



SOCIAL STUDIES

STUDENT TEXTBOOK



Grade **8**



Federal Democratic Republic of Ethiopia
Ministry of Education



Sidaama National Regional State
Education Bureau

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SOCIAL STUDIES

Student Textbook

Grade 8

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Hawassa, Sidaama
Ethiopia

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UNIT ONE

1. PHYSICAL CHARACTERISTICS OF THE EARTH

Introduction

In grade seven (unit one) you have learned about the physical characteristics of the earth, origin of the earth and the solar systems, external components of the earth (lithosphere, biosphere, hydrosphere) and internal structure and sources of information about the internal parts of the earth (crust, mantle, core) of the earth.

In this unit, you will learn about

Physical Characteristics of the Earth. The major topics to be covered include, the Forces shaping the earth's surface (internal forces, external forces and resultant land forms), Composition and structures of the Earth's atmosphere, definition of weather and climate, Elements and controls of weather and climate, diurnal and seasonal variation of weather.

Unit Outcomes



After completing this unit, students will be able to:

-  *Differentiate between internal and external forces shaping the surface of the earth;*
-  *Identify the types of land forms formed by the earth's internal and external forces;*
-  *Describe the different thermal and compositional layers of the Earth's atmosphere;*
-  *Distinguish between weather and climate;*
-  *Identify elements and controls of weather and climate.*

1.1. Forces Shaping the Earth's Surface

Competencies

After completing this lesson, students will be able to:

-  *describe internal and external forces shaping the surface of the earth;*
-  *identify land forms created by external and internal forces; and*
-  *explain how the earth's internal and external force affects human life.*



KEY TERMS



Folding



Rift valley



Faulting



Earthquake



Volcanism



Erosion

1.1.1. Internal or tectonic forces and resultant land forms

What is internal force?

Internal forces are sometimes called endogenous forces. They drive energy from the interior part of the earth. These forces create irregularities on the surface of the earth. Internal forces form the ups and downs on the earth's crust by breaking and bending it. These ups and downs are the results of folding, faulting, earthquake and volcanism.

A. Folding

What is folding? How it is formed?

Folding is one of the internal processes which occurs when two forces act towards each other from opposite sides. Due to this force, rock layers are bent into folds. The process of folding is the result of compressional force. In principle folding include the entire bend that ranges from microscopic wrinkling to domes and basin.



Figure 1.1 Folded Structure

A fold arching upward is called an anticline and one arching downward is a syncline. The sides of a fold are called the limbs.

Results of folding are the formation of different Fold Mountains in the world. Fold mountains are usually formed from sedimentary rocks and are usually found along the edges of continents. This is because the thickest deposits of sedimentary rock generally accumulated along the edges of continents. The resultant landforms can be formed as a result of folding are fold mountains. There are two types of Fold Mountains: young fold mountains (10 to 25 million years of age, example, the Atlas, Rockies and the Himalayas) and old fold mountains (over 200 million years of age, example, the Cape Range, the Urals in Russia and the Appalachians. These processes of mountain building are called **Orogeny**.

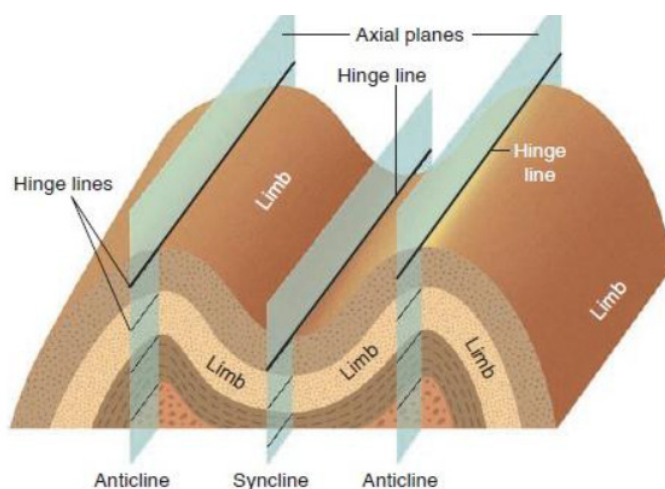


Figure 1.2 Sycline and Anticline

B. Faulting

What is faulting? What are the causes for faulting?

Movements in the crust of the earth sometimes make cracks. These cracks are called faults. Faulting can be caused by either lateral or vertical forces, which can be either tension or compression. Tension causes a normal fault, and compression causes a reverse fault.

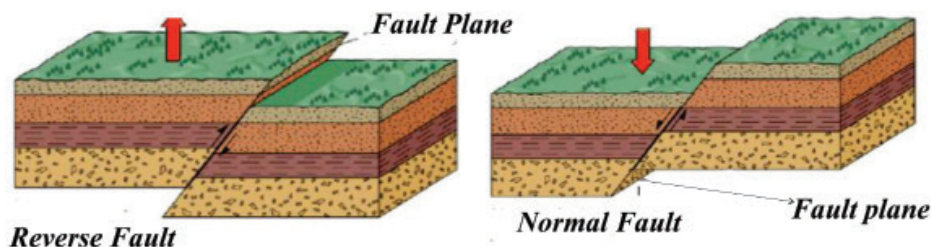


Figure1.3 Reverse Fault | Figure1.4. Normal reverse fault

There are two major landforms that can be formed as a result of faulting they are

-  *Rift valley*
-  *Block mountains*

I. Rift valleys

What is rift valley? How rift valleys are formed?

A rift valley is a linear shaped lowland area between highlands or mountain ranges created by geologic rifts or faults. The largest rift valley in the world is the East African Rift Valley. It extends from Syria to Mozambique, passing through the Red Sea, Eritrea, Ethiopia, Kenya, Tanzania, DR Congo, Rwanda and Burundi. The total length of the East African Rift Valley is about 7,200 km, of which 5,600 km is in Africa. The Ethiopian Rift Valley is a part of the East African Rift Valley. It extends from northeast to south west. Features found in the Rift Valley include active volcanoes, lakes, hot springs and fumaroles.



Figure 1.5 Rift valleys of Africa

II. Block (Horst) Mountains

How Block Mountains are formed?

Block Mountains are formed when land between two parallel faults is pushed upward due to pressure from inside the earth. If there are two parallel faults, the crustal block between them may either rise to produce a Horst (block) mountain, or fall, to produce a rift valley. Examples: The Afar block mountain in Ethiopia and the Ruwenzori in West Africa.

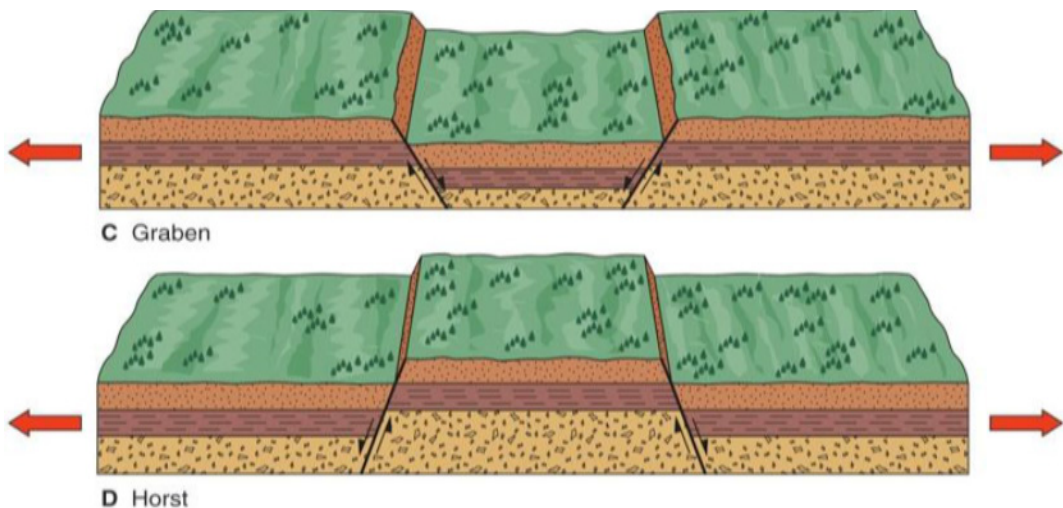


Figure 1.6 Formation of block mountain (Horst)

C. Volcanism

What is Volcanism? Discuss the major volcanic areas in Ethiopia

Volcanism is the process by which magma, gases, water vapor, ashes and other solid materials are forced out to the surface. It is another internal force which changes the surface of the earth, which is caused by internal movements within the earth. Inside the earth the temperature is very hot. This high temperature changes rocks into molten magma. When this magma reaches the surface, volcanic activity takes place. The out pouring of this liquid (molten) rock onto the surface is called lava. Magma is the molten rock when it is underground. When the magma emerges on to the surface, it cools and hardens.

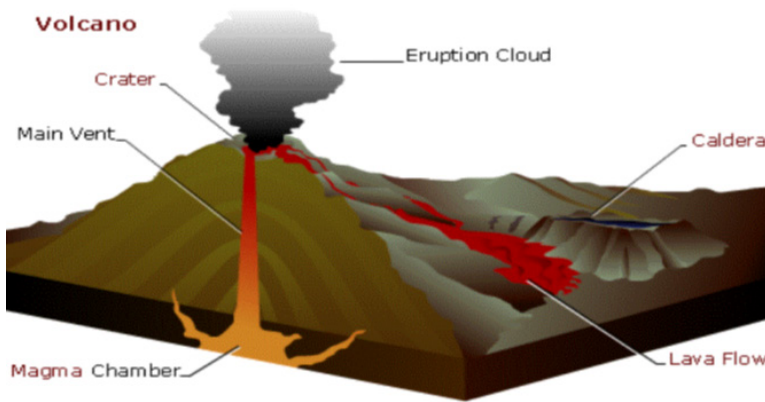


Figure 1.7 a) Volcanism

Magma reaches the earth's surface through two kinds of holes. They are vents and fissures. Magma may force its way violently through a small hole called a vent. If lava emerges via a vent, it builds up into a volcano (cone-shaped mound), and if it emerges via a fissure, it builds up to form a lava plateau or lava flow. Magma may pour quietly through long cracks (fissures) onto the earth's surface.

If the magma flows to the surface through a vent, a crater is formed. Sometimes a volcano erupts very forcefully. When this happens, the top part of the volcano is blown away. This forms a large crater called a caldera. Water collects in the crater or in the caldera and forms a lake. We call this a Crater Lake or caldera lake. In Ethiopia there are many crater lakes such as Zuqula, Wonchi and Dendi.

If an eruption begins again in a caldera, a new small cone-shaped volcano is formed inside the caldera. These are known as caldera cones. In volcanic areas, where water sinks deep enough to be heated by the magma the superheated water carrying the dissolved minerals may flow quietly out of the earth's crust to form a hot spring. When a hot water and steams are ejected through a vent, it is called a geyser. Part of the magma may not reach the earth's surface, and when this magma cools, solidifies and forms rocks inside the crust, features such as batholiths, laccoliths, sills and dikes, are formed.

- ① **Batholiths:** - are a very large mass of magma which accumulates in the crust. It is the largest structure.
- ① **Laccoliths:** - are mushroom shaped bodies of intrusive igneous rock. Smaller than batholiths.
- ① **A dike:** - is formed when magma solidifies in a vertical or near-vertical crack.
- ① **A sill:** - is formed when magma solidifies horizontally or nearly horizontally along a bedding plane.

Major landforms formed by volcanism

If the magma comes out through vent, a crater is formed whereas when it erupts through fissures caldera can be formed. Caldera is larger than crater. When both are filled with water crater or caldera lakes are formed. When volcano erupted violently or explosively through a small hole volcanic mountain is formed.

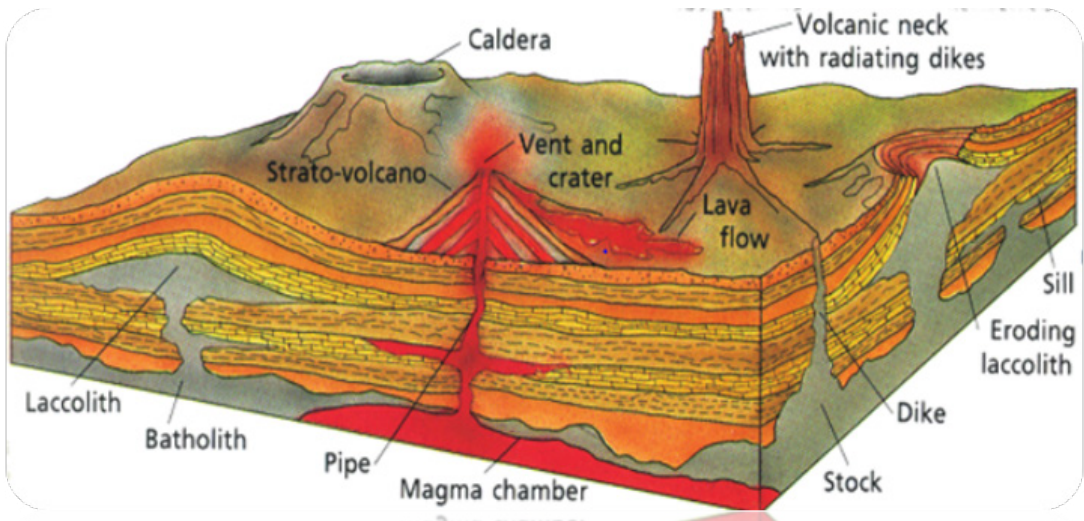


Figure 1.8 Volcanic landforms

Table 1.1: Type of Volcanoes

Types	Features	Example
Active volcano	Erupts from time to time	Ertali, FentaleDubbi and Damiali
Dormant volcano	Has not erupted for a long time but may erupt again in the future	Tatali and Dabbahu
Extinct volcano	Has not erupted within historic time	Mt. Zuqala, Ras-Dashen and Batu

Importance of volcanic eruptions:

- ✓ Provide fertile soil
- ✓ Creation of new land
- ✓ Provide hot springs (with medical value)
- ✓ Generate geothermal energy and
- ✓ Help in the formation and concentration of minerals
- ✓ It can also provides information about internal forces of the earth.

D. Earthquake

What is an earthquake? How earthquakes do occurs?

An Earthquake is shaking of the ground caused by the sudden (unpredictable) movements in the earth's crust. They are caused by internal movements deep down inside the earth. Earthquakes are frequently associated with faults. They take place along fault lines where the earth's crust is weak. When an earthquake occurs, vibrations from the Centre spread out in the form of waves in all directions.

The point at which an earthquake originates is called the ***focus***. The point on the earth's surface immediately above the focus is called the ***epicenter***.

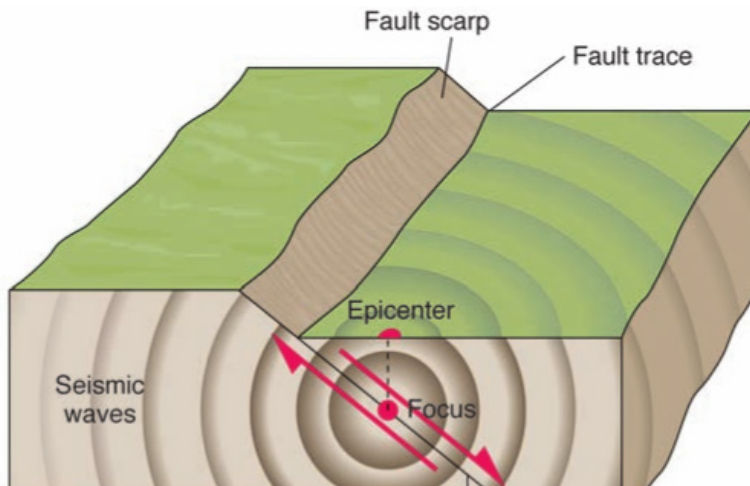


Figure 1.9 An earthquake's waves, focus and epicenter

The intensity of an earthquake is measured by an instrument called a seismometer, commonly known as a seismograph. It records the vibrations produced by an earthquake. The scale which gives the magnitude is called the Richter scale. Scientists assign a magnitude rating to earthquakes based on the strength and duration of their seismic waves. A quake measuring to 5 would be considered minor or light; 5 to 7 is moderate to strong; 7 to 8 is major and 8 or more is great.

Effects of Earthquakes

Earthquake leads to loss of life and destruction of property, landslides and deep cracks in surface rocks, the rise or lowering of the sea floor, displacement of parts of the earth's crust vertically or laterally and the devastation of cities, fires and diseases.



Figure 1.10 Destruction caused by earthquakes

Earthquakes take place in many parts of the world. However, frequent occurrences are observed along certain belts. 80% of all seismic energy generated around a belt that is found at the east- west border of the Pacific Ocean. This place is called the pacific ring of fire.

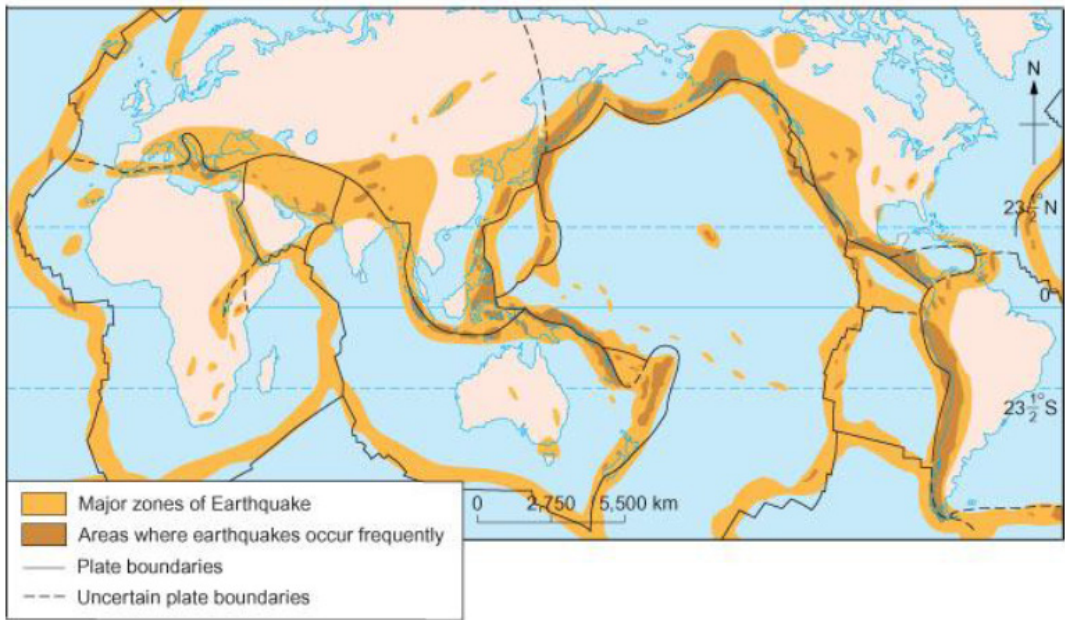


Figure 1.11: Major Zones of Earthquake



Activity 1.1

Being in group discuss on the following questions

1. Discuss the following issues and questions in pairs.

I) Folding	IV) Volcanism
II) Faulting	V) Earthquakes
III) Rift valley	
2. Explain the characteristics of

I) Active Volcano	III) Dormant Volcano.
II) Extinct volcano	

1.1.2. External or gradational forces and resultant land forms.

What are external forces?

