



## RAM SETU AND SETHUSAMUDRAM SHIP CHANNEL PROJECT - GS III MAINS

**Q.** Why is Ram Setu a sensitive issue in India? Also, bring out the complications and significance of implementation in the Sethusamudram project in India. (15 marks, 250 words)

**News:** *Govt plans 23-km sea bridge linking India and Sri Lanka*

### What's in the news?

- The Indian government is planning to construct a sea bridge linking India and Sri Lanka, which could boost tourism and the economy in the region, according to media reports.
- According to officials, the government will conduct a feasibility study to develop a 23-kilometre bridge across the Palk Strait, connecting Dhanushkodi in Tamil Nadu, India and Talaimannar in Sri Lanka.
- The New Ram Setu, a 23-km road/rail sea link, will connect Dhanushkodi, India, with Talaimannar, Sri Lanka, across the Palk strait, Sethusamudram project alternate, reducing transport cost by 50% and provide a Mainland connection to Lankan Island.
- The project will be promoted by the National Highways Authority India (NHAI), officials said, as cited in media reports.

### Key takeaways:

- While the story of the controversial **Sethusamudram Ship Channel Project (SSCP)** can be traced back to the British, who proposed creating a channel to **link the Palk Strait with the Gulf of Mannar**, it was only in **2005** that the project was inaugurated.
- Separating the shallow sea consisting of the Gulf of Mannar in the south and Palk Bay in the north is a somewhat linear coral ridge called Adam's Bridge or Ram Setu.
- This **runs between Rameswaram in Tamil Nadu and Talaimannar in Sri Lanka**.
- The SSCP, if completed, is expected to considerably reduce the navigation time between the east and west coasts of India.

### Ram Setu:

- Ram Setu is also known as **Adam's Bridge or Nala Sethu**.
- It is a **48 km chain of limestone shoals** between Pamban Island known as Rameswaram Island on the coast of Tamil Nadu, India, and Mannar Island on the coast of Sri Lanka.
- The bridge separates the Gulf of Mannar (south-west) from the Palk Strait (northeast).
- The bridge holds religious significance. A **bridge is mentioned in Ramayana**, that Lord Ram and his army built to reach Lanka. The location of the Lanka of the Ramayana has been widely interpreted as being current day Sri Lanka and bridge as Ram Setu.



## Is Ram Setu Man Made or Natural?

- In 2003, space-based investigations, using satellite remote sensing imagery, by researchers at the **Space Applications Centre in Ahmedabad** concluded that **Ram Setu is not man-made**.
- They said that Ram Setu comprises 103 small patch reefs lying in a linear pattern with reef crest, sand cays and intermittent deep channels”.
- Cays, also known as keys, refer to low-elevation islands situated on surfaces made of coral reef.
- Thus, it is reasonable to assume that Ram Setu is a **linear ridge made of coral reefs and forms a shallow part of the ocean that is being constantly impacted by sedimentation processes**.
- Like the Great Barrier Reef, the Ram Setu is also a continuous stretch of limestone shoals that runs from Pamban Island near Rameswaram to the Mannar Island on the northern coast of Sri Lanka.



## Sethusamudram Ship Channel Project:

- The Sethusamudram Shipping Canal project aims to create a shipping route between India and Sri Lanka by building an **83-km-long deep water channel**.
- It would also reduce travel time between the eastern and western coasts of India as ships would no longer have to circle Sri Lanka to travel between the Bay of Bengal and Arabian Sea.



## Significance of SSCP:

- Successful completion of the project would **cut travelling by about 350 nautical miles and will save 10 to 30 hours sailing time**.
- It is expected to considerably **reduce the navigation time** between the east and west coasts of India.
- The project will lead to considerable **savings and earnings of foreign exchange**.
- It will **bring down shipping costs**.
- With China's influence in Sri Lanka increasing, India needs to explore **alternative shipping routes**.



## Challenges of SSCP:

The proposed route through the shoals of Ram Setu is opposed by some groups on religious, environmental and ecological grounds.

### 1. Religious Argument:

- Religious groups have been opposing it as they believe that the structure, which is mentioned in the Ramayana, is of religious significance.

### 2. Environmental Impact:

- Concerns have been raised on the stability of the proposed channel and its environmental impact.
- The project would **disturb the ecological balance and destroy corals and kill marine life.**

### 3. Impacts of Waves:

- Computer models suggest that the central, eastern and northeastern parts of Palk Bay may be impacted by waves of higher energy. This means that these areas will receive more sediment, rendering them more turbid.

### 4. Impact of Cyclone:

- The area is also vulnerable to cyclonic storms. A cyclone in 1964 was so powerful that it wiped out the town of Dhanushkodi. So, finding safe places for dumping dredged material without harming terrestrial or marine ecosystems is a big challenge.

### 5. Emissions Problem for Ships:

- Emissions from ships will pollute the air and water. Any accident to a ship carrying oil or coal will lead to an ecological disaster.

### 6. Affects Sensitive Biosphere Reserve:

- The **coral reef platforms between Thoothukudi and Rameswaram** in the Gulf of Mannar were notified as a marine biosphere reserve in 1989. The reserve has more than 36,000 species of flora and fauna.
- This area is already threatened by discharge from thermal plants, brine run-off from salt pans, and illegal mining of corals.
- The SSCP, if it becomes a reality, might be the final blow to this sensitive environment and to the livelihoods of the people.

## Need to Protect Ram Setu:

### 1. Presence of Corals and Mangroves:

- The coral reef platforms between Thoothukudi and Rameswaram in the Gulf of Mannar were notified as a marine biosphere reserve in 1989.
- More than 36,000 species of flora and fauna reportedly live there, flanked by mangroves and sandy shores which are considered conducive for turtles to nest.



## 2. Lifeline for Marine Ecosystem:

- It is also a breeding ground for fish, lobsters, shrimps and crabs.
- Of the 600 recorded varieties of fish in the region, 70 are said to be commercially important.

## 3. Area under Stress:

- This area is already threatened by discharge from thermal plants, brine run-off from salt pans, and illegal mining of corals.
- The SSCP, if it becomes a reality, will be the final blow to this sensitive environment and to the livelihoods of the people there.

## Geo-Heritage Aspect of Ram Setu:

While considering this issue from a believer's point of view, it is also important to consider this feature from a "GEOHERITAGE" perspective.

- The geoheritage paradigm is **used in nature conservation to preserve the natural diversity of significant geological features.**
- It accepts the fact that **geodiversity**, consisting of varied landforms and features representative of dynamical natural processes, is under threat from human activities and needs protection.
- The natural heritage of a country includes its geological heritage.
- The value of abiotic factors like geology, soils and landforms is also recognised for their roles in supporting habitats for biodiversity.
- India's 'tryst with destiny' does not begin at Harappa or the Vedic Period; it goes back billions of years when the Indian tectonic plate moved thousands of kilometres from the south of the equator to its present location.

The **Ram Setu carries the unique geological imprints of an eventful past.** Therefore, it needs to be preserved not just as a national heritage monument, but also as a geoheritage structure as defined from a scientific perspective.