

MERRYLAND HIGH SCHOOLS – ENTEBBE
S5 GEOGRAPHY HOLIDAY WORK 2021

NB: Please copy these notes in your Geography book.

AGRICULTURE IN UGANDA

Current status of agricultural status in Uganda

- Agriculture is the largest contributor to GDP contributing approximately 22.9% of the total Gross Domestic Product.
- It employs the largest population, where about 65.6% of working population is engaged in agriculture.
- It is mainly subsistent in nature
- Most large scale plantations are owned by foreigners for example Kakira Sugarcane plantation in Jinja
- Agriculture in Uganda is highly dependent on nature for example soil fertility and rainfall.
- Farmers normally use rudimentary tools for agriculture
- Some of the main traditional cash crops of Uganda include; Coffee, tea, cotton and tobacco.
- Coffee forms a major source of revenue for the country since it dominates the exports in terms of value.
- Coffee is the main foreign exchange earner contributing about 15.8%.
- The government through Plan for Modernization of Agriculture (PMA) is encouraging agricultural modernization.

AGRARIAN SYSTEMS/FARMING SYSTEMS/AGRICULTURAL SYSTEMS IN UGANDA

The major agrarian systems in Uganda include:

- Intensive banana-coffee system for example in Masaka, Mukono, Buikwe and Wakiso.
- Western banana-coffee-cattle system for example in Mbarara and Bushenyi.
- Afro-montane system for in Mbale and Sironko on mountain Elgon, Bundibugyo and Kasese on mountain Rwenzori.
- Teso system for example in Kumi, Soroti and Kaberamaido.
- Northern cereal-cotton-cattle system for example in Lira, Gulu and Kitgum.
- West Nile Tobacco-cassava-cereal system for example in Arua, Kboko and Nebbi.

- Pastoral system for example in Kaabong, Kotido and Mororo.

1. INTEENSIVE BANANA-COFFEE SYSTEM

This system is practiced in areas around the shores of Lake Victoria which receive heavy rainfall of about 1000 – 1500 mm per annum for example in Masaka, Mpigi, Wakiso, Buikwe, Mukono and Jinja.

Characteristics of intensive banana-coffee system.

- Mainly perennial crops are grown such as coffee, tea and bananas.
- There is growing of annual crops such as beans, maize, cassava and ground nuts
- Labour intensive techniques of production are used.
- Mainly rely on family labour and hired labour.
- There is intensive use of land represented by intercropping of annual crops and perennial crops.

- Most of the agricultural activities are on small holdings owned by individual farmers
- Mainly simple tools like pangas, hand hoes and slashers are used and mechanization is practiced on plantations.
- The major cash crop grown is coffee and other cash crops include tea and oil palm and coffee.
- The major food crop grown is bananas and other food crops are potatoes, beans and cassava.
- There are permanent settlements.

2. WESTERN BANANA-COFFEE-CATTLE SYSTEM

This is practiced in western Uganda and the major crops grown are bananas and coffee and others include millet, sorghum, beans and maize together with the rearing of cattle for example in Mbarara and Bushenyi.

Characteristics of western banana-coffee-cattle system:

- Mainly perennial crops are grown such as coffee, tea and bananas.
- There is growing of annual crops such as beans, maize, cassava and ground nuts.
- It is dominated by local Ankole long-horned cattle.
- Cattle rearing is practiced for cultural functions like prestige and marriage ceremony.
- Labour intensive techniques of production are used.
- Mainly rely on family labour and hired labour.
- There is intensive use of land represented by intercropping of annual crops and perennial crops.
- Most of the agricultural activities are on small holdings owned by individual farmers.
- Mainly simple tools like pangas, hand hoes and slashers are used and mechanization is practiced on plantations.
- The major cash crop grown is coffee and other crops include tea and cocoa.
- The major food crop grown is bananas and other food crops are potatoes, beans, and cassava.
- There are permanent settlements.

3. AFRO-MONTANE SYSTEM

This system is practiced in highland or mountainous areas of Uganda for example in Mbale and Sironko on mountain Elgon, Bundibugyo and Kasese on mountain Rwenzori.

Characteristics of afro-montane system

- Mainly perennial crops are grown such as Arabica coffee, and bananas.
- There is growing of annual crops such as beans, maize, cassava and ground nuts.
- Labour intensive techniques of production are used.
- Mainly rely on family labour and hired labour.
- There is intensive use of land represented by intercropping of annual crops and perennial crops.
- Most of the agricultural activities are on small holdings owned by individual farmers
- Mainly simple tools like pangas, hand hoes and slashers are used and mechanization is practiced on plantations.
- The major cash crop grown is coffee and other cash crops include tea and cocoa.
- The major food crop grown is bananas and other food crops are potatoes, beans and cassava.
- There are permanent settlements.

4. TESO SYSTEM

- This is practiced in Teso areas in areas experiencing tropical climate of rainfall ranging between 700-100 mm per annum for example in Kumi, Soroti and Kaberamaido.

Characteristics of the Teso system

- Mainly annual crops are grown such as millet, maize, sorghum, simsim and cotton.
- Local breeds of cattle such as short horned zebu are part of the system.
- Local tools are used like hand hoes, pangas and axes.
- Ox-ploughing is mainly used to ensure large scale farming.
- There are permanent settlements.
- The system highly relies on natural factors in form of rainfall and soil fertility.
- Cotton is the major cash crop grown.
- The land is left to fallow for a short period of time.

5. NORTHERN CEREAL-COTTON-CATTLE SYSTEM

This system is mainly practiced in northern Uganda for example in Lira, Gulu and Kitgum.

- Mainly annual crops are grown such as millet, maize, sorghum, simsim and cotton.
- There is rearing of animals like cattle, goats, sheep etc.
- Subsistence farming on small holdings is practiced.
- Local breeds of cattle such as short horned zebu are part of the system.
- Local tools are used like hand hoes, pangas and axes.
- Ox-ploughing is mainly used to ensure large scale farming.
- There are permanent settlements.
- The system highly relies on natural factors in form of rainfall and soil fertility.
- Cotton is the major cash crop grown.
- The land is left to fallow for a short period of time.

6. WEST NILE TOBACCO-CASSAVA-CEREAL SYSTEM

This system is practiced in west Nile districts such as for example in Arua, Koboko and Nebbi.

Characteristics of the west Nile tobacco-cassava-cereal system

- Mainly annual crops are grown such as tobacco, millet, maize, sorghum.
- Local breeds of cattle such as short horned zebu are part of the system.
- Local tools are used like hand hoes, pangas and axes.
- Ox-ploughing is mainly used to ensure large scale farming.
- There are permanent settlements.
- The system highly relies on natural factors in form of rainfall and soil fertility.
- The major cash crop grown is tobacco.
- The major food crops include; cassava, millet, and simsim.

7. PASTORAL SYSTEM

This is mainly practiced in semi-arid sparsely populated areas of Uganda like for example; Kabongo, Kotido and Moroto.

Characteristics of pastoral system

- It is dominated by cattle keeping where numbers are preferred to quality
- Animals and crops are kept and grown mainly for subsistence purposes.

- Nomadic pastoralists move from place to place with their animals in search for water and pasture.
- Annual bush burning is a common practice to regenerate fresh pasture.
- Drought resistant annual crops are grown like millet.
- There is communal ownership of land.
- Temporary shelters are usually constructed.
- There is over dependence on animal products for food, social customs etc.
- Local breeds of livestock are kept.
- There is communal grazing of the animals.

Factors influencing agrarian systems in Uganda.

1. Climate:

- Areas with equatorial type of climate receive heavy rainfall of over 1500mm per annum which is well distributed throughout the year leading to the growth of perennial crops like bananas and coffee which leads to intensive banana-coffee system in Mukono, Masaka, Wakiso and Kayunga districts.
- Areas with tropical climate receive moderate rainfall of between 750mm and 1500mm per annum leading to the growth of seasonal crops like sorghum, millet alongside rearing of cattle leading to the Teso system in Kumi, Soroti and Kaberamaido and northern cereal-cattle system in Gulu, Lira and Kitgum.
- Areas with montane climate receive heavy relief rainfall throughout the year which encourages the growth of Arabica coffee and bananas leading to afro-montane system in Mbale and Bulambuli on mountain Elgon and Bundibugyo on mountain Rwenzori.
- Areas with semi-desert climate receive low amount of rainfall of less than 500mm per annum with hot temperatures of about 30oC which encourage nomadic pastoralism leading to pastoral system in Kabong, Kotido and Moroto.

2. Soils:

- Soils of high productivity for example tropical loam soils have encouraged the growth of crops such as coffee and bananas leading to intensive banana-coffee system in Mukono, Wakiso and Masaka and western banana-coffee-cattle system in Mbarara
- Soils of medium productivity have encouraged the growth of seasonal crops like millet, simsim and sorghum leading to Teso system in Soroti,

Kumi and Kaberamaido and northern cereal-cotton-cattle system in Gulu, Lira and Kt gum.

- Soils of low productivity have encouraged the growth of dry bush savanna which encourages nomadic pastoralism encouraging pastoral system in Kaabong and Moroto.

3. Drainage:

- Poorly drained soils with impaired drainage especially swampy soils have promoted the growth of cereal crops like rice and millet leading to Teso system in Kumi and Soroti.
- Well drained soils have encouraged the growth of crops Coffee and bananas leading to intensive banana-coffee system in Masaka and Wakiso.

4. Relief:

- Mountainous areas receive heavy relief rainfall on their windward sides leading to the growth of crops like bananas and Arabica coffee leading to afro-mountain system in Mbale and Manafa.
- Plateau lands receive moderate rainfall which has promoted the growth of seasonal crops like millet and sorghum leading to Teso system in Kumi, Soroti and Kaberamaido.
- Lowland areas in the rift valley region receive low amount of rainfall with hot temperature leading to the growth of dry bush savanna which supports nomadic pastoralism leading to pastoral system in Kasese and Ntoroko.

5. Nature of vegetation:

- Areas with tropical rainforests receive heavy rainfall leading to the growth of perennial crops like coffee and bananas leading to intensive banana coffee system in Mukono, Masaka and Wakiso.
- Areas with savannah grassland support the growth of seasonal crops and animal rearing leading to Teso system in Soroti and Kumi
- Areas with dry bush savanna have encouraged pastoralism leading to pastoral system in Kaabong, Kotido and Moroto.

6. Land tenure system;

Areas where land is communally owned have provided a large grazing land leading to the pastoral system in Kaabong, Kotido and Moroto.

7. The population density.

Sparsely populated areas of Uganda have encouraged communal ownership of land encouraging the pastoral system in Kotido, Moroto and Kaaabong while in areas with a dense population, land is intensively cultivated on small holdings leading to intensive banana-coffee system in Masaka, Buikwe, Mukono and Wakiso.

8. Availability of market.

Remote areas with limited market have encouraged subsistence agriculture leading to pastoral system in Moroto and Kotido and the Teso system in Kumi and Soroti, while areas with large market have promoted the growth of coffee and bananas leading to intensive banana-coffee system in Masaka, Mukono and Wakiso.

9. Availability of labour.

Areas with adequate labour supply have encouraged the growth of perennial crops like coffee and bananas leading to intensive banana-coffee system in Mukono, Masaka and Wakiso while areas with limited labour supply have encouraged the pastoral system in Kotido, Moroto and Kaabong.

10. Availability of capital.

Areas where people have large capital have encouraged investment in the growth of perennial crops like coffee and bananas leading to intensive banana-coffee system in Mukono and Masaka and western banana-coffee-cattle system in Mbarara and Bushenyi while areas with poor people have encouraged subsistence agriculture leading to Teso system in Soroti and Kumi.

11. Government policy:

Sometimes the government of Uganda has influenced the agrarian system through dictating particular agricultural practice in a given region for example the colonial government allocated cotton growing in norther Uganda and Teso region leading to northern cereal -cotton -cattle system in Gulu and Lira and coffee and Teso system in Kumi and Soroti while coffee was given to central Uganda leading to intensive banana-coffee system in Masaka, Mukono, Rakai and Buikwe.

12. Culture and tradition

Certain groups of farmers practice a particular agricultural system according to their culture for example the pastoral system is practiced in Moroto, Kaabong and Kotido because cattle is traditionally kept by the Karamojongs while intensive banana-coffee system is practiced in Masaka, Mukono and Wakiso because bananas and coffee are grown as part of culture of the Baganda.

13. Availability of transport network.

Areas which are poorly served with infrastructure have encouraged subsistence agriculture leading to the pastoral system in Moroto, Kaabong and Kotido, while areas which are well served with transport network have encouraged commercial agriculture leading to intensive banana -coffee system in Masaka, Mukono and Wakiso.

14. Political situation.

Political stability encourages commercial agriculture leading to intensive banana-coffee system in Mukono, Masaka and Wakiso and western banana-coffee-cattle system in Mbarara and Bushenyi.

ARABLE FARMING IN UGANDA:

Arable farming is the growing of crops either for subsistence or commercial purposes.

