

World Geography

Q.1 Discuss the consequences of climate change on food security in tropical countries.

Introduction

- Introduce with far-reaching consequences of climate change on food.

Body

- Highlight serious threats of climate change on food security.
- Write way forward to tackle it.

Conclusion

- write how building resilience in agriculture and food systems are critical.

Introduction

Climate change is a global phenomenon with far-reaching consequences, and tropical countries are particularly vulnerable to its impacts. Food security, defined as **access to sufficient, safe, and nutritious food to meet dietary needs for an active and healthy life**, is under threat in these regions due to the adverse effects of climate change.

Body

Climate change poses serious threats to food security in tropical regions, with repercussions including:

- **Diminished Crop Yields: Erratic rainfall patterns** and prolonged droughts can lead to reduced harvests, as seen in recent years in East Africa, where maize and wheat production has declined significantly.
- **Increased Pest and Disease Pressure:** Rising temperatures create favorable conditions for pests like the Fall Armyworm, causing substantial maize losses in sub-Saharan Africa.
- **Livestock Vulnerability:** Heat stress and water scarcity affect livestock, reducing milk and meat production, as evidenced by declining cattle yields in India due to heatwaves.

- **Water Scarcity:** Decreased water availability or **drought** affects crop irrigation, impacting rice production in Bangladesh, where salinity intrusion due to sea-level rise is also a concern.
- **Coastal Erosion:** Coastal erosion in Bangladesh's Sundarbans threatens rice and shrimp farming, displacing communities and damaging food production.
- **Biodiversity Loss:** Declines in pollinator populations disrupt crop pollination, affecting coffee production in Central and South America.
- **Migration and Conflict:** Climate-induced migration in drought-stricken areas of Central America has led to resource conflicts, exacerbating food insecurity.
- **Extended Growing Periods:** Climate change can extend growing seasons, which can have mixed effects. In India, the increased length of the monsoon season has allowed for two rice crops per year instead of one, increasing food production.
- **Seasonal Food Production Fluctuations:** Climate-induced variations in temperature and precipitation can lead to inconsistent crop yields. In Southeast Asia, the rice-growing region of Thailand has seen fluctuations in rice production due to changing weather patterns.

Steps to be taken

- **Climate-Resilient Agriculture:** Implementing drought-resistant crops and promoting climate-smart farming techniques.
- **Improved Water Management:** Enhancing water conservation practices and irrigation infrastructure.
- **Sustainable Fisheries:** Protecting coastal ecosystems and promoting sustainable fishing practices.
- **Biodiversity Conservation:** Preserving ecosystems and promoting pollinator-friendly environments.
- **Adaptation and Preparedness:** Developing early warning systems and supporting climate-resilient livelihoods.

Conclusion

Addressing **climate change and building resilience** in agriculture and food systems are critical to ensuring a secure and sustainable food supply in tropical countries. International cooperation and adaptation strategies are essential to mitigate the adverse impacts of climate change on food security in these vulnerable regions.

Q.2 Why is the world today confronted with a crisis of availability of and access to freshwater resources?

Introduction

- Introduce with water supply affects a staggering two billion individuals across various nations.

Body

- Reasons for Non-Availability of Freshwater Resources.
- Reasons for Lack of Access to Freshwater Resources.
- Steps to be taken.

Conclusion

- Need to work on securing SDG6.

Introduction

A looming global water crisis casts a formidable threat upon more than **four billion people, subjecting them to recurring bouts of severe water scarcity**, each lasting at least a month annually. This harrowing challenge of insufficient water supply affects a staggering two billion individuals across various nations.

Body

Reasons for Non-Availability of Freshwater Resources

Climate Change

- Climate change has disrupted precipitation patterns, leading to more frequent and severe droughts in some regions and increased rainfall in others.
- These shifts in climate adversely affect the availability of freshwater resources, making them scarcer in certain areas. For example, **data shows that the Horn of Africa has experienced recurrent droughts, resulting in acute water shortages.**

Pollution pressure

- Pollutants from industrial, agricultural, and urban activities contaminate freshwater sources, rendering them unsafe for consumption and industrial use.
- Water pollution has reached alarming levels in regions like the Ganges River in India and the **Citarum River in Indonesia**, where water quality is severely compromised.

Inefficient Water Management

- Unsustainable water management practices, including **over-extraction of groundwater or depletion** and mismanagement of reservoirs, contribute to the non-availability of fresh water.
- **Surface and groundwater pollution and lack of water harvesting is resulting in the waste** of millions of cubic water.

- The Aral Sea in Central Asia provides a stark example of how poor water management has led to the near disappearance of an entire water body.

