

# GEOGRAPHY FORM FOUR FULL NOTES

## RESEARCH

### Definition

Research is a scientific and systematic process of collecting, analyzing and interpreting data basing on a certain phenomena. OR  
Is a careful and systematic investigation in a field of knowledge or a systematic process of collecting information and interpreting it.

### OBJECTIVES OF RESEARCH

- To search for a new knowledge/insights.
- To gain familiarity with a certain phenomena.
- To develop theory about certain social economic phenomena.
- To test hypothesis so as to find out their reliability.
- To explain/describe about certain phenomena.
- To find solution to the existing problems.
- To make evaluation of a certain issue.

### IMPORTANCE OF RESEARCH IN DAILY LIFE

1. Research develop or generate new knowledge e.g the information produced by research can be applied in many ways.
2. It helps to improve human activities for the betterment of people e.g A society can develop irrigation scheme when finds show that there is food shortage.
3. Research can be used to develop new theories and laws.
4. It helps to improve various sectors as related to daily life e.g Agriculture, industries, etc.
5. It provides reliable and needed information to data bank.
6. Research enable in finding solutions about the special programmes e.g HIV, hunger, etc.

### TYPES OF RESEARCH

#### 1. According to their aims/purpose

##### i) Basic/pure research

Is a type of research which is conducted to collect data to advance or develop a certain scientific knowledge.

It is always done through the verification of theories especially in

laboratory.

ii) Applied research

Is the research which seeks the specific knowledge necessary to find solution to solve certain in the society.

iii) Evaluative research

It a type of research which is conducted purposely to measure or asses the achievement of a certain scientific practice.

iv) Analytical research

Is a type of research that uses facts already available and analyses these facts to make a critical evaluation of the material.

v) Fundamental research

Is a type of research which studies life process that is universal in their application to scientific knowledge.

## 2. According to the type of data to be collected.

### i) Quantitative research

It focuses on the measurement of quantity.

It is applicable on phenomena that can be expressed in terms of quantity like population data.

It tries to answer the question how much? How many?

### ii) Qualitative research.

It concerned with qualitative phenomena.

It is applicable to phenomena that can be expressed in terms of qualitative. The data gathering are purely in form of description.

It is alternatively called Descriptive research.

## Other type of Research

1. Empirical research - relies on intensive interpretation of data and come up with conclusion which is capable of being verified through observation/experiment.
2. Conceptual research - is related to some abstract ideas. It is used to develop new concept.

3. Exploratory research -Is conducted when a researcher explores things like gold, iron, diamond, and other mates related to mining.
4. Explanatory research - Is a research that explain about a certain phenomena.

## **RESEARCH DATA DATA**

Is a body of information about a particular problem.

## **TYPES/SOURCES OF DATA IN RESEARCH**

### **i) Primary source/data**

Is the original data collected directly from the field, they are obtained through interviews, questionnaires, observation and focus group discussion.

### **ii) Secondary sources/data**

Is the data collected from documents.

Example; through books, journals, economics, survey, census report, official report.

## **STAGE OF CONDUCTING RESEARCH**

- i/ Problem identification
- ii/ Pr-survey
- iii/ Literature review
- iv/ Formulation of hypothesis
- v/ Research design
- vi/ Data collection
- vii/ Data analysis
- viii/ Hypothesis testing
- ix/ Data interpretation
- x/ Report writing.

### **i) PROBLEM IDENTIFICATION**

A problem is the question or idea of interest which ought to be answered through data collection.

The researcher identifies a problem to be researched e.g Child labour, poor performance.

## QUALITIES OR CHARACTERISTICS OF A RESEARCH PROBLEM

1. The research problem must be carefully selected and come from the researcher's mind.
2. Must be clear, precise and meaningful.
3. It must relate to the subject of interest e.g A Geographer can do a research on the following issues; Climate, soil, etc.
4. The research problem must be short and clear to avoid vague and ambiguity.
5. It must have variables.

## SOURCES OF RESEARCH PROBLEM

- Personal experience.
- Conclusion from various theories.
- Literature reviews.
- Practical issues.
- Deductive and inductive reasoning.

### ii) LITERATURE REVIEW

These are readings of various publications to know what other scholars/researchers have done about what you are investigating.

It enables the researcher to gain experience, to decide a good method to be used, to identify the weakness and success of other researchers. Sources of literature reviews are journals/reports, books, internet.

### iii) FORMULATION OF HYPOTHESIS

This is an assumption used on what one expects to find out in the field. It can be either true or false or Hypothesis is a prediction of outcome of the results. It is the statement of expected results.

Research hypothesis is usually tested before the study begins.

e.g Poor students classrooms attendance results to poor academic performance.

The hypothesis are ;

- Involvement of students in economic activities.
- Poor family income.

-Poor parental care.

### **TYPES OF RESEARCH HYPOTHESIS**

1. Null hypothesis - Is the one that is stated in negation i.e. it indicates non relationship between the variables.
2. Alternative hypothesis - Is the one stated to indicate the actual expectation. it indicates relationship between the variables.

### **iv) RESEARCH DESIGN/STUDY DESIGN**

This is the frame work of the research.

-Is the conceptual structure within which a research is conducted.

### **v) RECONNAISSANCE**

It is the pilot study of the area before the actual data collection is done. The stage enables the researcher to be familiar with the area and judge on tools to be used,etc.

### **vi) DATA COLLECTION**

It involves collection of various information in the field research.

It can be done through observation, interview, questionnaires and focus group discussion.

### **DATA COLLECTION TOOLS/METHODS**

The following are the basic and common method to collect primary data in the field.

#### **1. OBSERVATION**

A researcher uses his/her five senses of hearing, tasting, smelling, seeing and touching to observe the phenomena and record what is observed.

#### **Types of Observation**

##### **i) Participant/direct observation**

In this method the researcher becomes part of people under study he/ she participates fully on a particular event.

##### **ii) Non – Participant observation**

In this method the researcher observes the action, behaviours and activities of the researched group without participating or seen by the participants.

### **ADVANTAGES OF OBSERVATION**

- Helps to develop skills like observation and recording.
- Data are recorded as they occur/observed.
- It give first hand information.
- Allows full participation of learners in teaching and learning process.
- It is a quick method of data collection.
- No bias.
- Avoid language barriers.
- It is flexible to use wherever and whenever needed.

### **DISADVANTAGES OF OBSERVATION**

- It can give wrong information especially when the respondent discovers that they are researched.
- Misinterpretation of data may occur.
- Some geographical phenomena may not be easily obtained.
- It costs time and money. Sometime it may involve risk taking especially when you are observing people that are doing something illegal.
- It is subjective because data is based on personal observation.

## **2. INTERVIEW**

- It is a face to face technique between a researcher and a respondent.
- It is the verbal communication/interaction between the interviewer and interviewee, designed to list the information, opinions and feelings they have on their own.
- It can be through by two ways - face to face interview, telephone interview.

### **ADVANTAGES OF INTERVIEW**

- The interview enables a researcher to obtain required information quickly.
- Not restricted it is flexible.
- Interview can adapt to situation and gets as much information as required.
- Provide data which is not possible to get through questionnaires.
- Interview method can also employ observation method.



- Interview gives/yield high responses because it is difficult for the interviewee to refuse completely to answer the question or ignore the interviewer.

### **DISADVANTAGES OF INTERVIEW**

- It is time consuming.
- If the respondents are suspicious of the information required they can give irrelevant information.
- There is an element of distortions.
- The respondent tends to be subjective.
- It cost the researcher has to travel to meet the respondents in different parts of the country.
- It becomes a hindrance if the researcher wants to use big samples.

### **TYPES OF INTERVIEWS**

#### **1. STRUCTURED INTERVIEW**

The type of interview in which the same question are asked to respondent.

- The researcher prepares questions which he/she asks each respondent in a good order and manner.

#### **ADVANTAGES**

- A researcher can compare answer from different respondent to see their validity.
- It is possible to use quantitative analysis to analyses the date.
- It is not time consuming

#### **DISADVANTAGES**

- It is inflexible, researcher cannot ask more a part from those prepared before.
- Some hidden information cannot be obtained easily.

#### **2) UNSTRUCTURED INTERVIEW**

- Is a set of questions that the interviewer asks when interviewing.
- Probing is commonly used to get deeper information. The questions vary from one respondent to another.



**ADVANTAGES**

- More information can be revealed because of high degrees of freedom.
- Respondents are given chances to say more on what they are asked.

**DISADVANTAGES**

- It is a time consuming because it involves probing questions.
- Researcher can't be able to compare answers given because different questions are asked to different respondents.
- If it is not controlled/planned it may collect irrelevant information.

**PROCEDURE FOR CONDUCTING AN INTERVIEW**

- Create friendly atmosphere where two people can talk easily.
- Maintain warmth and friendliness. It enables respondent to express in detail their thought and feelings.
- Be neutral in note and don't suggest any answer.
- Instill confidence and trust to the respondent by assuming his/her information given would be confidential.
- Explain briefly the purpose of the interview.

**3. QUESTIONNAIRES**

These are ready written questions which are given to the respondent to be answered.

- Consists of list of questions related to the topics used to obtain the data required.

**ADVANTAGES OF QUESTIONNAIRES**

- Researchers get a lot of information from different respondents and from different areas in the country.
- Omission of names makes the respondent to respond to the questions.
- Freedom to the respondents.
- It is well planned (structured).
- It is useful to distant respondent.

**DISADVANTAGES**

- It is time consuming
- It is selective in nature as it is limited to illiterate
- It may lead to ensure answers when questions need opinions or personal

feelings

- Questions may be understood hence the respondents answer, the way they understood and provide wrong data.
- May get lost on transit.
- It is expensive to prepare.

## **TYPES OF QUESTIONNAIRES**

### **I. Structured/closed - Ended questionnaires**

- Are questions which are accompanied by a list of all possible alternatives from which respondent select the answer that is best.
- The respondents are limited on answering the questions.

#### **ADVANTAGES**

- They are easier to analyze
- They are easier to administer because each item is followed by an alternative answer

#### **DISADVANTAGES**

- Are more difficult to construct because categories must be well thought out
- Responses are limited; the respondent is required to answer the questions according to the researcher's choice.

### **II. Unstructured/open – ended questionnaires**

- Are question where by the respondents are free to explain the answers
- They permit respondent to respond in his/her words. The amount of space provided is however an indicator of whether a brief or long answers is required

#### **ADVANTAGES**

- allow a greater chance of responses
- Simple to formulate because a researcher does not have to come up with appropriate response categories.
- Can stimulate a person to think about his/her feelings and to express what he/she consider most important.

#### **DISADVANTAGES**

- When the respondent is fire, he/she may give information which does not answer the concerned research questions.
- It is time consuming

### **PROCEDURES CONSIDERED IN PREPARING QUESTIONNAIRES**

- Questions should be short and straight forward
- Question should be asked and should follow the order
- Question should be polite
- Question should be free from bias

### **MAIL QUESTIONNAIRES**

- This is the type of questionnaires which involves mailing questions to the respondent.
- It can be through post mail

## **4. FOCUS GROUP DISCUSSION**

Is the research method which involves intensive discussion on a particularly issue

- Normally done in groups of 5-7 people
- A researcher guides the discussion and records the data from what is discussed by the members.

AIM: It enables the group to get additional information.

### **ADVANTAGES**

- Low cost
- Rasher becomes an active person in the discussion
- Respondent get skills of writing , speaking and coordinating
- Makes respondents understand well the topic
- Allows critical thinking to the participants
- Makes the research topic to be live and interesting

### **DISADVANTAGES**

- Not easy to analyse the data collected
- Very small sample is used

- Selection of sample may be affected by biasness
- It is time consuming.

### **(vii) DATA ANALYSIS**

The stage involves the following processes; editing, coding, classification and tabulation of collected data.