External forces are the forces that act upon the earth's surface from outside. They are also known as exogenous processes.

These include weathering, mass movement, erosion, transportation and deposition. These forces are responsible in the formation of different land features on the surface of the earth. These forces level the ups and downs of the earth's surface and this process is called **denudation**. They also raise the level of the land by deposition. Denudation consists of weathering and erosion.

A. Weathering

Weathering is the disintegration or decomposition of rocky materials of the earth's crust. It results in the formation of a covering of rock wastes which sometimes are called regolith. Generally, the term weathering refers to the processes that change the physical and chemical character of rock at or near the surface. Weathering is a relatively long, slow process.

Types of weathering

I. Physical (Mechanical) Weathering

Discuss physical weathering and main agents of physical weathering?

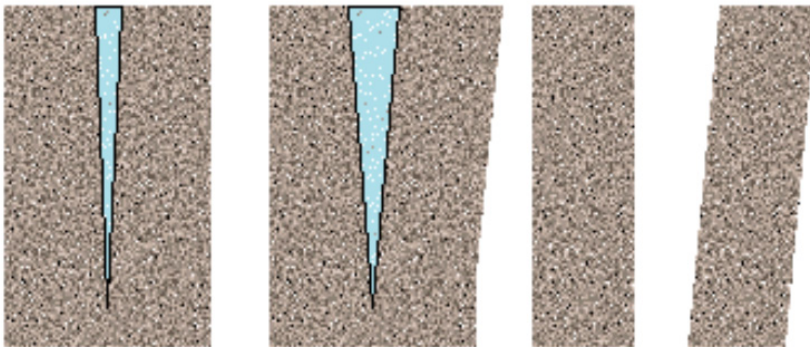
Mechanical weathering is the mechanical fragmentation of rocks which is accomplished by physical forces which broke the rocks into smaller pieces without changing the mineral composition. Its main agents (causes) are temperature changes, frost action and the action of plants and animals.

The effects of temperature changes: The temperature variation between day and night causes rock to expand and to contract. This process causes cracks to develop. In time, the cracked layer peels off and falls to the ground this process is called **exfoliation**.



Figure 1:12 Exfoliation domes

The effects of frost action: Due to frost action, rock breaks up into pieces and these fragments accumulate around the lower slopes of the rock. Frost action is very common in the winter season in the temperate zone and in some high mountains all year round.



Water -filled crack

Freezes to ice

Breaks Rocks

Figure 1.13 the breaking of rocks by the action of frost

The effects of plant and animal action: Plants and animals also cause weathering. For example, seeds may fall in cracks of rocks. If water collects there, it forms suitable conditions for the seeds to germinate and grow. As

plants develop their roots may push the rock apart. Some animals burrow, and this also helps to break up rocks.



Figure 1.14 breaking of rock by a plant

II. Chemical Weathering

Discuss chemical weathering and main agents of Chemical Weathering?

Chemical weathering is the process by which rocks and minerals undergo changes in their composition. Agents of chemical weathering include water, oxygen, carbon dioxide, and acid precipitation. The interaction of these agents with rock can cause some substances to dissolve, and some new minerals to form.

B. Erosion and deposition

Erosion

Define the term erosion? What are the major agents of erosion?

Erosion is the movement of broken rock and soil particles from one place to another by the different agents like running water, stream, wind, and glacier sea waves.

Causes of Soil Erosion

What are the causes of soil erosion?

- ① **Physical causes:** - involve a combination of the following physical factors: steepness of slope, the intensity, duration and seasonality of rainfall, soil type (example, texture) and vegetation cover.
- ① **Human causes:** - have to do with human interference with natural processes, including deforestation, overgrazing and bad farming practices which deplete plant cover, leaving the land exposed and vulnerable to erosion.

A. Erosion by Running Water

Rivers are the most important of all natural agents which help in shaping the earth's surface. The work of running water includes eroding, transporting and depositing eroded material. Running water results three types of erosion. These are;

- ① **Sheet erosion** develops when running water erodes the surface uniformly



Fig 1.15 Erosion by sheet flow

- ① **Rill erosion** develops when running water cuts small channels.



Figure 1. 16 Rill Erosion

- ① **Gully erosion** is formed when a rill are more widened and deepen.



Fig 1.17 Gully erosion

There are three main types of processes that occur in a river. These are erosion, transportation and deposition. These processes depend on the amount of energy of the river and acts on the different courses of the river. Accordingly, different landforms can be formed. The followings are the major landforms that can be formed at three courses of river.

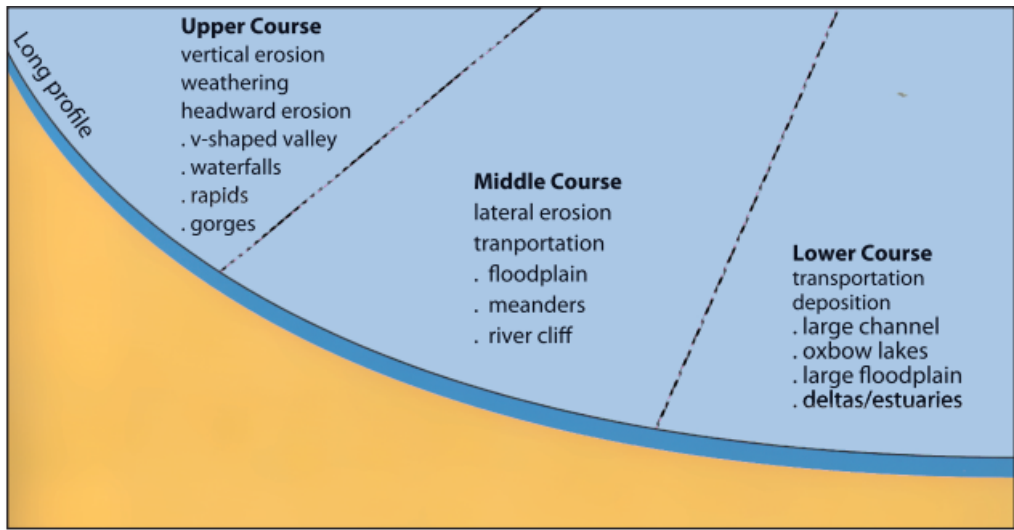


Figure 1.18 three stages of a river

Upper Course: - In this stage the river water is usually small in volume. As the river flows very fast down, steep-slopes, a V-shape valley, waterfalls and deep gorges are formed. The fast flow of the river causes vertical erosion and destruction. The V-shape valley has steep sides and a narrow floor. The fast flowing river cuts down deeply into the land. Example:-Tis Abay water fall.



Figure 1.19 Features of the Upper courses of a river

The Middle Course: - during a river's middle course, the river valley becomes wider and larger. The river may receive waters of many tributaries, which increase the volume of water. Wide-floored valleys with gentle sloping sides

are the main features of the middle course of the river. Instead of taking the most direct course possible, the river begins to meander. Meanders are pronounced curves in the course of a river.

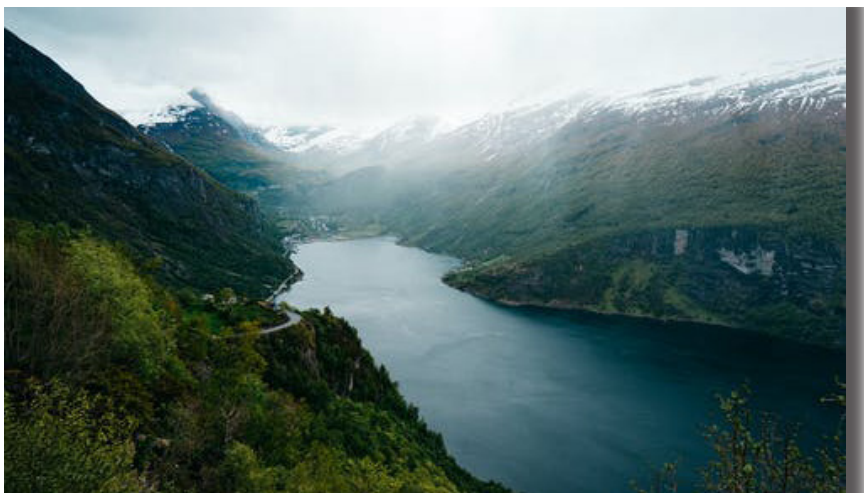


Figure 1.20 Features of the Middle courses of a river

The Lower Course:-The river flows fast, meandering over wide plains, and makes widespread deposition. The load is so large that deposition occurs. Flat flood plains, big meanders, levees, ox-bow lakes and deltas are the main features of this course.



Figure 1.21 Features of the lower courses of a river



Figure 1.22 Rivers profile

Wind Erosion: - is the most common form of erosion in dry and treeless areas where the soil is exposed. The dry and unprotected topsoil from fields is blown away. Wind forces are capable of removing all of an area's topsoil and transporting it several thousand kilometers away. Wind erosion is common in desert and semi-desert area where there is no vegetation cover.

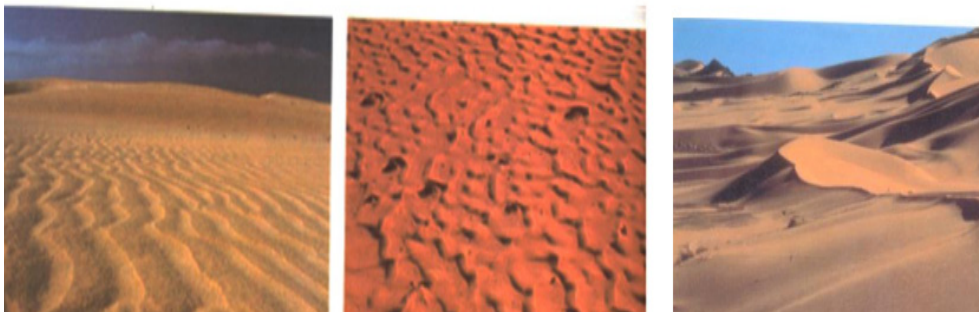


Figure 1.23 Wind Erosion

Deposition

What is deposition?

Deposition is the final result of erosion. Rocks, sands and silt picked by water, wind and ice are deposited in a number of ways. Stream and rivers carry sand and silt downstream from uplands to lowlands. They drop these materials wherever the volume or the speed of the flow of water and wind lessens, and the eroded material can no longer be carried. The newly deposited soils form alluvial plains along stream beds, in the foothills, at the base of mountain, and on coastal plains.

Moreover, wind is also erosional and depositional agent. It forms different landforms, such as sand dunes, barchans and loess deposits.

- ✓ Sand dune is a small hill of sand formed by the action of the wind.
- ✓ Barchans is a sand hill that has a crescent-moon shape.
- ✓ Loess deposit is a deposition of fertile soil in the desert by wind.



Activity 1.2

Answer the Following Questions

1. Describe the cause of erosion?
2. Discuss the types of erosion by running water?
3. Discuss types of weathering?
4. What are the major agents of erosion?

1.2. Composition and Structure of the Earth's Atmosphere

Competencies

After completing this lesson, students will be able to:

-  *explain the composition of Earth's atmosphere; and*
-  *describe the different layers of Earth's Atmosphere and their characteristics.*



KEY TERMS



Mesosphere



Thermosphere



Stratopause



Stratosphere



Troposphere

1.2.1. Composition of the earth's atmosphere

What is Atmosphere? What are Components of Atmosphere?

The earth's atmosphere is a mixture of gases, suspended dust particles and condensed moisture droplets which are collectively known as aerosols.

What are Components of Atmosphere?

The atmosphere consists of a mixture of gases, water vapor and dust particles. These gases may be grouped in to two permanent and Variable gases.

A. Permanent Gases

What are permanent gases?

Permanent gases are gases which are always found in the same proportion in the atmosphere.

Table 1.2 Permanent gases

Gas	Symbol	Volume of Dry Air (%)	Molecular Weight
Nitrogen	N ₂	78.084	28.02
Oxygen	O ₂	20.095	32.00
Argon	Ar	0.93	9.88
Neon	Ne	0.0018	20.18
Helium	He	0.0005	4.00
Methane	CH ₄	0.0001	—
Hydrogen	H ₂	0.0005	2.02
Xenon	Xe	0.000009	—
Carbon dioxide	Co ₂	0.0314	—

B. Variable Gases

Variable gases are gases present in different quantities at different time and places in the lower atmosphere. Among these gases the most important ones are water vapor, ozone and carbon dioxide.

Table 1.3 Variable gases

Gas	Symbol	Volume (%)
Water Vapor	H ₂ O	0 to 4
Carbon dioxide	Co ₂	0.034
Ozone	O ₃	0.000004
Carbon monoxide	CO	0.000002
Sulfur dioxide	SO ₂	0.000001
Nitrogen dioxide	NO ₂	0.000001
Dust particles	-	0.000001

1.2.2. Structure of earth's atmosphere

What are the thermal and compositional structures of atmosphere?

The atmosphere is an envelope of transparent, odorless gases held to the earth by gravitational attraction. Most of the atmosphere is concentrated within 16km of the earth's surface at the equator and 8km at the poles. The information

received from satellite weather station indicated that the pattern of temperature distribution throughout the atmosphere changes with change in altitude. On the basis of this temperature variation the following layers of atmosphere are identified.

A. Troposphere

This is the thinnest and the lowest layer of the atmosphere which extends up to 16km above the surface. It contains 75% of the total atmospheric mass and thus it is responsible for all weather conditions that occur. As a result sometimes it is called 'the weather sphere'. This layer contains most of the atmospheric gases, like, water vapor, cloud, dust and pollution. There is a general decrease in temperature with an increase in height in the troposphere. The top of the troposphere is known as tropopause and extends between 16-20kms.

Focus



Within Troposphere, temperature decreases by 6.4°C for every 1000m rise in altitude. This is known as environmental lapse rate or normal lapse rate.

B. Stratosphere

Why temperature increases with increase in height in the stratosphere?

This layer extends up to 50km from the tropopause. It is characterized by a steady increase in temperature with increase in altitude and reaches maximum at the upper level (around 50km) where its temperature approaches the surface temperature. The cause for an increase in temperature with increase in height is caused by a concentration of Ozone gas, which absorbs incoming ultra-violet (UV) radiation of the sun. Ultraviolet ray causes skin cancer, blindness and other health problems.

Focus

Stratosphere is another layer of atmosphere where temperature increases with increasing altitude.

C. Mesosphere

Why do you think the mesosphere is the coldest layer of atmosphere?

Mesosphere is the third layer of the atmosphere which extends from stratopause (about 50km) to between 80 and 85km. It is the coldest layer of atmosphere where temperature reaches up to -90°C . This rapid temperature fall is attributed to absence of water vapor, clouds, dust or Ozone to absorb incoming radiation. Mesosphere is also darkest part of atmosphere due to scarcity of the air molecules to reflect and scatter the radiation. Its upper portion called mesopause.

D. Thermosphere

What do you think about the temperature condition of this layer?

Thermosphere extends from mesopause (about 80km) up space in thermosphere temperature rises rapidly with height perhaps up to 1200°C . This is due to an increasing proportion of atomic oxygen in the atmosphere, like ozone, which absorbs incoming ultraviolet radiation. Thermosphere is the first layer where meteorites are swallowed or burned because of the high temperature. Sometimes, some meteorites pass through it and may be absorbed by others. If they pass all of the layers they will reach on the surface of the earth Example Arizona in USA.

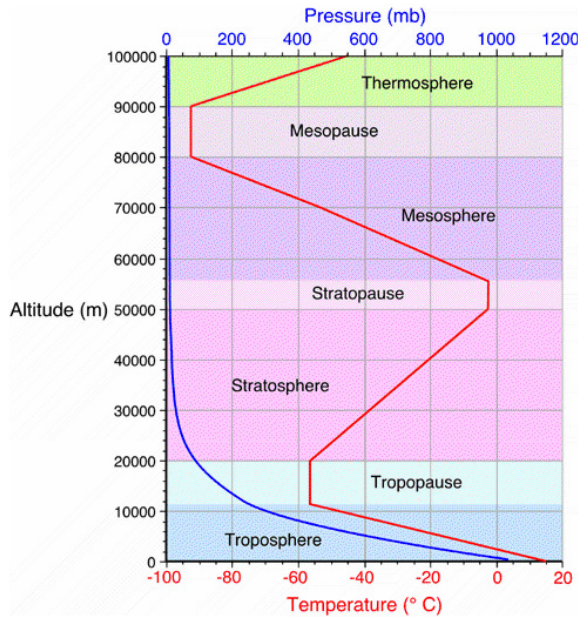


Figure1. 23 the vertical (Thermal) structure of atmosphere



Activity 1.3

Answer the following questions

1. Why stratosphere is sometimes called the protective layer? Explain.
2. In troposphere temperature decreases with increase in altitude. Why?
3. Which layers of the atmosphere contain high temperature?
4. What is the coldest layer of the atmosphere?

1.3. Elements and controls of weather and climate

Competencies

After completing this lesson, you will be able to:

-  *distinguish between weather and Climate;*
-  *identify elements of weather and climate;*
-  *outline climatic controls and climatic elements;*
-  *compare and contrast variations of rainfall and temperature between different locations such as highlands and lowlands agro-climatic zones of their locality;*
-  *collect summarize and present diurnal and seasonal variation of weather data in their locality; and*
-  *draw climatic graphs.*



KEY TERMS



Temperature
Weather



Rainfall
Climate

1.3.1. Definition of weather and climate

What are weather and Climate? Discuss the difference between weather and climate.

Weather: - is the condition of the atmosphere over a short period of time. Weather includes daily changes in precipitation, air pressure, temperature, wind, etc. Weather is always changing.

Climate: - is the average of all weather conditions of an area over a long period of time. These conditions include average temperature, air pressure, humidity, and days of sunshine for a period of 30 years. Hence a description of the climate of a particular region is possible only after weather records have been kept for many years. Weather differs from day to day while climate varies from region to region.

