

(Q: NO: 5)

Global warming :-

Global warming is long-term heating of Earth's surface observed since pre-industrial period due to human activities, primarily fossil fuel burning, which increases the heat-trapping greenhouse gas levels in Earth's atmosphere.

Threat to Agriculture and Food Security

Pakistan is vulnerable to climate change and extreme climatic conditions are threatening food security and Agriculture sector. The rise and fall of temperature, rainfall, relative humidity affects the major crops of Pakistan. Like wheat maize, rice and sugarcane.

1- Temperature stresses the Agriculture and food insecurity -

As the global temperature rise, heat stress the lower yields. For example wheat, rice, and maize are vulnerable to temperature above their optimal growing conditions -

Pakistan fallen short of its three-year wheat production target in 2022, wheat production must rise to keep up with rising demand because 33m tonnes will be needed by 2050.

The food security is ensured by enough production of staple crops. In Pakistan 98% of people consume wheat every day.

2- Water stresses Agriculture and Food security:

The altered rainfall patterns and

increased evaporation leads to water scarcity, which disrupt irrigation and some areas experience excess rainfall that lead to soil erosion.

3- Extreme Weather Events :-

The frequency and intensity of extreme weather events such as storms, hurricanes, floods and droughts to be increased with global warming. In 2022 the estimated loss of at least \$20 billion caused by weeks of rains and floods, with India, in particular suffering damages of over \$1.6bn as all major crops have been destroyed.

Causes of global warming

1- Burning of fossil fuels.

This is the most significant

Source of greenhouse gases, including carbon dioxide, methane, and nitrous oxide. Fossil fuels like coal, oil and natural gases are burned for electricity, heat and transportation, releasing large amount of CO_2 and other pollutants.

Fossil fuel consumption by countries -

United States of America	19 million barrels per day
China	4.4 billion in 2013
India	4.6 million daily
Russia	3.6 million daily
Japan	151 million metric tons daily

2- Deforestation :-

When forests are cut down for timber, agriculture or urban development, that carbon storage capability is lost. Trees absorb CO_2 from atmosphere and use it for photosynthesis. So clearing forests often involves burning trees and direct emission of CO_2 in atmosphere -

4- Agriculture contributes to global warming -

The use of nitrogen-based fertilizers produces nitrous oxide, a potent greenhouse gas. Livestock, such as cows, produce methane during digestion, which is released into the atmosphere.

5- Industrial sector contributes to global warming -

Industries emit a variety of greenhouse gases through chemical reactions necessary to produce goods from raw materials.

For example, production of cement releases CO_2 , and various industrial processes release fluorinated gases, which are extremely potent greenhouse gases.

6- Transportation -

Vehicles powered by gasoline and diesel are major emitters of CO_2 . As global transportation networks expand, emissions of CO_2 increase.

Impacts of global warming

1- Environmental impact -

Direct impact of global warming is the rise in temperature worldwide, which lead to melting of glaciers and ice caps contributing to rising sea levels -

Increased level of CO_2 are absorbed by world's oceans, leading to acidification that harms marine life -

2- Economic impact -

It negatively affect crop yields and livestock, threatening food security -

Extreme weather put stress on infrastructure like roads, bridges and railways -

3- Human health ::

Most frequent heatwaves can cause heat-related illnesses and deaths -

Infectious diseases, and air pollution leads to health issues -

4- Social and cultural impacts -

Migration and displacement of migrants due to extreme weather like floods - Flood inflict \$10 billion losses across Pakistan.

Ways to counter the impact of global warming

1. We need to shift from fossil fuels to renewable energy sources like solar, wind, hydroelectric and geothermal power to replace fossil fuels.
2. Other step to be taken to reduce Greenhouse Gas Emissions by implementing carbon pricing mechanism such as carbon tax to incentivize emissions reductions.

3-

In 2023, COP28 conference was held in UAE where some points were discussed on how to reduce climate threatening activities

Reduction of fossil fuels and switching to renewable energy were one of the agendas.

4-

Preserve forests and restoring degraded lands to absorb carbon dioxide from atmosphere.