Subsistence arable farming is divided into shifting cultivation, bush fallowing and small holding, farming and commercial arable farming is divided into plantation farming irrigation framing and market grading.

CASHCROP GROWING IN UGANDA

- Some of the main traditional cash crops of Uganda include: Coffee, tea, cotton and tobacco
- Coffee forms a major source of revenue for the country since it dominates the exports in terms of value.

The table below showing coffee, tea and tobacco production in 2011 and 2012

Crop	Coffee	Tea	Tobacco
2011 metric tonnes	191,371	35,194	28,444
2012 metric tonnes	186,126	50,195	30,091

COFFEE GROWING IN UGANDA

Current status of coffee growing in Uganda

- Uganda majorly produced two kinds of coffee that is; Robusta and Arabica coffee also known as Mountain coffee.
- Over the years, Robusta coffee has been procured in much more quantities compared to Arabica coffee.
- Robusta coffee is grown in lowland areas which receive heavy rainfall of above 1000mm per annum such as Mukono, Buikwe, Masaka, Luwero, Wakiso, Mityana and Mubende.
- Arabica coffee is grown in highland areas like Mbale, Manafa, Sironko and Bududa on mountain Elgon and Kasese and Bundibugyo on Mountain Rwenzori.
- The Uganda Coffee Development Authority has been formed to manage the production and marketing of coffee.
- Many factories have been set up to establish coffee in Uganda.
- Coffee growing is mainly dominated by private farmers, buyers and processing companies like KAWACOM.
- Coffee is mainly produced for export.

THE AREAS WHERE COFFEE IS GROWN IN Uganda include:

- Mukono, Buikwe, Wakiso, Masaka, Mubende, Mityana, Kayunga, Nakaseke and Luwero for robusta coffee.
- Mbale, Manafa, Bududa, Sironko, Kasese and Bundibugyo for Arabica coffee.

Conditions which have favoured coffee growing in Uganda.

1. The presence of deep, fertile well-drained soils have encouraged the growth of Robusta coffee in Mukono and Wakiso and Arabica coffee in Mbale and Bundibugyo
2. The presence of heavy rainfall of above 1000mm per annum has encouraged the growth of Robusta coffee in Buikwe and Masaka and Arabica coffee in Bududa and Kasese.
3. The presence of tropical rainforest trees which provides shades to coffee seedlings and protect the coffee plants against strong winds for example Robusta coffee in Mukono
4. The presence of extensive land to promote extensive growing of Robusta coffee in Mukono, Buikwe, Masaka, Wakiso and Mubende and arabica coffee in Bududa and Mbale
5. Availability of adequate capital invested in buying land, cultivation and harvesting of Robusta coffee in Mukono Buikwe and Arabica in Mbale, Bududa
6. Availability of skilled and semi-skilled labour in weeding, harvesting and marketing of Robusta coffee in Mukono, Wakiso and Mubende and arabica coffee in Mbale
7. The relatively stable political atmosphere has encouraged investment in growing of Robusta coffee in Masaka, Wakiso and Mubende and arabica coffee in Mbale
8. The presence of large market both locally and abroad in Japan for Robusta coffee in Buikwe, Masaka, and Mubende and arabica coffee in Mbale and Bundibugyo
9. Favorable government policy for example in construction of supportive infrastructure like roads and market research for Robusta coffee in Mukono, Buikwe and Masaka.
10. Availability of improved transport network like Kampala-Masaka road distribution of coffee to market centres has promoted growing of Robusta coffee in Masaka and Wakiso.
11. Alternative research conducted by the Uganda Coffee Development Authority (UCDA) concerning improved quality production and marketing of Robusta coffee in Masaka.

Contribution of coffee growing in Uganda.

Positive contribution:

1. Sources of employment opportunities for people who are employed in weeding harvesting and marketing of Robusta coffee in Masaka and Mubende and Arabica coffee in Mbale.
2. Source of foreign exchange through exportation of coffee to foreign countries for example Robusta coffee from Wakiso and Mubende and Arabica coffee in Mbale exported to Japan.
3. Source of government revenue through taxes charged on coffee farmers and exporters for Robusta coffee in Mukono and Mubende and Arabica coffee in Bududa.
4. It has led to the development of coffee processing industries for example Kyagalanyi and Zigoti coffee factory in Mityana for Robusta coffee from Mityana.
5. It has led to urbanization of areas where coffee is processed for example Kyagalanyi and Zigoti in Mityana processing Robusta coffee from Mityana.
6. It has created international relation between Uganda and countries where coffee is exported for example Robusta coffee from Masaka and Mubende and Arabica coffee from Mbale exported to Japan.
7. It has led to diversification of the economy and reduce over dependence on one sector like mining for example Robusta coffee in Wakiso and Arabica coffee in Mbale.
8. It is source of food to the people in form of beverage coffee and dried boiled Robusta coffee in Masaka and Mubende and Arabica coffee in Mbale, and Bududa.
9. Coffee is used for cultural purposes among the Baganda for commenting the relationships by sharing Robusta coffee in Mukono, Buikwe, Masaka, Wakiso and Mubende.
10. Coffee growing has helped in soil conservation for example Arabica coffee in Mbale and Bududa secure the soil against soil erosion and adds humus to the soil.
11. It has led to the development of transport infrastructure to support the distribution of coffee to market centres for example Kampala-Masaka road for Robusta and Arabica coffee in Bududa.

Negative contribution:

1. It has led to industrial pollution from coffee processing industries for example at Zigoti and Mbale for Robusta coffee Mityana and Mubende.
2. It has led to urban related problems in urban areas which have developed from coffee growing like high crime rates and unemployment for example in Mityana for Robusta coffee in Mbale.
3. Coffee growing has led to neglect of the growth of food crops like maize and cassava since large tracks of land is occupied by Robusta coffee in Mukono and Arabica coffee in Mbale.
4. Coffee growing is highly affected by price fluctuation leading to instability of farmers income and government revenue for example Robusta coffee in Mukono and Wakiso.
5. Coffee growing is highly affected by natural factors like drought, pests and diseases which attack the plants leading to losses for example Robusta coffee in Mukono
6. It has led to competition for example Robusta coffee in Wakiso and Mukono and Arabica coffee in Kasese and Bundibugyo.
7. It has led to competition for labour from other sectors like fishing and forestry affecting their growth for example Robusta coffee in Wakiso and Mubende and Arabica coffee in Mbale.
8. It has led to destruction of vegetation to establish coffee gardens hence affecting the micro-climate of the areas for example Robusta coffee in Mubende and Arabica coffee in Mbale.

Problems facing coffee growing in Uganda:

1. Pests and diseases which affects the growth of coffee plants for example coffee wilt which destroys Robusta coffee in Wakiso and Mubende and Arabica coffee in Bududa.
2. Soil exhaustion due to monoculture has led to low yields of Robusta coffee in Mukono and Buikwe and Arabica coffee in Kasese and Bundibugyo.
3. Unfavorable climatic conditions like prolonged drought which lead to low yields for example Robusta coffee in Mukono, Buikwe, Masaka , Wakiso and Mubende.
4. The rugged relief of mountainous areas discourage mechanization of coffee growing for example Arabica coffee in Mbale and Bundibugyo.
5. Shortage of land due to increased population leading to land fragmentation hence discouraging large scale growing of Robusta coffee in Mukono and Mubende.
6. Price fluctuation on the world market due to competition with foreign countries for example Brazillian coffee outcompetes Robusta coffee in Masaka and Arabica coffee in Bududa.

7. Poorly developed transport network for distribution of coffee to market centres for example Robusta coffee in Wakiso and Mubende and Arabica coffee in Kasese.
8. Inadequate skilled labour to ensure quality coffee production for example Robusta coffee in Wakiso and Arabica coffee in Mbale.
9. Inadequate capital to be invested in buying land and establishing processing plants for Robusta coffee in Mubende and Arabica coffee in Bududa.
10. Insecurity has discouraged investment in growing of Arabica coffee in Kasese and Bundibugyo.
11. Limited research conducted regarding improved quality production of Arabica coffee in Mbale and Robusta coffee in Masaka.
12. Unfavorable government policy like charging high taxes on coffee exporters and coffee processing industries for Arabica coffee in Mbale and Robusta coffee in Mukono.

Measures being taken to improve on coffee growing in Uganda:

1. Conducting research for example regarding improvement of coffee varieties and market for example by UCDA for Robusta coffee in Mukono, Buikwe, Masaka and Mubende.
2. Liberalization of coffee growing which has led to private coffee processing and exporting companies like UGACOF and KAWACOM for Robusta coffee in Mukono and Luwero.
3. Construction of transport network like roads to link coffee growing areas to market centres for example Kampala-Masaka road for Robusta coffee in Masaka.
4. Establishment of institutions to ensure high quality and quality of coffee produced for example Uganda Coffee Development Authority (UCDA) for Robusta coffee in Masaka.
5. Providing soft loans to farmers through financial institutions for example banks like Centenary bank to act as capital for the growth of Robusta coffee in Masaka and Mubende and Arabica coffee in Mbale.
6. Improving on security by using the national army UPDF so as to encourage investment in coffee growing for example Robusta coffee in Buikwe and Arabica coffee in Bundibugyo.
7. Establishing coffee processing plants in many parts of Uganda to increase the demand for Robusta coffee in Mukono and Mubende and Arabica coffee in Mbale and Bududa.
8. Education and training of coffee farmers concerning improvement in quality of coffee to promote the growth of Robusta coffee in Wakiso and Arabica coffee in Mbale.

9. Application of fertilizers and manure to improve soil fertility for Robusta coffee in Masaka and Mityana and Arabica coffee in Mbale and Bundibugyo.
10. Spraying with chemicals to control pests and diseases for Robusta coffee in Mukono, Buikwe, Masaka and Arabica coffee in Mbale, Kasese and Bundibugyo.
11. Expanding the size of the market for coffee through regional economic integration like EAC and COMESA for Robusta coffee in Masaka and Arabica coffee in Mbale.

Tea growing in Uganda

- Tea is the third foreign exchange earner in Uganda
- It is mainly grown on plantations like Kasaku tea estate in Buikwe, Finlay's tea estate in Bushenyi and Kabarole, Rwenzori products tea estate in Kabarole and many other tea estates in Hoima, Mubende and Rukungiri.

Tobacco growing in Uganda

Tobacco growing is supervised by British American Tobacco (BAT) in areas like Arua, Moyo, Gulu, Kitgum, Hoima, Masindi, Mubende, Rukungiri, Kisiro and oKabale.

COTTON GROWING IN UGANDA

Current status of cotton growing in Uganda.

- Cotton production has been fluctuating over the years despite the fact that the government has put in place many programmes to review the sector.
- The government has liberalized and privatized growing, buying and selling.
- New cotton varieties have been introduced by National Agricultural Research Organisation (NARO).
- Uganda Cotton Development Organisation (CDO) is responsible for the management of cotton production and marketing.
- Cotton ginneries are being rehabilitated e.g. Rhino Camp in Arua by corecto company, Nyakatonzi in Kasese, Iki-Iki in Budaka, Lukhonge in Manafwa etc.

The major cotton growing areas in Uganda include:

- Katakwi, Amuria, Soroti, Kaberamaido and Kumi (Teso region)
- Budaka, Pallisa, and Tororo (bukedi region)
- Kamuli, Bugiri and Jinja (Busoga region)
- Lira, Oyam, Dokolo, Apac (Lango region)
- Gulu, Kitgum and Pader (Acholi region)
- Masindi, Hoima and Kibale (Bunyoro region)
- Arua, Nebbi, Moyo, Adjumani and Yumbe (West Nile region)

Factors for the low level of cotton production in Uganda:

1. Competition for land with other lucrative non-traditional crops like Maize, flowers, fruits etc. for example in Soroti, Lira, Apac and Kamuli.
2. Low levels of technology for example use of land hoes and pangas which are highly inefficient leading to poor quality output for example in Jnja, Kamuli and Lira..
3. Constant price fluctuations in both domestic and international markets which discourage cotton farmers in Arua, Kasese and Msindi.
4. The collapse of the co-operative movements which used to provide market for cotton, for example Lint marketing board discouraging cotton farmers in Gulu, Lira and Apac.
5. Limited capital to invest in cotton growing among the farmers in Kamuli, Jinja and Kaberamaido.
6. Limited skilled labour to work in cotton production and marketing for example in Gulu, Lira and Masindi.
7. Soil exhaustion due to over cultivation leading to low cotton output for example in Kamuli, Jinja and Kaberamaido.
8. Limited research conducted by the cotton farmers in terms of market research and biological research for example in Kamuli and Gulu.
9. Pests and diseases for example cotton weevil which destroy cotton affecting the quantity and quality of cotton for example in Gulu, Jinja and Apac.