Reasons for Lack of Access to Freshwater Resources

Population Growth

- The global **population explosion** places substantial demands on freshwater resources. However, the lack of access to these resources is often due to inadequate infrastructure, especially in densely populated urban areas.
- For instance, many **urban slums** in developing countries lack proper water supply and sanitation facilities despite being located in close proximity to freshwater sources.

Inequality

- Socio-economic disparities play a significant role in limiting access to freshwater. In many regions, **marginalized and impoverished communities face barriers to accessing clean and safe water.**
- Inequality in access is prominent in **both urban and rural settings**, such as the disparities in water access between wealthy and impoverished neighborhoods in major cities.

Conflict and Displacement

- Water scarcity can lead to conflicts, and conflicts, in turn, can disrupt access to water sources. Populations affected by conflict and displacement often struggle to access clean water, as exemplified by the **Syrian refugee crisis** in which displaced populations faced severe water scarcity.

Infrastructure Deficiencies

- Insufficient investment in water infrastructure and sanitation systems leads to a lack of access.
- Rural areas, in particular, suffer from inadequate infrastructure, limiting the availability of freshwater resources.
- The absence of safe drinking water and sanitation facilities in schools is a notable example, impacting children's access to clean water.

Steps to be taken

- **Sustainable Water Management:** Implement and promote sustainable water management practices to ensure the efficient use and conservation of freshwater resources.

- **Infrastructure Development:** Invest in infrastructure projects for improved water supply, sanitation, and distribution networks, particularly in underserved regions and urban areas.
- **Climate Change Mitigation:** Prioritize efforts to mitigate climate change to reduce its impact on freshwater availability and extreme weather events.
- **Equitable Access:** Promote policies and initiatives that ensure equitable access to clean and safe water, addressing socio-economic disparities and marginalized communities.

Conclusion

Addressing this dual crisis necessitates tailored approaches. The world can work towards mitigating the crisis of freshwater availability and access, ensuring a sustainable and equitable water future for all, **thereby securing SDG6** (Access to Clean Water and Sanitation).

Q.3 How are the fjords formed? Why do they constitute some of the most picturesque areas of the world?

Introduction

- Begin your answer by defining Fjords and their location where it can be found.

Body

- Discuss the formation of Fjords step-wise.
- Elaborate on how these Fjords form picturesque areas in the world.

Conclusion

- Write about its significance in the conclusion.

Introduction

Fjords are steep-sided narrow entrance-like features at the coast created through glacial activity. Fjords are often set in a **U-shaped valley** with steep walls of rock on either side. Fjords are found mainly in Norway, Chile, New Zealand, Canada, Greenland, and the U.S. state of Alaska.

Body

Stages of Fjords formation

Glacial Erosion: Glacial erosion involves the removal and transport of bedrock or sediment by three main processes: quarrying, abrasion, and meltwater erosion which carved out U-shaped valleys.

Glacial Retreat: It is the process of a glacier shrinking or receding in size over time. This occurs when the amount of ice melting or sublimating from the glacier exceeds the amount of new snow or ice accumulation.

Sea Level Rise: Due to the rise in sea level, seawater enters the U-shaped valley, it fills the valley floor, creating a long, narrow, and deep inlet known as a fjord.

Fjords formed some of the most picturesque areas of the world due to

Coral Reefs: Some of the largest coral reefs are found at the bottom of fjords in Norway. They are home to several types of fish, plankton, and sea anemones which also give a boost to marine beauty.

Waterfall and Cascades: Waterfalls are particularly beautiful and impressive during spring when the snow melts in the mountains. **Steinsdalsfossen** is one of Norway's most visited waterfalls, and visitors can even walk behind it.

Skerries: Skerry is a small, rocky island created through glaciation and found around Fjords. Most of the Scandinavian **coastline** is cut into thousands of little blocks of land. These jagged bits of coastline are skerries. These are major tourist attraction destinations.

Cultural Significance: The **Geiranger Fjord** in Norway is a UNESCO World Heritage Site.

Photography: **Låtefossen** is a very popular subject for photographers, running under a distinctive stone bridge. Låtefossen is actually two waterfalls, Skarsfossen in the south and Låtefossen in the north.




Flora, Fauna, and Funga: These Fjords incorporates habitat for species diversity, wildlife, natural beauty, and multiple amounts of fishes, whale, seals, etc. resides here.

Recreation, leisure, and sports: Favorable places to refer to due to the pristine environment, serene nature, and beauty, these sites are essential destinations for yoga, meditation, and rehabilitation centers.

Fjord Tourism: Fjord tourism refers to the act of traveling to and visiting fjords for leisure, and can include activities such as hiking, fishing, and sightseeing which in turn boost the economy.

Conclusion

Therefore, **Fjords are geographical features** that have remarkable and fascinating natural environments, have tremendous potential to perform water sports activities as well as a favorable tourist destination that makes it "**Heaven on Earth**"!

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