

Based on National Curriculum of Pakistan 2022-23

Model Textbook of

Pakistan Studies

GRADE 09

National Curriculum Council
Ministry of Federal Education and Professional Training



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**Model Textbook of Pak Studies
for Grade 9**



Authors

Dr. Kamran Naseem, Shamsa Mufti, Khadija Saleem & Hafsa Akhtar

Supervision

Dr. Mariam Chughtai

Director, National Curriculum Council

Ministry of Federal Education and Professional Training, Islamabad

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Desk Officer

Suhail Bin Aziz & Zehra Khushal

Management

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Preface

This Model Textbook has been developed by NBF according to the National Curriculum of Pakistan 2022- 2023. The aim of this textbook is to enhance learning abilities through inculcation of logical thinking in learners, and to develop higher order thinking processes by systematically building upon the foundation of learning from the previous grades. A key emphasis of the present textbook is on creating real life linkages of the concepts and methods introduced. This approach was devised with the intent of enabling students to solve daily life problems as they go up the learning curve and for them to fully grasp the conceptual basis that will be built upon in subsequent grades.

After amalgamation of the efforts of experts and experienced authors, this book was reviewed and finalized after extensive reviews by professional educationists. Efforts were made to make the contents student friendly and to develop the concepts in interesting ways.

The National Book Foundation is always striving for improvement in the quality of its books. The present book features an improved design, better illustration and interesting activities relating to real life to make it attractive for young learners. However, there is always room for improvement and the suggestions and feedback of students, teachers and the community are most welcome for further enriching the subsequent editions of this book.

May Allah guide and help us (Ameen).

Dr. Raja Mazhar Hameed

Managing Director

CONTENTS

Section 1: History of Pakistan

Unit 01:	Ideological Basis of Pakistan	05
Unit 02:	Establishment of Pakistan	21

Section 2: Geography of Pakistan

Unit 03:	Land of Pakistan	42
Unit 04	The Natural Topography and Vegetation Of Pakistan	52
Unit 05	Climate of Pakistan and Environmental Hazards	70

Section 3: Resources and Economic Development of Pakistan

Unit 06:	Water Resources	93
Unit 07	Population Structure and Growth	106
Unit 08	Agriculture, Livestock and Fisheries	118
Unit 09	Transport And Trade	143

Section 1

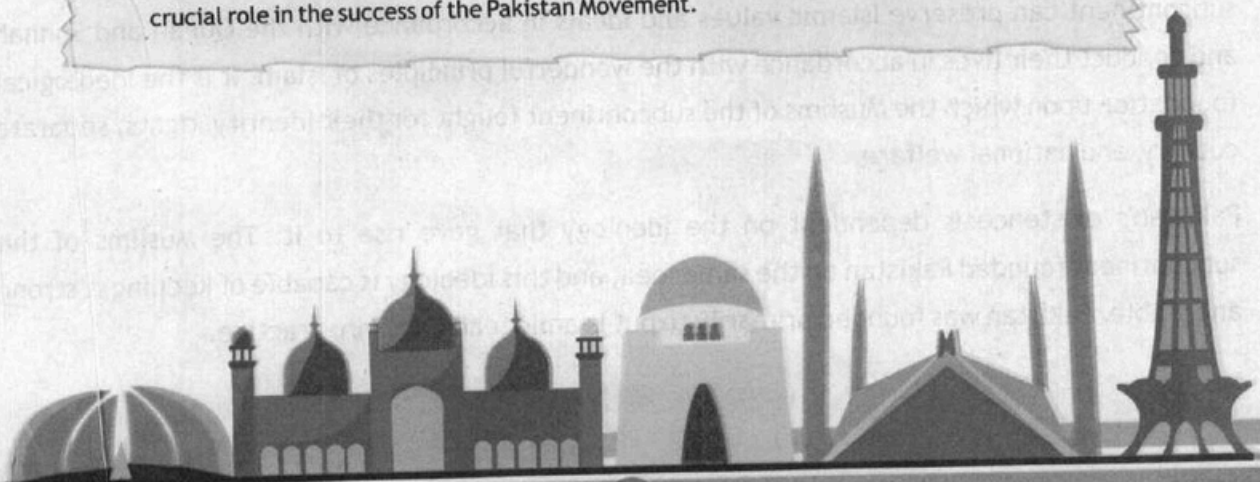
History of Pakistan

UNIT 01

IDEOLOGICAL BASIS OF PAKISTAN

In this unit the students will be able to:

- Relate the basis of Pakistan's Ideology to the basic values of Islam and the economic and social deprivations of Muslims in India, using historical evidence and scholarly analysis.
- Evaluate Pakistan's ideology with reference to the statements of Quaid Azam and Allama Iqbal, including their vision for a Muslim state and the role of Islam in Pakistan's identity and governance.
- Define British colonialism and its impact on various aspects of life in the Indo-Pakistan subcontinent.
- Recognize the significant role of Sir Syed Ahmed Khan as a reformer whose efforts, connections with the Western world, and establishment of the Aligarh Movement played a crucial role in the success of the Pakistan Movement.



Ideology

The word Ideology means the "Science of Ideas,". An "idea" is a basic concept on which a "system" is built are its "ideology."

Ideology is the set of views, values, and goals of a group or country. It is deeply embedded in people's sense of right and wrong. It is a set of

ideas, a framework for action, and a set of rules that gives life order and meaning to human actions.

Ideology looks at the current political, social, and economic processes and tries to make people aware of how they work. It supports or disapproves of certain actions and ideas. Ideology gives a country a sense of direction and perspective, and it is up to the people concerned to put it into action.

A country's ideology reflects the mental state of its citizens, their feelings, dreams, aspirations, ideals, goals, and the ongoing desire to achieve those goals. Any ideology's value is based on how committed its adherents are to it.

Importance of Ideology

People's beliefs are reflected in ideology. It makes countries appear alive. The national rights and obligations of people are explained through ideology. Ideology aids in maintaining national cohesion. Ideology gives people the strength to overcome all kinds of obstacles in order to accomplish their goals. Ideology fosters a spirit of resistance to achieve the goals and guarantees their accomplishment. Sometimes ideology causes revolution, and new approaches result from it.

Ideology of Pakistan

Pakistan's ideology refers to the establishment of a separate state in which Muslims of the subcontinent can preserve Islamic values and ideals in accordance with the Qur'an and Sunnah and conduct their lives in accordance with the wonderful principles of Islam. It is the ideological foundation upon which the Muslims of the subcontinent fought for their identity, rights, separate country, and national welfare.

Pakistan's existence is dependent on the ideology that gave rise to it. The Muslims of the subcontinent founded Pakistan on the same idea, and this ideology is capable of keeping it strong and stable. Pakistan was founded primarily to put Islamic teachings into practice.

Do You Know?

The term "ideology" was first coined by French philosopher Antoine Destutt de Tracy in the late 18th century. He used it to describe a science of ideas and beliefs, focusing on how these ideas influenced human behavior and society.

Islam's fundamental principles form the basis of Pakistani ideology, which was influenced by the economic and social hardships Muslims in colonial India endured. Let us examine the historical setting and the crucial elements that influenced the creation of Pakistan's ideology.

The Situation of the Muslims after the War of Independence

From the mid-18th century until 1947, the Indian subcontinent was subject to British colonial control. Muslims experienced numerous hurdles and disadvantages as a religious minority during British rule. Economic, political, and social differences were among them.

Economic Disparities

Common economic goals are also the source of a country's philosophy. The Muslims of the subcontinent had a deterioration in their economic status, notably after 1857. Following the War of Independence in 1857, the British were convinced that the Muslims were the main reason for the War and that they might try it again in the future. As a result, the British were hostile towards

Expand Your Horizon

Some estimates suggest that India's GDP per capita in 1857 was higher than that of many Western countries, including Britain. Using the internet and other sources, find the GDP of India when the British left India in 1947.

Muslims, who continued to be economically oppressed and disregarded. Land ownership, a critical economic resource transferred into the hands of the British and Hindu elites, leaving many Muslims landless and economically deprived. For all these reasons, Muslims' commercial and trade opportunities shrank, yet they did not renounce their ideology.

Here are some examples of economic inequality that Muslims faced:

- **Land ownership** was a critical economic resource in colonial India. However, Muslims experienced considerable discrepancies in land ownership, particularly in places with a predominantly agricultural economy. Many Muslims were landless laborers with Hindus or British landlords holding the majority of land. Land ownership disparities resulted in economic inequality.
- Another important element influencing economic prospects was **education**. During the colonial period, Muslims, particularly those in rural areas, had restricted access to contemporary education. Their inability to compete for skilled occupations and access economic prospects was hampered by their lack of education, exacerbating economic inequities.
- **Discrimination in the workplace** was pervasive in British India. Many Muslims encountered

difficulties in getting government or British-controlled occupations. Their economic mobility was hampered by discriminatory employment practices and a lack of representation in administrative and economic institutions.

- **Communal tensions** and rioting between Hindus and Muslims interrupted economic activity. During such riots, Muslims typically suffered disproportionately, with their houses, businesses, and livelihoods being targeted, resulting in economic losses.
- Muslims frequently lacked **access to credit and financial resources**. Muslims found it difficult to engage in enterprises or agriculture due to discriminatory lending policies and a lack of financial institutions that catered to their requirements.
- The **zamindari system**, which entailed intermediaries (zamindars) collecting tax from peasants on behalf of the British, frequently exploited rural Muslims. These mediators sometimes enforced excessive land rents and taxes, increasing Muslim peasants' economic problems.

These inequities shaped Muslims' socioeconomic conditions, contributing to their demands for social and economic fairness, as well as their political demands for representation.

Social and Political Disempowerment

The British advocated a "divide and rule" tactic, taking advantage of religious differences within Indian society. Muslims were frequently politically sidelined, and their representation in key administration positions significantly decreased.

Some examples of the political marginalization of Muslims during the British colonial period are as under:

- The colonial administration and other communities disregarded or misunderstood Muslim cultural practices and traditions. This exacerbated feelings of cultural isolation and social alienation.
- Muslims, particularly in religiously charged areas, faced social shame. Occasionally, communal tensions erupted into violence and social exclusion, producing more division and discrimination.
- Following their colonization of the subcontinent, the British instituted a system of education in which the English language was important. The majority of Muslims opposed the new educational system.



Queen Victoria

- Muslims were underrepresented in key positions in British India. The British frequently preferred Hindus for jobs. As a result, Muslims felt politically excluded.
- Muslims frequently found themselves on the outskirts of crucial political choices. Decisions about India's participation in World War I, for example, were taken without proper engagement with Indian authorities, notably Muslim leaders.
- While Muslims had some representation in legislative bodies, it did not reflect their real population. This hampered their ability to successfully advocate for their political and social interests.
- When the British administration decided to form an all-British Simon Commission to study the operation of the Indian constitution in 1927, Indians, notably Muslims, were outraged and sought Indian representation on the commission.
- During periods of political upheaval, such as the Khilafat Movement and the Non-Cooperation Movement, British authorities frequently used repressive tactics. Many Muslim leaders were arrested or silenced, making it difficult for them to participate in the political process.
- Hindu revivalist movements became more hostile to Muslims. Following 1857, the Hindi-Urdu Controversy was the biggest Hindu assault on the Muslim heritage and legacy of the vast Muslim Empire. Labelling Urdu as the language of Muslims, Hindus were prejudiced against it. They demanded the replacement of Hindi with Urdu as the official language. Hindus' demonstration against Urdu in Banaras in 1867 was the beginning of the Urdu-Hindi controversy.
- These examples show how Muslims in British India were socially and politically marginalized as a result of discriminatory legislation, underrepresentation, and the British policy of divide and rule.



Islam's Fundamental Values

- Pakistani ideology arose from the desire of South Asia's Muslim people to maintain their distinctiveness within Hindu civilization. Muslims felt that Islam and Hinduism are not just two religions, but also two social orders of life with distinct cultures.
- The foundation of Muslim nationhood is not territorial, racial, linguistic, or ethnic; rather, they

are a nation because they shared the same creed, Islam. Some distinct fundamentals of Islam are as under:

- Islam promotes the **intrinsic equality** of all people, regardless of race, nationality, or socioeconomic condition. This principle was opposed by the economic and social disadvantages that Muslims endured in colonial India.
- Islam promotes **social and economic equality**. Under colonial control, economic inequalities and political marginalization of Muslims were considered as violations of this Islamic principle.
- Islam promotes **self-determination** and Muslims' right to practice and rule themselves in accordance with their beliefs. The yearning for self-determination was a major driving force behind the demand for a distinct Muslim state.

Pakistan's Ideology and Quaid e Azam

The ability of the leader to guide the nation is crucial for the success of any ideology. The characteristics of knowledge, consciousness, mobilization, direction, and defense against enemies are all infused into good leadership. The Muslims were fortunate to have such good leadership and the most important leader was Quaid e Azam Muhammad Ali Jinnah.

Quaid-e-Azam Muhammad Ali Jinnah's vision for Pakistan is reflected in a number of fundamental beliefs and expressions that serve as the foundation of Pakistani ideology. The words and deeds of Quaid-e-Azam shed light on Pakistan's original philosophy:

- **The Two-Nation Theory**, which asserted that Hindus and Muslims in British India were two different nations with distinct religious, cultural, and social identities, was something Quaid-e-Azam passionately believed in. In order to defend the rights and interests of Muslims, this notion served as the foundation for the demand for Pakistan, a separate Muslim state. Quaid e Azam used the term 'Nation' for the Muslims of the subcontinent in February 1935 in the Legislative Assembly. He maintained that a minority is a distinct entity when its religion, culture, race, arts, music, and other factors are combined.

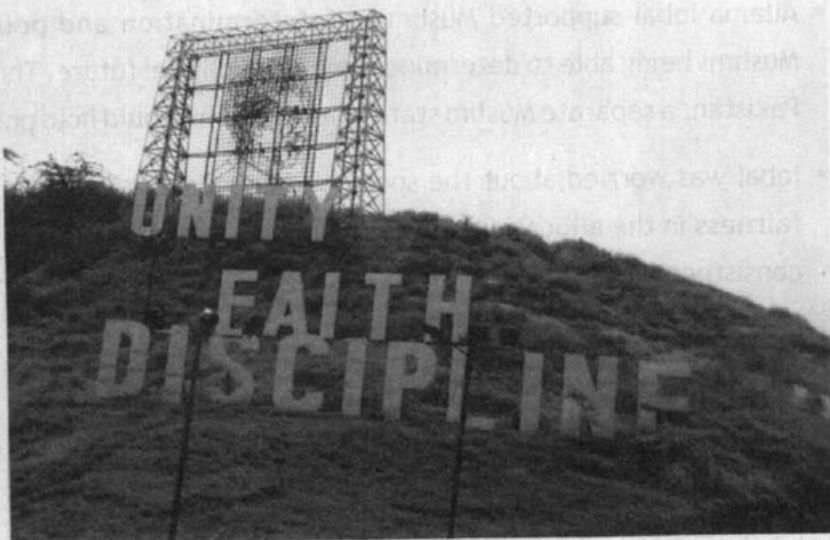


Note For Teachers: Encourage students to learn more about the fundamental values of Islam that served as the roadmap for the Muslims of the Subcontinent towards their destination of a separate homeland.

- Quaid-e-Azam frequently underlined the necessity of **Pakistani unity**. He emphasized the need for national unity in order to overcome Pakistan's diversity of ethnic, linguistic, and cultural groupings.
- Quaid-e-Azam wanted Pakistan to be a **democracy** in its true sense. He stressed the significance of the rule of law, representative governance, and a constitution that would protect the liberties and rights of all citizens.
- Quaid-e-Azam understood the significance of Pakistan's **economic growth** and prosperity. He held that the well-being of the country and its citizens depended on a robust economy.
- Quaid-e-Azam stressed that Pakistan would be a country where Muslims and other religious minorities may practice their beliefs openly and without fear of persecution. He frequently spoke out in favor of minority rights preservation and religious tolerance. On August 11, 1947, in the Constituent Assembly of Pakistan, he explained the concept of the Islamic State as under:

"You are free to go to your places of worship. You may belong to any religion, caste or creed but it will have nothing to do with the business of the State."

- Quaid-e-Azam emphasized the values of **social justice and equality**. He wanted to build a society where everyone had equal opportunities and rights, regardless of background. He spoke out against prejudice based on caste, religion, or creed.
- Quaid-e-Azam wanted Pakistan to keep **cordial ties with other nations** based on the ideas of equality and respect for one another. He aimed to make Pakistan a recognized independent and sovereign state in the world.
- Although Quaid e Azam's plan for a contemporary, democratic, and inclusive



Pakistan encountered many difficulties over time, it is still a crucial point of reference for comprehending the fundamental principles of Pakistani ideology.

Pakistan's Ideology and Allama Muhammad Iqbal

Allama Iqbal is one of the most important personalities in history. His poetry challenged the dominant social conventions. He was schooled in Europe and was familiar with all the worst features of Western society. He decried materialism, capitalism, and the absence of spirituality.

Allama Iqbal significantly contributed to the development of the philosophy that originated the concept of Pakistan. His political and philosophical views have had a significant impact on Pakistan's founding ideals. Recognizing Allama Iqbal's major contributions is necessary to evaluate Pakistan's ideology in light of his assertions:



- Allama Iqbal underlined the value of **preserving and advancing the Islamic identity** of Muslims in South Asia. He also spoke about the unity of Islam. He held that despite language, ethnic, and geographic barriers, Muslims should come together in the name of their common religion. His works and poems inspired Muslims to develop a shared identity.
- Iqbal exhorted Muslims to work on their own **self-realization and personal growth**. He felt that Muslims might overcome socioeconomic and political obstacles by promoting both individual and group self-awareness. His emphasis on personal growth is consistent with Pakistan's desire for national advancement.
- Allama Iqbal supported Muslim **self-determination and political sovereignty**. He imagined Muslims being able to determine their own political future. This idea was in line with the call for Pakistan, a separate Muslim state where Muslims could hold political power.
- Iqbal was worried about the social and economic inequalities among Muslims. He demanded **fairness** in the allocation of wealth and social justice. This focus on socioeconomic equality is consistent with Pakistan's worldview, which aims to create a just society.
- Allama Iqbal championed the idea of "**Ijtehad**," which calls on Muslims to use independent thinking to reinterpret Islamic teachings in light of modernity. This viewpoint is in line with the notion that Pakistan ought to be a dynamic, developing nation that can adjust to changing conditions.
- Iqbal argued in favor of an **economic structure based on Islamic principles**, emphasizing economic independence, just distribution of wealth and resources, and the ban on interest (Riba). Pakistan's economic policies and aspirations for an Islamic economic system have been influenced by these concepts.

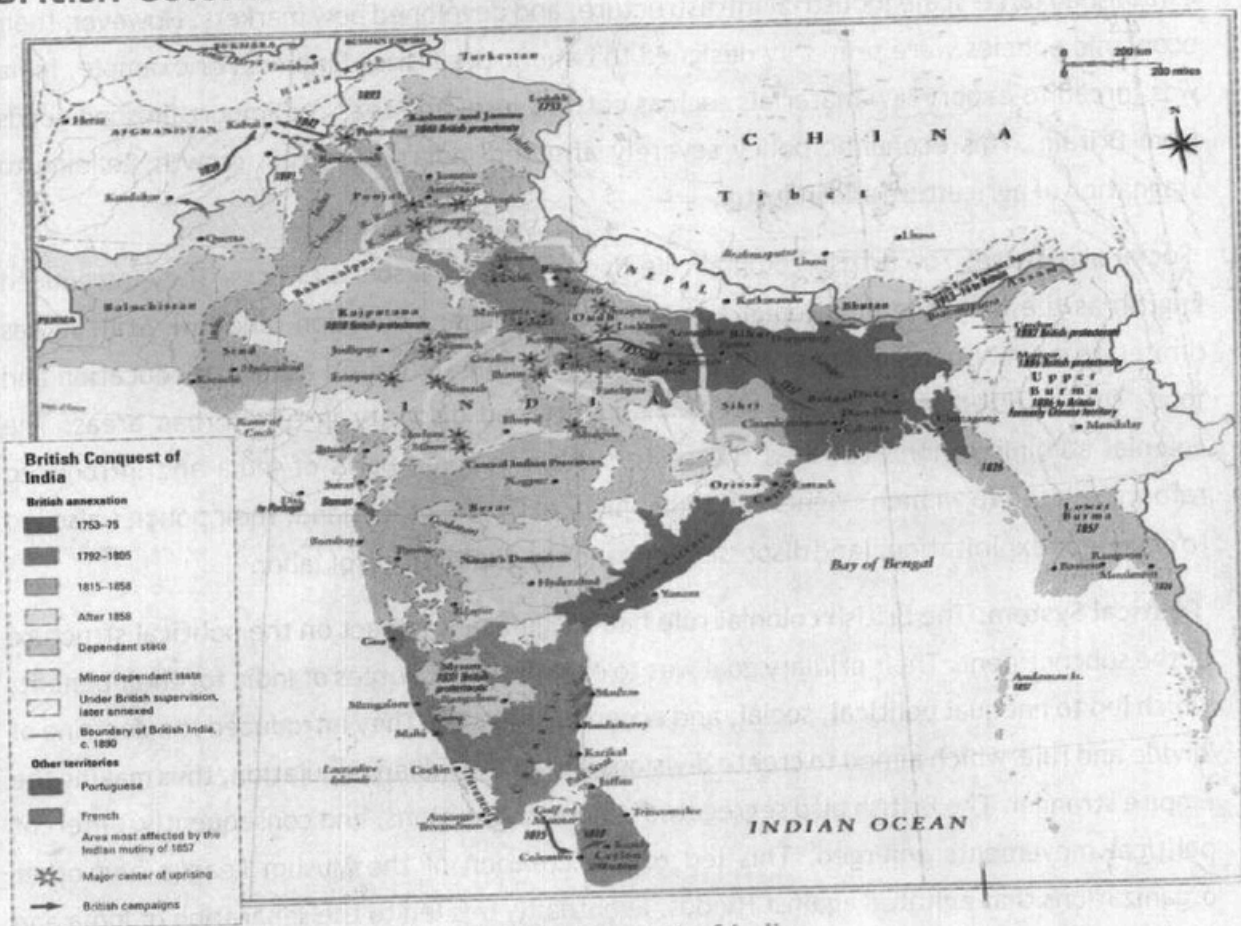
Iqbal emphasized the necessity for Muslims to have a spiritual renewal. He held that any Muslim country, particularly Pakistan, needed a solid spiritual foundation in order to grow and succeed. Pakistan's cultural and religious identities are still influenced by this emphasis on spirituality. Allama Iqbal's remarks have had a significant impact on Pakistan's ideology.

Colonialism

Colonialism refers to when one nation seizes control of another country or area for its own profit. The colonial nation sends people to reside in the colonized country and profits from its resources and economy. They may also attempt to modify the language, culture, and governance of the existing residents.

It is important to recognize that colonialism may have both beneficial and bad consequences for the colonized territory, however, it mostly has very negative impacts on the colonized states.

British Colonialism



British Conquest of India



Note For Teachers: Encourage students to learn more about the countries that remained as the colonies of different European powers.

The era of direct British regulation over the Indian subcontinent, which lasted from 1858 until the independence of India and Pakistan in 1947, is referred to as British colonialism. The entity that assumed control of the subcontinent subsequent to the British East India Company seized the company's assets and instituted direct governance. The common name for the British Raj was an effort to increase Indian participation in government. Nevertheless, the Indian people's lack of agency in shaping their own future without British approval fueled a movement for national independence that grew more resolute over time.

Impact of the British Colonialism

The impact of British colonialism on various aspects of life in the Indo-Pakistan subcontinent was profound. Here are some key areas that were influenced:

1. **Economy:** The British colonial rule had a varied impact on the economy of the subcontinent. The British Empire introduced modern transportation and communication systems, established large-scale industrial infrastructure, and developed new markets. However, their economic policies were primarily designed to benefit the British Empire. For example, India was forced to export raw materials such as cotton, jute, and tea, and import finished goods from Britain. This economic policy severely affected India's economic growth, leading to stagnation of agriculture and industry.
2. **Social Structure:** The British colonial rule had far-reaching social effects. They introduced English as the language of colonial administration, higher education, and law. Still, it was limited to a small percentage of the population, leading to limited access to education and jobs. This resulted in significant social inequality and disparity in rural-urban areas. The colonial administration abolished the caste system in some parts of India and introduced reforms related to women's rights and social justice. On the other hand, their policies also led to economic exploitation, land dispossession, and the exploitation of labor.
3. **Political System:** The British colonial rule had a significant impact on the political structure of the subcontinent. Their primary goal was to exploit the resources of India for their benefit, which led to unequal political, social, and economic policies. They introduced the doctrine of 'divide and rule' which aimed to create divisions within the Indian population, thus making the Empire stronger. The British also segregated Hindus and Muslims, and consequently, different political movements emerged. This led to the creation of the Muslim League and other organizations that agitated against Hindus. Eventually, this led to the separation of India and Pakistan in 1947.



Note For Teachers: Ask the students to learn more about the impacts of the British colonialism using different sources.

Sir Syed Ahmad Khan

In the 19th century, Sir Syed Ahmed Khan was a well-known Indian Muslim leader, philosopher, and educator. He was born in Delhi, India, on October 17, 1817, and he passed away in Aligarh, India, on March 27, 1898. As a reformer, Sir Syed worked to make a progressive society that could compete with other nations of the world. He was born into a family with a lot of different cultural experiences. However, he was also introduced to Western ideas, which had a big impact on how he thought. Sir Syed set up the Scientific Society and the Muhammadan Anglo-Oriental College to help Muslims become more educated and open to new ideas. He also worked to bring Hindus and Muslims together and close the gap between them. The idea of a separate Muslim country and his support for the Two-Nation Theory impacted Allama Iqbal and eventually led to the birth of Pakistan.



Sir Syed Ahmed Khan

Significant Role of Sir Syed Ahmed Khan

Sir Syed's relationships with the West had a big impact on how he thought about progress and education. He knew how important Western-style schooling was and thought it was important for Muslims to learn new things so they could keep up with the times. Sir Syed opened the Muhammadan Anglo-Oriental College in Aligarh in 1877. The school became the Aligarh Muslim University in 1920. He pushed for the Muslim community to learn English as a way to give them a greater say. He thought that if they learned English, they could learn more, get more chances,

Expand Your Horizon

Aligarh University has a rich history of academic excellence and has produced numerous distinguished alumni who have made significant contributions to various fields, including politics, literature, science, and the arts.

Find the names of some such famous alumni of this university.

and break the chains that were holding them back. Sir Syed wanted to encourage a spirit of research by encouraging people to think in a scientific and logical way. He was sure that knowledge and education were the best ways for society to solve its problems. The creation of this school was very important for introducing modern education to Muslims and creating a new group of educated Muslims who were better prepared to deal with the challenges of the modern world.

The Aligarh Movement led by Sir Syed was an important moment in the history of Indian Muslims.

Its goal was to get more Muslims to go to school and raise a new generation of educated Muslims who could compete with people from other groups. The movement also tried to get Muslims to change their ways of life and accept new ideas and ways of doing things. Sir Syed's work as a reformer and the Aligarh Movement was very important in giving Indian Muslims a feeling of identity as Muslims and looking out for their best interests. Sir Syed started a newspaper called the Aligarh Institute Gazette, which pushed for new ideas and scholarly discussion. This newspaper was very important for spreading unbiased information.

Sir Syed Ahmed Khan's establishment of the Scientific Society marked a pivotal moment in Indian history. Founded in 1864 in Aligarh, India, the society aimed to promote scientific knowledge and rational thinking among the Indian populace, particularly Muslims. It served as



Aligarh University

a platform for the translation of Western scientific works into Urdu, making scientific knowledge more accessible to the local population.

Sir Syed's work as a reformer was a big part of why the Pakistan Movement was so successful. At first, he tried to bring Hindus and Muslims together, but later he became a leader of Muslim nationalism in India. Many people think that Sir Syed came up with the idea of two countries, which was the base of the Pakistan Movement. His ideas and work helped shape what it meant to be a Muslim and advance the goals of Indian Muslims. His focus on education and development helped create a new generation of educated Muslims who were better prepared to face the difficulties of the modern world.

The Aligarh movement served as a forerunner of the Pakistan movement. The groundwork was laid for the formation of the All-India Muslim League in 1906, which subsequently spearheaded the movement for the establishment of Pakistan in 1947. The Aligarh movement served as a source of inspiration and influence for other Muslim movements and organisations that lent their support to the Pakistan movement. These include the Anjuman-i-Himayat-i-Islam, the Khilafat movement, and the All-India Muslim Students Federation.

The Aligarh Muslim University was also very important in getting more Muslims to go to school and giving Indian Muslims a feeling of who they were as Muslims. Sir Syed's goals for progress and learning have been an inspiration to generations and continue to inspire people today.

What I have Learned

- Ideology is the set of views, values, and goals of a group or country. It is deeply embedded in people's sense of right and wrong.
- Pakistan's ideology refers to the establishment of a separate land in which Muslims of the subcontinent can preserve Islamic values and ideals.
- Muslims experienced economic, political, and social hurdles and disadvantages as a religious minority during British rule.
- Intrinsic equality, social and economic equality, and self-determination are among the basic principles of Islam.
- Unity, democracy, economic growth, religious tolerance, justice, equality, and cordial relations with other nations are among Quaid-e-Azam Muhammad Ali Jinnah's vision for Pakistan.
- The vision of Allama Muhammad Iqbal was based on preserving and advancing the Islamic identity, self-realization and personal growth, self-determination and political sovereignty, fairness, social justice, Ijtihad, and economic structure based on Islamic principles.
- British colonialism refers to the period of direct British rule over the Indian subcontinent from 1858 until the independence of India and Pakistan in 1947.
- The impact of British colonialism on various aspects of life in the Indo-Pakistan subcontinent was profound.
- In the 19th century, Sir Syed Ahmed Khan was a well-known Indian Muslim leader, philosopher, and educator.
- The Aligarh Movement led by Sir Syed was an important moment in the history of Indian Muslims.

Exercise

Answer the following questions by choosing the best answer A, B, C or D.

1. The word Ideology means:
 - a. Study of Politics
 - b. Study of Sociology
 - c. Science of Ideas
 - d. Science of Ethics
2. Which of the following statements is consistent with the role of ideology?
 - a. Ideology has no influence on a country's vitality.
 - b. Ideology weakens national cohesion.
 - c. Ideology can lead to the accomplishment of goals.
 - d. Ideology does not impact national rights and obligations.

3. **What is the primary purpose of Pakistan's ideology?**
 - a. To establish economic prosperity in the subcontinent.
 - b. To create a separate nation for Muslims.
 - c. To promote foreign influence in the region.
 - d. To preserve cultural diversity in colonial India.
4. **What was one significant consequence of economic inequality for Muslims in colonial India?**
 - a. Improved access to education opportunities.
 - b. Increased economic mobility and prosperity.
 - c. Greater representation in administrative and economic institutions.
 - d. The development of demands for social and economic fairness and political representation.
5. **What contributed to the social and political marginalization of Muslims in British India during the colonial period?**
 - a. The British policy of promoting Indian languages and traditions.
 - b. Most Muslims supported the new British educational system.
 - c. Underrepresentation of Muslims in key positions and political decisions.
 - d. Hindu support for Urdu as the official language in opposition to Hindi.
6. **What fundamental beliefs and expressions of Quaid-e-Azam Muhammad Ali Jinnah served as the foundation of Pakistani ideology?**
 - a. The importance of ethnic and linguistic diversity.
 - b. The need for a centralized and authoritarian government.
 - c. The principles of unity, democracy, minority rights, and social justice.
 - d. The promotion of religious persecution and intolerance.
7. **What aspects of Allama Iqbal's philosophy and beliefs have had a significant impact on Pakistan's founding ideals, as discussed in the text?**
 - a. Advocating for materialism, capitalism, and individualism.
 - b. Emphasizing social and economic inequalities among Muslims.
 - c. Supporting a static interpretation of Islamic teachings.
 - d. Promoting the Islamic identity, unity, self-realization, and spiritual renewal.
8. **What is the primary goal of colonialism, as described in the text?**
 - a. To control and profit from the resources of the colonized region
 - b. To promote cultural diversity and tolerance in colonized territories.
 - c. To improve the economic and social conditions of the colonized people.
 - d. To encourage self-determination among the colonized population.

9. What significant impact did British colonialism have on the social structure of the Indo-Pakistan subcontinent?
- Enhanced social equality
 - Reduced rural-urban disparities
 - Limited access to education and jobs
 - Abolished caste system
10. What was one of the primary objectives of Sir Syed Ahmed Khan's educational initiatives, as discussed in the text?
- Promoting the use of regional languages.
 - Encouraging scientific and logical thinking.
 - Preserving traditional Muslim ways of life.
 - Rejecting the importance of English education.

Answer the following questions briefly.

- What is the fundamental principle of Pakistan's ideology?
- How did the Ideology of Pakistan influence the country's establishment?
- How did Allama Iqbal's emphasis on individual and group self-awareness align with Pakistan's goals for national advancement?
- Define British colonialism.
- Recognize the significant role of Sir Syed Ahmed Khan as an important reformer of his time.

Answer the following questions in detail.

- What was the situation of the Muslims during British Rule? How does it relate to the Ideology of Pakistan?
- Evaluate Pakistan's ideology with reference to the statements of Quaid Azam.
- How did the principles of Islam, particularly the promotion of intrinsic equality and self-determination, influence the demand for a distinct Muslim state in South Asia?
- How did British colonialism impact various aspects of life in the Indo-Pakistan subcontinent?

Compare and Contrast

Compare Pakistan's ideology with the ideologies of other nations or independence movements. How is Pakistan's ideology unique, and how does it align with or differ from other ideologies?

Relevance across Time

Do you think that the ideals of Quaid e Azam can lead Pakistan out of present-day problems? Write an action plan in light of Quaid's teachings to make Pakistan a democratic and progressive country.

Project: "Exploring the Ideology of Pakistan"

Students will conduct research on the ideology of Pakistan. They will investigate the historical context, the Two-Nation Theory, and the role of religion in shaping Pakistan's ideology. Students may interview family members, friends, or community members. They will create multimedia presentations that showcase their research findings. These presentations should include images, videos, and audio clips that enhance their understanding of Pakistan's ideology.

List words and write their meaning that you find difficult in this chapter.

Section 1

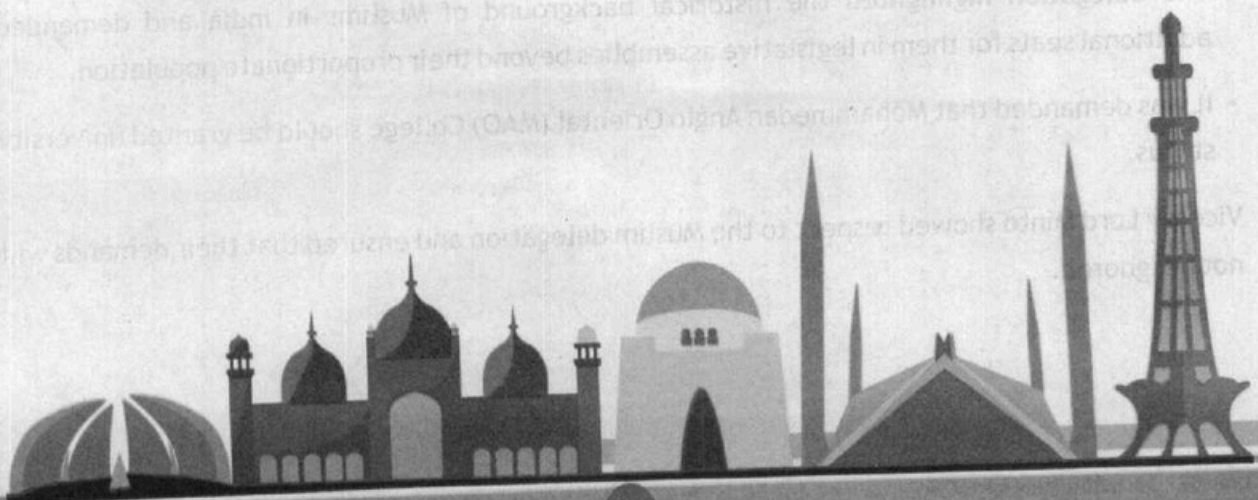
History of Pakistan

UNIT 02

ESTABLISHMENT OF PAKISTAN

In this unit the students will be able to:

- Analyze the important developments in India between 1906-1920 (from Simla Deputation till Khilafat Movement)
- Analyze the important political developments between 1920-1939 (from Khilafat Movement till Day of Deliverance)
- Evaluate the political developments that undertook during 1940 till 1947
- Discuss the role of political leaders, including women and minorities in the making of Pakistan



Important Developments between 1906-1920

Simla Deputation (1906)

The Indian National Congress formed in 1885, claimed to be dedicated to safe guarding the interests of all communities residing in the Indian subcontinent. The Congress opposition to the partition of Bengal in 1905, which proposed splitting it into two provinces, East Bengal and West Bengal, created mistrust among Muslims towards the Congress. The rise of Hindu nationalist movements posed a threat to the Muslims community. After the failure of the 1857 War of Independence, Muslims who had been victimized and disheartened regained their confidence in the early 20th century. On the other hand, in 1905, the Liberal party led by Lloyd George won the elections in England. The Liberal Party declared its intention to introduce constitutional reforms in India. Muslim leadership believed that it would be wise to present Muslim demands to the government for consideration in these future reforms.