10. Insecurity in some parts of Uganda, discouraging investment in cotton for example in Lira and Gulu.
11. Climatic changes for example prolonged drought which affects the growth of cotton in Arua., Kamuli and Apac and heavy rainfall in Jinja which affects the harvesting of cotton.
12. Poorly developed transport network has limited the distribution of cotton to market centres for example in Kamuli, Jinja and Apac.
13. Poor storage facilities leading to post harvest losses for example in Lira, Kamuli and Gulu.
14. Limited power supply which limits cotton processing for example in Lira, Kamuli and Arua.
15. Unfavorable government policy for example closure of ginnery in Lira, and Soroti.
16. Corruption and embezzlement of funds meant to develop the cotton growing sub-sector in Jinja, Kamuli and Iganga.

Measures being taken to improve cotton production in Uganda.

1. Introduction of government reform programmes for example agricultural rehabilitation projects and establishment of the cotton development organization (CDO) for cotton growing in Jinja, Kamuli and Apac.
2. Conducting research for example by NARO and individual farmers regarding markets for cotton and improvement in quality of output for example in Jinja, Kamuli and Kaberamaido.
3. Formation of cotton export associations like the Uganda cotton ginners and exporters association for cotton from Jinja, Kamuli and Kaberamaido.
4. Privatization and liberalization of cotton growing which has led to establishment of private cotton processors for cotton in Apac, Lira and Gulu.
5. Establishment and rehabilitation of cotton ginneries Rhino Camp in Arua by Corecot company, Nyakatonzi in Kasese, Iki-Iki in Budaka, Lukhonge in Manafa etc.
6. Ensuring education and awareness programmes for cotton producers regarding improved quality production of cotton for example in Kamuli, Jinja and Gulu.
7. Re-introduction of the use of ox-plough to increase the acreage of cotton farms for example in Soroti and Kaberamaido.
8. Provision of extension services through NAADS programmes to teach farmers modern methods of farming for example in Jinja, Kamuli and Gulu.

9. Extension of power to rural areas through the rural electrification programme to allow processing of cotton for example in Kasese, Lira and Gulu.
10. Construction and rehabilitation of feeder roads to encourage marketing of cotton for example in Lira, Gulu and Apac.
11. Use of scientific methods for example pesticides to fight pests and ensure quality cotton production for example in Lira, Arua and Kitgum.
12. Improving security through deployment of soldiers encouraging investment in cotton growing for example in Gulu and Lira.

PLANTATION AGRICULTURE IN UGANDA

Plantation agriculture is the growing of one or two perennial crops like tea, sugarcane and coffee on a large scale using scientific methods of farming and mainly for commercial purposes.

Examples of plantations in Uganda include, Lugazi sugarcane plantation in Buikwe, Kakira sugarcane plantation in Jinja, Kinyara sugarcane plantation in Masindi, Kasaku tea estate in Buikwe, Ankole and Igara tea estates in Bushenyi, Kiko, Mpanga Tampeco Kiamara and Rwenzori product Kirimi tea estate in Kabarole and Kaweeri coffee plantation in Mubende.

Characteristics of plantation agriculture:

- Mainly one or two perennial crops like tea, sugarcane and coffee are grown.
- Crops are grown mainly for commercial purposes. \most of the estates owned by foreigners.
- There is use of modern methods of farming like application of fertilizers and use of tractors plantations are both labour intensive and capital intensive.
- Plantations are self-sustaining in that they have their own infrastructure like roads, schools, hospitals etc.
- They carry out intensive research regarding improvement in crop varieties and markets.
- They are located in areas where there is large tracts of land since they operate on a large scale.
- They mainly have out growers who supply them with the related crop grown on the plantation.

Contribution of plantation agriculture in Uganda

Positive contribution

1. Source of foreign exchange through exportation of agricultural products to foreign countries for example sugar from Kakira sugarcane plantation in Jinja exported to South Sudan.
2. Source of government revenue through taxing people employed on plantations such as Kasaku tea estate in Buikwe and Lugazi sugarcane plantation in Buikwe.
3. Source of employment opportunities to people in planting, harvesting and processing and therefore earning income for example workers at Kasaku tea estate in Buikwe.
4. plantation agriculture has led to urbanization with its associated advantages due to increased population of workers for example Lugazi town near Lugazi sugarcane plantation.
5. Plantation agriculture has promoted the development of transport infrastructure to link farms to marked centres for example roads in Kakira sugar plantation.
6. Plantation agriculture has promoted industrialization by providing raw materials used in industries like tea processing industry at Kasaku tea estate.
7. Planation agriculture has promoted international relationship between Uganda and countries where agricultural products are exported for

example South Sudan where sugar from Kakira sugarcane plantation in Jinja is exported.

8. Planation agriculture has encouraged diversification of the economy which was reduced overdependence on one sector like fishing by generating alternative income from plantation like Kasaku tea estate in Buikwe and Kakira sugarcane plantation in Jinja.
9. Planation agriculture has boosted research and education/tourism by students pursuing agriculture related courses for example tea from Kasaku tea estate in Buikwe.
10. Planation agriculture has led to the development of power and energy used in running machines hence promoting industrialization for example electricity from bagasse from the sugar mills at Kinyara, Lugazi and Kakira sugarcane plantations.

Negative contributions

1. Planation agriculture has led to industrial pollution from agro-based industries caused by industrial wastes and fumes for example Kasaku tea factory due to Kasaku tea estate in Buikwe.
2. Planation agriculture has led to urban related problems like high rates of crime, shortage of accommodation in areas like Kinyara sugar cane plantation in Masindi.
3. Planation agriculture has led to destruction of forests to acquire land for large scale agriculture for example Mabira destroyed by Lugazi sugarcane plantation in Buikwe.
4. Planation agriculture has led to land degradation due to monoculture for example tea from Kasaku tea estate in Buikwe and sugarcane from Lugazi plantation in Buikwe.
5. Planation agriculture has led to profit reputation by foreigners owning farms and plantations in Uganda for example Kakira sugarcane plantation in Jinja owned by Madhvan Group of companies.
6. Planation agriculture has led to land conflicts with other land use types like wildlife conservation for example Lugazi sugarcane plantation in Buikwe with Mabira forest.
7. Planation agriculture has led to competition for labour with other sectors of the economy like mining hence affecting their growth for example tea from Kasaku tea estate in Buikwe.
8. Planation agriculture is highly affected by pests and diseases leading to massive losses for example tea from Kasaku tea estate in Buikwe and sugarcane from Kakira sugarcane plantation in Jinja.

9. Planation agriculture is highly affected by price fluctuations leading to instability in farmer's income for example the growing of tea at Kasaku tea estate in Buikwe.

IRRIGATION FARMING IN UGANDA

Irrigation farming is the artificial application of water to crops in semi-arid and arid areas to supplement to the natural rain water.

Examples of irrigation schemes in Uganda include Doho in Butalejja and Kibimba Tilda in Bugiri for rice, Mubuku irrigation scheme for vegetables like onions and cabbages. Kakira sugar plantaion in Jinja and Lugazi sugarcane plantation in Buikwe for sugarcanes, Olwenyi in Lira, Agoro in Kitgum, Atera in Apac and Odina in Soroti.

Factors which have favoured irrigation farming in Uganda.

1. The presence of large quantity of water for irrigation for example from Lake Victoria for irrigation at Kakira Sugarcane plantation and river Sebwe for Mubuku irrigation scheme.
2. The presence of fertile well-drained soils have encouraged the growth of crops like rice at Doho irrigation scheme in Butalejja and Mubuku irrigation scheme for vegetables.
3. The presence of low amount of rainfall of less than 750mm has necessitated irrigation farming for example at Doho in Butalejja and Kibimba Tilda in Bugiri for rice.

4. The presence of a gently slopping landscape which encourages the construction of irrigation channels and gentle flow of water under gravity for example at Doho in Butalejja.
5. The presence of extensive land to promote extensive growing of crops for example at Doho in Butalejja and Kibimba Tlda in Bugiri for rice, Mubuku irrigation scheme in Kasese for vegetables.
6. Availability of adequate capital invested in buying land, cultivation and harvesting at Doho in Butalejja and Kibimba Tilda in Bugiri for rice and Mubuku irrigation scheme.
7. Availability of skilled and semi-skilled labour in weeding, harvesting and construction of irrigation channels at Doho in Butalejja and Kakira sugar plantation in Jinja.
8. The relatively stable political atmosphere has encouraged investment in irrigation farming at Doho in Butalejja for rice and Kakira sugar plantation in Jinja.
9. The presence of large market both locally and abroad for agricultural products like rice from Doho in Butalejja and Kakira sugar plantation in Jinja.
10. Favourable government policy for example in construction of supportive infrastructure like roads and market research for products from Kakira sugar plantation in Jinja.
11. Availability of improved transport network like Kampala-Jinja road for distribution of rice from sugar from Kakira sugar plantation in Jinja to market centres.
12. Intensive research conducted by the Uganda concerning improved quality production and marketing at Doho in Butalejja for rice and Kakira sugar plantation in Jinja and Lugazi sugarcane plantation in Buikwe for sugarcanes.

MARKETING GARDENING:

Market gardening is the intensive growing of crops such as fruits, flowers and vegetables near market centres such as urban areas, industrial centres, and mining areas.

Market gardening in Uganda is practiced in areas like Kampala with tomatoes and mangoes, Entebbe with flowers, Kabale with cabbages, apples and oranges, Mbale with tomatoes, oranges and cabbages.

Characteristics of market gardening:

- It is carried out within the vicinity of urban areas, industrial centres or mining areas.
- The type of crops grown are perishable crops such as onions, cabbages and tomatoes.
- There is artificial application of scientific methods such as crop rotation, application of fertilizers, herbicides and pesticides.
- The farms are usually small.
- The market gardens are labour intensive.
- The land is intensively worked throughout the year.
- The yields per unit area are high
- Farms are located near quick means of transport.
- Most of the farms are privately owned.
- The crops grown fetch high prices.

Problems facing market gardening in Uganda

1. Soil exhaustion due to intensive cultivation of the land leading to low productivity for example tomatoes and mangoes in Kampala, flowers in Entebbe and cabbages in Mbale.
2. The presence of pests and diseases which attack and destroy crops for example tomatoes and mangoes in Kampala, flowers in Entebbe, cabbages, apples and oranges in Kabale.
3. Poor storage facilities and limited proper preservation facilities leading to losses for example in tomatoes and mangoes in Kampala, flowers in Entebbe and oranges in Kabale.
4. Competition for market from foreign countries engaged in market gardening like USA and The Netherlands limits demand for flowers in Entebbe, apples and oranges in Kabale.
5. Low levels of technology used which is inefficient and lead to low yields for tomatoes and mangoes in Kampala, flowers in Entebbe, cabbages, apples and oranges in Kabale.
6. Limited land for expansion on farms due to dense population in urban areas like tomatoes and mangoes in Kampala, flowers in Entebbe, cabbages, apples and oranges in Kabale.
7. Inadequate capital to invest in paying labour and purchasing machinery like tomatoes and mangoes in Kampala, flowers in Entebbe, cabbages, apples and oranges in Kabale.
8. Inadequate supply of both skilled and semi-skilled labour to carry out weeding, harvesting and research in growing tomatoes and mangoes in Kampala, flowers in Entebbe, cabbages, apples and oranges in Kabale.
9. Inadequate government support in form of extension services for the growth of tomatoes and mangoes in Kampala, flowers in Entebbe, cabbages, apples and oranges in Kabale
10. Poorly developed transport network leading to high transportation costs and wastage of crops like tomatoes and mangoes in Kampala, flowers in Entebbe, cabbages, apples and oranges in Kabale.
11. Unreliable weather conditions such as prolonged drought affects the growth of crops like tomatoes and mangoes in Kampala, flowers in Entebbe, cabbages, apples and oranges in Kabale.
12. Insecure peri-urban areas of Uganda discourage investment in growing of crops like tomatoes and mangoes in Kampala, flowers in Entebbe, cabbages, apples and oranges in Kabale.
13. Profit repatriation by foreign owned farms leading to low levels of re-investment affects the growth of tomatoes and mangoes in Kampala, flowers in Entebbe, cabbages, apples and oranges in Kabale.

LIVESTOCK FRMING IN UGANDA.

Livestock farming is the rearing of animals such as cattle, goats, pigs, rabbits for subsistence or commercial purposes.

The major forms of livestock farming in Uganda include:

- Dairy farming in Kabale, Mbarara, Kampala, Jinja and Mbale.
- Nomadic pastoralism in Kotido, Kaabong, Nakapiripiriti and Moroto.
- Zero grazing in Kabale, Kampala and Mbale.
- Ranching in Nakasongola, Masindi, Mbarara and Bushenyi.
- Piggery in Soroti, Gulu, Jinja and Mukono.
- Poultry in Kasese, Masindi, Soroti, Lira, Gulu and Kampala.

The table showing livestock numbers 2010 – 2012 in Uganda.

Livestock	2010	2011	2012
Cattle	12,104,000	12,167,000	12,841,000
Sheep	3,621,000	,3,730,000	3,842,000
Goats	13,208,000	13,604,000	14,012,000
Pigs	3,378,000	3,480,000	3,584,000
Poultry	42,766,000	44,304,000	45,901,000

Source: Statistical Abstract 2013 Uganda bureau of statistics (UBOS), pg 42.