### **(viii) DATA INTERPRETATION**

After getting the right information the analyze data is interpreted in different statistical graphs, charts, figures, etc. That can be understood by everyone

### **(ix) TESTING HYPOTHESIS**

This involve sorting and sifting and to identify similar phrases.

### **(x) REPORT WRITING**

Is the last step in research where a researcher communicates his or her findings to other researchers or the public.

## **IMPORTANCE AND RESEARCH REPORT**

- i. Exposes the problem and their implication
- ii. Presents the outcome of research data
- iii. Interprets the data

## **THE REPORT FORMAT**

The research report should have three main parts;

- a) Preliminary pages
- b) Main body
- c) Conclusion

### **A) PRELIMINARY PAGES**

Saves as the guide to the reader

Page 1: Title of the researcher

Page 2: Declaration; that the work belongs to the said researcher.

Page 3: Acknowledgement. (A researcher gratitude to all who are in one way, or another help the researcher to be successful).

Page 4: Table of contents.

Page 5: List of tables (if any)

Page 6: List of figures

Page 7: Abstract –This summarize the whole research work. It should not be more than 120 words.

## **(B) THE MAIN BODY**

It contains five chapters;

### **Chapter 1 Introduction**

The Chapter contain the following parts;

- Background of the study.
- Statement of the problem.
- Objective of the study.
- Purpose of the study.
- The scope of the study.
- Significance of the study.

### **Chapter 2 Literature Review**

Covers the literature review of other researchers who did a similar research in the past.

### **Chapter 3. Research Methodology**

This describe the design of the research and method of conducting the study e.g;-

- Population.
- Sampling.
- Location of the study area.
- Tools and data analysis techniques.

## **Chapter 4. Data Presentation**

The parts covers the results of the findings of the research.

## **Chapter 5 Conclusion and Recommendations**

Provide detailed summary of the findings and the implications drawn from the results.

### **SAMPLE AND SAMPLING**

**SAMPLE:** Is the small number of population which represents the whole population.

**SAMPLING :** Is the process of collecting samples from the population.

### **SAMPLING TECHNIQUES**

#### **1. RANDOM SAMPLING**

It is a type of probability sampling where by every individual has an equal chance to be selected in a sample. This technique involves selecting a sample randomly from the sampling frame without replacement.

E.g. it is very common in Lottery's such as Bingo and communication companies.

#### **Advantages**

- It reduces biasness.
- It is a very important method in a small population.
- The method portraits fairness in getting a sample.
- It gives equal chance to every person to be selected.

#### **Disadvantages**

- The better sample may not be chosen.

- It is very tedious or tiresome.
- It is time consuming especially when the population is high.
- It is representative in Heterogeneous population.

Heterogeneous population – means a population with different characteristics.

## 2. **SYSTEMATIC SAMPLING**

It is a sampling technique where by a sample is obtained randomly but in a systematic way.

It is a sampling technique which involves selection of a sample randomly at regular intervals from the sampling frame

## 3. **STRATIFIED SAMPLING** - Individuals for the sample are selected from different strata.

Example: A researchers wishes to get a sample of 20 students from 5 schools he/she will have to select 4 students from each.

4. **PURPOSIVE SAMPLING:** Is the judgemental sampling in which a researcher uses his/her knowledge to choose individuals to be samples. The sample base on certain purpose e.g only engineer, male, students, youth,elders,etc.

5. **ACCIDENTAL SAMPLING** – The researcher comes into contact accidentally with the individuals to form a sample.

6. **SNOW BALL SAMPLING-** The researcher begins with the few individuals available, then those individual recommend others.

## **The uses of research outputs and recommendations**

1. Help to improve the knowledge of the people e.g Discovery of diseases.
2. The results help in finding problems facing society e.g Diseases, social inequalities, famine.
3. The results improve economic and social activities e.g Introduction of new breeds of cattle.



4. Research can lead to exploitation of the new resources like minerals and fossil fuel.
5. It helps to identify the specific need of each community e.g Community A needs schools, Community B needs water, etc.
6. Research results are useful in protecting and concerning the environment.
7. They are used in formulating government policy.

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## NATURAL REGIONS OF THE WORLD

### CLIMATE AND NATURAL REGIONS

World Climatic Types and Their Characteristics.

The world climatic types on the basis of temperature are classified into four basic types;

#### i. HOT CLIMATES

Is the climatic type of the world characterized by mean annual temperature which is over 21°C and have the following natural vegetation; Equatorial Forests, Monsoon Forest and Tropical Grassland scrub e.g Equatorial, Tropical Desert, Monsoon and Marine areas.

#### ii. WARM CLIMATES

Is the world's climatic type whereby no month has the temperature of less than 7°C and have the following natural vegetation, Evergreen Woodland and Grassland Temperate Forest e.g West Margine and China Type.

#### iii. COOL CLIMATES

Is the world's climatic type whereby one to five month have temperature below  $7^{\circ}\text{C}$  and have the following natural vegetation; Temperate Forest, Grassland and Scrub e.g British Type, Cool Temperate Interior and Laurentian Type.

#### iv. COLD CLIMATES

Is the world's climatic type whereby six months or more have temperature below  $7^{\circ}\text{C}$  and the natural vegetation are Nil, Mosses, Linchen and Coniferous Forest e.g Polar, Tundra, West Margine,etc.

### FACTORS INFLUENCING CLIMATE

The characteristics of various type of climate are a result of the following factors;

#### a) Latitude

-Influences temperatures on the surface of the earth whereby the areas nearer to the Equator experience higher temperature than those far away.

-Shifting of the overhead position of the sun is determined by latitudes and has an influence on climate.

#### b) Altitude

-Influences temperature and pressure of a region.

-Low altitude regions are warmer and experience high atmospheric pressure while high altitude areas are cooler and have low pressure.

#### c) Distance from the sea

-Has an influence in both temperature and rainfall of a region. During summer onshore winds have cooling effect on the land which is warm.

-During winter the sea is warmer than the land.

#### d) Aspect

Aspect refers to the direction in which a slope faces e.g in The Northern Hemisphere, the Southern ward slopes are warmer than the North ward

facing slopes. This is because the North slopes never receive direct sunshine as the sun in this region never gets overhead.

-Windward slopes of highlands receive much higher rainfall than the Leeward slopes.

#### e) Ocean Currents

Current flowing along the Coasts tend to modify the climate of the Coastal regions. Where onshore wind blow over a cold ocean current are cooled from the below and the moisture they are carrying is condensed and dropped over the sea as rain.

#### f) Prevailing Winds

Wind is a medium of transfer of heat and moisture over the land. If wind is blowing from a warm region, it has the warming effects over the region it is blowing across and if wind will blow from cold region it will be cold and will cool the land over which it is blowing.

#### g) Human Activities

Like development of settlements, agriculture and construction of dams and creation of man made lakes have influence on climate. In recent times we are realizing the effects of human activities in causing climate change, caused by clearing of forests , draining and cultivating swamp areas, emission of Chlorofluorocarbons and other gases from factories and motor vehicles.

## NATURAL REGIONS OF THE WORLD

Natural Regions are geographical areas with uniform physical characteristics that distinguish it from other natural regions.

## CHARACTERISTICS OF THESE REGIONS

- They experience similar problems.
- They have same geographical back ground.
- Are unified by the same certain latitudes which help in locating them over.
- Tend to have almost the same type of soil and vegetation cover.

- They have the same occupation such as a mining, agriculture and animal husbandry.

## **TYPES/ CLASSIFICATIONS OF NATURAL REGIONS**

1. Equatorial Regions.
2. Tropical/savannah Region.
3. Mediterranean.
4. Hot Desert.
5. Warm Temperate Interior Region.
6. Cold Temperate Continental Region (SIBERIAN TYPE).
7. Cool Temperate West margin Region (BRITISH TYPE).
8. Cool Temperate Eastern margin Region (LAURENTIAN TYPE).
9. Warm Temperate Eastern coast margin Region (CHINA TYPE).
10. Monsoon Region.
11. Mountain Region.
12. Tundra and Polar Region.

### **1. EQUATORIAL REGIONS**

**Location:** The region is found between  $0^{\circ}$  -  $5^{\circ}$  North and South of the equator.

**Area found:** west coastal Nigeria S.W and S. Central Ghana, Congo, and Amazon basin / East Indies.

#### **Characteristics of Equatorial**

- High temperature about  $27^{\circ}\text{C}$  throughout the year.
- Annual temperature range is  $2^{\circ}\text{C}$ .
- Rainfall is heavy throughout the year.
- The Annual rainfall is about 2000mm.
- There are no seasons of the year.
- Type of rainfall is convectional.

Crops grown are cassava, groundnuts, maize, millet, beans, bananas.

**Human activities:** Plantation agriculture, fishing, cultivation, peasantry sedentary agriculture.

**Common animals found:** Monkey, gorillas, crocodiles, and hippopotamus.

**2. TROPICAL REGION /GRASSLAND/SAVANNAH/SUDAN TYPE**

Location: the region is found between 5° - 20° North and South of the equator Between equatorial and tropical desert.

Area found: East and Central Africa, Brazilian plateau, Venezuela, Africa and N. Australia.

Climate: hot wet summer season, warm dry winter, rainfall is moderate. Torrential rainfall associated with thunderstorms in annual range of temperature increases with the distance from equator.

**CHARACTERISTICS OF TROPICAL REGION**

-High temperature range from 20°C - 32°C.

-Temperature range is 8°C.

Total rain varies from 500mm to 1500mm.

Vegetation: tall grasses which lie dormant in dry season e.g Miombo, palm, acacia, gum tree.

Human activities: Livestock keeping and cultivation.

Animals found: Lion, leopard, zebra, giraffe.

crops grown: cotton .

**3. MEDITERRANEAN REGION**

It is found between 30° - 45° North and south of the equator around Mediterranean ocean only.

**Areas found**

- South Eastern Australia, central Chile, central California, north and South America.

**CHARACTERISTICS OF MEDITERRANEAN REGION**

- Mean temperature is about 20°C - 25°C.

- Annual temperature rainfall is about 500mm to 760mm.

- Has two (2) types of climatic conditions (season) per annual.

- They face problems like TSUNAMI.

- Type of rainfall is cyclonic rainfall.

- The climatic condition is dry in summer and cool wet in winter.

- It is a coastal belt region.

- Rain has 2 seasons, not throughout the year.

**Animal found**

- Elephant, rhino, zebra, lion, buffalo.

**Human activities**

- Tourism, agriculture, fishing and navigation.

- Crops are wheat potatoes, vegetable, maize and fruit cultivation, as orange, lemon and grape fruits.

#### **4. HOT DESERT**

It is located between  $15^{\circ}$  -  $30^{\circ}$  latitudes North and south of the equator. Hot Desert of the world are Sahara, Kalahari, Attacama and Namib desert.

#### **CHARACTERISTICS OF HOT DESERT**

- Very high temperature of about  $40^{\circ}\text{C}$  during day time.
- There is very little rainfall usually less than 250 mm a year.

#### **Vegetation**

- There is no complete cover of vegetation on the land because is too scanty.
- It consist mostly of thorny club bushes and cacti tropics.

**Crops grown** are dates, palm, cotton, rice, tobacco, fruit tree and tomato.

#### **Economic activities**

- Trading, mining, low agriculture over irrigation around coastal areas.

#### **5. WARM TEMPERATE INTERIOR REGION (STEPPE TYPE)**

**Location** : it is located  $20^{\circ}$  -  $35^{\circ}$  North and South of the equator.

#### **Areas found**

Australia, Argentina, Mexico, USA (Oklahoma, Texas, place of Manchuria).