Meteorology: - is a science of atmospheric process. It uses the methods of physical science to analyze, explain and predict atmospheric processes and their particular behavior. It is also called the science of weather. One of the major significance of meteorology is its application to the forecasting of the future trend of weather.

1.3.2. Elements of weather and climate

What are the major elements of weather and climate?

1. Temperature

What is temperature? What is the instrument used to measure temperature?

Temperature is one of the basic elements of weather and climate. It refers to the degree of hotness or coldness of a substance. It is a measure of the average speed or kinetic energy of atoms and molecules in a substance. The temperature of a given place is measured by an instrument called thermometer.

Since temperature changes several times during 24 hours of a day, the highest temperature of a day is measured by maximum thermometer. This is usually done in the afternoon between 2 and 3 P.M. The lowest temperature is measured by minimum thermometer. This is done before the sun rise in the morning between 5 and 6 A.M. The daily maximum and minimum are basis for many of the temperature data compiled by meteorologist and climatologists. By adding the maximum and minimum temperatures and dividing by two, the daily mean temperature is calculated. That means:-

$$\text{Mean Daily Temp} = \frac{\text{Daily Max Temp} + \text{Daily Min Temp}}{2}$$

Example

For instance, the daily maximum temperature of a hypothetical station X on September 11, 2018 was 22°C its minimum temperature was 10°C . Therefore, the mean daily temperature of station X for the day was:-

$$\text{Mean Daily Temp} = \frac{22^{\circ}\text{C} + 10^{\circ}\text{C}}{2} = 16^{\circ}\text{C}$$

On the other hand the daily range of temperature computed by finding the difference between the maximum and minimum temperature for a given day.

$$\text{Daily Range of Temp} = \text{Daily Max Temp} - \text{Daily Min Temp}$$

Example

The daily range of temperature of a hypothetical station X on September 11, 2018 is equal to:

$$\text{Daily Range of Temp} = 22^{\circ}\text{C} - 10^{\circ}\text{C} = 12^{\circ}\text{C}$$

The monthly mean or average temperature is calculated by adding together the daily means for each day of the month and dividing by the number of days in a month.

The mean annual temperature of a given place can be calculated by adding the mean monthly temperature, from January to December, and dividing the result by 12 that means:

$$\text{Mean Annual Temp} = \frac{\text{The sum of mean monthly temp}}{12}$$

Month	J	F	M	A	M	J	J	A	S	O	N	D
MMT($^{\circ}\text{C}$)	14	16.5	19.5	18.5	19	18	17.5	17.5	17.5	18	16.5	17.4

(MMT represents Mean Monthly Temperature)

Example

The mean annual temperature for the above station can be obtained by adding the mean monthly temperatures and dividing the result by 12.

$$\begin{aligned} \text{Mean Annual Temp} &= \frac{14 + 16.5 + 19.5 + 18.5 + 19 + 18 + 17.5 + 17.5 + 17.5 + 18 + 16.5 + 17.4}{12} \\ &= 17.49^{\circ}\text{C} \end{aligned}$$

Temperature also changes from month to month in a year. Therefore, the difference in temperature between the hottest or coldest months gives us the annual range of temperature. That means, the annual temperature range is computed by finding the difference between the highest and the lowest monthly temperature.

$$\text{Annual Range of temp} = \text{Max Temp of the year} - \text{Min Temp of the year}$$

Example

The annual range of temperature for can be obtained by subtracting minimum temperature of the year from the yearly maximum.

$$\begin{aligned} \text{Annual Range of Temp} &= \text{Max. Temp} - \text{Min. Temp} \\ &= 19.5^{\circ}\text{C} - 14^{\circ}\text{C} \\ &= 5.5^{\circ}\text{C} \end{aligned}$$

2. Air Pressure (Atmospheric Pressure)

What is air pressure? Explain how to record and measure pressure?

Air pressure is a force or weight of an air pressing continuously on a given area. In other words it is the amount of force exerted by an overlying air on an area of surface. This shows that the atmosphere has a definite weight and so exerts pressure up on the earth. The distribution of pressure over the earth's surface depends on:-

- ✓ The altitude of places above sea level (Pressure decreases with an increasing in altitude).
- ✓ Most importantly, on temperature. (Pressure increase with decreasing altitude.) Pressure distribution can be shown on a map. Lines connecting all places that have the same pressure are called isobars.

Atmospheric pressure is measured with an instrument called barometer. It measures the weight of gases that exerts pressure on the earth's surface and it can be expressed in millibar (mb). A normal atmospheric pressure at sea

level is equivalent to 1.03kg/cm^2 . Or 1013 millibars. The difference in distance between Isobars is called the pressure gradient. If the isobars are closely spaced, we can expect the pressure gradient force to be great, and wind speed to be high. In areas where the isobars are spaced widely apart the pressure gradient is low and light winds normally exist. High speed winds develop in areas where isobars are closer.

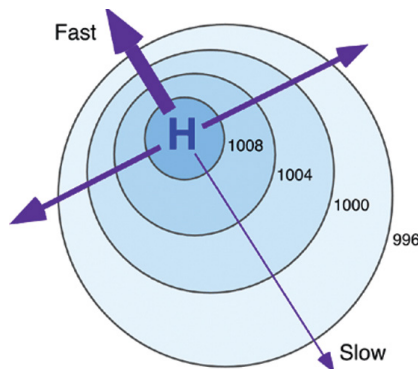


Figure 1.24 Association between wind speed and distance between isobars

3. Winds

What is wind? What is the cause of wind or what generate winds?

Wind is the movement of air caused by the uneven heating of the Earth by the sun. It does not have much substance you cannot see it or hold it but you can feel its force. It is strong enough to carry sailing ships across the sea and rip huge trees from the ground. It is the great equalizer of the atmosphere, transporting heat, moisture, pollutants, and dust great distances around the globe. Winds generally blow from high-pressure areas to low-pressure areas. Winds have direction and speed. The speed of the wind is measured by anemometer and its direction is measured by wind vane.

Deflection of Winds Due to the Earth's Rotation

Because of the earth's rotation, the direction of wind blow may not be at right angles to wind isobars, rather at slanting angles to them. This deflection is

caused by friction. The speed of wind also affects the amount of deflection. The force which affects the direction of movements of winds is called the “Coriolis force”. The deflection is to the right in the Northern Hemisphere and to the left in the Southern Hemisphere.

Near the ground, where the winds are slowed by friction, the air blows at an acute angle toward areas of low pressure, forming great gyres creating **cyclones** and **anticyclones**. In the Northern Hemisphere, the **Coriolis** force causes air in low-pressure areas to spiral counter clockwise and inward, forming a cyclone, whereas air in high-pressure areas spirals clockwise and outward, forming an anticyclone. In the Southern Hemisphere, cyclones turn clockwise and anticyclones, counter clockwise.

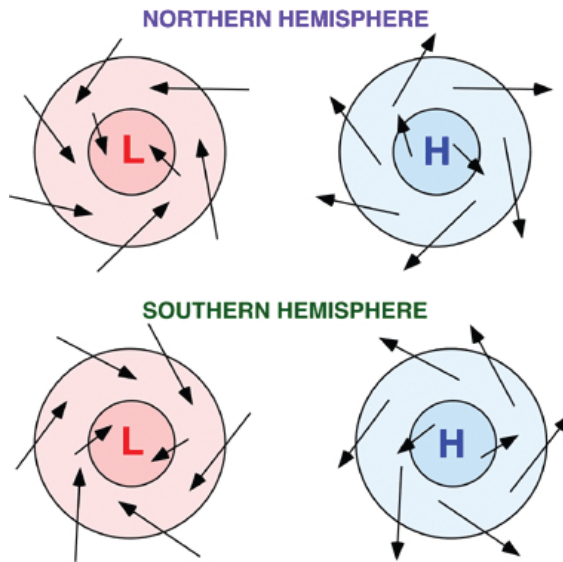


Figure 1.25 Cyclone & anticyclone

Cyclones are atmospheric disturbances which involve a closed circulation about a low-pressure center. They move inward, anticlockwise, in the Northern Hemisphere and clockwise in the Southern Hemisphere. Cyclones are commonly known as **lows** or **low pressure areas**.

Anti-cyclones are vast areas of high pressure which have a diverging system of surface winds. The winds in anti-cyclones blow outward in the anti-clockwise direction in the Southern Hemisphere and in the clockwise direction in the

Northern Hemisphere. Anticyclones are commonly called **highs** or **high pressure areas**.

Types of Winds

There are three types of surface winds. They are:

A. Planetary

B. Monsoon

C. Local winds.

A. Planetary winds and their relationship with pressure belts:

Planetary winds blow over large areas of the earth's surface. They are closely associated with the world pressure belts. Winds blow from areas of high pressure to areas of low pressure. The most common planetary winds are **trade winds, westerlies and polar easterlies**. They have wide influence over the earth's surface.

I. Polar Easterlies: Polar easterlies are dry, cold prevailing winds that blow from the east. They emanate from the polar highs, areas of high pressure around the North and South Poles. Polar easterlies flow to low-pressure areas in sub-polar regions.

II. Westerlies: Westerlies are prevailing winds that blow from the west at mid latitudes. They are fed by polar easterlies and winds from the high-pressure horse latitudes, which sandwich them on either side.

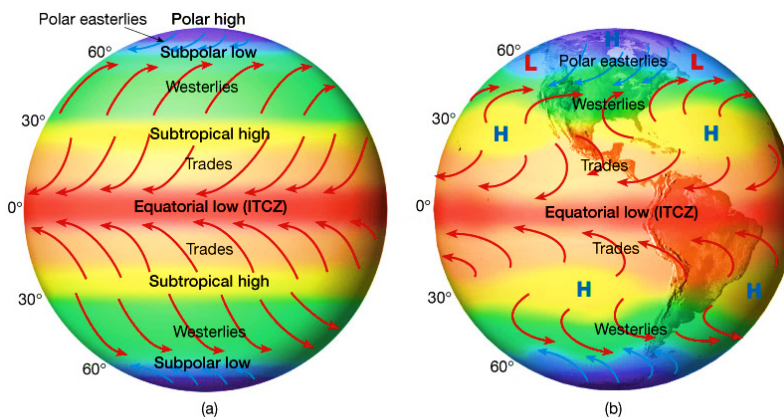


Figure 1.26 Planetary winds

III. Trade Winds: Trade winds are the powerful prevailing winds that blow from the east across the tropics. Trade winds are generally very predictable. They have been instrumental in the history of exploration, communication, and trade.

B. Monsoon winds: They are seasonal winds whose movements are controlled by pressure that differs during different seasons. Monsoon winds are very common in South and South East Asia. Seasonal changes in the direction of these winds are caused by the unequal heating of land and water surfaces. The direction of monsoon winds changes between summer and winter.

C. Local winds: They affect only limited areas and blow for a short period of time. They affect climate conditions on a small scale. Local winds are caused by the nature of the physical features of the area. The main local winds are:

- ① Land and sea breezes
- ① Mountain and valley breezes

A. Land and sea breezes: These winds are common along coastal areas. These winds change their directions daily and affect very small areas. During the daytime, temperature on the land is higher than on the water/sea so low pressure is formed on the land, while it is relatively high on the sea. Wind blows from the sea towards the land. This is known as a **sea breeze**. At night the land is colder than the sea so low pressure develops over the sea. The wind blows from land towards the sea. This is known as a **land breeze**.

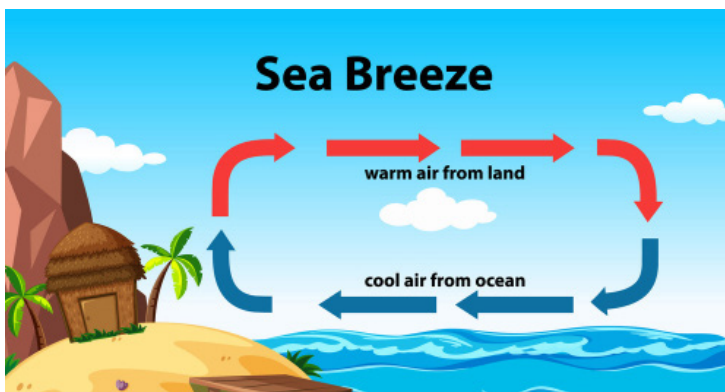


Figure1. 27 Daytime developments of sea breeze and land breezes



Figure 1.28 Night time development of sea breeze and land breezes

B. Mountain and valley breezes: Mountain and valley breezes arise from contrasts in temperature between a valley floor and mountain slopes. During the day the air at the bottom of the valley becomes warmer. As a result it expands and rises along the mountain slopes. This is known as a **valley breeze**.

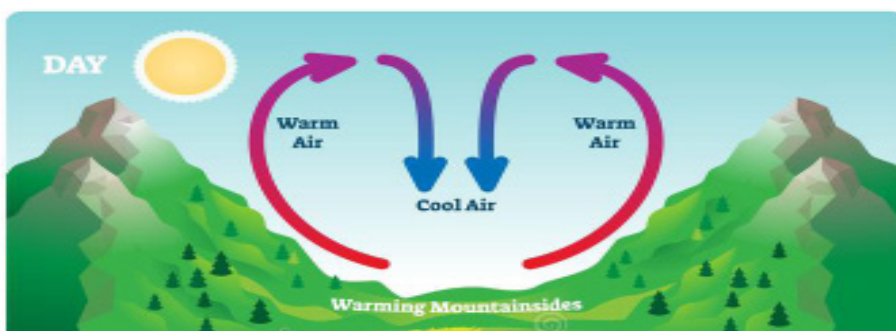
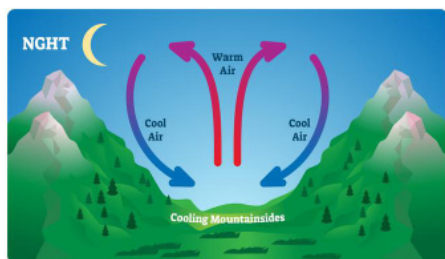


Figure 1.29 Daytime developments of valley breezes and mountain breeze.



At night the wind over the slope of the mountain becomes cool. Then this cooler and heavier mountain air slides down slopes towards the valley. This is called a **mountain breeze**.

Figure 1.30 Night time development of valley breezes and mountain breeze.

4. Rainfall

What is rainfall? How rainfall is formed?

Rainfall is liquid precipitation. Any moisture that falls from the clouds towards the earth's surface is called precipitation. Precipitation may occur in the form of rain, snow, hail, sleet and drizzle. Precipitation is part of the water cycle or hydrological cycle. The water cycle begins as water is changed from liquid to vapor by evaporation and transpiration of water vapor. Once water vapor is formed, it expands and cools. Then, condensation occurs, forming clouds, and the water falls as snow, sleet or rainfall. The whole process is powered by solar energy and is repeated continuously. This whole process is called the hydrological cycle.

Water is a unique substance, because it can exist in three states as (liquid, solid and gas) in the atmosphere. Water either absorbs or releases heat when changes from one state to another.

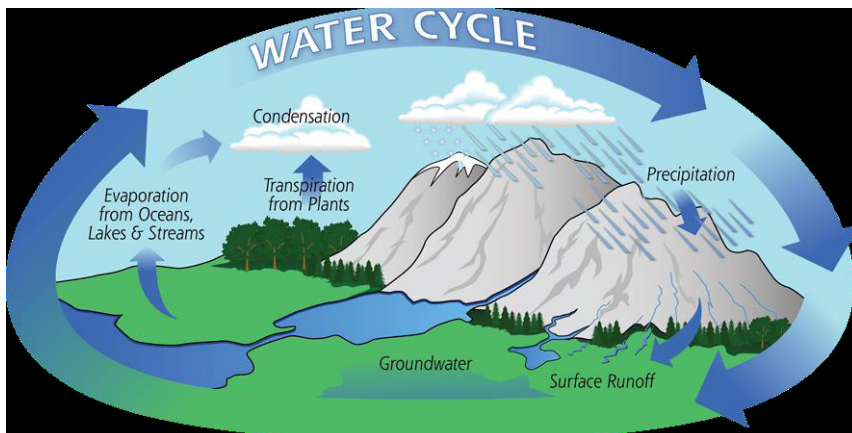


Figure 1.31 *Hydrological cycle*

- ✓ Evaporation: - is the process by which liquid water is converted into gases.
- ✓ Transpiration: - is the transfer and change of water from plants to water vapor in the air.
- ✓ Evapotranspiration: - is the combined loss of water through the process of evaporation and transpiration.
- ✓ Condensation: - is the process by which vapor becomes liquid.
- ✓ Sublimation: - is the process in which ice changes into water vapor without first becoming a liquid, and vice versa.

Types of rainfall

What are the three types of rainfall? Explain their formation.

Rain is given three different names according to the different ways in which moisture is forced to rise. They are: Convective rainfall, Orographic or relief rainfall and Cyclonic rainfall.

1. Convective rainfall: When the ground surface is heated by the sun, the air above it is warmed up. At high altitudes, the water vapor cools, condenses to form clouds and falls as rain. This type of rainfall is common in humid areas where temperature is high throughout the year.

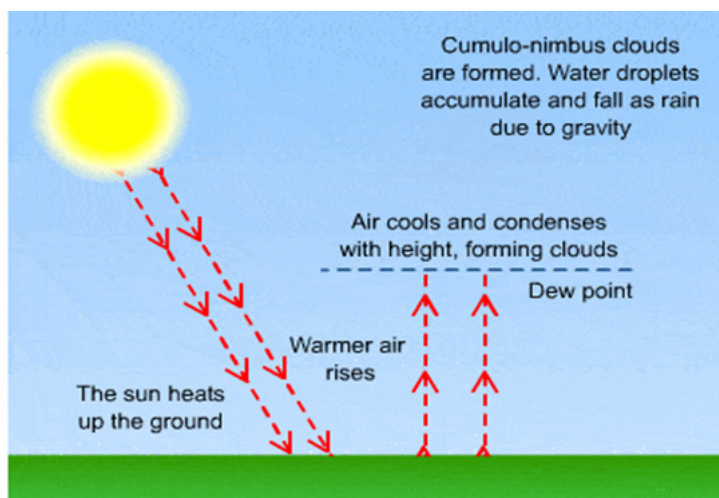


Figure1.32 Convective rainfall

2. Orographic (relief) rainfall: occurs when moist air is forced to rise over mountains. As it rises, it cools, then condenses and falls as rain. Almost all orographic rainfall falls on the windward side of mountains.