A delegation of 35 Muslims led by Sir Agha Khan and representing various regions of India, met with the Viceroy of India, Lord Minto, on October 1, 1906. The delegation presented the following demands to the Viceroy:

- Given that the circumstances in India are distinct from England due to the presence of two major communities, Muslims and Hindus.
- It was demanded that, considering the Muslim population minority status, a system of separate electorates should be introduced in India.
- It was demanded that a quota in government services must be reserved for Muslims.
- The delegation demanded that Muslim judges should be appointed in courts to handle cases involving Muslims.
- The delegation highlighted the historical background of Muslims in India and demanded additional seats for them in legislative assemblies beyond their proportionate population.
- It was demanded that Mohammedan Anglo Oriental (MAO) College should be granted university status.

Viceroy Lord Minto showed respect to the Muslim delegation and ensured that their demands will not be ignored.

Success of Simla Deputation

The Muslim community had been facing challenges since 1857. However, the Simla deputation brought about some successes for the Muslim nation.

1. The Simla deputation bridged the gap between Muslims and the British government.
2. The Simla deputation boosted the confidence of the Muslim community.
3. The success of the Simla deputation paved the way for the establishment of the All India Muslim League.
4. The demand for separate electorates for Muslims was accepted through the 1909 Minto-Morley Reforms.
5. The Muslims were recognized as a separate nation through the acceptance of the separate electorate demand.
6. The Muslims felt that they could present their demands directly to the British government without the support of the Indian National Congress.

The All India Muslim League (1906)

The Urdu-Hindu Controversy, the establishment of extremist Hindu organizations, and Congress's anti-Muslim policies forced Muslims to form a platform to protect the rights of the Muslim community.

Establishment of All India Muslim League

The annual session of the All India Muslim Education Conference was held in Decca in 1906, and prominent Muslim leaders from India attended the meeting. After the meeting, Nawab Salim Ullah Khan of Decca called a meeting to discuss the formation of a political party. This meeting took place on December 30, 1906, and was presided over by Nawab Waqar-ul-Mulk. He proposed the formation of a political party, and the participants such as Nawab Salim Ullah Khan, Maulana Zafar Ali Khan and Hakeem Ajmal Khan supported the idea, leading to the establishment of All India Muslim League.

Objectives of the All India Muslim League

1. To protect rights of the Muslim community and to present the Muslim demands before the British Government in a respectful way.
2. To create feelings of loyalty among Muslims towards the British Government and to remove misunderstandings about government policies.

3. To cooperate with other communities of India without damaging the above objectives.

On December 30, 1907, the first annual session of All India Muslim League was held in Karachi. The next session of the League was held in Aligarh on March 18, 1908, and Sir Agha Khan was elected as the president, and Hasan Bilgrami as the secretary. Syed Amir Ali was appointed as the president of London Branch. The League provided a platform for Muslims, the second-largest community of India after Hindus. The All India Muslim League played a very important role from 1906 to 1947.

Minto-Morley Reforms (1909)

Lord Minto, the Viceroy of India, prepared a draft of constitutional reforms and sent it to the Secretary of State for India, Mr. Morley. The British Parliament passed the Bill, which was implemented in India in 1909 and given the name Minto-Morley Reforms. The salient provisions of the Reforms are mentioned below:

1. The Muslim demand for a separate electorate for Muslims was accepted.
2. The membership of the Central and Provincial Council was increased.
3. The powers of the Legislative Councils were enhanced.
4. Indians were included in the Executive Council of the Viceroy and in the Provincial Executive Councils.
5. Local Bodies were allowed to elect their representatives.

Analysis

Minto-Morley Reforms 1909 were fruitful for Muslims as their demand for a separate electorate was accepted, recognizing Muslims as a separate nation. The membership and powers of the Legislative Councils were increased.

Lucknow Pact (1916)

A joint session of the All India Muslim League and the All Indian National Congress was held in Lucknow in December 1916. This event marked a historic moment in India. Both parties reached an agreement on the following points.

1. The All Indian National Congress accepted the League's demand for a separate electorate for Muslims.
2. Provincial autonomy should be ensured, and provincial councils should be empowered to levy taxes and vote on budget.
3. There will be one-third ($1/3$) Muslim representation in the central council.
4. In case a bill pertaining to a particular community is presented, and three-fourths ($3/4$) of the members of that community oppose the bill, then the bill will be rejected. This clause was in favor of the minority community.

5. In provincial legislative councils, four-fifths (4/5) of the members will be elected, while one-fifth (1/5) will be nominated.
6. In the Muslim-majority provinces of Bengal and Punjab, Muslims seats will be reduced, while in Muslim-minority Provinces of Bihar, Bombay, Madras, C.P. and U.P., Muslim seats will be increased.
7. The members of the legislative assemblies should be granted the right to ask questions and present an adjournment motion.
8. There should be a separation of the executive and the judiciary.

Analysis

The Lucknow Pact was important for various reasons. Congress accepted the Muslim demands of separate electorates for Muslims and one-third (1/3) Muslim representation in the central council. It was a significant milestone for Muslims when the Congress accepted them as a separate nation.

Khilafat Movement (1919)

During the First World War, Turkey, the seat of Khilafat, fought against the Allied forces and was defeated. The Ottoman Khilafat, which had been established in 1299, was under threat from the Allied forces. Muslims of India started Khilafat movement with the aim of safeguarding the institution of Khilafat in Turkey. There were three main demands or objectives of this movement.

1. The Turkish Khilafat should not be abolished.
2. Muslim sacred places should not be disrespected.
3. The territories that were under Turkey's control before the start of the war must not be taken away from Turkey.

Events

Maulana Muhammad Ali Jauhar, Maulana Shokat Ali, Maulana Abdul Bari, Hakeem Ajmal Khan, Dr. Mukhtar Ansari and Barrister Jan Mohammad Junejo were prominent leaders of the Khilafat movement. They organized rallies and protests to emphasize the significance of the Khilafat institution to the British government. A delegation, comprising Syed Sulaiman Nadvi, Syed Husain, Maulana Muhammad Ali Jauhar and Hasan Hayat, was sent to England to highlight the issue. The delegation met with British parliamentarians, including the prime minister, and highlighted the importance of the Khilafat institution. Unfortunately, the attitude of the British government was not favorable toward the Turkish issue, and the delegation returned to India empty-handed.

Gandhi's Role and Hindu-Muslim Unity: Gandhi, a prominent Hindu leader, joined the Khilafat movement and earned respect from the Muslim community. During the Khilafat movement, Hindu-Muslim unity was at its peak. Gandhi advised Muslims to resign from government jobs, abstain from attending educational institutions, boycott courts and renounce their titles.

Hijrat Movement: Maulana Abdul Bari Farangi and Maulana Abu-al-Kalam Azad issued a fatwa stating that India was a Dar-ul-Harb (House of War), and they believed there were threats to the lives of Muslim and the practice of Islam. Consequently, they advised Muslims to consider leaving India and seek refuge in an Islamic country. Following the issuance of this Fatwa, approximately 18,000 Muslims attempted to migrate to Afghanistan. However, the Afghan government refused to enter Indian Muslims into their territory, leaving the helpless individuals with no choice but to return to their homes.

Gandhi's Decision to Call off the Khilafat Movement: Gandhi announced his detachment from Khilafat movement for two specific reasons. Firstly, the Moplas, who were from Arab descent and settled on the Malabar shores, protested during the Khilafat movement. Some were arrested, and nearly 400 of them were killed by the British government. The Moplas subsequently rebelled, engaging in guerrilla warfare against the British government and targeting British officers as well as some Hindu neighbors. The government took measures to suppress the Moplas rebellion. Gandhi strongly criticized the violent activities of Moplas. Secondly, in the beginning of 1922, Gandhi launched his non-cooperation movement from Chauri Chaura, a small town in Farakhabad District. On February 5th, 1922, people of Chauri Chaura staged a demonstration and declared their refusal to pay taxes and obey government laws. The police attempted to disperse the demonstrators through the use of force. The mob set fire to 22 policemen. Gandhi immediately called off the non-cooperation movement and the Khilafat movement.

Results

The Khilafat Movement was initiated with great enthusiasm by the Indian Muslims; however, it ultimately ended in failure. The historical institution of the Khilafat was not abolished by the Allied Forces, but rather by Mustafa Kamal Ataturk, a Turkish Muslim. The Khilafat movement left the significant influences on Indian politics. The Muslims learned a lesson not to trust Gandhi's philosophy. They gained confidence and political maturity.

Important Developments between 1920-1939

Simon Commission 1927

The Indian government introduced Montague-Chelmsford Reforms in 1919. It announced that after ten years, a commission would be sent to India to assess the results of reforms and recommend further reforms for Indians. The government fulfilled its promise, and in 1927, it

instituted a commission under the leadership of Sir John Simon. Not a single person from India was included as a member of the Simon Commission. The two major political parties, the Indian National Congress and the All India Muslim League, boycotted the Commission. Protests were held in India against the Simon Commission, which was received with slogans such as "Simon Go Back, Simon Go Back."

Nehru Report (1928)

The Secretary of State for India, Lord Birkenhead, declared in the British Parliament that the Indians were divided and unable to prepare unanimous proposals for further reforms in India. Indian leadership accepted the challenge, and an all-party conference was held in February 1928. A committee was established to prepare unanimous proposals with Moti Lal Nehru as its head. Other members included N.A. Joshi, M.R. Jaikar, G.R. Pardhan, Tej Bahadur Sapru, Sir Ali Imam and Shoaib Qureshi. The committee ignored the interests of the Muslim community and passed a report known as the Nehru Report. The Muslim members refused to accept the proposals. The following proposals were outlined in Nehru Report.

1. The method of separate electorates should be replaced with the method of joint electorates. The Muslims were less in number compared to Hindus in United India. Under separate electorates, seats for Muslims had to be reserved. The Congress realized that it could win more seats under joint electorates.
2. One-fourth (1/4) of seats should be reserved for Muslims in the central legislative assembly.
3. Sindh should be declared a separate province, Balochistan and the North West Frontier Province (NWFP) should be granted more powers.
4. Hindi should be declared as official language.

Analysis

The demands of Muslims, which had been accepted under the Lucknow Pact (1916), were reversed by the Congress in the Nehru Report. Muslim interests were harmed, leading Muslims to believe that the Congress could not accommodate their interests.

Fourteen Points of Quaid-e-Azam رَحْمَةُ اللهِ عَلَيْهِ (1929)

Under the Nehru report (1928), Muslim interests were adversely affected. Quaid-Azam Muhammad Ali Jinnah رَحْمَةُ اللهِ عَلَيْهِ convened the session of All India Muslim League in 1929 and presented his fourteen points.

1. Provincial autonomy should be equally granted to all provinces.
2. A federal system should be introduced, and residuary powers should be vested in the provinces.

3. Effective and adequate representation should be provided to minorities in all the legislative assemblies, but their majority should not be converted into a minority.
4. There should be a separate electorate system for Muslims.
5. Sindh should be declared a separate province.
6. One-third (1/3) of seats should be reserved for Muslims in the central legislative assembly.
7. Reforms should be introduced in Baluchistan and the North West Frontier Province (NWFP).
8. If the demarcation of the provinces is necessary, then the Muslim majority in the provinces of Punjab, Bengal and North West Frontier Province (current Khyber Pakhtunkhwa) should not be turned into a minority.
9. There must be one-third (1/3) of ministers from the Muslim community in the central and provincial ministries.
10. Seats should be reserved for Muslims in government jobs.
11. All the communities in India should be granted religious liberty.
12. A bill belonging to a particular religious community should not be passed by the legislature if three-fourths (3/4) of the members belonging from that community oppose the bill.
13. Muslim culture, education and language should be granted constitutional protection.
14. Amendments to the constitution should be made after obtaining approval from the provinces and states.

Analysis

The Quaid's fourteen points were a prompt and appropriate response to the Nehru Report. These were moderate and genuine demands of the Muslim community presented at the right time. Muslims continued their struggles in the subsequent years based on the framework of fourteen points.

Address of Allama Iqbal رَحْمَةُ اللهِ عَلَيْهِ (1930)

The annual session of the All India Muslim League was held in Allahabad in 1930, and it was presided by the great Muslim thinker Allama Iqbal. This session holds significant importance because Allama Iqbal presented the idea of a separate homeland for the Indian Muslims. Iqbal addressed the following points in his presidential speech. He expressed that Islam is a complete code of life that guides in all aspects of human life. Iqbal emphasized the concept of two-nation theory within the Indian context. He also criticized the Western world, noting that in the west, religion has been declared a private affair of every individual. In Islam, there is no concept of separating matter from spirit, and both are equally important. Islam is a dynamic force that has consistently protected Muslims. Iqbal strongly rejected the idea of India as one nation and

asserted that Muslims and Hindu cannot be considered a single nation. India is home to different nations with significant differences. Comparing India to the Western world would be inaccurate. Muslims have valid reasons for seeking a separate homeland because it aligns with the fundamental principles of Islam.

Allama Iqbal said:

“India is a continent where different nations coexist, and they possess differences among themselves. If a constitution or future adjustments are based on the idea that ‘all Indians belong to one nation,’ it could potentially ignite a civil war in India. Therefore, I demand the establishment of a consolidated Muslim state in the best interests of Muslims of India. The formation of a consolidated Muslim state in North-West India seems to be the ultimate goal for Muslims, particularly in the North-Western region of India.”

Analysis

Allama Iqbal's address holds great significance in the political struggle, as it provided a clear direction for Indian Muslims. He demanded for the establishment of a separate Islamic state in Muslim-majority areas. This marked the first instance in which a Muslim had demanded a separate homeland for Indian Muslims at the All India Muslim League platform.

The Round Table Conferences (1930-1932)

Quaid-Azam Muhammad Ali Jinnah wrote a letter to the British Prime Minister, Mr. Ramsay MacDonald, urging him to convene a conference of all political parties in India to present their demands before the government.

The first session of the Round Table Conference was held from 12th November 1930 to 19th January 1931. The Congress boycotted the first session. Prominent leaders such as Quaid-Azam Muhammad Ali Jinnah, Maulana Muhammad Ali Jauhar, Sir Agha Khan etc., represented the Muslim League in the first session. Eight sub-committees were established to address various issues. The Prime Minister announced the introduction of a federal system at the centre and responsible government in the provinces in India. The government did not make any decision regarding the Muslim demands.

The second session of the Round Table Conference was held from 7th September 1931 to 1st December 1931. Gahndi represented the Congress, while the Muslim League was represented by Allama Iqbal, Maulana Shoukat Ali and Sir Ali Imam. Ghandi tried his best to prove India as one nation. Due to Gahndi's rigid attitude, a resolution on the minorities issue could not be reached. The session was ended without reaching any conclusion.

The third session was held from 17th November 1932 to 24th December 1932. The Congress did not attend the third session, while the Muslim League was represented by Sir Agha Khan. The third session ended without achieving anything.

The Communal Award (1932)

The British Prime Minister, Mr. Ramsay MacDonald, announced the Communal Award in August 1932. According to the award, separate electorates were extended to Muslims, Sikhs, Indian Christians, Anglo-Indians, Europeans and depressed classes (scheduled castes). The award favored the minorities in India, reserving one-third ($1/3$) of seats for Muslims in the Central Legislative Assembly. Following the principle of weighting, minorities were allocated more seats in the provincial legislatures than their population in the respective provinces. However, this decision was against the interests of Muslims, as their majority was converted into a minority in the provinces of Punjab and Bengal. Political parties in India did not accept the Communal Award, and the Muslim League also rejected it due to the reduction in Muslim seats in the legislative assemblies of Punjab and Bengal.

Government of India Act (1935)

The British Government began the process of crafting the future constitution of India, taking into account the Nehru Report, Quaid's fourteen and the outcomes of the three round-table conferences (1930-1932). The following were the main characteristics of the 1935 Constitution:

Bicameral Legislature: There was a bicameral legislature. The Council of States served as the upper house (chamber), comprising a total of 260 members, with 156 representing the provinces and 104 representing the states. The Federal Assembly, serving as the lower house (chamber), consisted of 375 members, with 250 representing the provinces and 125 representing the states.

Federal System: Federal system was introduced, consisting of provinces and states.

Division of Powers: The powers between the centre and the provinces were distributed among three lists: the federal list, the provincial list and the concurrent list.

Provinces: India had 11 provinces under the 1935 Act, each with the authority to make laws on subjects enlisted in the provincial and the concurrent lists.

Provincial Autonomy: Provincial autonomy was increased.

Council of Minister: Each province had a council of ministers, and the governor was obliged to act upon the council's advice. However, the provincial governor was subordinate to the Governor General of India.

Abolition of the Indian council: The Indian council was abolished.

Federal Court: The Federal Court, consisting of the Chief Justice and six other judges, served as the highest court. The Act provided details of the powers of the Federal Court.

Analysis

The 1935 Act failed to satisfy different sections of Indian society due to its inability to meet their expectations. The provincial governors and the Viceroy of India held significant powers. The federal system introduced under the Act had some flaws. The central portion of the 1935 Act was not implemented, and only the provincial part was put into effect.

Formation of Congress Ministries (1937-1939)

Under the Government of India Act 1935, provincial assembly elections were held in 1937. The total number of seats for the provinces was 1585, and the Muslim League won 108 Muslim reserved seats out of 495. The Muslim League could not perform well due to different reasons. The Congress formed provincial ministries in 8 out of the total 11 provinces of India. However, the Muslim League was unable to establish a ministry in any province. Shortly after the formation of Ministries in 8 provinces, the Congress started actions against Muslims, as detailed below.

Hoisting of the Party Flags When the Congress ministries had been formed in 8 provinces, the Congress issued instructions to government officials to hoist the Congress's flags on government buildings.

Bande Matram Anthem "Bande Matram" was a song taken from Bankim Chandra Catterjee's novel 'Anandamath'. This song portrayed a negative image of Muslims and advocated the expulsion of Muslims from Hindustan, suggesting that India is only for Hindus. The Congress declared "Bande Matram" as the national anthem and issued instructions that the beginning of the day in government offices and educational institutions must start with its recitation.

Widdia Mander Scheme It was a new educational scheme introduced in the provinces where the Congress party formed its ministries, and the aim of the scheme was to erase Muslim culture. The scheme intended to convert Muslims into Hinduism and was implemented in all educational institutions. Students were forced to pay homage to Gandhi's picture every day during their school assemblies.

Wardha Scheme This scheme was the outcome of Gandhi's philosophy, preaching Hindu nationalism and emphasizing the importance of non-violence. The main purpose of this scheme was to instill respect in the minds of young students for Hindu heroes and religious leaders. The scheme was designed to create the sense that there was only one nation in India. It was intentionally introduced to convert Muslims into Hinduism.

Attacks on Muslims Attacks on Muslims had become a troubling routine in the provinces under the Congress party's rule. Muslims were forced to abandon their religion and allegiance to any party other than the Congress.

The Resignations of Congress Ministries and Day of Deliverance: World War II began in 1939, and

Britain, while fighting against Germany, called upon Indians for their support. The Congress believed that the British government could not overlook it at this time and announced that it would not cooperate with the government in wartime activities. In November 1939, Congress ministries gave their resignations from provincial ministries. Quaid-e-Azam appealed Muslims to peacefully observe the Day of Deliverance on December 22, 1930.

Analysis

The rule of Congress ministries was a critical period for Muslims, as their lives, properties and religion came under attack. Congress introduced anti-Muslim educational schemes to promote a sense of one nation in India. Muslims peacefully criticized these policies and were happy after the resignations from Congress ministries.

Lahore Resolution / Pakistan Resolution (1940)

In March 1940, the All India Muslim League's annual session was held in Lahore at Minto Park, which was later known as Iqbal Park. Quaid-e-Azam presided over this session, and it marked an important event in the political struggle of India's Muslims as they demanded a separate homeland for themselves based on their religion. Prominent Muslim leaders from different parts of India participated in this session. Quaid delivered his presidential speech and raised some important points. He said that it was untrue to think that only one nation resided in India. There were two main nations: Muslims and Hindus, and they belonged to different civilizations with differing worship styles. Despite living together in India for centuries, each remained its separate identity and did not mix with other. Quaid emphasized that India's issue should not be seen as an inter-communal matter but as an international one.

The Resolution: Molvi Fazal-ul-Haq, the chief minister of Bengal, presented the resolution on March 23, 1940. The resolution said: "No constitutional plan would be workable or acceptable to the Muslims unless it is designed on the following basic principles, viz, that geographically contiguous units are demarcated into regions which should be constituted, with such territorial readjustment as may be necessary that the areas where the Muslims are numerically in majority, as in the North Western and Eastern zones of India, should be grouped to constitute 'Independent States' in which the constituent units shall be autonomous and sovereign." All of the leaders and participants assembled in the gathering endorsed the resolution.

Reactions

The Muslims were quite happy because the Lahore Resolution showed them their destination. Under the kind leadership of Quaid-e-Azam, they devoted their energies to achieving freedom. On the other side, Hindus and the Congress rejected the resolution.

Cripps Mission (1942)

In March 1942, a delegation from the British government arrived in India under the leadership of Sir Stafford Cripps. The objective of the delegation was to view the political situation in India and present its recommendations to the government. The delegation submitted its report to the government in April 1942. The recommendations were as follows:

1. After the end of World War II, a Constituent Assembly will be formed, consisting of members from the provinces and the states.
2. India will be granted dominion status after the end of the war.
3. The Constitution shall be framed by the Constituent Assembly.
4. The proposals of the Cripps Mission would be accepted or rejected as a whole.

Quit India Movement (1942)

Britain was participating in the Second World War. The Congress realized that Britain would not succeed in the war and tried to exert pressure on the government to leave undivided India. In August 1942, the Congress started Quit India Movement. The Congress made efforts to create hurdles in the formation of a separate Muslim state. Hindus engaged in violent activities to achieve their agenda. However, the government managed to control the situation, and this movement ultimately failed.

Divide and Quit India

Quaid-e-Azam Muhammad Ali Jinnah referred to the 'Quit India Movement' as anti-Muslim. He believed that the movement was a conspiracy against Indian Muslims. Quaid-e-Azam responded to the 'Quit India Movement' with the slogan, 'Divide and Quit India.' This was the best response given by Quaid-e-Azam. He devoted all his energies to secure a separate Muslim state for Indian Muslims.

Gandhi-Jinnah Talks (1944)

On 17th July 1944, Gandhi wrote a letter to Quaid-e-Azam expressing his desire to meet him. Gandhi-Jinnah Talks began on 9th September 1944 and lasted until 27th September 1944 in Bombay. Gandhi told Quaid-e-Azam that he had come to meet him in his personal capacity and not as a representative of the Indian National Congress. Quaid-e-Azam expressed that the Muslims were a separate nation and they must be given a separate state. On the other hand, Gandhi said that all Hindustanis were one nation, and the division of India would destroy the unity of India. On 27th September 1944, Gandhi-Jinnah Talks ended. The talks failed due to Gandhi's unjust viewpoint that all Hindustani were one nation.

Simla Conference (1945)

In June 1945, following the end of World War II, Indian Viceroy Lord Wavell summoned a conference in Simla and invited political leaders from India to discuss his plan. The Muslim League delegation, lead by Quaid-e-Azam, and the Congress delegation, led by Maulana Abu-al Kalam, participated in the conference. The Congress nominated Maulana Abu-al Kalam to claim that it also represented Muslims. However, a deadlock occurred when Quaid-e-Azam insisted that all five members of the executive council must be from the Muslim League. Khazir Hyayat, the chief minister of Punjab, demanded that one seat in the council, allocated to Muslims, should be given to his Unionist party. The Congress also supported the demand of the Unionist party. Quaid-e-Azam rejected this proposal, stating that the Muslim League was the sole representative party of Muslims and called upon the government to hold elections to determine the representative claims of all the parties. The conference ultimately ended in a failure.

Elections of 1945-46

The elections for the Central Legislative Assembly were held in December 1945. Quaid-e-Azam visited all corners of India and highlighted the importance of these elections for Muslims. The Muslim League prepared its election manifesto on two-nation theory. All 30 seats reserved for Muslims were won by the Muslim League. In the beginning of 1946, the elections for the provincial assemblies were held, with 482 seats reserved for Muslims. The All India Muslim League also performed well and won the majority of the reserved Muslim seats. The 1945-46 elections proved that the All India Muslim League was the true representative party of Indian Muslims, while the Congress primarily represented Hindus. The Muslim League's victory in these elections paved the way for the creation of Pakistan.

Delhi Convention (1946)

On 19 April 1946, a convention of the Muslim League's winning candidates of the central legislative assembly and the provincial assemblies was held in Delhi. The political situation in India was comprehensively discussed. Quaid-e-Azam emphasized that Muslims would suffer a lot in united India under Congress rule. He said that the creation of Pakistan is the destination of the Muslim community. The participants of Delhi convention passed a resolution for the establishment of a separate Muslim state.

The Cabinet Mission Plan (1946)

The British Prime Minister, Lord Attlee, sent a delegation to India known as the Cabinet Mission Plan to discuss constitutional issues with the Viceroy and Political leaders of India. The delegation consisted of three members: Sir Stafford Cripps, A.V. Alexander and Pethick Lawrence, and it

arrived in India on March 24, 1946. The delegation met with the leadership of both parties, the Congress and the Muslim League and listened to their views. It announced a formula in May 1946 and the following were its main points.

1. India will be a union consisting of British India and the states. The central government would deal with subjects such as defense, foreign affairs, communication and the imposition of taxes.
2. There would be three groups of the provinces. Group A would consist of six Hindu-majority provinces. Group B would consist of the provinces of Punjab, Sindh and the North West Frontier Province (Khyber Pakhtunkhwa). Group C would consist of the provinces of Bengal and Assam.
3. The provinces and the states would be the basic units of the Indian union. The provinces would have powers over subjects not included in the union subjects. The provinces would also enjoy residuary powers.
4. If the majority of the provincial assembly of any province would like to secede from the Indian union, it would be able to do so, but only after a period of ten years.
5. Political parties would have to accept or reject the plan as a whole. The party that accepts the plan would be included in the interim government.

Reactions

The Congress accepted the plan and it was quite happy because the Muslim demand for a separate state was not fulfilled. Quaid-e-Azam and the Muslim League expressed their reservations but decided to accept the provisions of the plan.

Interim Government

In 1946, an interim government was formed in India, which continued its functions till independence. The Congress tried its best to keep the Muslim League out of the interim government, but it could not do so. The members of the interim government taken from the Muslim League included Liaquat Ali Khan (finance), Raja Ghazanfar Ali (health), Ibrahim Ismail Chandigarh (commerce), Abdur Rab Nishtar (Communications) and Jogendara Nath Mandal (Law). The members of the interim government taken from the Indian National Congress included Jawaharlal Nehru (foreign affairs), Rajagopal Acharya (education), Jagjivan Ram (Labour), Rajendra Prasad (food and agriculture), Patel (interior, information and broadcasting), and Asif Ali (transport and railway). Three minority members included Baldev Singh (defence), John Matthai (industries and supplies) and C. H. Bhaabha (works, mines and power).

3rd June 1947 Plan

Background: Lord Mountbatten was appointed as the last Viceroy of India, and he arrived in India on March 22, 1947. His important task was to facilitate the peaceful transfer of power to the Indians. Mountbatten started negotiations with the political leadership of India. He met with Jawaharlal Nehru and Mahatma Gandhi, the representatives of the Congress. Mountbatten listened to their points of view. Quaid-e-Azam also met with Mountbatten and presented his perspective on the division of India. Mountbatten went to England to take approval of the scheme for the division of India from the British Government. The British Prime Minister, Lord Attlee, and his cabinet approved the scheme, and Mountbatten returned to India.

3rd June Plan: The initial plan for partition was set for August 1948; however, Mountbatten advanced the date to August 15, 1947 due to certain reasons. Mountbatten announced partition plan on 3rd June 1947. The important clauses of this plan were as follows:

1. Sindh Assembly would decide whether it wanted to join India or Pakistan.
2. A referendum would be held in the North West Frontier Province (NWFP) to determine the province's willingness to join India or Pakistan.
3. The legislative Assemblies of Punjab and Bengal would decide their future.
4. A referendum would be held in the District Sylhet in Assam province to determine the willingness of the people to join India or Pakistan.
5. Balochistan's royal jirga and Quetta Municipal Corporation would decide their future.
6. The Government of India Act 1935 would be implemented as the interim constitution in India and Pakistan.
7. The princely states would decide for themselves about their future.

The Independence Act 1947

The British Prime Minister, Lord Attlee, presented the Independence of India Bill before Parliament, and it was passed. It was implemented on July 18, 1947, and was named the Independence Act 1947. The important clauses of the Act were as follows:

1. The British rule over India would end on August 15, 1947, and two countries, Pakistan and India, would be established.
2. The legislative assemblies of both countries would have the power to legislate. The Government of India Act of 1935 would be implemented as the interim constitution in both India and Pakistan.
3. The princely states were given the choice to join either country.
4. The powers of the British Crown would cease to exist, and the Governor Generals of both countries would have the power to approve the bills passed by the legislatures.

Under the Independence Act of 1947, Pakistan came into being on August 14, 1947, with Quaid-e-Azam Muhammad Ali Jinnah as the first Governor General and Liaquat Ali Khan as the first Prime Minister.

Role of Political Leaders, Women and Minorities in Making of Pakistan

Quaid-e-Azam Muhammad Ali Jinnah رَحْمَةُ اللَّهِ عَلَيْهِ

Quaid-e-Azam was born in Karachi on December 25, 1876, and was a great Muslim leader of the twentieth century. He dedicated his energies to protect the rights of Indian Muslims and gain independence from the Hindu and British domination. He is rightly called the founder and father of the nation. In the beginning, Quaid-e-Azam advocated for Hindu-Muslim unity and played a very important role in the creation of Lucknow Pact of 1916. However, due to the Congress's and Hindus' hostility towards Muslims, he was forced to reconsider and lost trust in both. He rejected the idea of a single nation in India and provided examples to demonstrate that



Muslims were a separate nation and needed a separate homeland. While addressing a gathering at Lahore in March 1940, Quaid-e-Azam stated that the ultimate destiny of Indian Muslims was to have a separate state. He organized the All India Muslim League and rallied Muslims under its banner. The League won all 30 Muslim reserved seats in the Central Legislative Assembly in the 1945 elections. Quaid-e-Azam served as the first Governor General of Pakistan and devoted all his efforts to solving the initial problems of Pakistan. Although, Quaid-e-Azam Muhammad Ali Jinnah passed away on September 11, 1948, he continues to live in the hearts of Pakistanis.

Allama Muhammad Iqbal رَحْمَةُ اللَّهِ عَلَيْهِ

Allama Muhammad Iqbal was born in Sialkot on November 9, 1877. He received early education in the same city and later moved to Lahore, where he earned a master's degree in philosophy from Government College Lahore. Allama Iqbal went to England and stayed there for a few years. Later, he moved to Germany, completed his Ph. D. degree from the University of Munich, and returned to India in 1908. Allama Iqbal condemned the Western civilization and is referred to as the 'Poet of the East'. He actively participated in protecting the rights of Indian Muslims and supported the idea of the unification of Muslims throughout the



world. He was elected as a member of the Punjab Legislative Assembly. Allama Iqbal delivered his presidential address at the annual session of the All India Muslim League in Allahabad in 1930. He highlighted the following points in his speech: Islam is a complete code of life, and politics and religion cannot be separated from each other. Islam is a living force and has always protected Muslims. The concept of a single nation in India cannot be accepted by Muslims as both Hindus and Muslims have sharp differences in every aspect of life. Therefore, it is suggested that a Muslim state must be established consisting of Muslim-majority areas. Allama Iqbal inspired Muslims through his poetry and is known as 'Hakeem-ul-Ummat.' He died on April 21, 1938, and was buried near the 'Badshahi Masjid' in Lahore.

Choudhary Rahmat Ali رَحْمَةُ اللهِ عَلَيْهِ

Choudhary Rahmat Ali was an active figure during the freedom struggle and an architect of the idea of Pakistan. He graduated from Islamia College Lahore and then started teaching at Aitchison College Lahore. He went to England for higher studies and completed his master's degree at Cambridge University, after which he obtained the degree of Bar-at-Law from Dublin University. Choudhary Rahmat Ali had deep emotional sentiments for the Muslims of India and was

a great orator. He keenly promoted the idea that Muslims were a separate nation and must be granted a separate homeland. In 1933, Choudhary Rahmat Ali issued a pamphlet titled 'Now or Never' and emphasized that the Muslims were distinct from Hindus in many aspects. He asserted that the division of India into two states was a feasible and permanent solution to maintain peace as an undivided India would lead to chaos and disorder. Choudhary Rahmat Ali suggested the name 'Pakistan' for the Muslim state. In 1933, he founded the 'Pakistan National Movement' and continued his struggle for gaining independence from the British rule. He raised awareness among Muslims that the only solution to their problems lay in the establishment of a separate state.



Miss Fatima Jinnah

Miss Fatima Jinnah was the sister of Quaid-e-Azam Muhammad Ali Jinnah and she played a very active role during the Pakistan movement and also after the creation of Pakistan. She was a close associate of her brother and worked on organizing the women's wing of the All India Muslim League, where she presided over its meetings. Fatima Jinnah accompanied her brother, Quaid-e-Azam, wherever he went for the cause of the Muslim community. She visited far-off places in united India and created political awareness in Muslim women, motivating them to take an active part in the freedom struggle. Fatima Jinnah and her team



conveyed the message of the All India Muslim League to every home. At the time of partition, a large number of refugees came to Pakistan. She visited refugee camps and encouraged women to face the problems with high spirits. After the death of Quaid-e-Azam, she continued her political activities and contested the presidential election in 1965 against Ayub Khan. She was given the title of 'Madher-i-Millat (mother of the nation)'. Fatima Jinnah died on July 11, 1967.

S.P. Singha

Devan Bahadur Satya Prakash Singha, widely known as S.P. Singha, was a political activist born in 1893 in Sialkot. He secured employment at the University of Punjab and introduced the matric and intermediate examination system. Due to his contributions, the British government honored him with the distinction of 'Dewan Bahadur'. The majority of Indian Christians gathered under the platform of All India Conference of Indian Christians and leaned towards the Indian National

Congress. However, S.P. Singha held an opposite view and also attended the annual session of the All India Muslim League, held in March 1940 in Lahore. He declared, 'Jinnah is our leader' and assured that the Christians would support him in the creation of Pakistan. Singha also served as the Speaker of the Punjab Assembly in united India. When Pakistan came into being, S.P. Singha chose to live in Pakistan and passed away in 1948.



Exercise

Answer the following questions briefly

1. Describe the importance of the Simla Deputation 1906?
2. Analyze the Nehru Report of 1928?
3. What were the three objectives of the All India Muslim League?
4. Describe the Importance of the 14 points presented by Quaid-e-Azam?
5. Analyze Allama Iqbal's Address of 1930?
6. Describe the failure of Simla Conference of 1945?
7. Analyze the formula given by the Cabinet Mission Plan of 1946?

Answer the following questions in detail

1. In what ways did the Lucknow Pact address the concerns and demands of both the Congress and the Muslim League?
2. How did the Khilafat Movement evolve, and what were its primary objectives?
3. To what extent did Congress Ministries seek revenge against Muslims, and what were the consequences of their actions?
4. What were the basic principles and demands outlined in the Lahore Resolution?
5. What were the important clauses of the 3rd June Plan 1947 that paved the way for partition of India?

Project

Each student will choose a topic, prepare a chart, write down important points, and then submit it to the teacher.

Compare and Contrast the role of Gandhi and the Muslim leaders during the Khilafat Movement?

Glossary

Delegation: A group of people

Parliamentarian: Member of the Parliament

Rebel: A person who fights against his government

Demonstration: A public meeting or march against the government

Provincial Autonomy: Self-governance and decision-making authority of a province

Amendment to the constitution: Introducing change in the constitution

Federal System: Power is divided between the centre and the provinces

Bicameral Legislature: Two-Houses of the Legislature (Pakistan: National Assembly & Senate)

Interim Government: A temporary government

List more words and write their meaning that you find difficult in this chapter.

Section 2

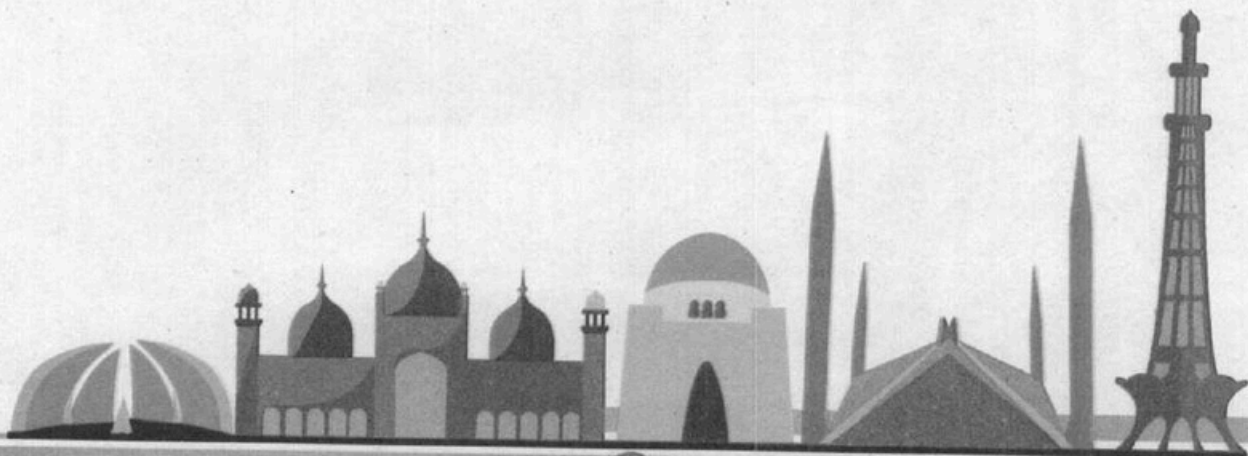
Geography of Pakistan

UNIT 03

LAND OF PAKISTAN

In this unit the students will be able to:

- Explain Pakistan's precise cardinal location on a world map.
- Evaluate the significance of location in terms of its proximity to neighboring countries, seas, and oceans.
- Describe the significance of Pakistan's major cities based on their geographical location, including their relationship to surrounding physical features such as rivers, mountains, and coastal areas.