A SKETCH MAP OF UGANDA SHOWING MAJOR FORMS OF LIVESTOCK FARMING

NOMADIC PASTORALISM

Nomadic pastoralism is a form of rearing animals like cattle, sheep and goats which involves constant movement of farmers from place to place with their herds in search for water and pasture for their animals.

In Uganda, the system is practiced by Karamojong of Moroto, Kaabong and Kotido, the Bahima of Mbarara, Lyantonde and Kiruhura, the Basongora of Kasese and some Iteso of Kumi and Ngora.

Characteristics of nomadic pastoralism:

- Pastoralists keep on moving from place to place and therefore there is no permanent settlements.
- The system is practiced in areas with sparse population of less than 50 people per square kilometer.
- Pastoralists keep local breeds of cattle like the long-horned cattle and short horned zebu.
- Pastoralists keep large number of animals for prestige. \animals feed on natural pasture especially dry bush savanna.
- The system is practiced in arid areas and semi-arid areas of Uganda.
- There is communal ownership of land
- Livestock is mainly kept for subsistence purposes for example milk, meat and blood.
- Bush burning during dry season is a common phenomenon.
- Pastoralists employ rudimentary methods of rearing animals.
- Some pastoralism grow some crops especially seasonal crops like millet and sorghum.

DIARY FARMING IN UGANDA

Dairy farming is the rearing of livestock especially cattle for milk production.

Current status of the dairy industry in Uganda.

- The industry is not well developed compared to other sectors. However, the farming is increasing under government policies of plan for Modernization of Agriculture (PMA).
- Modern technology /scientific methods are being employed in dairy farming activities.
- Most dairy farms are managed by private individuals for example Jesa farm in Wakiso.
- The dairy industry is currently managed by Dairy Development Authority (DDA)
- There is increased processing of dairy products for local and external markets to reduce on post-harvest losses and value addition.

The major dairy farms in Uganda include, Jesa farm and Myomba Dairy farm in Wakiso, Beatrice farm in Kabale, Byakika farm in Mbale, Rubona farm in Kabarole etc.

A SKETCH MAP OF UGANDA SHOWING DAIRY FARMS

Factors for the development of the dairy industry in Uganda.

1. Cool climatic conditions which favour rearing of dairy animals for example in the highland areas of Kabale for Beatrice farm and around Lake Victoria for Jesa farm in Wakiso.
2. Availability of rich natural and exotic pasture for feeding dairy cattle for example at Beatrice farm in Kabale and Jesa farm in Wakiso.
3. The presence of gentle sloping relief conducive for the movement of dairy animals and construction of supportive infrastructures like roads for example at Jesa farm in Wakiso.
4. The presence of extensive land for large rearing of dairy animals for example on Jesa dairy farm in Wakiso and Beatrice farm in Kabale.
5. Abundant and constant water supply from natural and man-made sources for feeding animals for example at Jesa farm in Wakiso.
6. The presence of improved exotic breeds which are high yielding for example Friesian cows at Jesa farm in Wakiso.
7. Availability of improved technology for rearing dairy animals like use of milking machines and milk preservation for Jesa farm in Wakiso and Beatrice farm in Kabale.
8. Establishment of various milk collecting and processing centres for quick preservation to reduce wastage of milk for Jesa farm in Wakiso.
9. Improved storage and pasteurization methods for example the use of refrigerated trucks to avoid losses resulting from perishability of milk for example at Jesa farm in Wakiso and Beatrice farm in Kabale.
10. Availability of large domestic and foreign market for milk and milk products encouraging investment in dairy farming at Jesa farm in Wakiso.
11. Availability of adequate capital in form of loans/credit facilities from financial institutions like banks which is invested in paying labour and purchasing the necessary equipment at Jesa dairy farm in Wakiso.
12. Improved transport network in form of roads which is used in the delivery of milk and milk products to processing centres and markets for example Kampala – Mityana road for Jesa farm in Wakiso.
13. Intensive research conducted in dairy farming concerning the breeding of dairy animals as well as market research which is conducted by DDA and farms like Jesa farm in Wakiso and Beatrice farm in Kabale.
14. The relative political stability which has encouraged large scale investment in the dairy industry for example Jesa farm in Wakiso.
15. Supportive government policy of liberalizing the dairy industry and putting in place the dairy development authority to supporting dairy farming by farms like Jesa farm in Wakiso and Beatrice farm in Kabale.
16. Availability of skilled labour in rearing dairy animals for example herdsmen and transporters of dairy products for Jesa farm in Wakiso.

17. Availability of abundant power supply especially HEP for processing of milk and dairy products from Jesa dairy farm in Wakiso.

RANCHING IN UGANDA

Ranching is the keeping of animals mainly cattle on large scale for beef or milk production and for commercial purposes using modern animal industry techniques. The most ranching schemes in Uganda include Aswa cattle ranch in Gulu, Maruzi ranch in Apac, Singo ranch in Kiboga, Nyabushozi in Mbarara, Kisozi ranch in Gomba, Kajara cattle ranch in Mbarara, Lubbo and Ekitangaala ranch in Nakasongola.

ZERO GRAZING

This is a method of farming in which few cattle are fed in a small area on food supplements like banana peelings, cotton seeds, cotton cakes etc. It is mainly practiced in densely populated areas like Mpigi, Jinja, Kisoro, Kabale, Kampala and Mbale.

Contribution of livestock farming in Uganda

Positive contribution:

1. Source of food in form of meat and milk rich in proteins hence reducing malnutrition diseases for example pastoralism in Kaabong, rearing goats in Nakasongola and piggery in Soroti.
2. Source of foreign exchange through exportation of livestock products to foreign countries like Kenya, South Sudan for example cattle in Kaabong, goats in Nakasongola.
3. Source of government revenue through taxing people employed on livestock rearing for example pastoralism in Kaabong rearing of goats in Nakasongola and piggery in Soroti.
4. Source of employment opportunities where people are employed as herdsmen and researchers for example by rearing cattle in Kaabong and Mbarara, goats in Nakasongola.
5. Livestock farming has led to urbanization with its associated advantages for example ranching in Mbarara and Nakasongola and poultry farming in Wakiso.

6. Livestock farming has promoted the development of transport infrastructure to link farms to market centres for example rearing of cattle in Mbarara and Nakasongola.
7. It has promoted industrialization by providing raw materials used in industries for example milk, hides and skins from cattle in Kaabong, goats in Nakasongola and sheep in Moroto.
8. It has promoted international relationship between Uganda and countries where livestock products are exported like South Sudan for cattle from Mbarara and Nakasongola.
9. It has encouraged diversification of the economy which has reduced overdependence on one sector like fishing by generating alternative income from cattle in Mbarara
10. Livestock farming has boosted research and education/tourism by students pursuing Agricultural related courses for example cattle rearing in Mbarara and Kaabong.
11. It has led to the development of power and energy used for domestic purposes for example biogas from cattle in Mbarara and Kiruhura.
12. Source of manure in form of decomposed cow dung and chicken dropping hence favouring arable farming for example cattle in Mbarara, poultry in Wakiso and pigs in Soroti.
13. Animals are used for ploughing hence encouraging large scale Arable agriculture for example cattle in Soroti, Kumi and Pallisa.
14. Animals are used to fulfill cultural obligations such as dowry during marriage and sacrifices by offering cattle in Mbarara, Kaabong and Nakasongola.
15. Livestock provides building materials in form of hides and skins and cow dung hence providing shelter to the pastoralists for example cattle in Mbarara and Kaabong.
16. Livestock farming encourages effective use of the rangelands which would not be productive for other land use types for example pastoralism in Kaabong and Moroto.

Negative contributions:

1. Livestock farming has led to industrial pollution from industrial wastes and fumes for example milk processing and abattoirs for cattle in Mbarara and Nakasongola.
2. It has led to urban related problems like high cases of crime, shortage of accommodation in areas towns that emerged as a result of rearing cattle in Mbarara and Nakasongola.

3. It has led to destruction of forests to acquire land for large scale livestock farming and due to overgrazing of cattle in Kaabong and Nakasongola and sheep in Moroto.
4. It has led to land degradation due to overgrazing which has accelerated soil erosion in areas with animals like cattle in Kaabong and Nakasongola and sheep in Moroto.
5. It has led to profit repatriation by foreigners owning farms and livestock processing industries for ranching in Nakasongola.
6. It has led to land conflicts with other land use types like wildlife conservation and cattle rearing in Kaabong and Kiruhura.
7. It has led to withdrawal of labour from other sectors of the economy like mining leading to their underdevelopment for example pastoralism in Kaabong, ranching in Nakasongola.
8. It is highly affected by pests and diseases leading to massive losses of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
9. It is highly affected by price fluctuations leading to instability in farmer's income for example cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
10. It has led to spread of diseases to humans for example foot and mouth disease for cattle in Kiruhura and swine fever for pigs in Soroti.
11. Animals destroy crops leading to losses in arable for cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.

Problems facing the livestock industry in Uganda:

1. Pests and diseases which affect the quality of animals for example foot and mouth disease for cattle in Nakasongola and Kiruhura and swine fever for pigs in Soroti.
2. Climatic changes for example prolonged drought leads to loss of livestock hence affecting nomadic population in Kotido and Moroto and goats in Soroti.
3. Poor pasture due to harsh climatic conditions affects the growth of livestock for example nomadic pastoralism in Kotido and Kiruhura, ranching in Mbarara
4. Shortage of water for animals affects the growth of livestock like cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
5. Livestock theft and cattle rustling has led to losses in rearing cattle in Kaabong, Kotido and sheep in Moroto
6. Inadequate capital to be invested in purchasing farm machinery and paying labour for rearing cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.

7. Inadequate market for livestock products because of competition from other countries discourages rearing cattle in Kaabong, goats in Nakasongola, pigs in Soroti.
8. Poorly developed transport network hinders distribution of livestock products to market centres cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
9. Limited skilled labour in form of veterinary services has led to poor quality production of livestock for example cattle in Kaabong and Nakasongola, pigs in Soroti.
10. Limited government support in form of heavy taxation of activities related to livestock for example the rearing cattle in Kaabong, goats in Nakasongola, pigs in Soroti.
11. Limited research conducted regarding markets and improvement in the quality of livestock products discourages rearing cattle in Kaabong, goats in Nakasongola, pigs in Soroti.
12. Poor breeds of animals which produces low quality and quantity products from cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
13. The presence of dangerous wild animals which attack and kill animals and farmers affecting the rearing cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
14. Limited land due to competition with other land use types like wildlife conservation discourages large scale rearing of cattle in Kaabong and Kiruhura.
15. Conservatism of the animal rearing communities whereby farmers are not willing to change from their traditional way of rearing animals like cattle in Kaabong and Kiruhura.

Steps being taken to modernize livestock industry in Uganda.

1. Constructing water sources to provide water for livestock for example boreholes, valley dams, water reservoirs for cattle in Kaabong and Nakasongola and sheep in Moroto.
2. Controlling the carrying capacity and planting fodder crops to improve on pasture for cattle in Kaabong, goats in Nakasongola and pigs in Soroti and sheep in Moroto.
3. Cross breeding is being practiced to improve on the quality of animals for example cattle in Mbarara and Nakasongola, and pigs in Mukono.
4. Livestock research is being practiced regarding improvement in markets and quality of livestock for cattle in Mbarara and Nakasongola, pigs in Soroti and sheep in Moroto.

5. Setting up demonstration farms to teach farmers modern methods of livestock farming for cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
6. Spraying, dipping and putting quarantine to control pests and diseases for cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
7. Market for livestock products like milk and meat is being expanded through regional integration like EAC for cattle in Mbarara and Nakasongola, pigs in Soroti.
8. Promoting peace and stability by the national army UPDF and encourage investment in rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
9. Developing transport infrastructures to facilitate the distribution of livestock products like milk and meat to market centre for cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
10. Liberalizing the livestock industry to increase private investment in rearing animals like cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
11. Training of manpower to work in the livestock industry for example veterinary doctors to support rearing of cattle in Mbarara, and Nakasongola, pigs in Soroti and sheep in Moroto.
12. Setting up industries processing livestock products like GBK dairies in Mbarara and Jesa dairy in Busunju for milk and abattoirs for cattle in Mbarara and Nakasongola.
13. Intensive advertising of livestock products to increase on the size of the market for products from cattle in Mbarara and Nakasongola, pigs in Soroti and sheep in Moroto.
14. Providing capital to the farmers through microfinance institutions and banks in form of loans for promoting the rearing of cattle in Mbarara and Nakasongola, and pigs in Soroti.
15. Encouraging foreign investors to invest in the livestock industry since they have the necessary capital and technology for rearing of cattle in Nakasongola.
16. Restocking areas that lost livestock during periods of insecurity for example cattle in Amolatar, Pallisa, Kaberamaido, Luwero and Nakasongola.
17. Setting up support institutions to ensure improvement in livestock rearing for example Uganda Dairy Development Authority (UDDA) for cattle in Mbarara and Kiruhura.
18. Encouraging land reform policies to encourage farmers to own and improve on livestock farming like cattle in Nakasongola, pigs in Soroti and poultry in Wakiso

19. Subsidizing farm inputs so as to encourage farmers acquire the to improve livestock farming for example tractors, milking machines and medicines for cattle in Mbarara.
20. Improving on storage and preservation methods for milk and meat to reduce on wastages of products from cattle in Mbarara and Nakasongola, pigs in Soroti.