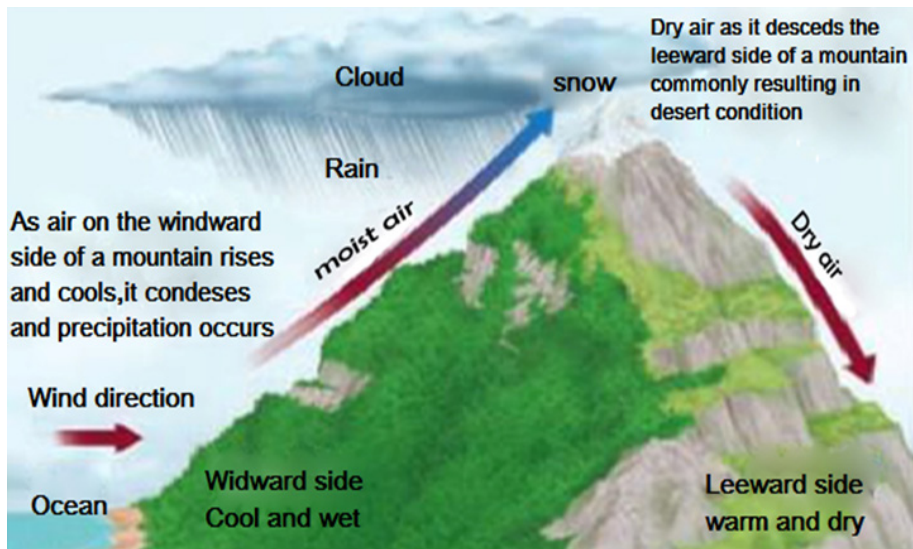


Figure 1.33 Orographic (relief) type of rainfall

3. Cyclonic or Frontal rainfall: when two air masses (warm and cold) meet, they do not mix freely with each other. They remain separated with a boundary surface between them. The warmer and less dense air is forced to rise over the colder and heavier air. As the warmer air rises, it cools and condenses. Then clouds form and rain falls. The place where warm air and cold air meet is called a front. Frontal rainfall is very common in the middle and high latitudes (60° north and south from the equator).

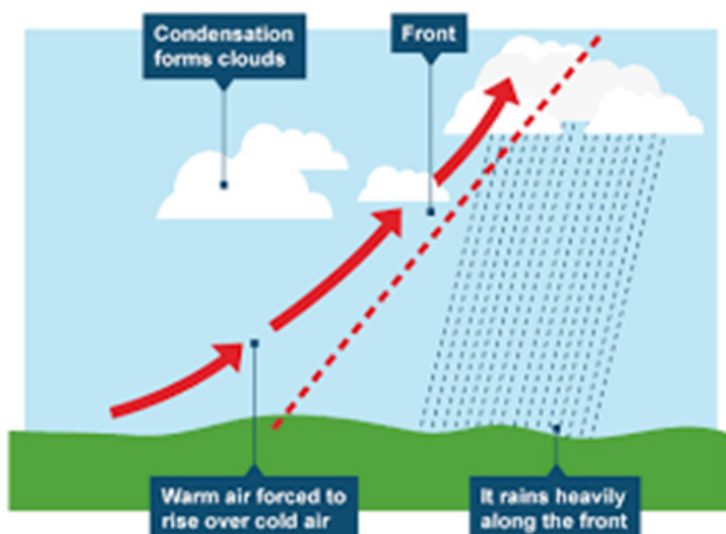


Figure 1.34 Cyclonic/frontal rainfalls

Measuring and Recording Rainfall



Figure 1.35 rain gauge

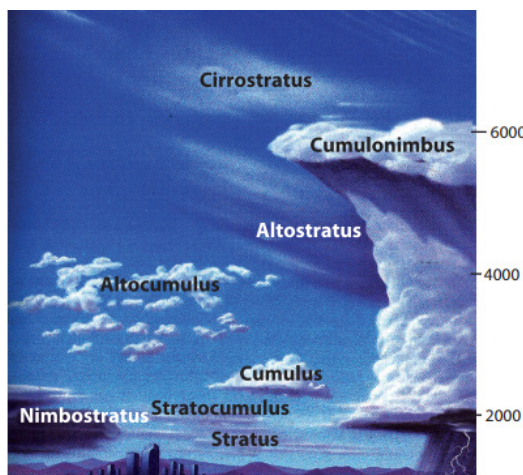
Rainfall is measured using an instrument called **rain gauge**. A rain gauge consists of a wide-mouthed funnel placed over a cylindrical container. Rain water passes through the funnel into the container below. The water in the container is poured into a measuring cylinder, and then the amount of rainfall is measured in millimeters and is recorded.

5. Cloud

A cloud is a visible aggregate of tiny water droplets or ice crystals suspended in the air. Some are found only at high elevations, whereas others nearly touch the ground. Clouds can be thick or thin, big or little they exist in a seemingly endless variety of forms. Clouds can be formed when the rising air passed the condensation level. There are high cloud, middle cloud and low cloud.

A. High cloud: High clouds in middle and low latitudes generally form above 6000 m (20,000 ft). Because the air at these elevations is quite cold and “dry,” high clouds are composed almost exclusively of ice crystals and are also rather thin. The most common high clouds are the cirrus.

B. Middle Clouds: The middle clouds have bases between 2000 and 7000 m (6500 to 23,000 ft) in the middle latitudes. These clouds are composed of water droplets and when the temperature becomes low enough some ice crystals.



C. Low Clouds: Low clouds, with their bases lying below 2000 m (6500 ft), are Almost always composed of water droplets; however, in cold weather, they may contain ice particles and snow.

Figure 1.36: Clouds



Activity 1.4

Answer the following questions

1. What is temperature? How do you sense it?
2. Explain the three types of rainfall with their process of formation.
3. Which types of rain fall is most common in your locality?

1.3.3. Controls of Weather and Climate

What are the major controls of Weather and Climate? Discuss on each in group.

The energy that the earth receives from the sun is not distributed equally. Many factors affect the distribution. Controls of weather and climates are the factors that affect the normal functioning of the elements of weather and climate. These include latitude, altitude, distance from the sea, cloud cover, ocean current, planetary winds and pressure.

A. Latitude

Latitude is the distance of any place from the equator. On a global scale, latitude is the most important factor determining the strength of heat reaching the earth's surface. When the sun's rays are vertical (at a right angle) to the surface, the amount of heat received is the greatest. But when the sun's rays are slanting (oblique) the heat's strength decreases. At the equator, the overhead sun is high and of high intensity insolation is received.

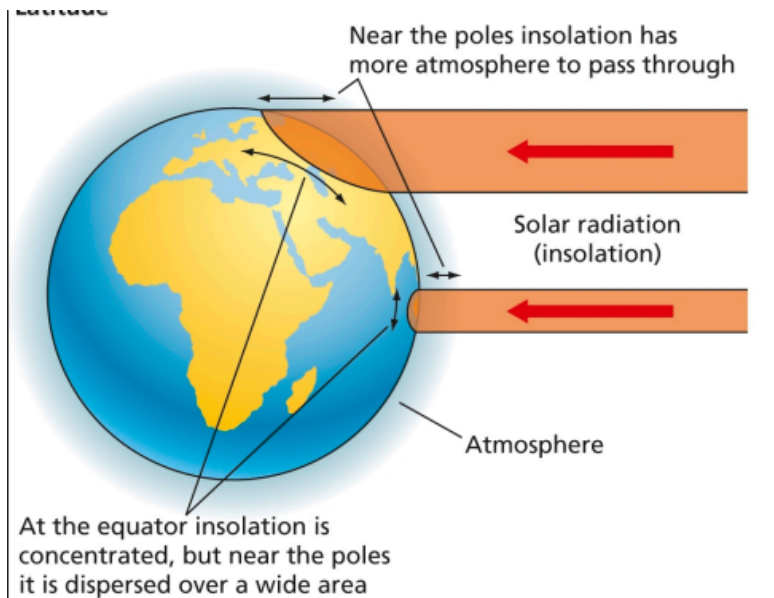


Figure 1.37 Angle of the sun

B. Altitude

Do you know the relationship between temperature and altitude? Explain?

Air temperature decreases with increasing altitude. The normal decrease of temperature with height is 6.4°C per 1000 m. This is known as the normal lapse rate. The normal lapse rate is the average rate or proportion at which temperature changes per unit of altitudinal change. The highland areas of Ethiopia are good examples of places that demonstrate the effect of altitude on temperature. In Sidama, Hula highlands can be taken as example.

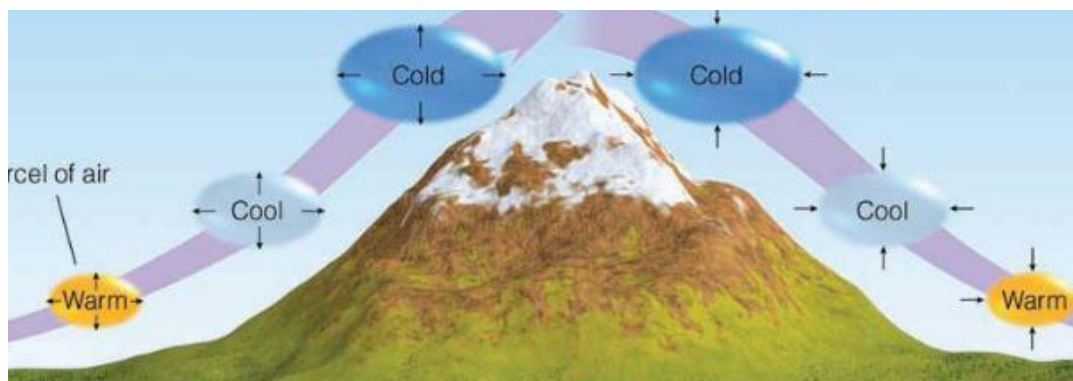


Figure 1.38 Influence of altitude on climate

C. Distance from the Sea

Land heats more quickly than water. But it loses its heat quicker than water. This is because of the transparency of water reflections from water surfaces, evaporation, mixing and currents in water. All these conditions result in greater and more rapid temperature changes on land than in the seas. Therefore, coastal regions are cooler than inland regions.

D. Cloud Cover

Cloud cover is one of the most important controls of weather and climate. The difference in the amount of temperature for the place in the same latitude is the results of cloud cover and altitude. Cloud reduces the amount of solar radiation reaching on the earth's surface and the amount of radiation reflected from the earth's surface. When there are no clouds both types of radiation will be at a maximum level.

E. Ocean Current

Ocean current is the horizontal movement of ocean water caused by winds and differences in temperature. The effect of ocean currents on temperatures depends upon whether the current is cold or warm. The water at the equator is warmer and less dense than that of in polar areas. Ocean currents are the source of temperature regulation on the earth. Ocean currents change the temperature of a particular region. A warm ocean current makes the weather of the nearby regions to go up in temperature, whereas cold ocean currents reduce

the surrounding temperature.

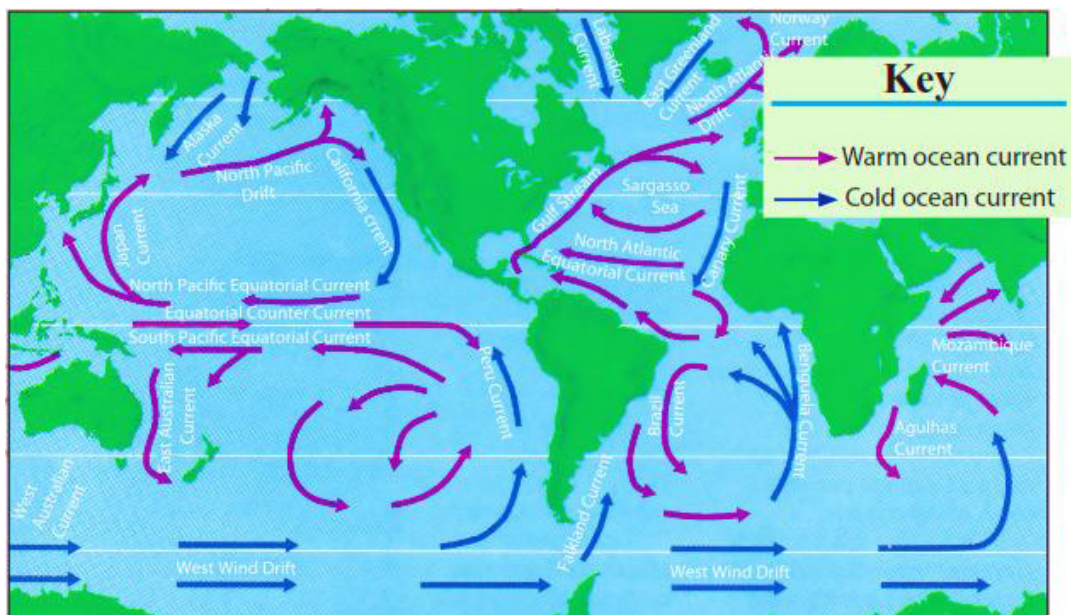


Figure 1.39 Ocean currents

F. Winds

What is the effect of wind on temperature?

Winds indirectly change the temperature of places near the sea according to the areas from which they blow. There are two ways by which distribution of temperature is influenced by winds.

- Winds carry the temperature from one place to another.
- Winds blow the surface layers of a body of water in the direction of their flow.

In this way, the winds have the effect of raising the temperature of the shore towards which the wind is blowing and lowering the temperature of the opposite shore.

1.3.4. Diurnal and seasonal variation of weather in Ethiopia

How do you describe the weather of your locality? Which season is the warmest, coldest, wettest and driest in your area?

Temperature in Ethiopia is determined primarily by **altitude and latitude**. Ethiopia lies within the tropics, a zone of maximum insolation, where every place has overhead sun twice a year. However, considerable portions of Ethiopia are highland areas, and their altitudes give them non-tropical temperatures. Ethiopia's tropical climate occurs in lowlands at the country's peripheries. Away from the peripheral lowlands, the land begins to rise gradually and considerably, culminating in peaks in various parts of the country. The highlands form the heartland of the country. Thus temperature in most of the center of the country is affected by altitude, and temperature essentially decreases from Ethiopia's peripheries towards the interior. Ethiopia experiences both hot and cold extremes of temperature.

Daily Temperatures

Ethiopia's daily temperatures are more extreme than its annual averages. In terms of spatial distribution, Ethiopia's daily maximum temperature varies from a high of more than 37°C over the lowlands of the northeast and of the southeast to a low of about 10°C-15°C over the highlands of Ethiopia. In terms of temporal distribution, the months of March, April and May are generally the hottest throughout the country.

Monthly Temperatures

Ethiopia's monthly temperatures also exhibit extremes. The lowest monthly minimum temperatures mostly occur over the highlands of the country. Most of the highlands experience mean minimum temperatures as low as 0°C between November and January (Bega season). The highest mean monthly minimum temperature (20°C - 30°C) is observed in the Dallol Depression.

The lowest mean monthly minimum temperature (0°C or less) occurs in January in the highlands in the northwest (Gonder and Gojam), central (Shewa) and

southeast (Arsi-Bale), and the highest (30°C) occurs in the lowlands of the western, southeastern and northeastern areas.

Daily (diurnal) temperature range

In the northern hemisphere, during the winter months of December, January and February, the sun apparently shifts to the southern hemisphere and Ethiopia experiences its bega season. During this period, the sky is clear, without blanketing cloud cover to retain heat or cold on earth. Therefore, during the day the heat from the sun is intense. But at night, because of the clear sky and relatively longer nights, temperature drops very low. Reflecting such clear-sky conditions, Ethiopia's daily temperature range is greatest during bega in most parts of the country.

Annual temperature range

Ethiopia's annual temperature range is the highest in the lowlands, and it decreases with increasing altitude or highest in the high lands.

Distribution of Rainfall in Ethiopia

Which part of Ethiopia is the driest and wettest?

Overall, mean annual rainfall ranges from over 2200 mm in pockets of areas in the southwestern high lands to less than 400 mm over the northeast and southeastern lowlands of the country. However, the low end of the range is much less in the southeast lowlands, the Ogaden area, standing at 200 mm. In the northeast lowlands, the Afar region, it is even less than 100 mm. creases with increasing altitude.

Rainfall in Ethiopia is seasonal, varying in amount over space and time. There is the long and heavy summer rain, which is normally referred to as “the big rain” or keremt. There are also short and moderate rains in autumn (Tsedey), winter (Bega) and spring (Belg). They are collectively called “the little rains”.

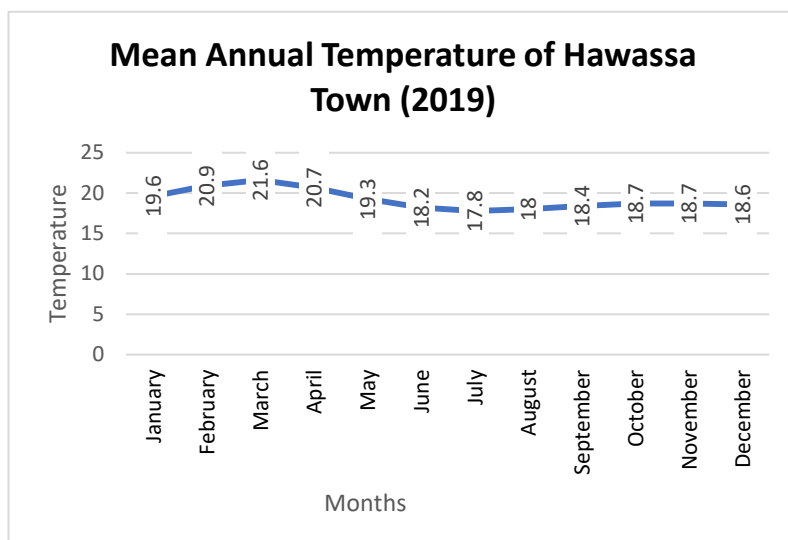
In contrast to the rest of Ethiopia, southwestern high lands of Ethiopia gets rain for a long period that stretches usually for more than eight to ten months.

Other regions, for instance the southeastern lowlands, receive rain twice a year. These rainy seasons do not correspond with keremt or bega.

In most of highland Ethiopia like, Addis Ababa the main rainy season is in summer (June to September), when the ITCZ is to the north of Ethiopia. During this season, the whole country with the exception of a few places is under the influence of the southwest equatorial westerly winds from the South Atlantic Ocean or of the south easterly winds from the Indian Ocean.

