

Course:
Geograph
y of
Pakistan-II
(8664)

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Question 1: Coal Resources of Pakistan: Demand, Utilization, and Limitations

Demand for Coal in Pakistan

Pakistan's demand for coal has been steadily increasing due to various factors:

- **Energy Security:** Coal is a domestically available energy source, reducing reliance on imported fuels.
- **Industrial Growth:** The burgeoning industrial sector, particularly steel and cement industries, requires significant energy input.
- **Power Generation:** Coal-fired power plants are being established to meet the growing electricity demand.

Utilization of Coal in Pakistan

Coal is primarily utilized in the following sectors:

- **Power Generation:** Coal-fired power plants are a major source of electricity generation in Pakistan.
- **Steel Industry:** Coal is used as a reducing agent in the production of iron and steel.
- **Cement Industry:** Coal is used as fuel in cement kilns.
- **Household Fuel:** In rural areas, coal is used for cooking and heating.

Limitations of Coal in Pakistan

While coal offers significant benefits, it also presents several limitations:

- **Environmental Impact:** Coal mining and combustion contribute to air pollution, water pollution, and greenhouse gas emissions.
- **Infrastructure Challenges:** Developing coal mining and transportation infrastructure requires substantial investment.
- **Technological Limitations:** Efficient coal utilization technologies may not be readily available or affordable.
- **Social and Economic Issues:** Coal mining can lead to displacement of communities and social unrest.

To mitigate these limitations, Pakistan needs to adopt cleaner coal technologies, such as clean coal technology (CCT) and integrated gasification combined cycle (IGCC), to reduce environmental impact. Additionally, promoting energy efficiency and renewable energy sources can help reduce reliance on coal.

Question 2: Production and Distribution of Natural Gas in Pakistan

Production of Natural Gas in Pakistan

Pakistan's natural gas reserves are primarily located in the Sui, Dhodak, and Mari fields. Production involves several stages:

1. Exploration and Appraisal: Identifying potential gas-bearing formations through seismic surveys and drilling exploratory wells.
2. Development: Developing the gas field, including drilling production wells and constructing pipelines.
3. Production: Extracting natural gas from the reservoir and processing it to remove impurities.

Distribution of Natural Gas in Pakistan

Natural gas is distributed through a network of pipelines to various consumers:

1. Domestic Consumers: Natural gas is supplied to households for cooking and heating.
2. Industrial Consumers: Industries such as fertilizers, textiles, and chemicals use natural gas as a fuel and feedstock.
3. Power Generation: Natural gas is used to generate electricity in power plants.

The Sui Southern Gas Company Limited (SSGC) and Sui Northern Gas Pipelines Limited (SNGPL) are the two primary gas distribution companies in Pakistan. They are responsible for ensuring the efficient and reliable supply of natural gas to consumers.

Challenges in Natural Gas Sector

Pakistan's natural gas sector faces several challenges:

- Depleting Reserves: The country's natural gas reserves are depleting, leading to supply shortages.

- **Infrastructure Constraints:** The existing gas infrastructure may not be sufficient to meet future demand.
- **Theft and Losses:** Gas theft and transmission losses reduce the overall efficiency of the sector.
- **Price Regulations:** Government price controls can hinder investment in the sector.

To address these challenges, Pakistan needs to focus on exploration and production activities, improve infrastructure, reduce losses, and implement market-based pricing mechanisms.

Question 3: Pakistan's Reliance on Hydropower

Hydropower is a significant source of electricity generation in Pakistan due to its abundant water resources, particularly from the Indus River system. However, relying solely on hydropower has limitations:

- **Seasonal Variations:** Hydropower generation is dependent on water flow, which varies seasonally.
- **Climate Change Impacts:** Climate change can affect rainfall patterns, impacting hydropower generation.
- **Environmental Concerns:** Dam construction and operation can have negative environmental impacts, including habitat loss and ecosystem disruption.
- **Security Risks:** Hydropower infrastructure can be vulnerable to terrorism and natural disasters.

To diversify its energy mix and reduce reliance on hydropower, Pakistan needs to invest in other renewable energy sources, such as solar, wind, and geothermal power. Additionally, improving energy efficiency and promoting conservation can help reduce overall energy demand.

Question 4: Role of Textile Industry in Pakistan's Economy

The textile industry is a vital sector of Pakistan's economy, contributing significantly to GDP, employment, and export earnings.

Key Contributions of the Textile Industry:

- **Economic Growth:** The industry contributes significantly to GDP growth.
- **Employment Generation:** It provides employment to millions of people, particularly in rural areas.
- **Foreign Exchange Earnings:** Textile exports are a major source of foreign exchange for Pakistan.
- **Value Addition:** The industry adds value to raw materials, such as cotton.
- **Backward and Forward Linkages:** The textile industry creates linkages with other sectors, such as agriculture and chemicals.

However, the textile industry faces several challenges, including competition from other countries, high energy costs, and infrastructure bottlenecks. To remain competitive, Pakistan needs to focus on improving productivity, adopting advanced technologies, and investing in skills development.

Question 5: Sugar Industry and Small-Scale Industries

The sugar industry plays a significant role in Pakistan's economy, particularly in supporting small-scale industries.

Major Contributions of the Sugar Industry:

- **Rural Development:** Sugarcane cultivation provides employment opportunities in rural areas.
- **Small-Scale Industries:** The sugar industry generates by-products like bagasse and molasses, which are used as raw materials for various

small-scale industries, such as paper mills, distilleries, and animal feed production.

- **Economic Growth:** The sugar industry contributes to GDP growth and generates revenue for the government.