Location of Pakistan

Pakistan is located in South Asia with a land area of 796,096 km². It is 1,600 km long from north to south and 885 km wide from east to west. According to the coordinates shown on the map, Pakistan is located between the latitudes of 24°N and 37° N and extends from longitude 61° E to 77° E Islamabad is federal capital of Pakistan. It is one of the most modern and well-planned capitals in the world.

The map also shows the administrative divisions of Pakistan's four provinces namely, Punjab, Kyber Pakhtunkhwa, Balochistan and Sindh. Pakistan's Northern areas were assigned a new identity i.e., Gilgit-Baltistan and internal and political autonomy by the federal cabinet of Pakistan on 29th August 2009. Azad Jammu and Kashmir (AJK), a self-governing territory with its capital at Muzaffarabad, is also administered by the federal government of Pakistan. In the south Pakistan has 1058 Km long coastal areas.



Do You Know?

Islamabad is known for its profuse green spaces, including the Margalla Hills National Park and the Shakarparian. It is also the site of several renowned landmarks, including the country's emblematic Faisal Mosque which is a stunning example of modern Islamic architecture.



Pakistan is bordered by six countries. To the east, Pakistan shares its international border with India. At the northern end of Pakistan, the line of control (LOC, 806 Km) separates Pakistani-administered Kashmir with Indian-held Kashmir territory. China lies to the northeast, across the remote and mountainous Karakoram range. The western border with Afghanistan is established along the 2,611 Km long Durand Line. The Wakhan Corridor, a narrow strip of Afghan territory jutting into Tajikistan, separates Pakistan from the rest of Central Asia. In the southwest, Pakistan shares 909 Km long border with the Islamic Republic of Iran.

Significance of Pakistan's Location

Strategically, Pakistan's location makes it a potential gateway to Central Asia and the Middle East. It also serves as a doorway to Islamic block. This gives Pakistan a strategic advantage in the region for both cooperation and competition from other countries. It is explained as follows;

- i. Pakistan is situated to the northwest of China and to the northeast of Iran and Afghanistan. It is also close to Central Asia. Pakistan provides transit trade route to Afghanistan and Central Asian States which are land locked countries with no access to sea. This gives Pakistan access to Central Asia, which is a region with rich natural resources and growing economies.
- ii. The Arabian Sea is a valuable resource for many countries from the viewpoint of trade by sea. It is a warm water sea and provides major shipping lane and a source of oil and gas. As the Arabian Sea is located in a strategic position, connecting the Indian Ocean to the Persian Gulf.



Note For Teachers: After studying the map of Pakistan, use cardinal directions to describe the location of China, Afghanistan, Iran and India.

Do You Know?

A landlocked country is surrounded by land, with no direct access to the sea or coastline. Examples of such countries include Afghanistan and Bhutan.

This makes it a major shipping route for sea trade between South Asia, the Far East, and the Middle East. This gives Pakistan access to global markets and energy resources.

- iii. Pakistan is located at the intersection of the world's two busiest air traffic corridors, the North Atlantic and Asia-Pacific routes. This makes it a natural transit hub for air traffic between East and West. The Jinnah Terminal Karachi is important as an international airport because it handles large passenger and cargo traffic.
- iv. The Arabian Sea serves as important source of sea food. It provides habitats for many marine creatures including fish, sharks, whales, and dolphins. There are three important seaports of Pakistan including Karachi Keamari port, Qasim port and Gwadar port.

Expand Your Horizon

The China-Pakistan Economic Corridor (CPEC) is a 62-billion-dollar infrastructure project that connects China to the Arabian Sea. CPEC is a crucial part China's Belt and Road Initiative, which is an investment project that aims to connect China to countries around the world through roads, railways largely. CPEC is expected to boost Pakistan's economy and improve its trade links with China and other countries of the world.

Major Cities of Pakistan

Major cities are often the economic centers of their countries. They are home to businesses, industries, and financial institutions that play a vital role in the economy. Some cities have important historical and cultural sites, such as museums, monuments, and theaters. By learning about the history and culture of these cities, we can better understand our own country's past and present and may develop an appreciation for the diversity of our country and its people.

Karachi

Karachi, Pakistan's financial hub and the capital of Sindh Province, is considered an important city due to its strategic location and economic potential. As a pioneer in cable networking and information technology, Karachi has become a center of software outsourcing. Moreover, it is home to a number of salient industries, such as textile manufacturing, shipping, and tourism. Karachi is also a major transportation hub, with the country's largest airport and seaport which facilitate exports and imports of Pakistan.



Karachi

Lahore

Lahore is the second-most populous metropolis in Pakistan, situated in the Punjab province. It is a salient cultural and historical metropolis, and is home to the Badshahi Mosque, one of the world's largest mosques. Lahore is also a major commercial and industrial center for manufacturing, particularly in the textile, food processing, and engineering industries.



Lahore

Faisalabad

Faisalabad is situated in the north-east of the country, lying between the plains of the Ravi and Chenab Rivers. Faisalabad is one of the most industrialized cities in Pakistan and known as the "Cotton polis of Pakistan" owing to its textile industry. Agriculturally, Faisalabad produces some main crops including cotton, wheat, rice and sugarcane.



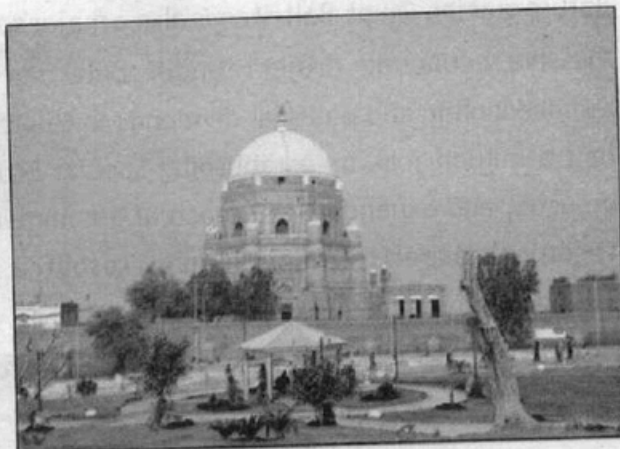
Faisalabad



Kohinoor Shopping district in Faisalabad

Multan

Multan is the fourth largest city in Pakistan, situated in the Punjab province. It is an antique metropolis with a storied history, and is home to the Multan Fort, one of the country's oldest forts. Multan is also a salient religious metropolis, and is home to many shrines of Sufi saints including Hazrat Shah Rukn-e-Alam.



Multan

Peshawar

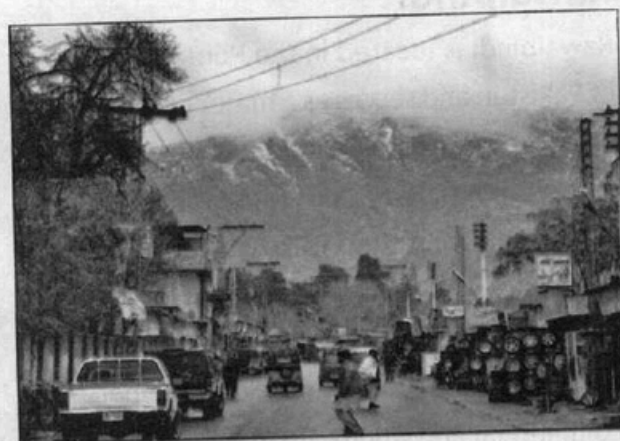
Peshawar is the metropolis of Khyber Pakhtunkhwa province, situated in the north-west of Pakistan. It is a salient transportation hub, For example, the Khyber Pass is a historic trade route between Central Asia and South Asia. Peshawar is also a salient cultural city and is the center of a number of historical monuments, such as the Mohabbat Khan Mosque.



Peshawar

Quetta

Quetta is the capital of Balochistan province, situated in the south-west of Pakistan. It is renowned for its orchards producing plums, peaches, pomegranates, apricots, apples, melons, cherries, pistachios, and almonds. Quetta has mineral wealth such as coal, copper, and Gold. Quetta is also a hub of education, business, and commerce, and is also known for its handicrafts.

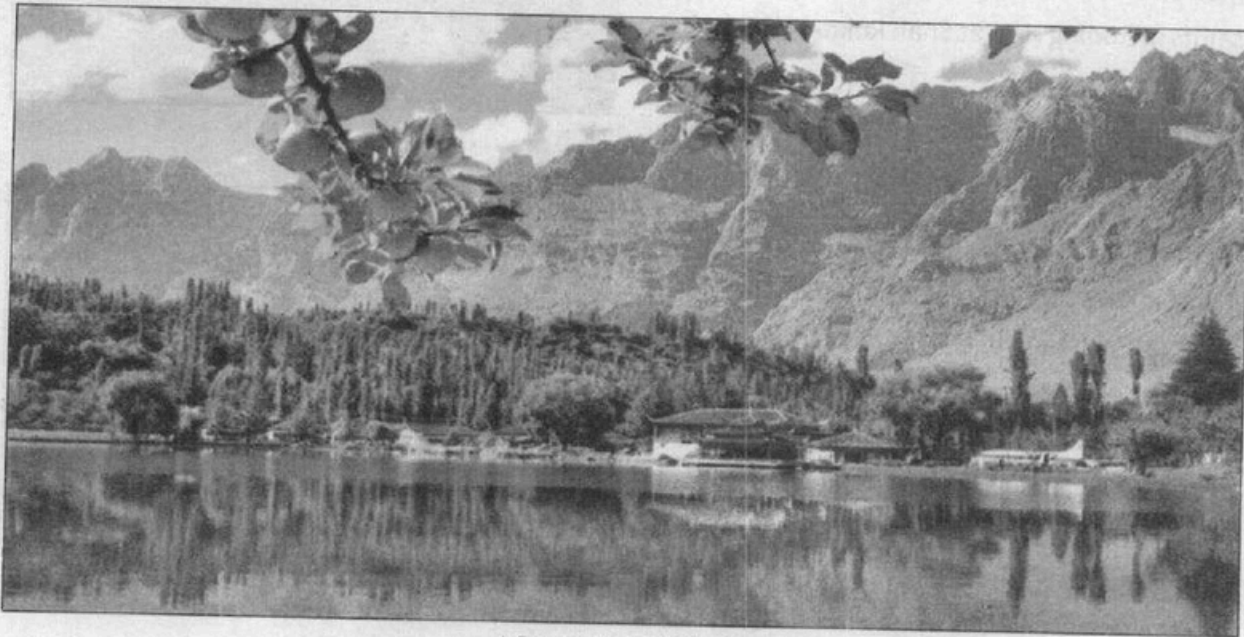


Quetta

Gilgit-Baltistan

Gilgit-Baltistan is a region which is located in the northern Mountains. It is a popular tourist destination, and is home to a number of glaciers, including the Baltoro Glacier, the Siachen and

Batura glacier. Gilgit-Baltistan is also a major source of hydroelectric power for Pakistan. CPEC, a massive economic project under Belt and Road Initiative (BRI), aims to enhance the socioeconomic and political dividends in Gilgit Baltistan. It is projected to generate more than half a million jobs by establishing Special Economic Zones in Gilgit, invigorating the tourism industry, and expanding the reach of e-commerce. The CPEC-driven hydropower development, technical expertise, and human resource development has transformed the region's socioeconomic dynamics.



A Scenic View of Skardu

Rawalpindi

Rawalpindi is located in the Punjab province of Pakistan and serves as a major cantonment area. Rawalpindi is a major transportation hub, with a network of roads, railways, and airports connecting it to other parts of Pakistan. This makes it easy for the businesses to import and export the goods and services. There are several important commercial and wholesale markets in Rawalpindi that sell goods in bulk to retailers, wholesale manufacturing and construction industries.



A Busy Market in Rawalpindi

What I have Learned

- Pakistan is situated on important commercial corridors that connect South Asia, Central Asia, and the Middle East. It becomes a strategically significant site for trade and commerce.
- Arabian sea is a source of maritime trade.
- Pakistan provides transit route to the land locked countries.
- CPEC is a project of China which is lucrative for economic growth of Pakistan.
- Lahore is the second largest city of Pakistan after Karachi. It is industrial hub of Pakistan
- Faisalabad is known for producing world class textile goods.
- Pakistan and India have very complex relations.
- On August 29, 2009, the federal cabinet of Pakistan granted internal and political autonomy to Gilgit-Baltistan

Exercise

Answer the following questions by choosing the best answer A, B, C or D.

1. What is the land area of Pakistan?
a. 796,096 km² b. 716,796 km². c. 696,296 km². d. 996,596 km².
2. Islamabad is located in
a. the Karakoram b. Punjab
c. Potwar region d. in the foothills of Karakoram
3. Mohabbat Khan Mosque is located in
a. Karachi b. Faisalabad c. Peshawar d. Rawalpindi
4. The city called Cotton polis of Pakistan is
a. swat b. Lahore c. Hyderabad d. Faisalabad
5. The Durand line is situated
a. between Iran and Pakistan b. between Afghanistan and India
c. between China and Pakistan d. between Afghanistan and Pakistan
6. What is the recent economic project between China and Pakistan is called
a. QUAD b. BRICS c. SAARC d. CPEC
7. Multan is known for its
a. sky scrappers b. gardens
c. monuments d. Sufi-saints

8. Metropolis means
 - a. Natural forest
 - b. Airport
 - c. center
 - d. city
9. Wakhan territory connects Pakistan with
 - a. Russia
 - b. China
 - c. Central Asian states
 - d. India
10. Pakistan is bordered by India to the
 - a. Northwest
 - b. West
 - c. East
 - d. South west

Answer the following questions briefly.

1. Describe the geographical location of Pakistan.
2. What are the characteristics of Islamabad that distinguish it from other cities of Pakistan?
3. What is meant by landlocked countries? Give examples
4. Describe the location of Arabian sea
5. What are the natural resources found in the Arabian Sea?
6. Describe the significance of Jinnah terminal Karachi as an international airport.
7. What is Faisalabad famous for?

Answer the following questions in detail.

1. What is the strategic importance of Pakistan's location in relation to Afghanistan, Central Asia, the Middle East, and East Asia?
2. Describe the importance of following cities with respect to their economic importance for Pakistan?
 - Lahore
 - Rawalpindi
 - Karachi
3. Explain reasons for the significance of Gilgit-Baltistan in Pakistan?
4. How do Pakistan and China strengthen their relationship through their geographical location?
5. What are the factors that make Lahore an important city of Pakistan?

Compare and Contrast

Does Pakistan's strategic location have more advantages or disadvantages? Discuss

Project

Divide the class into small groups . Each group will be assigned a city of Pakistan. Each group will research the city and gather information about its history, geography, economy, culture, and tourism. They will then create a presentation or infographic that summarizes the information they have gathered.

Relevance Across Time

What are the key changes that have taken place in Pakistan's cities over time? You may discuss the city of your choice.

Glossary

Profuse: Plentiful

Metropolis: urban center, City

Populous: densely populated, overcrowded

Transportation Hub: A place where passengers and cargo are exchanged between vehicles and/or between transport modes.

Autonomy: self-government

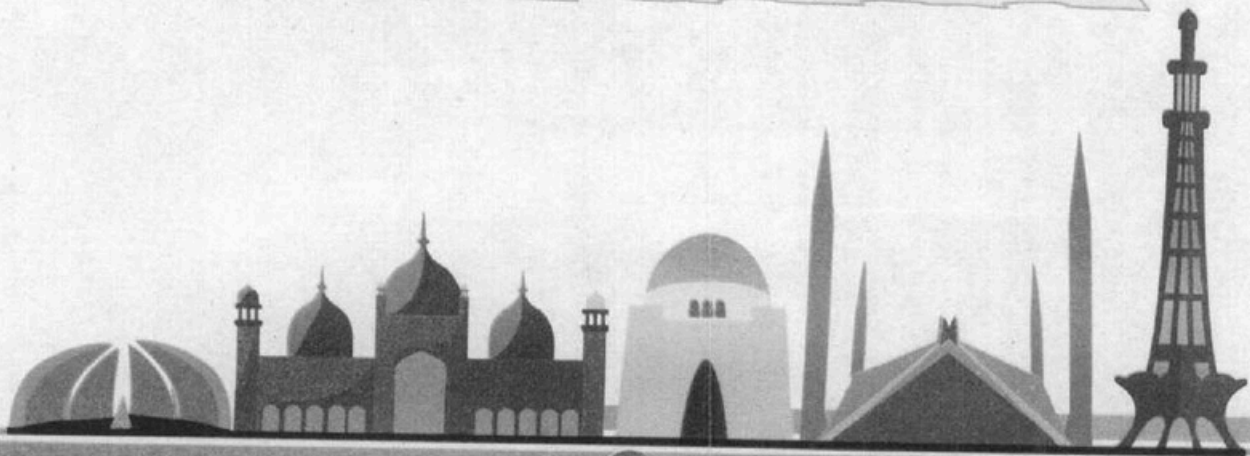
Maritime: navigation round the year

List more words and write their meaning that you find difficult in this chapter.

THE NATURAL TOPOGRAPHY AND VEGETATION OF PAKISTAN

In this unit the students will be able to:

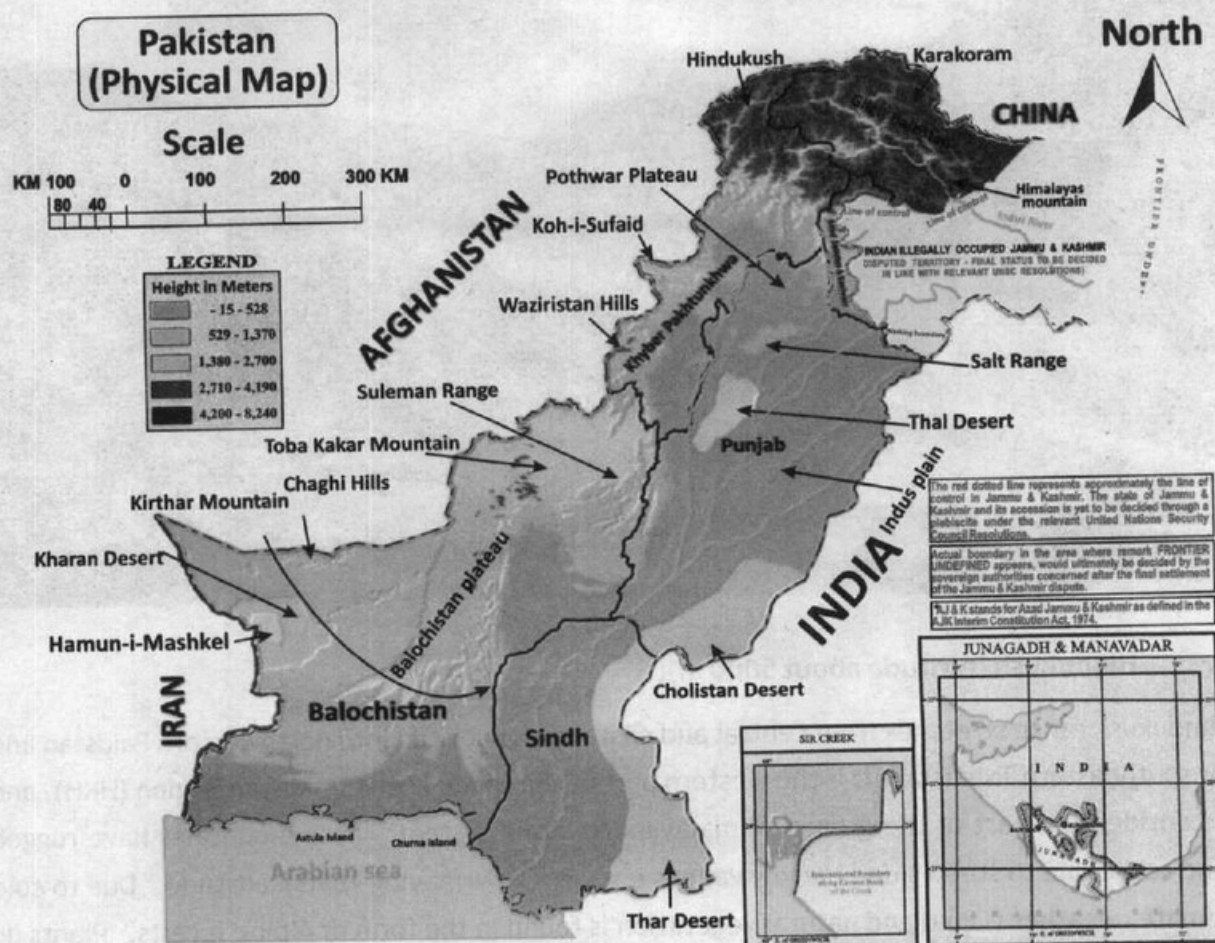
- Label the significant mountain ranges, plateaus, rivers, and plains of Pakistan on a physical map, and explain their importance to the country's physical and human geography.
- Analyze the natural topography of Pakistan, including the spatial distribution of physical features such as mountains, plateaus, rivers, and plains, using appropriate geographical vocabulary and terminology.
- Investigate the weather patterns, economy, natural vegetation, drainage systems, lifestyles, and cultures of people living in various landforms of Pakistan, using geographic representations and geospatial technologies to analyze the similarities and differences.
- Construct well-supported arguments with relevant evidence to assess the potential of Pakistan's natural topography for future growth and sustainability, considering opportunities for leisure, commercial, and economic development.



Regions of Pakistan

Topography is the study of the earth surface and the representation of both natural and artificial features of land on a map. The study of topography is fundamental to understanding the Earth's surface features and how they have changed over time. In this chapter, we will explore the natural topographical features of Pakistan. The natural topography of Pakistan can be classified into six main regions.

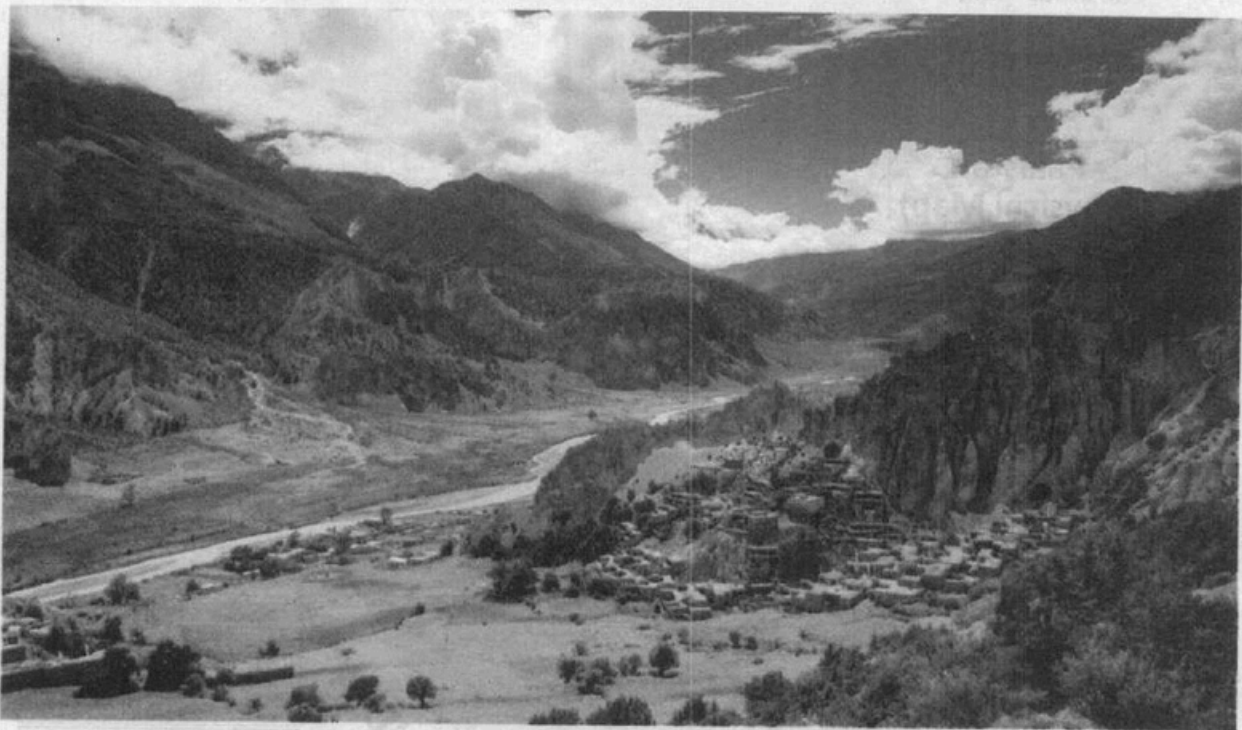
1. The Northern Mountains and North Western Mountains
2. The Western Mountains
3. The Balochistan Plateau
4. Pothwar Plateau and Salt Range
5. The Indus Plain
6. Desert Areas



1-Northern mountains and North western mountains. This region includes following three mountain ranges

i. **Himalayas (Altitude about 4000 m):**

The Himalayas cover 2500 km from east to West. They include Siwaliks, lesser Himalayas and the central Himalayas. The Siwaliks hills have altitude between 600-1200 meter. While Lesser Himalayas have altitude between 1800-4500 meter. Himalayas have tremendous tourist potential such as Murree, Galiats such as Ghora Gali, Nathia Gali situated there. The central Himalayas lies between the ranges of Pir Punjal and Karakoram. Most parts of central Himalayas generally located in Kashmir with the highest peak Nanga Parbat having height of about 8126 meters. The natural topography is characterized with snow peaked mountains, massive glaciers with very rich natural vegetation including tropical evergreen Coniferous forests, deciduous forests and Alpine meadows. Above the tree line, vegetation is in the form of grasses, shrubs and wild flowers.

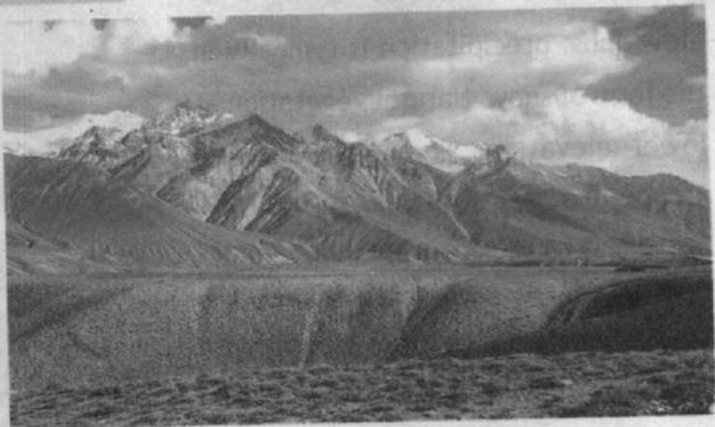


Sparsely Populated Himalayas

ii. **Hindukush (Altitude about 5000 m):**

Hindukush range stretches from central and eastern Afghanistan into northwestern Pakistan and far southeastern Tajikistan. It is the western part of the Hindu Kush Himalayan Region (HKH), and is considered a part of the greater Himalayan Mountain system. These mountains have rugged land scape due to steep sided narrow valleys e.g., Tirch Mir having 7690m altitude. Due to cold climate, weather is cold and natural vegetation is found in the form of Alpine forests. Plants do

not grow above the snow line which starts above 4000 m. At this altitude mountains remain covered with the snow round the year. The glaciers including Batura and Chiantar of the Hindu Kush are a vital source of water for the region, and they also support a number of important economic activities, such as agriculture and



Hindukush

hydropower generation. The Hindu Kush Mountains consist of a number of strategically important passes, including the Shandur Pass, the Shangla Pass, and the Lawarai Pass. These passes connect important population centers and valleys, such as Gilgit, Chitral, Swat, and Peshawar.

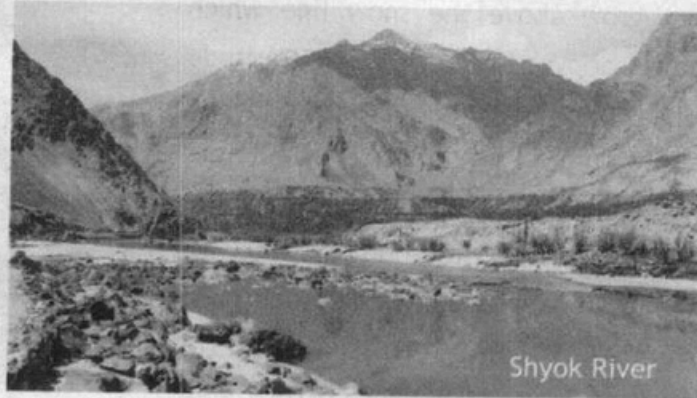
iii. Karakoram mountains: (Average Altitude 6000 m)

The Karakoram range consist of a long chain of Rocky Mountains which are generally snowcapped running east to west. The range stretches for 400 kilometers from the Hunza Valley to the Shyok River, with the westernmost part of the range in Pakistan. The Karakoram Mountain range is characterized by narrow and deep valleys, such as the Hunza, Shyok, and Baltoro; towering gorges, such as the Nanga Parbat and Indus Gorges; and vast glaciers, such as the Baltoro, Siachen, and Biafo Glaciers. K2, the second-highest mountain peak in the world, is also located in the Karakoram. The precipitation at lower elevations is typically in the form of rain. At higher



Karakoram Mountains

elevations, precipitation is typically in the form of snow. Natural vegetation at lower elevations is mostly dry and steppe-like, with grasses, shrubs, and scattered trees such as poplar, Juniper and willow. At higher elevations, the vegetation becomes more alpine, with meadows, mosses, and lichens.



Shyok River

The population density in the Karakoram Mountain range is low due to the challenging climate and landscape. Most of the population is concentrated in three towns in the disputed Kashmir region of the northern Indian subcontinent Gilgit and Skardu in Gilgit-Baltistan. Most of the people who live in these high-altitude areas are subsistence farmers and pastoralists as they grow crops and raise livestock for their own needs and they trade surplus goods with other communities.

Importance of Northern Mountains

- i. The Northern Mountains are a major source of water for the region, providing drinking water, irrigation water, and hydropower. For example, the Indus River, which provides water for millions of people in Pakistan, originates in the Northern Mountains.
- ii. The Northern Mountains play a role in regulating the climate of the region and the world. For example, the glaciers of the Northern Mountains help to cool the planet.
- iii. The Northern Mountains are home to a variety of unique and endangered wildlife species, such as the snow leopard and the Tibetan antelope.
- iv. Mountain peaks provide protection to Pakistan from cold winds of Siberia and Central Asia
- v. The Northern Mountains offer a variety of economic opportunities for local communities, such as tourism, agriculture, and forestry. For example, the Northern Mountains of Pakistan are a popular tourist destination for mountaineers and trekkers.
- vi. Northern Mountains provide raw materials to several important industries e.g., chemical industry, pharmaceutical industry, pulp and paper and furniture making industries.

Earthquake in Northern Areas

Northern Pakistan, including Kashmir, lies at the collision point of the Eurasian and Indian tectonic plates, making it prone to earthquakes. On October 8, 2005, a magnitude 7.6 earthquake struck the region, causing widespread devastation, especially in Balakot, Kashmir, which was almost completely destroyed. The earthquake resulted in a massive loss of life, damage to settlements and infrastructure, and large-scale migration to plain areas. Secondary effects included water shortages and the spread of diseases. The Pakistani government provided emergency relief, evacuation measures, and rehabilitation centers.

2-Western Mountains

The Western Mountains are a chain of mountains with low altitude running parallel to each other. The description of Western Mountains is given in the table:

Name of Mountain Range	location	Altitude above sea level	Important Features & Passes	significance
Safed Koh	South of the Kabul River	Between 4712 m to 4755 m	-Snow-capped peaks -Limestone ridges -Mount Sikaram has maximum elevation -Pine vegetation Kohat & Peshawar as urban centers	-Forms a natural border between Afghanistan and KPK through Kurram Pass
Waziristan Hills	Between Kurram and Gomal Rivers	3513 m	-Abundant mineral deposits such as clay. - little vegetation due to scanty rainfall - Kurram dam provides water for irrigation	-Tochi pass connects Bannu and Gazhni
Suleman Range	West of the River Indus in southern Punjab	3383 m	-Lime stone -Shale and sandstone deposits -Takht-i-Suleman as highest peak	-boundary between Baluchistan plateau and the Indus River in Punjab - Bolan Pass connects Kachhi Sibbi plain to Quetta
Kirthar Range	West of the River Indus in Sind	2174 m	- Kirthar Hills aquifer -Shrub species -drained by river Hab and Lyari	-Border between Sindh plain and Baluchistan plateau



Note For Teachers: Ask students to develop a fact file related to the Northern Mountains. Students may research this information online, in books, or by interviewing experts to contribute to the fact file.

Economic Activities and lifestyle in the Western Mountains

The landscape of western mountain ranges is rugged and are largely devoid of natural vegetation. Most of the population lives in small towns and rural areas in a subsistence and Nomadic lifestyle. Population density is lower than 100 people per kilometer square. Canal irrigation is not viable in the majority of the western mountains due to the challenging terrain. There is a lack of infrastructure facilities, including commuter trains, asphalted roadways, and air links, for instance, the large urban centers like Peshawar and Kohat are accessible through roads and railways and connected with the country. Although there are abundant of mineral resources but they have not been extracted due to tough terrain.

Expand Your Horizon

Read the newspaper clipping and answer the questions given below

Food security in mountains published in DAWN December 9, 2009

The problem of hunger in mountains is getting worse. Harsh climates and the difficult, often inaccessible, terrain combined with political and social marginality make mountain people vulnerable to food shortages. Indigenous knowledge about local foods and traditional agricultural practices in mountain areas is eroding and agricultural diversity as well as productivity is declining, further increasing the vulnerability of mountain people. Now food prices are soaring worldwide and increased transportation costs to remote mountain areas mean mountain communities are paying that much more for their food, Food and Agriculture Organization (FAO) says.

Food security in mountains published in DAWN December 9, 2009

1. How does the harsh climate and difficult terrain in mountains affect the lives of people living there?
2. How is the lack of indigenous knowledge about local foods and traditional agricultural practices affecting the lives of mountain people?
3. Suggest some solutions to help mountain communities address the problem of hunger?

3-The Balochistan Plateau

Balochistan Plateau forms the southwestern half of Pakistan. It is bordered to the north by the Hindu Kush mountains, to the south by the Arabian Sea, and to the west by the Iranian border. The plateau is characterized by its high-altitude ranges (600-300 meters) with total area stretching over 347,190 sq km. Balochistan has a dry climate, with less than 250 millimeters (10 inches) of annual rainfall on average.

The distinct topography of Balochistan Plateau is identified as follows:

i. Basins of North Balochistan

Between the Toba Kakar and the Suleman ranges, a number of depressions are found which are marked as the Zhob and Loralai basins. Quetta valley is located to the south west of the basin of Loralai.

ii. Basins of Western Balochistan

The western basins are found between a number of mountain ranges such as Chagai hills, Siahan and central Makran. Balochistan has inland drainage. The rainwater of the basins drains into the rivers and streams which either absorbed into the ground or forms temporary lakes called Hamuns which contains high salt concentration. The largest Hamun is found in Kharan desert.

iii. Mountain Ranges

The mountain ranges found in Balochistan Plateau are infertile and devoid of vegetation. However, these ranges contain vast deposits of coal, gold and copper and sulphur. These ranges include:

- Central Brahui range
- Hala range
- Siahan Range
- Toba Kakar Range
- Makran coastal range
- Ras Koh Range

iv. Coastal Areas

Coastal areas of Balochistan Plateau are divided into eastern including Lasbela plain and western extents consisting of Makran coast and its coastal plain is formed by the projection of land into the sea. There are some significant coastal rivers i.e., Hab, Hingol, Porali and Dasht which empty their waters into Arabian sea.

Natural and Economic Resources

Balochistan plateau is rich in natural resources which are as follows:

• Water Resources

Water resources in Balochistan are limited and unevenly distributed. People face water scarcity all round the year as there is no major source of water. The main sources of water are surface



Note For Teachers: Inform students that a basin is a large, generally level region of land that is enclosed by higher land. Basins of Baluchistan are formed by the erosion of the surrounding mountains and hills over time. They have no outlet to sea.

water, ground water in the form of aquifers and springs. The system of Karez helps in irrigation. However, ground water is declining due to over extraction.

- **Minerals**

Balochistan is rich in mineral wealth which is possibly important but remains an under-developed sector in Balochistan's economy. According to provincial Census report Balochistan 2017, the extraction of thirty-nine out of fifty recorded mineral resources present in the province generates an annual revenue close to Rs. 3.4 billion. The most important minerals are gas, coal, copper, antimony and gold.

Do You Know?

Balochistan; A Trading Gateway

Gwadar port can be a hub for inter-regional transport and trade as it provides access to the Arabian Sea for landlocked Afghanistan and Central Asia. Gwadar has been marketed as a futuristic trade gateway with Central Asian regions. Goods from Gwadar port can be transported via land routes to Afghanistan, Tajikistan, Uzbekistan, Turkmenistan, and deeper into Central Asia. To make this possible, road and railway networks are being laid linking Gwadar to Afghanistan and Iran. Plans to open gateways on the Afghanistan and Iran borders are also under execution. With these and similar developments, Balochistan can serve as a transit route into the neighboring countries of Afghanistan and Iran, and a trading gateway into Central Asia.