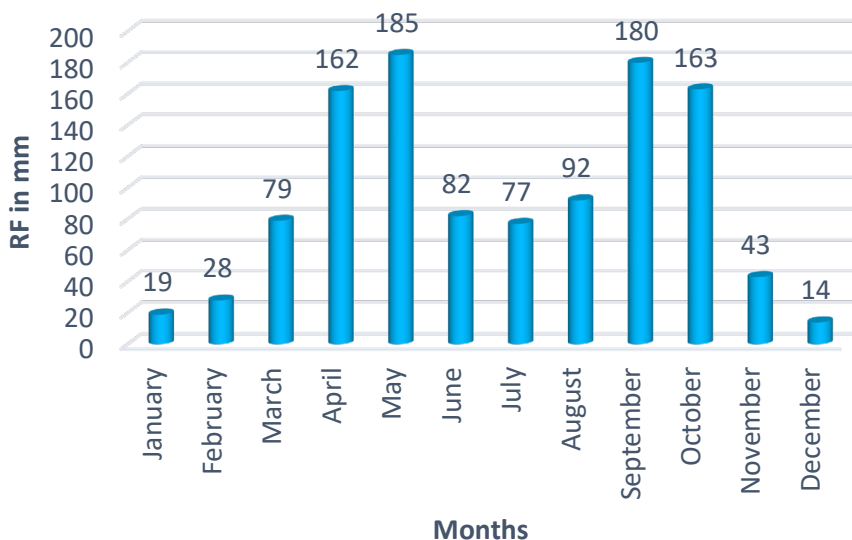
Table 1.4 Agro climatic Zones of Ethiopia

Altitude	Climatic zone	Crops grown
Below 500m	Bereha	Crops with only irrigation
500-1500m	Kolla	Sorghum, Nug, Tef, Sugarcane, maize, coffee
1500-2300m	Woyna dega	Maize, sorghum, tef, Wheat, maize, Degussa, barley.
2300-3200m	Dega	Marley, Wheat, and pulses
Above 2300m	Wurch	Barley



(Source: NMA; SNNPR Branch Office; Hawassa, 2019)

Rainfall of Hawassa Town (2019)



Activity 1.5

Answer the Following Questions

1. Discuss the effects of latitude on the temperature of Ethiopia?
2. Temperature in Ethiopia is primarily determined by altitude and latitude. Discuss.
3. What are the two most important controls of weather and climate in Ethiopia? Is the distribution of rainfall and temperature uniform in Ethiopia?

UNIT SUMMARY

- ✓ The present day landforms were the results of two forces as internal and external. Internal forces result ups and down where external forces result leveling the ups and downs formed by the internal forces.
- ✓ Internal forces include folding, faulting, volcanism and earthquakes whereas external forces include weathering, mass wasting, erosion and deposition.
- ✓ Earthquakes originate at the focus. The epicenter is the point on the surface directly above the focus.
- ✓ Volcanism is the process that formed when magma (molten rock) from deep within Earth reaches the top of the crust and escapes up to the ground.
- ✓ Folding is one of the internal processes which occur when two forces act towards each other from opposing sides and rock surfaces are bent. The massive fold mountains such as Himalayas were resulted because of folding.
- ✓ Faulting is the earth movement along the fractures (faults). Faults may be normal or reverse. It results in the formation of rift valley such as the Great East African rift valley and Block Mountains like Mount Rwenzori (5119m amsl).
- ✓ Physical weathering breaks up rocks into smaller pieces. Its main agents are frost, temperature changes, plants and animals.
- ✓ Chemical weathering (decomposition) causes rock to dissolve or decompose. Its main agents are rainwater and actions of plants and animals.
- ✓ Erosion involves the breaking down of rock and the carrying away of rock particles. Erosion is caused by moving water, wind, etc
- ✓ Deposition is the final result of erosion. Landforms like spit, beaches, waterfall, valley, rapids, barchans, meanders, oxbow lakes were the results of erosion and deposition.
- ✓ The layers of the atmosphere include the troposphere, stratosphere, mesosphere and thermosphere.
- ✓ The major elements of weather and climate are temperature, rainfall, winds, air pressure and cloud.

- ✓ Winds are formed as a result of difference in air pressure.
- ✓ Weather is the condition of the atmosphere over a short period of time.
- ✓ Climate is the average of all weather conditions of an area over a long period of time probably for more than 30 years.
- ✓ Fissures: elongated fractures or cracks on the slopes of a volcano. Fissure eruptions typically produce liquid flows, but pyroclastic may also be ejected.

GLOSSARY

Altitude: - distance above sea level; generally applied to a location above the earth's surface.

Anticline:- a fold in which the beds dip outward and the older rocks are in the center of the fold.

Atmosphere: -the envelope of air that surrounds the earth, held in place by gravity.

Barchans: - is a sand hill that has a crescent-moon shape.

Beach:- is a strip of land along the sea coast covered with various types of sediment.

Caldera:- a basin-shaped volcanic depression; such large depressions are typically formed by the subsidence of volcanoes.

Climate: - is the average of all weather conditions of an area over a long period of time.

Condensation: - the conversion of water vapor to the water droplets. Condensation occurs when a water vapor passes over condensation level.

Crater: - a steep-sided, usually circular depression formed by either explosion or collapse at a volcanic vent.

Earthquakes: - are sudden movements in the earth's crust.

Epicenter: - the point on the earth's surface directly above the focus of an earthquake.

Erosion: - is the transporting of weathered material by various natural forces such as moving water, wind and moving ice.

Evaporation: -is the process that occurs when liquid water is changed into water vapor.

Faulting: - can be caused by either lateral or vertical forces, which can be either tensional or compressional.

Folding: - is one of the internal processes which occurs when two forces act towards each other from opposing sides.

Freezing: - is a change of state from liquid water to ice. It is an opposite of melting.

Loess deposit:- is a deposition of fertile soil in the desert by wind.

Magma: - Molten rock beneath the surface of the earth.

Melting: - occurs when an ice is changed to liquid water

Mesosphere: - It is the coldest part of the atmosphere

Oxbow lake:- an elongate and curved lake formed by an abandoned Meandering stream channel on a flood plain.

Rainfall: - is liquid precipitation.

Rift valley: - a deep, linear, steep-sided trough produced by subsidence of a strip of land between two faults

Sand dune: - is a small hill of sand formed by the action of the wind.

Spit:- is a narrow ridge of sand or shingle. It projects into the sea but is attached to the land at one end.

Stratopause: - It is the upper limit of stratosphere

Stratosphere: - Has constant temperature and High concentration of ozone gases.

Sublimation: - is a process when solid is converted into gases without becoming a liquid.

Syncline: - a fold structure in which the associated beds dip inward and the youngest rocks occupy the core of the fold structure

Temperature:- is the amount of hotness or coldness of an object.

Thermosphere; - is the highest and hottest layer of the atmosphere

Transpiration: - is the loss of water from the plant bodies

Troposphere: - Is the lowest layer of the atmosphere that contains 75% of the atmospheric mass.

Vent: - the opening at the earth's surface through which volcanic materials issue forth.

Volcanism: - is the process by which magma, gases, water vapour, ashes and other solid materials are forced out to the surface.

Weather: - is the condition of the atmosphere over a short period of time.

REVIEW EXERCISES

I. Determine whether each of the following sentences is true or false.

1. Water is the most active erosion agent in a desert region.
2. The focus of an earthquake is the point on the surface directly above the epicenter.
3. All of the sun's energy that reaches the atmosphere is absorbed by the earth's surface.
4. The only difference between weather and climate is their elements and controls.
5. In line with rising altitude temperature decreases in the troposphere.
6. Troposphere layer contains relatively large concentration of water vapor.

II. Match items in column 'B' with items in column 'A'.

A

1. Stratosphere
2. Mesosphere
3. Troposphere
4. Thermosphere
5. Atmosphere

B

- D. The Hottest sphere
- E. Envelope of transparent gases
- F. Coldest layer
- G. Protective layer
- H. Weather sphere

III Choose the correct word or phrase from the given alternatives.

1. Which is not a type of mechanical weathering?
 - A. Frost wedging
 - B. pressure release
 - C. frost heaving
 - D. oxidation
2. Which type of faulting occurs when tension forces within Earth are pulling rock apart?
 - A. Reverse fault
 - B. normal fault
 - C. Over thrust fault
 - D. strike-slip fault

3. Which of the following is major landform of lower courses of river?

A. Rapids	C. Meanders
B. Waterfalls	D. V-shaped valleys
4. Which one of the following is not Fold Mountain?

A. Andes	C. RasDashen
B. Himalaya	D. Alps
5. Which one of these does not belong to volcanic activity?

A. Caldera	C. Waterfall
B. Hot springs	D. Crater
6. Which one is a common feature in the upper course of a river?

A. flood plain	C. ox-bow lake
B. meander	D. 'V'-shape valley
7. Which of the following is not an internal force?

A. Earthquake	C. volcanic eruption
B. erosion	D. folding
8. The instrument used to measure temperature is called _____

A. Barometer	C. Thermometer
B. Wind vane	D. Hydrometer
9. A type of rainfall that occurs when a warm air is forced to raise over the mountains is:

A. Convectional.	C. Cyclonic
B. Frontal	D. Relief
10. A type of atmospheric layer which absorbs the incoming ultra-violet (UV) radiation of the sun is _____

A. Thermosphere	C. Stratosphere
B. Mesosphere	D. Troposphere

IV Complete each of the following sentences with the correct word or phrase.

1. The average weather condition recorded for a long period of time is _____.
2. _____ forces push rocks together, _____ forces pull rocks apart.

3. The most common types of rain fall in equatorial rainforest region is _____.
4. The process of mountain building is known as _____.
5. The break up and decomposition of rocks in a place is _____.

Table:-1.1 Temperature and rainfall data for Hawassa

	Jan	Feb	March	April	May	June	July	August	Sept	Oct	Nov	Des
Ave. Te in ^o C	19.6	20.9	21.6	20.7	19.3	18.2	17.8	18	18.4	18.7	18.7	18.6
Min. Te in ^o C	12.9	13.9	15.3	15.6	14.8	14.2	14.2	14.2	14	14	13.1	12.4
Max. Te in ^o C	26.2	27.8	27.8	26.3	24.3	22.8	22	22.2	23.1	23.5	24.4	25
R.F.mm	19	28	79	162	185	82	77	92	180	163	43	14

Using the above temperature and rainfall data for Hawssa City performs the following tasks:

- ✓ Calculate the average temperature of the year?
- ✓ Identify the warmest and coldest months of that year of the above station
- ✓ Calculate the range of temperature?
- ✓ What is the total annual rainfall of the city?
- ✓ What are the highest rains falls recorded season?

UNIT TWO

2. PEOPLE AND SOCIOECONOMIC ACTIVITIES

Introduction

In unit one you have learned about forces shaping the earth's surface, Composition and structure of the earth's atmosphere and Elements and controls of weather and climate. In this unit, you will learn about people and socioeconomic

activities. The major topic to be include are cultural diversity and changes, major economic activities, trade, market and government revenue as the current national and local concern and Government revenue and tax.

Unit Outcomes



At the end of this unit, students will be able to

-  *explain how peoples culture develop and change through time;*
-  *discuss the impacts of population movement on human settlement and economic activities;*
-  *explain the concept of trade and increasing global interdependence;*
-  *analyze the condition of consumers right and supply problem using their local examples; and*
-  *describe the benefits of government revenue and tax.*

2.1. Cultural Diversity and Changes

Competencies

After studying this lesson, students will be able to:

-  *explain how peoples culture develop and change through time;*
-  *discusses language, religion and human race as a cultural elements;*
-  *elaborate the cultural diversity of people in terms of language, religion, and human races;*
-  *debate in the class room on the effect of globalization as an agent of cultural change; and*
-  *respect humanity and indigenous knowledge*



KEY TERMS



Language families



Culture



Human race



Religion

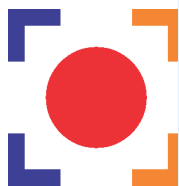
2.1.1. The development of human culture

What is Culture? How culture is develop and change?

Culture is “the way of life” which includes knowledge, belief, art, morals, law, custom and any other capabilities and habits acquired by human beings.

Cultural development It follows from the definition of culture as “information capable of affecting individuals” behavior that they acquire from others member of their species through teaching, imitation and other forms of social transmission.

Focus



The development of agriculture, Increasing settlement aggregation and the rise of cities, Alliance formation and increasing social integration, the development of social hierarchies, Craft specialization and increased division and so on, are some of the major evolutionary stages of cultural development that a human beings achieved in his history.

Cultural Change

Cultural change is a very vast area to explore. It refers to changes made in cultural elements both, material and non-material. All important changes have cultural aspects within them. Cultural change includes change in technology like introducing advanced appliances, automobiles, machinery and many more. Moreover, it also refers to the change in ideology, beliefs, administrative system of a society and many more. It tells us about the changes that ought to be made in our life style, habit patterns and in advancing our mode of life. These changes may also include the invention of new trends, art, dance, television, music and much more.

2.1.2. Major Cultural Elements (language, religion and the human race)

Language

What is language? What are the major language families of the world?

The word language is derived from Latin term ‘Lingua’ meaning tongue. Still language is often called tongue. Language is human speech, either spoken or written. It enables people to talk to each other as well as to write their thoughts and ideas.

Distribution of major Language Families.

-  *Indo-European*: Predominate language family in Europe, South Asia, North America and Latin America.
-  *Sino-Tibetan*: Encompasses languages spoken in the People's Republic of China and several smaller countries in Southeast Asia. Mandarin is the most-used language in the world and the official language of China and other Asian language families.
-  *Afro-Asiatic and Arabic*: are major languages of Southwest Asia and North Africa and Central Asia. It is an Official language in 24 countries of south west Asia and North Africa. It is also one of the six official languages in the UN.
-  *Altaic*: Altaic language with most speakers is Turkish. Altaic language becomes official language of several countries that gained independency when Soviet Union broke up. Example: - Azerbaijan, Kazakhstan and Turkmenistan.
-  *African language families*
 - ❶ **North Africa**: - Afro-Asiatic, (Hamito, Semetic) branches into Semitic which includes Arabic, Hebrew, Ethiopia, and Aramaic and Berber in the Atlas mountains, along with Cushitic, Egyptians and Chadic (Hawsa) .
 - ❶ **Sub Saharan Africa**: - Niger-Congo and Swahili more than 1000 district languages have been documented.
 - ❶ **South Africa**:- Khoisan (Bushmen) Hottentots and other indigenous of South Africa peninsula noted for the presence of clicks.
 - ❶ **Nilo Saharan**:-It is divided into seven subgroups. Chari-Nile, Songhai, Saharan, Meban, Koman and Fur. Chari-Nile and Koman are spoken in parts of Ethiopia and the Horn. It has about 30 million speakers.

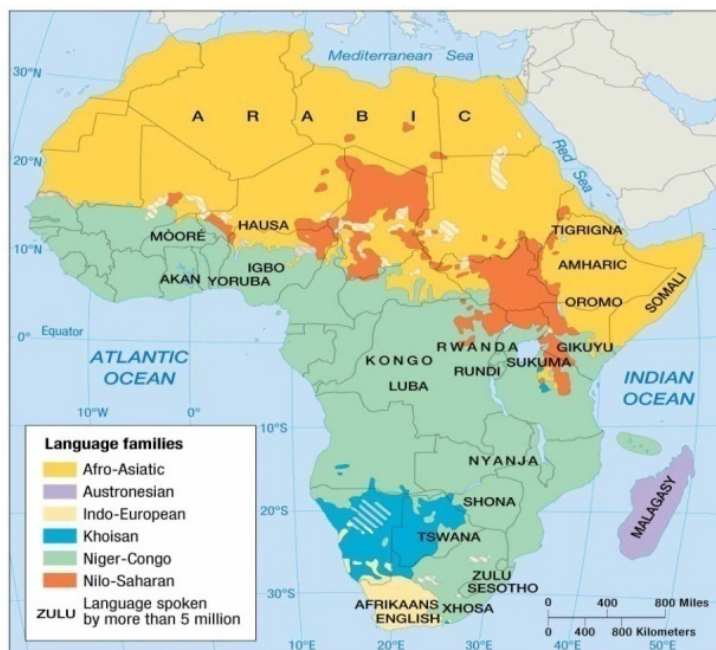


Figure 2.1 Language super families of Africa

According to linguists, there are about 6000 languages spoken in the world. Many of the languages are spoken only by small groups of people. However, there are more than 200 languages spoken by a million or more people. About 23 languages have about 50 million or more speakers. Some of the major languages used in the world include Mandarin, English, French, Spanish, Russian and Arabic.

A. English: It is the most widely spoken language in the world. In many countries, English is used as either a mother tongue or second language. Today, about 400 million people speak English as their first language. Most English speakers live in Australia, Canada, Great Britain, Ireland, New Zealand, South Africa and the United States of America. Nowadays, English is used as an international language in science and technology. It is also used in business and diplomacy all over the world.

B. French: French is the official language in France. It serves as an official language in Belgium, Canada, Haiti, Luxemburg and

Switzerland. It is one of the six languages used in the United Nations. Over 90 million people use French as a mother tongue. Other millions use it as a second language.

C. Spanish : Spanish is the official language of Spain. It is also used as an official language in most Latin-American countries. Throughout the world about 297 million people speak Spanish.

D. Russian: Russian is an official language of Russia. Native speakers of the language account for about 153 million. Russian is the third widely spoken language in Europe. It is also among the six official languages used by the United Nations. The six languages used in the UN include: Arabic, Chinese (Mandarin), English, French, Russian and Spanish.

E. Mandarin: Is an official language of China. This language is spoken by about 600 million people.

F. Arabic: Arabic is one of the most widely spoken languages in the world. It is an official language of many Arab countries in the Middle East and North Africa such as Egypt, Iraq, Jordan, Lebanon, Saudi Arabia and Syria.

Major Religions in the World

What are the major religions of the world? Discuss on each

Religion is an organized collection of beliefs, cultural system, and world views that relate humanity to an order of existence. Many religions have narratives, symbols, and sacred histories that are intended to explain in the meaning of life and/or to explain the origin of life or the Universe. The following are major religions of the world: Judaism, Hinduism, Buddhism, Shintoism, Islam and Christianity.

A. Hinduism: The religion of Hinduism developed and evolved over a long time in India, giving rise to a variety of beliefs and practices and to other religions, including Buddhism. It is one of the

oldest religions of humanity, founded in 1500 BC or earlier. It is the 3rd largest religion in the world.