#### **CHARACTERISTICS OF STEPPE TYPE REGION**

- Short warm summer and long cold winter.
- Two seasonal in the year.
- Rainfall is very little because of the dry winds (winds without moisture).
- Type of rainfall is conventional rainfall caused by low pressure system.
- Total annual rain 380mm -700mm, depending on distance of the sea.
- Temperature range from  $15^{\circ}\text{C}$ -  $25^{\circ}\text{C}$  depending on place location.
- Maximum temperature during daytime exceed  $30^{\circ}\text{C}$ .
- When temperature falls less than  $0^{\circ}\text{C}$  the land is covered with ice (snow).
- The area experience low rainfall in general which form in spring and early summer.

#### **Human activities**

- Animal rearing ( cattle and sheep ranching ) to large grassland.
- Agriculture, main crop cultivate is wheat, maize, linseed.
- Mining in grassland (coal, oil, and iron ores).

### **Environmental Problem**

- Environmental pollution (air) due to industries.
- Deforestation.
- Snow fall destroy crops.
- Floods, soil erosion.
- Dust storm, thunderstorms.
- Drought condition.
- Leaching.

## **6. COLD TEMPERATE CONTINENTAL REGION (SIBERIAN TYPE)**

### **Location.**

Northern hemisphere along 60°N in Europe, Asia and Northern America.

### **CHARACTERISTICS OF SIBERIAN TYPE**

#### **Location.**

- Short warm summer season, long cold winter season warmest month reached about 30°C.
- Annual temperature range is 37°C very high due to distance from the sea.
- Minimum temperature during night may be less than 40°C.
- Most rain falls in summer associated with thunderstorms.
- Type of rain is convectional rainfall.
- Average rainfall is 500mm.

#### **Vegetation**

- Coniferous forest ( but fewer than in equatorial climate).
- Trees are evergreen; leaves are needle shaped, thick and leathery in order to reduce loss of moisture by transpiration.
- Conical shaped trees do not permit the accumulation of snow.

#### **Human activities**

- Agriculture.
- Lumbering.
- Fishing.
- Mining and trapping.

#### **Soil**



- Coarse, infertile soil which do not favor agriculture. Agriculture is rarely practiced due to short time of grow season.

### **Animals found**

- Animal have short ears and tails, fur so as to adapt to seasonal changes (e.g. moose , caribou fox).

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- Flooding.
- Leaching.
- Glacial erosion.
- Soil infertility.
- Frost destroys crops.
- Environmental pollution.

## **7. COOL TEMPERATE WEST COAST MARGIN REGION (BRITISH TYPE)**

### **Location**

It is located in Western sides of continents between 45°-60°N and S of the equator.

### **Areas found**

-Northern Western Canada, Coast of South Chile and Southern Island of New Zealand.

### **CHARACTERISTICS OF BRITISH TYPE**

- Type of rainfall is cyclonic and orographic which is distributed throughout the year.
- Total annual rain is 760mm but varies with distance from sea.
- Windward slopes receive heavier rain than leeward slope.
- Coastal regions are in oceanic influence (near the ocean).

### **Vegetation**

Deciduous trees are dominant (but are cleared to allow farming).

### **Human activities**

- Main activity is mining and manufacturing industries.
- Few people practice agriculture in Northern Europe.
- Cattle, sheep, growing wheat and fruit develop in farming.
- Availability of coniferous trees/forests encourages lumbering activities.

### **Environmental Problem**

- Deforestation due to lumbering, overgrazing.
- Establishment of settlement and cultivation.
- Water, air, soil pollution (also water borne diseases due to water pollution).
- floods due to poor drainage, soil erosion.
- Earthquake and volcanic eruption that affect coast lands destruction of properties.
- Soil leaching, soil acidification and decline of soil fertility.

## **8. COOL TEMPERATURE EASTERN MARGIN REGION (LAURENTIAN TYPE)**

### **Location**

It is located on eastern side between 35° and 50° Northern and Southern Hemisphere.

### **Areas found**

East Canada, north china, Korea, north Japan, England, USA.

## **CHARACTERISTICS OF LAURENTIAN TYPE**

- Two (2) seasons per year warm in summer and cold in winter. Rain throughout the year.
- Summer temperature , range from 12°C - 18°C.
- Annual range is high in summer about 25°C, it differs in America 25°C and in Asia 29°C.
- In winter low temperature range 10°C - 4°C, in America and 15°C - 4°C in Asia.
- Cold winds carry moisture , they blow outward from interiors which are responsible for low winter temperature.
- Winds in North America are warmed by Great lakes which results in heavy snow falls in Eastern Canada (Great lakes influence the climate).
- Precipitation is in the form of snow falls and rain in Southern America and Northern Japan.
- Total rain is 550mm to 1000mm annually.
- Rain is convectional and cyclonic.

### **Vegetation**

- Coniferous forest found in areas with high rainfall.
- Northern hemisphere there are deciduous trees.

### **Human activities**

- Farming (USA - mixed farming , Canada – fruit trees).

- Manufacturing industries.
  - Mining activity in America and Asia ( minerals extraction).
- NB. In Asia crops as wheat, maize and soya beans grown intensively.

### **Environmental Problem**

- Snow fall destroys crops.
- Butter cold winter cause frost formation.
- Environmental pollution.
- Glacial erosion.
- Stormy condition.
- Dense fogs which hinder effective visibility.
- Volcanic eruptions and earth quakes e.g. In Japan Tsunamis.
- Decline in fertility, deforestation.
- Soil acidification.
- Loss of biodiversity.
- Frost.

## **9. WARM TEMPERATE EASTERN COAST MARGIN (CHINA TYPE)**

### **Location**

It is located in the Eastern side of the continents between 23° - 35° north and south of the equator.

### **Area found**

South Eastern USA, East central China and Eastern part of Argentina, S.E Australia and S.E Africa.

### **CHARACTERISTICS OF CHINA TYPE**

- 2 season, summer and winter.
- Hot summers with temperature about 26°C and 13°C during winter.
- Trade winds are dominant seasonal winds they blow on short and bring convectional type of rainfall.
- Most rain takes place in summer. in winter rain is light.
- Annual total rain is 1000mm.

### **Soil**

- There are variety of soil type depending on location and topography.
- A long coast the soil is sandy, loam, silt and clay.
- Beneath deciduous forest soil are called alfisols, rich in plant nutrients due to humus created by fallen leaves of deciduous tree.
- Also there is peddlers and volcanic soil.

**Geological system**

Volcanic eruption and earth quakes which bring valuable minerals near the surface.

**Human activities**

- Mining - Recreational centers ( camp, climb, ski).
- Pastoralism - Manufacturing of HEP.
- Tourism - Employment to people in HEP power plants.
- Transhumance - seasonal movement of animals to the valleys and to the uplands. People take animals to the upland pastures which are free from snow in summer and brought back to the valleys during winter.

**Environmental Problems**

- Drought condition in the leeward side due to rain shadow effect.
- Soil erosion.
- Land slides.
- Avalanches in snow cover.
- Deforestation ( because of lumbering and settlement).
- Water population.
- Flooding in lowlands.
- Earthquakes and volcanic eruption.
- Global warming that leads to melting of attractive snow.

**10. THE MONSOON REGION**

Is the area in which its climate is influenced by wind that blow from one direction in one season and another direction in another season.  
It prevails mainly in Indian Ocean.

**Areas found**

India,Burma,china,Indonesia,N. Australia,southern Horn of Africa.

**Characteristics of monsoon region****Climate**

- Receives rainfall in different amounts from place to place.
- Wind blows from south –West in April – October.

**Vegetation**

- Deciduous trees/forest in low lands and coniferous forests in highlands.

- Flowering shrubs and bamboos are common
- Good temperature and rain makes it possible for growing crops throughout the year.

### **Human activities**

- Fishing.
- Trade.
- Lumbering.
- Tourism.
- Industries.
- Dairy farming.
- Agriculture (maize, tobacco, and cotton, in S.E USA and paddy in china).

## **11. THE MOUNTAIN REGION**

Location: found mostly in areas where young fold mountain is obtained such as Himalaya, Alps Rockies and Andes.

### **Areas found**

S. Europe central Asia, N. E Africa, E Australia and N & S of America.

## **CHARACTERISTICS OF THE MOUNTAIN REGION**

### **Climate**

- Temperature of air drop as altitude increase.
- When the warm moist air moves up the windward slope of mountain it cools and water vapour condenses into water droplet, which then fall as rain or snow on the windward side. The dry area (leeward side) which is away from wind is called rain shadow.
- Precipitation increase when altitude increase, it is called relief or orographic precipitation.
- Types of rainfall is orographic or relief rainfall.

### **Animals found**

Only few living things survive in the bitter cold of snow. Just below snowfield a variety of small animals are found.

### **Human life**

It has unfavorable for human settlement. The inhabitants are ESKIMOS of N. America, Yakutsk, Lapps of Scandinavia and Samoyed of Siberia.

### **Economic activities**

- Hunting.
- Fishing.
- Rearing of vender.

### **Environmental Problem**

- Severally cold condition.
- Snow fall and snow cover.
- Frozen soil that hinder cultivation.
- Environmental pollution.
- Avalanches in mount onerous region.
- Shallow soil.
- Sub glacial desert.
- Glacial erosion.
- Frost.

NB. Eskimos use clothes made of fur and polar deerskin.

- In winter they live in house made up of ice blocks known as IGLOOS.
- In summer they live in tents made up of wood and deerskin.
- They use canoes called KAYAKS for transport.

## **12. TUNDRA AND POLAR REGIONS**

### **(a) TUNDRA REGION**

Location; Lies beyond latitude 60° N & S.

Areas found: N. Siberia, Russia and N. Canada.

### **Characteristics of tundra region**

Climate:

- Short cool summer and long cold winter.
- The annual range temperature varies from 29°C to 50°C.
- Nights are long and day are short.
- Snow covers the land for 9 months during the year.

### **Vegetation**

- Mosses , lichens sedges and grasses.
- Arctic scrub vegetation on southern parts.
- Tundra stands for region with low vegetation cover.

### **(B). POLAR REGION**

**Location:** Large parts of Greenland, Antarctica and interior of Iceland. It lies far away from Equator.

## CHARACTERISTICS OF POLAR REGION

- Temperature below 0°C due to effect of cold polar. Continental mass.
- Also known as ice cap climate.
- Receives sun rays at low angle.
- Low temperatures.
- Winters are extremely very long and cold.
- The region experiences continuous darkness since it is inclined far from the sun.
- Summer are quite cool and highest temperature hardly exceed 10°C opposite direction North- East from October to April.
- South – West / summer monsoon is accompanied by heavy rain.
- Climate is characterized by heavy daily rainfall.

## Vegetation

- It varies with amount of rainfall.
- Areas with heavy rain more than 2000mm, consist of dense forest with big trees (teak and tropical cedar).
- Area with 1000mm- 2000mm, rain less dense forest, sandal wood and iron wood trees.

