DHUSSI BANDHS

Mains: *GS III - Disaster and Disaster Management*

Why in News?

Recently, more than 50 Dhussi bandhs have been breached in Gurdaspur and Amritsar during the Punjab floods this monsoon.

What are dhussi bandhs?

- **Dhussi bandhs** – They are *earthen flood-protection embankments*, primarily constructed along the rivers of Punjab, India.
- **Built during** – Built mainly in the 1950s and 1960s.
- **Role** – These embankments protect villages and agricultural land from flooding during the monsoon season.
- **Location** – The embankments are built along major rivers like the Sutlej, Ravi, and Beas, as well as tributaries and seasonal rivulets known as "choes" and streams.
- According to the Water Resources Department, Sutlej has *bandhs* of around 226 km in length, Ravi 164 km, Beas 104 km, and Ghaggar around 100 km, with some 300 km of *bandhs* along tributaries, choes, and creeks.
- The total length of these bandhs across Punjab is approximately 900 km.
- **Construction** – They are mostly "kutcha," or earthen, with some sections having metalled or unmetalled roads on top used by local villagers.
- **Design** – The height of the bandhs can vary, ranging from 5–6 feet in some areas to 10–15 feet above the river's normal level in others, depending on the terrain.
- They typically have a width of *10–15 feet* at the top.

What are the importance of dhussi bandhs?

- **Acts as protective barriers** – Since the 1950s-60s, when these *bandhs* were first constructed, these embankments have acted as protective barriers against floods.
- Before the construction of these *bandhs*, rivers flowed unchecked and often flooded nearby fields and homes during the monsoon.
- **Increases the capacity of rivers** – It reduces the direct impact of overflowing rivers and allowing rivers to carry more water during heavy rains.
- **Acts as protective shelters** – During river surges, many families shift to the embankments, as they see these as the safest ground to escape the deluge.

What are the current challenges faced by dhussi bandhs?

- **Weak constructions** – Weak, poorly built embankments frequently collapse under

pressure.
- During heavy monsoons, these embankments are prone to breaches, which can cause severe flooding in surrounding villages and destroy agricultural crops.
    - ***For instance,*** *Punjab has witnessed more than a half dozen major floods in 1978, 1988, 1993, 2008, 2019, 2023 and now 2025 mainly due to breaches in these bandhs.*
- **Illegal mining** – Sand and gravel extraction along river beds has progressively eroded the base of embankments, loosening soil and weakening structures.
- Unchecked mining close to rivers reduces makes bandhs prone to caving in during high water flow.
- **Inadequate coverage** – Several stretches of the Sutlej, Beas, Ravi, and Ghaggar still lack embankments.
- **Enlarged settlements** – permanent human settlement on bandhs makes routine maintenance difficult.
- **Inadequate repair** – In 2025, it was reported that Punjab needed hundreds of crores of rupees to repair and strengthen these bandhs.

What can be done?

- **Increasing the height** – Experts say that to minimise flood risk, embankments must be raised to at least 15-20 feet above the riverbed.
- **Strengthening** – Weak points to be reinforced and their foundations should be widened.
- **Regular monitoring** – There should be a periodical monitoring of the bundhs to look for any cracks, breaks etc.
- **Contruction of new bundhs** – The new bundhs should be constructed near the areas with potential flooding and more human settlements.
- Smaller *choes*, *nadies*, and *khads* also need such *bandhs*.
- ***Choes,nadies and khads*** *are local names for seasonal streams in the Punjab region.*
- **Regulating river bed** – It is important to mitigate flooding, maintain groundwater recharge, protect river ecosystems and biodiversity, and enable human uses like transportation and irrigation.

Reference

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