Figure 2.2 the Hindu god dancing



Figure 2.3 the Hindu god of

- B. Buddhism:** Buddhism, which teaches people that they can escape the suffering of the world through the Buddhist teachings, developed in Northeast India in 520 BC and spread to other parts of Asia. It is the 4th largest religion in the world.

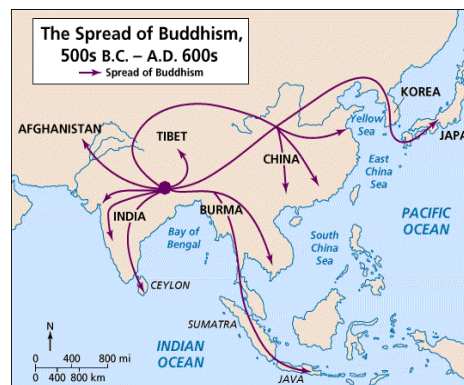


Figure: 2.4 Symbol of Buddhism

- C. Judaism:** The Hebrew leader Abraham founded Judaism in Mesopotamia around 1300 BC. Judaism is the oldest of the monotheistic faiths (religions with one God).
- D. Christianity:** It is founded by Jesus Christ, who was crucified around 33 AD in Palestine in the city of Jerusalem. It was after his death when his followers came to believe in him as the Christ, the Messiah. Christianity is the world's largest religion, with about 2.2 billion followers worldwide. It is based on the teachings of Jesus Christ who lived in the Holy Land 2,000 years ago.
- E. Islam:** It is the second most popular religion in the world with about 1.3 billion followers. Islam began in Arabia and was revealed to humanity by the Prophet Muhammad (peace is upon him). Those who follow Islam are called Muslims. Muslims believe that there is only one God, called Allah, who speaks Arabic.
- F. Shintoism:** Shintoism is the oldest living religion of Japan the word Shinto in Japanese means "the way of the gods". This religion promotes worship of many gods. It does not believe in life after death. According to Shintoism, the sun goddess was the ancestor of Japan's royal family.

Human Races

What are the major human races of the world? How is their classification?

Concept of Race: - Anthropologists define race as a principal division of mankind, marked by physical characteristics that breed. A human race is defined as a group of people with certain common inherited features that distinguish them from other groups of people. All men of whatever race are currently classified by the anthropologist or biologist as belonging to the one species, Homo sapiens.

Focus



Fundamentally, the entire human species has one originated all men are Homosapience. National, religious, geographical, cultural and linguistic groups are entirely unconnected with the unrelated to race. These groups do not give indication of any race. Distinctions can made between different races on the basis of differences in physical features but not on the basis of cultural characteristics.

Major Races of the World

- ✓ Caucasoid -White (Europeans, Euro-African-Asian)
- ✓ Negroid (Africa, Asia, Pacific island)
- ✓ Mongoloid (Asia, Pacific islands North and South)
- ✓ Caucasians races:- (Aryans, Hamites and Semites)
- ✓ Negroid:-Negroid races (African, Hottentots, Melanesians/Papua, “Negrito”, Australian Aborigine, Dravidians, and Sinhalese)
- ✓ Mongolian races (northern Mongolian, Chinese and Indo-Chinese, Japanese and Korean, Tibetan, Malayan, Polynesian, Maori, Micronesian, Eskimo, American Indian)

2.1.3. Globalization and dynamics of social and cultural values

What is globalization? What are the effects of globalization?

Globalization refers to the integration and democratization of the world's culture, economy, and infrastructure. It is the process by which people their ideas and their activities (economic, cultural, political) in previously relatively separated parts of the world become inter-connected, and drawn to the same social historical time. It must be noted that there are continuing controversies and disputes on the value of globalization to the common good in society.

As a result of this there are two views in globalization:

Positive Views on globalization.

- ✓ Globalization is not only an economic phenomenon as it affects all aspects of life. Therefore it is unavoidable.
- ✓ Because of the dramatic expansion of science and technology, the international relations among peoples of the world are interwoven. (Which is one of the most important parts of globalization as an agent of cultural change)
- ✓ Globalization is a compound process taking place without being determined by any one nation or corporation. Therefore whether poor or rich, nations cannot do away with globalization.

Negative views of globalization

- ✓ Globalization works to the advantage of the leading industrialized countries of Europe and North America.
- ✓ The European Union countries mostly trade among themselves, while those of Asia or North America do the same thing. Therefore, there is no international trade that benefits the world community as a whole.
- ✓ Globalization is an ideology intended to impose Westernization or Americanization over the rest of the world. As a result, less developed countries have nothing to gain from this new trend, but it urges the developing countries to adopt the western countries culture.
- ✓ Globalization adds more to the misery and despair of the already poor and underdeveloped nations while increasing the wealth of the rich countries.

Focus



Some of the advantages of globalization include creation of new opportunities and benefits (such as removal of tariff restriction), increment of direct foreign investment, remittance to home countries, etc. Its disadvantage is mainly related to the widening of the economic gaps between the rich and the poor nations.



Activity 2.1

Answer the following questions

1. Define culture
2. Discuss on cultural development and cultural diversity.
3. What is Race? Discuss on it.
4. Discuss the advantages and disadvantages of globalization.

2.2. Major Economic Activities

Competencies

After completing this lesson, students will be able to:

-  *explain the different types of economic activities;*
-  *relate different economic activities with countries levels of development;*
-  *compare and contrast agriculture of the developed and developing countries;and*
-  *respect humanity and indigenous knowledge.*



KEY TERMS



Industry
forestry



Harvest
Tourism



Fishing

2.2.1. Major Types of Economic Activities and Their Characteristics

What is economic activity? What are the major economic activities in your locality?

Economic activity is the production, distribution and exchange of goods and services. Some examples of these activities are hunting, fishing, farming, grazing, mining, manufacturing, transportation, trade and others. The economic activities practiced in the world can be grouped into five, but in this grade level you will learn only three of them, namely primary, secondary and tertiary. Each type of economic activity is important to a society. The distribution of jobs in a particular economic activity in a country may indicate the level of development of the country.

Categories of Economic Activities

Primary economic Activities (Harvest or extraction)

- Agriculture
- Mining
- Forestry
- Fishing

Secondary economic Activities (Value added industries)

- Manufacturing
- Power production
- Construction

Tertiary economic Activities (Service-sector industries)

- Trade
- Communication
- Transportation
- Tourism

2.2.2. Primary Economic Activities

What are primary economic activities?

Primary economic activities focus directly on the extraction of resources from the environment. They involve the production of food stuffs and raw materials. A few examples of primary economic activities include agriculture, fishing, forestry, and mining. All of these jobs are dependent upon the natural resources of the earth.

Agriculture

What is agriculture? What are major activities accomplished in this sector?

Agriculture is defined as the purposeful growing of crops and rearing of animals whether for subsistence or for sale. It is an art, science and industry of managing the growth of plants and animals for human use.

Moreover, it is the most important of all economic activities, which provides the direct livelihood for at least half the world's population. It is also a source of raw materials for industries and export earnings. In terms of land usage, agriculture tends to be the dominant user of rural land, compared to forestry, mining and quarrying, transport, recreation etc. Agriculture is very important in providing employment particularly in most developing countries.

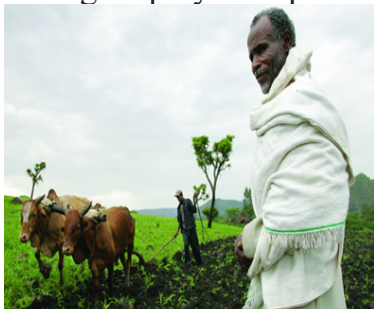


Figure: 2.5 Arable Farming Figure2.6 Pastoralist

Forestry

What is Forestry?

Forestry is a primary economic activity concerned with the exploitation of forest products. In its broader sense, forestry is defined as the art and science of developing and managing forests and other resources associated with them for the benefit of human kind. But as an economic activity forestry simply means exploiting forest resources.

Developing and managing forest resources have multiple uses. It helps



to maintain an adequate supply of timber, ply wood, paper and other wood products. It also includes the management of such valuable forest resources as water, wildlife, grazing areas and resources as recreation areas.

Figure: - 2.7 Forestry

Fishery

What is fishing?

Fishing is the catchments of fish and other marine creatures such as whales, seals, pearls sponges, mollusks etc. for It is a form of hunting which rely on rivers, lakes, seas and ocean resources. Fishing includes all activities involved in the commercial and recreational production of fish and shellfish.

Fish are caught for many purposes, some of these are:-

- ✓ Source of food - An estimated number of people depend on fish as their primary source of protein. E.g. Norway, Iceland and Japan etc.
- ✓ Source of minerals – iron, calcium, iodine, copper, magnesium and phosphorous are obtained from fish.

- ✓ Source of raw materials for industries to produce fish meals, glues, oils, fertilizers, soaps, paints, margarine, ink etc.
- ✓ Cloth making - seals & walruses provide skin for making cloths, bags, etc



Figure 2.8 Fishing

Mining

What is mining?

Mining refers to the extraction of mineral bearing substances from the earth's crust. Minerals, such as iron, aluminum, coal, etc. are extracted from the earth's crust. They serve as raw material for manufacturing industries.



Figure 2.9 Mineral Exploitation

The earth's crust is composed of rock containing minerals. A mineral is an inorganic chemical element or compound found naturally in the crust of the earth. Even though, most minerals are inorganic; there are also some organic minerals, such as coal, petroleum and natural gas. Minerals are non-renewable resources which are not evenly distributed on the earth's surface.

Minerals are not distributed evenly through the earth's crust. Some countries are rich in certain type of mineral and poor in others.

Table 2.1 Major minerals and the first Three Leading producers of the world

Minerals	First	Second	Third
Gold	South Africa	Russia	Canada
Iron	Russia	Australia	Brazil
Copper	USA	Russia	Chile
Coal	USA	China	Russia
Crude oil	Middle East	Russia	USA
Zink	Canada	Russia	Peru
Lead	USA	Russia	Australia
Tin	Malaysia	Bolivia	Indonesia

2.2.3. Secondary Economic activities

Manufacturing

What is manufacturing? Is there any difference between manufacturing and industry?

Manufacturing refers to the process and change (transform) that turns raw materials in to finished or semi finished products using inputs in the form of labor, capital and equipment. Industry refers to the place where manufacturing takes place. Like, Hotel industry, tourism industry and transport industry etc. Manufacturing activities are characterized by the following features:

- ✓ Large capital & large scale production and Value adding
- ✓ Power driven machinery and High degree of division of labor
- ✓ Large number of skilled and semi – skilled labor force;
- ✓ Availability of raw materials and source of power
- ✓ Easy access to raw materials , markets etc



Figure 2.10 Manufacturing

2.2.4. Tertiary economic activities

The tertiary sector of the economy, (the service sector or the service industry) is the third type of economic activity. The basic characteristic of this sector is the provision of services. Examples of tertiary economic activities include education, legal services, medical services, trade, transportation services, tourism, etc.

Trade

What is trade? When it begun?

Trade is a tertiary economic activity. It is the process of buying, selling, or exchanging of commodities. Whole sellers and retailers sale the finished and semi-finished industrial products to individual consumers.

Transportation

What is Transportation? What is the major means of transportation in your locality?

Transportation is the movement of goods or people from place to place. In Early times, primitive humankind moved from place to place on foot or by animal to seek food and protection and to satisfy a natural necessity as to the world they lived in. The main transportation systems are road, railway, inland waterways, oceans and airways.

Communication

What is Communication? How many forms of communication?

The word communication involves the transmission of words and messages from one place to another. The major types of communications are telephone, television, radio, mail, internet and other modern communications tools.

Tourism

What is tourism?

Tourism as one of tertiary economic activities is said to be the smokeless industry. Tourism is not only the world's largest industry but it is one of the fastest growing ones and is multidimensional in nature. It is also considered to be one of the major sources of employment especially for European Union countries.

Importance of tourism

- ✓ Foreign exchange generation (Income generation)
- ✓ Regional development :
- ✓ Environmental improvements
- ✓ Employment creation and Nature conservation

Tourism in Ethiopia

What are Ethiopia's major tourist sites? Is there any tourism site in your locality?

Ethiopia is a country with numerous sites of tourist attractions. It has a wide variety of climates ranging from temperate to tropical and varied species of flora and fauna. In addition, it has numerous mountains with contrasting beauty. There are also deep gorges, valleys, mountain peaks, several lakes, rapids and falls.

Major Tourist Sites in Ethiopia

What are Ethiopia's major tourist attractions? Are there any tourist sites in your nearby locality? If there is report in the class.

Ethiopia's old and consistent history puts the country at the top of African

countries with the richest historic and cultural resources. Some of these tourist sites include:-

- ✓ Human technology, the oldest tools of human civilization which were found near Melka kuntura, that date back to about two million years.
- ✓ The historic towns of Axum, Lalibela, and Gondar, etc.
- ✓ Lucy, the first known human being, whose skeleton is the size of a 20 years old girl. It is found in the national museum of Addis Ababa.



Figure 2.12 Endemic mammal wildlife of Ethiopia



Figure 2.13 Gondar Fasiledes



Figure 2.14 Lalibela Rock hewn Church

2.2.5. The effect of different economic activities on countries economic development.

What do you think will the effect of different Economic activities on Countries development?

Different economic activities have two effects on countries economic development. It brought about economic and social changes. Agriculture had been the leading sector followed by the service sector until 2007/08.

Agriculture's main products are food crops, cash crops, industrial crops, fruits and vegetables, flowers and animal products. But, after 2008/09, the service sector emerged as the dominate/leading sector mainly due to the natural factors and economic factors. The industrial sector ranked third in its contribution to Ethiopia's GDP. Its growth was small (13.0%) in comparison to that of the agriculture and service sectors. This could be attributed to the short history of industrialization in the country.

Economic basis of developed and developing countries

How do you explain the economic basis of developed and developing country?

The developed countries are the world's richest nations. This is because their economy is urban-based, industrial and specialized in commercial activities, supported by sophisticated technology and infrastructure. Less developed countries include the bulk of the world's countries, which are found in Africa, Latin America, and Asia. They have traditional economic systems, largely based on agriculture, mining or a combination of both.



Activity 2.2

Answer the following questions

1. What are the major economic activities? Discuss on each
2. How are tertiary economic activities different from primary and secondary economic activities?
3. Which transportation systems are more common in your locality?
4. What are the different types of communication devices?

2.3. Trade, market and government revenue as the current national and local concern

Competencies

After completing this lesson, students will be able to:

-  *explain the concept of trade and increasing global interdependence;*
-  *analyze the condition of consumers right and supply problem using their local examples*
-  *describe the concept and historical development of trade;*
-  *analyze the contribution of trade to the ethiopia economy*
-  *evaluate the contribution of different economic sectors to ethiopian export trade;*
-  *explain how the interaction of supply and demand determines price;*
-  *use graphs to show the market equilibrium pint; and*
-  *explain what conditions must exist for “perfect competition” to occur*



KEY TERMS



Foreign trade



Domestic



trade



Market



Consumer



Equilibrium



Supply



demand

2.3.1. The concept and historical development of trade and Market



KEY TERMS

Bartering



Demand



Supply

Concept of trade.

What is trade? How it began?

Trade refers to the exchange of commodities. It results from the unequal distribution of resources over the earth's surface. None of the world countries is self-sufficient in all types of commodities. Hence trade appeared to solve this shortage of resource or production in different parts of the world.

In the earliest times, people used bartering or exchanging goods for goods. Bartering is the exchange of one article with another equal value. Trade is also resulted from specialization of skills, such as weaving, metal work, tannery, pottery etc. Therefore, due to specialization of varied occupations, people began to exchange goods in the form of bartering. But later on, people used metal and paper money as medium of exchange.



Figure 2.19 Bartering

Benefits of trade

What are the benefits of trade?

A country has a comparative advantage in the production of a good. Expanding the variety of products by consumers and business, trade keeps our economy open, dynamic and cooperative. It increases competition and lowers world prices, which provides benefits to consumers by raising the purchasing power of their own income. Moreover, trade encourages investment, which leads to rapid economic growth. Supporting more productive, higher paying jobs in export sector is also another advantage of trade.

Types of the trade

The trade can be divided into two broad categories. They are; Domestic trade and foreign trade

A. Domestic Trade:- Domestic trade is also known as internal or home trade. It is concerned with the exchange of commodities among peoples of a country. This type of trade activities does not cross national boundaries.

B. Foreign Trade: - Foreign trade is also known as external or international trade. It refers to the exchange of goods and services between nations. The goods here can be finished products, intermediate goods used in producing other goods or agricultural products and food stuffs. Foreign trade has two aspects. These are: The import trade, and the export trade.

Import trade is concerned with bringing goods and services from abroad or from the outside source to home country. On the other hand, export trade is concerned with the sending of goods to another country for sale.

Market forces: Demand and Supply

What is demand and supply? What is the relationship between demand and supply with price?

In economics, the term demand has a specific meaning. It refers to the amount of commodity which an individual buyer is willing and able to buy at a given price and during a given period of time.

Demand Schedule: A demand schedule is a tabular statement that states the different quantities of a commodity that would be demanded at different prices. Demand schedules are of two types:

- ① Individual demand schedule.
- ① Market demand schedule.

A. **Individual demand schedule** is a tabular statement which shows the quantity of a commodity demanded by an individual household at various alternate prices per time period.

Table 2.2 Individual demand Schedule

price per kg	Quantity Demand
10	4
15	3
22	1

The above demand schedule shows the different quantities of mangoes demanded by an individual at different prices. At Birr 10 per kg consumer demands 4 kg mangoes but at Birr 22 per kg consumer demands 1 kg mangoes.

B. **Market demand schedule** is a tabular statement which shows the different quantities of a commodity demanded by different households or consumers in a market at various alternate prices per time period.

Table 2.3 Market demand schedule

Price per kg	X's Demand	Y's Demand	Market demand (x+y)
10	4	6	10
15	3	4	7
22	1	2	3

The above demand schedule shows the different quantities of mangoes demanded by different consumers at different prices. At Birr 10 per kg X demands 4 kg whereas Y demands 6 kg, so market demand at Birr 10 per kg is 10 kg but at Birr 22 per kg X demands 1 kg whereas Y demands 2 kg, so market demand at Birr 22 per kg is 3 kg.

Supply

What is Supply? What is the relationship between supply and price?

In economics we define supply as follows: Supply of a commodity refers to various quantities of it which producers are willing and able to offer for sale at a particular time at various corresponding prices. Note that supply shows a relationship between quantities supplied and price of a commodity, whereas quantity supplied refers to a specific quantity which a producer is willing to sell at a specific price.

Supply Schedule: - A supply schedule is a tabular statement that states the different quantities of a commodity offered for sale at different prices.

