



Subansiri Dam Project

Why in News?

The Subansiri Lower Hydroelectric project (SLHEP) on the **Assam-Arunachal border** was recently hit by a **landslide** during pre-monsoon rain.

- However, no damage has been caused to the project and **it is set to become operational by June 2023**.



What is a Landslide?

- **About:**
 - A landslide is defined as the movement of a mass of rock, debris, or earth down a slope. The term encompasses 5 modes of slope movement: **falls, topples, slides, spreads, and flows.**
- **Major Causes:**
 - **Geology:** Characteristics of the material; the earth or rock might be weak or fractured, or different layers may have different strengths and stiffness.
 - **Morphology:** Structure of the land; slopes that lose their vegetation to fire or drought are more vulnerable to landslides.
 - **Natural Causes:** Heavy rainfall, earthquakes, snowmelting and undercutting of slopes due to flooding.
 - **Human Activity:** Agriculture and construction increases the risk of a landslide.
- **Landslide-Prone Areas:**
 - **Entire Himalayan tract**

- ~66.5% of the landslides are reported from the North-western and ~18.8% from Northeastern Himalayas.
- **Western Ghats** (~14%) and **Konkan areas**
- **Nilgiris** in Tamil Nadu

What is the Subansiri Lower Hydroelectric Project?

▪ About SLHEP:

- SLHEP is an **under-construction gravity dam** (nearly 90% of the work completed) with capacity **2000 MW** (8x250 MW).
- It is the **biggest hydroelectric project undertaken in India so far** and is a **run of river scheme on river Subansiri**.
 - A run-of-river dam is one in which the **flow of water in the river downstream of the dam is the same as the flow of water upstream of the dam**.
 - In other words, the dam doesn't hold back/store water behind it; it runs with the river.
- The construction of SLHEP is being undertaken by **National Hydroelectric Power Corporation (NHPC) Limited**.

▪ About Subansiri River:

- **Subansiri, or "Gold River"** is the **largest tributary of the Upper Brahmaputra** river.
- It **originates from the Tibetan Himalayas** and makes its way to India via **(Miri Hills) Arunachal Pradesh**.

▪ Controversy regarding SLHEP: The project had been kept pending due to local agitation over several **dam safety** and **administrative issues** involved in the implementation of the project like:

- SLHEP contravenes the **1980 Brahmaputra Board Act** by transferring the work of Water Resources Department of Subansiri Basin from the Brahmaputra Board to the public and private sector.
- As assessed by IIT-Roorkee, there is also the issue of **increased seismic threat levels to the dam**.

Note

- **Arunachal Pradesh is often dubbed as the powerhouse of the country** and is home to 34% (50,328 megawatts) of the country's 148,701 MW hydropower potential.

What is a Gravity Dam?

- Gravity dam is constructed from concrete or cement (unlike mud and masonry stones used in embankments).
- It is designed to hold back water by primarily utilising the weight of the material alone to resist the horizontal pressure of water pushing against it.

UPSC Civil Services Examination Previous Year Questions (PYQs)

Q. Consider the following rivers: (2014)

1. Barak
2. Lohit
3. Subansiri

Which of the above flows/flow through Arunachal Pradesh?

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (b)

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