## Human activities

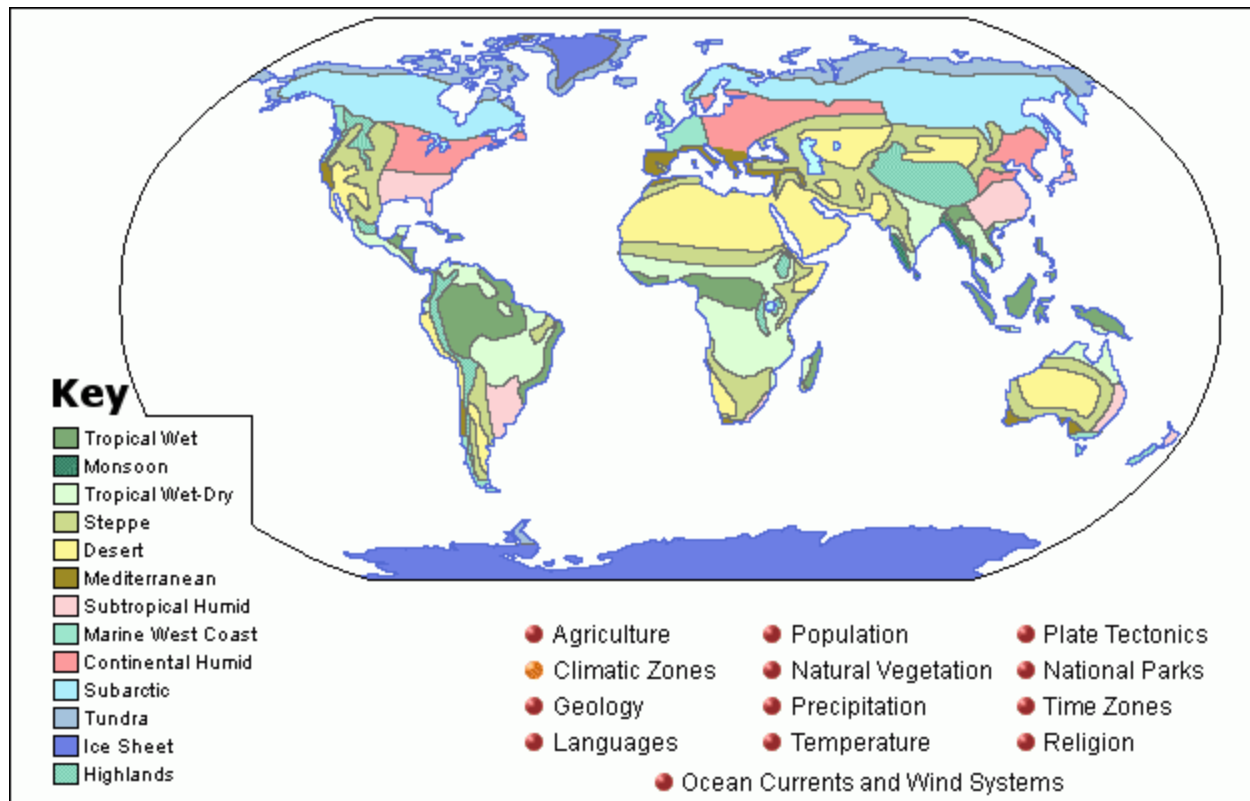
- Farming ( rice, millet, wheat , maize).
- Tourism.

## Environmental Problems

- Land degradation.
- Deforestation.
- Heavy annual flood.
- Destructive heavy rains.
- Earthquakes due to tectonic plate movement.
- Drought condition in some areas.
- Leaching of soil.

## WORLD MAP SHOWING DIFFERENT NATURAL REGIONS





## HUMAN POPULATION

### Population

Population is a number of people, animals and plants (living things) occupying a certain area.

### Human Population

Is a group of people occupying a certain geographical unit.

### Characteristics of human population

#### (i) POPULATION SIZE

Is the total number of people living in the country; It is obtained through census.

#### (ii) POPULATION STRUCTURE

Population Structure is the composition of a given population in terms of age and sex at a particular time.

The information on age and sex of an individual person from the entire population is obtained when a census, vital registration or sample survey is conducted.

### **(iii) COMPOSITION**

Population composition refers to the geographical make up of persons in a given locality which includes, sex, age, marital status, education, occupation, income level, religion, ethnic group and race.

### **(iv) SEX RATIO**

This is the number of males per 1000 females in a given population.

### **(v) DEPENDENCY RATIO**

Is the part of the population that is not involved in productive activities. The dependency ratio can be categorized into two;

- a) Youth dependency ratio: Includes those who are under 15 years.
- b) Old age dependency ratio: Includes those who are above 65 years.

The dependency ratio can be expressed as;

$$\text{Dependency Ratio} = \frac{\text{Children}(<15) + \text{Old people}(>65)}{\text{Working population (15-64)}}$$

## **IMPORTANCE OF STUDYING POPULATION**

In studying population, population data are obtained through census, vital registration and sample survey. The data obtained are useful in different ways;

- i. The information obtained during the National Census is used by the Government for Planning Public Services e.g Schools, Hospitals, Markets, etc.
- ii. Enable to know the age and sex in a country e.g In Tanzania the number of female is higher than of male.

iii. Enables the government to combat mortality rate which may lead to loss of man power if not well managed.

iv. Enables to know the number of manpower skilled and unskilled.

## **POPULATION DISTRIBUTION**

Is the way in which people are spread out across the earth surface. Distribution is uneven and changes over period of time.

### **FACTORS INFLUENCING POPULATION DISTRIBUTION AND DENSITY**

#### **1. Relief (Topography)**

Where the slope is steep there is low or no population due to poor soil and nature of the land, but on gentle slope or flat surface there is high population since soil is good and mechanization can take place easily. Also low land tends to flood usually since people avoid settling in those areas.

#### **2. Climate**

Areas with reliable (moderate) rain have attracted high population but where there is poor rain like in the desert there is low population. Also areas with high or very low temperatures do not attract population while areas with moderate temperature attract population (high).

#### **3. Vegetation**

In areas where dense vegetation is difficult to clear like in Tropical forest of Amazon and Congo basin discourage people to live leading to sparse population or no population at all. Dense vegetation hinders penetration and development. In less dense vegetation people are attracted since they grow crops after clearing for cultivation.

#### **4. Soil**

Thin, infertile and badly leached soil discourages settlement since they can't support agriculture. Good soil attracts population.

### **5. Mineral and energy resources**

Area with mineral and energy resources attract population e.g. rand of S. Africa, iron and coalfield in Europe and southern part of W. Africa where there are rich mineral deposits like diamond, oil, etc.

### **6. Natural Hazards**

Areas with natural hazards like floods in low land, earthquakes, and tornadoes are avoided by people.

### **7. Diseases and Pests**

People like settling in areas which are free of diseases and pests. There is high population in highlands of Tanzania which have healthy climate like Arusha. But areas with high incidence of disease and pests infestation like mosquitoes that causes malaria, tsetse flies discourage population settlement.

### **8. Social – cultural aspects**

Some tribes have a tradition of going to live in areas which have been left by their ancestors. Traditional beliefs like superstitions can make people avoid living in certain areas due to fear of risking their life.

### **9. Political factors**

Area with political stability and peace attract population but where there is political instability does not attract population. People avoid settled in area that has political conflict like in Sudan and Somalia.

### **10. Transport and communication**

Areas which are served with transport and communication attract high population since they can transport their goods to the markets areas. Also area where social services are ready available like in towns, unlike the rural areas where social services are poorly available.

## **POPULATION CHANGE**

It is the growth or decline in population i.e Increase or decrease population can change by positive growth and negative growth.

The main factor for population change;

1. Fertility rate.

2. Mortality rate.
3. Migration.

## **FACTORS FOR POPULATION CHANGE**

### **1. FERTILITY/BIRTHRATE**

It is also known as fertility rate. Fertility refers to the ability to conceive and produce. It is measured by counting the number of people (live births in a population).

Fertility rate is influenced by factors like;

- Level of education.
- Urbanization.
- Birth control measures.
- Cultural belief.
- Prestige.
- Early marriage.
- Source of labour.
- Preference of sex.

### **2. MORTALITY/DEATH RATE**

Is also called mortality. It refers to the number of deaths within a given population.

Death rate can be categorized into;

(a) Infant mortality rate

The number of death from 0-2 years.

(b) Child mortality rate

Number of death of children aged between 1-5 years per 1000 live birth.

(c) Adult mortality rate

Number of adults dying per 1000 of the total population.

Hence;

- Large scale mortality may be caused by;

- Severe hunger/famine.
- Diseases.
- Natural disasters.
- Wars.
- Accidents.

### 3. **MIGRATION**

Is the movement of people from one place or region to another which results in changes of residence which may be temporary or permanent.

#### **Immigration**

People come into a new area and are called immigrants.

#### **Emigration**

People leave their native land for other lands and these people are called emigrants

#### **TYPES OF MIGRATION**

Types of migration, there are two types namely;

- i. Internal migration.
- ii. External (International) migration.

And these types of migration can be permanent, temporary, voluntary and involuntary.

#### **(i) INTERNAL MIGRATION**

People move within a country, it can be permanent, temporary, voluntary or forced (involuntary).

#### **WHY INTERNAL MIGRATION**

- Search for jobs.
- Settlement.

- Search for fertile soils.
- Trade.
- Education.

## FORMS OF INTERNAL MIGRATION

### (a) Rural to Urban Migration

People move from rural to urban or towns search for jobs, better social services, education.

### (b) Rural to Rural Migration

People move from rural to rural e.g Nomadic pastoralists.

### (c) Urban to Rural Migration

From towns to villages for investing, job purpose, setting up industries and other projects.

### (d) Urban to Urban Migration

From one town to another for business, better employment, education etc.

## (ii) EXTERNAL MIGRATION

Is also called international, interstate or inter regional migration. Is the movement of people from their own countries to other countries.

## CAUSES OF MIGRATION

There are many reasons why people choose to migrate. The following are some of them;

- i. Pressure on land.

People move to areas with available land for cultivation, settlement etc.

- ii. Availability of employment opportunities.

Move to areas where employment is possible e.g rural to rural, to work in plantations, mines, etc.



iii. Creation of wealth.

People migrate to other countries with aim of making wealth quickly e.g Tanzanians move to South Africa

iv. Religious conflicts.

Which may result to chaos in a country.

v. Political instability.

Like civil wars cause people to migrate e.g Like that of Rwanda and Burundi has resulted to influx of refugees in East African countries.

vi. Natural disasters

Epidemic diseases , floods, earthquakes, drought may cause people to migrate to better areas where it is safe.

1. Forced migration

People forced to move from the area e.g Asians were expelled in Uganda during the leadership or military regime of Iddi Amin, the slave trade of 17<sup>th</sup> and 18<sup>th</sup> century is an example of forced migration (Involuntary).

Other causes are ;

- Government policies.
- Cultural beliefs.
- Health services.

## EFFECTS OF POPULATION CHANGE

Can affect both the individual and the nation at large.

a) Effects on the individual

- The family is overwhelmed hence large family which as the results parents can fail to provide family basic needs.

- Loss of cultural values to some individuals migrate to urban hence immorality.
- Government may fail to provide services due to over-increasing population.

#### b) Effects on the nation

- When population grows in a country lead to increased poverty.
- Overpopulation leads to unemployment, poor housing, poor health facilities, high demand for food.
- It is also a source of labour power when population is high.
- Under population.
- Cause uneven distribution of population.
- Shortage of labour.
- Under utilization of resources.

## MIGRATION

- Has an effect in the place of origin like shortage of labour, hence low production which result to shortage of food and cash crops.
- Destination areas.

-Immigrants increase population hence pressure on the available resources and amenities.

-Demand of houses leads to growth and expansion of slums.

-Well developed social services e.g water supply, schools, health facilities.

-Refugees drain the resources of a host country.

-Spread of diseases.

-Promote supply of labour power.

## POPULATION DATA

Population data means information on population which are presented in numerical form, diagrams charts, graphs and maps.

## SOURCES OF POPULATION DATA

(A) There are two sources of population data namely;-

### PRIMARY SOURCES

Are the first hand data or data collected directly from the field. These data may be obtained through;

#### (i) Census

Is the official counting of the country's population. E.g In Tanzania, it is normally done in every 10 years.

### TYPES OF CENSUS

#### According to approach;-

- De jure

Is the ones which are counted according to their usual place or residence where only permanent members of household are counted.

- De facto

People are counted wherever they are found on the day of enumeration.

#### According to time interval

- **Quinquennial census**

Is carried out after every 5 years.

- **Decennial census**

Is carried out after 10 years.

#### (ii) Vital registration

Is a way of collecting statistical information about population where by the occurrence of events is recorded as data for further use.

The events include birth, death, marriage, divorce, migration.