GENERAL PROBLEMS FACING AGRICULTURE IN UGANDA

Physical factors:

1. Pests and diseases which lead to death of animals and affects the growing of crops for example Nagana and foot and mouth disease for cattle in Nakasongola and Kiruhura, swine fever for pigs in Soroti, Jinja and Mukono, cotton wilt for cotton in Mubende, cassava mosaic for cassava in Mukono.
2. Climatic changes for example prolonged drought and heavy rainfall to loss of livestock and affects the growth of crops hence affecting nomadic pastoralism in Kotido, and Moroto, goats in Soroti and Nakasongola, cotton in Lira, coffee in Mubende.
3. Poorly drained soils like highly leached soils of Buganda limits the growth of coffee in Mukono and Kayunga, thin sandy soils discourage the growth sorghum in Napak, Kaabong and Moroto.
4. The rugged relief in the mountainous discourage mechanization of agriculture limiting the growth of bananas and coffee in Mbale, vegetables in Kabale and coffee in Bundibugyo.
5. Poor pasture due to harsh climatic conditions affects the growth of livestock for example nomadic pastoralism in Kotido and Kiruhura, ranching in Mbarara.
6. Shortage of water for animals affects the growth of livestock like cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
7. Natural hazards like landslides affects the growth of coffee and bananas in Budhuda and Bulambuli, hailstones affect the growth of bananas in Mbarara leading to losses.
8. Poor quality of crops like coffee in Masaka, bananas in Mubende and breeds of animals which produce low quality and quantity products from cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.

Other factors:

9. Insecurity and Livestock theft in form of cattle rustling has led to losses in rearing cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
10. Inadequate capital to be invested in purchasing farm machinery and paying labour for growing crops like coffee in Masaka, bananas in Mubende and rearing cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
11. Inadequate market for agricultural products because of competition from other agricultural countries discourages growing of Bananas in Mubende, coffee in Masaka and rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
12. Poorly developed transport network to facilitate distribution of agricultural products hence discouraging large scale growing of bananas in Masaka and Mubende, rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
13. Limited skilled labour in form of veterinary services has led to poor quality production of agricultural products like bananas in Masaka and Mubende, and cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
14. Limited government support in form of heavy taxation of activities related to livestock for example growing of bananas in Masaka and Mubende and rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
15. Limited research conducted regarding improvement in the quality of agricultural products discourages improvement in growing of bananas in Masaka and Mubende and rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
16. The presence of dangerous wild animals which attack and kill animals and farmers affecting the rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
17. Limited land use due to competition with other land use types discourages large scale growing of crops like bananas in Masaka and Mubende and rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
18. Conservatism of the farmers whereby they are not willing to change from their traditional way of rearing animals like growing of bananas in Masaka and Mubende and rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.

AGRICULTURAL PRODUCTIVITY AND MODERNISATION IN UGANDA

Agricultural productivity refers to the quantity of agricultural output per unit area.

Agricultural modernization refers to the transformation of agriculture from traditional subsistence agriculture to modern commercial agriculture.

Modernization in agriculture in Uganda is carried out by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) under the Plan for Modernization of Agriculture (PMA).

Methods or ways of increasing agricultural productivity / modernizing agriculture in Uganda.

1. Providing water through irrigation to crops like sugarcane in Kakira sugarcane plantation and constructing water sources to provide water for livestock for example boreholes, valley dams, water reservoirs for cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
2. Controlling of the carrying capacity of livestock and planting fodder crops to improve on pasture for cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
3. Provision of genetically modified seeds like Maize in Iganga and coffee in Wakiso and cross breeding of livestock is being practiced to improve on the quality of agricultural output for example cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
4. Conducting intensive research in agriculture regarding improvement in quality of crops and livestock and technological advancement for coffee in Mubende, tea at Kasaku tea estate cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
5. Setting up demonstration farms to teach farmers modern methods of agriculture for coffee in Mubende , cotton in Lira and cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
6. Spraying, dipping and putting quarantine to control pests and diseases for tomatoes in Kabale, cabbages in Wakiso and cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
7. Expanding the size of the market for agricultural products like milk and meat through regional integration like EAC for maize in Kiryandongo, coffee in Mubende and cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
8. Promoting peace and stability by the national army UPDF and encourage investment in agriculture for example growing of maize in Iganga, coffee in Mubende and rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
9. Developing transport infrastructures to facilitate the distribution of agricultural products like milk and meat to market centres promoting the

- rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
10. Liberalizing the livestock industry to increase private investment in growing of Maize in Iganga, coffee in Mubende and rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
 11. Training of manpower to work in the agriculture for example as extension workers in growing of Maize in Iganga, coffee in Mubende and support rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
 12. Setting up of industries processing agricultural products like Kakira sugar processing industry for sugarcane at Kakira, GBK and Jesa dairy for milk and abattoirs for cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
 13. Intensive advertising of agricultural products to increase on the size of the market for products for example rice from Kibimba Tilda in Bugiri, cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
 14. Providing capital to farmers through microfinance institutions and banks in form of loans for promoting the growing of maize in Iganga, coffee in Mubende and rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
 15. Encouraging foreign investors to invest in the livestock industry since they have the necessary capital and technology for example Maldivian for Kakira sugarcane plantation, Mehta for Lugazi sugarcane plantation.
 16. Restocking of areas that lost livestock during periods of instability for example cattle in Amolatar, Pallisa, Kaberamaidod, Luwero and Nakasongola.
 17. Setting up support institutions to ensure improvement in agriculture for example Cotton Development Organization (CDO) for cotton in Lira, Coffee development authority (CDA) for coffee in Mubende and Uganda Dairy Development Authority (UDDA) for cattle in Mbarara.
 18. Encouraging land reform policies to encourage farmers to own land to improve on growing of maize in Iganga, coffee in Mubende and rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
 19. Subsidizing farm inputs like hoes, tractors and chemicals so as to encourage farmers acquire them to improve agriculture in growing of Maize in Iganga, coffee in Mubende and rearing of cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.
 20. Improving on storage and preservation methods for milk and meat to reduce on wastages in products from cattle in Kaabong, goats in Nakasongola, pigs in Soroti and sheep in Moroto.

REVISION QUESTIONS:

1. Assess the contribution of agriculture to the development of Uganda.

- Give the current status of the agricultural sector in Uganda, identify the agricultural system in Uganda and
- Explain the positive and negative contribution of agriculture, giving an example of agrarian system / type of animal / crop and place name on every point.

2. Examine the influencing agrion system in Uganda.

- Give the current status of the agricultural sector in Uganda, identify the agriculture systems in Uganda and draw a sketch map of Uganda showing agrarian system.
- Explain the factors influencing agrarian system, giving an example of agrarian system and place names on every point.

3. To what extent has climate influenced agrarian systems in Uganda.

- Give the current status of the agricultural sector in Uganda, identify the agriculture systems in Uganda and draw a sketch map of Uganda showing agrarian system.
- Explain the role of climate on the agrarian systems in Uganda (e.g. Equatorial climate, tropical climate, semi-desert climate and montane climate), and give other factors giving an example of agrarian system and place names on every point.

4. a) Explain the factors limiting coffee growing in Uganda.

- Give the current status of coffee growing in Uganda, identify the types of coffee grown in Uganda and draw a sketch map of Uganda showing types of coffee grown and place names.
- Explain the problems facing coffee growing, giving an example of type of coffee and where it grown on every point.

b) What measures are being taken to improve on coffee growing in Uganda?

- Explain the measures in present tense giving an example of type of coffee and where it is grown.

5. Assess the contribution of plantation agriculture to the development of Uganda

- Define plantation agriculture, give the areas where it practiced in Uganda and draw a sketch map of Uganda showing areas where plantation agriculture is practiced.
- Explain the positive and negative contribution of plantation agriculture giving an example of plantation and name of plantation, crop and district on every point.

6. Examine the factors which have favoured irrigation farming in Uganda.

- Define irrigation farming, identify irrigation schemes in Uganda and draw a sketch map of Uganda showing irrigation schemes in Uganda.
- Explain the factors favouring irrigation farming, giving an example of the irrigation scheme on every point.

7. a) Describe the characteristics of market gardening.

- Define market gardening, identify areas where market gardening is practiced in form of crop and place names and draw a sketch map of Uganda showing areas where market gardening is practiced.
- Outline the characteristics in a complete sentence form.

b) Explain the factors limiting the development of market gardening in Uganda

- Explain the factors giving an example of a crop and place name on every point.

8. Examine the problems facing livestock farming in Uganda.

- Define livestock farming, identify the forms of livestock farming in Uganda and draw a sketch map of Uganda showing forms of livestock farming.
- Explain the problems giving an example of form of livestock farming / type of livestock and place name on every point.

MINING IN UGANDA

Current status of the mining industry in Uganda.

- New minerals have been discovered like oil around lake Albert, Uranium, gold in Moroto.
- Most mining is done by foreign companies for example oil by Tullow oil and gas company.
- Mineral prospecting and exploration is still going on like oil around lake Albert
- Some minerals appear in small quantities like gold in Busia.
- Some formerly closed mining centres are being opened for example tin mine in Kisoro, iron ore at Muko in Kabale.
- Copper mining at Kilembe has been revived by Tibet Hima Company.
- Mining contributes about 0.3% of GDP.
- Most mines use simple tools / technology for example Gold at Busia and salt on lake Katwe.
- Most minerals are being exported before being processed for example gold from Busia.
- There is dependence on expatriate labour in the mining sector.
- Some minerals are being extracted from waste materials like cobalt at Kasese.
- Various industries have been established to process minerals for example Hima and Tororo cement factories for Limestone.

Summary of mineral statistics by value (Million shs), 2008 2012.

	2008	2009	2010	2011	2012
Production	87,349	98	126,190	177,655	207,819
Exports	89,247	27,622	36,486	65,247	69,896
Imports	102,436	27,119	40,843	17,361	31,557

Source: Statistical abstract; UBOS Report 2013.

In Uganda, the major minerals include:

- Gold in Busia, Bushenyi, Mubende, Kotido and Moroto.
- Beryllium in Bushenyi, Rukungiri and Mubende.

- Iron ore at Muko in Kabale and Kisoro.
- Lead in Mbarara
- Tin in Ntungamo, Kisoro and Mbarara.
- Limestone at Tororo and Hima
- Clay at Kagganshi
- Sand at Kasenyi, Bukakata and Rakai
- Gypsum in Bundibugyo
- Wolfram at Mutolele in Kisoro
- Oil at Buseruka and Waraga in Busia
- Salt from lake Katwe in Kasese.

A SKETCH MAP OF UGANDA SHOWING MAJOR MINING CENTRES

Methods of mining in Uganda.

Open cast method;

This involves excavation of the soil covering a mineral which is found near the surface for example in the mining of sand at Bukakata and Bushenyi, limestone at Hima and Tororo.

Underground mining

This involves digging of tunnels in case of adit mining and shafts to obtain the mineral which is found very deep under the ground for example at Kilembe in Kasese.

Placer or alluvial mining

This involves excavation of loose or alluvial deposits such as sand, gravel, silt or clay, where the valuable mineral is separated from the alluvial deposits through a system of screens for example mining of clay and sand at Kajjansi.

Solution method

This is mainly concerned with mining of soluble salts where salt solutions through is crystalized into salt for example salt from lake Katwe.

Drilling

This involves boring until the mineral is reached and is obtained by pipes for example oil mining in Buliisa district.

Factors which have favoured mining in Uganda.

1. The presence of large valuable mineral deposits which are highly demanded for their products encouraging continuous exploitation of minerals like clay at Kajjansi. Limestone at Hima and Tororo and oil in Buliisa.
2. The gentle sloping landscape has encouraged the construction of supportive infrastructures especially roads leading to mining centres fore mining of clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa, gold in Busia and Kotido.
3. Ideal climatic conditions for example the dry and hot conddddditiions of kasese have encouraged evaporation and crystalisation of salt, encouraging salt mining at lake Katwe.
4. The presence of hard basement rock which reduces the collapsing of open pits and tunnels hence reducing accidents and favouring limestone mining at Hima and Tororo.
5. Availability of adequate capital in paying labour and construction of supportive infrastructure for clay at Kajjansi, limestone aat Hima and Tororo, oil at Buliisa.

