UNIT FIVE
GEOGRAPHY AND ECONOMIC DEVELOPMENT

Influence of Geographic Location on Development

Geographic location plays a crucial role in shaping the economic development of regions. Factors such as geology, climate, relief, soils, and biodiversity directly affect agricultural production, industrialization, and commerce. Despite advances in technology minimizing some geographic constraints, challenges persist, particularly in tropical regions where harsh climates and poor soils impact development.

1. Geographic Parameters and Development

Geographic parameters significantly influence development:

- **Agricultural Production**: Climate, soil quality, and water availability determine crop yields and farming practices.
- **Industrialization**: Proximity to resources, transportation networks, and markets impacts industrial location and growth.
- **Commerce**: Geographic location affects trade routes, market accessibility, and economic interactions.

Key Concepts

1. **Economic Growth vs. Economic Development**:
    - **Economic Growth**: An increase in a country's GDP or national per capita income, focusing on quantitative measures.
    - **Economic Development**: A broader concept that includes improvements in education, health, housing, sanitation, and employment opportunities, often measured by the Human Development Index (HDI).
2. **Human Development Index (HDI)**:
    - **Longevity**: Life expectancy at birth.
    - **Knowledge**: Literacy rates and average years of schooling.
    - **Standard of Living**: Real per capita income.
    - HDI values range from 0 to 1, with higher values indicating better human well-being. For example, Norway and Switzerland have high HDI scores, while Niger and Chad are at the lower end.

2. Geographic Determinism vs. Possibilism

Two theories explain the relationship between geography and development:

1. **Geographic Determinism**:
    - **Definition**: Suggests that geographic features (location, climate, and geomorphology) determine the socio-economic development of a region.
    - **Historical View**: Theorists like Karl Ritter and Ellen Churchill Semple believed temperate regions were more developed due to favorable climates compared to tropical regions.
    - **Criticism**: This approach is criticized for overlooking human agency and technological advancements.
2. **Possibilism**:
    - **Definition**: Argues that while geography influences development, human creativity and technological advances play a crucial role in overcoming geographic constraints.
    - **Proponents**: Lucien Paul Victor Febvre and Paul Vidal de la Blache emphasized that humans can modify their environment and create opportunities regardless of geographic limitations.

3. Influence of Location on Agricultural Development

Johann Heinrich von Thünen's land-use model (1826) illustrates how proximity to a market influences agricultural practices:

- **Zone 1**: Intensive farming (perishable goods like vegetables and dairy) near the market.
- **Zone 2**: Forest products (firewood and timber) due to higher transport costs.
- **Zone 3**: Field crops (grains) with lower transport costs.
- **Zone 4**: Ranching (animals) as they are self-transporting.
- **Beyond Zone 4**: Wilderness or unoccupied land.

4. Influence of Location on Industrial Development

Alfred Weber's Least Cost Theory (1909) explains industrial location based on minimizing transportation costs:

- **Key Factors**:
    - **Transport Costs**: Minimizing the cost of moving raw materials and finished goods.
    - **Labor Costs**: Consideration of labor availability and costs.

    - **Agglomeration Economies**: Benefits of locating near other firms or industries.
- **Types of Industries**:
    - **Weight-Gaining**: Industries producing heavier final products (e.g., textiles) should be located near markets.
    - **Weight-Losing**: Industries with reduced weight in final products (e.g., steel) should be near raw material sources.

Weber's model uses the **Material Index (MI)** to guide location decisions:

- **MI > 1**: Locate near raw material sources.
- **MI < 1**: Locate near market centers.

Understanding these concepts helps in analyzing how geographic factors and development policies interact to shape economic activities and growth in different regions.

5.1.5. Effect of Location on Settlement and Service Center Development

Christaller's Central Place Theory

Walter Christaller, a German geographer, developed the Central Place Theory in 1933 to understand how settlements are organized and how they provide goods and services. His study focused on southern Germany, aiming to explain the spatial distribution of settlements and service centers.

Assumptions:

- **Isotropic Plain:** An ideal, flat, and homogeneous landscape.
- **Uniform Settlement:** Evenly distributed population and services.
- **Rational Behavior:** Consumers and businesses act to minimize costs and maximize profits.
- **Perfect Competition:** No excessive profits for suppliers.

Hexagonal Pattern: Christaller proposed a hexagonal grid system for settlements to minimize overlap and optimize coverage. This pattern avoids the issues associated with circular arrangements.

Hierarchical Model: Christaller's model consists of a hierarchy of settlements:

1. **Central Places:** Serve as nodal points providing goods and services.
2. **Lower-order Settlements:** Smaller centers providing fewer services.
3. **Higher-order Settlements:** Larger centers offering a broader range of services.