### (iii) Sample survey

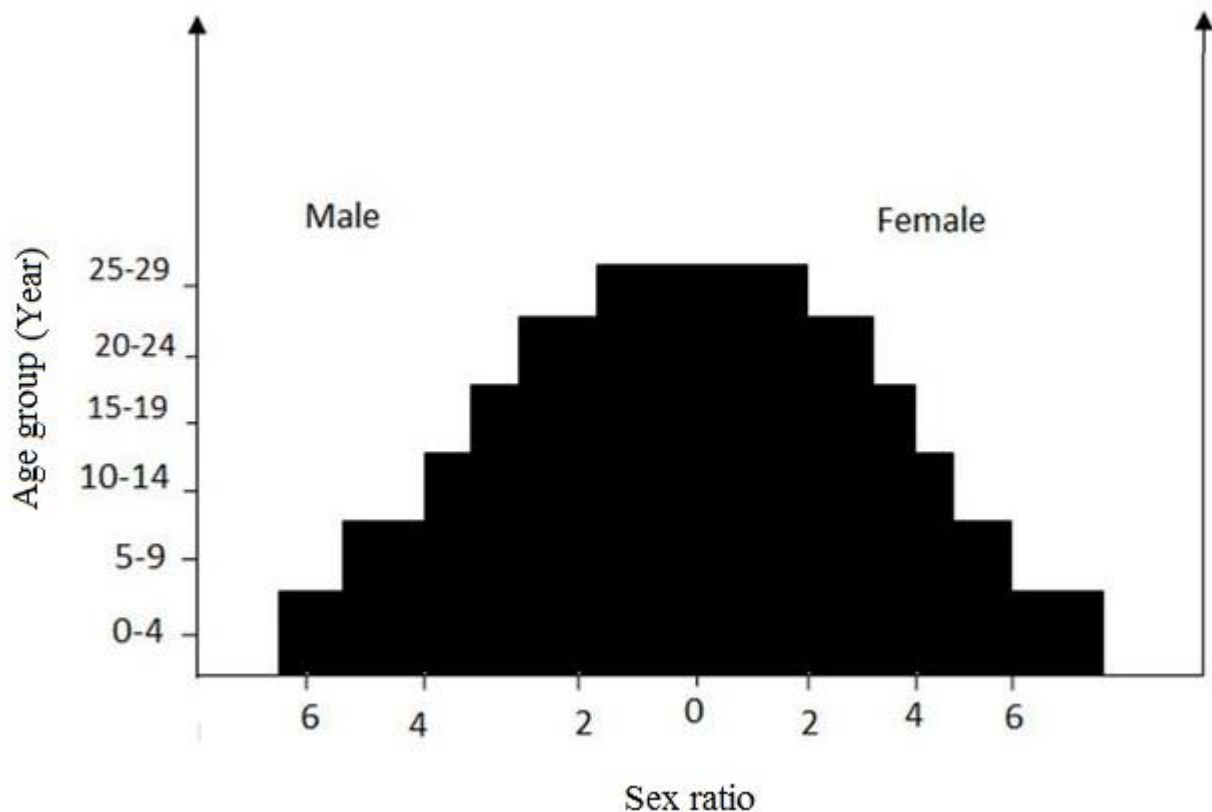
Involves selecting suitable representative size in the community to form population which provide information on death, birth, etc.

### SECONDARY SOURCE

Includes reports on population which is compiled and published. Data is obtain from text books, atlases, magazines, newspapers, journals, periodicals and research papers, internet and electronic media.

### INTERPRETATION OF POPULATION DATA

After data has been collected and analyzed in term of mean, densities, birth, death, sex ratio, etc. The population pyramid must be drawn to represent life expectancy, sex ratio, age group.



### USES OF POPULATION DATA

- (a) Population numbers and density enable the government to plan on how to locate resources e.g roads, schools, hospital, police posts.
- (b) Organizations use the data from census for private business e.g where to locate factories, shopping centre or malls or banks.
- (c) Data on birth and death rates are helpful in planning medical services and health education especially where the death rates are very high so as to be controlled by providing health education.
- (d) Data on migration enable the government to plan on how to curb influx of people into urban areas from the rural regions.
- (e) By knowing the number of dependants enable the government to plan for schools, medical and other social amenities for children below 15 years and for elders above 65 years.
- (f) Likewise by knowing the number of working age group would enable planning for creation of jobs.

## POPULATION PROBLEMS

Are normally caused by population pressure by regarding the resources in which they are utilized and the population size overpopulated or under populated. When the number of people is in balance with the available resources is called **Optimum population**.

Hence, many population problems are associated with population growth.

Population Problems are following;

- (a) Pressure on the scarce resources due to over utilization and exhaustion of non renewable resources.
- (b) Increase of environmental pollution and complicated conservation and waste management.
- (c) Increase in the number of beggars especially in urban centres.
- (d) Increase in the rate of unemployment which in turn cause increasing number of crime, prostitution, etc.

(e) Population increase leads to inadequacy of social amenities and services such as medical care and education.

## POSSIBLE SOLUTIONS

- Efforts should be made to improve rural areas by providing basic socio-economic services and amenities.
- Efforts should be made to improve the equipment of farming implements to enable people to remain in their settlement within rural set up.
- There is a need to improve transport and other infrastructures in the rural areas to enable farmers to transport their products to the market.
- Government should create job opportunities in rural and urban areas through establishment of industries, providing loans to people and education about entrepreneurship.
- Provision of education on family planning in order to curb birth rate and death rate.

## POPULATION POLICY

Refers to the statement or set of statement in a form of laws or regulation rules enacted to attain some demographical goals. It aimed at putting more action and effort on favouring people to attain better life for the people.

## POPULATION POLICY IN TANZANIA

- The population programme of 1970's focused on villagization aimed at free social services such as health, education and free supply of freshwater.
- Literacy programme for Universal Primary Education (UPE) which was given free.

## Impacts of population policies to the country

-The national population policy (NPP) of 1992 in Tanzania was improved so as to resettle the population in Tanzania. Villages become more or less nucleated or near nucleated this gave the government a version of serving people with education e.g Primary education, health services (Dispensaries and health centres).

-Provision of better services (education, safe water and health services) expanded and reached a greater number of people introduced.

MCH-Maternal and Child Health with paid leave of 84 days.

However the policies brought negative impacts to other Tanzanians like;-

-Loss of properties like farms, permanent crops, etc.especial during villagization.

## **TANZANIA POPULATION POLICY ON FAMILY PLANNING AND POPULATION POLICIES IN OTHER COUNTRIES**

The adopted NPP of 1992 shows some achievements as summarized bellow;

- (a) Interrelationship between population, resources and environmental development.
- (b) The prevalence of methods and use of contraceptives.
- (c) Introduction and expansion of population studies in various institutions.

## **NIGERIA POPULATION POLICY AND ITS STRATEGIES FOR FAMILY PLANNING**

Launched its first population policy in 1998 aimed at improving life quality and standard of living of the Nigerians.

### **Areas of policy**

- (a) Reduction of fertility rate.
- (b) Marriage age of 18 years for women and 24 years for men.
- (c) Restriction of pregnancies from 18 to 35 years.
- (d) Extending coverage of family planning services.



## SETTLEMENTS

Is the place where people live together and engage in various social, economic, and political activities.

Example: industrial activities, Agricultural activities, educational activities.

### TYPES AND CHARACTERISTICS OF SETTLEMENT

The classification of settlement depends or bases on functions and number of people. According to the economic base theory which were founded on the idea that settlements (towns, cities or regions) perform two broad categories of economic activities, basic and non basic.

Basic is an economic activity or function that either produces goods or market a service outside the settlement where it is located or within the settlement hence lead into growth of settlement and economic growth as a result Urban settlement is generated or found.

Non basic is an economic activity or function that produces goods or markets services within the settlement in which it is located and therefore makes little contribution to settlement as a result Rural settlement is generated.

There are two major types of settlements namely Rural and Urban Settlements.

#### 1. RURAL SETTLEMENT

The basic unit of rural settlements is a number of people and functions. In rural areas the main function or activity is agriculture. The cultivators most often live in scattered family settlement. Nature of settlement are isolated, hamlet, village and small market town.

#### 2. URBAN SETTLEMENT

The basic unit of urban settlement is the number of people and economic activities or functions. This type of settlement is mostly found in

large towns and cities and is characterized with continuous buildings and different economic activities. (Trade, commerce, social and industrial).

Generally urban settlement have high population density where rural settlement have low population densities

## CHARACTERISTICS OF SETTLEMENT

1. **It must have social services like**
  - Water supply.
  - Transport and communication.
  - Education.
  - Electricity power supply.
  - Health services.
2. **It must have building**

### 3. It must have different land up

## CATEGORIES OF SETTLEMENT/SETTLEMENT PATTERNS

Categories of settlements depends on the patterns of structures in relation to the population density. Settlement pattern refers to the arrangement or layout of houses in a given area. There are three categories of settlement patterns namely **Scattered or dispersed settlements, nucleated or clustered** and **linear settlements**

**The Scattered or dispersed type of settlements;** Its the arrangement of houses are randomly spread out over an area. Commonly are found to the countryside where land is available. Most of the activities performed by them include cultivation, animal keeping, honey extraction, etc.

**Nucleated settlement pattern** is also referred to as **Clustered settlement**. Its arrangement of houses are concentrated in a group in a relatively small area. The population of dwellers is high, normally found in urban centres such as large towns and cities.

**Linear settlement** is the one in which houses are developed or built along the specific features such as rivers, railway or road. The lines or arrangement may be straight or curved depending on the nature of the feature along which house are built.

### **FUNCTIONS OF SETTLEMENT**

All settlement have certain activities/useful function to justify their existence, such function are;

#### **i) Agriculture collective center**

Where farmers produce different agricultural crops and animals are marked as agriculture collective centers.

#### **ii) Communication center**

Some of settlement functions as communication centers and they perform various communication activities.

#### **iii) Residential function**

They are place where people live and share different values and culture activities.

#### **iv) Administrative center**

These are center from which the surrounding areas are administered some of these center can be district or regional center and local administration.

#### **v) Commercial and market center**

These are place where business takes place. These centers are composed of shops, markets and means of transport and communication like roads and telephones facilities.

#### **vi) Mining center**

They are settlements which have ground infertile mainly as a result of mining activities. These settlements are characterized by having mineral resources Example: Geita, Mwadui, Magadi and etc.

#### **vii) Industrial settlement/Manufacturing centre**

These kind of settlement are mainly formed in town areas which grow rapidly with the establishment of industries and they normally have a certain advantage to the people living around as they provide employment and goods.

**viii) Fishing centers**  
The river sites like ports and ocean ports are important for fishing activities.

**ix) Social function settlement**  
They provide the health and educational facilities such as hospital, and clinic likewise the area can be places of entertainment and recreational center.

**x) Royal center**  
These are traditional residence of monarchies, kings, queens, sultans, and their consorts.

**xi) Tourist centers**  
These centers are mainly characterized by resort and around them many hotels which enter mainly of holiday.

## FACTORS FOR SETTLEMENT GROWTH

Factors that influence growth of settlements can be categorized into two, namely Physical factors and Human factors.

### PHYSICAL FACTORS

Physical factors include climate, soil, topography, drainage, natural resources, vegetation, availability of land, and pests and diseases.

FACTORS	SPARSELY POPULATED AREAS	DENSELY POPULATED AREAS
(a) CLIMATE	<p>-Areas receive very low annual rainfall and long seasonal drought or unreliable rainfall.</p> <p>-Areas suffering high humidity, very cold have low population density due to the harsh climatic conditions.</p>	<p>-Areas where the rainfall is reliable and evenly distributed throughout the year with no temperature extremes, have high population density due to the good climatic conditions e.g Mbeya, Kilimanjaro, Mwanza, etc</p>

## (b) SOIL

-Areas with frozen soil, thin soil of mountaineous, leached soil and areas experiencing severe soil erosion, discourage people to live there because soil doesn't support agriculture in general.