- **Agriculture**

- a) **Fruit and vegetable production**

Balochistan has two crop seasons: Kharif (summer) and Rabi (winter). Kharif crops include rice, jowar, maize, onion, potato, melons, chilies, tobacco, and sugarcane. Kharif vegetables include lady fingers, tinda, brinjals, bitter gourd, bottle gourd, pumpkin, kharif tomatoes, and cucumber. Rabi crops include wheat, barley, rapeseed & mustard, cumin, gram, and sunflower. Rabi vegetables include cabbage, carrot, cauliflower, peas, radish, turnip, spinach, beet root, and Rabi tomatoes. Important fruits include almonds, apples, apricots, grapes, peaches, plums, pomegranates, cherries, dates, bananas, mangos, chikoos, papayas, and coconuts.

- b) **Fishing**

Balochistan's fishing sector has the potential to grow significantly, but it needs more support infrastructure and services. The important fish are Tuna, Sardinals, Mekerals etc. Its coastline is 70% of Pakistan's total coast line, but it only contributes 30% of the country's landed catch. This is due to a lack of supporting infrastructure and services at the ports of Gwadar, Ormara and Pasni, as well as a lack of modern processing facilities. Integrating the development of the coastal

highway and the Gwadar port is expected to boost the development of the fishing sector and the local economy.

c) **Livestock**

Balochistan is rich in livestock resources, almost 70 percent population is directly or indirectly involved in livestock rearing activities. Animals such as cattles, camels and poultry are traditionally kept for household milk and meat needs. The main consumers of Balochistan's livestock products include the leather, carpet, and pharmaceutical industries. A poverty alleviation strategy with a focus on livestock development may well target the higher poverty in the province. By investing in infrastructure, services, and training, the government can help livestock farmers to increase their productivity and incomes.



Gwader Port, A part of CPEC Project

4. The Pothwar Plateau & Salt Range

Pothwar plateau and Salt range are located to the south of Islamabad and lying between the river Indus and river Jhelum. It has changing landscape due to constant erosion. Pothwar Plateau and Salt range have rich deposits of minerals like gypsum, limestone, marble, dolomite coal and oil. A number of oil and gas field are set up in this area such as Attock Oil Refinery. Farming depends on the natural rainfall which is why this area is called Barani (rainfed). Natural vegetation is consisted of dry temperate forest, with a mix of deciduous and evergreen trees and shrubs.

Natural Topographical and Drainage Features of Pothwar

The Pothwar Plateau presents a badland topography owing to its dissected, eroded and faulted land. The Soan river forms alluvial plains which are agriculturally productive.

i. Ridges and residual hills

These features are formed by the erosion of soft rock through the action of running water and fast blowing winds. Kala Chitta and Khairi are important residual hills of Pothwar plateau.

ii. Faulted land

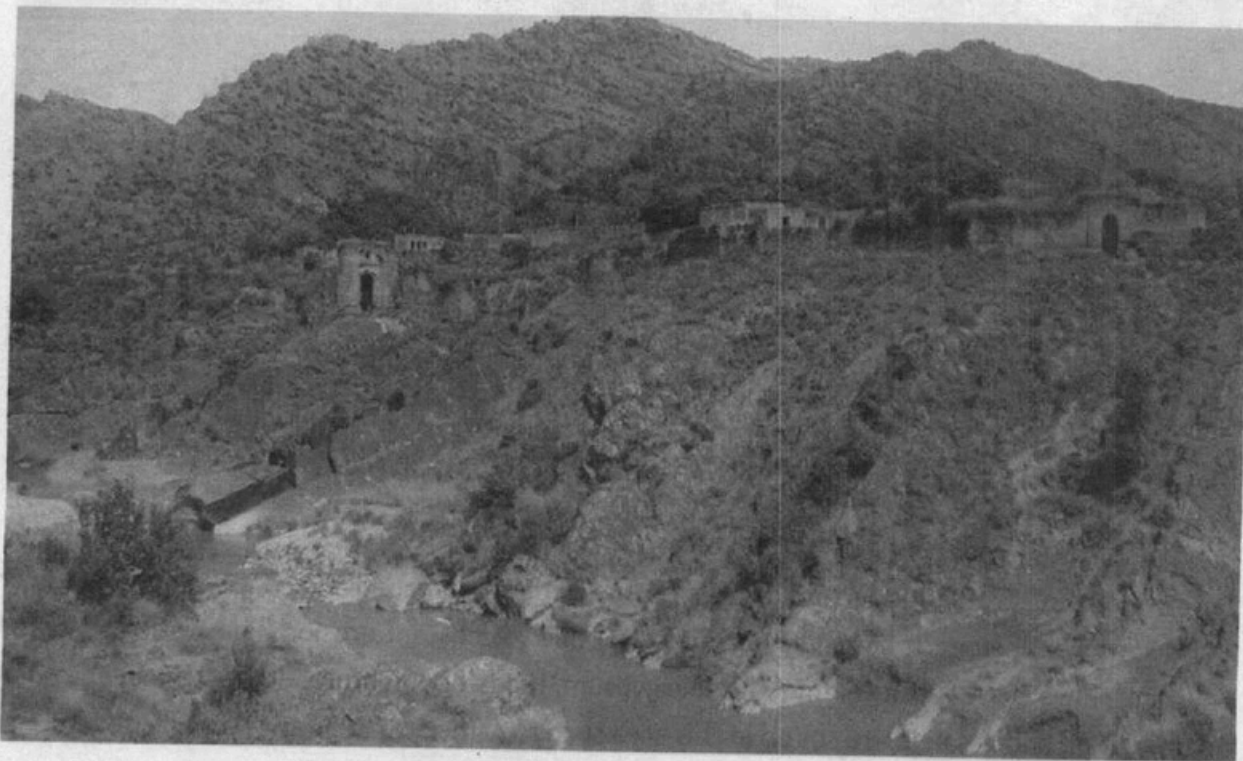
During the mountain building process, the land is weak and shows off cracks.

iii. Troughs and depressions

These features are formed when soft rocks are eroded by water and wind blow away the loose soil which creates depression and trough.

iv. Ravines

Ravines are deep channels created by the erosion of soft water and carry running water particularly during rainy season.



Badland Topography of Pothwar Plateau (Pharwala Fort along the Soan River)

The Salt Range

The Salt range is located 160 km from Islamabad. Salt range are parallel ranges with average altitude between 750 to 900 meters and located in Khewra. The area is rich in the mineral deposits such as gypsum, rock salt and limestone. Salt ranges are consisted of broken and faulted land eroded by rivers. It has famous Kallar Kahar lake and Sakesar peak (1,527 m) which is the highest point of the Salt ranges. The main districts of Salt ranges are Jhelum, Mianwali and Chakwal.

5.The Indus Plain

The Indus plain is drained by the river Indus and its eastern and western tributaries as shown in the table.

Eastern Tributaries	Western Tributaries
1. Jhelum River	1. Shyok River
2. Chenab River	2. Gilgit River
3. Ravi River	3. Kabul River
4. Sutlej River	4. Kurram River
5. Beas River (tributary of Sutlej)	5. Gomal River

Natural Topographical features of the Indus Plain

Indus plain is formed by the river Indus. It is divided into two plains:

- (i) Upper Indus Plain (ii) Lower Indus Plain

Some important topographical features of Indus plain and their importance is discussed below:

Active Flood plain: It is a narrow strip of land with rich alluvial deposits on either side of almost all the river except for the southern half of the river Ravi. Active flood plain is almost regularly flooded every year. The active flood plain of river Ravi is 40 km wide which makes it important for agricultural activities such as crop cultivation, fish farming etc. Other features like meanders and ox-bow lakes are also present in the active flood plain formed by the acts of erosion and deposition.

Old Flood Plain: An old floodplain is a high, flat area that was once flooded by a river. It is the area that lies between active flood plain and the alluvial terraces. Old floodplains are valuable for agricultural activities, provide food, flood control, habitat, and recreation.

Alluvial Terraces: Alluvial terraces or bars, are flat and higher grounds that are found at different elevations between the rivers or doabs. They are formed when the river changes its course over time and leaves behind its old floodplain. Alluvial terraces are typically made up of sand, silt, and clay, and they are often very fertile and favour extensive farming. The prominent alluvial

terraces are Nili Bar in Bari Doab, Sandal in Rachna doab and Kirana Bar in Chaj Doab. Doabs attract population because of the availability of flat land for the construction, settlements and other industrial and business activities.

Piedmont Plains or Alluvial Fans: These plains are formed by the river as soon as it comes out of mountains. These plains are agriculturally productive. Piedmont plains are located at the foothills of Kirthar, Suleman and Siwaliks of Himalayan Mountain ranges.

Tidal Delta: It is also called Indus delta located to the south of Thatta.

It is a triangular or fan shape area with distributaries coming out from the main river. It plays a significant role in the ecology, economy and culture of Pakistan.

Cuestas: Cuestas or escarpments are important features of lower Indus Plain. These are limestone ridges gently sloping on one side and steep on the other side. Examples include Rohri Cuesta and Gango Takkar in Hyderabad. These cuestas provide firm foundation for the construction of barrages which are used for storage of water for irrigation and fishing purposes.

Do You Know?

Doab: Doab refers to a tract of land lying between two rivers.

Do You Know?

A piedmont plain is a low-lying area of land that lies at the base of a mountain range.

Economic Activities in the Indus Plain

The Indus plain is very productive region of Pakistan for a number of reasons. The fertile soil and plenty of water supply through a well-developed irrigation system makes it ideal for agricultural activities. Availability of flat land and drainage makes it ideal for settlement growth. Industrialization is encouraged due to the presence of vast mineral deposits, well developed transport network of air, railways and roads. Main urban centers are Lahore, Sialkot, Faisalabad and Gujranwala.



Irrigated Plains of the Punjab

6. Desert Areas

Pakistan has vast and hot deserts. They are located at three places.

- a) The **Thal desert** is located between the river Indus and River Jhelum. It is also called Sindh Sagar Doab
- b) To the south east of Pakistan, the **Thar desert** is located in Sind. It has further three main desert areas:
 - Cholistan
 - Nara
 - Tharparker
- c) The Kharan desert is a sandy and mountainous desert situated in Balochistan province in south-western Pakistan.

Deserts have a very changing landscape due to strong winds. Most important relief features of desert areas are rolling sand dunes, undulating land, sand plains or strip of land, bare rock, dry soil due to lack of water, cracks in rocks caused by intense heat and weathering action. Hot climate, lack of rainfall and strong winds make desert areas a hard place to live because all the basic life sustaining activities are hindered such as farming. Natural vegetation in desert areas is a mixture of shrubs, succulents, herbs, and a few grasses. Availability of water to a major part of Thar was made possible through canals from Sukkar Barrage which has changed the area into a farmland.



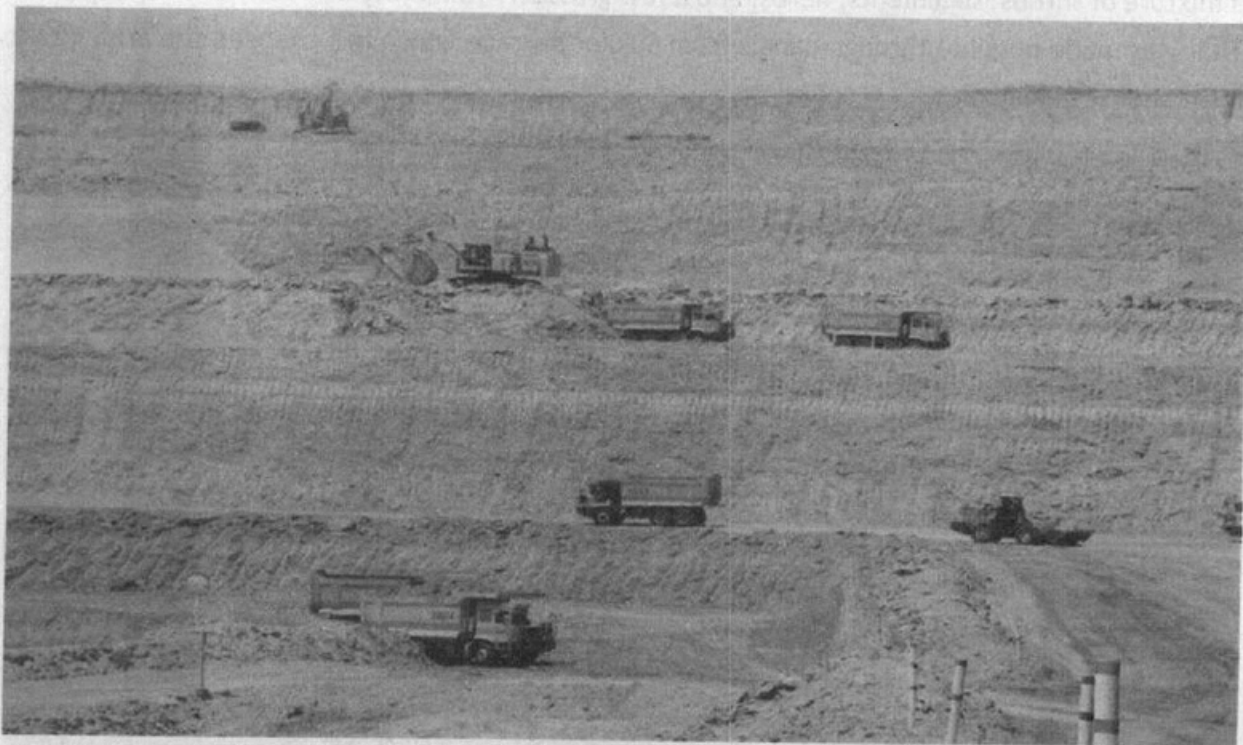
Thar Desert

Economic Potential of Desert Areas of Pakistan

Desert areas are rich in mineral deposits and fossil fuels such as coal, oil and gas. These mineral deposits have the potential to play an important role in the development of Pakistan's economy. For example, Cholistan desert is rich in lignite, gypsum, and silica sand. Moreover, the coal deposits in the Thar desert could be used to generate electricity, and the iron ore deposits could be used to produce steel.



Coal in Thar Desert



Dumpers working at a mining site in the Thar Desert

What I have Learned

- Pakistan's natural topography is diverse, with mountains, deserts, plains, and coastlines.
- The northern highlands are home to some of the world's highest mountains including the Karakoram Range, the Himalayas, and the Hindu Kush.
- The Indus plain is a vast agricultural region.
- The Indus River has been a source of water for irrigation and drinking for centuries, and it has also been a major transportation route.
- Pakistan has potential for renewable energy and tourism development
- Desert areas are rich in mineral deposits such as fossil fuels.

Exercise

Answer the following questions by choosing the best answer A, B, C or D.

1. Which of the following is the highest mountain peak in Pakistan?
a. K2 b. Nanga Parbat c. Tirch Mir d. Kalar Kahar
2. Which of the following mountain ranges is located in northwestern Pakistan?
a. Himalayas b. Hindu Kush c. Karakoram d. Kirthar
3. What is the average altitude of the Karakoram Mountains?
a. 4000 m b. 5000m c. 6000 m d. 7000m
4. What percentage of Pakistan's land area is covered by mountains?
a. 25% b. 33% c. 50% d. 66%
5. Which of the following is a temporary lake that forms in the Balochistan Plateau during the rainy season?
(a) Zhob Basin (b) Loralai Basin (c) Hamun (d) Quetta Valley
6. Which of the following is NOT a characteristic of the Potwar Plateau?
(a) Badland topography (b) Ridged and residual hills
(c) Faulted land (d) Dense forests

7. Which of the following is a mineral deposit found in the Salt Range?
 (a) Gypsum (b) Rock salt (c) Limestone (d) coal
8. Which of the following is NOT a characteristic of the Indus Plain?
 (a) Active flood plains (b) Old flood plains
 (c) Alluvial terraces (d) Dense forests
9. Which of the following is a type of cuesta found in the lower Indus Plain?
 (a) Rohri Cuesta (b) Gango Takkar (c) Both (d) and (b)
10. Which of the following is a mineral deposit found in the Cholistan desert?
 (a) Lignite (b) Gypsum (c) Silica sand (d) marble

Answer the following questions briefly.

1. Explain the topographical features of Pothwar Plateau?
2. Identify the important passes situated in northern and western mountains.
3. Describe the location and topography of salt range.
4. Why is the Indus plain a productive region of Pakistan?
5. What are the eastern and western tributaries of Indus River?
6. What is meant by Inland drainage? Give examples
7. Write short notes on the following
 - a. Fishing in Balochistan
 - b. Livestock in Balochistan

Answer the following questions in detail.

1. Discuss the various natural resources available in these deserts and the ways in which they can be sustainably exploited to improve the lives of the local people.
2. Describe the natural vegetation of Northern mountains?
3. Explain how the relief features of Balochistan plateau are different from Potwar Plateau? Give examples
4. Describe the differences between the Northern mountains and Western Mountains.
5. With name examples, describe the deserts of Pakistan. Also explain the economic potential of the desert areas for Pakistan.

Forming Informed opinions

Teacher may ask the following questions for an interactive class discussion on the future prospects of development of the Balochistan Plateau:

1. Identify the main opportunities for development in the Balochistan Plateau?
2. What are some specific projects or initiatives that could be undertaken to promote development in the Balochistan Plateau?

Project

“Pakistan's Natural Topography: A Catalyst for Future Growth and Sustainability”

Ask students to develop their proposal and present their proposal to a panel of judges, such as teachers, environmental experts, or business leaders. The judges should evaluate the proposal based on its feasibility, potential benefits, and implementation plan.

Glossary

Desert: A dry, barren area of land.

Plain: A large, flat area of land.

Plateau: A large, flat area of land that is higher than the surrounding land.

Coast: The edge of a sea or ocean where it meets the land.

Pass: A narrow path through mountains.

List more words and write their meaning that you find difficult in this chapter.

Section 2

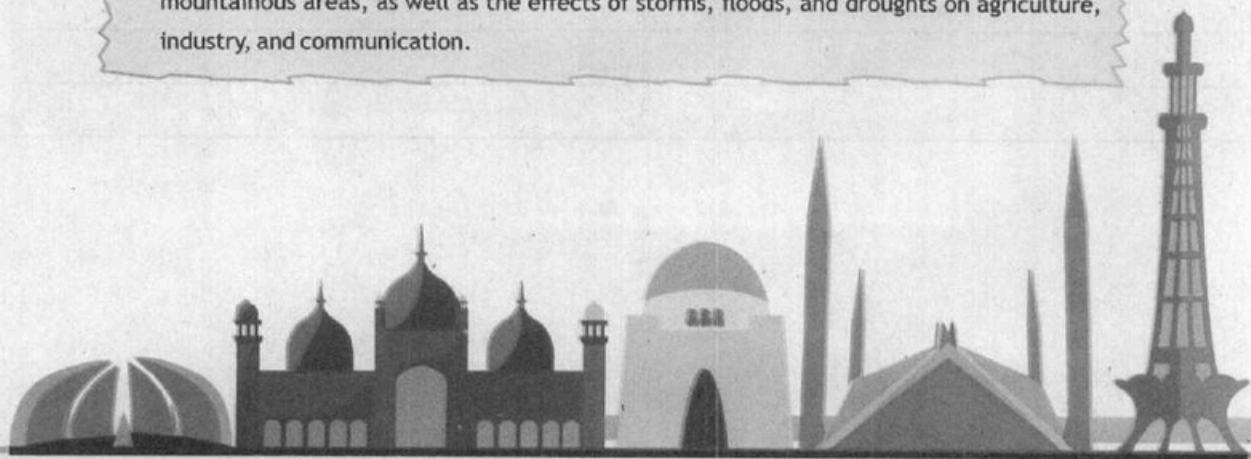
Geography of Pakistan

UNIT 05

CLIMATE OF PAKISTAN AND ENVIRONMENTAL HAZARDS

In this unit the students will be able to:

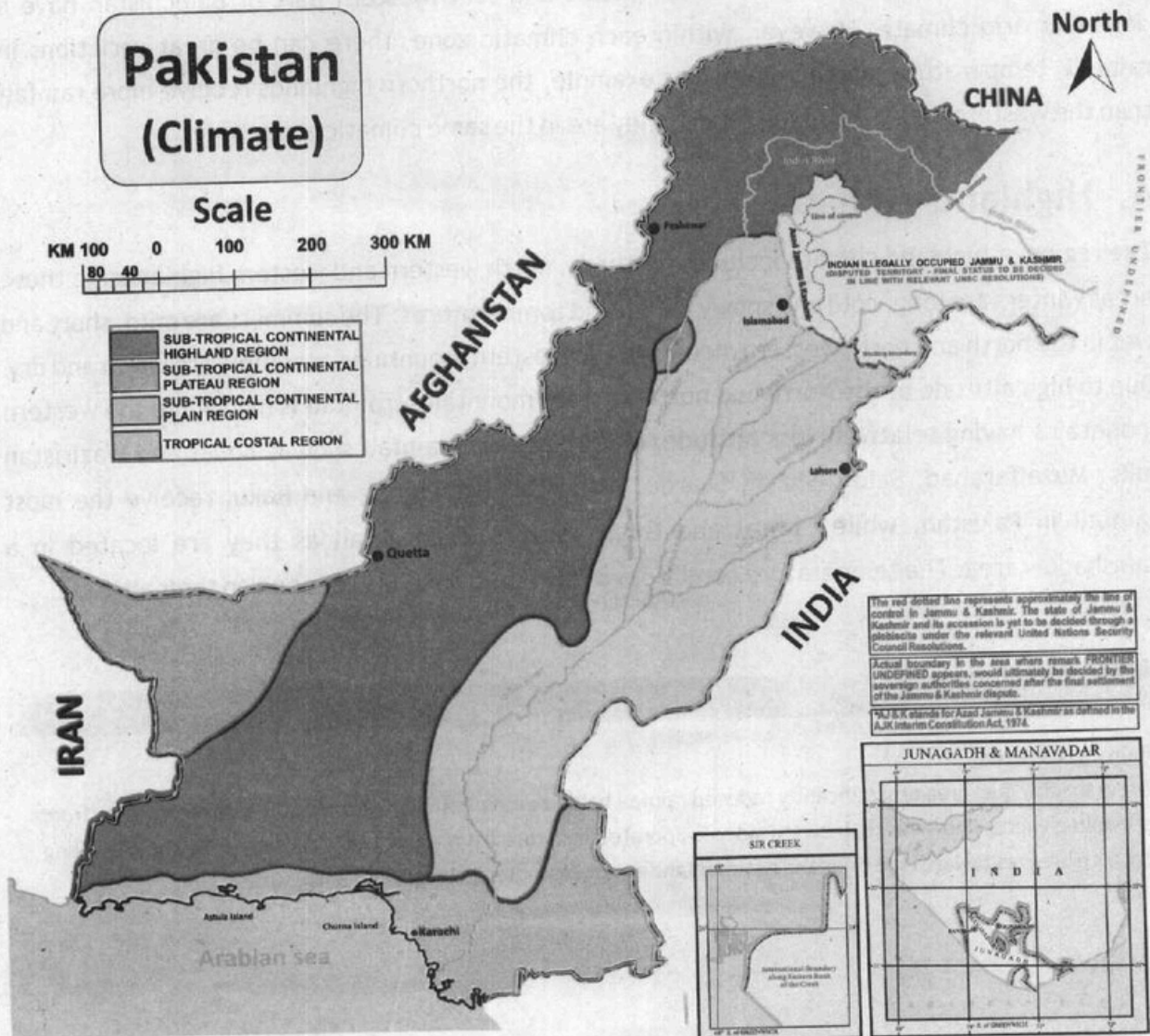
- Compare the climatic zones of Pakistan in terms of the distribution of temperature, precipitation, including monsoons, cyclones (Western Depressions), and convectional rain, using a variety of resources such as newspapers, weather charts, geographic representations, and geospatial technologies.
- Interpret the data collected on Pakistan's climatic zones to evaluate their impact on the country's physical and human geography, including agriculture, infrastructure, and transportation systems.
- Analyze the characteristics of arid, semi-arid, humid, coastal, and highland climates in Pakistan, including seasonal changes, and evaluate their impact on the physical and human geography of the country.
- Assess the ramifications of seasonal shifts in temperature, pressure, and wind patterns on Pakistan's economy taking into consideration the effects of cold, ice, and snow on mountainous areas, as well as the effects of storms, floods, and droughts on agriculture, industry, and communication.



Introduction

Pakistan's climate is mostly tropical or subtropical, and semi-arid or arid. but in the north, it is cooler and wetter. Climate may be defined as the average weather conditions in a place over a long period of time usually thirty years or more. Weather refers to the current state of the atmosphere, including temperature, humidity, precipitation, wind, and cloudiness at a place and time. The weather conditions change rapidly. In this chapter you will study about the climate of Pakistan in detail.

Climatic zones of Pakistan



The climate of Pakistan is broadly divided into four climatic zones due to diverse topographical regions. Climate of different places within a country are classified under a common category. The

divisions are:

- A. Highland Climate
- B. Lowland Climate
- C. Desert or Arid Climate
- D. Coastal or Maritime climate

The northern, northwestern, and western mountains experience a highland climate, while the Indus Plain has a lowland climate. The Makran Coast, Karachi Coast, and Indus Delta experience a coastal climate, while the southeastern desert and southwestern part of Balochistan have a desert or arid climate. However, within each climatic zone, there can be great variations in rainfall, temperature, and humidity. For example, the northern highlands receive more rainfall than the western highlands, even though they are in the same climatic zone.

A. Highland Climate

The region of highland climate includes northern, north western and western highlands. In these areas winters are long, cold and snowy with frigid temperatures. The summers are mild, short and wet in the north and north western mountains. In western mountains, summers are warm and dry. Due to high altitude of the North and north western mountains, rainfall is high while the western mountains having relatively less altitude, experience less rainfall such as Kohat and Waziristan hills. Muzaffarabad, Said-u-Sharif, Skardu, Astor, Dir, Parachinar, and Kakul receive the most rainfall in Pakistan, while Chitral and Gilgit receive less rainfall as they are located in a rainshadow area. The temperature conditions of different areas also depend on their altitude.

Do You Know?

Rainshadow Area

A rain shadow is an area of significantly reduced rainfall behind a mountainous region, on the side facing away from prevailing winds, known as its leeward side. Evaporated moisture from water bodies is carried by the prevailing onshore breezes towards the drier and hotter inland areas. Examples include Gilgit and Chitral.

B. Lowland Climate

The low land climate refers to plain areas of Pakistan located in Punjab and Sindh except the coastal areas. In these areas, summers are arid and at times extremes. Winters are mild to cool. Monsoons typically lasts from June to September. The lower Indus plain and southern parts experience way less rainfall. The north and north western of the Indus plain receive the tail end of monsoon rainfall. Most of the rainfall and thunderstorm occur during July and August. However, the number of rainy days in the Indus plain varies depending on a number of factors, including elevation, latitude, and proximity to the mountains. For instance, the areas of Pothwar plateau are wetter than the Indus plain because it receives rainfall from both the monsoon and western depressions.

C. Desert or Arid Climate

Aridity refers to low precipitation and low moisture content in the environment. The desert areas i.e., Kharan, Cholistan, Thal and Thar experience dry and hot summers and receive scanty rainfall throughout the year. During the day, hot and dusty winds blow across the plains from May to September. The diurnal range of temperature in desert areas is high. Dust storms are a permanent feature of desert climate that temporarily lower the temperature. Winters are cold with minimum temperature of 4°C.

Do You Know?

The diurnal range of temperature is the difference between the highest and lowest temperatures in a 24-hour period.

D. Coastal Climate

The region of coastal climate stretches from Ran of Kutch in Pakistan- India border to the Makran coast at the Pakistan-Iran border. The coastal strip includes the Indus Delta, Thatta, Karachi, and whole of Makran coast. This region has a maritime climate with sea breezes round the year. The proximity to the sea results in high humidity particularly between April to September. Very little rain fall is experienced in the monsoon season. Some rainfall is received from the western depression.

The Seasons of Pakistan

Pakistan has four distinct seasons namely Spring, summer Autumn and winters. Spring in Pakistan starts from March and lasts until May with average temperatures ranging from 15°C to 25°C. Summer continues from June to September. The weather is hot and dry, with average

temperatures ranging from 25°C to 40 °C. The monsoon rains arrive in Pakistan in the summer, and they can be very heavy, especially in the southern and eastern parts of the country. The autumn season lasts from October to November with average temperatures ranging from 15°C to 25°C. There is some rain in the autumn, but it is not as heavy as the monsoon rains. Winter in Pakistan persists from December to February. The weather is cold to cool and dry, with average temperatures ranging from 5°C to 15°C. There is some snow in the winter, especially in the northern parts of the country. These seasonal variations are caused by the variations in the climatic elements which will be explained next.

Climatic Elements

There are four elements which largely influence the seasonal variations in Pakistan- temperature, pressure, winds and rainfall:

i. Temperature

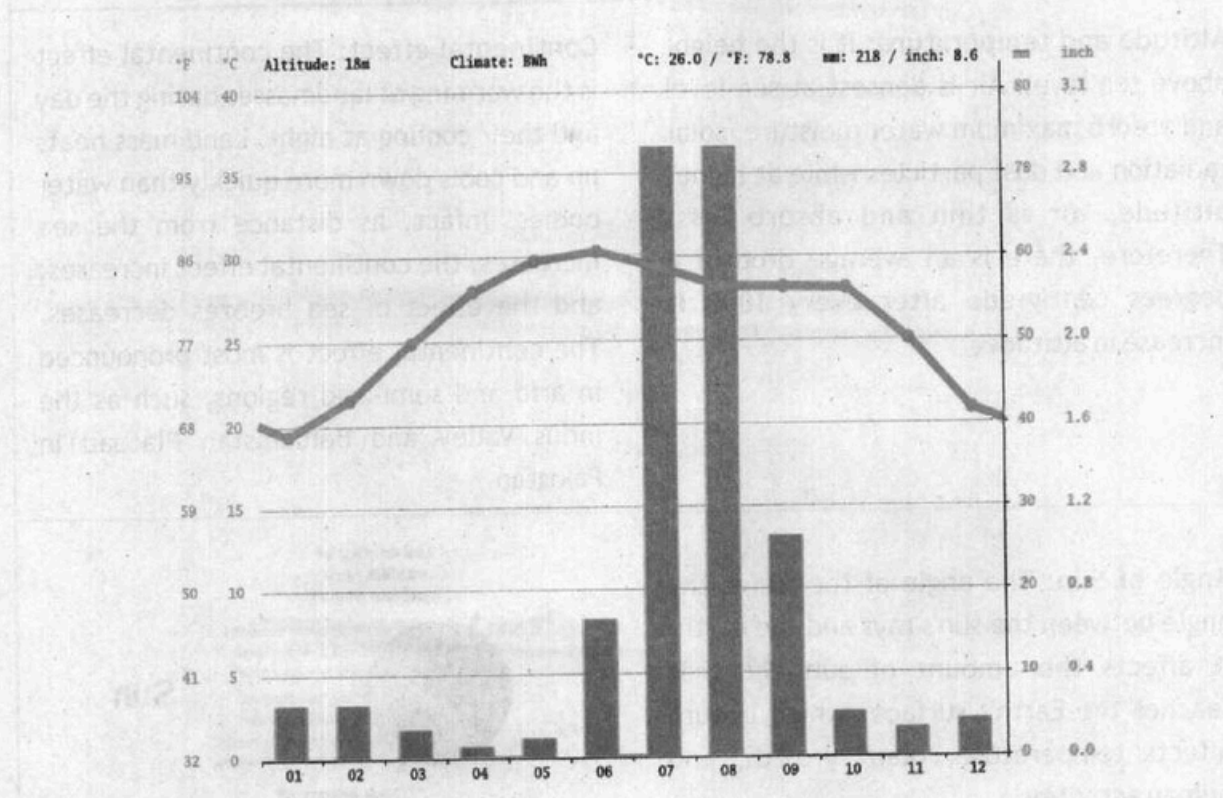
Temperature is the measure of hotness or coldness expressed in terms of any of several scales, including Celsius and Fahrenheit. The temperature distribution of an area informs us about the climatic conditions, biodiversity, and human activity of an area. The factors Affecting temperature variations in Pakistan are angle of sun, monsoon rains, cloud cover, distance from the sea, continental effect, sea breezes, altitude and latitudinal differences.

Things to Remember	Temperature in Celsius	Description
	40°C and above	Very hot
	31°C- 39 °C	hot
	21°C -29°C	Warm
	10°C-20°C	Mild
	3°C-9°C	Cool
	-5°C -2°C	Cold
	Below -5°C	Very Cold

Temperature key

The northernmost region of Pakistan is the coldest, with average temperatures ranging from 17° C in the summer to -2° C in the winter. The highest peaks of the northern mountains remain covered in snow year-round. Central Pakistan has a more moderate climate, with average temperatures ranging from 25° C in the summer to 10° C in the winter. The region includes Islamabad, and the major city of Lahore. Southern Pakistan is the hottest region of Pakistan, with average temperatures ranging from 28° C in the summer to 18° C in the winter. The region is home to the

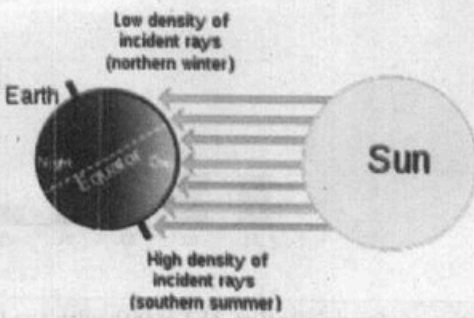
port city of Karachi and the desert region of Balochistan. According to the Pakistan Meteorological Department, the hottest months are May and June, with average temperatures of 30.5°C and 34.0°C , respectively. The coldest months are December and January, with average temperatures of 12.5°C and 15.5°C , respectively. The graph is showing the climate of Karachi in terms of temperature and rainfall.



In terms of precipitation, the month with the lowest amount of rainfall is April, recording a mere 0 mm | 0.0 inch in its entirety. This denotes an exceptionally dry period within that particular time frame. On average, the highest amount of rainfall occurs during July with a mean value of 52 mm | 2.0 inch.

Factors contributing to temperature variations in Pakistan

There are four elements which largely influence the temperature variations in Pakistan- temperature, pressure, winds and rainfall.

Latitudinal effect: At the equator, the sun's rays hit the Earth vertically at right angle, so they deliver more heat to the Earth's surface. At the poles, the sun's rays hit the Earth at a very oblique angle, so they deliver less heat to the Earth's surface.	Cloud cover: It is an important factor in determining the amount of sunlight that reaches the Earth's surface. It also affects temperature, precipitation, and visibility.
Altitude and temperature: It is the height above sea level. Air is densest at sea level and absorb maximum water moisture, solar radiation and dust particles while at higher altitude, air is thin and absorb less. Therefore, there is an average drop of 6 degrees centigrade after every 1000 ft increase in altitude.	Continental effect: The continental effect is the warming of landmasses during the day and their cooling at night. Land mass heats up and cools down more quickly than water bodies. Infact, as distance from the sea increases, the continental effect increases, and the effect of sea breezes decreases. The continental effect is most pronounced in arid and semi-arid regions, such as the Indus Valley and Baluchistan Plateau in Pakistan.
Angle of Sun: The angle of the sun is the angle between the sun's rays and the earth. It affects the amount of sunlight that reaches the Earth's surface, which in turn affects temperature, plant growth, and human activities.	

ii. Rainfall

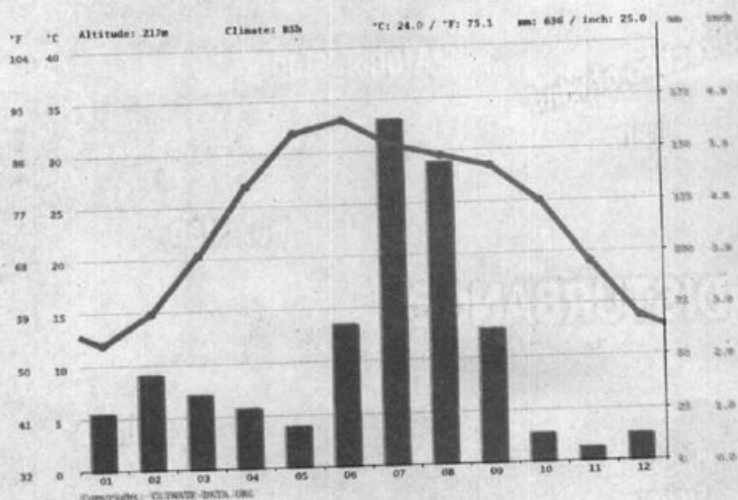
The rainfall in Pakistan decreases from the Himalayas to the south of Pakistan. There are four sources of rain which provide rain to the different regions located in Pakistan. These are:

• Monsoon Winds

The word "monsoon" comes from the Arabic word "mausim", which means "season". This is because monsoons are seasonal winds that reverse their direction twice a year. Pakistan experiences monsoon rains from two sources: the Bay of Bengal and the Arabian Sea. The monsoon season in Pakistan typically lasts from June to September.