Principles of Hierarchical Models:

1. **Marketing Principle (K = 3):** Each central place serves three surrounding lower-order centers.
2. **Transportation Principle (K = 4):** To reduce travel distance, lower-order settlements are placed at mid-points of hexagon sides, creating four lower-order centers per higher-order center.
3. **Administrative Principle (K = 7):** Each high-order center controls and provides for six lower-order centers, ensuring a structured administrative hierarchy.

5.2.1. The Concepts of Climate Extremes

Climate Extremes: Climate extremes refer to significant deviations in temperature and rainfall from the norm, leading to severe environmental hazards. These include heatwaves, cold spells, floods, and droughts.

Global Warming Trends:

- **Temperature Increases:** Average global temperatures are rising, leading to more frequent and severe climate extremes.
- **Precipitation Changes:** Increased rainfall in some regions and decreased rainfall in others, affecting weather patterns.

Impacts:

- **Heatwaves and Cold Spells:** Extreme temperatures disrupt ecosystems and human activities.
- **Floods and Droughts:** Affect agricultural productivity, water supply, and infrastructure.

5.2.2. Extreme Climate Events and Poverty

Impact on Poor Communities: Extreme weather events severely impact poor communities, exacerbating poverty. Key factors include:

- **Vulnerability:** Poor people are more exposed to climate extremes due to living in high-risk areas.
- **Lack of Infrastructure:** Poor access to roads, water, and services exacerbates the impact of climate events.
- **Economic Strain:** Loss of assets and income, increased food prices, and health costs deepen poverty.

Poverty Traps:

- **Short-term Impacts:** Immediate loss of income, assets, and access to essential services.
- **Long-term Impacts:** Persistent poverty due to ongoing damage, higher costs of recovery, and reduced future resilience.

5.2.3. Flooding Events and Poverty

Effects of Floods: Flooding damages infrastructure, crops, and livestock, leading to:

- **Loss of Livelihoods:** Destruction of crops and animals affects food security and income.
- **Displacement:** Floods cause property damage and force people to leave their homes.
- **Social Disruption:** Disrupts community networks and support systems.

Coping Strategies:

- **Short-term Measures:** Relocating assets, selling livestock, and harvesting early.
- **Long-term Measures:** Building flood defenses and improving property resilience.
- **Post-Flood Support:** Relying on social networks and external aid for recovery.

Case Example: In Ethiopia, floods have significantly affected agriculture and livestock, leading to higher food prices and reduced food security. Affected households use both immediate and long-term strategies to cope, but often face challenges due to insufficient support.

By understanding these concepts, students can grasp how geographic factors like location and climate extremes influence settlement patterns and economic conditions.

5.2.4 Poverty Traps and Critical Thresholds

Poverty Traps: A poverty trap occurs when adverse conditions, such as extreme climates, perpetuate and worsen poverty over time. Extreme weather events, like droughts and floods, can lead to poverty traps when poor individuals and communities are repeatedly hit by these disasters. For example, persistent climate extremes can continuously damage livelihoods, pushing people deeper

into poverty. This is especially true when the effects of such events persist over decades.

Critical Thresholds: These are points where the combined impact of multiple factors causes significant and often irreparable harm. For example, if poor people face repeated climate extremes, their social networks, which often provide crucial support, may weaken. As their support systems deteriorate, their ability to cope with ongoing poverty diminishes, leading to severe and enduring poverty.

Case Study - Ag Ayad Inanchanan: Ag Ayad Inanchanan's experience in Burkina Faso illustrates a poverty trap. Despite investing his army earnings in livestock to ensure a secure retirement, recurrent droughts drastically reduced his herd. The droughts and other extreme weather events led him to sell much of his remaining livestock and shift to vegetable farming. However, even this new venture was insufficient to restore his former wealth due to subsequent droughts and disasters, such as locust invasions and floods.

Geographical Impact of Climate and Poverty: The interplay between extreme climate and poverty is geographically significant. Regions like Sub-Saharan Africa and parts of Asia are particularly affected. Extreme climatic events in these regions, such as severe droughts or heavy rainfall, often exacerbate poverty. For example, areas with increasing temperatures and decreasing rainfalls, like North Africa, or regions with rising annual rainfalls, like South Asia, tend to have higher poverty levels.

Future Projections and Strategies: Studies indicate that extreme weather events due to climate change will likely increase, potentially worsening poverty. By the 2030s, approximately 325 million people in vulnerable countries could face severe poverty due to these events. Effective disaster risk management and climate-focused development goals are crucial to mitigate these impacts. Countries highly at risk include Bangladesh, Ethiopia, Kenya, and Nigeria, among others. Addressing these issues requires integrating disaster management into poverty reduction strategies and ensuring robust support systems for affected communities.