5-

Raise awareness about causes and impacts of climate change and promote actions individual can take to reduce carbon footprint.

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Shah Wali Ullah

Qutb-al-Din Ahmad popularly known as Shah Waliullah was born on 21st Feb 1703 in Delhi. In the 18th century, Islam in the sub-continent was faced with menacing problems.

Shah Wali Ullah belonged to a religious family. He was educated at Madrasat-i-Rahimiyyah by his father. His contribution represent the first brilliant attempt to rethink the entire system of Islam in a spirit of scientific objectivity.

Political contribution :-

At that time when Aurangzeb died, Shah Waliullah was four year old, so rulers ascended the throne.

Muslims were suffering at hands of Sikhs, Jats and Marhattas. Finally, the Shia-Sunni split was widening day by day, disintegrating an already divided nation.

In the middle of 18th century, Marathas had become great political power. They were threatening to occupy the crown of Delhi. Shah Waliullah wrote a letter to Ahmad Shah Abdali, King of Afghanistan, requesting him to save the Muslims from the Marathas. Consequently in Third Battle of Panipat, Ahmed Shah defeated the Marathas. So the Muslim Renaissance Movement launched by Shah Wali-Ullah.

Socio-economic Contribution

Shah Waliullah was teaching the Muslim society with concept of

basic social justice, removing social inequalities, and balancing the unjust distribution of wealth. In his book of "Hijab-ullah-il-Balighah", he pointed the causes of disintegration of Muslim society.

Shah Waliullah's principles about production of wealth, distribution of wealth and exchange of wealth, that all people are equal, no single person or specific clan can get hold of resources. He said balance should be maintained in a way that whole society can grow.

Shah Wali Ullah

Revival of Islamic Ideology

Shah wali Ullah put great contribution in renaissance of Islamic ideology. Ulama were divided into

Sects. Scepticism and rationalism had overruled the tradition. The clergy used made reasons as their standard, which adversely affected the masses.

Finally, he did Persian Translation of Holy Quran to answer questions of Christian Missionaries in 1738. Later on his son translated Holy Quran in Urdu. He trained students in different branches of Islamic Knowledge. He recommended the application of Ijtihad against blind Taqlid in his famous work. Shah Waliullah wrote *Isalat-al-Akhira* and *Khilafat-al-Khulafa* in order to remove misunderstandings between Shia and Sunnis.

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Water Issues Of Pakistan

Pakistan's water crisis is explained mainly by;

- 1 Rapid population Growth
- 2 poor water Management
- 3 water pollution
- 4 water scarcity
- 5 Unequal distribution
- 6 Groundwater Depletion
- 7 Transboundary water Disputes
- 8 Hydropolitics with India
- 9 Climate Change Impact
- 10 Need for Regional cooperation -

1. Rapid population Growth :-

The biggest challenge to deteriorating water resources and decreasing per capita water availability in Pakistan is population

growth and urbanisation.

Pakistan's population is projected to increase by over one-half 53%, reaching 388 million by 2050. The share of the population living in cities is also projected to increase from 37.2 percent in 2020 to 52.2% in 2050. If water efficiency remains the same, the water withdrawal to water resources ratio may exceed 100% in coming decades.

2. Poor Water Management -

Over 80% of country's water resources are used by four major crops like rice, wheat, sugarcane and cotton which contribute only 5% to GDP. The productivity of these crops is low in Pakistan compared to other major agricultural economies of world.

3 Water pollution :: Every year about half of two million produced wet tons of human excreta go on to pollute water in

Pakistan. Contamination of water sources by Industrial discharge, agricultural runoff, and untreated sewage poses significant health risk to population. Waterborne disease are prevalent in many areas due to lack of access to clean drinking water and inadequate sanitation infrastructure.

Domestic Water Issues -

2 water scarcity:-

Pakistan is a water-stressed country, with per capita water availability decreasing over time due to population growth and increasing water demand from various sectors such as agriculture, industry, and domestic use.

Inefficient irrigation practices, such as flood irrigation and lack of modern water-saving technologies, contribute to water wastage in agriculture, which is largest consumer of water in Pakistan.

