UNIT ONE: LANDFORMS OF AFRICA

Introduction

The study of Africa's landforms helps us understand the continent's diverse physical geography, how it shapes human activities, and its role in the global environment. By exploring Africa's major landforms, you'll gain a deeper appreciation of the continent's natural beauty and its importance in the world.

Overview of Landforms

Landforms are physical features on Earth's surface that shape the terrain of an area. The three major types of landforms are **mountains**, **plateaus**, and **plains**. Minor landforms include **hills**, **gorges**, **valleys**, and **basins**.

Formation of Landforms

Landforms are created by two main processes:

- **Internal processes** like tectonic plate movement and volcanic activity, which push up mountains and hills.
- **External processes** such as erosion by water and wind, which can wear down land and form features like gullies, river valleys, and gorges.

These processes take millions of years. For instance, the deep **Abbay Gorge** in Ethiopia was formed over a long period due to erosion, cutting down about 1000 meters deep between the towns of Goha Tsiyon and Dejen.

Major Landforms of the World

1. **Mountains:**
    - The largest elevated landforms with steep sides and high peaks.
    - Formed when rock layers are pushed together or by volcanic activity.
    - Example: **Mount Everest** in the Himalayas, the highest peak on Earth at 8,849 meters.
2. **Plains:**
    - Large, flat areas of low land, often important for agriculture.
    - Example: The **Great Plains** in the United States.
3. **Plateaus:**
    - Raised areas of flat land, often formed by volcanic activity.
    - Example: The **Deccan Plateau** in India.

Africa's Location and Features

Africa is the second largest continent, covering 30.37 million km², and is home to about 1.3 billion people, accounting for 16% of the world's population. It is divided almost in half by the Equator, creating similar climatic and physical conditions in the north and south.

Landforms of Africa

Africa is home to several significant landforms, each shaping the continent's diverse ecosystems and human activities. Understanding these landforms is crucial because they influence climate, ecosystems, and human interactions with the environment.

Major Landform Regions in Africa

1. **African Alpine System:**
    - Includes the **Atlas Mountains**, which extend across Morocco, Algeria, and Tunisia. These mountains form a natural divide between the Mediterranean Sea and the Sahara Desert.
2. **African Massif:**
    - Includes the **Sahara Desert**, the largest hot desert in the world, and other regions like the **Sahel** and the **Savanna**.
3. **East African Highlands and Rift System:**
    - Home to the **Rift Valley** and the **African Great Lakes**, as well as the **Ethiopian Highlands**.
4. **Southern Africa Platform:**
    - Features mountain and desert systems, such as the **Drakensberg Mountains** and the **Kalahari Desert**.

African Massif

I. The Sahara Desert The Sahara is the largest hot desert in the world, covering an area of 9.2 million square kilometers. It stretches across North Africa, from the Atlantic Ocean in the west to the Red Sea in the east. The desert spans ten countries: Algeria, Chad, Egypt, Libya, Mali, Mauritania, Morocco, Niger, Sudan, and Tunisia. The landscape of the Sahara is diverse, consisting of vast sand dunes called ergs, and flat, rocky areas known as regs.

II. The Sahel The Sahel is a semiarid region that lies just south of the Sahara. It acts as a transition zone between the desert and the more fertile lands to the south. The Sahel is a 5,000-kilometer stretch of savanna, and its name comes

from the Arabic word "sahil," meaning "shore," as it borders the Sahara. This region includes countries like Mauritania, Senegal, Mali, Niger, and Chad. The Sahel's landscape is characterized by grasslands and savannahs with low-growing grasses and scattered trees, which are mostly acacias. The region is prone to desertification, where productive land gradually turns into desert due to factors like climate change and human activities.

III. The Savanna The African Savanna is a tropical grassland with scattered trees and shrubs, located between the rainforest and the Sahel grassland. The vegetation in the Savanna is adapted to the dry conditions, with trees shedding their leaves during the dry season to minimize water loss. The Savanna is divided into two parts: the Savanna Woodland and the Thorn Tree Tall Grass Savanna. In the Savanna Woodland, trees are widely spaced due to limited soil moisture, allowing for a dense layer of grass to grow underneath. The Thorn Tree Tall Grass Savanna features trees with small leaves and thorns, adapted to the dry environment.

IV. The Tropical Rainforest The Tropical Rainforest is found near the equator in countries like Cameroon, the Republic of the Congo, and Gabon. These rainforests are highly diverse, with a single square kilometer hosting up to 100 different tree species. The trees form a dense, continuous canopy that reaches up to 35 meters high, with some trees even taller. The climate is consistently warm and humid, with rainfall exceeding 2,000 millimeters annually. The soil in tropical rainforests is often acidic and nutrient-poor due to heavy rainfall and rapid decomposition.