• Bay of Bengal Monsoon

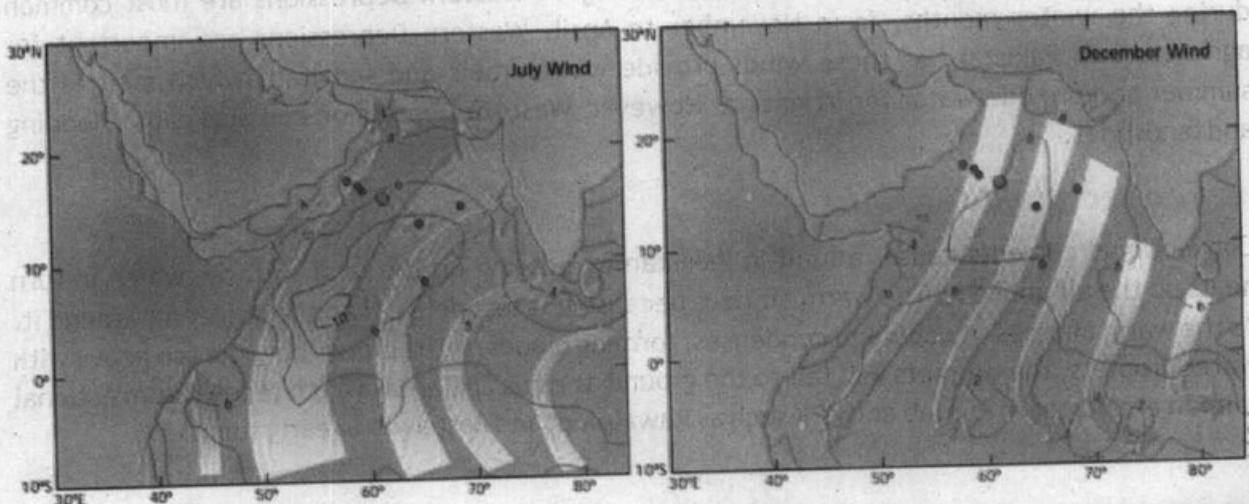
The Bay of Bengal monsoon is caused by the differential heating of the land and the sea. During the summer months, the land heats up more quickly than the sea. This causes a low-pressure area to develop over the land. The warm, moist air from the Bay of Bengal rushes in to fill this low-pressure area, resulting in heavy rainfall. These winds blow from Bay of Bengal and cross over India and straight hit the Himalayas and give rain to the areas of northern Punjab as well.



According to the graphic representation, the precipitation in Lahore is the lowest in November, with an average of 7 mm | 0.3 inch. Most of the precipitation here falls in July, averaging 166 mm | 6.5 inches.

• Arabian Sea Monsoon

The Arabian Sea monsoon rains are caused when an over active monsoon winds blow across south east of Pakistan and bring rain to the coastal areas. The Arabian Sea monsoons provide water for agriculture and replenish groundwater supplies. However, the monsoon rains also cause flooding, landslides, and damage to infrastructure sometimes.



Arabian Sea Monsoons (a) summer season represented by July (b) winter season represented by December (Honjo and Weller based on SODA data)

iii. Western Depressions



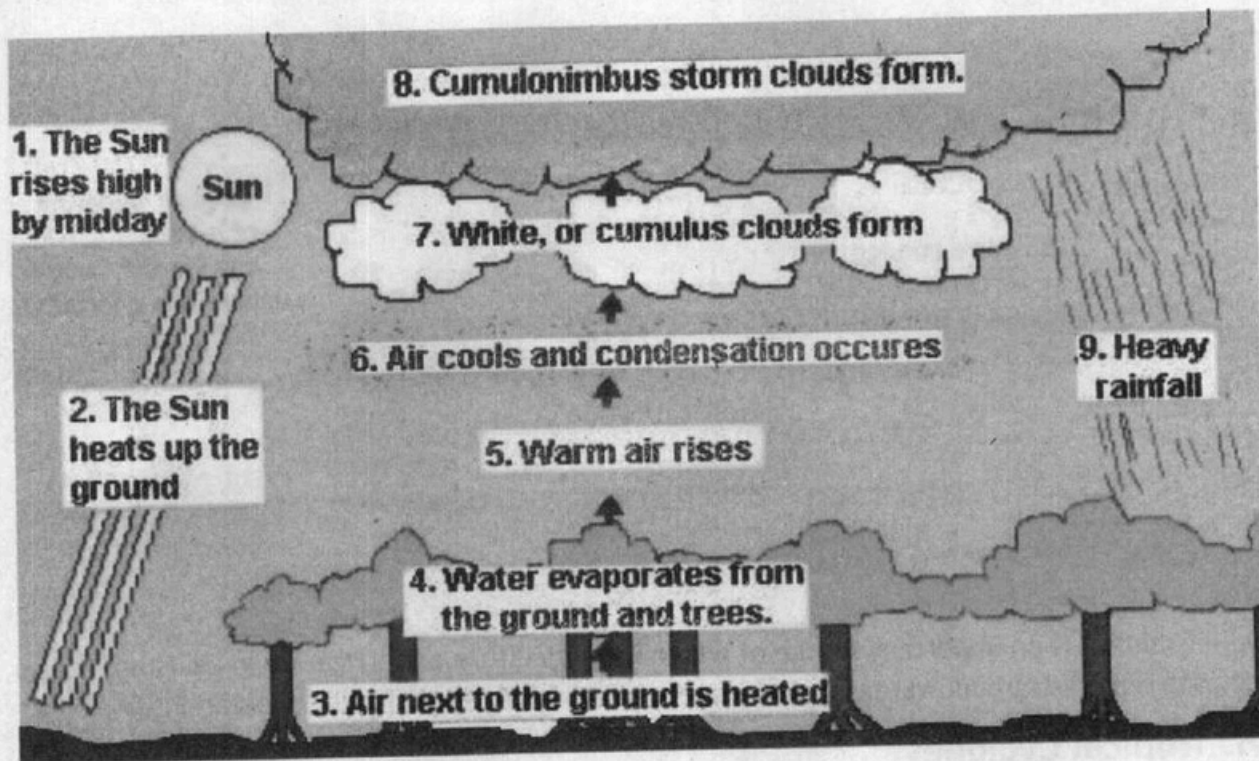
Western Depressions or Western disturbances are a low-pressure system that develops over the Mediterranean Sea and travels eastward, bringing rain and snow to the Middle East and South Asia, especially to the northern and western regions of Pakistan including Chitral, Dir, Peshawar, Loralai, Quetta, Kharan, and Makran coastal range. Western Depressions are most common during the winter months, from November to April. Western Depressions are important for agriculture in Pakistan, as these winds provide winter rains and snowfall, which melt in the summer and provide water for irrigation. However, Western Depression can also cause flooding and landslides.

iv. Convictional Currents

Convictional currents cause rainfall in Pakistan by heating up the land surface, which in turn heats up the air above it. The warm air rises because it is less dense than the cooler air around it. As the warm air rises, it cools and condenses, forming clouds. If the clouds become too heavy with water droplets, the droplets will fall to the ground as rain. The areas which receive convictional rainfall are northern Punjab and KPK such as Rawalpindi and Peshawar in early summer.



Note For Teachers: Describe the distribution of mean annual rainfall of areas having highest to lowest rainfall in Pakistan. (Source: <http://www.globalcitymap.com/Pakistan>)

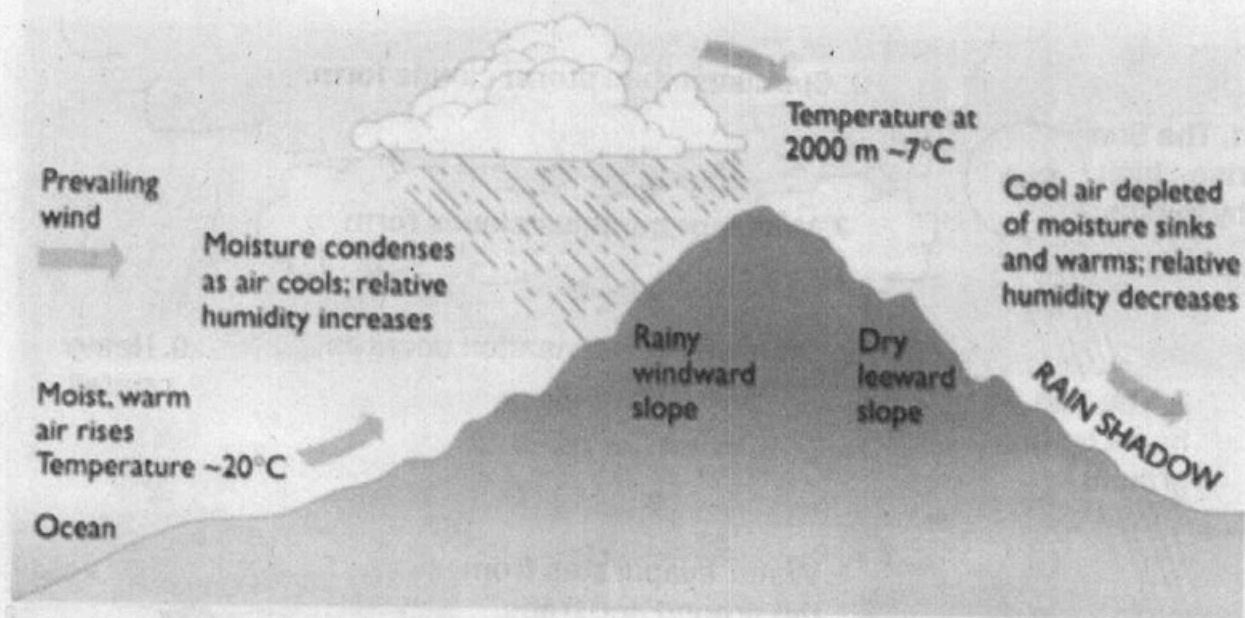


Convectional rainfall

Convectional rainfall does not take place in the areas south of Pakistan during summer because of the temperature inversion layer. Temperature inversion layer is a layer of air where the temperature increases with height. This forced the rising air to sink which compresses and warms as it descends back to the earth. Temperature inversion layers can trap pollutants in the lower atmosphere, leading to poor air quality and results more dryness in the area. They can also prevent clouds and precipitation from forming, which is why Karachi and adjoining areas do not receive convectional rainfall during the summer months, despite the high temperatures i.e., 40°C.

v. Relief Rainfall

Relief rainfall, also known as orographic rainfall, is a type of precipitation that occurs when moist air is forced to ascend over a mountain range. As the air rises, it expands and cools, causing the water vapor in the air to condense and form clouds. If the clouds become too heavy with water droplets, they will fall to the ground as rain. Relief rainfall is common in the northern and western regions of Pakistan i.e., the Himalayas and Karakoram. These mountains act as a barrier to the moist air from the Arabian Sea, forcing it to rise. As the air rises, it cools and condenses, forming clouds and precipitation. Some important places include Murree, Abbottabad, Swat Valley, Gilgit-Baltistan, Peshawar, Kohat, Bannu and Quetta.



Relief rainfall is an important source of water for agriculture and irrigation in Pakistan. It also helps to replenish groundwater supplies and provide drinking water for the population.

vi. Tropical Cyclones

Tropical cyclones are large, rotating storms that form over warm ocean waters. They are characterized by strong winds, heavy rainfall, and storm surges. Tropical cyclones are natural hazard and proved to be very destructive, causing widespread damage to property and infrastructure. Pakistan is located on the northern shores of the Arabian Sea, which is a region that is prone to tropical cyclones. The coastal regions of Sindh and Balochistan are the most vulnerable to tropical cyclones. The places that experience tropical cyclones are Karachi, Thatta, Badin, Pasni, Jiwani and Gwadar.



Tropical Cyclone in Karachi October 01, 2021

vii. Pressure and movement of Monsoon winds

The pressure and movement of monsoon winds is a complex system that is influenced by a number of factors, including the sun's position, the temperature of the land and sea, and the rotation of the Earth. During the summer months, the Arabian sea is warmer than the land surface. This creates a low-pressure system over the Arabian Sea and a high-pressure system over the land surface. Winds blow from the Arabian Sea towards the land surface, bringing warm, moist air to northern and central Pakistan. The warm, moist air rises and cools, forming clouds and rain in the months of July and August. While during the winter months, the Arabian Sea is cooler than the land surface. This creates a high-pressure system over the Arabian Sea and a low-pressure system over the land surface. Winds blow from the land surface towards the Arabian Sea, taking dry air with them. As a result, Pakistan receives very little rain during the winter months.

Efficacy of Rainfall for Farming

The effectiveness of rainfall for farming in Pakistan varies depending on the amount, timing, and distribution of rainfall. Farmers plan and choose crops that are suited to the rainfall patterns in their region and use irrigation to supplement rainfall where necessary.

The arid regions of Baluchistan receive less than 250 mm of rainfall per year, which is insufficient for crop production. Farmers in these regions rely on irrigation. The humid regions of the Himalayas receive over 2,000 mm of rainfall per year, which is too much for most crops. Farmers in these regions use drainage systems to prevent waterlogging.

Pothwar Plateau: The Pothwar Plateau which is a rainfed area also called 'Barani land', receives moderate rainfall, ranging from 500 to 1,000 mm per year. This is enough rainfall to support crop production, but farmers have to manage the water resources during dry years. The Indus Plain receives moderate rainfall, ranging from 250 to 500 mm per year. This is enough rainfall to support crop production, but farmers need to rely on irrigation to supplement the rainfall.

Winter rainfall plays an important role in agriculture, water storage, groundwater recharge, ecosystems, and other sectors. It helps to replenish water reservoirs, such as dams and lakes and supports a variety of ecosystems in Pakistan, including forests, grasslands, and wetlands and Industrial usage.



Note For Teachers: What can you infer about the aftermath of the cyclone based on the photograph?
Source : The News International

Natural Hazards

i. Thunderstorms

Thunderstorms in Pakistan are most common in the summer months of April to June and September to October. However, they can occur in any part of the country, but they are most common in the north and north western areas, foothills of Himalayas and Safed Koh mountains. Thunderstorms cause strong winds, heavy rain, lightening, thunder and hail which can destroy crops, orchards, flooding, landslides and power outages due to damage to power lines.

ii. River Floods

A river flood is a natural disaster that occurs when a river overflows its banks and inundates the surrounding land. Although floods deposit fresh nutrients and spread a layer of alluvium in wetlands and the Indus delta and recharge ground water but floods also have massive devastating effects on natural and human resources. There are natural and human reasons of river floods.

Natural Factors	Human Factors
1) Record breaking rainfall such as in 2010, alone in Peshawar, 312mm of rain fell in 24 hours.	1) Deforestation, as with many floods, is an issue due to the reduced infiltration and increased surface run-off.
2) Fastest melting of snow due to climate change. Increase in average temperature of the earth. 0.08°C per decade since 1880.	2) Building settlements on the floodplains. The quality of settlements close to the river is poor and prone to collapse during flooding
3) Natural embankments alongside rivers are not high enough to contain the flood water.	3) Reduced capacity of Dams to store extra or flood water.
4) Storm surge in sea level caused by a hurricane or other storm causes flooding in coastal areas.	4) Federal Flood Commission is generally under prepared in major rainfall event. There is a lack of managing effective flood control.

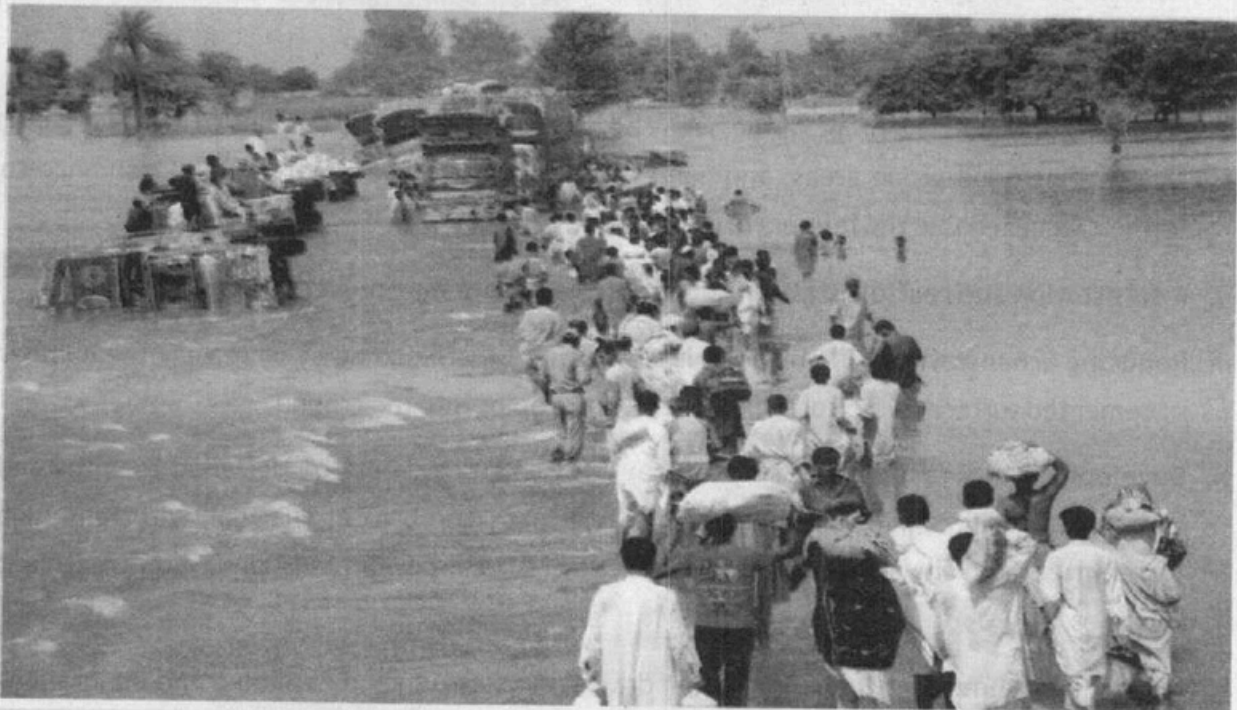
Preventive Measures

- i. **Providing preflood warning:** Farmers may be helped in evacuating animals to higher ground, sandbagging flood-prone areas, and harvesting crops early. by promoting flood insurance to farmers would enable the farmers to recover from the losses.
- ii. **Afforestation and reafforestation:** Forests regulate water and prevent the risks of floods.
- iii. **Reducing urbanization:** Urbanization increase the risk of flooding by increasing the number of cemented surfaces which prevent water from seeping into the ground.
- iv. **Developing flood-resilient infrastructure:** Infrastructure should be designed to withstand the impacts of flooding. This includes building roads and bridges that can withstand high water levels, and elevating critical infrastructure, such as power plants and water treatment facilities.
- v. **Improving drainage systems:** Improving drainage systems include building and maintaining storm drains and canals, and clearing debris from waterways.
- vi. **Constructing flood defences:** Flood defences, such as levees and floodwalls will protect communities from river floods.
- vii. **Managing water resources:** By building more small dams will reduce the risk of flooding and to mitigate its impacts.
- viii. **Raising awareness of flood risks and educating people about flood safety:** Pre-flood warning may be advertised on television and social media and educating people about flood safety. Rehabilitating centres must be built to provide medical care, psychological and social support to flood affectees.



Note For Teachers: Whole-class discussion prompt:

How does the spatial distribution of the summer monsoon rainfall in Pakistan impact the country's agriculture and economy?



Pakistan's Flood in 2010. Experts called it the 'flood of century'. It affected over 20 million people and displaced over 10 million people. The floods caused an estimated \$43 billion in damage.

iii. Droughts

Drought is a natural hazard marked by long spell of dry period. The lack of rainfall causes severe water shortages and damages crops and livestock. Pakistan is susceptible to both natural and human-induced droughts. In Pakistan drought appears in several forms:

1. **Permanent drought:** It exists in desert areas of Pakistan. Crop cultivation is hindered due to extreme aridity.
2. **Seasonal drought:** Barani areas of Potwar and southern Punjab often experience dry season due to unreliability of monsoon. This severely hinders crop cultivation.
3. **Invisible drought:** It is also known as agricultural drought. It may be directly caused due to deforestation and consistent soil erosion. Crop yield is reduced, livestock remain vulnerable due to water shortages and farmers suffer economic losses.
4. **Unpredictable drought:** It occurs because of the unexpectedly low rainfall due to climate changes resulting in crop failure, water shortages, livestock death and internal displacement of rural population.



Effects of Drought

Drought Management in Pakistan

The government and communities in Pakistan are working together to mitigate the risks of droughts and to ensure that communities are able to cope with the effects of droughts. Water conservation schemes are introduced such as lining canals, building water tanks, small local dams, reservoirs. Early warning system is developed and financial assistance is provided to affected farmers. Farmers are increasingly planting drought-resistant crops, such as sorghum and millet and using water more efficiently by adopting drip irrigation. Community-based drought management initiatives include rainwater harvesting by the collection of rainwater from rooftops and other surfaces during the rainy season and stored for use during the dry season.



Local Konkar Dam in Sindh to fight drought

Seasonal Canal Proposed to Bring Water to Thar Desert

The Sindh government is considering a proposal to build a seasonal canal from Sukkhar Barrage to the Thar Desert. The canal would bring much-needed water to the desert region, which is currently very dry and arid. Canal would be approximately 200 kilometers long and would carry water from the Indus River to the Thar Desert. The water would be used for irrigation, drinking water, and livestock. The project is estimated to cost around Rs. 50 billion. The Sindh government has approached the federal government for funding assistance. The project has been welcomed by farmers and residents of the Thar Desert. They say that the canal would bring prosperity to the region and help to improve their lives. However, some environmentalists have raised concerns about the project. They say that the canal could damage the fragile ecosystem of the Thar Desert. They also say that the canal could displace people who currently live in the desert.

By The News Desk, August 4, 2017

Effects of Climate on the lifestyle and economic activities of People

The effects of climate on the lifestyle and economic activities of people vary depending on the climatic zone. Here this will be discussed in more detail.

Highland zone

The climatic highland zone is characterized by cooler temperatures and higher precipitation than the lowlands. This zone is often home to forests and alpine meadows. People in the climatic highland zone are nomads and typically practice transhumance, subsistence agriculture and livestock herding. In the extreme north, people also rely on tourism and other non-agricultural activities for income. In Balochistan, crop cultivation is difficult in most parts due to lack of water. It also discourages human settlements.

Climate change also has a significant impact on the climatic highland zone. For example, farmers are struggling to grow crops in the face of declining water availability, droughts, floods, and landslides. This is leading to food insecurity and poverty. Climate change is also making it more difficult for people to access traditional grazing lands, which is impacting livestock herders.

Lowland zone

The lowland zone is characterized by warmer temperatures and lower precipitation than the highlands. Indus plains of Punjab and Sindh covers lowland zone. People in the lowland zone rely on a variety of economic activities, including agriculture, manufacturing, and services. However, warming temperatures are leading to more extreme weather events, such as heat waves, droughts, floods, and storms. These events may lead to crop failure, damage transportation and

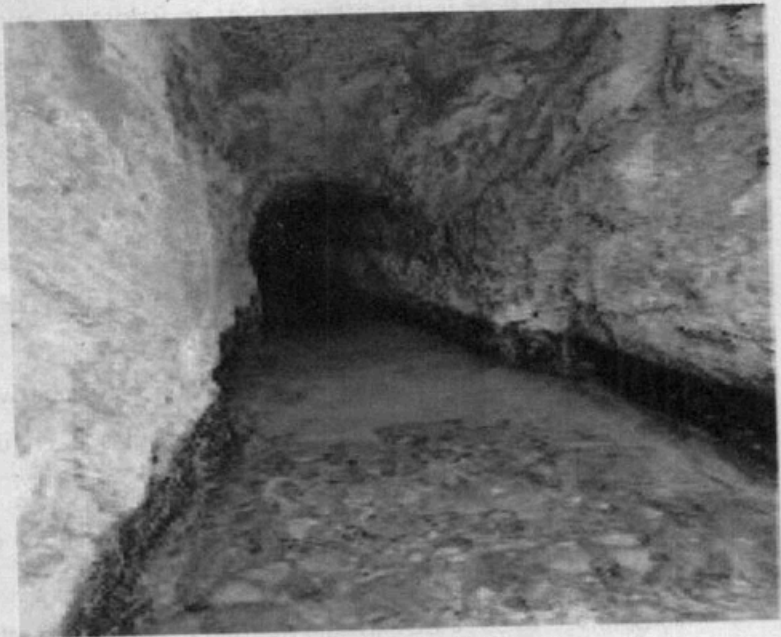
communication and disrupt economic activities. For example, heat waves can lead to crop failure and livestock deaths. Droughts can also reduce crop yields and make it difficult for people to access water. Floods and storms can damage infrastructure and disrupt transportation and communication networks.

Arid Zone

The arid zone of Pakistan is mainly consisted of desert areas. It is characterized by very dry spell of weather. These areas suffer from water shortages due to extremely low rainfall and high evapo-transpiration rate. People in the arid zone rely on a variety of economic activities, such as mining, livestock herding, and tourism. Despite the arid conditions, many people in the desert areas of Pakistan practice agriculture. Karez - an underground irrigation system-is practiced in Balochistan. Karez irrigates farmlands, orchards and date palms. They grow a variety of crops,

including wheat, rice, millet, and sorghum. In arid Zone, people also raise livestock, such as sheep, goats, and camels. Animals provide them with food, milk, and transportation. They are also used to produce wool and other products.

Many people of desert areas are skilled artisans. They produce a variety of handicrafts, such as carpets, textiles, and pottery. These handicrafts are sold in local markets and exported to other



Karez in Balochistan

parts of Pakistan and the world such as Ajrak, Ralli quilts, embroidery shawls, leather products, pottery to various countries including India, United States, United Kingdom, Canada, Australia, Germany and United Arab Emirates. Tourism is a growing industry in some parts of the desert areas of Pakistan. Tourists are drawn to the unique landscape and culture of the desert for example Cholistan Desert that is known for its rolling sand dunes, salt marshes, and ancient forts. Tourist explore deserts landscape, culture and wildlife of Thar and Cholistan by Camel safaris and Jeep tours.

Coastal zone

The coastal zone of Pakistan is comprised of delta coastline in Sindh and the hilly Makran coast in Balochistan. It is characterized by maritime climate. Cool sea breezes relieve the high temperatures of the summer months. This long coastal line is home to beaches, estuaries, and wetlands which attract tourism during winter months. People in the coastal zone rely on a variety of economic activities, including



Sindh Coastal region

fishing, tourism, and trade. The Karachi-Korangi and Qasim ports play vital role in Pakistan's economy. Karachi Port is the busiest port in Pakistan, and it handles a wide variety of cargo, including containers, bulk cargo, and liquid cargo. However, Climate change is leading to some frequent and severe storms result coastal erosion and damage to infrastructure costing very high to the economy of Pakistan.

What I have Learned

- Transhumance is the seasonal movement of livestock between high-altitude and low-altitude pastures. It is a traditional practice that has been used for centuries by pastoralist communities.
- Monsoon winds are seasonal winds that reverse direction every six months. These winds are caused by the differential heating of land and water.
- Monsoons can also cause extreme weather events, such as floods.
- A temperature inversion layer is a layer of the atmosphere in which the temperature increases with height.
- Livestock plays an important role in the lives of many people in the desert areas of Pakistan.
- Fishing is a major industry in many coastal communities.

Exercise

Answer the following questions by choosing the best answer A, B, C or D.

- 1: The continental effect is the:
 - A. Warming of landmasses during the day and their cooling at night.
 - B. Cooling of landmasses during the day and their warming at night.
 - C. Warming of oceans during the day and their cooling at night.
 - D. Cooling of oceans during the day and their warming at night.
- 2: The floods are caused by the:
 - A. Different heat capacities of land and water.
 - B. Inundation of river embankments
 - C. Different heat reflectivity of land and water.
 - D. landslides in the northern mountains.
- 3: The temperature inversion layer is pronounced in:
 - A. Arid and semi-arid regions.
 - B. Humid and tropical regions.
 - C. Polar regions.
 - D. South-East of Pakistan
- 4: Relief rainfall occurs in the:
 - A. Valley floor
 - B. Leeward side of the relief
 - C. Desert areas
 - D. All of the above
- 5: Which of the following is NOT a characteristic of Western Depressions
 - A. They are most common during the winter months.
 - B. They bring rain and snow to Pakistan.
 - C. They are important for agriculture in Pakistan.
 - D. They develop over the Pacific Ocean.
- 6: Sea breezes are caused by the:
 - A. Differential heating of land and water.
 - B. Same heating of land and water.

- C. Differential cooling of land and water.
 - D. Same cooling of land and water.
7. **Convictional rainfall in Pakistan is caused by:**
- A. It is caused by the heating of the land surface.
 - B. It is common in the northern and western regions of Pakistan.
 - C. It occurs in the early summer months.
 - D. It is caused by the collision of two air masses.
- 8: **Which non coastal city in Pakistan is vulnerable to tropical cyclones?**
- A. Karachi B. Thatta C. Badin D. Peshawar
- 9: **Which of the following statements is NOT true about the monsoon winds in Pakistan?**
- A. The monsoon winds blow from the Arabian Sea towards the land surface during the summer months.
 - B. The monsoon winds bring warm, moist air to Pakistan during the summer months.
 - C. The monsoon winds cause heavy rainfall in Pakistan during the summer months.
 - D. The monsoon winds blow from the land surface towards the Arabian Sea during the winter months.
10. **Which of the following regions in Pakistan does NOT receive enough rainfall for crop production?**
- A. Arid regions of Balochistan B. Humid regions of the Himalayas
 - C. Potwar Plateau D. Indus Plain.

Answer the following questions briefly.

1. What are the four climatic zones of Pakistan, and what are two key differences between each zone?
2. Describe the characteristics of the desert or arid climate of Pakistan?
3. Explain how the climate of Pothwar plateau makes it a challenging area for the farmers.
4. How does the coastal climate of Pakistan differ from the other climatic zones of Pakistan?
5. Why do many rivers flood in Pakistan during summer?
6. How does the yearly distribution of rainfall and temperature vary between Karachi and Lahore?

7. Explain the development of Monsoon winds in Arabian sea.

Answer the questions in detail.

1. How can the effectiveness of rainfall for agriculture in Pakistan be improved? Discuss the key challenges and opportunities particularly in Indus plain.
2. To what extent do storms and droughts cause problems for the people of Pakistan? Also Suggest some preventive measures and management strategies to reduce the problems.
3. Explain the sources of rainfall in Pakistan and how they vary seasonally. Give examples to support your answer.
4. Explain how temperature variations affect the lifestyle of people in different regions of Pakistan.
5. Write short notes on the following topics
 - Pressure and Winds
 - Advantages and disadvantages of floods in Pakistan

Forming opinions

Do you think that the proposed seasonal canal from Sukkhar Barrage to the Thar Desert is a good idea? Why or why not?

This is a learning activity which requires students to think critically about the potential benefits and drawbacks of the project. It also requires students to consider the different perspectives of the people who would be affected by the project, such as farmers, residents of the Thar Desert, and environmentalists.

Project

Analyze the impact of climate change on the climatic zones of Pakistan. Present your information to the class in power point presentation.

Glossary

Highland climate: A climate that is characterized by high altitudes and cold temperatures.

Lowland climate: A climate that is characterized by low altitudes and warm temperatures.

Monsoon: A seasonal wind pattern that brings heavy rainfall to Pakistan during the summer months.

Western depression: A low-pressure system that develops over the Mediterranean Sea and travels eastward, bringing rain and snow to the Middle East and South Asia, including Pakistan.

Sea breeze: A cool wind that blows from the sea to the land during the day.

Land breeze: A warm wind that blows from the land to the sea at night.

Diurnal temperature range: The difference between the highest and lowest temperatures in a given day.

Precipitation: Any form of water that falls from the sky, such as rain, snow, or hail.

List more words and write their meaning that you find difficult in this chapter.

Section 3

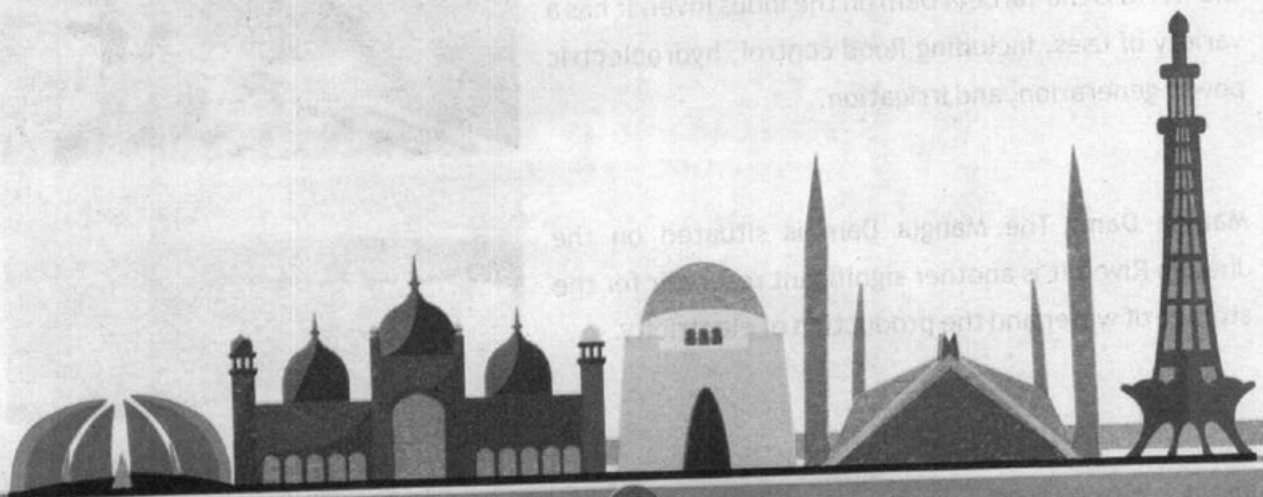
Resources and Economic Development of Pakistan

UNIT 06

WATER RESOURCES

In this unit the students will be able to:

- Describe the surface and groundwater resources in Pakistan, including seasonal fluctuations in flow and quality of water.
- Evaluate the advantages and disadvantages of the extensive irrigation system in Pakistan and suggest sustainable solutions to water resources management in order to deal with threatening issues of water pollution, water shortage and wastage.
- Analyze the vital role of dams, barrages, canals, and water reservoirs offer towards sustainable solutions, (including hydroelectric power generation, flood control and irrigation), and their potential impacts on the agriculture environment, industry and human activities.



Surface and Ground Water Resources

All types of life on Earth depend on water. Our bodies contain roughly 60% water and we cannot survive without a consistent supply of clean water. It is the foundation of human existence. Surface and ground water resources are abundant in Pakistan, which lies in South Asia. These resources are essential for the country's household, industrial, and agricultural demands. An overview of these water resources is given below.

Surface Water Resources:

Indus River: The Indus River is Pakistan's biggest and most important river. It has its sources. Jhelum, Chenab, Ravi, and Sutlej rivers are only a few of the tributaries of the Indus River that contribute significantly to Pakistan's surface water resources.



Jhelum River: One of the principal tributaries of the Indus River is the Jhelum River. It runs through the province of Punjab and the Azad Jammu and Kashmir region. It is playing a significant role in irrigation and hydroelectric production.



Chenab River: The Chenab River is another important Indus tributary. It runs through Pakistan's Punjab province. It supports both electricity and irrigation.



Tarbela Dam: One of the biggest earth-filled dams in the world is the Tarbela Dam on the Indus River. It has a variety of uses, including flood control, hydroelectric power generation, and irrigation.



Mangla Dam: The Mangla Dam is situated on the Jhelum River. It is another significant reservoir for the storage of water and the production of electricity.



Ground Water Resources:

Pakistan largely relies on its groundwater supplies, particularly in those regions which have little access to surface water. Tube wells and hand pumps are the main methods used to access groundwater for domestic, commercial, and agricultural uses in those regions.

Indus Basin Aquifer: The greatest groundwater source in Pakistan is the Indus Basin aquifer. It covers the whole Indus plain and fulfills the majority of the country's agricultural needs of water.

Baluchistan Plateau Aquifer: The Baluchistan Plateau aquifer is a vital supply of groundwater in the region of Baluchistan. It promotes agriculture and maintains local residents' means of survival.

Punjab Aquifer: Groundwater is a major source of irrigation in Punjab province. In some locations, excessive groundwater extraction is a problem because it causes dropping water tables and an increase in salinity.

Seasonal Fluctuations in Flow and Quality of Water:

Pakistan's dry to semi-arid environment, monsoon rains, and glacier melt water from the Himalayan and Karakoram mountains all have a significant impact on seasonal variations in water flow and quality. These elements cause different seasonal fluctuations in the quantity and quality of water. An outline of these variations is provided below:

Seasonal fluctuations in Water flow:

The monsoon season (July to September): It is the most crucial time for Pakistan's water flow. The southwest monsoon at this time causes a lot of rain to fall across the nation, but especially in the north and west. This downpour contributes to a rise in river flow and aids reservoir restocking. During this time, there is a noticeable rise in the amount of water flowing through the Indus River and its tributaries, including the Jhelum, Chenab, and Sutlej.

Winter and Spring (October to April): Most of Pakistan experiences comparatively little rainfall during the winter and spring months. However, water from the melting snow in the Himalayan and Karakoram peaks continuously decreases during this time. This melt water contributes to the Indus River and its tributaries, helping to keep the flow somewhat steady. It is significant to note that the snowpack from the preceding winter affects the water supply throughout these months.

Summer (May to June): When winter snowmelt fade, the summer months are often characterized by increasing temperatures and decreased water flow in rivers and streams. During this season, water shortage becomes an issue in many locations, particularly in Pakistan's south, and irrigation needs rise.