6. The availability of large market both at home and abroad for minerals such as clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa, gold in Busia and Kotido.
7. Supportive government policy like liberalization of the mining sector and construction of supportive infrastructure has encouraged exploitation of clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa, gold in Busia and Kotido.
8. The relative political stability has encouraged long term investment in mining of clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa, gold in Busia and Kotido.
9. Intensive research conducted by the ministry of energy and mineral development has encouraged sustainable and quality mining of clay at Kajjansi and Limestone at Hima.
10. Availability of skilled labour provided by both local and foreign labour to work in mining for example as engineers, surveyors and researchers in mining of clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa, gold in Busia and Kotido.
11. Availability of improved technology especially imported technology which is efficient for example drillers for oil at Buliisa, excavators for lime stone mining at Tororo and Hima.
12. Availability of improved transport network for the distribution of minerals to market centres for example Kampala – Jinja road, Kampala – Gulu road for clay at Kajjansi and Limestone at Hima and Tororo.
13. The presence of reliable power and energy for example hydro-electricity power, wood fuel and petroleum used in running machines during mining of clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa,.
14. The availability of many mineral processing industries has increased demand for minerals such as clay at Kajjansi and Limestone at Hima and Tororo.

Contribution of mining to the development of Uganda.

Positive contributions

1. Source of employment opportunities where people are employed as geologists, engineers and accountants in mining of clay at Kajjansi, limestone at Hima and Tororo.
2. Mining has led to the development of industries since minerals act as raw materials for industries for example limestone at Tororo and Hima for the cement industry, clay at Kajjansi for the manufacture of bricks and tiles by the Uganda clays at Kajjansi.

3. Source of foreign exchange through exportation of minerals for example cobalt from Kasese exported to Australia and Japan, Verniculite from Manafwa exported to USA
4. Source of revenue to the government through imposing taxes on people employed and companies engaged in mining activities like from clay at Kajjansi and limestone at Hima and Tororo.
5. Mining has led to the development of transport infrastructure especially roads connecting mining centres to processing centres and market centres for example road from limestone mines at Hima to Hima cement factory, a road from Osukuru limestone mines to Tororo.
6. Mining has led to the development of power and energy to facilitate the mining activities for example copper mining at Kilembe led to the development of Mubuku power station in Kasese.
7. Mining has led to urbanization with its benefits since centres attract a large population for example copper mining at Kilembe led to the growth of Kilembe town, Tororo town due to limestone mining at Tororo, Kajjansi due to clay mining at Kajjansi.
8. Mining has led to creation of international relationship between Uganda and countries where mining companies come from for example Tullow oil and Gas Company from UK for oil mining in Buliisa.
9. Mining has led to the development of research and education / tourism for example Geology for clay at Kajjansi, Limestone at Hima and Tororo and oil in Buliisa.
10. Mining has led to diversification of the economy and reduce over dependence on agriculture which is highly affected by natural factors through generation of alternative income from clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa.
11. Mining is a source of consumer goods for domestic purposes for example salt from Lake Katwe in Kasese for human and cattle, and sand at Kasenyi for construction of roads and buildings.
12. Mining has led to the development of agriculture through provision of market for foodstuffs for example workers in salt mining from lake Katwe in Kasese and limestone mining at Tororo and Hima buy foodstuffs in the neighborhood.

Negative contributions:

1. Mining has led to environmental pollution resulting from smoke, gases and dust and wastes released to the atmosphere for example fumes from limestone mining at Tororo and Hima.

2. Mining associated with accidents especially during open cast mining for example iron ore at Muko in Kabale, limestone mining at Tororo and Hima, stone quarrying at Matugga.
3. Mining has led growth of ghost towns with their associated evils when mining cases for example Kilembe ghost town after copper mining ceased in Kilembe.
4. Mining has led to exhaustion of mineral resources resulting from over exploitation for example limestone mining at Hima and Tororo and Wolfram from Kisoro.
5. Mining has led to displacement of people to establish mines leaving them landless and homeless for example oil mining at Buliisa.
6. Mining has led to profit repatriation by foreign mining companies for example Tullo Oil and Gas company from UK carrying out oil mining at Buliisa.
7. Mining has led urban related problems, in urban centres which have developed from mining for example prostitution, unemployment etc. at Tororo and Hima limestone mines, Katwe salt mine.
8. Mining has led to destruction of vegetation to establish mining centres for example clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa, Gold in Busia and Kotido.
9. Mining has led to creation of pits which are habitants for disease carrying vectors for example clay mining at Kajjansi, sand mining at Kasenyi have created pits which are breeding grounds for mosquitoes.
10. Mining has led to land degradation such as large scars and pits left behind after mining for example quarrying of stones at Matugga and Bwebajja, mining of sand at Kasenyi, mining of clay at Kajjansi, mining of limestone at Tororo and Hima.
11. Mining has led to withdrawal of labour from other sectors especially agriculture leading to reduction in its production by getting better employment opportunities in mining clay at Kajjansi, limestone at Hima and Tororo, oil at Buliisa, gold at Busia and Kotodo.
12. Mining has led to increased government expenditure in providing supportive infrastructure like roads for example oil mining in Buliisa.

Problems facing mining in Uganda

1. Inadequate capital to invest in purchasing machinery, surveying and paying labour has led to low levels of mining of sand at Kasenyi and Bukakata, gold in Busia and Kotido.
2. Some minerals appear in small quantity and are easily exhausted for example tin at Kikagat in Isingiro. Wolfram in Nyamuliro in Kabale.

3. Poor quality of minerals and thus minerals are of limited economic value for example gold in Busia and Kotido and cobalt from Kasese.
4. Inadequate market / price fluctuation due to low demand for mineral products in local markets has discouraged investment in copper at Kilembe and gold in Busia and Kotido.
5. Low levels of technology in mining which involve use of inefficient tools like hoes, axes and spades for gold mining in Busia and Moroto, salt mining at lake Katwe in Kasese.
6. Limited skilled labourforce to work as engineers, researchers and miners leading to dependence on expatriate labour which is expensive in mining of oil at Buliisa.
7. Insecurity / hospitality in some parts of Uganda which scares away investors for example ADF in western Uganda has caused a threat to oil mining at Buliisa and the hostile Karamojong have scared away investors in gold mining in Moroto and Kotido.
8. Poorly developed transport network to connect mining centres to market centres and processing centres limiting fold mining in Moroto and Kotido and tin in Kahungu.
9. Low supply of power and energy supply for mining due to load shedding affecting exploitation of minerals like wolfram in Kabale, limestone at Kaseremu in Kapchorwa.
10. Climatic changes especially heavy rainfall which hinders transportation of minerals to market centres for example iron ore in Kabale and effects salt mining on lake Katwe in Kasese and too much heat discourages gold mining in Kaabong, Moroto and Kotido.
11. Competition from other sectors of the economy for labour for example agriculture and industrial sectors leading to reduction in labourforce employed in mining clay at Kajjansi, Limestone at Hima and Tororo, oil in Buliisa, gold in Busia and Kotido.
12. Over exploitation of mineral resources leading to exhaustion for example wolfram from Nyamuriro in Kabale, tin from Kikagati in Isingiro, gypsum in Bundibugyo.
13. The presence of a hard overlying rock which makes it expensive to blast the rocks and therefore making mining uneconomical for example stone quarrying at Matugga and Bwebajja, oil at Semuliki valley.
14. Profit repatriation by foreign companies which discourages re-investment in the mining sector for example Tullo oil and gas company from UK engaged in oil mining at Buliisa.
15. Smuggling of minerals across borders leading to overexploitation of mineral resources and reduced government revenue for example gold in Busia, Moroto and Kotido smuggled to Kenya, mica in Nebbi smuggled to Congo.

16. Corruption and embezzlement of funds has led to mismanagement of funds meant for improving on mining for example oil in Buliisa and copper in Kilembe.
17. Some minerals are found in remote areas and thus not easily accessible for example gypsum in Bundibugyo. Gold in Kotido and Moroto.
18. Limited research / poor geological survey limiting the discovery of some minerals for clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa, gold in Busia and Kotido.
19. Absence of clear marketing policy of minerals where individual mines search for market and negotiate prices of minerals leading to price fluctuation of minerals such as clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa, gold in Busia and Kotido.
20. Territorial conflicts in the mining areas has increased competition and created insecurity limiting mining of copper at Kilembe, oil on lake Albert in Buliisa.
21. Land conflicts with other land use types for example wild life conservation at Queen Elizabeth national park versus limestone mining in Kasese, tea growing at Kyamuhga versus gold mining in Bushenyi.
22. Breakdown of machinery and therefore leading to losses for example the breakdown of a salt processing plant has hindered salt mining on lake Katwe in Kasese.
23. Pests and diseases discourage mining in affected areas for example Ebola discouraging gypsum mining in Bundibugyo.
24. Land encumbrances / wrangles over ownership by government and private individuals for example oil at Buliisa.

Measures being taken to promote mining in Uganda.

1. The government is improving on transport network to facilitate the distribution of minerals to market centres for example road from Kasese to Kampala for limestone at Kasese, a road from Jinja to Mbale for vermiculite in Manafwa.
2. Providing capital in form of loans necessary for mining through financial institutions like Stanbic Bank and Agricultural Bank for clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa, gold in Busia and Kotido and vermiculite in Manafwa.
3. Liberalization of the mining sector to allow private individuals engage in mining without any restriction for example in mining clay at Kajjansi and limestone at Hima and Tororo.
4. Privatizing the formerly inefficient state owned mines to ensure quality mineral production for example clay mining at Kajjansi and copper mining at Kilembe. Improving technology to increase on efficiency and

- effectiveness in mining through importation of technology from Japan, USA and China to promote mining of clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa.
5. Improving technology to increase on efficiency and effectiveness in mining through importation of technology from Japan, USA and China to promote mining of clay at Kajjansi, limestone at Hima and Tororo, oil in Buliisa.
 6. Reduction of smuggling of minerals to neighbouring countries by using strong check points by Uganda Revenue Authority for at Malaba and Busia to reduce smuggling of gold at Busia and Verniculite in Manafwa to Kenya.
 7. Expanding the size of the market through economic intergration for example the East African Community and COMESA to increase market for minerals such as clay at Kajjansi, limestone at Hima and Tororo and Oil in Buliisa.
 8. Promoting political stability in the mining areas by using the national army UPDF to encourage investment in the mining of clay at Kajjansi and limestone at Hima and Tororo.
 9. Intensive research such as geological research, technological research and market research to improve on mining of clay at Kajjansi, limestone at Hima and Tororo and oil in Buliisa.
 10. Education and training through higher institutions of learning with students doing petroleum engineering and geology to provide skilled labour employed in mining of clay at Kajjansi, limestone at Hima and Tororo and oil in Buliisa.
 11. Improving on power and energy to run machines used during mining of limestone at Hima and Tororo, oil in Buliisa and Hoima and wolfram in Kabale.
 12. Government involvement in mining to ensure sustainable exploitation of minerals for example in exploitation of oil at Buliisa where the government has been involved in training the required manpower.
 13. The government through the Uganda investment Authority has bidding for mining different minerals to foreign investors with the necessary capital and technology for example oil mining in Buliisa and copper in Kilembe.
 14. Setting up mineral processing industries to expand on the size of market for example cement industries for limestone at Tororo and Hima, Uganda clays for clay at Kajjansi.

REVISION QUESTIONS

1. a) **Describe the state of mining sector in Uganda.**

- Give the current status of the mining sector in Uganda, identify the mining centres and draw a sketch map of Uganda showing mining centres.
- b) Explain the challenges facing the mining sector in Uganda.**
- Explain the challenges facing the mining sector giving an example of a mineral and place name on every point.
- 2. Assess the contribution of mining to the development of Uganda.**
- Give the current status of the mining sector in Uganda, identify the mining centres and draw a sketch map of Uganda showing mining centres.
 - Explain the positive and negative contribution of mining to the development of Uganda, giving an example of a mineral and place name on every point.
- 3. a) Draw a sketch map of Uganda showing the distribution of mineral resources.**
- Give the current status of the mining sector in Uganda, identify the mining centres and draw a sketch map of Uganda showing mining centres.
- b) Explain the measures being taken to improve on the mining industry in Uganda.**
- Explain the measures in present tense, giving an example of a mineral and place name on every point.

WILDLIFE CONSERVATION IN UGANDA

Wildlife refers to Fauna (animals) and Flora (plants), which have been gazetted in a given area together with the natural landscape / scenery they occupy.

Current status of wildlife conservation in Uganda.

- Wildlife is the major tourist attraction in Uganda
- Wildlife conservation is mainly carried out in semi-arid areas of Uganda where rainfall amounts are less than 750mm per annum.
- There is deterioration in wildlife population due to poaching and hostile environment.

- There efforts to protect rare species of animals for example white \rhinos at Ziwa ranch in Nakasongola.
- National parks have been increased from 4 to 10 since 1980 to date.
- The government has established Uganda Wildlife Authority (UWA) to monitor wildlife conservation in Uganda.

Wildlife conservation areas in Uganda include:

- National parks like Murchison falls national park, Queen Elizabeth national park, Kidepo valley national park, Mt. Elgon national park, Mt Rwenzori national park etc.
- Wildlife resources like Pian-Upe, Matheniko, Bokora corridor and Bugungu and Karuma wildlife reserve.
- Wildlife sanctuaries like Kei, Otze, Ngamba island, Entebbe birds sanctuary etc.
- Community wildlife areas like Armudat, Iriri, Karenga, Kaiso – Tonya, East Madi and North Karamoja.
- Wildlife ranches like Ziwa ranch in Nakasongola.