-Deep humus and deposited silt influence settlement because soil support agriculture. Good example is Morogoro, on the foot of Mount Kilimanjaro and around Lake Victoria.

## (c) WATER SUPPLIES

-Areas with lack of permanent clean and fresh water, lack of money and technology to build reservoir, discourage people to live there hence the area experiences low population densities.

-Population is more likely to increase with a reliable water supply. Mostly around the coast, lakes and rivers.

## (d) VEGETATION

-Areas with density forest like in Amazon, Coniferous Forest of Northern Eurasia and Northern Canada experience low population density.

-Areas with scattered trees and grassland tend to have higher population densities than areas with dense forest or desert.

## (e) PESTS AND DISEASES

-Areas infected with pests and diseases such as mosquitoes, tsetse fly, *Salmonella typhi*, experience low population densities because pests and diseases discourage people to settle there.

-Areas free from pests and diseases are more populated because it attracts settlement.

## (f) TOPOGRAPHY

-High land areas like mountaineous have a tendency of experiencing high

-Areas with gentle slope and flat areas that experience moderate temperature and

## (g) RESOURCES

temperature and pressure which is not favourable for the human survival.

rainfall attract settlement.

-More over high land areas experiencing volcanic activities tend to discourage settlement.

-Areas with no natural resources such as minerals, energy supply, fishing centres, etc tend to discourage settlement because the scarce resource around the given area does not favour human survival.

-Areas with natural resources such as minerals, energy supply, fishing centres, etc tend to encourage settlement because the available resource around the given area favour human survival.

**HUMAN FACTORS;** This includes political and economic factors

## (h) POLITICAL FACTORS

-Areas experiencing frequently civil wars, political disorders have a negative impact on settlement growth because people does not want to live in areas with insecurity.

-Areas experiencing free from civil wars, political disorder and high level of civil rights attracts many people to live in that area.

## (i) ECONOMIC FACTORS

-Lack of centres of economic development like trading centre, industrial centre, mining centre, etc

-The vice versa is true. Availability of centres of economic development like trading centres, industrial centres,



mining centre, fertile soil, etc.

All these attract people to live there.

### **PROBLEMS FACING HUMAN SETTLEMENT**

1. Shortage of land/lack of space.
2. Inadequate social services e.g. water, electricity etc.
3. Risk and disaster occurrence e.g. floods, earth equate.
4. Employment crisis due to the increase of number of people.
5. Poor housing especially in rural areas.
6. Presence of social disorder e.g. crimes, robbery etc.
7. Environment problem e.g. Pollution, erosion.
8. Poor transport and communication.
9. Rural urban migration due to shortage of employment.
10. Spreads of disease e.g. Cholera, Aid etc. This is due to shortage of water.

### **URBANIZATION**

Is the process whereby increasing portion of the total population in a country settlers in town.

### **CAUSES OF URBANIZATION**

- i) Availability of employment e.g. Trade and in distort.
- ii) Availability of social service.
- iii) Shortage of employment opportunities in rural areas.
- iv) Over population in rural areas.
- v) Low level of modern contraceptive user limited education.
- vi) Natural increase in birth and death rate in Urban centres.

### **PROBLEMS ASSOCIATED WITH URBAN GROWTH (URBANIZATION)**

- i) Rise of transport problem e.g. Traffic congestion.
- ii) Presence of unplanned houses.
- iii) Lack of enough water supply leading to serious disease.
- iv) Shortage of social services e.g. School, health centers etc.



- v) Overcrowding/over population leading to the crimes such as prostitution, robber and theft.
- vi) Unemployment.
- vii) Rural urban migration leading to scarcity of labour in rural area.
- viii) Environmental deterioration.

### **WAYS OF OVERCOMING PROBLEMS ASSOCIATED WITH URBAN GROWTH**

- i) Emphasizing seriously in family planning program.
- ii) Improvement of rural areas e.g. Employment opportunities, improve social services.
- iii) To educated people the danger caused by rapid population growth.
- iv) Provision of adequate social service on rural and urban area.
- v) Improvement of the living standard of the people.
- vi) Maintenance of the cleanness of the environment.
- vii) Population retribution.
- viii) Enforce laws to restore unpleasant settlement.

### **MERITS/ADVANTAGES OF URBANIZATION**

- i) They are center for changes e.g. Modernization and fashion.
- ii) They are centers for commerce.
- iii) They attract greatly tourist from different parts of the world.
- iv) They are importing and exporting centers.
- v) They are center of manufacturing industries.
- vi) Most of urban center are administrative areas.
- vii) There is good provision of social services.
- viii) They are center for cultural change.

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## **ENVIRONMENTAL ISSUES AND MANAGEMENT**

## THE MEANING AND IMPORTANCE OF ENVIRONMENT

Environment refers to all external conditions surrounding an organism and which have influence over its behaviour and activities.

### IMPORTANCE OF ENVIRONMENT

- i. To support the life of living organisms. Environment contains all resources which sustain life of living organisms for example water, soil, gases and minerals.
- ii. Some of landscapes, water bodies and Flora and Fauna are pleasing to the eyes hence accelerate to the development of tourism activities.
- iii. Sustain economic development, the environment contain variety of natural resources includes forest, minerals, water, fish and air which can be exploited by people for various human need.

### ENVIRONMENTAL PROBLEMS

Are hazard, disasters or calamities that result into destruction of environment.

#### Examples of environmental problems

- i. Environmental pollution.
- ii. Loss of biodiversity.
- iii. Soil erosion and land degradation.
- iv. Desertification.
- v. Flooding.
- vi. Acid rain.
- vi. Harmful radiation.
- viii. Drought.

## 1. ENVIRONMENTAL POLLUTION

Is the introduction or addition of any substance or situation that is harmful or not required to the environment i.e. Addition of unwanted material into environment.

### POLLUTANTS

These are substance or materials that caused pollution i.e. Pollutant are material that pollute environment

### FACTORS WHICH LEAD TO THE INCREASE OF ENVIRONMENTAL POLLUTION

1. Rapid pollution growth in the world especially in the thirds world countries this led to the increase rate of production of waste and problem in the managing of the waste.
2. The increase level of poverty in the developing country. This made people uses cheap energy resources that cause air pollution like charcoal and fuel wood. Rapid advance in technology that has led to the development of supplicated industries which emits a lot of gases and waste.
3. Development of transport let work that has net to the development and increase number of cars that emits a lot of fumes smokes.
4. Increase in political conflict that forces people to keep on migrating from place to place end up polluting the environment as well as the use of bombs and nuclear weapons.
5. Advancement of Science and Technology.

### CLASSIFICATION OF ENVIRONMENTAL POLLUTION

**Environment pollution can be classified as follows**

- a) Air pollution.
- b) Soil/land pollution.
- c) Water pollution.
- d) Noise pollution.

#### **a) AIR POLLUTION**

Is an addition of waste material into air, Air is an important resource in sustaining life, without it there would be no life on earth. It is a mixture of gases surrounding the earth. These gases are such as nitrogen, oxygen carbon dioxide and others gases.

## CAUSE OF AIR POLLUTION

### A) Natural causes

#### i) Volcanic eruption

That gives out dust ashes and gaseous like sulphur and carbon dioxide.

#### ii) Wind

That, raise the dust and pollen to a certain levels. Dust has chemical that are toxic and hence harmful to the living organism both flora and fauna.

### B) Human causes

#### iii) Industrial activities and automobile.

This process led to the emission of fumes and gases that pollute the air.

iv) The uses of charcoal, coal, firewood and fuel oil for difference purpose like cooking, lighting, smelting etc. pollute environment.

#### v) Construction activities

The construction of project like road construction, salting up buildings and etc. lead to introduction of dust into the air.

#### vi) Agricultural activities pollute the air through:-

- Digging in the soil that raises dust into air.
- Spraying some chemicals like insecticides.

vii) Mining activities: this in also led to the introduction of dust and some gases into the atmosphere.

## EFFECTS OF AIR POLLUTION

1. Reduction in amount of solar energy because of being blocked by the layer of dusts or fumes hanging in the atmosphere leading to problems in photosynthesis.
2. Transportation in plants in upset since the smoke and dust setting on the leaves block the stomata.
3. Occurrence of global warming as the result of trapping of heat energy from the sun by the green houses gases.
4. Death of plants and animals due to poisonous gases.
5. Destruction of Ozone layer.

6. Reduction of air dirty.
7. Occurrence of acidic rainfall when gases like carbon dioxide and sulphur dioxide mix with rainfall.
8. It can causes bad and irritating smell keeping people in residence area uncomfortable.
9. It can causes dangerous disease like skin cancer.

### MEASURES TOWARDS REDUCING AIR POLLUTION

- i) Planting trees which absorb gases like carbon dioxide and prevent fast movement of air that lead to the introduction of dust into the atmosphere and destruction of Ozone layer.
- ii) Improving the combination system in the engines so that fuel can burn easily.
- iii) Reducing number of small cars or industries.
- iv) Finding out alternative sources of energy instead of depending on the charcoal, fire wood, and fuel wood.
- v) Government policies should be active and strict laws should be passed to ensure proper management of resources.
- vi) Land filling when dumping the wastes so that when they decompose they cannot lead to the emission of gases like methane into the Atmosphere.

### b) SOIL POLLUTION

**Soil pollution** is the process of introducing or adding any unwanted material in the soil.

or

Is the process of adding harmful material into the soil or earth surface which then led to the loss of soil fertility.

### SOURCES OF SOIL POLLUTION

**The main causes of soil pollution can be categorized as follows**

- a) **From the atmosphere:** the pollutants are introduced into the soil through the acidic rain. Acid rain leads to the increase of acidity into the soil which later on destroy the soil structure. Acidic rain is predominant in the industrialized countries like Germany Eastern Canada and USA.
- b) **From the industries:** Some chemical such as radioactive material and

metals can be introduced into the soil and render the soil units for Agriculture.

c) **From the home steeds:** Some waste from homes like bottles, metallic material plastics baby's cans etc. which are dumped into the soil they lead to soil pollution.

d) **From the farms:** There are chemicals which include pesticides like DDT crop remains and fertilizers when all these chemicals get into the soil they lead to the soil pollution. Likewise irrigation activities can lead to soil pollution especially when applied in steep slope areas for a long period of time.

e) **Mining activities:** On the other hands mining activities can lead to the introduction of some rocks. Fragments into the upper layer of the soil which then leads to the soil pollution.

### EFFECTS OF SOIL POLLUTION

i) Death of animals (Biota) since some chemicals affect plant and animal cell for instance organism like bacteria which are mainly used for decomposition of some materials to form Humus.

ii) Decline in Agriculture as a results of poor production caused by poor plant growth. Poor plant growth takes place due to the decline in soil fertility in turn to the occurrence of famine which leads to the poor health and death of people.

iv) It can lead to water logging and flooding because of poor drainage caused by the soil pollution which tends to create an impermeable layer of substance in the soil.

v) Change in soil structure as some of the mineral and nutrients are dissolved by acidic materials.

vi) Migration of people to other areas which have not been affected by soil erosion.

vii) Change in soil color which causes problems in the soil classification and determination of land uses.

### MEASURES TO BE TAKEN IN ORDER TO REDUCE THE RATE OF SOIL POLLUTION

i) Reducing or stopping the uses of chemicals in agriculture like DDT and used killers.



- ii) Increase of manure instead of industrial fertilizers.
  - iii) Recycling of wastes rather than dumping them in the soil.
  - iv) Launching afforestation and reforestation programmes which can reduce soil erosion.
  - v) Control of population so as to reduce the rate of production of wastes that lead to the pollution of soil. Population control can be done through family planning.
  - vi) Educating people on how to undertake their activities properly.
  - vii) Radioactive materials should be dumped so deep in the ground.
- Method like crops rotation use of organic manure and switch the traditional system like shifting cultivation.
- viii) Formulating strict policies that govern on how to dump the wastes. Fines and punishment should be impressed those who dump the waste randomly.