Seasonal Fluctuations in Water Quality:

1. The monsoon season (July to September): This season can significantly affect the quality of the water. In rivers and other bodies of water, heavy rains can cause overflow water that carries contaminants from urban and agricultural regions. Flooding can contaminate water sources and can be one of the reasons of lowering the quality of the water.

2. Dry Season (October to June): Because there is less pollution brought on by rainfall during the dry season, water quality tends to improve. However, due to decreased water flow and dilution in some regions, the concentration of contaminants might increase significantly. During this time, agricultural water quality problems may worsen.

2. Glacier Water: Water from glacier melt sources is often of high quality and is also cost-free.

Challenges and Concerns: Pakistan's water resources are subject to a number of problems, such as water scarcity, excessive groundwater extraction, contaminated water sources, and a lack of effective water management techniques.

Irrigation

Irrigation is the process of applying water to soil or land artificially in order to promote the growth of plants and crops. Especially in regions with low or irregular rainfall, it is an essential agricultural method used to supply appropriate moisture to plants. The main goal of irrigation is to provide water to agricultural fields, orchards, gardens, and other cultivated areas. The irrigation systems can vary, from straightforward techniques like using buckets or hoses to more complicated ones like drip irrigation, sprinkler irrigation, and flood irrigation.

Advantages of extensive irrigation system:

Pakistan's large irrigation system, which is mostly based around the Indus River and its tributaries, offers a number of important benefits. Some of which are listed below:

1. Improved Agricultural Productivity: By supplying a steady supply of water, the irrigation system enables agricultural cultivation. This dramatically increases food output by increasing agricultural productivity and enabling many planting cycles in a single year.

2. Food Security: In order to ensure food security for Pakistan's rapidly expanding population, the irrigation system's consistent water supply is essential. It makes it possible to grow important food staples for Pakistan's diet, including cotton, rice, and wheat.

3. Economic Development: Agriculture, which employs a huge section of the people and contributes to the GDP of the nation, is an important economic factor in Pakistan. By providing water for agricultural, the irrigation system aids in the development of this industry.

4. Community Stability: Millions of rural Pakistanis who depend on agriculture for their livelihood are supported by irrigation. A reliable water supply reduces these populations' vulnerability to droughts and other climate fluctuations.

5. Crop Modification: Farmers can choose from a wider variety of crops because of irrigation's accessibility to water. Farmers will be able to cultivate a greater variety of crops, such as fruits and vegetables, which can increase income and food variety.

6. Hydropower Generation: The irrigation system includes numerous dams and reservoirs that are used to generate hydropower. This reduces the nation's dependency on fossil fuels. It also assists in meeting country's energy needs.

7. Flood Control: The irrigation system includes some flood-control mechanisms, such as dams like Tarbela and Mangla. They can hold more water during the monsoon season and lowers the risks of floods.

8. Control of Salinity and Waterlogging: The irrigation system contains drainage infrastructure to handle the salinity and waterlogging issues that may arise as a result of excessive irrigation. This keeps the soil in good condition for farming.

9. Support for Livestock: By supplying drinking water and grazing for animals, reliable water sources benefit not just crop production but also livestock farming.

10. International Water Sharing: The Indus Waters Treaty regulates water sharing between Pakistan and India, which share the Indus River system. Pakistan is able to manage its portion of these foreign waters and thanks to the massive irrigation system.

Although Pakistan's massive irrigation system has many benefits, there are some drawbacks as well, such as water scarcity, poor water use, and environmental issues. To solve these issues and ensure long-term water availability, sustainable water management strategies are essential for maximizing advantages.

Disadvantages of the extensive irrigation system:

The irrigation systems in Pakistan have been essential for agriculture and food security, but they also have a number of drawbacks and difficulties. The large irrigation system in Pakistan has a number of drawbacks, some of which are listed below:

1. Water Reduction and Shortage:

Aquifers have been depleted in several areas of Pakistan as a result of over-extraction of groundwater due to the heavy use of irrigation. Falling water tables and higher pumping expenses for farmers are the results of this.

2. Salinity and waterlogging:

- a. Waterlogging, in which the water table rises to the root zone of crops and damages them. It is a result of improperly maintained irrigation systems.
- b. Salinity: Irrigation water has a high salt content, and over time, poor drainage and management can result in salinity of the soil, which lowers agricultural yields and soil fertility.

3. Effects on the Environment:

- a. Habitat Degradation: Building dams, canals, and reservoirs as part of extensive irrigation systems can have a negative impact on local ecosystems and destroy habitat.
- b. Dams and diversions can disturb river ecosystems, which can have an effect on fish populations and water quality.

4. Expensive Maintenance:

Maintenance of large irrigation infrastructure, such as canals, dams, and pumps, may be costly and difficult. It needs frequently major government investment.

5. Unfair Distribution:

- a. Unequal Access: Farmers' agricultural output and revenue vary widely because access to irrigation water is not always distributed fairly. Smallholders may not have an advantage over larger landowners.
- b. Water Theft: Common issues like water theft and unauthorized canal tapping make an uneven distribution of water resources.

6. Energy Consumption:

Pumping water for irrigation can be expensive, increasing expenses for farmers and adding to energy demands.

7. Climate Vulnerability:

sources so it makes agriculture vulnerable to unpredictable climate such as droughts or a smaller amount of water flow.

8. Social Issues:

- a. Land Displacement: The relocation of settlements during the construction of big dams and reservoirs presents social and economic difficulties for the affected inhabitants.
- b. Conflicts: Pakistan's massive irrigation systems can lead to water disputes between provinces and even with neighbors like India.

9. Problems with water quality:

- a. **Pollution:** In some instances, irrigation water may be infected with contaminants from industrial waste discharges, agricultural runoff, or untreated sewage.

10. Lack of Modernization:

- a. **Old Practices:** Poor irrigation techniques and the use of old-fashioned technology can reduce the benefits. Irrigation's potential benefits might be limited by the use of old technology, which also hinders agricultural modernization.

Pakistan must make investments in justifiable water distribution policies, better irrigation infrastructure, effective water usage promotion, and sustainable water management techniques in order to solve these drawbacks. A more sustainable agricultural system can also be achieved by reducing the over-reliance on irrigation and responding to changing climatic circumstances by encouraging the use of water-efficient crops.

Some Sustainable Solutions:

Pakistan needs to use a multimodal approach that includes legislative changes, infrastructure upgrades, and community involvement to address water pollution, water shortages, and water waste. Here are some green approaches to efficiently managing water resources:

1. **Facilities for treating wastewater:** Spend money on and increase the size of wastewater treatment facilities to handle sewage and industrial effluents before releasing them into bodies of water. Put in place strict rules to ensure agreements.
2. **Usage of Rainwater:** Promote the adoption of rainwater harvesting methods in homes and communities to collect and store rainwater for domestic usage and groundwater replacement.
3. **Effective Irrigation Methods:** To prevent water waste in agriculture, promote and encourage the use of contemporary irrigation techniques, such as sprinkler and drip systems, to reduce water waste.
4. **Desalination:** By installing desalination facilities along the coast, particularly in coastal areas where there is a severe water shortage.
5. **Geological Management:** Implement strict groundwater extraction regulations to avoid

overuse and salty water intrusion. Encourage aquifer recharge techniques to top off groundwater supplies.

6. Education and Information: Organize public awareness campaigns to raise awareness of the need for sustainable water usage, pollution avoidance, and water preservation. Education has the power to influence behavior.

7. Industrial Regulation: To reduce industries' release of pollution, impose tight environmental laws on them. Promote more eco-friendly production techniques and the reuse of industrial effluent.

8. Water management in rural areas: Build small dams, ponds, and water storage structures as part of community-based water management systems in rural areas.

Promote the growth of such type of crops which are considered drought-resistant. It will help to lower agricultural water demands and boost crop yields in times of water shortage.

9. Governmental Measures: Create and implement comprehensive water management plans that take both urban and rural demands into account. Implement price policies that promote wise water use. Research and development of water-saving technology, such as water-efficient appliances and leak detection systems, should be funded.

10. Collaboration across borders: To ensure the equitable and sustainable use of shared water resources, cooperate with neighboring nations. It will help to ensure the sustainable and fair use of shared water resources.

11. Climate Change Mitigation: Fight against climate change's consequences by implementing measures to deal with shifting rainfall patterns by creating strong infrastructure.

12. Public-Private Alliances: Water infrastructure projects can be managed and funded by public-private partnerships, which can increase effectiveness and ease the strain on government resources.

13. Monitoring and Data Gathering: Set up a thorough water monitoring system to keep checks on water supply, quality, and usage. Government and civic society must make a nonstop commitment to addressing Pakistan's water-related issues, and various parties must work together. To achieve a safe and impartial water future, sustainable solutions must strike a balance between economic growth and environmental preservation.

14. Water management: In order to solve water shortage and better manage water resources, the Pakistani government has been working on a number of water management projects, including the building of dams and reservoirs. Water governance is being improved. Water use

efficiency is being increased. Sustainable agricultural and industrial practices are being promoted.

In conclusion, Pakistan's water needs are met through a combination of groundwater resources and surface water sources, primarily the Indus River system. The development of a nation and the welfare of its people depend on the efficient management of these resources.

Role and Impacts of Water Reservoirs

Hydroelectric power generation, flood control, irrigation, and other sustainable solutions all benefit greatly from the use of dams, barrages, canals, and water reservoirs. However, they could also have an impact on human activities, the environment, industry, and agriculture. Let us examine these features in greater detail:

1. Hydroelectric Power Generation:

- **Benefit:** Dams and reservoirs are necessary for the production of hydroelectric power. They offer a dependable and sustainable energy source and help in assisting in the reduction of greenhouse gas discharges and dependence on fossil fuels. Hydroelectricity can provide a large amount of the region's electricity requirements while also promoting the production of sustainable energy.
- **Negative Impact:** Building dams and reservoirs may have negative effects on the environment. It includes the disturbance of habitats, altered river flow patterns, and potential harm to aquatic ecosystems. Large dams have the potential to uproot communities and cause social and cultural repercussions.

2. Flood Control:

- **Positive Impact:** Dams and barrages are constructed to control water flow and lessen the likelihood of flooding in communities downstream. This promotes public safety and property preservation by reducing the damaging effects of flooding on infrastructure, crops, and communities.
- **Negative Impact:** By releasing water at the wrong periods or holding back too much water, poorly maintained dams can occasionally make flooding worse. Additionally, the modified river regimes can negatively impact biodiversity and water quality in downstream ecosystems.

3. Irrigation:

- **Beneficial Effect:** Canals and reservoirs are essential for irrigating agricultural crops, particularly in areas with erratic rainfall patterns. By enabling farmers to grow crops all year

round, this improves food security by raising agricultural output and income for rural areas.

- **Negative Effect:** Poor irrigation techniques can waste water, make the soil saltier, and damage the environment. The availability of water downstream can be decreased and aquatic habitats harmed by excessive river water withdrawal for agriculture.

4. Agriculture:

- **Positive Impact:** Access to water through irrigation systems and canals increases agricultural output and assures a steady supply of food. This promotes economic growth, food security, and livelihoods in rural communities.
- **Negative Impact:** Poor water resource management can result in over-extraction, aquifer reduction, and soil degradation. Irrigation can degrade water quality and harm aquatic habitats also by allowing fertilizers and pesticides to discharge.



5. Environment:

- **Positive Impact:** Well-planned dams and reservoirs can perform as useful water supply and storage systems during dry spells. They can help in maintaining a steady supply of water for both ecosystems and human use.
- **Negative Impact:** Modifying natural river flows can damage ecosystems. It can disturb fish migration, and harm aquatic habitats. Additionally, reservoirs can contribute to the buildup of deposit, which over time reduces their capacity for storage.



6. Industry and Human Activities:

- **Positive Impact:** water is essential for industry growth and human needs. It improves the quality of life overall by guaranteeing a steady supply of water for drinking, sanitation, and enjoyment.
- **Negative Impact:** Building and maintaining dams and reservoirs can be expensive. Large-scale water infrastructure projects can come at a social and environmental cost.

In conclusion, dams, barrages, canals, and water reservoirs provide valuable sustainable solutions including irrigation, flood control, and hydroelectric power generation that support economic growth and human well-being. To reduce these water resources' negative effects on the environment, agriculture, and communities, appropriate management is essential. To balance the advantages and disadvantages, sustainable and responsible water management methods are crucial.

Exercise

Answer the following questions by choosing the best answer A, B, C or D.

1. Up to ----- of the human adult body contains water.
a. 60% b. 70% c. 80% d. 90%
2. Pakistan's biggest river is -----
a. Sutlej b. Chenab c. Sindh d. Jhelum
3. One of the biggest earth-filled dams in the world -----.
a. Hub Dam b. Mangla Dam
c. Diamer Basha Dam d. Tarbela Dam
4. Groundwater is a major source of irrigation in ----- province.
a. Punjab b. Sindh
c. Khabar Pakhtun kha d. Balochistan
5. Most of Pakistan experiences comparatively little rainfall during-----.
a. Summer b. Winter
c. Spring d. Autumn
6. A big Number of Pakistanis depend upon the field of ----- for their livelihood.
a. agriculture b. government jobs
c. industry d. medicine
7. The greatest groundwater source in Pakistan is the-----.
a. Baluchistan Plateau Aquifer b. Indus Basin Aquier
c. Punab Aquier d. Arabian Sea

8. The main goal of irrigation is to provide water for-----.
- a. agriculture puposes b. industrial purposes
c. Washing purposes d. Cleaning purposes
9. The process of removing salt from seawater is called-----.
- a. precipitation b. condensation
c. desalination d. salination
10. Water-efficient crops are those which need -----
- a. some water b. no water
c. more water d. less water

Answer the following questions briefly.

1. Describe five positive impacts of water reservoirs on water issues?
2. What is meant by irrigation?
3. Analyze the role of dams in flood control.
4. Describe the following terms.
a. salinity b. waterlogging
5. Describe five advantages of Pakistan's extensive irrigation system?
6. How does seasonal fluctuation affect the flow of water?
7. Suggest five sustainable measures to reduce water wastage?

Answer the following questions in detail.

1. Write a note on the surface and ground water resources in Pakistan.
2. What are the strengths of the irrigation system of Pakistan?
3. Evaluate the importance of different types of water reservoirs in obtaining sustainable solutions or water-related issues?
4. Suggest some sustainable solutions to address water pollution, water shortages, and water waste.

Compare and Contrast

How do the water resources of the Indus River and the ground water resources in Pakistan differ in terms of availability and distribution.

Project

Plan a study trip of your class to your nearest dam to explore its advantages and disadvantages.

Glossary

Abundant: plentiful, rich, generous, ample, copious.

Tributary: headwater, branch, feeder

Aquifer: A body of permeable rock which can contain or transmit groundwater.

Desalination: The process of removing salt from seawater.

Erratic: unpredictable, inconsistent

Alter: change, modify, adjust, vary

List more words and write their meaning that you find difficult in this chapter.

Section 3

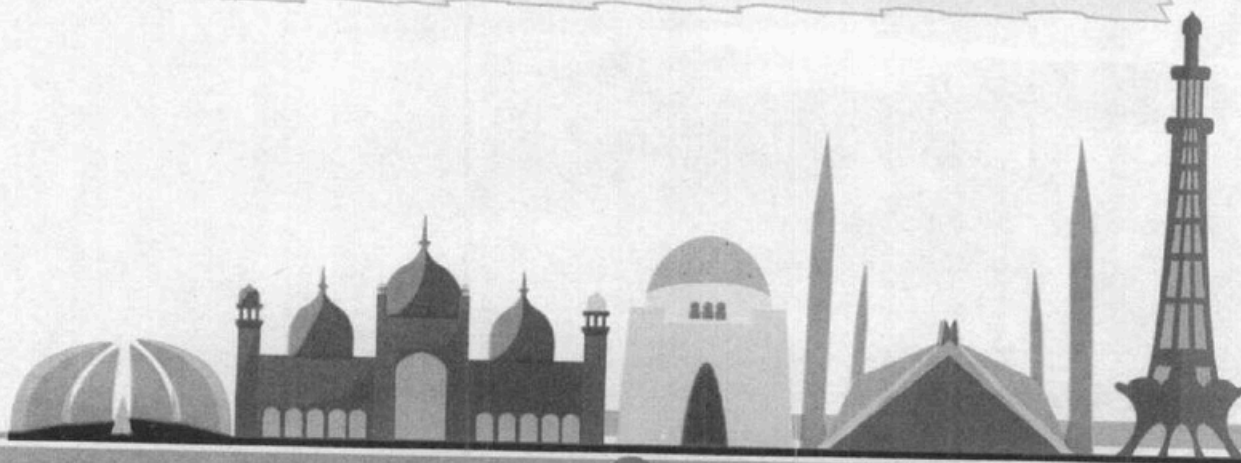
Resources and Economic Development of Pakistan

UNIT 07

POPULATION STRUCTURE AND GROWTH

In this unit the students will be able to:

- Analyze the demographic changes occurring in Pakistan, specifically in terms of population growth, density and structure, (using the demographic transition model and population pyramids) to interpret statistical trends, and consider the various social, religious, educational, economic, and political factors that contribute to sustainable population growth.
- Analyze the causative factors of rural-urban and seasonal migrations, their influence on population distribution while considering their consequential geographical and socio-economic impediments.
- Evaluate the problems of youth and dependent population in Pakistan and the role of the government/ NGOs in addressing the issue while identifying measures for sustainable human resource development.



Density of Population

Density of population is the number of people living per square kilometer unit of an area. The formula used to calculate density of population is $\text{total (population of the country)} / (\text{total area of the country}) = \text{density}$. Pakistan is the 5th largest country in the world, according to its population, after China, India, USA, and Indonesia respectively. In 1947 the population of West Pakistan was 32.7 million which increased to 207.68 million in 2017 census with a density of 260.88/sq.km (Pakistan Bureau of Statistics). In 2023 census population has risen to 241.49 million in 2023 with density of population as 302.08/sq.km.

The population indicators census of years 2017 and 2023.

Table 1. Population Indicators

	2017	2023
Population in millions	207.68	241.49
% of Rural Population	64	61.18
% of Urban Population	36	38.82
% of Male Population	51.2	50.4
% of Female Population	48.8	49.6
Population Density / sq.km	260.88	302.08
% of growth rate	2.40	2.55
Life Expectancy	66.82 years	67.79 years

Source: Pakistan Bureau of Statistics (pbs.gov.pk)

Reasons for High Density of Population

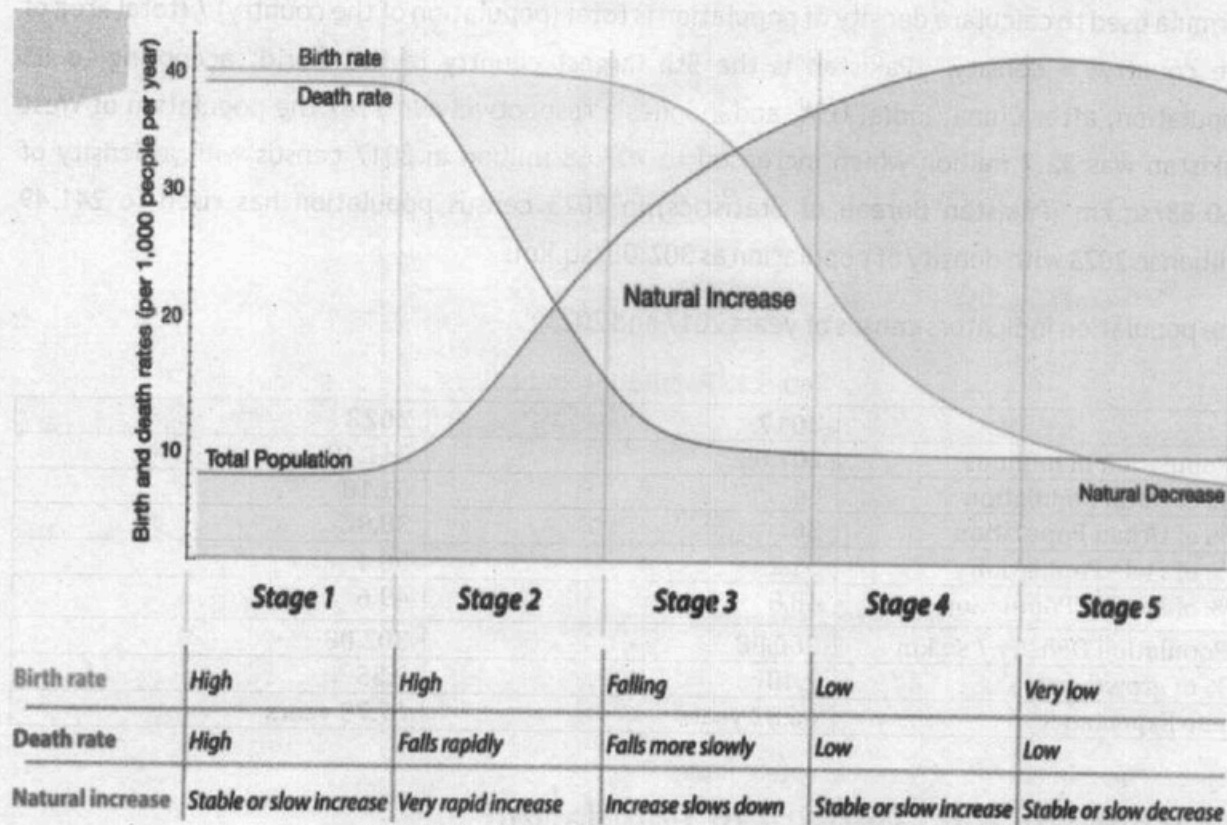
The increase in density is not only because of high birth rate or low death rate but also because of increasing life expectancy of the people. This increasing trend is due to better hygiene, better healthcare and awareness of better lifestyle. Life expectancy means an expected average age of a person of a country for a particular period of time. The life expectancy of Pakistan in year 2017 was 66.82 years which has increased to 67.79 years in 2023.

Density of a country is directly related to population growth. Natural factors play an important role in this issue. For example, lofty mountains in the north, lack of water and rugged terrain of Balochistan and desert areas of Sindh have low density of population due to lack of basic resources. People practice subsistence agriculture or nomadic herding prefer to have large families, increasing the density of population of these areas. Pakistan is an agricultural country; people mostly ignore the benefits of small families. They follow their traditional way of life increasing the population as well the density of population of the country.

Classification of population growth

Growth rate of population is determined by Birth rate, Death rate and Migration of the people of a country for a specific period of time.

1. Demographic Transition Model



Demographic transition theory suggests that population grows along a predictable 5 stage model.

Stage 1 Pre-industrial society: both birth rate and death rate are high and roughly in balance and population growth remains slow. Farming is the main occupation. High birthrate is due to many children needed in agriculture. High deathrate is a consequence of poor medical facilities, sanitation, and food.

Stage 2 Birth rate is still high but death rate decreases due to better medical facilities, sanitation and food.

Stage 3 Death rate is low due to improved economic conditions, food, healthcare and sanitation. The birth rate is decreasing due to awareness in family planning, female education, ambitious plan of the government and NGOs to encourage people to have small families and better education, late marriages and desire for high standard of living.

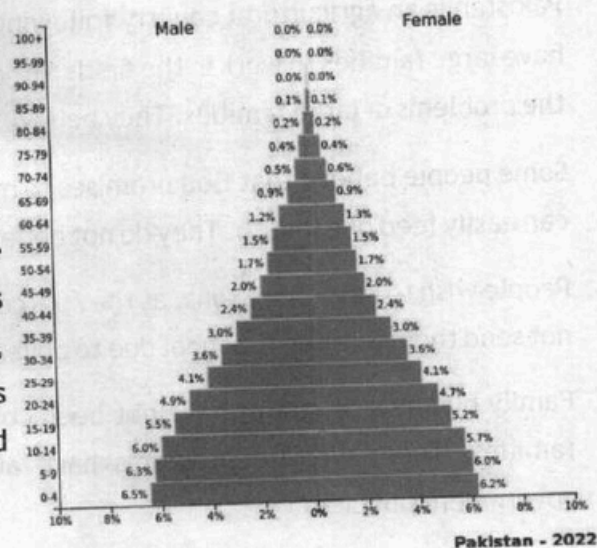
Stage 4 Both death and birth rate are gradually low, an ideal placement for a country. Examples are Argentina, Australia, China, Brazil, most of Europe and USA.

Stage 5 Both rates remain relatively low and death rate is now higher than the birth rate but total population is still high and not showing a decline due to higher life expectancy.

2. Population Pyramid

Population structure is the percentage of male and female and different age groups shown by a population pyramid.

As indicated in the figure, it represents Birth rate, Death rate, different age groups of male and female population and migration. It also represents dependent population from early years to 10 years, Active group from 14 years to 60 years also known as labour force, above 60 years is known as old age and dependent group.



Population trends shown by the Population Pyramid

Below 14 years

Birth rate of Population of Pakistan has declined from 2.6% in 1998 to 2.4% in 2017, indicating less dependency ratio in the early group.

14–60 years is a large group of active labour force; Government can easily plan for its positive work plan for development of the country. Better technical education can be designed to improve ratio between primary, secondary and tertiary activities. According to year 2017-18, 44% people were in **Primary sector**, employed in agriculture, fishing and mining, 25% in **Secondary sector** were employed including industry and manufacturing of machine-made quality products for domestic and foreign markets. For example, textiles, cement, sugar and many more. 37% in **tertiary sector** including services. Like, banking, insurance, health care and teaching etc.

Above 60 years has been increasing demanding more healthcare better food and healthy lifestyle. Government and NGOs can plan for qualified old people may volunteer and counsel the younger generation.

Political stability is the dire need of the country. As without peace and stability, there can be no development of various projects, decreasing job opportunities in the country, leading to unemployment and migration.

Causes of population growth

Pakistan is an agricultural country following mostly subsistence farming methods. People like to have large families to work in the fields rather than to focus on hired labour. They are not aware of the problems of large families. They believe in early marriages due to primitive lifestyles.

Some people believe that God promises to meet all human needs and also believe that two hands can easily feed one mouth. They do not believe in the need for the family planning system.

People wish to have more sons, as they perceive them to be an economic support. Many people do not send their children to school due to poverty.

Family planning programs have not been convincing enough to encourage people to have small families. These welfare programs have also suffered because of the frequent changes in government policies.

Due to better medical facilities and better hygiene, the death rate is decreasing, leading to increase in growth of population in the country.

The effects of population growth on the economy and development of Pakistan

The effects of high population growth are shortage of food water and basic needs of the people. Country is unable to provide skill-based quality education and health facilities according to the requirement of the people. The country has to increase its import to fulfill the needs of the people. Many important development projects are delayed leading to slow economic progress. Population growth is also causing increasing unemployment and child labour. The growing population also influences the inflation in the country, as increasing demands of a large population puts pressure on available resources, thereby driving prices higher.

Migration

Migration is the frequent movement of people from one area to another on large scale. In Pakistan Rural - Urban population is on the increase; people usually move from villages to cities. This migration is on the increase since independence because of difference of resources and lifestyle. Cities have better facilities of infrastructure, education, health, sanitation, housing and recreation and better paid jobs. These facilities are known as PULL factors which work like magnet to force the people to move to the cities.

On the other hand, the limited resources of rural areas force or PUSH the people to leave their homes. People in rural areas have large families to the point that the land is unable to meet their needs. Overgrazing and drought make the land they depend on for food unproductive, which

forces them to urban areas to fulfill their needs. Furthermore, they do not have access to latest technology and are dependent on primitive tools and methods, which contributes to low yield of crops per acre.

Following table shows the change of % ratio of urban population

Year	Population (millions)	Urban (% share)
1981	84.25	28.30
1998	132.35	32.52
2017	207.69	36.44
2023	241.49	38.82

Source: Government of Pakistan Finance Division.

Seasonal Migration

1 Transhumance

Pakistan has lofty mountains in the north, living conditions during winter become too difficult for the people to remain there. They move from these cold areas to surrounding low lying areas with their cattle. This type of seasonal migration is known as **Transhumance**.

2. Nomadism

Nomadic people with their cattle, move from one area to the another in search of food and water. This type of movement is known as Nomadism or subsistence Livestock farming, which is common in Dry areas of Punjab, Baluchistan and Sindh such as Thal, Kharan and Cholistan desserts.

They mostly keep sheep, goats, camel, and donkeys. These are their source of food and income. They sell meat and milk and donkeys and camels are used for transport.

3. Migration of people for harvesting season

People who have moved from rural areas to urban areas for small and low paid jobs move back to their villages to help out with harvesting, transporting and storing of crops. This way they can also take a share of the crops for their need and make supplementary income. For example, people help in cotton picking and transporting sugarcane to the factories.

Urbanisation

Urbanisation means town or city life. These are areas with large population and high density of population. The system is mostly based on non-agricultural or non-primary activities. Main occupation of the people is in a variety of secondary industries and various types of tertiary industries including services, trade and commerce. The services provide high paid jobs which result in agglomeration of population and high standard of living.

Problems caused by urbanisation

Urbanisation attracts more people to cities as they provide better quality of life. This is leading to various serious economic, social and political problems. These are as follows:

1. Lack of accommodation

Migrating people are unable to get standard houses. There is a great decline in living conditions. They live in slums or kachi Abadis which have poor standard of living, shortage of safe drinking water, electricity, and natural gas leading to many hazards.

2. Environmental issues

Sanitation facilities are not enough to meet the unprecedented growing urban population. This leads to untreated domestic and industrial waste, which causes water and land pollution, resulting in health hazards (Malaria, Dengue, Typhoid etc.). Large number of vehicles causes air pollution since they release smoke and increase carbon emissions. Furthermore, this leads to traffic jams and many drivers do not follow the traffic rules resulting in frequent accidents. Industrial estates form around major cities contribute to very dense air pollution, for example there is now heavy smog in Lahore

3. Degradation of resources

People migrating from rural areas mostly settle in unplanned houses in the outskirts of cities where there is a great shortage of basic facilities of education, health, transport, and electricity which effects the main city life as well, this also leads to unemployment.

4. Increase in crime rate

Crime rate increases due to unemployment as well as inter mixing of people from different areas based on their lifestyle and culture. The great economic difference between the people of the planned city and rural people settled in the outskirts of these cities create a great economic difference leading to crime.

Solution to the problems of urbanisations

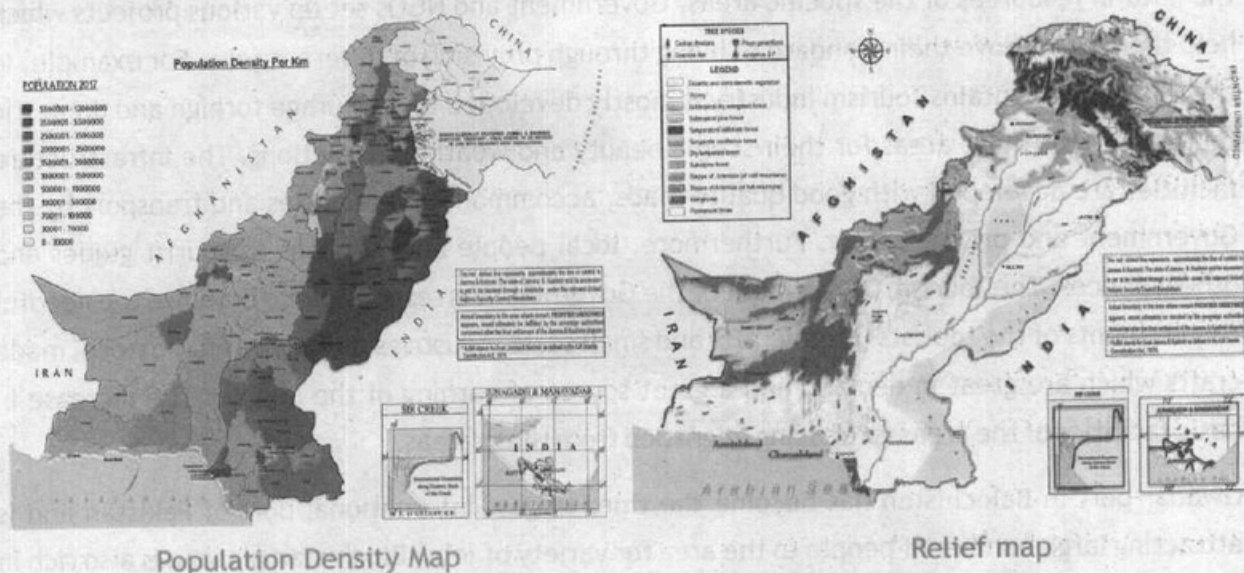
The transport systems need to be improved by developing better roads, overhead bridges and underpasses to reduce the distances between places. Metro service, Orange and Green line and Rapid bus transport system for urban centres are present to provide public transport. However, these facilities need to be further expanded to meet needs of growing population. This way the transport system will be cheaper and affordable and reduce the chances of a traffic jam occurring.

Awareness should be given to realise the conservation of electricity, gas and water. To maintain the sustainability and the importance of these resources.

Rural-Urban migration should be controlled by providing quality education, electricity, safe drinking water and encourage people to develop more small-scale industries in rural areas.

More housing schemes may be planned by private and public sector with better facilities for the people of different income groups. Government should also introduce more housing schemes at subsidised rates to accommodate more and more people according to their needs.

Population distribution according to climate, topography and agriculture



Pakistan has lofty mountains in the north. In these areas the temperature remains below freezing. Most of the year there is heavy snowfalls and frequent land slides which lead to low population. Examples of such areas are Karakoram, Himalayas and Hindukush mountains along with most of their valleys. People move to warmer areas due to lack of development and job opportunities. Kohat, Banu, Waziristan in KPK, Balochistan also has low population density due to the rugged terrain, low rainfall, poor transport links and lack of industrial development.

In contrast to this, Punjab and Sind provinces have higher densities of population due to flat and fertile land, moderate rainfall, reliable water from river Indus and its tributaries, lakes and canals. Human resources have contributed to urbanisation and expansion of cities. Karachi (Sindh) is the biggest city with a population density of 1500persons / sq.km followed by Lahore, Faisalabad, with 1000-1500persons/sq.km (Punjab). The cities have better transport, power

resources, housing schemes, education, health and recreational facilities. All these natural and human factors have attracted a large number of people to these big cities in search of better paid jobs.

The above maps can easily be compared how the density of population is being affected by the physical features of the country.

Population distribution and Physical, economic, social and political factors

Physical and Economic factors

Relief features of the country have a great influence on the population distribution. According to the natural resources of the specific areas, Government and NGOs set up various projects which help them to improve their standard of living through provision of different jobs. For example, In the Northern Mountains Tourism Industry is mostly developed to encourage foreign and domestic tourists to visit these areas for their scenic beauty and weather attractions. The infrastructure facilities are developed with good quality roads, accommodation facilities and transport by the Government and private sector. Furthermore, local people also get jobs as tourist guides and other services. The Tourism Department of the Government is responsible to organise the needful requirements of the tourists. Handicrafts and small scale industries provide variety of local made crafts which are great in demand and a great source of earning of the people. The increase in basic facilities of the areas is reducing migration from these areas.

Gwadar port in Balochistan has become the third largest international port of Pakistan and is attracting large number of people to the area for variety of jobs. Blochistan plateau is also rich in gold, copper, coal and variety of other minerals. Sandak gold and copper project is also attracting large number of people to the north west of Balochistan. There is a great possibility that population of Balochistan may increase with greater speed in future with better economic standards.

Thar Coal power project in Sindh has been developed to increase thermal power in the country. It is a great source of variety of jobs to the local people contributing better facilities of infrastructure and accommodation to the area. Similarly Physical facilities may be used for the development of various projects in the country, according to the needs of the people. This will improve economic progress automatically solving the distribution and density problems of the country. By this, the resources will become more sustainable for better future.

Social factors

Due to economic progress, the social needs of the people will also increase. They will get better education, healthcare, safe drinking water, better housing and recreational opportunities to increase the economic progress and better living standards of the people.

Political factors

A stable government plays a very important role for the welfare of the people. It implements planning and security to provide the future progress of the country. The various development projects will complete on time improving the problems of the people.

Sustainable Population Growth

Sustainable population means the size of population of a country, that can be easily supported by its economic resources at all times. It is achieved when development in resources is proportionate to population growth. Pakistan's population is increasing at a greater rate than its economic growth, many development plans are not meeting the demand of its population. There is an extra burden on food resources, land, energy resources transport system, education and health care facilities.

Pakistan is an agricultural country with most of its population living in rural areas practicing subsistence farming which is not meeting the needs of the growing population. In order to combat this issue the government should encourage the farmers for mechanization of agriculture or cash crop farming to increase yield per acre crops. Irrigation system should be improved to provide reliable source of water for cultivation of more areas under agriculture..

Government should also increase literacy ratio by introducing compulsory and free primary education. More technical and skill based institutions according to international standards maybe set up to provide quality education. Country needs more skillfull labour force to increase the ratio of secondary and tertiary activities. Government should encourage people to increase exports by finding more international markets. Population is increasing all over the world and in order to meet the demand of this growing population many developed countries have started mass production of goods. Pakistan should follow the same to improve its economy and to become self sufficient. Increasing population growth of the country is becoming a serious issue for its progress and development. Government should encourage the NGOs to contribute more for the economic and social progress of the country. Pakistan is blessed with variety of natural and human resources, if the economic and social issues are planned properly. The nation can easily overcome its difficulties and problems.

