

EVOLUTION OF MAN, TECHNOLOGY AND ENVIRONMENT

Evolution of Man Is the gradual changes development of plants and animals from a simple form to a more complex form. This change leads to existence of plants and animals that are different from the original plants and animals.

THE THEORY OF EVOLUTION OF MAN.

The theory of evolution tries to explain the origin of man by describing the changes that our ancestors underwent until they were like modern man. There are two theories, which attempt to explain the origin of man.

1st THEORY OF CREATION. This theory explains that there is super natural power that creates everything. This super natural power is God. Refer from the Holy Bible and Qur'an e.g. from Biblical knowledge (Genesis chapter 1:26) it says that: - God created man by using soil; at first, they created a man and then later a woman. These two creatures established their relationship and this marked the beginning of human family.

2nd THE THEORY OF EVOLUTION OF MAN: an English man known as Charles Darwin (1809 – 1882) proposed the theory of evolution of man.

The theory says that: - man's species has been changing gradually from lower stage to better stage due to environment. Changing goes hand in hand with improvement of methods of obtaining food, cloth and shelter.

The gradual change of man is called evolution. The first man belongs to the family of **primates** that included Ape, Gorilla, Monkey and Chimpanzee. These animals lived in the forest walking on four limbs and their bodies covered with hair. Because of environmental changes and diminishing of forests, they started to live in open grassland. Environment forced them to adopt new way of walking. The forelimbs instead of walking become special for tool making and using. Forelimbs become free from walking. The walking is known as Bi –pedalism

STAGES OF MAN'S EVOLUTION

1. PRIMATES (Ape, Gorilla, Monkey, Chimpanzee)

Characteristics

- Their bodies were covered with lots of hair.
- They walked on four limbs
- They lived in dense forest.
- They had poorly mental abilities.
- They totally depended on nature e.g. ate raw food

2. AUSTRALOPITHECUS AFRICAN FAMILY. This stage started about 12million years ago (B.C) when primates changed to near man. This stage is divided into two; Zinjanthropus and Homo habilis

Zinjanthropus

In this stage:

1. Fore limbs were free from walking.
2. Hind limbs were used for standing and body balance.
3. Man started to design, make and use tools.
4. Man becomes skillful.

Homo habilis

- It lived between 1,500,000 and 750,000 BC.
- Homohabilis become more skillful man, because was systematic tools maker.
- Homohabilis believed to be the direct ancestor of modern man.
- He had bigger brain and he was more systematic toolmaker.
- The skull of those creatures was discovered at Olduvai Gorge and in Eastern and Rudolf in Kenya.

3. HOMO ERECTUS. During this stage, man was fully moving upright. He becomes more skillful tools maker than Homo habilis. Its fossils have been dug up in Olororgesaille and near Lake Turkana in the Kenya, Olduvai Gorge in Tanzania.

4. HOMO SAPIENS

its characteristics

- He is a true man of today
- Has a large brain in size
- Has less thick jaws
- He was highly skillful man
- He made tools by using stones and bones.

NB: Archaeologist Dr. Leakey in Olduvai Gorge has supported the theory of evolution in 1959

Basic characteristics of human evolution.

- (i) Development of man's ability to design make and use tools.
- (ii) Ability of man to walk on two limbs. (Bi-pedalism)
- (iii) Ability of man to think.
- (iv) Ability of man to domesticate plants and animals.

5. HOMO SAPIENS SAPIENS. Homo sapiens is a modern man. Homo sapiens are believed to have evolved into Homo sapiens sapiens about 50,000 years ago. This man has a large brain and great intelligence.

DEVELOPMENT OF STONE AGE.

Stone Age: This is historical period in which man made and used stone tools. Is a period based on man's economic activities and type of the tools used. e.g., Stone Age, Iron Age, Science technology age etc.

Stone Age is divided into three ages;

- (a) *Early or Old Stone Age.*
- (b) *Middle Stone Age*
- (c) *Late or new Stone Age*

THE EARLY OR OLD STONE AGE: This is the first period of Stone Age. It existed between 1,750,000 B.C and 750,000 B.C.

Zinjanthropus was the only man existed in this period. The early stone tools were pebbles and chopping. Man used these tools for killing and skinning animal flesh, digging up roots, cutting tree branches, and for defense. Man obtained his food by hunting and gathering. In this period, man had low ability to control his environment.

THE CHARACTERISTICS OF EARLY OR OLD STONE AGE

In East Africa Stone Age sites are found at Ologasaille, Nsongezi and Olduvai.

1. Man lived primitive life depending on nature.
2. Man made and used crude (poor) tools.
3. Man lived by hunting and gathering.
4. Man ate raw food i.e. meat
5. Man walked up right.
6. Man lived in caves.
7. Man did not wear clothes.