### c) WATER POLLUTION

Water is a very important resource that supports human life. No water hardly life.

Water pollution; Refers to the addition or introduction of unwanted materials or substances in the water which has negative effect of animal and plant.

Polluted water is not fit for human consumption like drinking unit treated first.

### WAYS THROUGH WHICH WATER CAN BE POLLUTED

1. Disposal of untreated sewage into the water bodies. The sewage can be form homestead. Institution like schools, hotels and hospitals.
2. Dumping of wastes from industries into the water bodies these can be either liquid or solid form.
3. Some chemicals and other wastes from the farms ear get into the water bodies through the surface turn off or by deliberate dumping by human being leading to water contamination.
4. Oil spills from the leaking oil containers or pipes. This happened in the Indian Ocean where there are some oil spills from TIPPER in Dar es Salaam in 1990s oil forms a uniform over on the surface of water.
5. Fishing activities, some fishermen tend to use harmful chemicals in fishing which lead to water pollution.
6. Breaking of rocks along the coastal areas or near other sources of water using explosives like dynamite which in turns leads to the dying of marine organisms including fish.



7. Introduction of dust into the water sources mainly due to wind action. This is also another way into which water can be polluted.

## EFFECTS OF WATER POLLUTION

1. Water pollution can lead to the death of plants and animals if the pollutants and poisonous or causes the rise of temperature to extreme levels.
2. Spread of disease like cholera, diarrhea, dysentery and typhoid.
3. Oil spills kills aquatic organisms because it prevents oxygen from penetrating into water, organisms die because of lacking oxygen.
4. Water pollution leads to the emission of soil smells that causes discomfort to the people round the water body. The soil smell is caused by decomposition of the organic matter introduced into the water body.
5. Decline of tourist activities due to the fact that tourist who depends on water bodies for swimming will find difficult due to the fact that water bodies has been polluted (i.e. presence of toxic chemicals)
6. The color of water changes. The water becomes under due to the presence of impurities.
7. Multiplication of sea weeds as a result of the increase in nutritious from the wastes in water.
8. The death of fish leads to the loss of valuable sources of protein to human being.

## MEASURES TOWARDS WATER POLLUTION CONTROL

1. Encourage the proper use of fishing methods rather than using chemicals, since chemicals end up killing different fish, animal and plant species.
2. The oil container and pipes should be kept properly and frequently inspected so as to avoid the problem of soil spiller
3. Population controlling the population number of people will reduce the amount of water produced.
4. Reduction in the uses of fertilizers and chemicals in agriculture organic agriculture should be encouraged in which manure is used
5. The government and the NGO'S should cooperate in educating people on how to use water, conserve it and where possible they should assist financial in trying to prevent the problem of water pollution.

6. Water should be kept in a clean containers or reservoirs and be covered tightly to avoid contamination
7. Breaking of rocks using dynamite should be discouraged and hence alternative ways should be applied.
8. Dumping of wastes on the land should be hand in hand with land filling method since random throwing of it leads to water pollution
9. There should be recycling of wastes rather than throwing them into the water bodies.

#### d) **NOISE POLLUTION**

This refers to the disorganized sound produced from different activities.

#### **CAUSES OF NOISE POLLUTION**

- i. Motor vehicles
- ii. Construction activities
- iii. Bombing activities
- iv. Machines in factories

#### **EFFECTS OF AIR POLLUTION**

- i. Mental and physical illness
- ii. High blood Pressure problem
- iii. Death on organism

#### **(2) LOSS OF BIODIVERSITY**

Loss of biodiversity refers to all processes that lead to loss of variety of species of organisms and plants of the Earth.

#### **CAUSES OF LOSS OF BIODIVERSITY**

- Floods which kill most of the organisms at the place where they occur.
- Pests and diseases tend to kill large number of organisms.
- Landslides and other types of mass wasting.

- Earthquakes kill organisms in large number.
- Wars; When wars breakout the weapons kill not only people but also other organisms.
- Pollution, poison of air, water and soil lead to the death of living organisms.
- Illegal fishing when people use dynamites, bombs and poisoning lead to death of fish and other organisms.
- Poaching.

### **EXTENT OF LOSS OF BIODIVERSITY**

The rate of loss of biodiversity is very great in the world today because of rapid expansion of human activities.

### **EFFECTS OF LOSS OF BIODIVERSITY**

- Change of climate of the world due to death of plants and organisms which can regulate the temperature and rainfall of the area.
- Loss of wild life and hence affect tourism activities.
- Desertification due to death of plants.
- Lack of food, the death of plants and organisms lead to the shortage of food.

## **3. DESERTIFICATION**

This is the process by which the desert fringes are encroaching on agricultural potential land.

**OR:** It is the process in which the fertile land is demanded and degraded to produce or initiate desert.

### **CAUSES OF DESERTIFICATION**

1. Poor use or mismanagement of land leads to desertification. In most cases many people are still ignorant and hence unaware of how to use the land properly due to low level of technology e.g. Over cultivation and overgrazing, as well as poor methods of cultivation especially cultivation facing down the slope.
2. Deforestation: This is the process which is mainly associated with massive destruction of trees and vegetation cover.

In most cases in African countries, natural forest have been destroyed, using trees for different activities such as building, making furniture, building ships and boats, making paper and fuel, charcoal making, etc.

3. Increase of population in some countries has led to clearing of forested areas for cultivation in order to increase food production, settlement purposes, construction of infrastructures.
4. Natural drought cycles have been responsible for the advance of the desert. Drought leads to loss of soil moisture and hence death of different plant species.

## EFFECTS OF DESERTIFICATION

1. It leads to decline in agriculture. This is because of drought condition that causes water problems when there is poor precipitation plant growth is inhabited leading to poor food production.
2. Migration of people from affected area to productive land area.

People and other animals are compelled to move from areas with scarcity of water to areas that experience enough rainfall.

3. The desert advance acceleration of soil erosion which leads to deforestation and loss of arable land. Erosion also affect different structure like building bridge, roads and railway line.
4. Leads to the loss of important species of trees and animals as well as organism like bacteria.
5. Scarcity of water makes travel long distance in search for water for domestic uses like cooking, drinking, washing.
6. The desert also contribute at high rate the destruction of wild life animals and species which in turn leads to decline of tourist industries in the country .This happens when animal die or migrate away or when lakes and rivers dry up.

## MEASURES TO BE TAKEN IN ORDER TO MINIMIZE THE RATE OF DESERTIFICATION

1. Alternative source of energy should be used in the developing countries especially in natural areas where the majority live. Alternative energy includes solar energy, wind power, bio gas and hydroelectric power.

2. The local people should be educated on how to conserve vegetation. Some programs like afforestation and reforestation should be encouraged in order to mitigate them.
3. The government should advice some substantive policies whose objectives are to lay down principles to guide development and control of forests.
4. The government should encourage forest conservation by avoiding deforestation.

#### 4. LAND DEGRADATION (SOIL)

Land degradation refers to the deterioration of the quality of land (soil) through the loss of fertility, soil pollution erosion and mass wasting.

##### **Loss of soil fertility**

This refers to the decline in the soil ability to support plant growth due to the lack of plant nutrients necessary for growth.

#### **CAUSES OF SOIL INFERTILITY**

##### 1. **Leaching process:**

This process contributes to the soil infertility due to the fact that nutrients which are necessary for plants growth and washed away.

2. **Over cultivation:** In a certain area caused by the rapid population growth. The crops grown on the some pieces of land for a long time lead to depletion of nutrients.
3. **Monoculture:**

That involves cultivation of one type of crop without crop of inter cropping. Nutrients are used up without replacement and the soil structure can be destroyed rendering the soil unstable.

##### 4. **Soil erosion**

Which accelerated by poor land management like deforestation feat cultivation on the slopes etc.

##### 5. **Mass wasting**

That lead to the loss of the upper layer of soil and its nutrients

6. Severe loss of soil water through excessive evaporation especially in arid and semi arid.

## **SOIL MANAGEMENT AND CONSERVATION**

### **Soil management**

Refer to the skilful uses or wise utilization and control of quality of soil (land resources)

### **Soil conservation**

Refers to the process of preserving soil for proper and sustainable use.

## **MEASURES OF SOIL MANAGEMENT AND CONSERVATION**

- Educating people so as to promote and encouraged land management skills among them this has to be undertaken by the government collaboration with NGO'S and some individual.
- Training and encouraging farmers to uses proper farming methods like crop rotation counters roughing and inter cropping
- Planting of cover crops forestation and reforestation in order to check soil erosion.
- Reducing or stopping the uses of industrial chemical which tend to accumulate in the soil and causes soil pollution.
- Waste products should be recycled rather than dumping them in the soil.
- Destocking animal members should be reduced or controlled so as to avoid overgrazing that leads to destruction grass.
- Encouraging dry farming that involves mulching in order to reduce loss of water through evaporation
- Land filling with bush wood should be used where the soil has been severely eroded producing gullies.
- Population should be controlled so as to discourage excessive exploitation of resources which in nature leads to land degradation
- Alternative energy resources should be exposed and used effectively to avoid the excessive exploitation of forest and oil which causes hazard to the environment.
- Radioactive materials should be dumped very deeply in the soil to prevent the upper soil layer from being high affected.
- Terracing and contraction of some stone lines should be undertaken so as to control the movement of water and forces it to get into the soil rather than flowing over the land.



## 5. ACIDIC RAIN

It is the rain that contain more acid than normal formed in the air when sulphur dioxide or carbon dioxide combine with hydrogen gas

Sulphur dioxide, carbon dioxide mainly originated from industries and strip mining of coal as well as burning of charcoal.

### EFFECTS OF ACIDIC RAIN

1. It led to the increase of acidity in water bodies hence killing of aquatic animals and plants
2. Reduction of the rate of soil fertility due to the increase amount of acidity into the soil.
3. Increase the rate of leaching process.
4. Destruction of different structure like buildings, bridges, railways as result of the corrosive action of acid on paint and rocks containing calcium.
5. Sulphuric acid lead itching and irritation of eyes in human beings and animal
6. Erosion of limestone rock lead to the formation of features like sink holes dolries and garpikes

### **MEASUREMENTS TO COMBAT THE PROBLEM OF ACIDIC RAINFALL**

- i) Spraying the trees to wash off the acids and adding of lime to the soil lakes and rivers to reduce acidity . The good example is Germany, UK and Scandinavia, countries where this process has been used advice.
- ii) Reduction of emission of sulphur dioxide and nitrogen oxide by using non fossil fuel, coal which contains less sulphur, removing sulphur from coal.
- iii) Introducing new boilers in power station which can burn sulphur dioxide into ash.
- iv) Trapping sulphur dioxide from the waster gases and spraying it with water so that it can form sulphuric acid which can later be neutralized by adding lime.
- v) Using alternative sources of energy which do not pollute the air the country can turn the coal – fired power station into gas fired power.
- vi) Recycle the waste to avoid unnecessary pollution action that lead to the



production of sulphur gas

vii) Strict policies should be formulated to restrict the case of energy that leads to emission of sulphur dioxide.

**NB:**

Environmental problems have affected adversely different species of plant and animal i.e. Loss of biodiversity and Eco system.