Question 1: Leather Industry of Pakistan and Its Contributions to Small-Scale Industries

The leather industry in Pakistan is a significant contributor to the economy, particularly in the realm of small-scale industries. Here's a breakdown of its contributions:

Contributions to Small-Scale Industries

- **Raw Material Supply:** The leather industry generates a substantial amount of leather scraps and waste materials.¹ These by-products are utilized by small-scale industries to produce various items such as leather belts, wallets, key chains, and footwear.
- **Value Addition:** Small-scale industries add value to these raw materials by transforming them into finished products. This process generates employment opportunities and contributes to local economies.²
- **Export Potential:** Small-scale industries can tap into the export market by producing high-quality leather goods. This can help in earning foreign exchange for the country.

Challenges Faced by the Leather Industry

- **Lack of Modern Technology:** Many small-scale industries lack access to modern technology and machinery, which hampers their productivity and product quality.
- **Skill Shortages:** A shortage of skilled labor in the leather industry can hinder its growth and development.

- Environmental Concerns: The leather industry can have negative environmental impacts, including water pollution and waste disposal.³

Potential for Growth

To further develop the leather industry and its small-scale component, Pakistan needs to:

- Invest in Training and Skill Development: This will help to improve the skills of workers and enhance productivity.
- Promote Modern Technology Adoption: Encouraging the adoption of modern technology can improve efficiency and product quality.⁴
- Address Environmental Concerns: Implementing sustainable practices can help reduce the industry's environmental impact.⁵
- Support Small-Scale Industries: Government policies and initiatives should be aimed at supporting and promoting small-scale industries.

Question 2: Disadvantages of Large-Scale Production in Pakistan

While large-scale production offers several advantages, it also has certain disadvantages in the context of Pakistan:

- High Initial Investment: Large-scale production requires significant capital investment, which can be a barrier for many businesses.
- Economies of Scale: To achieve economies of scale, large-scale industries often need to produce large quantities of goods.⁶ This can lead to overproduction and inventory buildup.
- Dependency on Foreign Technology: Many large-scale industries rely on foreign technology and machinery, which can increase costs and reduce self-reliance.

- **Environmental Impact:** Large-scale industries can have significant negative environmental impacts, such as pollution and resource depletion.⁷
- **Social Issues:** Large-scale industries can lead to social issues, such as displacement of communities and labor unrest.

Given these disadvantages, it is important to strike a balance between large-scale and small-scale industries to ensure sustainable economic growth.

Question 3: Scope and Contribution of Shipping in Pakistan, and the Role of PNSC

Scope of Shipping in Pakistan

Shipping plays a crucial role in Pakistan's economy, especially in international trade.⁸ The country's strategic geographic location makes it a potential hub for regional and international shipping.

Contribution of Shipping to Pakistan's Economy

- **Trade Facilitation:** Shipping facilitates the import and export of goods, contributing to economic growth.
- **Employment Generation:** The shipping industry provides employment opportunities in various sectors, such as port operations, shipping agencies, and logistics.⁹
- **Foreign Exchange Earnings:** Shipping can generate foreign exchange through port charges, shipping services, and related activities.

Role of Pakistan National Shipping Corporation (PNSC)

PNSC is a state-owned shipping company that plays a vital role in Pakistan's maritime sector.¹⁰ Its key functions include:

- **Cargo Transportation:** PNSC transports various goods, including bulk commodities, containers, and project cargo.¹¹
- **Fleet Management:** The corporation manages and operates a fleet of ships to cater to the country's shipping needs.¹²
- **Chartering Services:** PNSC provides chartering services to other shipping companies.¹³
- **Port Operations:** The corporation is involved in port operations, including cargo handling and terminal management.

To enhance its role, PNSC needs to modernize its fleet, improve operational efficiency, and explore new business opportunities.

Question 4: Population Structure, Social Classes, Density Distribution, and Growth of Pakistan

Population Structure

Pakistan's population is predominantly young, with a high proportion of people below the age of 25.¹⁴ This demographic dividend can be harnessed to fuel economic growth and development.¹⁵

Social Classes

Pakistan's society is stratified into various social classes, ranging from the elite to the poor.¹⁶ The gap between the rich and the poor is significant, and social inequality remains a major challenge.

Density Distribution

Pakistan's population is unevenly distributed.¹⁷ The most densely populated areas are in Punjab and Sindh provinces, while the less populated areas are in Balochistan and Khyber Pakhtunkhwa.

Population Growth

Pakistan's population is growing rapidly, putting pressure on resources and infrastructure.¹⁸ This rapid growth can pose challenges in terms of providing basic services, such as education, healthcare, and housing.

Question 5: Economic Potential of Pakistan: Mineral Resources, Power Resources, and Advanced Resources

Mineral Resources

Pakistan is endowed with a variety of mineral resources, including:

- Metals: Copper, gold, iron ore, and chromite
- Non-Metallic Minerals: Limestone, marble, gypsum, and silica sand¹⁹

To tap into this potential, Pakistan needs to invest in exploration and mining activities, improve infrastructure, and attract foreign investment.²⁰

Power Resources

Pakistan has a diverse energy mix, including:

- Hydropower: Abundant water resources provide significant hydropower potential.²¹
- Thermal Power: Coal and natural gas are used to generate thermal power.
- Renewable Energy: Solar, wind, and biomass energy sources are being explored to meet growing energy demand.²²

Developing a robust and diversified energy mix is crucial for Pakistan's economic growth and development.

Advanced Resources

Pakistan has a growing pool of skilled labor and a vibrant IT industry.²³ The country has the potential to become a hub for knowledge-based industries, such as software development, IT services, and biotechnology. To realize this potential, Pakistan needs to invest in education, research, and innovation.