THE MIDDLE STONE AGE. This stage covered the period between 750,000BC to 50,000 BC. This period man improved his stone tools. Tools were -smaller, sharper and easier to handle. Tools used during this period were spear, Arrows, Needles, Stone picks, Knives etc. These tools were used for; digging up roots, killing and skinning animals, cuttings & chopping.

THE DISCOVERY OF FIRE. Man who was scratching pieces of wood using his hands discovered fire. The more he continued scratching, the pieces of wood got heat the smoke come out, the scratch caused friction of scratched wood and led to emission of fire.

IMPORTANCE/EFFECTS OF FIRE TO MAN DURING THE MIDDLE STONE AGE

The following were the effects resulted after the discovery of fire during the Middle Stone Age

- Man started to eat roasted food i.e. meat
- Man started to live in cold areas.
- Man used fire to clean bushes
- Man used fire to provide light at night.
- Fire used to kill small animals e.g. rabbit
- With fireman increased working hours.
- Man use fire to attract prey.
- Man used fire for defense from dangerous animals like lion.

THE LATE STONE AGE (NEW STONE AGE). In East Africa, late Stone Age started from around 50,000 BC to the first millennium AD. In this stage, man used better tools compared to the previous stone ages. Tools become sharper and smaller.

Tools were stone axes, blades, spears, arrows, etc. Man started permanent settlement. The tools were still largely made of stone but they were far better than those of earlier periods were.

This period marked the beginning of settled communities. In areas such as Kondea Irangi, paintings and drawings in the carves proved this fact. The paintings and drawings show the shape of tools used and animal hunted.

Characteristics of the late stone age.

1. Man used better tools compare to the previous ages.
2. Man started to domesticated plant and animal.
3. Man became food producer.
4. Increase of population.
5. It was beginning of settled communities and villages.
6. This period marked to be primarily on division of labor.

Example: women become child bearers and cares while man for protecting the families and hunting
Informal education started in this period.

THE IRON AGE. Iron Age is believed to have started during the 1st millennium A.D. This was the period when manmade and used Iron tools. The discovery and use of iron improved man's standard of living. Iron tools were discovered about 3000 years ago.

The first people to make and use iron tools in Africa were the people of Ethiopia and Egypt. Iron skills and knowledge were not uniform or the same in Africa.

Famous iron Sites

The first important towns for iron smelting were Meroe in Sudan, Axum in Ethiopia, and Nok area in West Africa. In East Africa, it is believed that man started to use iron from the first millennium A.D e.g. Iron discovered earlier in Engaruka, Uvinza, Karagwe, Ugweno and Western shores of Lake Victoria.

Iron tools included iron spears, arrows, Axes, Hoers etc also, Iron technology helped early African societies to produce and use iron tools as well as to produce better weapons for defense.

THE RESULT/EFFECTS/ IMPACTS OF USING IRON TOOLS

The discovery of iron tools in East Africa led to the following effects;

- ❖ It led to increase in food production. Man could now clear his areas for cultivation.
- ❖ Increase in population due to more food.
- ❖ There was emergence of specialization i.e. Iron workers (black smiths) and food producers.
- ❖ It led to the emergence of complex villages / development of political organization as kingdom and states.
- ❖ Tools were highly improved and more efficient,
- ❖ It led to the improvement of security due to better weapons like arrows, spears and pangas
- ❖ It resulted to the development of trading activities due to surplus production

DEVELOPMENT OF ECONOMIC ACTIVITIES AND THEIR IMPACT

HANDCRAFT INDUSTRIES AND MINING IN PRE-COLONIAL AFRICA.

Handcraft industries: Man used hands and skills to produce tools and weapons of these industries.

Industries-Is the place where raw materials are processed into finished goods e.g. cotton-cloth

Specialized handcraft industries in Africa.

Salt making industries; iron working; copper mining; gold mining; pottery making; spinning and weaving industries; bark –cloth industries; canoe making industries

1. Salt making industries: These are industries, which engaged in production of soil in pre-colonial Africa.

Methods of obtaining salt

- **Obtaining salt from different reeds:** Reeds were collected, dried and burned, the ashes would be filtered while the ashes remain liquid would be evaporated and residue would be used as salt.
Places: - Near Lake Victoria, Kyoga, and Albert, among Buganda and Bahaya tribes and among Mang'anja people near shores of Lake Nyasa.
- **Obtaining salt by boiling and evaporating method.** Sea or ocean water put into pans and left to evaporate, the salt crystals would be collected and used as salt.
Places: around coastal areas.
- **Obtaining salt by mining under neath rocks.** Places: At Taghaza, Bilma around Lake Chad in western Sudan. Near lake Bangwela and river Luapala in central Africa.
- **Obtaining salt using water by fire.** Spring water containing salt was boiled and finally salt was obtained. Places with salt; in uvinza salt spring along river malagarasi in central Africa.