Supply schedules are of two types:-

I. Individual supply schedule.

II. Market supply schedule.

- A. Individual supply schedule** is a tabular statement which shows the different quantities of a commodity offered for sale by an individual firm at different prices per time period.

Table 2.4 Individual supply schedule

Price per kg	Quantity Supplied
5	15
8	20
12	28

The above supply schedule shows the different quantities of a commodity supplied by an individual firm at different prices. At Birr 5 per kg, the firm supplies 15 kg, but at Birr 12 per kg, the firm supplies 28 kg of the commodity.

B. Market supply schedule is a tabular statement which shows the sum of the quantities supplied by all the sellers.

Table 2.5 Market supply schedule

Price per kg	Supply of firm X	Supply of Firm Y	Market Supply (X+Y)
5	15	12	27
8	20	18	38
12	28	25	53

The above supply schedule shows the different quantities of a commodity supplied by different firms at different prices. At Birr 5 per kg, firm X supplies 15 kg, whereas firm Y supplies 12 kg, so market supply at Birr 5 per kg is 27 kg. But at Birr 12 per kg, firm X supplies 28 kg, whereas firm Y supplies 25 kg. So market supply at Birr 12 per kg is 53 kg.

Market Equilibrium

In the context of price determination, equilibrium refers to a situation in which the quantity demanded of a commodity equals the quantity supplied of the commodity. It refers to the balance between opposite forces of demand and supply and is termed as market **equilibrium**.

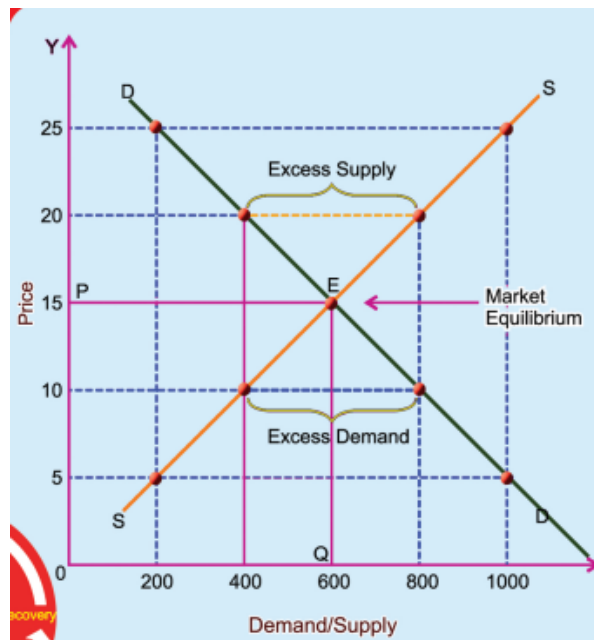


Fig 2.20 Market equilibrium

Major actors of the market

Who are major actors of the market? What is their role?

The actors that can play a role in the marketing process can be divided into three groups: Customers, Distributors and facilitators.

A. Consumer: - is a person or group who intends to order, orders, or use purchased goods, products, or services primarily for personal, social, family, household and similar needs, not directly related to entrepreneurial or business activities.

B. Distributer: - is an intermediary entity between the producer of product and another entity in the distribution channel or supply chain, such as a retailer, a value added reseller or system integrator.

C. Market facilitators: are consultants whose sole or primary responsibility is to handle marketing functions. Advertising agencies are responsible for initiating, and communications.

Competitive Market

What is competitive market? What are the characteristics of perfect competitive market?

A competitive market is one where there are numerous producers that compete with one another in hopes to provide goods and services, as consumers, want and need. In other words, not one single producer can dictate the market. Also, like producers not one consumer can dictate the market either. This concept is also true where price and quantity of goods are concerned. One producer and one consumer cannot decide the price of goods or decide the quantity that will be produced.

A great example of competitive market is farming. There are thousands of farmers and no one of them can influence the market or the price based on how much they grow. All the farmer can do is grow the crop and accept whatever the current price is for that product. They do not get determine the price they want to sell.

A perfectly competitive market has the following characteristics:

- ✓ All producers contribute insignificantly to the market
- ✓ The producers are price takers, they cannot influence the market.
- ✓ Products are homogenous.
- ✓ Producers enter and exit the market freely.
- ✓ Both buyers and sellers have perfect information about the price, utility, quality, and production method of products.
- ✓ There are no transaction costs.

Ethiopian export trade

Since Ethiopia's economy is underdeveloped heavily depends on agriculture; the structure of Ethiopia's exports is dominated by agricultural products, which alone accounted for more than 90% of the export earnings of the country.

Table 2.6 *The share of export items in the total merchandise export value*

Particulars	2015/16 (%) share	2016/17(%) share)	2017/18 (%) share
Coffee	25.2	30.4	29.5
Oilseeds	16.6	12.1	14.9
Leather & Leather products	4	3.9	4.7
Pulses	8.1	9.6	9.5
Meat & meat products	3.4	3.4	3.6
Fruits & Vegetables	1.9	1.9	2.2
Live animals	5.2	2.3	2.2
Chat	9.2	9.4	9.3
Gold	10.1	7.2	3.5
Flower	7.9	7.5	8
Electricity	1.1	2.5	3
Others	7.4	9.7	9.7
Total Export	100	100	100

(Source: World Bank, 2019)

Consumers right:- consumer right is the right to have information about the quality, strength, quantity, purity, price and standard of goods or services, as it may be the case, but the consumer is to be protected against any unfair practice of trade.



Activity 2.3

Answer the Following Questions

1. Define Trade. How it begun?
2. Illustrate concept of demand and supply?
3. Describe benefits of trade?

2.4. Government revenue and tax

Competencies

After studying this lesson, students will be able to:

-  *explain the meaning of government revenue and tax;*
-  *discuss the historical development of revenue and tax in Ethiopia;*
and
-  *describe the benefits of government revenue and tax.*



KEY TERMS

Tax



Revenue



Levy

The meaning and basic concept of government revenue and tax in Ethiopia

What is revenue and tax? How it is collected?

Government revenue or national revenue is the money received by a government from taxes and non-taxes sources to enable it to undertake government expenditure.

A tax is a compulsory financial charge or some other type of levy imposed on a taxpayer (an individual or legal entity) by governmental organization in order to fund government spending and various public expenditures. A failure to pay along with avoidance of or resistance to taxation is punishable by law.

Focus



A tax is a mandatory fee or financial charge levied by any government on an individual or an organization to collect revenue for public works providing the best. Taxes are levied by governments on their citizens to generate income for undertaking projects to boost the economy of the country.

Historical development of government revenue and tax in Ethiopia

Describe the historical development of government revenue and tax in Ethiopia?

Taxes in Ethiopia until the early 20thC were mainly paid in kind or labor, service, rather than in cash. Taxation in the past varied greatly from region to region, and was often arbitrary, in that it tended to depend on the desire of the chief or tax collector. At the middle of the nineteenth century, the British council member Walter Plowden, wrote “The imposts (i.e. taxes) are numerous but vary according to the traditional customs of each village. They pay a certain portion in kind to the Ras, or other great chief, and sometimes a regular tax in money; besides this they must furnish oxen to plough the king’s lands.

The first important reforms, carried out by Emperor Menilik toward the end of the nineteenth century, resulted in the establishment of a fixed tithe rather than the undefined, and essentially arbitrary, system of agricultural and other taxation.

The second major reform, which dates back to the early twentieth century, and resulted largely from the increasing prevalence of money and the growth of trade, was the stable efficiency of agricultural and other taxation. Later, more recent reforms were the fruit of Ethiopia’s emergence as a modern state. They involved all the mechanisms of modern tax collection; tax schedules, paper work, and the development of trained and regularly paid civil service, as well as the abolition of the vexatious system of internal customs posts.

The benefits of the government revenue and tax

List and explain the benefits of government revenue and tax.

Government expenditure is divided into two principal headings: *Recurrent* and *Capital expenditure*. The recurrent budget is mostly financed from domestic revenue sources, i.e., from tax and non-tax revenue. The capital budget is usually financed by external loans and grants.

Recurrent budget expenditure consists of expenses that repeated in nature like salaries of civil servants. The recurrent budget in Ethiopia is structured under four functional categories.

- ✓ Administration and General service (Organ of state, justice, Defense, public order and General Service).
- ✓ Economic service (agriculture & natural resource, trade & industry, mining & energy, tourism, transportation& communication, and construction)
- ✓ Social (education & health, culture & sport, labor & social affairs, and prevention & rehabilitation).
- ✓ Other services (transfer public payment, repayment of public debt, contingency & miscellaneous).



Activity 2.4

Answer the Following Questions

1. Define revenue and tax
2. Explain the importance of government revenue and tax.
3. Describe the historical development of revenue and tax in Ethiopia

UNIT SUMMARY

- ✓ Culture is “the way of life, especially the general customs and beliefs, of a particular group of people at a particular time.
- ✓ Language Families is collection of languages related through a common ancestral language.
- ✓ The six languages used in the UN include: Arabic, Chinese (Mandarin), English, French, Russian and Spanish.
- ✓ Religion is an organized collection of beliefs, cultural system, and world views that relate humanity to an order of existence.
- ✓ Globalization refers to the integration and democratization of the world’s culture, economy, and infrastructure.
- ✓ Economic activity is the production, distribution and exchange of goods and services.
- ✓ Manufacturing refers to the process and change (transform) that turns raw materials in to products using inputs in the form of labor, capital and equipment
- ✓ Mining is a primary economic activity concerned with the extraction of mineral bearing substances from the earth’s crust.
- ✓ In the earliest times, people used bartering or exchanging goods for goods that has relatively equal value.
- ✓ Trade encourages investment, which leads to rapid economic growth. Supporting more productive, higher paying jobs in export sector is also another advantage of trade.
- ✓ Domestic trade is exchange of goods and services within a country.
- ✓ Foreign trade is also known as external or international trade. It refers to the exchange of goods and services between nations.
- ✓ Demand for a commodity is the amount of it that a consumer is willing to buy at various given prices and a given moment of time.
- ✓ Taxes are levied by governments on their citizens to generate income for undertaking projects to boost the economy of the country.
- ✓ Taxes in Ethiopia until the early twentieth century was mainly paid in kind or labor, service, rather than in cash.

GLOSSARY

Bartering: is the exchange of one article with another of equal value.

Culture: “the way of life, especially the general customs and beliefs, of a particular group of people at a particular time.

Demand is the amount of commodity which an individual buyer is willing and able to buy at a given price and during a given period of time.

Domestic trade: It is concerned with exchange of goods and services within the country.

Export: Sending goods and services to another country for sale.

Fishing is the catchments of fish and other marine creatures such as whales, seals, pearls sponges, mollusks etc.

Foreign trade: It refers to the exchange of goods and services between nations.

Forestry is a primary economic activity concerned with the exploitation of forest products.

Globalization: the integration and democratization of the world’s culture, economy, and infrastructure.

Human race: - a human race a group of people with certain common inherited features that distinguish them from other groups of people.

Import: bring goods or services into a country from abroad for sale.

Industry refers to the place where manufacturing takes place.

Language Families: is collection of languages related through a common ancestral language.

Levy:- taxes initiated by primary industries imposed on the producers in the industry.

Religion:- is an organized collection of beliefs, cultural system, and world views that relate humanity to an order of existence.

Revenue is the money received by a government from taxes and non-taxes sources to enable it to undertake government expenditure.

Supply:- refers to various quantities of commodity which producers are willing and able to offer for sale at a particular time at various corresponding prices.

Taxes are levied by governments on their citizens to generate income for undertaking projects to boost the economy of the country.

Tourism as one of tertiary economic activities is said to be the smokeless industry.

REVIEW EXERCISES

I. Determine whether each of the following sentences is true or false.

1. Culture is constantly interacting and changing sets of practices and processes.
2. All languages are not considered as essentially an important part of the culture.
3. Religion and belief of the people play an important role in shaping up of the Culture as well.
4. Minerals are distributed evenly throughout the earth's crust.
5. Mass poverty is a common feature of the majority of the populations of the least developed countries.
6. The tertiary sector of industry involves the provision of services to other businesses.
7. Trade is the result of unequal distribution of resource on the surface of the earth.
8. Import trade is concerned with bringing goods and services from abroad.
9. Spanish is an official language of most African countries.
10. Agriculture is the least user of rural land compared to forestry.

II Match items.

A

1. Sino-Tibetan
2. Altaic
3. North Africa
4. South Africa
5. Sub Sahara

B

- A. Turkish
- B. Hamito-Semitic
- C. China & Southeast Asia
- D. Khoisan (Bush men).
- E. Niger-Congo
- F. Europe & Asia

III Choose the correct answer

1. A dominant language family of Europe and south Asia is:
 - A. Indo-European
 - B. Sino Tibetan
 - C. Niger-Congo
 - D. Khoisan (Bush men)

2. An official language of most Latin American countries is
 - A. English
 - B. Russia
 - C. Spanish
 - D. France
3. Which one of the following is not an official language of the UN?
 - A. Spanish
 - B. Germany
 - C. Arab
 - D. Russia
4. Which one of the following economic activities belongs to “smoke less industry?”
 - A. Manufacturing
 - B. Mining
 - C. Forestry
 - D. Tourism
5. A type of trade which refers to the exchange of goods and services between nations.
 - A. Domestic trade
 - B. Internal trade
 - C. Foreign trade
 - D. Home trade
6. It refers to the balance between opposite forces of demand and supply
 - A. Market equilibrium
 - B. Demand schedule
 - C. Supply Schedule
 - D. Demand supply
7. One of the following is not a primary economic activity.
 - A. Mining
 - B. Agriculture
 - C. Forestry
 - D. Trade
8. One of the following is not a characteristic of manufacturing activities.
 - A. It requires large capital investment and involves mass units of production
 - B. Large number of employees is engaged
 - C. They involve a high degree of division of labor
 - D. It is one of the primary economic activities.
9. The integration and democratization of the world’s culture, economy, and infrastructure is.
 - A. Global warming
 - B. Religion
 - C. Globalization
 - D. Westernization
10. The types of human activities can be broadly grouped into several major groups of economic activities. To which does the extractive sector belong to?

- A. Secondary
- B. Tertiary

- C. Primary
- D. Quaternary

IV. Short answer

1. Discuss on the major component of culture by adding your own suggestion
2. List and discuss the major types of major world languages and religion of the world.

UNIT THREE

3. NATURAL RESOURCES AND SOCIO ECONOMIC DEVELOPMENT

Introduction

In the previous units, you have learned about the physical characteristics of the earth, (Forces shaping the Earth's surface, Composition and structures of the Earth's atmosphere, Elements and controls of weather and climate). In this unit you will learn about Natural resources and

socioeconomic development. The major topics to be covered in this unit include: Conservation and utilization of natural resources for sustainable development, Consequences of unwise utilization of natural resources, Resource accessibility & resource based conflicts.

Unit Outcomes



At the end of this unit, students will be able to

-  *describe the role of natural resources for socio economic development;*
-  *explain the concept of sustainable resource utilization and development;*
-  *describe the way natural resources are utilized in their locality; and*
-  *value indigenous resource based conflict resolution efforts in their locality.*

3.1. Conservation and utilization of natural resources for sustainable development

Competencies

After studying this lesson, students will be able to:

-  *analyze the importance of natural resource for socioeconomic development;*
-  *describe factors influencing the utilization of natural resource*
-  *explain how the consumption patterns of resources are changing through time in their locality*
-  *explain the ideas of resource conservation and sustainable utilization; and*
-  *respect humanity and indigenous knowledge.*



KEY TERMS



Conservation



Renewable resources



Natural Vegetation



Non-renewable resources



Natural resources



Sustainability

3.1.1. Resource utilization and economic benefits

What are natural resources? How do people use resources to make a living?

Concepts of Resources

Natural resources refer to the things that exist freely in nature for human use and don't necessarily need the action of mankind for their generation

or production. Natural resources include fertile soil, clean water, minerals, wildlife, vegetation, and energy sources. People use all these resources to improve their lives.

Types of Resources

What are the different types of natural resources?

- I. Renewable resources:** are types of resources that can be replaced as they are used. They can be replaced naturally or grown fairly quickly. Forests, water, soil, plant and animal life all can be renewable resources if people manage them carefully.
- II. Non-renewable resources:** As their name suggests, non-renewable resources cannot be replaced once they have been used. The most important example of non-renewable resources are the fossil fuels like, coal, oil and natural gas and minerals. These resources are generally non-replaceable in character.

A. Natural Vegetation

What is natural vegetation? Discuss uses of natural vegetation?

The term natural vegetation refers to a plant community which has grown naturally without human aid, which is resulting from normal conditions of climate, soil, drainage and other natural conditions. The vegetation of a region can be modified to a marked extent by people, because of agricultural or urban development. The following are the direct and indirect uses of natural vegetation.

Table 3.1 Uses of Natural Resources

Direct use	Indirect use
Serve as a source of energy such as fuel wood and charcoal etc	Regulate local climatic condition
Serve as source of industrial raw materials.	Maintain the balance of nature
Serve as source of construction materials.	Maintain soil fertility and regulate soil erosion.
Serve as a source of food	serve as habitat of wild animals
serve as source of income	Provide aesthetic value.

B. Wild Animals

What are wild animals? Have you ever seen wild animals?

Wildlife includes all wild living creatures, large or small. Mammals, birds, fish, reptiles, amphibians and insects are regarded as wildlife. These animals are important for many reasons. Among the most common important functions of wild animals for human beings are the following.

- ✓ Source of food
- ✓ Maintaining the balance of nature
- ✓ Add beauty to the environment (aesthetic value)
- ✓ Source of industrial raw materials
- ✓ Source of individual and national income



Figure 3.1 Wild Animals

C. Minerals

What are minerals? Discuss the use of minerals?

A mineral is an element or a combination of elements. It is either inorganic or organic chemical elements or compounds found naturally in the crust of the earth.

The major uses of minerals are:-

- ✓ Minerals are raw materials for a variety of manufacturing industries.
- ✓ Some minerals are sources of energy that is used to run machinery. Examples: coal, petroleum and natural gas.

- ✔ Some minerals are used for making fertilizers. These include minerals like phosphates, sulphur, potash, and nitrates.
- ✔ Some minerals are used directly as materials in building construction. Such minerals include limestone, marble, granite, clay, etc.
- ✔ Some minerals are used for both aesthetic and ornamental purposes. Like, Gold, Diamond etc.

D. Soil

What is soil? What are soils used for? What are the parent materials of soil?

