

1. Why India is Launching a National Framework for Climate Services

India is introducing a National Framework for Climate Services (NFCS) led by the India Meteorological Department (IMD) to streamline climate information and services for various sectors and manage climate-related risks. This initiative is critical for sectors such as agriculture, energy, disaster management, health, and water.

The Global Framework for Climate Services (GFCS)

The NFCS is based on the Global Framework for Climate Services (GFCS), a global partnership aiming to enhance the production and utilization of climate information and services. The GFCS fosters collaboration between researchers and users to make informed, long-term decisions. It generates high-quality climate data and information for various sectors.

The announcement to establish a GFCS was made during the third World Climate Conference held in Geneva in 2009. This framework is led by National Meteorological and Hydrological Services (NMHS) in their respective nations. The framework includes active participation of policymakers, planners, investors and vulnerable communities or sectors, as they need climate information and services in a user-friendly format, so that they can prepare for expected trends and changes in the long run.

What the NFCS Will Accomplish

The NFCS aligns with the GFCS but caters to India's specific weather and stakeholder requirements. The IMD is the nodal agency for implementing the national framework. In addition to the identified sectors, India can incorporate other relevant sectors over time, such as transport and tourism.

Initially, the NFCS will address operational gaps between various agencies in need of climate services, including hydrology, power, renewable energy, transport, dams, irrigation, and health agencies at central and state levels.

Why the NFCS is Essential

The IMD, with a history dating back to 1873, has excelled in providing high-quality weather services, particularly for the Indian subcontinent. However, there are gaps in data coverage across terrains and seas, preventing comprehensive climate predictions. Moreover, there is a lack of long-term (100 years or more) climatological data.

The NFCS aims to bolster the observational network, enhance data flow, and utilize this data for weather and climate modeling. It will create tailored data and information products to support decisions related to agriculture, health, population distribution, infrastructure, and more.

Implementation of the NFCS

Since the 2009 declaration of frameworks for climate services, several countries, including Switzerland, China, Germany, and the United Kingdom, have already launched their NFCS. India has joined them with the recent workshop held in Pune, and consultations are planned with key stakeholders. A formal statement of NFCS will be released once consensus is reached among partnering stakeholders.

Early implementation and accelerated deployment of NFCS are crucial due to the increasing frequency of climate vagaries and extreme events affecting India and the world. This initiative needs to be carried out in a mission-oriented manner and guided by the highest decision-making authority in the country.

Relevance: GS Prelims & Mains Paper III; Environment

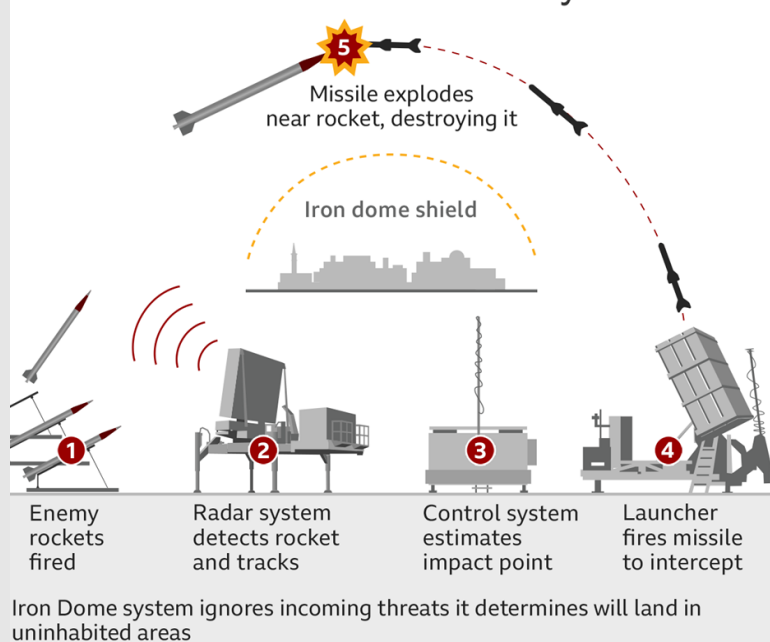
Source: The Indian Express

2. Israel's Iron Dome Defense System

Why in news?

The Hamas militant group launched its worst attack inside the Jewish state's territory since 1948 on October 7, killing at least 250 Israelis and abducting several others. Israel's retaliatory strikes, meanwhile, have resulted in over 230 casualties in Gaza. The attack has raised concerns over Israel's defence system, with many questioning the intelligence failure.

How Israel's Iron Dome defence system works



What is the Iron Dome?

The Iron Dome is a defense system used by Israel to stop rockets and missiles from reaching their targets. It protects against attacks like rockets, artillery, and mortars, as well as aircraft, helicopters, and drones. The Iron Dome was deployed in 2011.

How It Works

The Iron Dome has three main parts that work together: a radar that detects incoming threats, a system that manages and controls the weapons, and a unit that fires the interceptor missiles. The radar spots

threats and guides the interceptor missile to the target. The missile can change its course to destroy the threat.

Why It's Effective

The system works in all weather conditions, day or night. It's designed to spot and track small objects accurately and can change the missile's path to hit the target.

Cost

The Iron Dome is expensive, with each unit costing over \$50 million and each interceptor missile costing around \$80,000. In contrast, the rockets it intercepts are much cheaper, costing less than \$1,000. But experts believe that the value lies in saving lives and boosting morale by preventing rocket attacks.

Relevance: GS Prelims & Mains Paper II; International Issues

Source: The Indian Express

3. Understanding the Sikkim Flood: Causes and Impact

What Caused the Sikkim Flood?

In early hours of October 4, a massive flood hit Sikkim, resulting from a Glacier Lake Outburst Flood (GLOF). These floods occur when glacial lakes formed by melting glaciers suddenly break free from natural dams made of rocks and debris. Sikkim, with around 80 glaciers, is vulnerable to such events.



What Triggered the Sikkim GLOF Event?

The exact cause is uncertain, but it's believed to be a combination of factors. Satellite images showed the glacier-fed lake had shrunk, possibly due to drainage, but the depth was hard to determine. While there were speculations about heavy rainfall and even earthquakes in Nepal, the remote location made it challenging to confirm the cause.

Resulting Damage

The flood led to the destruction of the Chungthang dam, which supplies water to the Teesta 3 hydropower project. Several other hydropower projects along the Teesta River were also affected. Bridges were washed away, communication disrupted, and many houses, pipelines, and sewage lines destroyed. It's a significant setback to the region.

Future Risks

Studies have warned that GLOF events in the Himalayas are likely to increase due to rising temperatures and climate change. The fragile ecosystem in the region is at risk due to hydropower and infrastructure projects. Early warning systems could help anticipate such events, but they require coordination and monitoring changes in glacial lakes.

Relevance: GS Prelims & Mains Paper III; Disaster Management

Source: The Indian Express and The Hindu