5.3 Disadvantages of Landlocked Countries

Characteristics of Landlocked Countries: Landlocked countries are those without a coastline and direct access to the sea. They are geographically isolated and rely on neighboring countries for access to seaports. Landlocked countries are found on all continents and make up about one-fifth of the world’s nations.

Disadvantages of Being Landlocked:

1. **High Transport Costs:** Without direct sea access, landlocked countries face higher transportation costs for international trade. These costs are a significant barrier to trade competitiveness, often resulting in higher prices for imports and reduced export volumes.
2. **Dependency on Transit Neighbors:** Landlocked countries depend on neighboring countries' infrastructure for access to ports. Poor infrastructure in transit countries can significantly increase trade costs and impede economic growth.
3. **Transit and Customs Charges:** Landlocked countries face various fees for transit and customs, which can include border fees, road licenses, and security bonds. These charges add to the overall cost of trade.
4. **Political and Regional Instability:** Political conflicts and instability in transit countries can disrupt trade routes. For example, Ethiopia's access to ports has been affected by political tensions with Eritrea.

Case Studies:

- **Burundi:** Although Burundi has relatively good domestic road connections, its access to the sea via the Central Corridor through Tanzania is hampered by poor transit infrastructure.
- **Central African Republic (CAR):** CAR faces significant challenges due to poor transit infrastructure through Cameroon and the Democratic Republic of Congo.

Recent Efforts: Some regions have made efforts to improve transit and reduce costs. For instance, the Southern African Development Community (SADC) and Common Market for Eastern and Southern Africa (COMESA) have introduced measures to streamline transit procedures.

Conclusion: Landlocked countries face significant economic disadvantages due to their lack of direct sea access. High transport costs, dependency on neighboring countries' infrastructure, and political instability are major challenges that hinder their economic development.

5.4.3 Commodity Composition of Trade Flows

Trade flows within Africa show a more varied mix of agricultural products compared to other regions like South Asia and Europe. Among the top 20 agricultural products traded within Africa, only six—maize, wheat, rice, cattle, apples, and vegetables—are critical for food security and nutrition. The rest of the traded products include sweeteners, fats, beverages, processed foods, and traditional exports such as tea, coffee, palm oil, cotton, and tobacco. This

diversity in trade reflects both the essential role of certain staples and the broader agricultural trade network that includes various food and non-food items.

5.4.4 Intra-African Trade Policies and Challenges of Integration

Intra-African trade faces several barriers that complicate and restrict trade flow. The main challenges include:

1. **Tariff and Non-Tariff Barriers**: Tariffs are taxes on imports or exports, while non-tariff barriers (NTBs) are regulations or policies that make trade more difficult. NTBs often pose more significant challenges than tariffs, affecting trade more restrictively. Examples include complex administrative procedures and customs regulations, which can be more prohibitive than tariff rates.
2. **Regional Coordination**: Effective regional trade requires coordination among different African regions. However, this is hindered by inconsistent production and processing capabilities, as well as varying consumer demands. The lack of streamlined regional coordination affects the efficiency of trade and increases the risk of informal trade practices.
3. **Administrative Barriers**: Bureaucratic delays and complex regulations can impede the timely movement of agricultural products, especially those that are perishable and require cold storage. These barriers lead to higher costs and discourage investment in regional supply chains, contributing to a reliance on informal trade.
4. **Infrastructure Investment**: Improving regional trade requires investment in infrastructure such as roads, transport systems, and information networks. Enhancing links between production areas, agro-processing facilities, and cross-border markets can improve the efficiency of regional value chains. Investment should focus on key transport corridors and provide market information to support trade.

Impact of Geographic Location and Extreme Climatic Events

Geographic location significantly affects economic development through its influence on agriculture, industry, and trade. There are three main theories:

1. **Agricultural Location Theory**: Focuses on the optimal location for agriculture based on factors like climate and soil quality.
2. **Industrial Location Theory**: Examines where industries are best located considering resources, labor, and markets.
3. **Central Place Theory**: Analyzes the distribution of cities and towns and their role in providing goods and services.

Extreme climatic events such as droughts, floods, and erratic rainfall can severely impact biodiversity, agriculture, and human health. These events contribute to reduced agricultural yields and increased poverty, creating a cycle where environmental degradation and poverty exacerbate each other.

Challenges for Landlocked Countries

Landlocked countries, like Ethiopia, lack direct access to the sea, which significantly impacts their economic development. They incur high costs for importing and exporting goods, which affects their international trade. Ethiopia, for example, relies on neighboring countries like Djibouti and Sudan for its foreign trade, which influences its economic performance. In addition to geographical challenges, issues such as inadequate government policies, poor transportation infrastructure, and administrative barriers further complicate intra-regional trade in Africa.

By understanding these factors, we can better address the challenges and opportunities for improving trade and regional integration in Africa.