A SKETCH MAP OF UGANDA SHOWING WILDLIFE CONSERVATION AREAS

Factors favouring wildlife conservation in Uganda

Physical factors

1. Favourable climatic conditions such as semi-arid and tropical climate with low rainfall amounts responsible for the growth of savanna vegetation which provides conducive eco-system for the survival of numerous species of wildlife like elephants, antelopes and warthogs in Queen Elizabeth national park.
2. The presence of semi-dessert vegetation which provides conducive ecosystem for the survival of numerous species of wildlife like elephants, antelopes and warthogs in Queen Elizabeth national park.
3. Soils of low productivity which has hindered crop cultivation creating extensive areas for wildlife conservation for example in Kidepo valley national park and Pian-Upe wildlife reserve in the Karamoja areas.
4. Poorly drained areas with limited water limiting crop cultivation creating extensive areas for wildlife conservation for example in Kidepo valley national park and Pian-Upe wildlife reserve in the Karamoja areas.
5. The presence of a rich ecological system for the growth and survival of wildlife for example various animal species like antelopes and zebra on which lions feed encouraging their growth and maturity for example in lake Mburo national park.

Human factors

6. Increased demand for wildlife for tourism has created the need to protect areas as national parks such as Queen Elizabeth national park, wildlife reserve like Bokora corridor in Karamoja.
7. Availability of adequate capital invested in wildlife conservation in paying labour and setting supportive infrastructure to support protected areas like Queen Elizabeth national park and Kidepo Valley national park.
8. Availability of skilled labour force employed in wildlife conservation for example game wardens in Murchison falls national park and lake Mburo national park.

9. Intensive research conducted by Uganda Wildlife Authority (UWA) concerning protection and conservation of wildlife leading to continued existence of protected areas like Queen Elizabeth national park and Mt Rwenzori national park.
10. Improved security for growth and survival of wildlife species in protected areas like Queen Elizabeth national park and Mt Rwenzori national park.
11. Supportive government policy of setting Uganda Wildlife Authority (UWA) and National Forest Authority and gazetting areas as national parks like Murchison falls National Park and Mt. Rwenzori national park.
12. Improved transport and communication for effective monitoring of wildlife conservation areas and movement of tourists to protected areas like Queen Elizabeth National park.

Contribution of wildlife conservation to the development of Uganda.

1. It has led to the development of tourism and research hence a source of foreign exchange for example Queen Elizabeth national park and Mt Rwenzori national park, Pian-Upe wildlife reserve and Karuma wildlife reserve.
2. It has led to the development of research and education by students from high institutions of learning for example those doing tourist related courses do their studies in Queen Elizabeth National park.
3. Source of employment opportunities where people are employed as reserchers game wardens amd guides amd veterinary personnel in Queen Elizabeth Nationa park.
4. Source of foreign exchange through foreign tourists from USA, China and Britain vising conservation areas like Queen Elizabeth National park.
5. Source of internal revenue to the government through imposing taxes on people employed in the conservation areas such as Queen Elizabeth Nationa park.
6. It helps in protecting important water catchment areas especially in mountainous areas for example in Mountain Rwenzori national park and mountain Elgon National park.
7. It provides plants used for curative / medical purposes for example in Queen Elizabeth national park and Mt Rwenzori national park.
8. It provides food through controlled hunting for example in for example antelopes in Queen Elizabeth national park and Pian-Upe wildlife reserve .
9. Wildlife conservation has led to the development of transport infrastructure especially roads connecting conservation areas such as Queen Elizabeth national park, Mountain Elgon national park and Mountain Rwenzori national park.

10. It has led to urbanization with its benefits since conservation areas attract a large population for example Mweya and Kikorongo in Queen Elizabeth national park.
11. It has led to creation of international relationship between Uganda and countries sharing conservation areas for example with Democratic Republic of Congo with Virungas national park linked to Semliki national park and mountain Rwenzori national park.
12. Conservation areas protect landscape from degradation, erosion and mass wasting due to protection of plant life especially in mountainous areas for example mountain Rwenzori national park and mountain Elgon national park.
13. It has led to diversification of the economy and reduce over dependence on agriculture which is highly affected by natural through generation of alternative income from conservation areas like Queen Elizabeth National park.
14. It has led to the development of agriculture through provision of market for agriculture products for example at Mweya safari lodge in Queen Elizabeth national park.
15. Wildlife conservation has encouraged the utilization of the would be idle land that is less productive in terms of agriculture for example the dry areas of Kaabong occupied by kidepo valley national park, Kasese occupied by Queen Elizabeth national park.
16. It has led to the development of photography and videography since conservation areas provide magnificent scenery such as Queen Elizabeth national park.
17. Some conserved areas have cultural significance for example Queen Elizabeth national park with Leopards and lions.
18. Conservation areas especially with thick forest vegetation help to modify the local climate through formation pf rainfall for example Mountain Elgon national park and Bwindi impenetrable national park.
19. Wildlife conservation maintains ecological balance by providing food to plants and animals for example lions feed on antelopes which feed on grass in Queen Elizabeth national park.

Negative contributions

1. Conservation of wildlife involves the protection of wild animals which are dangerous to humans for example leopards, snakes and lions in Queen Elizabeth National park, and mountain Rwenzori national park.
2. The conserved wild animals normally invade farmlands in the neighborhood and destroy the crops hence discouraging agriculture for

example in Queen Elizabeth National park, and mountain Rwenzori national park.

3. It has led to destruction of vegetation resulting from overgrazing by wild animals for example elephants in Murchison falls national park.
4. It has led to pollution of the environment which is harmful to human life for example Hippopotamuses in Queen Elizabeth national park pollute the water of the Kazinga channel and Lake Edward with their dung.
5. It has led to withdrawal of labour from other sectors like agriculture affecting their growth by engaging in wildlife conservation areas such as in Queen Elizabeth National park, and mountain Rwenzori national park.
6. Some conservation areas are breeding grounds for vectors like tsetse flies for example Murchison falls national park and Mountain Rwenzori national park.
7. The conservation areas provide hideout for antigovernment forces and other wrong doers who destabilize peace for example ADF in Mountain Rwenzori national park.
8. It has led to urban related problems like prostitution, high crime rates and others in urban centres which have emerged from wildlife conservation for example at Mweya and Katwe in Queen Elizabeth national park
9. It has led to displacement of many people near conservation areas through eviction of encroachers such as Queen Elizabeth national park.
10. Wildlife conservation has led to competition for land with other land use types like agriculture and settlement for example Murchison falls national park and Queen Elizabeth national park.
11. It has led to profit repatriation by foreign owned companies engaged in wildlife conservation for example in operation of lodges in Queen Elizabeth national park.
12. It has led to regional imbalance where conservation areas are more developed than the adjacent areas with improved infrastructure for example Queen Elizabeth national park.
13. It has led to loss of government revenue through provision of infrastructure like roads, conducting research etc. for conservation areas like in Queen Elizabeth National park.

Wildlife as the basis for the tourist industry in Uganda.

1. Tourists want to see wildlife in the natural settings or habitats leading to the development of tourist activities like bird watching in Queen Elizabeth National parks and gorilla tracking in Bwindi impenetrable national park.
2. Tourists are interested in going for game sports like hunting and sport fishing thus encouraging them to go to Kazinga channel in in Queen Elizabeth National park.
3. Tourists who are interested in research on ecological system use wildlife at in Queen Elizabeth National parks and Murchison falls national park for their research for example at Institute of ecology at Katwe.
4. Some tourists are interested in photography and videography for example including feeding habits of wildlife like lions and crocodiles in Queen Elizabeth National parks and Murchison falls national park.
5. Wildlife provides camping sites for tourists for example Mt. Rwenzori national park and Mt. Elgon national park for the tourists who love adventure.
6. Wildlife provides dishes in form of mushroom, antelopes among others that attract tourists to Mgahinga national park and Bwindi impenetrable national parks.
7. Wildlife like animals and birds from Queen Elizabeth National parks and Murchison falls national park provide a basis for advertising different brands like the Uganda cranes and beers among others.
8. Some business oriented tourists want to engage in buying and selling of products from wildlife for example Ivory from elephants in Queen Elizabeth National park and Murchison falls national park.
9. Wildlife helps in maintaining the ecological balance which encourages various tourists' activities in Queen Elizabeth National park and Murchison falls national park.

REVISION QUESTIONS:

1. Examine the importance of wildlife conservation in Uganda.

- Define wildlife conservation, identify wildlife conservation areas and draw a sketch map of Uganda showing wildlife conservation areas.
- Give the positive and negative importance, giving an example of a conservation area on every point.

2. Explain the problems facing wildlife conservation in Uganda.

- Define wildlife conservation, identify wildlife conservation areas and draw a sketch map of Uganda showing wildlife conservation areas.
- Explain the physical and human problems, giving an example of a conservation area on every point.

3. Assess the contribution of national parks to the development of Uganda.

- Define national park, identify the national parks in Uganda and draw a sketch map of Uganda showing national parks.
- Explain the positive and negative contribution of national parks, giving an example of a national park on every point.

TOURISM IN UGANDA

Current status of the tourist industry in Uganda

- Uganda receives over one million tourists per year from various countries.
- The government has established the Uganda Tourists Board (UTB) and Uganda Wildlife Authority (UWA) to develop the tourist sector.
- Most tourists come from Western Europe, USA, Asia and African countries.
- Tourism is one of the major foreign exchange earners for Uganda.
- Tourism employs a sizeable number of Ugandan's population about 7.4% or the total population (420,000 jobs).
- Wildlife is the major tourist attraction in Uganda.
- National parks have been increased from 4 to 10 since 1980 to date.
- the tourist industry is one of the fastest growing sector in Uganda.
- The direct contribution of travel and tourism to GDP is expected to be Ug. Shs 1,363.8 bn about Us \$ 536m (3.2 percent of total GDP) in 2011 (WTTC 2011).
- Various tour and travel companies have been established to ease movement of tourists to various destinations for example Uganda safaris, Topi tours etc.

Major tourist attractions in Uganda.

The major tourist attractions in Uganda include:

- Wildlife in national parks like Queen Elizabeth national park.
- Relief features like Mountain Rwenzori and mountain Elgon and the western arm of the rift valley in Western Uganda.
- Drainage features like lake Victoria and lake Alert.
- The various climatic conditions like equatorial climate along the equator in Masaka and Entebbe.
- Historical sites like Kasubi tombs in Kampala, Nyero rock painting in Kumi and Fort Patiko in Gulu.
- Recent developments for example oil mines on lake Albert for example Buliisa.
- Accommodation facilities such as Hilton hotel in Kampala.
- The equator at Kayabwe, Kikorongo and Equator island at Entebbe.
- religious centres for example Namirembe cathedral for Anglicans, Rubaga cathedral for Catholics and Namugongo martyrs shrines for all Christians.
- culture and tradition for example dressing like Kanza among the Baganda of Masaka and Basoga of Jinja.
- Recreational activities for example Kitante golf club, Mandela National stadium in Kampala.

A SKETCH MAP OF UGANDA SHOWING TOURIST ATTRACTIONS

Factors which have favoured the development of the tourists industry in Uganda.

1. The presence of varied relief features such as mountain Rwenzori with snowcapped peak Margherita which encourages tourist activities like mountain climbing, the rift valley with associated features like Butiaba escarpment.
2. The presence of varied wildlife in national parks like Queen Elizabeth National park and Murchison falls national park. wildlife reserves like Ajai in Arua and Karuma in Masindi have encouraged tourist activities like game drive, bird watching and photography.
3. The presence of varied climatic conditions for example the equatorial climate in areas near the equator such as Entebbe, Ssese island and Masaka has encouraged tourists activities like sun bathing at Jinja, Entebbe and Ggaba beach around lake Victoria.
4. The presence of varied drainage features for example Lake Victoria the largest lake in Africa with beautiful beaches like Nabugabo and Ggaba beach which encourages activities like sport fishing and sun bathing.
5. The presence of the equator crossing points signifying that Uganda experiences tropical climate at Kayabwe / Nabusanke along Kampala Masaka road, the equator island at Entebbe and Kikorongo in Kasese.

Human factors

6. The presence of many impressive historical sites, which attract tourists for research and education such as Kasubi tombs in Kampala, Fort Stanley in Kalangala, Fort Patiko in Gulu, Nyero rock painting in Kumi.
7. The presence of various cultural practices which attract tourists for leisure such as Larakaraka and Dingding dance among the Acholi of Gulu, Ntogoro dance among the Banyoro of Hoima and the Karamojong way of dressing in Kaabong.
8. The availability of improved transport network for tourists to access various tourist attractions for example Kampala-Masaka-Mbarara road for tourists visiting Lake Mburo national park, Kampala – Jinja to Mabira forest and source of the Nile.