Exercise

1. Fill in the blanks with most appropriate answer.

- (i) According to the census of 2017, the density of population of Pakistan was -----
 - a) 287.93 people / sq. km.
 - b) 250.5 people /sq.km
 - b) 260.88 people /sq.km
 - d) 270.4people /sq. km
 - (ii) According to the census of 2017, the urban population of Pakistan was -----
 - a) 84.69 million
 - b) 75.67 million
 - b) 65.4 million
 - d) 90.00million
 - (iii) Karakoram mountains are in the ----- of Pakistan
 - a) West
 - b) East
 - c) North
 - d) South
 - (iv) Balochistan is a -----populated province of Pakistan
 - a) scarcely
 - b) densely
 - b) evenly
 - d) unevenly
 - (v) ----- is the capital of Punjab
 - a) Karachi
 - b) Peshawar
 - c) Quetta
 - d) Lahore
 - (vi) Transhumance is the migration of people -----
 - a) In the northern mountains
 - b) in the desert areas
 - d) In Indus plain
 - d) in the coastal areas
 - (vii) Most farmers in rural areas practice ----- farming.
 - a) commercial
 - b) subsistence
 - b) cash crop
 - c) poultry
- (B) Answer the following questions briefly.
- (I) Analyse causes of the difference of population density in different areas of Pakistan
 - (ii) How Push and Pull factor effect the rural- urban migration
 - (iii) Analyse why seasonal migration is important.
 - (iv) Describe different causes for the growth of population in Pakistan.

(v) Analyse why rural-Urban migration is harmful for the economy of the country

(vi) suggest measures to discourage rural-Urban migration

C) Answer the following questions in detail.

(i) Explain how population Pyramid is important to understand the growth rate of population in Pakistan.

(ii) Evaluate the importance of Demographic model for different stages of population growth.

(iii) Evaluate the possibilities of sustainable population in Pakistan.

(iv) Explain why urbanisation is important for Pakistan.

Class presentations

Class may be divided into two groups to discuss

(i) One group for Rural-Urban migration and other for Seasonal Migration

There can be a convincing debate between the two for better understanding.

(ii) Class may be divided into two groups,

Compare the presentation of population by population Pyramid and Demographic Transition Model for the study and analysis of population of a country for its future plans of development.

There can again a debate about the topic for better understanding and involvement of the whole class.

List more words and write their meaning that you find difficult in this chapter.

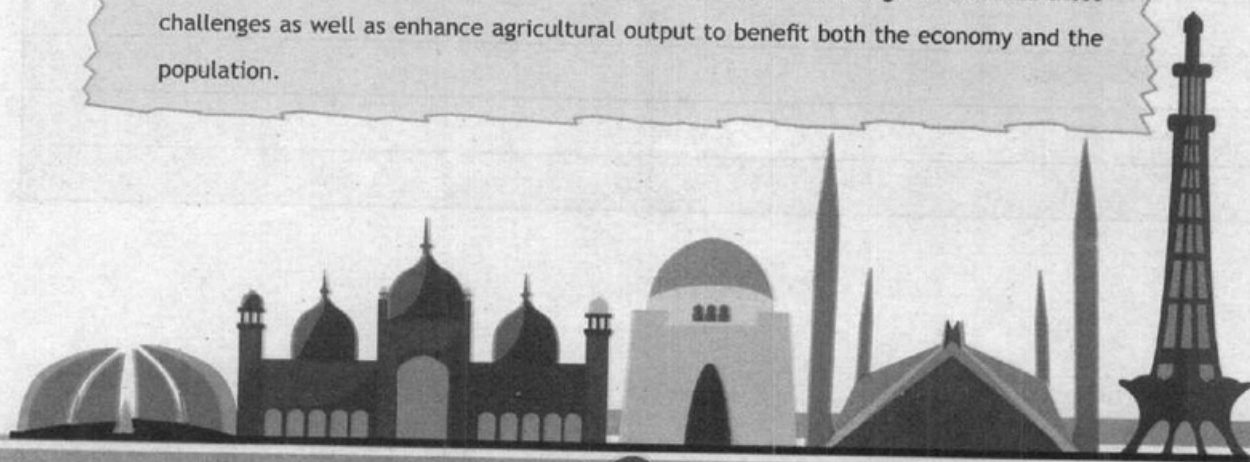
Section 3
Resources and Economic
Development of Pakistan

UNIT
08

AGRICULTURE, LIVESTOCK AND FISHERIES

In this unit the students will be able to:

- Demonstrate understanding of the different categories of agriculture recognizing agriculture as a complex system that involves various inputs, processes, and outputs.
- Demonstrate understanding of the major and minor food and cash crops cultivated in Pakistan, as well as their respective growing areas, and classify them based on their importance and economic significance to the country's agricultural sector.
- Evaluate agriculture's contributions to employment, processing industries, and exports in boosting the country's economy. Offer sustainable approaches to agricultural development, including organic farming.
- Identify challenges the agriculture sector is facing, including the threat of arable land being converted to housing societies and propose sustainable strategies to address these challenges as well as enhance agricultural output to benefit both the economy and the population.



Introduction

Pakistan is an agricultural country and agriculture is the main source of food production for the country's ever-increasing population. Agriculture is the cultivation of land for the production of crops and the raising of animals. It is a primary industry, meaning that it extracts raw materials from the earth. Agricultural raw materials can be processed in industry or consumed directly.

How Agriculture works As a System

Agriculture can be viewed as a system of inputs, processes, and outputs. The inputs are the resources that are used to produce agricultural products.

i. Inputs

The inputs can be divided into two main categories:

Natural (Physical): Land and other abiotic elements including soil, water and climate are essential for agriculture, as it is used to grow crops and raise livestock.

Human (Economic): Human resources include skilled and semi-skilled labour, machinery, investment, seeds, fertilizers, pesticides, machinery etc. These inputs are used to improve the productivity and efficiency of agricultural production.

ii. Processes:

The inputs regulate the type of processes required on the farm. The Processes are the activities to convert inputs into outputs. These processes can be divided into two main categories:

- **Crop production:** Crop production processes include planting, weeding, irrigating, and harvesting.
- **Livestock production:** Livestock production processes include feeding, breeding, and caring for animals.

iii. Outputs:

Outputs are the products that are produced by the agricultural system. The outputs of livestock production (livestock and dairy products) can be used as inputs to the food system or to other industries, such as the leather industry. These outputs can be divided into two main categories i.e food products and non-food products.

The diagram shows agriculture as system in Pakistan

Inputs	Processes	Outputs
Natural / Physical land, water, air, sunlight, soil, minerals	- Planting - Weeding - Irrigating - Threshing - harvesting - feeding - Breeding - caring for animals - Milking	Crops and non-food products - Cotton - Wheat - Rice - Wool - Vegetables - Fruits - flowers - biofuels
Human labor, capital, machinery, seeds, fertilizers, pesticides, water		Livestock, dairy products - Milk - Meat - Eggs
Reinvested profit back into the farm for new investment, equipment, land or livestock		

There are three main types of farming practiced in Pakistan.

A. Small-scale subsistence farming.

Pakistan is a land of subsistence farmers. Subsistence farming is based on growing crops and rearing of animals mainly for the farmer use. If there is surplus, it is sold for profit. 90% of farmers in Pakistan are small-scale subsistence farmers. This means that they own less than 12.5 acres of land. They



account for 42% of the country's workforce and contribute about 19% to the country's GDP. The subsistence farmers produce about 60% of Pakistan's agricultural output which play a vital role in Pakistan's food security. Subsistence farmers produce most of the country's basic food crops, such as wheat, rice, and maize.

Subsistence farmers in Pakistan use traditional methods of cultivation, relying on manual labor for sowing, weeding, harvesting, and threshing. Animals are used instead of machines to pull wooden ploughs and carts, and to help with threshing.

Small-scale subsistence farming in Pakistan is a labor-intensive activity therefore women and

children are also involved in the farming processes including caring for the animals. They prepare feed for animals by chopping fodder, mixing different types of feed, and delivering the feed to the animals, milking buffaloes, cows and goats, collecting eggs, raise chickens, cleaning animal and helping with harvest.

B. Cash crop farming.

It is commercial farming in which the farm output is sold to make a profit including crops and animals. Cash crop farming is the cultivation of crops that are grown primarily for sale and profit, rather than for consumption by the farmer or their family. Cash crops are typically grown on a large scale and are often exported to other countries. Some examples of cash crops include cotton, sugarcane, wheat, rice, corn, coffee, tobacco, cocoa, soybeans, oilseeds, fruits and vegetables.

Cash crop farms typically employ a mix of skilled and unskilled labor. Skilled labor is often needed for operating machinery, applying pesticides and herbicides, and maintaining the farm's infrastructure. Unskilled labor is often used for tasks such as planting, weeding, and harvesting.

Pakistan has two cropping seasons namely: Kharif (summer April to October) and Rabi (winter October -April). Winters in the lowlands are warm enough for temperate crops to grow, such as



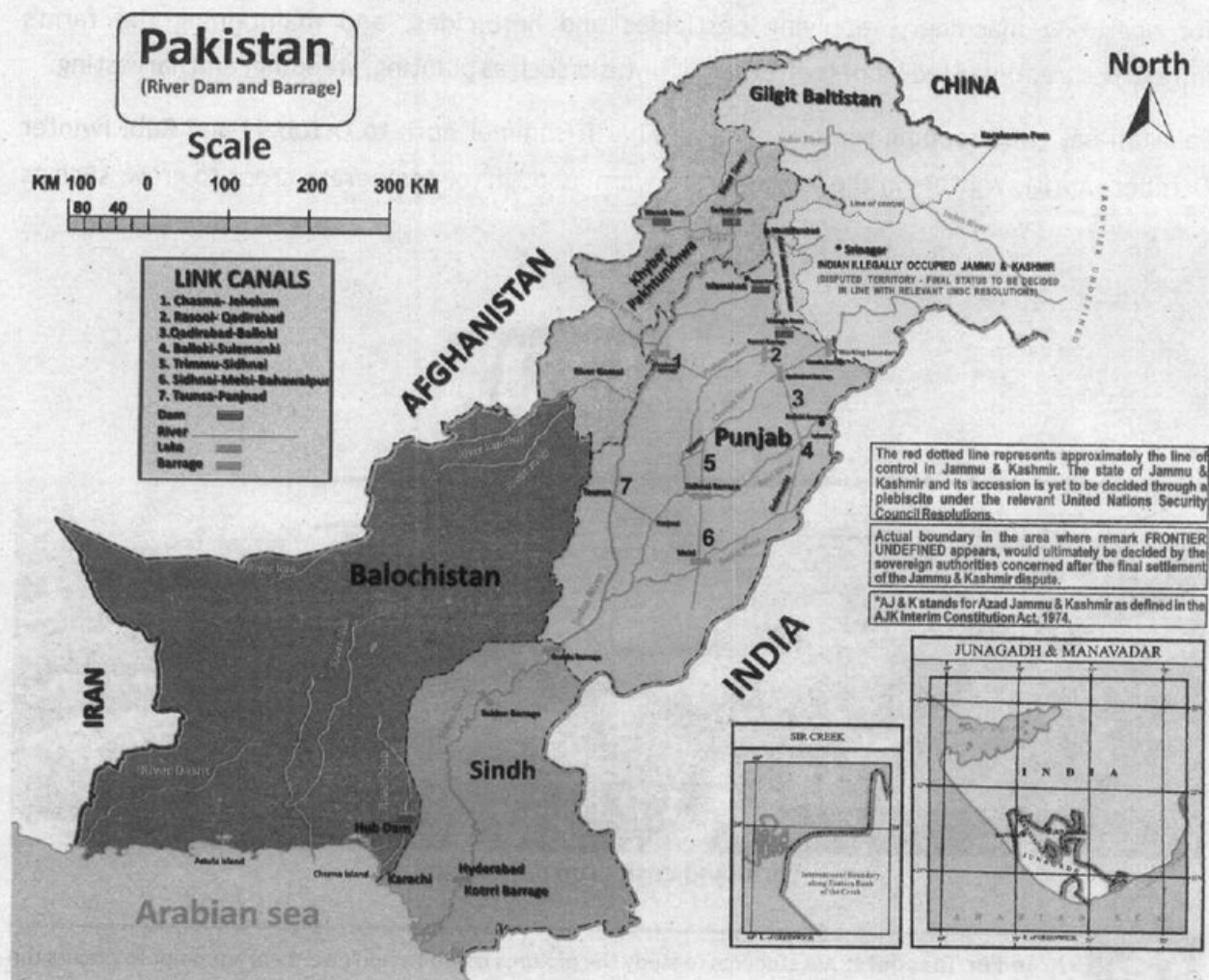
Farmland cash crop cultivation



Note For Teachers: Ask students to study the pictures carefully and give them a prompt to discuss the following: What features in the pictures suggest that this is a Large-scale subsistence farm?

wheat and rape seed, which are summer crops in the UK and other northwestern European countries. Pakistan's summer crops, such as cotton and rice, require high temperatures, like those in the tropics.

Water supply is a big problem for cash crop farming in Pakistan. Farmers can only grow crops in both seasons if they have enough irrigation water. Numerous dams (large and small) and barrages have been built to divert and store water from rivers that originate in the Himalayas. The two largest storage dams are Tarbela on the Indus and Mangla on the Jhelum. These dams supply water to large link canals, which in turn feed water into many smaller canals that crisscross Punjab and Sindh plains. Large barrages across the Indus in the south, such as Sukkur, are supplied with water from the Tarbela Dam in winter when river flow is low. Tube wells are also used to pump water from the ground for irrigation, especially in areas where canal irrigation is not available or adequate. The map shows some details about dams, barrages and link canals in Pakistan.



Important Crops

I. Cotton

Cotton is a vital crop for both the agricultural and textile sectors of the economy. It accounts for around 0.6 percent of GDP and 3.1 percent of the value added in agriculture. Cotton is an export-oriented raw material for the textile industry, and it plays a significant role in Pakistan's foreign exchange earnings.

Geographical Requirement:

Rainfall: Cotton requires moderate rainfall. However, cotton can be grown in areas with less rainfall if irrigation is available.

Temperature: Cotton is a warm-season crop and requires temperatures between 25°C and 35°C for optimal growth. Temperatures below 20°C can stunt plant growth, and temperatures above 40°C can reduce yields.

Irrigation: Cotton is a drought-tolerant crop, but irrigation is often necessary to achieve high yields. Irrigation is especially important in areas with low rainfall or during droughts.

Soil Type: Soil type for cotton is a well-drained, loamy soil with a pH between 6.0 and 7.5.

Cotton Picking

Problems of Cotton Crop

Pakistan, a major cotton producer, is experiencing a significant decline in production due to multiple challenges, including:

- i. **Economic:** Cotton is no longer as profitable as other crops such as maize, paddy, and sugarcane.
- ii. **Biotic stresses:** White fly and pink bollworm infestations are damaging crops. Leave curl virus also attacks the crop with irreversible effects.
- iii. **Abiotic stresses:** Climate change, heat stress, and extreme rainfalls are also impacting the production.
- iv. **Poor agricultural practices:** Unsustainable farming practices such as poor soil management and excessive pesticide use are also contributing to the decline.
- v. **High input costs:** Fertilizers, pesticides, and seeds are expensive, making it difficult for farmers to turn a profit.
- vi. **Limited research and development:** There is a shortage of early generation seeds, and research on new varieties that can withstand pests, diseases, and climatic stresses is inadequate.

Revival of Cotton Production

To revive cotton production in Pakistan, the following measures are essential:

- i. Set a minimum indicative or intervention price for cotton. This will ensure that farmers receive a fair price for their crops, even when market prices are low.
- ii. Issue subsidies to farmers in a timely manner. This will help to reduce the cost of inputs such as seeds, fertilizers, and pesticides.
- iii. Improve extension services to educate farmers about best practices i.e use of HYVs, awareness about irrigation needs and soil management. This will help farmers to improve their yields and reduce their costs.
- iv. Develop and distribute genetically modified (GM) cotton seeds that are resistant to pests and diseases. This will help to reduce crop losses and improve yields.
- v. Issue subsidies for pesticides, seeds, and fertilizers through Kissan cards. This will make it easier for farmers to access the inputs they need at an affordable price. Loan may be granted on easy terms and conditions.

Wheat

Wheat is Pakistan's main staple crop and, therefore, essential for the food security of the country. It accounts for 9.2 % of the value added in agriculture and 1.8 % of the GDP. Self-sufficiency in wheat has been a core objective of every government. Wheat crop recorded historic high production of 27.293 million tonnes showing an increase of 8.1 percent over 25.248 million tonnes production of 2020. This was primarily due to the increase in cultivated area. Significant high yielding wheat varieties include Maxi Pak, MH-21 etc. By using high-yielding wheat varieties, farmers can increase their yields and profits.

Geographical Requirements

Wheat is a relatively adaptable crop and can be grown in a variety of geographical conditions.

Soil type: Wheat prefers well-drained, loamy soils with a pH between 6.0 and 7.5.

Rainfall: Wheat requires moderate rainfall. However, wheat can be grown in areas with less rainfall if irrigation is available.

Temperature: Wheat is a cool-season crop and requires temperatures between 10 and 20 degrees Celsius for optimal growth. Temperatures above 30 degrees Celsius can stress the crop and reduce yields.

Irrigation: Wheat can be grown in rainfed conditions, but irrigation is often necessary to achieve high yields. Irrigation is especially important in areas with low rainfall or during droughts.



Wheat

Wheat Production areas

During 2020-21, area under cultivation increased by 4.2 percent to 9,178 thousand hectares over last year's sown area of 8,805 thousand hectares. Wheat is Pakistan's main staple crop, and it is essential for the country's food security. Punjab is the largest wheat producing province in Pakistan, accounting for over 70% of the country's total wheat production. Other major wheat producing provinces include Sindh, Khyber Pakhtunkhwa, and Baluchistan. Major Wheat growing areas include:

- Punjab: Faisalabad, Toba Tek Singh, Jhang, and Chakwal
- Sindh: Jacobabad, Larkana, and Shikarpur
- Khyber Pakhtunkhwa: Mardan, Nowshera, and Swabi
- Balochistan: Quetta, Pishin, and Zhob

Sugar Cane

Sugarcane is a valuable cash crop in Pakistan, accounting for 3.4% of agriculture's value addition and 0.7% of GDP. In 2020-21, the area under sugarcane cultivation increased by 12% to 1,165 thousand hectares, and production increased by 22% to 81.009 million tonnes. This was due to favorable weather conditions, better management, timely availability of inputs, and higher economic returns.

Geographical Requirements

Temperature: Sugarcane requires a temperature range of 20°C to 30°C for optimal growth. Temperatures below 20°C can stunt plant growth, and temperatures above 40°C can reduce yields.

Rainfall: Sugarcane requires moderate rainfall, ranging from 100 to 1520 mm. However, sugarcane can be grown in areas with less rainfall if irrigation is available.

Soil type: Sugarcane prefers well-drained, loamy soils with a pH of 6.5 to 7.5. Clay soils can be too heavy and poorly draining for sugarcane, while sandy soils may not retain enough moisture.

Method of Cultivation

To cultivate sugarcane, the soil is prepared by tilling it to a depth of at least 30 cm. Organic matter should then be added to the soil to improve drainage and fertility. Sugarcane stalk is cut to 30-45 cm long and the cuttings are planted in furrows that are 10-15 cm deep and 75-100 cm apart. Sugarcane requires regular irrigation and requires regular fertilization especially potash. It is important to keep the sugarcane field free of weeds, as they compete with the sugarcane for water and nutrients.



Sugarcane growing regions

Punjab is the largest sugarcane producing province in Pakistan, accounting for over 60% of the country's total sugarcane production. The major sugarcane growing districts in Punjab include Faisalabad, Toba Tek Singh, Jhang. Sindh is the second largest sugarcane producing province in Pakistan, accounting for around 25% of the country's total sugarcane production. The major sugarcane growing districts in Sindh include Jacobabad, Larkana, and Shikarpur. Khyber Pakhtunkhwa is the third largest sugarcane producing province in Pakistan, accounting for around 10% of the country's total sugarcane production. The major sugarcane growing districts in Khyber Pakhtunkhwa include Mardan, Nowshera, and Swabi.

Rice

Rice is a major food and cash crop in Pakistan. It is the second most important staple food crop after wheat and the second most export commodity after cotton. Rice contributes 3.5% of value added in agriculture and 0.7% of GDP. Rice production is divided into two categories:

- **Basmati (fine)**
- **Coarse**

The production of coarse types has been increasing in recent years. In 2020-21, rice was cultivated on 3,335 thousand hectares, 9.9% more than the previous year.



Geographical Requirements

Temperature: Rice requires a temperature range of 20°C to 35°C for optimal growth. Temperatures below 20 °C can stunt plant growth, and temperatures above 40 °C can reduce yields.

Rainfall: Rice requires moderate to high rainfall, ranging from 1270mm - 2000mm. However, rice can be grown in areas with less rainfall if irrigation is available.

Soil type: Rice prefers well-drained, loamy soils with a pH of 6.5 to 7.5. Clay soils can be too heavy and poorly draining for rice, while sandy soils may not retain enough moisture.

Method of Cultivation

The soil is tilled and levelled to prepare the seedbed. Rice seeds are sown in the seedbed. Seedlings are transplanted to the main field when they are 3-4 weeks old. Rice requires regular irrigation, especially during the first few months after transplanting. A balanced fertilizer should be applied every 4-6 weeks. It is also important to keep the rice field free of weeds. Weeds compete with the rice for water and nutrients, and they can also harbour pests and diseases. Rice is typically harvested 3-4 months after transplanting. The crop is harvested by hand or by machine. The harvested rice is then threshed to remove the grains from the stalks.

Areas of Cultivation

Punjab is the largest rice producing province in Pakistan, accounting for over 70% of the country's total rice production. The major rice growing districts in Punjab include Faisalabad, Sheikhupura, Gujranwala, Hafizabad, Sialkot, and Narowal. Sindh is the second largest rice producing province in Pakistan, accounting for around 20% of the country's total rice production. The major rice growing districts in Sindh include Jacobabad, Larkana, and Shikarpur. Khyber Pakhtunkhwa is the third largest rice producing province in Pakistan, accounting for around 10% of the country's total rice production. The major rice growing districts in Khyber Pakhtunkhwa include Mardan, Nowshera, and Swabi. In Balochistan very small amount of rice is cultivated.

Problems of Rice Crop

- Rice is susceptible to a number of pests and diseases, such as rice stem borers, brown plant hoppers, and blast disease.
- Rice is also susceptible to abiotic stresses, such as drought, salinity, and flooding.
- Weeds compete with rice for water and nutrients, and they can also harbor pests and diseases.
- Rice is a heavy feeder and requires regular fertilization. Nutrient deficiencies can lead to reduced yields and poor grain quality.

Management Strategies:

Pests and diseases control: Pests and diseases can be managed through a combination of cultural practices, biological control, and chemical pesticides. Cultural practices, such as crop rotation can help to maintain soil fertility. Biological control involves the use of various biological organisms to control pests. Chemical pesticides should only be used as a last resort.

Laser leveling: Laser leveling is a land preparation technique that uses lasers to create a level surface. This can help to improve water distribution and reduce water waste.

Alternate wetting and drying (AWD): AWD is a water management practice in which rice fields are alternately flooded and drained. This can help to reduce water consumption without sacrificing yield.

Nutrient deficiencies: Nutrient deficiencies can be managed through regular fertilization. A balanced fertilizer should be applied every 4-6 weeks

Maize

Maize is the third important cereal crop of Pakistan after wheat and rice. It contributes 3.4 percent to the value added in agriculture and 0.6 percent to GDP. Maize is cultivated as a multipurpose crop for food particularly in manufacturing of corn flour, and custard powder, feed and fodder for animals and poultry. While human consumption is declining, its utilization in feed and wet milling industry is growing at a fast pace. During 2020-21, maize was



Maize crop

cultivated on an area of 1,418 thousand hectares reflecting an increase of 1.0 percent over last year's 1,404 thousand hectares. The production increase was largely due to increase in area, availability of improved variety of seed, and better economic returns. Geographical requirement includes 35°C temperature with rainfall between 50-500 mm. It can be grown effectively on porous soil.

Tobacco

Tobacco is grown in Pakistan on around 0.25 percent of irrigated land. The major tobacco growing areas are in the Khyber Pakhtunkhwa province, specifically in the districts of Swabi, Mardan, Nowshera, and Charsadda. These districts produce over 90% of the country's Flue Cured Virginia (FCV) tobacco.

Method of cultivation:

Transplanting: Seedlings are grown in seedbeds and then transplanted to the main field.

Direct sowing: Seeds are sown directly in the main field.

Tobacco is a labour-intensive crop, and it requires regular attention and care. Farmers weed the fields, water the plants, and apply fertilizer. They harvest the tobacco leaves at the right time and cure them properly.

Do You Know?

Tobacco is a ratoon crop. Ratoon crop is a second crop that is grown from the roots of the previous crop.



Tobacco field

Other Crops

Gram, Bajra, and Jowar production decreased in 2020-21 due to smaller areas under cultivation and unfavorable weather conditions. Barley, Rapeseed & Mustard, and Tobacco production remained the same as the previous year. The production of Barley, Rapeseed & Mustard and Tobacco remained at low production level.

In 2020-21, production of pulses including Moong, Mash, and Potato increased significantly, while production of Chillies and Onion decreased slightly. Masoor production remained the same. Pakistan imported 2.917 million tonnes of edible oil in 2021, while local production was 0.374 million tonnes.

Fruit farming

Fruit farming is a significant part of Pakistan's economy by providing employment and generating foreign exchange earnings. Pakistan is the fifth largest producer of fruits in the world, Pakistan produces a wide variety of fruits, including apples, mangoes, citrus fruits, bananas, grapes, guavas, dates, and peaches.



Fruit Farming in Pakistan

Fruit farming is practiced in all four provinces of Pakistan, but the major fruit growing regions are in Punjab, Sindh, and Khyber Pakhtunkhwa. Punjab is the largest fruit producing province in Pakistan as it accounts for over 60% of the country's total fruit production. The major fruit growing districts in Punjab include Multan, Faisalabad, Toba Tek Singh, and Sargodha. Sindh is the second largest fruit producing province in Pakistan that accounts for around 25% of the country's total fruit production. The major fruit growing districts in Sindh include Jacobabad, Larkana, and Shikarpur. Khyber Pakhtunkhwa is the third largest fruit producing province in Pakistan, accounting for around 10% of the country's total fruit production. The major fruit growing districts in Khyber Pakhtunkhwa include Mardan, Nowshera, and Swabi. Hunza and Swat are known for apples and apricots. In Balochistan, varieties of apples, dates, apricots and grapes are produced. Pakistan is also a major producer of dry fruits, such as almonds, walnuts and raisins.

Government Support Schemes for Fruit Farmers

The government is providing subsidies to farmers for purchasing fruit plants and fertilizers. The government is also providing training to farmers on modern fruit farming practices. National Program for the Development of Horticulture (NPDH): The NPDH provides subsidies to farmers for the purchase of fruit plants and other agricultural inputs. It also provides training to farmers on modern fruit farming practices such as, cold storage for fruits protection and preventing harvest loss, pest and disease management, irrigation, fertilization, and harvesting.

Contribution of Agriculture to employment sector

Agriculture is essential to Pakistan's economy, food security, and employment. It contributes 19.2% to GDP and employs 38.5% of the labor force. Over 65% of the population relies on agriculture for livelihood. However, agricultural growth has been slow due to shrinking arable land, climate change, water shortages, and rural-to-urban migration. Increasing agricultural productivity requires new approaches. Agriculture can play a vital role in spurring economic growth, but it faces challenges such as climate change, water shortage, and rising input prices.

C. Livestock farming

Livestock farming is the raising and management of domesticated animals for the production of meat, milk, eggs, and other animal products. It is one of the oldest and most important forms of agriculture, and it is a significant contributor to the country's economy, accounting for around 11% of GDP. The sector also plays an important role in food security, providing a source of high-quality protein. Livestock farming can be divided into three main types: nomadic, settled, and transhumance. The details of each type will be discussed next.

Nomadic

Nomadic livestock farming is a traditional form of livestock farming in which herders move their animals from place to place in search of pasture and water. Nomadic livestock farming is typically practiced in arid and semi-arid regions, where there is limited availability of resources. Nomadic livestock farming is practiced by the Baloch and Pashtun tribes in the Balochistan and Khyber Pakhtunkhwa provinces of Pakistan. The main types of livestock raised by nomadic farmers are sheep and goats.

Settled

Settled livestock farming is a type of livestock farming in which animals are kept in permanent enclosures. Settled livestock farming is typically practiced in areas with more abundant resources, such as arable land and water. Settled livestock farming is practiced throughout Pakistan, but it is particularly concentrated in the Punjab and Sindh provinces. The main types of livestock raised by settled farmers are cattle, buffaloes, goats, and poultry.

Type of Livestock	Areas	Cities
Cattle, Buffaloes	Punjab, Sindh	Lahore, Karachi, Faisalabad
Sheep	Balochistan, Khyber Pakhtunkhwa, Kashmir	Quetta, Peshawar, Muzaffarabad
Goats	Balochistan, Khyber Pakhtunkhwa, Kashmir, Punjab, Sindh	Quetta, Peshawar, Muzaffarabad, Lahore, Karachi
Poultry	Punjab, Sindh	Lahore, Karachi, Faisalabad



Nomadic Livestock

Transhumance

Transhumance livestock farming is a type of livestock farming in which herders move their animals between different pastures seasonally. Transhumance livestock farming is typically practiced in mountainous regions, where there is a seasonal variation in the availability of pasture. Transhumance livestock farming is practiced by the



Gujjar and Bakarwal tribes in the Kashmir region of Pakistan. The main types of livestock raised by transhumance farmers are sheep and goats.

Do You Know?

What are the sustainable approaches to agricultural development?

There are a number of different organic farming methods that can be used as sustainable approaches to agriculture in Pakistan. Some of the most common methods include:

- 1) **Crop rotation:** Planting different crops in the same field in sequence. This helps to improve soil fertility and reduce the risk of pests and diseases. One patch of land is left to rest called fallow land.
- 2) **Intercropping:** Planting two or more different crops in the same field at the same time to improve soil fertility and reduce weed competition.
- 3) **Cover cropping:** Planting crops that cover the soil surface. This prevents soil erosion.
- 4) **Composting:** Composting is making of compost from a variety of materials, such as plant residues, manure, and food scraps.
- 5) **Biological pest control:** It is the use of natural predators and parasites to control pests. For example, ladybugs can be used to control aphids, and lacewings can be used to control whiteflies.
- 6) **Farmland must not be converted into housing schemes.** More water schemes may be helpful in sustaining agricultural activities.

Organic farming can be practiced on a variety of scales, from small backyard gardens to large commercial farms. In Pakistan, organic farming is most commonly practiced by small-scale farmers.

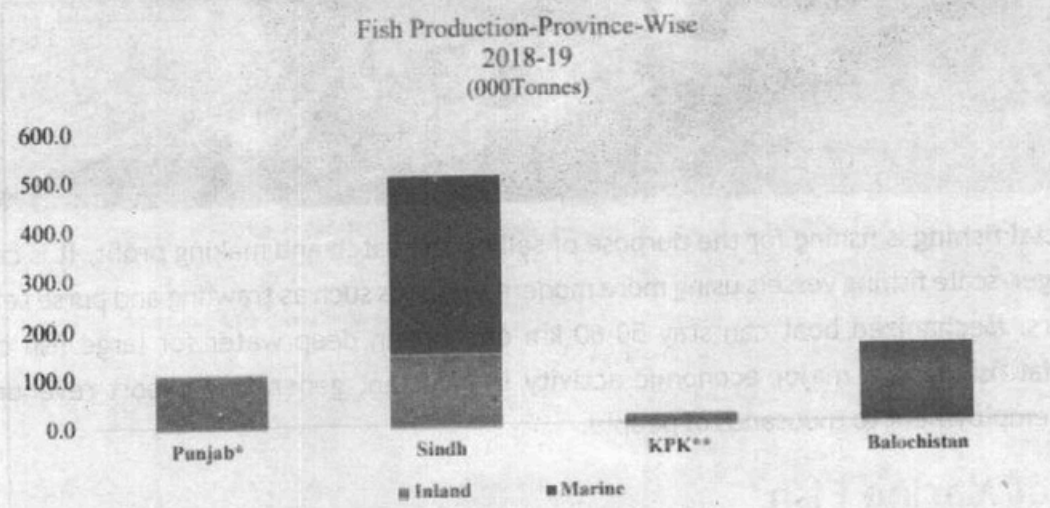
Fisheries in Pakistan

The fisheries, a subsector of agriculture in Pakistan, is concerned with the harvesting and processing of aquatic resources, such as fish, shellfish, and crustaceans. It is a major contributor to the country's economy, providing food security, employment, and export revenue. Fisheries account for 1.6% of total exports in 2020. The major importing countries for Pakistani fisheries are Thailand, China, Vietnam, the UAE, South Korea, Malaysia, Kuwait, Japan, Saudi Arabia, and Indonesia. During the Covid pandemic, the import of fish declined significantly from 22 million in 2017 to 6 million in 2020.

Fish Production in Pakistan

Fisheries are divided into three main types: inland fisheries, marine fisheries, and aquaculture.

The graphic representation of fish production province-wise shows the total fish production in thousand tonnes for the year 2018-19. Punjab and Khyber Pakhtunkhwa (KPK) only have inland fisheries, while Balochistan has marine fisheries and Sindh has both inland and marine fisheries. The fish production data for Punjab includes fish production from Mangla Dam, and the fish production data for KPK includes fish production from Gilgit-Baltistan.



Source: Ministry of Food and Security

Marine Fishing

Pakistan's 1,050-kilometer coastline along the Arabian Sea is home to two major fishing centers: Sindh and Makran. These coasts have rich marine fishing grounds that contribute about 64% of the country's total fish production, compared to 36% from inland fisheries. Karachi and Korangi are the main fishing ports of Sindh, while Makran has smaller ports such as Sonmiani, Jiwani, and Ormara. Gwadar port is also being developed as a modern fishing center with a state-of-the-art fish curing yard, ice factory, and refrigeration plant.

Types of Marine Fishing

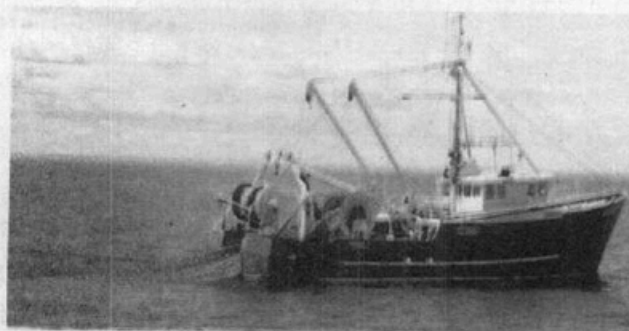
Subsistence fishing: is fishing for the purpose of consumption of the farmer and his family as fish is the main component of their diet. It is carried out by small-scale fishermen using traditional methods such as handlines, nets, and traps. Traditional boats can stay only up to 5km away from the coast. Subsistence fishing catch is less in amount therefore alternative sources of income are generated by the subsistence fishermen such as making fish feed, fish net and boat repairs etc.



Commercial fishing is fishing for the purpose of selling the catch and making profit. It is carried out by larger-scale fishing vessels using more modern methods such as trawling and purse seining, gill netters. Mechanized boat can stay 50-60 km offshore in deep water for large fish catch. Commercial fishing is a major economic activity in Pakistan, generating export revenue and providing employment to thousands of people.

Types of Marine Fish

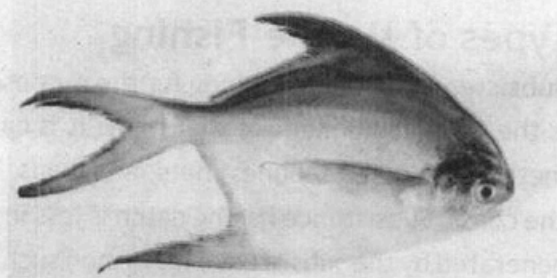
Sharks	Drums	Mackerel
croakers	Demersal	Catfish



Sustainable Development of Marine Fisheries

Set catch limits: The government can set catch limits for different fish species based on scientific assessments of sustainable yields. This will help to prevent overfishing and ensure that fish populations have a chance to recover.

Close fishing grounds during spawning seasons: Spawning seasons are critical for fish reproduction. By closing fishing grounds during spawning seasons, the government can help to protect fish stocks and ensure that future generations of fish can thrive.



White Pomfret (marine specie)

Ban the use of destructive fishing equipment: Destructive fishing equipment such as dynamite and bottom trawls can damage fish habitats and kill the fish indiscriminately. The government can ban the use of destructive fishing gear to protect fish stocks and the marine ecosystem.

Inland fisheries:

Inland fisheries in Pakistan employ a variety of fishing methods, including cast netting, gill netting, trawling, hook and line fishing, and spearfishing, to harvest fish and shellfish from freshwater lakes, rivers, reservoirs, and abandoned channels of canals and rivers. The most common fish species caught in inland fisheries are carp, catfish, and perch, Palla, Thalla, Rahu and Trout.

According to the Food and Agriculture Organization of the United Nations (FAO), inland fisheries in Pakistan employed over 211,609 people in 2014, representing a significant portion of the total employment in the Pakistani fisheries sector. Inland fishing is an important source of employment in rural areas of Pakistan, providing a livelihood for many people who may not have other job opportunities. It also plays a role in reducing poverty and improving food security.

Sustainable Development of Inland Fisheries

The Pakistani government is working to promote the sustainable development of inland fisheries through measures such as stocking fish populations, regulating fishing practices, and protecting fish habitat.