Soil is a natural resource consisting of layers of mineral constituents of variable thicknesses. It is composed of particles of broken rock that have been altered by chemical and environmental processes that include weathering and erosion. It is a mixture of mineral and organic constituents. Some of the major uses of soil are:-

- ✔ Soil is used in agriculture, where it serves as the primary nutrient base for plants.
- ✔ Soil absorbs rainwater and releases it later, thus preventing floods and drought. Soil cleans the water as it percolates through. Soil is the habitat for many organisms.
- ✔ The biological component of soil is extremely important for the carbon sink. Even in desert areas, bacteria, lichens and mosses capture a significant amount of carbon by photosynthesis.

3.1.2. Factors affecting natural resource utilization

What are the factors that affect the utilization of resources?

A. Overpopulation

As the human population keeps on enlarging, there is a lot of pressure on the utilization of almost all natural resources. This often causes over-exploitation of the natural resources. To worsen matters, exhaustible natural resources such as arable land, coral reefs, fresh water, fossil fuels, and wild forests drop sharply due to over-exploitation to sustain the ever increasing population.

B. Intensive Agricultural and Farming Practices

Intensive agricultural practices have claimed much space of the natural resources because farmers resort to converting forests and grasslands to croplands. In the modern world, the pressure to convert lands into resource areas for producing priced foods, crops, and livestock rearing has increasingly led to the depreciation of natural resources especially forests, wild life and fertile lands. Runoff of agricultural waste, fertilizers, and pesticides into marine and freshwater environments has also negatively threatened various natural crop species, natural water resources and aquatic life.

C. Climate Change and Global Warming

The severe changes in climate patterns as a result of human activities and overpopulation that generate greenhouse gases and carbon footprint in the atmosphere threatens biodiversity as well as other numerous natural resources.

D. Environmental Pollution

The majority of natural resources have been destroyed and a large portion is under immense threat due to the toxic substances and chemicals emitted from industries, homemade utilities, and agricultural products among other processed materials. Land, air, and water pollution pose long-term cumulative impacts on the natural resources and the quality of the environments in which they occur.

E. Land Use and Development

The conversion of lands into urban settings, housing development projects, office spaces, shopping malls, industrial sites, parking areas, road networks, and so on takes away the naturally occurring land that provided habitat for wildlife and other living organisms. This practice has substantially led to the loss and destruction of millions of acre of natural habitable environments.

3.1.3. The changing importance of resources over time

Are the consumption pattern of resources are changing? How?

Increase in demand on using resources is never-ending and human beings seek to achieve utilize in technical advancements will never be final. People to satisfy their wants and lead a more comfortable life relate the concept of consumerism to increased usage of consumer goods.

Industrial Revolution leads to expansion of cities and towns both in size and power. In developing nations, especially a large segment of society from villages moved to cities for occupational support (occupational migration). This exactly was the cause of rapid expansion of cities.

Electricity from various sources is a major requirement of expanding cities, towns and villages, this all together has led to an electricity energy crisis. Transport and communication has brought the petroleum reserves of the world under a great threat. The world population has extracted and used coal reserves thinking as if it is a never-ending commodity/resource. Fuel wood being used for the explosion of fire is chiefly responsible for the destruction of impoverished forestlands.

Focus**Utilization of Resource in Traditional and Modern Society****A. Traditional society**

- Backward means of production/
- wasteful and destructive/inefficient resource use

B. Modern society

- Over exploitation/ luxurious/ comfortable life
- Excessive use of resources/over production and wastage
- Disposing hazardous chemical waste
- Motives for profit

3.1.4. Resource conservation and sustainable utilization

What do you mean by resource conservation and sustainable use?

Conservation:- is the act of protecting Earth's natural resources for current and future generations. Conservation seeks the sustainable use of nature by humans, for activities such as hunting, logging, or mining.

Sustainable use means the use of components of resources in a way and at a rate that does not lead to the long-term decline of biological diversity, thereby maintaining its potential to meet the needs and aspirations of present and future generations.

Why Conserving Natural Resources is Important?

There is something called a balance in nature. As we continue to overuse natural resources, a serious imbalance has been caused. Deforestation, depletion of oil and gas, shortage of water and power, soil erosion leading to lack of agricultural growth, are all contributing to environmental issues such as global warming and environmental pollution. Interestingly, it is these environmental issues that are leading to further shortage of natural resources.

Ways of Conserving Natural Resources

Conserving soil

What are the possible measures of conservation for soil resources?

Major soil conservation measures that could be taken to increase soil fertility are:

Terracing: - constructing stair like structures along hillsides to reduce the speed at which water flows down the slope, thereby reducing erosion,



Figure 3.2 Terracing

Agro forestry: - is associating agriculture with forest development.

Afforestation: is planting trees in areas which originally were not covered by forests.

Reforestation: - is planting tree seedlings to replace cut forests.

Windbreaks and shelter-belt plantations: planting trees along a line to break the speed of the blowing wind and reduce its erosivity.

Check dams: - are small ditches that are prepared along sloppy areas to reduce the impact of the down slope surface flow.

Strip cultivation: - is planting two or more types of crops on the same farm, using a pattern of stripes of alternating crops. This approach reduc-

es soil erosion because different types of plants use different ways of binding soil particles to themselves.

Contour ploughing: - is ploughing the land sideways, following contours. It is commonly used in sloped areas, forming furrows perpendicular to the angle of the slope. These furrows act as blocks, slowing the flow of downhill water.

Crop rotation: - planting different crops alternately on a farm.

“Green manure”: This approach uses plants that have soil-nutrient value to enrich the soil in the same way that animal faeces are used as fertilizer. The “green manure” plants are cultivated on the land and then ploughed under to mix them with the soil.

Mulching: - is covering the soil with plant residue to let the soil regain some nutrients as the residue decays.

Fallowing: - is leaving the farm idle for a while until the soil regains its fertility

Case Study

KONSO PEOPLE AND THEIR TERRACING FARMING SYSTEM

The konso cultural Landscape consists of 200 km² of stone walled terraces and fortified settlement. Designated as an UNESCO world heritage site in 2011, it provides a 600 year-old example of how human beings adapted to a dry and unforgiving environment. Demonstrating sophisticated knowledge of engineering and dynamics of the landscape, the Konso agricultural system provides an insight into the functions of terrace systems and how their practices can still be relevant to cultivating this harsh landscape today. The impressive terraced landscape in Konso includes some 40 historic walled towns surrounded by a system of dry-stone agricultural terracing, complemented with a complex array of other soil and water conservation techniques such as water and soil harvesting; inter-cropping; agro forestry; livestock; and bee keeping activities. As a result, the stony hillsides of Konso are turned into protected fertile agricultural landscapes.

Conserving Water

Discuss possible measures of conservation for water resources.

Water is a basic resource for all our activities. We clean with water, we cook with water, and the production of every item of use requires the use of water. Several parts of the world are now facing a water shortage because of the way in which it is being used. Conserving this natural resource is of prime importance for the stability of the environment.

- ✔ Firstly, if you have any leaky faucets or those that don't work properly, get them fixed. Every drop of water is precious.
- ✔ Use a bucket of water to bathe rather than using the shower. You may not realize how much water you are wasting when you use a shower for a bath.
- ✔ Stop dumping things in the seas and rivers and lakes. Not only does marine life get affected, the water becomes polluted and dangerous for use thereafter.
- ✔ Try to harvest rainwater. You can use it to water your garden and plants, and even clean your car. Don't use it for any other purposes and definitely do not drink it.

Conserving Forests

What are the major possible measures of conservation for forest resources?

The problem of deforestation can be reduced through the application of different forest-conservation measures. These measures include reforestation, Afforestation, agro-forestry and social forestry.

Reforestation: - is planting trees in areas where the original forest cover has been removed. It is done to replace the trees that have been cut by humans for different purposes.

Afforestation: - is planting trees in areas where there was no original forest cover. For example, Afforestation is appropriate for areas where the land is left empty and therefore is exposed to erosion.

Agro forestry: - is forestry combined with farming. It is a practice of integrating the planting of trees into farming to provide fuel, fruit, forage, shelter for animals or crops, and other benefits. In short, it refers to associating

crop production with forest development.

Social forestry: - refers to planting trees in urban areas in association with human settlements.

Conserving Wild Animals

Discuss possible measures of conservation for the wildlife resources.

Wild Animals migrate, and even die due to the disturbance of their environment as humans influence. To control the situation the following measures can be taken:

Conserving natural vegetation: - the conservation of one type of natural resource means the conservation of others. Conserving natural vegetation that serves as habitats and sources of food for wild animals can ultimately help with their conservation.

Establishing national parks, game reserves and sanctuaries: - these areas provide protection and conservation for wild animals. *They are established* to conserve wild animals and their habitats so that they have a secure environment that is safe for their survival.

Controlling illegal hunting:- It can be done by developing strict legislation whereby illegal hunters are punished or penalized for their illegal acts.

Raising the people's awareness: - this can be done by educating the people about the uses of wild animal so that their attitudes and activities change.



Activity 3.1

Answer the Following Questions

1. What are natural resources?
2. Write the direct uses of natural vegetation
3. What is conservation? Discuss the ways of conserving the following natural resources from damage. (Forests, Wild animals,)

3.2. Consequences of unwise utilization of natural resources on Water, Air and Soil.

Competencies

After studying this lesson, students will be able to:

-  *analyze the major consequences of unwise use of natural resource;*
-  *describe the effects of unwise utilization of natural resource on water, air, and soil; and*
-  *explain the consequences of natural resource degradation on their locality*



KEY TERMS

 **Degradation**
 **Pollution**

 **Wise**
 **utilization**

What are the consequences of unwise utilization of resources? What is pollution?

Pollution is the introduction of harmful materials into the environment. These harmful materials are called pollutants. Pollutants can be created by human activity, such as trash or runoff produced by factories. Pollutants damage the quality of air, water and land.

Natural resources are the basis for our life on earth. But due to unwise utilization, which is caused by population pressure (growing consumption), industrialization and urbanization the demand for natural resources is increasing, and causing severe damage and their availability is being limited. Some of the consequences of unwise utilization of resources are:

Water Pollution:-Water is extremely essential for life; this common fact is known to all. It is required to meet our basic needs in day to day life, but during this processes the undesirable substances are added to the water resources to a great extent. This alters the basic chemistry of water in rivers and streams. Some of the effects of water pollution are: (destruction of biodiversity, depletes aquatic ecosystems, contamination of the food chain, lack of portable water, disease, infant mortality etc).

Air pollution:- The WHO defines **air pollution** as the presence of materials in the air in such concentration which are harmful to man and his environment. A number of ingredients find their way in the air and these are mostly gases, which rapidly spread over wide areas. These particle and gases can come from car and truck exhaust, factories, dust pollen, mold spores volcanoes and wild fire. It is considered as the major incidence and progression of some diseases such as asthma, lung cancer, ventricular hypertrophy, etc.

Soil Pollution:- Like water and air, soil is also equally important for living organisms. It supports plants on which all other living organisms depend. The toxic substances that are deposited on the earth's surface harm our health and well-being and affect food, water, and air quality. Some of the consequences of soil pollution are: (damage to health, poor harvests, climate change, water and air pollution, population displacement, species extinction, desertification, and economic impact).

Land degradation:- Besides pollution, land and soil face several other problems. Removal of topsoil is called soil erosion. Soil erosion factors are water, wind, ocean, waves and glaciers, felling of trees, overgrazing by cattle, over-cropping etc. Erosion occurs both in wet and dry regions. It leads to floods. It is also a global challenge that affects every one through food insecurity, higher food prices, climate change, environmental hazards, and the loss of biodiversity and ecosystem services.



Activity 3.2

Answer the Following Questions

1. What are the consequences of unwise utilization of natural resources (on water, air and Soil?)
2. Explain the effects of water pollution, wind pollution, soil pollution and land degradation
3. Discuss the effects of land degradation on your local area.

3.3. Resource accessibility & resource based conflicts:

Competencies

After completing this lesson, students will be able to:

-  Describe the major resource based conflicts of Ethiopia
-  Explain a resource based conflicts in their locality.
-  Describe how Resource conflicts within society can be managed and resolved.



KEY TERMS

Conflicts



Resolution

Natural resources are an integral part of society, as sources of income, industry, and identity. Developing countries tend to be more dependent on natural resources as their primary source of income, and many individuals depend on these resources for their livelihoods. It is estimated that half of the world's population remains directly tied to local natural resources; many rural communities depend upon agriculture, fisheries, minerals, and timber as their main sources of income.

Natural resource conflicts are disagreements or disputes to get access to, or control over and use of the existing natural resources. This kind of conflicts normally emerge because people have dissimilar and inequitable uses from resources of land, water, forests, and pastures, etc. or need to manage it differently.

Most Natural resource use conflicts are common occurrences in each and every part of Ethiopia. Among the prominent ones, ongoing competition over the use of rangelands between different pastoralist groups in the Middle Awash

valley and Ethio-Kenya border usually raises conflicts. Similar conflicts are also common among people living around major conservation areas like the Bale Mountains National Park, Semen Mountain National Park, and others.

On the other hand, the unresolved conflict of interest on the use of Nile River among Ethiopia, Sudan, Egypt, and other countries could also be taken as a noticeable example of state-wide conflicts. When such kind of conflicts are not properly addressed, it may escalate into violence and war; and thus, may cause further degradation of the environment, disrupting projects and undermining livelihoods. Therefore, it is extremely difficult to properly utilize and sustainably manage resources under conflict.

How to resolve resource based conflicts?

Resource conflicts within society can be managed and resolved. The ways by which people (even those from the same community) respond to natural resource conflicts vary noticeably. As a result, every community has its own scheme of handling conflicts. The most common strategies may include avoidance, coercion, negotiation, mediation, arbitration, and adjudication. Apart from the legal procedures, these mechanisms are common and had long been practiced as parts of the societal culture in Ethiopia.



Figure 3:1 Approaches to Natural Resource conflicts Management and Resolution



Activity 3.3

Answer the Following Questions

1. What do we mean by a resource conflicts?
2. Where the prominent resource is based conflicts in Ethiopia?
3. What are the major resource conflict management and resolution?

UNIT SUMMARY

- ✓ A natural resource is anything that people can use which comes from the natural environment.
- ✓ Now a day, natural resources of the earth are over exploited, polluted, exhausted and degraded because of over population, intensive agricultural and farming practices, climate change and global warming, land use and 21st lifestyle consumption.
- ✓ Renewable resources are types of resources that can be replaced as they are used. They can be replaced naturally or grown fairly and quickly.
- ✓ Non renewable resources, as their name suggests non-renewable resources cannot be replaced once they have been used.
- ✓ Wildlife includes all wild living creatures, large or small. Mammals, birds, fish, reptiles, amphibians and insects are regarded as wildlife.
- ✓ People to satisfy their wants and lead a more comfortable life relate the concept of consumerism to increased usage of consumer goods.
- ✓ Conservation seeks the sustainable use of nature by humans , for activities such as hunting, logging, or mining.
- ✓ Sustainable use means the use of components of resources in a way and at a rate that does not lead to the long-term decline of biological diversity, there by maintaining its potential to meet the needs and aspirations of present and future generations.
- ✓ Natural resource conflicts are disagreements or disputes to get access to, or control over and use of the existing natural resources.



GLOSSARY

Conflicts- are disagreements or disputes

Conservation:- wise utilization of resources

Degradation:- the act of degrading or the state of being degraded.

Deforestation - the process of indiscriminate destruction of the natural vegetation covers of an area without adequate replacement.

Natural resources:- is anything that people can use which comes from the natural environment.

Natural vegetation: vegetations which are grown naturally, without human interference

Pollution - damage to the environment caused by waste levels that overload natural recycling systems or by synthetic materials that cannot be broken down by natural process.

Renewable resources are types of resources that can be replaced as they are used.

Resolution::- the act of finding an answer or solution to a conflict, problem, etc.

Rural - country side or non-urban place a settlement is a whole inhabitant depends on agriculture for their livelihood.

Sustainability:- avoidance of the depletion of natural resources in order to maintain an ecological balance.

Urban - non-rural area example town, city, etc.

Urbanization - the process whereby large number of people leave the countryside and small towns in order to settle in cities and surrounding metropolitan areas.

Wise utilization:- the wise use of the earth's resource by humanity.

REVIEW EXERCISES

I write true if the statement is correct and false if the statement is wrong

1. Renewable resources cannot be replaced once they have been used.
2. A natural resource is anything that people can use which comes from the natural environment.
3. A mineral is an element or a combination of elements.
4. Transport and communication couldn't brought the petroleum reserves of the world under a great threat.
5. Conservation seeks the sustainable use of nature by humans.
6. Resource conflicts within society can be managed and resolved.

II Matching: Match Column A with Column B

A

1. Afforestation
2. Reforestation
3. Agro-forestry
4. Social forestation
5. Conservation

B

- A. wise utilization of resources
- B. planting trees in urban areas.
- C. planting trees in areas where there was no original forestation
- D. It is done to replace the trees.
- E. is forestry combined with Farming
- F. Harvesting crops

III. Multiple choice Item

1. Anything that people can obtain from the natural environment is _____.
 - A. Natural resource
 - B. Sustainability
 - C. Conservation.
 - D. Utilization.

2. The presence of materials in the air in such concentration which are harmful to man and his environment is:
- A. Soil pollution
 - B. Air pollution.
 - C. Deforestation
 - D. Soil erosion
3. Which of the following is not true about resource?
- A. It is useful for the existence of human beings
 - B. It can be made by human beings
 - C. It is created naturally
 - D. It is distributed unevenly.
4. Which one of the following is the major source of water pollution in rural areas?
- A. Sewage
 - B. Industrial wastes
 - C. Agricultural pollutants
 - D. Irrigation
5. Which of the following is not a human cause of erosion?
- A. Heavy rain
 - B. Deforestation
 - C. Overgrazing.
 - D. Bad farming practice
6. Which of the following belongs to non-renewable natural resources?
- A. Wild animals
 - B. Gold
 - C. Air
 - D. Soil
7. The wise use of natural resource is _____.
- A. Degradation
 - B. Destruction
 - C. Conservation
 - D. Misused
8. One of the following is not renewable natural resources.
- A. Coal
 - B. Forest
 - C. Soil
 - D. wild animals

IV Write short answers for the following questions

1. What does pollution mean?
2. Discuss pollution as a problem of drinking water.
3. What are the importance of wild animals?
4. What is conservation?
5. Why Conserving Natural Resources is Important?

Social Studies

Student Textbook
Grade 8



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Ministry of Education



Sidaama National Regional State
Education Bureau