9. Supportive government policy for example constructing supportive infrastructure like roads connecting to tourist attractions, liberalization of the tourist industry and establishing the Uganda Wildlife Authority has encouraged the development of tourist attractions like Queen Elizabeth national park.
10. The relative political stability has encouraged investment in the tourist industry and attract tourists to visit tourist centres like Queen Elizabeth national park and lake Victoria.
11. Introduction of tourist courses in the higher instructions of learning like Makerere University has produced skilled labour in form of game wardens and tour guides and receptionists in tourist centres like Queen Elizabeth national park, lake Victoria and Mabira forest.
12. Improved advertising being conducted by the Uganda tourist Board (UTB) has created awareness about the available tourist attractions in Uganda such as Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
13. Availability of improved accommodation facilities for the foreign tourists fore example Mweya Safari lodge in Queen Elizabeth national park, Serena Hotel in Kampala.
14. Hospitality of the people of Uganda encouraging interaction between the local people and foreigners visiting like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
15. Improvement in research concerning protection of wildlife which act as tourist attractions in national parks such as Queen Elizabeth national park, and Murchison falls national park.
16. Promotion of community tourism where tourists come to experience the way of life of certain communities for example the Batwa on the fringes of Bwindi national park in Kanugu distric.
17. Emergence of tour and travel agencies like Uganda Safaris, The far Uganda Tours and Travel, Magic Safari etc. to aid in organizing for accommodation and transportation of tourists to various attractions such as Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
18. Improved health services has enabled foreign tourists to visit various tourist centres such as Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.

19. Hosting of international conferences has created friendship between Uganda and foreign countries involved for example CHOGM meeting of 2007 which has increased tourists visiting Queen Elizabeth national park, lake Victoria, and Mabira forest.
20. Availability of adequate capital provided by the government and microfinance institutions to be invested in the development of tourism like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
21. The preservation of rare species of animals has attracted tourists for example gorillas in Bwindi impenetrable national park and rhinos in Ziwa ranch Nakasongola.
22. Recent developments for oil discovery in the Albertine region has attracted tourists to visit oil field in Hoima and Buliisa.

Contribution of the tourist sector to the development of Uganda

Positive contributions

1. Source of employment opportunities where people are employed as researchers, game wardens and guides and receptionists in Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
2. Source of foreign exchange through foreign tourists from USA, China and Britain visiting Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
3. Source of revenue to the government through imposing taxes on people employed in the tourist attractions such as Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
4. Tourism has led to the development of transport infrastructure especially roads connecting to tourist attractions such as Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
5. Tourism has led to urbanization with its benefits since tourist centres attract population for example Jinja with the source of the Nile and Bujagali falls, Mweya and Kikorongo in Queen Elizabeth national park and Kasese near mountain Rwenzori.
6. Tourism has led to creation of international relationship between Uganda and countries where foreign tourists come from like USA, China, Britain to

visit tourist attractions like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.

7. Tourism has led to the development of research and education by students from higher institutions of learning for example those doing tourist related courses do their study in Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
8. Tourism has led to diversification of the economy and reduce over dependence on agriculture which is highly affected by nature through generation of alternative income from tourists attractions like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
9. Tourism has led to the development of agriculture through provision of market for agricultural products for example in Hotels such as Sheraton hotel in Kampala fore tourists visiting Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
10. Tourism has encouraged the utilization of the would be idle land that is less productive in terms of agriculture fore example the dry areas of Kaabong occupied by Kidepo valley national park and Kasese occupied by Queen Elizabeth national park
11. Tourism has encouraged cultural exchange through enriching the African traditional culture with the foreign culture from foreign tourist from China, USA and Britain visiting tourist attractions such as Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
12. It has led to the development of photography and videography since tourist attractions such Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori form impressive features.
13. It has encouraged wildlife conservation and therefore the conservation of biodiversity through ecotourism in Queen Elizabeth national park, lake Victoria, and Mabira forest.
14. It has led to the development of art and craft industry from the local crafts such as baskets, traditional clothes sold at Mweya in Queen Elizabeth national park, at Paraa Safari lodge in Murchison falls national park and at Kayabwe equator point.
15. It has helped in conserving Uganda's cultural heritage by turning the various aspects of culture into valuable sources of income for example

Kasubi tombs in Kampala dances like Laralaraka dance among the Acholi of Gulu.

16. It has encouraged environmental conservation through gazettement of national parks which help to reduce soil erosion like Mountain Elgon national park and Mgahinga national park.

Negative contributions:

1. Tourism has led to conservation of wildlife which involves the protection of wild animals which are dangerous to humans for example leopards, snakes and lions in Queen Elizabeth national park, Mabira forest and Mountain Rwenzori forests.
2. Tourism has led to land conflicts with other land use types like agriculture and settlement for example Lake Mburo national park competes with livestock rearing by the Bahima of Kiruhura.
3. Tourism has led to profit repatriation by foreign investors in tourism for example those owning hotels like Fang Fang hotel in Kampala from China, Imperial hotel in Kampala for the Indians, Nile resource hotel in Jinja for Indians.
4. It has led to erosion of African traditional culture through infiltration of foreign culture from USA, Britain and China for example way of dressing, homosexuality in tourist centres like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
5. Tourism has led to high costs of local commodities leading to inflation due to increased demand for commodities like foodstuffs and local crafts near tourist attractions like Queen Elizabeth national park, Source of the Nile, Mabira forest and Mountain Rwenzori.
6. It has led to destruction of vegetation resulting from overgrazing by wild animals for example elephants in Murchison falls national park lead to destruction of vegetation.
7. It has led to environmental pollution in form of air, water and land affecting quality of life of the community for example hippopotamuses in Kazinga channel and Lake Edward with polluted water from dung.
8. It has led to withdrawal of labour from other sectors like agriculture affecting the growth by engaging in tourist attractions such as Queen

Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.

9. Tourism is associated with high costs of operation and maintenance which leads to losses due to seasonality of tourism in areas like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
10. It has caused insecurity in Uganda since some wrong elements visit Uganda tourists for example in tourist centres like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
11. It has led to urban related problems like prostitution, high crime rates and other urban centres which have emerged from tourism for example at Mweya and Katwe in Queen Elizabeth national park.
12. Tourism has led to smuggling of wild animals like monkeys and some parts of animals like ivory from elephants in Queen Elizabeth national park and Murchison falls national park.
13. Tourism has led to spread of diseases from protected wild animals like antelopes among elephants and hippopotamuses in Queen Elizabeth national park.
14. It has led to displacement of many people to conserve tourist attraction such as Queen Elizabeth national park, Mabira forest and Mountain Rwenzori.

Problems facing tourism in Uganda:

1. Insecurity in some parts of Uganda has threatened foreign tourists from visiting tourist attractions such as Queen Elizabeth national park, lake Victoria, and Mabira forest.
2. Poorly developed transport network has hindered the movement of tourists to tourist attractions such as Queen Elizabeth national park, lake Victoria, and Mabira forest.
3. Competition with other land use types like agriculture and settlement due to population increase in Uganda for example the Basongora pastoralists encroach on Queen Elizabeth national park, the Bahima pastoralists encroach on Lake Mburo national park
4. Competition with other African countries with the same tourist attractions and better tourist facilities for example Kenya and Tanzania which tends to reduce the number of tourists visiting Queen Elizabeth national park, lake Victoria, and Mabira forest.

5. Limited skilled labour to work in the tourist sector which has led to reliance on imported labour which is expensive affecting the growth of tourist centres like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
6. Poaching of wild animals by hunters for meat, skins and hides, and ivory leading to reduction of wildlife for example among the Basongora in Queen Elizabeth national park, the Bahima in lake Mburo national park.
7. The pests and diseases like Ebola in Western Uganda discourage tourists from visiting Queen Elizabeth national park, lake Victoria, and Mabira forest.
8. Limited capital per pay labour and set up the necessary infrastructure like roads and lodges in tourist centres like Queen Elizabeth national park, lake Victoria, and Mabira forest.
9. Limited domestic tourism due to poverty and ignorance among the Uganda has reduced on the number of tourists visiting Queen Elizabeth national park, and Lake Victoria.
10. Language barrier due to limited international languages spoken in Uganda limits the number of foreign tourists visiting Queen Elizabeth national park, and Lake Victoria.
11. Seasonality of tourism since most tourists visit Uganda during winter season in their countries leading to high costs of operation of hotels during unfavourable seasons in tourist centres like Queen Elizabeth national park, lake Victoria, and Mabira forest.
12. Low levels of advertising has limited awareness of the availability of the tourist attractions such as Queen Elizabeth national park, lake Victoria, and Mabira forest.
13. Hostile climatic conditions especially prolonged drought which affects the growth of wild life which is a basis of the tourist industry in Queen Elizabeth national park, Murchison falls national park and Matheniko national park in Moroto.
14. Limited research conducted concerning improvement in the tourist sector has limited the development of tourist attractions like Queen Elizabeth national park, and Lake Victoria.
15. Poorly developed accommodation facilities which does not meet international standards has limited the number of foreign tourists visiting Queen Elizabeth national park, lake Victoria, Mabira forest and Moutain Rwenzori.

Measures being taken to promote tourism in Uganda.

1. The government of Uganda through the UPDF is promoting peace and stability to fight rebel activities like ADF in Bundibugyo and therefore attract tourists to Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
2. Improvement in infrastructure especially roads connecting to tourist centres for example Kampala – Jinja road to Mabira forest, Kampala – Masaka – Mbarara – Kasese road to Lake Mburo national park and Queen Elizabeth national park.
3. Education and training of labour through higher institutions of learning like Makerere University with students doing tourist courses which has helped labour to acquire the necessary skills to work in tourist centres like Queen Elizabeth national park.
4. Research is being carried out by the Uganda Tourist Board (UTB) and Uganda Wildlife Authority (UWA) regarding wildlife conservation and improvement in tourist centres like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
5. Liberalization and privatization of the tourist sector by attracting both local and foreign investors to invest in the tourist sector for example in construction of hotels like Serena hotel in Kampala, Nile hotel in Jinja, Paraa lodge in Murchison falls national park.
6. Settlement and resettlement of people to reduce encroachment on protected areas for example the Basongora from Queen Elizabeth national park resettle to Mubuku prison farm and Muhokya.
7. Sensitization and education of the local population about the value of tourism and protection of wildlife and other tourist attractions like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
8. Attracting local tourists to join the tourist industry through giving subsidies tourist related activities for tourist attractions like Queen Elizabeth national park, and Lake Victoria.
9. Improvement of accommodation facilities that try to meet international standards for example Serena hotel in Kampala, Nile resort hotel in Jinja, Paraa lodge in Murchison falls national park and Mweya Safari lodge in Queen Elizabeth national park.

10. Diversification of the tourist potential instead of only depending on wild life for example the equator points and Kayabwe and Kikorongo, Source of the Nile in Jinja.
11. The government is reducing on the entry requirements for the foreign tourists in Uganda and there is freedom of movement into the country to visit tourist attractions like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
12. The Uganda Wildlife Authority is protecting rare species of animals and birds to reduce their extinction for example rhinos in Ziwa ranch in Nakasongola, lions in Entebbe wildlife education centre.
13. Setting up institutions necessary to spearhead tourism for example the Uganda Wildlife Authority (UWA) and Uganda Tourism Board (UTB) to encourage development of tourist centres like Queen Elizabeth national park, lake Victoria, Mabira forest and Mountain Rwenzori.
14. Encouraging the teaching of foreign languages like French, Chinese and Germany in schools to overcome the problems of language barrier in tourist areas like Queen Elizabeth national park, and Mountain Rwenzori national park.
15. Education of poaching and controlled game cropping thorough settling up an equipped anti-poaching squad in all national parks and wildlife reserves like Queen Elizabeth national park, Murchison falls national park.
16. The Uganda Tourism Board is increasing on the level o advertisement using local and international media like CNN to increase awareness of the available tourism attractions like Queen Elizabeth national park, Mountain Rwenzori and Lake Victoria.

Revision questions:

1. **To what extent have physical factors influenced the development of the tourist industry in Uganda?**
 - Introduce by giving the current status of the tourist industry in Uganda, identify the tourist attractions in Uganda and draw a sketch map of Uganda showing tourist attractions.
 - Explain the physical factors and then bring out the other factors giving an example of a tourist attraction on each point.

2. To what extent have human factors favoured the development of the tourist industry in Uganda?

- Introduce by giving the current status of the tourist industry in Uganda, identify the tourist attractions in Uganda and draw a sketch map of Uganda showing tourist attractions.
- Explain the human factors and then explain the physical factors giving an example of a tourist attraction on each point.

3. Examine the importance of the tourist industry in Uganda.

- Introduce by giving the current status of the tourist industry in Uganda, identify the tourist attractions in Uganda and draw a sketch map of Uganda showing tourist attractions.
- Explain the positive and negative contributions, giving an example of a tourist attraction on each point.

4. “Uganda, the holiday paradise comprises many tourist attractions”. Examine the validity of the statement.

- Introduce by giving the current status of the tourist industry in Uganda, identify the tourist attractions in Uganda and draw a sketch map of Uganda showing tourist attractions.
- Explain the various tourist attractions, giving an example of a tourist attraction on each point.