**BIODIVERSITY**

This mean that a variety of species of living organisms both plants and animals (flora and Fauna)

**ECOSYSTEM**

Means is the natural system in which plant (Flora) and animal (fauna) interact with each other and the non living environment

**WILD LIFE (FAUNA)**

Wild life (fauna)

These are animals found in the forests. These animals have a great roles or are of great importance

**IMPORTANCE OF WILD LIFE**

1. Wildlife animals are the sources of food such as meat which in turn provides protein in our bodies.
2. Wild animals attract tourism and are sources of foreign
3. They are sources of material valuable to man such as skin and medicine takes
4. Wildlife conservation areas have contributed to increase of employment opportunities.
5. Development of manufacturing industries due to availability of raw materials such as skin etc.

**6. FLOODS**

Refers the period of high river discharge or over flow of water along the coast due to extremely high tides and storm waves.

**CAUSES OF FLOODS**

- i) Flood occur due to the collapse of reservoirs like dam, emergence of spring, melting of ice and breaking of the water pipes
- ii) Also flood can occur due to the heavy rainfall that take place in a particular place and they affect so much the low land area especially where

vegetation how been cleared .

They occur most frequently in the humidly region like equatorial areas due to heavy rank.

## **FACTORS THAT CAN ACCELERATE FLOODING IN LAW LAND AREAS**

1. Shallowness of the soil due to the presence of the impermeable rock layer just near the surface.
2. Earth quakes that place below the sea tends to lead to the formation of large waves – flooding
3. Damming of the river by human being by lava spread out during volcanic eruption.
4. Blocked up drainage system in town and cites can lead to the flooding
5. Shallowness and name lines of the river system can also lead to flooding
6. Cleaning of vegetation accelerate flooding because on a base surface water runs freely to the stream
7. It can also take place where the rives has many bends

## **IMPACTS OF FLOOD**

1. Death of people and animals for example the frequent flood in Bangladesh has claimed the death of many people leading to depopulation.
2. Destruction of farm land they can be destroyed by running water leaching to devastation of crops.
3. Outbreak and spread of disease especially water born disease which then affected the health of people and sometimes death.
4. Floods also lead to the demolition of houses rending people homeless.
5. Silting of dams and other water resources resulting in the problem of water conservation and inadequate water supply.
6. Flood can lead to soil and air pollution
7. Occurrence of the soil erosion and the occurrence of lands.
8. Destruction of infrastructure like railways, roads and bridges.
9. Floods bring problem of industrial location in a particular place,.
10. It leads to migration of people who move as refugees
11. Destruction of various economic sectors like farms and industrial structures this lead to occurrence of poverty in the country.
12. Destruction of transport system hinders the movement of goods and services from one place to another.

## RESPONSE TO THE OCCURRENCE OF FLOOD

1. There should be proper management of the watershed catchment areas through planting trees people should be allowed to settle in the catchment areas
2. Construction of dams across the river channels helps in combating the problem of flood which affects the low land areas.
3. The stream of the rivers should be deeper widened and straightened so as to increase the speed of the river down the slope to the sea.
4. People should be frequent inspection and cleaning of the drainage by flooding.
5. There should be frequent inspection and cleaning of the drainage system.
6. Availability of rescue team which is skilled and actives in rescuing people affected by floods
7. International cooperation should be intensified so as to improve the techniques of combating this environmental problem.

## 7. DROUGHT

Is a state on an area facing prolonged condition of dry without precipitation or a long period of dry weather.

Drought and desertification have something in common in terms of occurrence and affects.

### CAUSES OF DROUGHT

#### i) Wind system dynamics.

Wind system that are dry since have blow across very narrow water mass stretch cause drought as they have not picked enough moisture for rain formation;

Example Harmaton wind of West Africa has contributed to the occurrence of drought condition particularly in the Sahara region.

#### ii) Shifting position of the overhead sun.

As a shifting of over head sun takes place then rainfall regime shift. It shift in the northern hemisphere there occur dryness in the southern hemisphere

iii) Location of some place:

Some place is located in the wind side of the mountains and therefore experience dryness. Good example is Namib desert

iv) Natural fires:

There is the fire caused by natural hazard like lighting of and volcanic eruption.

v) Rain shadow effect produced by high mountain ranges

## **MAN INDUCED CAUSES**

**These are activities carried all by man**

i) Lumbering that leads to deforestation due to excessive cutting of trees

ii) Bad agriculture practices like overgrazing, over cultivation and shifting cultivation.

iii) Establishment of new settlement areas due to the increase in population lead to cutting of trees.

iv) Mining activities and construction of dams can also cause deforestation.

v) Industrial activities and crops have an impact on the occurrence of drought

vi) Low level of technology and poverty there has led to occurrence of drought.

vii) Fire lit

## **IMPACT OF DROUGHT**

i) Drought has led to poor supply of water for domestic uses, agricultural uses and industrial activities.

ii) Disappearance of vegetation and animal species

iii) Poor supply of energy and power to some people who depends on fire wood as the man source of energy

iv) Drying of water bodies due to excessive evaporation

v) It has facilitated desertification process Migration of people from one area to another

vii) Decline of industries especially food processing industries that depend on agricultural production

viii) Women harassment due to the fact that women are forced to move long distance in search for fire wood.

## **MEASURING TO COMBAT THE PROBLEMS OF DROUGHT**

- Embarking an forestation programmers the trees moisture to the atmosphere and hence led to rain formation
- The uses of proper farming method which do not deplete vegetation
- Control of population should be encouraged so as to avoid the excessive exploitation of vegetation
- The water conservation centers should be established like dams so as to promote irrigation streams
- Farmers should be given proper education on how to conserve water resources sustainability to avoid environmental degradation
- Strict policies should be instituted so as to restrict excessive use of trees
- These should be the woof alternative energy sources like solar energy, wind energy, and Geothermal.

## GLOBAL WARMING/GLOBAL CLIMATIC CHANGE

The world climate changes “Refers to all form of climatic inconsistently but because the climate is never static the terms is more properly described as a significant long term abnormal fluctuations in terms of precipitation wind system and all other aspects of the earth’s climate.

For quite long period of time the world has been experiencing global climatic changes including extreme cooling or extreme warming of the atmosphere.

## CAUSES OF CLIMATIC CHANGE

### i. Variation of solar energy

It is estimated that the solar output increase at the rate of  $1\frac{1}{2}\%$  per century. This led to the decrease or drop in temperature.

### ii. Variation in atmospheric Carbon dioxide

The higher the level of atmospheric Carbon dioxide the warmer the global temperature

### iii. Volcanic eruption

It has been accepted for some time that volcanic activities have influenced climate in the past and continues to do so. World

temperatures are lowered after any large single eruption, this is due to the increase in dust particles in the lower atmosphere which will absorb and scatter more of the incoming radiation.

**iv. Changes in oceanic circulation**, this affect the exchange of heat between the oceans and the atmosphere. This can have both long term effects on the world climate and short term effects.

#### **v. Composition of the atmosphere**

Gases in the atmosphere can be increased. At present there is increasing concern at the buildup of Carbon dioxide and other green house gases like CFC's in the atmosphere, which are blamed for the depletion of Ozone in the upper atmosphere hence global warming.

### **GLOBAL WARMING AND GREEN HOUSES PHENOMENA**

#### **Global warming:**

This is the unusual increase in temperature of the earth's atmosphere which is caused by the green houses effect.

#### **Green house effect:**

Refers to the situation in which the atmosphere traps and retains heat energy from the sun in the lower level leading to the rise in temperature.

### **EFFECTS OF GLOBAL WARMING AND GREEN HOUSE**

1. The rise in temperature has led to the melting of ice in various parts of the world e.g. The cap at the peak of Mt Kilimanjaro has decreased in size due to the effect of global warming
2. The melting of ices has led to the increase of water in the sea and hence the sea level rises. As results of those phenomena some of coastal areas are flooded.
3. Global warming has led to the occurrence of strong storms in different parts of the world that kill people and destroy properties.
4. Some cold areas have become warm such that tropical crops are grown.



5. Disappearance of some animals and plant species due to the failures to adopt the abrupt in temperature.
6. Global warming has caused the occurrence of precipitation in other areas which is used to be dry due to the changes in hydrological cycles.
7. Decline of production due to drought and desertification process which then leads to poverty and death of people
8. Spread of disease like skin cancer, malaria and other.

### **MITIGATING MEASURES AGAINST GLOBAL WARMING AND THE GREEN HOUSES EFFECT**

9. Discouraging the uses of burning of material that release harmful green house gases such as CO<sub>2</sub>, CFC's
10. Alternative sources of energy, which are environmentally friendly, should be encouraged e.g. geothermal, power, solar energy, and wind energy.
11. Formation of an international policies and cooperation among different nations in the fight against air pollution.
12. Control of pollution in order to control and discourages excessive uses of fossils and biomass energy.
13. Recycling of wastes should be encouraged rather than burning or dumping on the surface.
14. Modification of the combustion system in the machines in order to attain efficient fuel burning in and out of massive release of green house gases especially carbon dioxide.

### **WASTE MISMANAGEMENT**

Is the poor disposal of wastes on undersigned areas. Examples of wastes are solid (bottles, plastic materials, iron). Liquid (Sewage from latrines, oil). Gaseous emission from motor vehicles and industries.

### **CAUSES OF WASTE MISMANAGEMENT**

- a) Human negligence, that people do not mind about waste management.
- b) Lack of dumping areas especially in towns.



- c) Lack of education to people on environmental conservation.
- d) Poor environmental policy e.g Dar es Salaam city is dirtier than Moshi.

### **EFFECTS OF WASTE MISMANAGEMENT**

- a) Eruption of diseases e.g dysentery, cholera
- b) Loss of aquatic organisms when liquid wastes are dumped in the sources of water may lead to death of organisms living in water.
- c) Air pollutions – If wastes will not be treated properly e.g dumped materials from domestic and industrial areas.
- d) Shortage of clean water because the sources of water may be contaminated by the wastes.
- e) Low productivity especially on land. If there will be acceleration of land erosion, oil spillage on land.

### **URBAN GROWTH ON ENVIRONMENT**

#### **Causes of urban growth**

- a) Trade; both small scale and large scale commercial activities e.g Town vendors, Bakhresa company etc
- b) Employment – many administrative centres and industries encourage urban growth because people move from rural to urban seeking for job.
- c) Improved social services e.g health centres education, roads.

### **EFFECTS OF URBAN GROWTH TO THE ENVIRONMENT**

- i) Pollution e.g noise, land, water and air pollution resulting by overcrowding.
- ii) Deforestation- Caused by clearing of forests for settlement, etc.
- iii) Global warming caused by smoke from industries, motor vehicles, etc.
- iv) Loss of Biodiversity due to clearance of the forest.

## THE IMPACT OF POVERTY ON THE ENVIRONMENT

Poverty is the state of being poor. Poverty is characterized by the following features.

- Low income.
- Poor standard of living.
- Short life expectancy
- Poor infrastructure.
- Unemployment.
- Environmental degradation.
- Diseases

The impacts of poverty in the environment are

- Soil erosion due to poor farming methods and overgrazing.
- Desertification due to cutting down of trees to obtain firewood and charcoal for domestic use because people can not afford the use of fuel and electricity.
- Loss of biodiversity due to clearance of forest and bush firing.

## ENVIRONMENTAL CONSERVATION

Environmental conservation refers to the careful use and protection of the environment from over exploitation and destruction.

Ways of Environmental Conservation

### **a) Setting up of institutions and organizations for coordinating matters related to environment and conservations.**

e.g UNEP-United Nations Environment Programmes

NEMC –National Environment Management and Conservation.

### **b) Education**

Both formal and informal education must be subjected to people, through mass media, schools and Universities aiming at demolishing the forces of environmental degradation.

### **c) Research**

Should be carried out locally and globally for management and conservation of the environment.

**d) Recycling factories**

Garbage make pollution on land and water hence once materials are recycled reduce environmental degradation e.g In Dar es Salaam plastic water bottles are collected and sold for recycling.

**e) Land Rehabilitation**

Especially after quarrying and mining activities have taken place, land should be rehabilitated.

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