TRADE IN THE PRE-COLONIAL AFRICA: Trade is the process of buying and selling of goods and services between people. There was need to trade in order to get all things needed by the communities. Trade tends to develop in any society where there is surplus production.

LOCAL TRADE. Refers to the kind of trade, which is conducted within the same geographical area. In local trade, goods are exchanged between people living in the same geographical area, such as a town or village. Local trade was not for profit making but just to obtain essential goods. i.e. pastoral communities like the Maasai needed vegetables and grains from cultivators like the Nyakyusa and the Chaga.

Impacts of local trade.

1. Local trade united people within the same area.
2. Communities obtained goods such as tools, weapons, foodstuffs and medical herbs.
3. Transport routes were improved.
4. Some important market centers emerged along the market routes.
5. Local trade encouraged communities to expand production.

REGIONAL TRADE. Regional trade refers to trade conducted from one region to another (Trade conducted between two different geographical regions). Regional trade involved a wider variety of goods

compared to local trade. It was not for profit making. For example, regional trade was Trans Sahara trade, Long distance trade of East Africa and Central Africa. Regional trade in the pre-colonial Africa took place in 19th century.

THE KAMBA. The Kamba were leading the long distance trade through northern route in the 19th century. They Kamba caravan brought ivory, guns, hides and beeswax from the interior. From the Coast they obtained cloth, salt, copper, cowrie's shells and jewellery.

THE YAO. The Yao traders got beads and cloth from Kilwa. They also captured and sold slaves from neighboring communities, Yao chiefs such as Mpanda, Mataka, Mchemba and Mtalika dominated the Southern route during the long distance trade.

THE NYAMWEZI. The Nyamwezi dominated the central route conducted trade between the interior of Tanganyika and the coast. The Nyamwezi sold slaves and ivory, hide rhinoceros horn..

Impacts/ effects of regional trade.

Positive consequences/impacts.

- Some traders became very rich. e.g. Mirambo and Isike.
- The communities were able to obtain new commodities e.g. guns, clothes, beads, ivory, etc.
- The rise of trade centers such as Saadans, Pangani, Bagamoyo, Tabora, Ujiji, Voi, and Taveta.
- The rise of trade routes.
- The rise of powerful Empires/Kingdoms such as Nyamwezi.
- New food crops such as maize, rice and cassava were introduced.
- Spread of Islam by the Arabs to the interior Tabora and Ujiji.

Negative impacts.

- The rise of inter-tribal wars in order to get slaves.
- Many elephants were killed, as there was high demand of Ivory.
- It led to depopulation and under development in some areas.
- Slave raids caused insecurity and loss of innocent lives.
- Foreigners used trade routes to reach to the interior.
- Exploitation of African wealth by Europeans and Asians.
- Decline of local industries in Africa.

LONG DISTANCE TRADE. Long distance trade was the trade carried out long distance as people/traders had to move for long distance going on exchanging goods with other societies and the major aim was to get profit for example a salt trader was exchanged salt for hoes not because he wanted to use hoes but he wanted to resell them at a profit later.

TRANS SAHARAN TRADE: Trans Sahara trade was the trade conducted across the Sahara desert. It involved the people of Northern Africa and the people of Western Sudan. This trade started long time ago between 3000BC to 2000BC. It became important in the 1st century AD after the people of West Africa discovered the use of camel and led to formation of many trade routes. The Trans Saharan trade was known as dumb trade because there was no common language, which was used. People who involved in the trade; *West Africa; North Africa and Savannah Region.*

MOVEMENT OF TRADERS.

People (traders) organized themselves in groups known as CARAVANS

Goods involved in the trade

Kola nuts, gold, salt, foodstuffs, Ivory, clothes, gold, bee-wax, slaves and ostrich feathers goods from West. In addition, from North Africa salt and animal skin. Goods from Europe and Asia were cotton and silk cloth, swords, guns, metal pans, horses and Arabic books.

Trade routes:

- (a) Western route- From Sijilmasa, Fez in Morocco passed through Taghaza, Taodeni, Walata, Audaghost, and Kumbi Saleh to Timbuktu.
- (b) Central route- This passed Tunis, Ghat, Ghamese, Kano, GAO and Hausa land.
- (c) Eastern route- This began in Tripoli, Marzul and Bilma.