2. Unequal Distribution -

Water resources in Pakistan are unevenly distributed, with majority of water originating from Indus River system in north. Southern regions, particularly Sindh and Balochistan, face water shortages due to reliance on canal irrigation system fed by Indus River -

3. Groundwater Depletion

Over-extraction of groundwater for irrigation and drinking water purposes has led to decline in water tables in many parts of Pakistan. This depletion threatens the sustainability of groundwater resources and exacerbates water scarcity issues -

Regional water Issues:

2. Transboundary Water Disputes ::

Pakistan shares several major rivers with neighboring countries including the Indus River system, which originates in India-occupied Kashmir. Disputes over water sharing, dam construction and irrigation projects have strained relations between Pakistan and India.

2. Hydropolitics with India -

The construction of dams and diversion projects by India upstream on rivers flowing into Pakistan, such as Indus and Jhelum, raised concerns about water security which impacts Pakistan's agriculture and economy.

3. Need for Regional cooperation

Effective management of transboundary water resources requires cooperation and diplomacy among states.

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Non-traditional Security Threats in Pakistan.

Non-Traditional Security Threats are major challenges faced by Pakistan. These challenges are highly and most critical hurdle in country's progress. According to World Disaster report (2003); Pakistan is considerably being affected by so many natural problems, such as floods, fog, dust storm, cyclones, glaciers, depletion, disasters. World Bank categorized Pakistan as water stressed country. Pakistan Council of Research warned if timely steps were not taken, as a result the country would suffer in 2025 from a deep water problem.

Non-traditional Security threats are following-

2 Cybercrime -

The foremost challenge faced by Pakistan in the current situation.

This attack is formidably attacking the banking system.

The financial services in Pakistan. for example accounts, credit cards, are or attack. Pakistan has lost \$6 million due to cybercrime in 2018.

2 Water Crisis -

Water crisis is an alarming issue in Pakistan, according to World Bank Pakistan is among 36 countries of water stressed country. This will widely affect economy. IMF ranked third among countries facing severe water shortage.

3 Climate change

In Pakistan, climate change has resulted in changing monsoon patterns, melting glaciers, rising sea levels, increase in water scarcity.

4 Irregular migrations-

Unplanned urbanization is creating the problems of law and order. It is leading to increase in crime rates and traffic problems.

5 Terrorism

Increase in terrorism and extremism due to domestic socio-economic-political deterioration and foreign factors is a severe NTST to survival of Pakistan.

6 People trafficking and Drug Smuggling -

Illegal inflow and outflow of people and drugs also pose serious non-traditional challenge to the security of Pakistan. People trafficking may lead to increase in terrorism and drug smuggling may lead to poor health condition in the country.

Role of Non-State Actors.

Pakistan has been experiencing the genesis and spread of multiple terrorist organizations for last many decades. Over the years, these organizations have proved that they are atrocious and can cause extreme violence to achieve their political objectives. Such violence can be at local, regional and international levels.

These organisations' compositions, structures and operations show that many are local and operate within a state's territorial limits. The growth of such terrorist/militant groups in post 9/11 has increased, especially after the United States led the global war against terrorism, in which Pakistan joined as a frontline ally.

Afghanistan is widely regarded as epicenter and fountainhead of militancy. In 1980s, the United States engaged in notorious proxy war to combat communism, supporting various jihade organizations, many of which originated in Pakistan. Several groups such as Harkat-ul-Mujahideen, Hizb-ul-Mujahideen, Lashkar-e-Taiba, Sipah-e-Sahaba, Lashkar-e-Jhanghi, Jaish-e-Muhammed were propped up in Pakistan before Taliban and Al-Qaeda -

Pakistan has long accused India of fueling unrest and terrorism. The country holds India responsible for financing arming, and training the Baluch Liberation Army, which is separatist movement in Balochistan, as well as Tehreek-e-Taliban Pakistan (TTP) which has claimed responsibility for numerous attacks in Pakistan.

These Non-State actors have not only challenged Pakistan's authority on several occasions but have also altered its perception of threats.