Aquaculture/ Fish farm:

Aquaculture is the farming of fish and shellfish in controlled environments. Aquaculture fisheries are becoming increasingly important as the demand for seafood grows. Fish farms need a reliable supply of clean water. This water is used to fill the ponds and to maintain the water quality in the ponds. Fish feed is purchased from commercial suppliers or

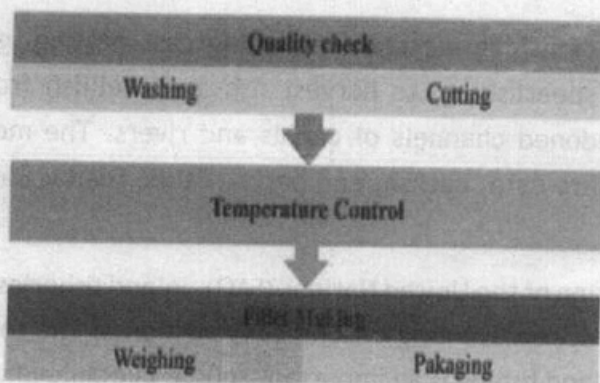


Trout Fish Farm

produced on-farm. Fish farms typically use a variety of equipment, such as pumps, aerators, and feeders. This equipment is used to maintain the water quality in the ponds, feed the fish, and monitor their growth and health. Trees are planted to maintain the air quality and oxygen level. The main fishing centres are Haleji in Thatta, Manchar lake in Dadu district, the river Indus at Kotri, Sukker, reservoirs of Tarbela and Mangla dam.

Types of farm Fish.

Almost all the inland types of fish are reared at the farm including Palla, Thalla, Rahu, Murrel, Grass carp, silver carp and Trout.



Do You Know?

Machineries used for Fish Processing

Machineries Fish Meat Separator

Individual Quick-Freezing Machine (IQF)

Icing Machine

Metal Detector Machine

Contact Plate

Freezer Machine for Chilling

To make value-added seafood products, a specific process is followed, depending on the type of fish. The diagram shows the detailed processing of surimi and cuttlefish only.

Problems of the fishing Industry

There are 4 of the major problems of the fish industry in Pakistan:

Overfishing: Overfishing is the biggest threat to the sustainable development of the fish industry. It is caused by high demand for fish, inadequate fishing regulations, and illegal fishing.

Pollution: Water pollution from industrial and agricultural waste contaminate fish stocks and make them unsafe for human consumption.

Climate change: Climate change is causing sea levels to rise and water temperatures to increase. This is disrupting fish habitats and making it more difficult for fish to reproduce.

Lack of infrastructure and technology: The fish industry lacks modern infrastructure and technology. This makes it difficult for fishermen to catch and process fish efficiently.

Government efforts to develop fisheries

- **Curtailling overfishing:** The government is working to reduce overfishing through a number of measures, including setting catch limits, closing fishing grounds during spawning seasons, and banning the use of destructive fishing gear.
- **Fighting pollution:** The government is working to combat water pollution through a number of measures, including investing in wastewater treatment plants, regulating industrial and

agricultural runoff, and raising awareness of the importance of clean water.

- **Adapting to climate change:** The government is working to adapt to climate change by investing in coastal infrastructure, developing new fishing methods, and helping fishermen to diversify their livelihoods.
- **Improving infrastructure and technology:** The government is working to improve infrastructure and technology in the fish industry by investing in fishing harbors, processing facilities, and cold storage facilities. The government is also providing training and support to fishermen on the use of modern fishing methods and technologies.

What I have Learned

- ✓ Agriculture sector is facing the problems of water scarcity, climate change, and land degradation.
- ✓ Agriculture provides food for a growing population and helps to lift people out of poverty.
- ✓ Kharif crops are grown during the monsoon season i.e., June to September in Pakistan.
- ✓ Rabi crops are sown in October and November and harvested in February and March. They provide food during winters.
- ✓ Agriculture as a system is a complex web of inputs, processes and outputs that work together to produce food and other agricultural products.
- ✓ Pakistan has a long coastline and a number of inland water bodies, which provide abundant fishing resources. The fishing sector employs over 2 million people in Pakistan, and contributes about 1% to the country's GDP.

Exercise

Answer the following questions by choosing the best answer A, B, C or D.

1. Fisheries export in Pakistan in 2020 account for:
A. 5% B. 2.3% C. 1.6% D. 0.6%
2. What is one of the biggest challenges facing the fishing sector in Pakistan?
A. Overfishing B. Illegal fishing C. Pollution D. All of the above
3. What is the most cultivated cash crop in Pakistan?
A. Wheat B. Rice C. Cotton D. Sugarcane

4. What are three of the benefits of cash farming in Pakistan?
- It provides income for farmers
 - It helps to meet the country's food needs
 - It creates jobs in the agricultural sector
 - It is for famer and his family use
5. Which of the following is a method of cultivation of rice?
- Broadcasting
 - Transplanting
 - Both A and B
 - None of the above
6. Which of the following is a method of cultivation of sugarcane?
- stalk cutting
 - Transplanting
 - Trench planting
 - None of the above
7. Which of the following is a key difference between nomadic and transhumance herding?
- Nomadic herders move in search of water and pasture, while transhumant herders follow a regular seasonal migration pattern.
 - Nomadic herders typically have permanent homes, while transhumant herders do not.
 - Nomadic herders raise a variety of livestock, while transhumant herders typically specialize in one or two types of livestock.
 - Nomadic herding is practiced in all parts of the world, while transhumance is only practiced in certain regions.
8. What is one of the benefits of nomadic and transhumance herding?
- It allows herders to access a wider range of grazing resources.
 - It helps to reduce the risk of overgrazing in any one area.
 - It allows herders to avoid conflict with other herders or farmers.
 - All of the above
9. Which of the following is a difference between inland fish farming and aquaculture farming?
- Inland fish farming is practiced in freshwater bodies, while aquaculture farming can be practiced in both freshwater and saltwater bodies.
 - Inland fish farming typically involves smaller-scale operations, while aquaculture farming can involve both small-scale and large-scale operations.
 - Inland fish farming is typically practiced in developing countries, while aquaculture

farming is typically practiced in developed countries.

D. Inland fish farming is a newer practice, while aquaculture farming has been practiced for centuries.

10. Which of the following is a similarity between inland fish farming and aquaculture farming?

A. Both practices involve the farming of aquatic organisms.

B. Both practices can be used to produce food for human consumption.

C. Both practices can provide income and employment opportunities for people.

D. All of the above.

Answer the following questions briefly

1. How do the inputs, processes and outputs on a cash crop farm are different from a small-scale subsistence farm?
2. Identify fishing ports of Sindh and Makran coast.
3. Describe the appearance of rice and wheat crop.
4. How are the temperature, rainfall and soil conditions of sugar cane differ from cotton crop.
5. Explain three major problems common to all cash crops which hinder the growth.
6. Suggest approaches to sustainable agriculture in Pakistan.
7. Compare the contribution to employment sector of the following:
 - i. Cotton and Rice
 - ii. Fisheries
 - iii. Livestock

Answer the following questions in detail in your own words

1. What are the important strategies for the sustainable growth of cash crops in Pakistan? Explain with reference to rice, cotton, sugar cane and wheat.
2. Explain the importance of Maize, Tobacco and other crops for the economy of Pakistan.
3. To what extent livestock farming is important for the economic development of Pakistan?
4. Differentiate between the method of rice, tobacco and wheat cultivation.
5. Describe the fishing methods used by marine and Inland fishing in Pakistan.
6. Suggest measures to protect and develop the fishing industry in Pakistan.

Forming Opinions (Debate)

If we develop more fish farms in Indus plain by using abandon channel of rivers or canal water, it will reduce the burden on crops and livestock. Do you agree. Give reasons and specific examples.

Project

Investigate the use of technology in agriculture, including precision farming, drones, and robotics.

Glossary

Fisheries: The industry or activity of catching or raising fish.

Subsistence agriculture: A type of agriculture in which the farmer produces enough food to feed their family and their livestock, but not enough to sell.

Commercial agriculture: A type of agriculture in which the farmer produces food to sell for profit.

Cash crop: A crop that is grown to be sold for money, rather than for consumption by the farmer.

Food crop: A crop that is grown to be eaten.

Livestock: Animals that are raised for their meat, milk, eggs, or wool.

Crop rotation: The practice of growing different crops in the same field in a series of years. This helps to improve soil fertility and reduce the risk of pests and diseases.

Irrigation: The artificial watering of land or crops.

Fertilizer: A substance that is added to soil to improve its fertility and increase crop yields.

Pesticide: A substance that is used to kill pests, such as insects, weeds, or fungi.

Aquaculture: The farming of aquatic organisms, such as fish, shellfish, and seaweed.

Fishery management: The process of managing fish populations and their habitats to ensure sustainable fishing.

Overfishing: The catching of fish at a rate that is faster than the fish population can reproduce.

List more words and write their meaning that you find difficult in this chapter.

Section 3

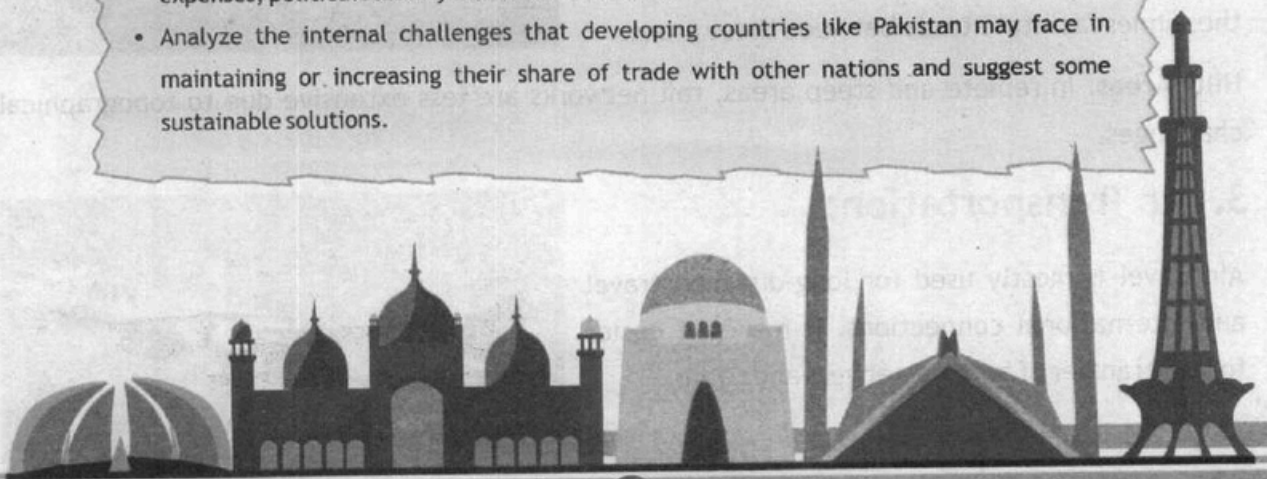
Resources and Economic Development of Pakistan

UNIT 09

TRANSPORT AND TRADE

In this unit the students will be able to:

- Categorize the mode of transportation in Pakistan based on their purposes, and assess the regional differences in the concentration and arrangement of road, rail, and air transportation networks throughout Pakistan, taking into account factors such as topography, population, and economic activity.
- Analyze the concept of dry ports in urban areas of Pakistan, highlighting their advantages in streamlining the transportation of goods for export while reducing dependence on conventional seaports.
- Compare and contrast the advantages and disadvantages of different transport modes for the movement of both goods and people within Pakistan, considering factors such as speed, cost, reliability, and environmental impact.
- Analyze the role of trade in Pakistan's trade economy, including benefits such as increased competitiveness and access to global market.
- Assess the influence of Pakistan's trade routes, such as Gwadar Port, CPEC and Karachi Port on global trade with China, Central Asia, and the Middle East to comprehend the factors that impact international trade, including trade agreements, tariffs, transportation expenses, political stability and market demand.
- Analyze the internal challenges that developing countries like Pakistan may face in maintaining or increasing their share of trade with other nations and suggest some sustainable solutions.



Transportation in Pakistan can be categorized into a number of modes. It can be included air travel, rail travel, and road travel. All kind of transportation has many purposes.

1. Road Transportation:

In Pakistan, intercity travel and the movement of cargo by road are the two purposes of this transportation that are most frequently used.

Regional Differences:

Northern Areas: In mountainous areas like Gilgit-Baltistan and Khyber Pakhtunkhwa, road networks are primarily built to connect remote areas and tourism destinations.



Urban areas: Densely populated urban areas like Karachi, Lahore, and Rawalpindi have extensive road networks to handle the huge volume of traffic.

Rural areas: Connectivity might be challenging in rural areas with less developed roads.

2. Transportation by Rail:

The main purposes of rail transportation in Pakistan are long-distance passenger travel and goods transportation. It includes the coal, cement, and agricultural products.

Main Trunk Lines: By connecting significant cities like Peshawar, Lahore, Rawalpindi, and Karachi, these lines facilitate trade between these areas.



Hilly Areas: In remote and steep areas, rail networks are less extensive due to topographical challenges.

3. Air Transportation:

Air travel is mostly used for long-distance travel and international connections. It makes it easier for the transfer of both passengers and cargo.



4. Regional Differences:

- **Important Airports:** Important cities like Karachi, Lahore, and Islamabad are home to significant international airports that provide travel locally and internationally.
- **Regional Airports:** In cities like Quetta, Peshawar, Sialkot, and Faisalabad, there are smaller regional airports that facilitate domestic flights and regional connectivity.

Factors Affecting Regional Variations:

1. **Topography:** Northern mountainous areas make it difficult to expand the road and rail networks. It leads to limited connectivity in these areas.
2. **In Coastal area:** Connectivity is far better due to their generally flat topography and support for road and rail networks.
3. **Population Distribution:** Densely populated cities need extensive road systems in order to manage traffic. Due to lower population density in rural areas they have fewer transit options.
4. **Economic Activity:** In the cities like Karachi, Lahore, Faisalabad and Sialkot which are considered major industrial and economic hubs of Pakistan, well-developed transit networks encourage their trade and commerce. They get great benefits from it. Agricultural regions rely on road and rail networks for the movement of goods and crops.
5. **Government Policies:** Rules and Regulations with the government's spending influence the creation of transportation infrastructure. In some areas, the connectivity of roads and rail has improved because of the China-Pakistan Economic Corridor (CPEC).

In conclusion, there are several uses for transportation in Pakistan. The geographical differences create variations in the use of these modes. Different geographical factors (such as population density, economic activity, and political laws) work complicatedly to shape networks. The nation's development still places a high priority on infrastructure and communication improvements.

Dry Ports:

Inland ports or terminals are sometimes known as dry ports. In Pakistan's urban areas, they are essential for the transportation of goods for export. These facilities are given in key areas of the country. Highways, railroads, and even airplanes are some of the modes of transportation that connect dry ports to seaports. They enhance the efficiency of the export process and reduce dependency on traditional seaports. Dry Ports have a number of advantages:



1. **Reduced Traffic:** Major traffic jams are common in Pakistan's urban areas. They can delay the transportation of goods to and from seaports. Dry ports help in reducing road blocking and pollution both by diverting a large amount of traffic away from urban areas.
2. **Savings:** By using dry ports, we can significantly reduce the cost of delivering goods to seaports. Long-distance trucking, which transports commodities from a point to the seaport, saves both time and money. In global market, businesses are trying to save transportation expenses. China's Belt and Road Initiative is an ample example of it.
3. **Better Logistics:** Dry ports serve as logistical centers by providing locations for the distribution and storage of goods. This helps exporters manage their supply chains efficiently by streamlining cargo transportation.
4. **Accessibility:** Dry ports are placed in close to the cities which are considered production and industrial hubs. So, it becomes quick and easy for exporters and manufacturers to reach there. As a result, businesses can rapidly deliver their goods to the dry port where they can be prepared for shipment. Travel time is reduced, and the overall effectiveness of the supply chain is increased.
5. **Customs clearance and paperwork:** Dry ports frequently include customs facilities, which helps hasten the export clearance process. When customs officials are present, any issues may be handled quickly. It helps to reduce delays and assures simpler exports.
6. **Economic Development:** The construction of dry ports in urban areas can stimulate economic growth by growing new businesses, creating job opportunities, and promoting trade. These locations can serve as a center for value-added services like packing, labeling, and quality control.
7. Having customs officials on-site can help resolve any issues quickly. It helps not only in reducing delays but ensuring smoother exports also.
8. **Reduced Dependence on Seaports:** Pakistan's significant dependence on seaports has frequently caused blockages and delays in international trade. Dry ports assist in reducing this dependence.
9. **Security and safety:** Better safety measures are often used at dry ports. These measures lower the danger of cargo damage and theft. This is especially crucial for expensive or delicate goods.

In conclusion, the dry ports in Pakistani cities have several benefits. They not only expedite the export of commodities but minimize the dependence on traditional seaports also. Moreover, the expansion of dry ports can boost Pakistan's trade competitiveness and economic growth.

Advantages and Disadvantages of Different Modes of Transportation:

Every nation's infrastructure must include transportation as it affects economic growth, accessibility, and general quality of life. In Pakistan, both goods and people are transported by using a variety of transport methods. Each mode has advantages and problems of its own. We'll contrast and analyze different modes in this section based on things like speed, price, dependability, and environmental impact:

1. Road Transport:

Advantages:

- i. **Speed:** Since most areas of Pakistan can be reached by road, small distances can be traveled by road quite quickly.
- ii. **Cost:** Compared to other infrastructure, the building and maintaining of roads is less expensive.
- iii. **Flexibility:** Road transportation is appropriate for both urban and rural areas because it can reach distant locations.
- iv. **Reliability:** Road transportation is often dependable for short-distance and local travel.

Disadvantages:

- i. **Traffic jamming:** Major cities like Karachi and Lahore see heavy traffic, which causes delays.
- ii. **Safety:** Poor road conditions and high accident rates, especially in mountainous areas, can be risky.
- iii. **Pollution:** Road traffic contributes to pollution and road degradation, which has an effect on the environment.

2. Rail Transportation:

Advantages:

- i. **Speed:** Trains are more suitable for large distances, especially for huge cargo.
- ii. **Cost:** For long distances and huge volumes of cargo, rail transportation is the most economical option.
- iii. **Efficiency:** It uses less energy and has a lower environmental effect.



Note For Teachers: Plan a study trip for the students to your nearest sea port or dry port and explain the students its advantages and disadvantages.

Disadvantages:

- i. **Reliability:** Because of Pakistan's old rail infrastructure and poor maintenance, delays are common.
- ii. **Limited Connectivity:** Basically, rail networks connect big cities and ignore the rural areas.
- iii. **Passenger Services:** Due to reduced speeds and old-fashioned infrastructure, passenger trains are less popular.

3. Air Travel:

Advantages

- i. **Speed:** Air travel is the quickest option to link with remote areas of Pakistan.
Airports in major cities like Islamabad, Lahore, and Karachi are well connected.

- ii. **Reliability:** In terms of schedules, flights are typically dependable.

Disadvantages:

- i. **Price:** Air travel can be costly, which limits its accessibility for many individuals.
- ii. **Limited Cargo:** Since air transportation is expensive, it is typically reserved for expensive and urgent commodities.
- iii. **Environmental Impact:** Aviation discharges play a significant role in the production of greenhouse gases.

4. Water Transportation:

Advantages:

- i. **Cost:** For international trade, water transport via ports like Karachi and Gwadar can be economical.
- ii. **Bulk Goods:** Especially, goods in huge quantity can be import and export by water transportation.
- iii. **Low Environmental Impact:** Compared to other modes, ships have a lower carbon impact on environment.

Disadvantages:

- i. **Speed:** When it comes to inland travel, water transport is slower than other options.
- ii. **Limited Reach:** Access to some areas is hampered by Pakistan's underdeveloped interior waterways.
- iii. **Infrastructure:** Ports and waterways need a lot of repair and investment.

Environmental Effect:

Due to emissions of greenhouse gases and pollutants, road and air transportation tend to have higher environmental impacts rather than rail and water transport which have lower emissions and generally considered more environmental friendly.

In Pakistan, the choice of transportation mode depends on different factors such as the needs of passengers, distance, accessibility and environmental concerns. Each mode has its positive and negative impacts.

Trade:

An action of buying and selling of goods and services is called trade. Trade is necessary to Pakistan's economy. It offers a variety of advantages. Here, we'll examine how trade affects Pakistan's economy:

1. **Economic Development and Growth:** Trade is making a huge economic contribution to Pakistan. A significant amount of the nation's GDP is made up of exports and imports of commodities and services. Pakistan can contact to a larger client base through international trade and can promote its economic growth through greater output and consumption.
2. **Export expansion:** Trade assists Pakistan to expand its exports beyond agriculture and textiles. Trade reduces dependence on a limited number of products and helps to alleviate the risks.
3. **Competitiveness:** Participation in international trade increases the competitiveness of Pakistani industries. Businesses must increase their productivity and quality if they want to succeed in international markets. Better productivity, innovation, and cost-effectiveness can result from increased competitiveness.
4. **Access to Technology and Skills:** Trade exposes Pakistani businesses to foreign best practices and innovations. Importing machinery and other high-tech commodities can raise domestic productivity. Knowledge transfer and skill development can be facilitated by collaboration with overseas partners.
5. **Foreign Exchange:** Exports produce foreign exchange profits, which Pakistan needs in order to pay its debts abroad and keep the rupee stable. Pakistan's economic stability depends on a strong foreign exchange market and a stable currency.
6. **Job Creation:** Trade-related activities generate employment across a range of industries, including marketing, banking, and manufacturing. This may lessen poverty and unemployment.

7. Availability of raw materials: It is crucial to access the raw materials and ideas through trade, which may not be affordable or available locally. It is essential for maintaining sectors like textiles and manufacturing.

8. Access to the world market: Pakistan receives special access to international markets through trade agreements and membership in organizations like the World Trade Organization (WTO). These agreements can lower trade obstacles and tariffs and increasing the competitiveness of Pakistani goods in foreign markets.

9. Consumer Welfare and Choice: Consumers in Pakistan have access to a greater range of goods through international trade, which raises their level of living. More competition can result in higher-quality goods with lower pricing.

10. Financial Stability: Trade can promote economic stability by attracting foreign investment, encouraging savings and investment in the economy. It also helps in expanding revenue streams to reduce dependence on a particular industry or market.

It is important to recognize that while trade has many advantages, it also has drawbacks such as trade imbalances, shifts in global demand, and exposure to outside economic shocks. Pakistan must put more effort into developing its infrastructure, encouraging entrepreneurship and innovation, and implementing sensible trade policies that match its objectives for economic development.

Trade Routes:

Global trade between China, Central Asia, and the Middle East is significantly impacted by Pakistan's trade routes, particularly Gwadar Port, the China-Pakistan Economic Corridor (CPEC), and Karachi Port. The dynamics of regional and international trade are significantly transformed by these trading routes. An assessment of their impact can be found here:

1. The CPEC (China-Pakistan Economic Corridor):

Impact on Global Market: This route has great impact on world economics. The China-Pakistan Economic Corridor (CPEC) has become a vital economic route from Western China to the Arabian Sea port of Gwadar. China now has a faster and more effective way to enter global markets, particularly those in Europe and the Middle East.

Impact on China: The CPEC enables China to reduce its dependence on the blocked and time-consuming maritime routes across the South China Sea and the Strait of Malacca. This improves the durability and security of Chinese trade by lowering the vulnerability of its supply networks.

Impact on Central Asia and the Middle East: The CPEC provides a chance to these region's countries to expand their trade with China by expanding their trading routes. Their dependence on Russia or Iran for economic relations could be waned as a result.

2. Gwadar Port: Gwadar Port has a significant impact on international trade due to its beneficial location at the entrance to the Persian Gulf. It might make trading easier between China, the Middle East, and Africa.

Impact on China: Gwadar Port provides a different path for Chinese exports to reach foreign markets and is a key hub in China's Belt and Road Initiative (BRI). In terms of maritime trade, it reduces China's dependence on the South China Sea and the Strait of Malacca.

Impact on Middle East and Africa: Gwadar Port offers a more direct way for Middle Eastern and African nations to reach Chinese and Asian markets. It can also act as a hub for the uploading and unloading of products to and from these areas.

3. Karachi Port: Karachi Port is the busiest and largest seaport in Pakistan. It handles a sizable amount of the nation's trade. It functions as the entrance to the Arabian Sea.

Impact on Regional Trade: The Karachi Port is essential for facilitating trade with a number of Middle Eastern nations, such as Saudi Arabia, the UAE, and Qatar. Moreover, it acts as an important channel for goods going to Central Asia.

Impact on Regional Connectivity: Port of Karachi is connected to the road and rail networks. It increases the effectiveness and connectivity and makes it possible for goods to be carried to and from Central Asia. It promotes regional trade and economic integration.



In conclusion, trade with China, Central Asia, and the Middle East is greatly impacted by quicker and more

effective trade routes, lessen reliance on chokepoints that are crowded, and encourage economic integration. However, a number of other elements, like as political stability, security, the development of infrastructure, and the desire of nations to participate in regional cooperation and economic alliances, also play a role in their success.

Factors impacting the Global Trades:

1. Trade Agreements: The China-Pakistan Economic Corridor (CPEC) is an important bilateral deal between the two nations. It connects Pakistan's Gwadar Port with China's northwest area. This trade corridor encourages the exchange of products and services and lowers the economic barriers between China and Pakistan.

2. Taxes: One of the main advantages of CPEC is the lowering of trade restrictions and tariffs between China and Pakistan. As a result, trade between the two countries becomes more efficient and encourages imports and exports. The largest and busiest seaport in Pakistan is Karachi Port. It has favorable tax structures and it can impact on the cost of trade with various nations.

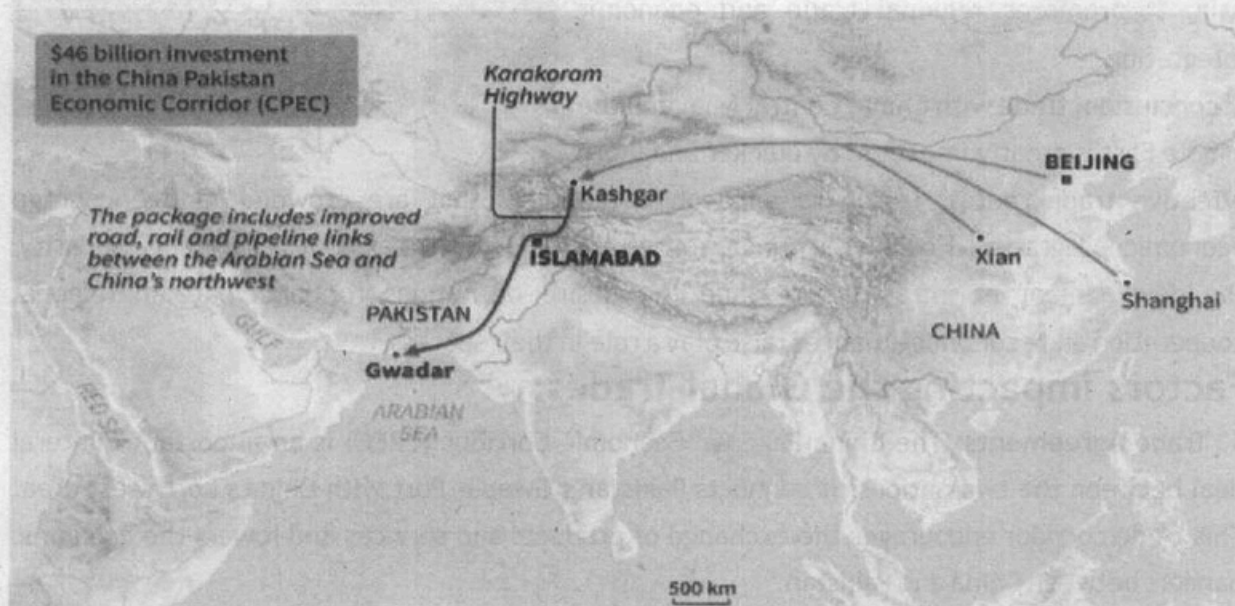
3. Transportation Costs: Gwadar Port helps to keep transportation costs for commodities going to Central Asia and the Middle East to a minimum level. It becomes easy because of its beneficial location close to important shipping lanes. Trade expenses can be significantly impacted by effective management.

4. Stability in politics: Pakistan's political stability is important for preserving and extending trade networks. Trade flows can be interrupted by political chaos or instability, which can leave multinational firms concerned.

5. Market Demand: The demand for goods and services in China, Central Asia, and the Middle East is heavily impacted through these routes. For firms wishing to trade internationally, understanding market dynamics, consumer preferences, and growing industries is crucial.

6. Infrastructure Development: Projects related to Gwadar Port and CPEC's infrastructure, such as the road, rail, and energy sectors, improve connectivity and cut down on transit times. It resulted in boosting the effectiveness of commerce.

7. Security Issues: Trade activity may be troubled by security issues in some areas along the trade routes. Cargo and employee safety must be guaranteed for these routes to continue to be reliable.



8. Geopolitical Factors: Trade agreements and partnerships using these routes may be impacted by geopolitical factors in the region, including the participation of other nations like India, the United States, and Russia.

9. Environmental Considerations: when trade increases, the environmental pollution increases too.

In summary, the impact of Pakistan's trade routes on international trade with China, Central Asia, and the Middle East is multifaceted and influenced by a number of factors. Furthermore, efficient administration and continuing monitoring of these factors are necessary too.

Internal Challenges and Some Sustainable Solutions for increasing Trade in Pakistan:

Developing countries are frequently facing internal challenges when it comes to increasing their share in international trade. So, Pakistan is also facing a variety of domestic problems. These difficulties may have several sides and be connected to one another. They need long-term remedies that deal with the root causes. The following is an analysis of several internal issues and possible solutions:

1. Infrastructure shortcomings:

Obstacle: Poor energy, logistics, and transportation infrastructure can make trade more expensive and time-consuming.

Solution: Invest in infrastructure development through public-private partnerships, encourage foreign direct investment (FDI) in infrastructure projects, and improve maintenance and administration of existing assets.

2. Administrative Red Tape:

Obstacle: Difficult and dragging bureaucratic procedures, such as regulatory and customs hurdles, can suppress trade and raise the cost of conducting business.

Solution: It is important to cut back on pointless rules to promote trade. Ensure to make open and effective customs rules.

3. Weak Institutions for Trade Facilitation and Promotion:

Obstacle: Trade Facilitation Centers may have limited abilities so efforts to promote exports and expand markets may be hindered.

Solution: It is important to strengthen Trade Facilitation Center and train their staff members.

Develop a thorough export marketing plan. Implement strategies to aid trade finance.

4. Training and Competencies Challenge:

Challenge: A nation's capacity to engage in global trade can be limited by a shortage of skilled workforce and low levels of education.

Solution: Investment requires in educational and vocational training programs so that skilled workers can be prepared. These programs should be matched to the demands of the labor market and new sectors.

5. Terrible Regulatory Framework:

Challenge: Poorly applied regulations might discourage international investment and trade.

Solution: Implementation of the rules is important to establish a business-friendly climate. By improving enforcement of regulations, international norms and agreements can be followed properly.

6. Access to affordable loans:

Challenge: Financing is a big challenge that can limit the expansion of businesses, particularly small and medium-sized enterprises.

Solution: Create and extend the loans limits for small and middle businesses, promote the growth of microfinance organizations.

7. Political and Policy Stability:

Challenge: Constant political instability and policy changes can reduce investor confidence and cause trade disruptions.

Solution: Encourage political stability by implementing comprehensive policymaking and democratic governance. Create long-term economic plans that are independent of political cycles.

8. Corruption and Transparency:

Challenge: Corruption can make it more expensive to conduct business and can tilt the playing

Do You Know?

The value of CPEC projects was \$46 billion originally. In 2022, it rose to \$65 billion.

Expand Your Horizon

<https://tdap.gov.pk>

<https://www.nlc.com.pk>dry-ports>

field.

Solution: Anti-corruption measures should be strengthened, openness should be improved, and good governance should be promoted. Reduce corruption by putting technology-driven solutions.

9. Access to Technology and Creativity:

Challenge: Lack of originality and restricted access to technology might make it difficult to be competitive

Solution: Promote technology transfer through collaborations with developed nations and international organizations, invest in research and development, and encourage creativity through financial incentives.

Developing nations like Pakistan can improve their trade performance and gradually grow their share of world trade by addressing these internal difficulties which will promote more economic stability and prosperity. These solutions must be a part of a comprehensive plan that involves cooperation between national and international partners as well as the private and public sectors.

Exercise

Answer the following questions by choosing the best answer A, B, C or D.

1. Rail networks are ----- extensive in remote and steep areas.
a. less b. more c. very d. not
2. -----transport is the slowest in all modes of transportation.
a. rail b. air c. road d. water
3. An action of buying and selling of goods and services is called-----
a. shop keeping b. online shopping c. trade d. consuming goods
4. Skilled workforce is the key factor for -----growth of the country.
a. economic b. social c. political d. cultural
5. People used to travel from one city to another by-----
a. bus b. train c. ship d. aero plane

6. Dry ports are more-----than sea ports for import and export of goods.
a. affordable b. reliable c. comfortable d. suitable
7. ----- can reduce the investor confidence.
a. political instability b. financial pressure
c. strict rules d. lack of transparency
8. Densely populated areas have extensive road networks to handle
a. cargo b. imported goods
c. huge traffic d. delicate goods
9. The term "Red Tape" is used for.....
a. delay tactics b. cricket ball
c. stop sign d. wrap cords
10. ----- is a big challenge for increasing trade in developing countries.
a. Population control b. political instability
c. corruption d. cleanliness

Answer the following questions briefly.

1. Describe the importance of Pakistan's trade routes in context of international trade?
2. What is meant by topography?
3. Analyze the concept of dry ports?
4. How can dry ports reduce dependence on conventional sea ports?
5. Write a paragraph on the importance of CPEC for Pakistan?
6. Why does the air transport is considered most expensive?
7. How can Pakistan increase its share of trade in international market? Suggest five points,

Answer the following questions in detail.

1. Explain the modes of transportation with their advantages and disadvantages.
2. Write down the advantages of dry ports in trade?
3. Analyze the role of trade in Pakistan's trade economy.

4. Assess the influence of Pakistan's trade routes in the international trade especially Gwadar port and Karachi Port?
5. How can Pakistan increase its international trade? Give some suitable suggestions.

Compare and Contrast

How mode of road transportation does is better than the mode of air transportation in terms o passengers and cargo?

Project

Design a "Trade Route Travelogue" to explore CPEC trade routes in Pakistan.

Glossary

Logistics: the commercial activity of transporting goods to customers

Streamlining: smooth, efficient, smooth running

Hasten: hurry, go fast, go quickly, speed up, make faster

Stimulate: motivate, encourage, arouse

Emissions: Releases, discharges, secretions

Pollutants: Impurities, Poisons, chemicals

Alleviate: reduce, ease, relieve, diminish

Entrepreneurship: the ability and readiness to develop, organize and run a business enterprise, along with any of its uncertainties in order to make a profit.

Dynamics: the forces or properties which arouse growth, development or change within a system or process

Chaos: disorder, disarray, disorganization, confusion

List more words and write their meaning that you find difficult in this chapter.

ABOUT THE AUTHOR

Dr. Kamran Naseem

Dr. Kamran Naseem has been working at Government Gordon Graduate College Rawalpindi since September 1997. Currently, he serves as an Associate Professor and heads the department of political science. He obtained his M.S. and Ph. D. degrees from the International Islamic University Islamabad. Dr. Naseem is an accomplished author with several books and research articles to his credit.

Email: kamrann43@gmail.com

Shamsa Mufti

Shamsa Mufti is a renowned educationist who has been teaching Pakistan Studies at 'O' Levels in the private sector. She completed her Master's degree in Geography from the University of Punjab and also achieved a role of merit. She holds a certificate of merit in Professional Studies from the University of Bradford. She attended many workshops held by the University of Cambridge International examination. She has the experience of preparing the Geography Curriculum for Middle School and 'O' Levels. She holds a certificate of merit on the online learners program and merit certificate for organisational skills for 'O' Levels. She has also contributed towards the text books of classes 6 and 8 for Geography for the National Curriculum.

Khadija Saleem

Ms Khadija Saleem has been working at Government Associate College for Women Gawalmandi Rawalpindi since 2009. Currently she serves as an Associate professor and heads the department of Political Science. She obtained her M.phil degree from the Quaid-e-Azam University Islamabad in 2023.

Hafsa Akhtar

Ms. Hafsa Akhtar, a distinguished educator within Cambridge system, holds a MPhil and dual Master degrees in Pakistan Studies and Peace and Conflict studies, with distinction. Her academic merit earned her the prestigious President's Gold Medal from the National Defence University Islamabad. She also possesses internationally recognized credentials from renowned institutions like the University of Plymouth (UK), Oxford University, and Cambridge University (UK). Beyond her remarkable academic background, Ms. Hafsa is a dedicated professional with extensive experience in education leadership. She serves as a textbook author, network teacher trainer for O level, curriculum expert, exam paper setter, and the HOD of History within The City School System. Her impactful contributions to education include the designing of Social Studies curriculum and playing a key role in the development and review of History and Pakistan Studies National curricula 2020- 2023. Ms. Hafsa has authored model textbooks for History grades 6 to 8 and Pakistan Studies grade 9 in the Federal Ministry of Education Islamabad. Her outstanding work continues with the authorship of Pakistan Studies model textbooks for 9, 11 and 12 grades published by Kitabistan Products. Email: hafsaakhtar444@gmail.com