FACTORS THAT LED TO THE GROWTH OF THE TRANS-SAHARAN TRADE

The following are some of the factors that contributed to the growth of the Trans Saharan trade:

- **Stability of the communities:** Both North African and Western Sudan zone were politically stable. For example, leaders like Sundiata Keita and Mansa Musa collected taxes and established guides on trade routes. This enabled the people to conduct trade without fear. Up to the end of the 15th century AD, many traders were motivated to come to Western Sudan for trade.
- **Western Sudan provided goods needed by traders from Europe.** These goods included gold, ivory and slaves. Through trading Western Sudan exchanged her own commodities with goods from Western Europe and Asia. In turn, she got clothes, guns and other commodities. The surplus production in Western Sudan was adequate to sustain demand for products such as kolanuts and gold, hides, ivory slaves, whereas Taghaza produced enough salt to meet the needs in Western Sudan. The high production capacity in the region enhanced the growth of the Trans Saharan trade.
- **Honesty:** The Berbers of North Africa and the African traders of Western Africa trusted each other. Traders brought in commodities without fear of theft and robbery, enabling the trade to flourish.
- **The use of camels for transport suited the desert conditions and facilitated the development of the Trans-Saharan trade.** These animals could not only carry more commodities than horses and human porters, but also endured desert conditions. Camels can survive without water for a longtime. This convenient means of transport strengthened the development of the Trans-Saharan trade.
- **Geographical location of the region:** The location and climate favored the production of kola nuts and other foodstuffs that were needed in the community, especially the forest region to the south. The region of Western Sudan had no impassable forests because many areas were covered by short grassland. This enabled traders to cross the desert without fear or any difficulty.
- **The invention of a medium of exchange contributed to the growth of the Trans Saharan trade.** At the beginning, only the silent barter system of trade was practiced. Later on, cowrie shells were introduced as a convenient medium of exchange. This in turn facilitated the development of the Trans-Saharan trade.
- **From the northern part, the Berbers provided capital to many traders who used to cross the Sahara desert.**
- **Removal of language barrier:** This was attained after Arabic language became the trader's medium of communication. This in turn facilitated the trade by making communication between the traders easy.

- Absence of competition for trading activities in the region: There were no regular ships that visited the coast of West Africa. As a result, what was produced from the forest zone was peacefully transported to North Africa through the Saharan desert.
- Scarcity of commodities like gold and salt.
- Introduction of horses, which were used in conquest and expansion.

EFFECTS OF THE TRANS SAHARAN TRADE IN AFRICA.

1. It led to the growth of empires like Ghana, Mali etc
2. It increased development of Agriculture.
3. It led to the introduction of Arabic Islamic religion cultures.
4. Formation of mixed races example half cast
5. Growth of town and cities e.g. Jenne, Timbuktu, GAO and Walata.

THE DECLINE OF THE TRANS-SAHARAN TRADE

By the second half of the nineteenth century, the volume of Trans-Saharan trade started to decline. A number of obstacles or problems have been identified to explain the decline. These are:-

- ❖ Strong desert winds: The traders could not withstand the hazards of sand storms. Many abandoned the trade as a result.
- ❖ Traders faced the danger of getting lost in the desert because the routes were not clear. Once traders got lost, they would wander in the desert for a long time and eventually die of thirst and starvation.
- ❖ Desert robbers who made their living by stealing from trade caravans subjected traders to attacks. In the process, traders lost their lives and goods. This discouraged traders from participating effectively in the trade.
- ❖ The extreme climatic conditions were unfavorable to traders. The heat and high temperatures during the day and every low temperature at night due to the absence of cloud cover discouraged traders.
- ❖ Traders faced the danger of highly poisonous desert creatures whose bites could result in death. These included snakes and scorpions.
- ❖ Traders faced language difficulties. This hampered communication during trade. As such, “silent trade” had to be used initially.
- ❖ The development of the Trans-Atlantic rout across the Atlantic Ocean to Europe: commodities like ivory and slaves were transported quickly to the coast of West Africa from where they were transported to Europe. Thus, the trade routes shifted from the Saharan desert to the Atlantic. Instead of the direct route to the North, they went via the coast of West Africa.
- ❖ Commodities obtained from Western Sudan such as salt and gold faced competition from similar goods from other America cheaply. As result, the volume of Trans-Saharan trade decreased because Western Sudan could no longer claim a monopoly in production of certain commodities like salt and gold. In addition, gold from Zimbabwe via Sofala port by the Portuguese ended up in Europe.
- ❖ The abolition of slave trade contributed to the decline of the Trans-Saharan trade. Slaves were the main item of trade. When slave trade was abolished, trade started to decline.
- ❖ Shortage of water also led to the decline in trade. The oases in the Saharan desert provided water seasonally but they sometimes dried up. This made it difficult for the traders to cross the Saharan desert.
- ❖ Wars: The war in Morocco and the one between Christians and Muslims disrupted the smooth running of the trade. The Moroccan invasion of western Sudan in 1591 AD disturbed the growth of

the trade by taking gold at Wangara.

Finally, the Trans-Saharan trade collapsed in the 16th century. From this period onwards, West Africa witnessed the expansion of European occupation on the coast of West Africa.