

Ecosystem-based flood management interventions: insights from 3 deltas

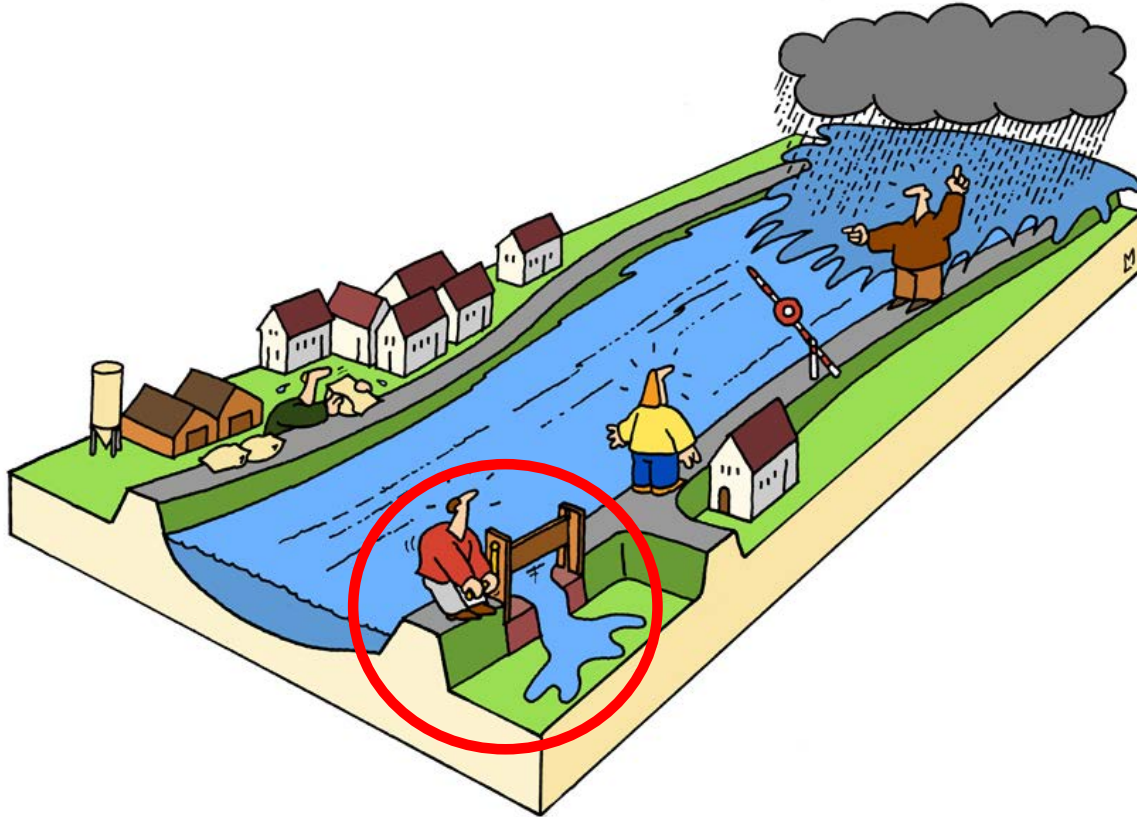
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Source: Bringing in the floods. A comparative study on controlled flooding in the Dutch, Bangladesh and Vietnamese Mekong deltas, <https://edepot.wur.nl/423239>



Restored controlled flooding in deltas

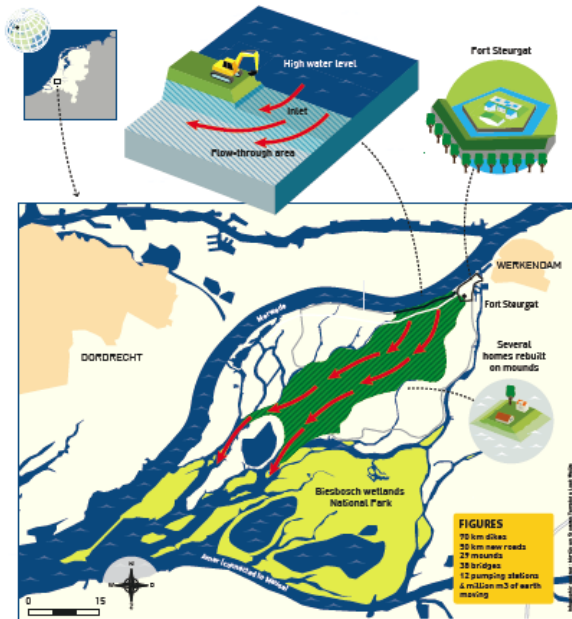


Socio-politics of restored flooding

De-poldering the Noordwaard in the Dutch Delta

The Noordwaard agricultural polder will be reconnected to the adjacent river, by means of lowering or removing dikes. Controlled flooding will occur in the flow-through area in times of high river water levels. Together with restoring tidal dynamics in the broader estuary, this restores dynamic land and water interactions around and in the Biesbosch wetlands.

Hybrid-engineered dike
Near the Stuurgat Fort, a willow forest will be laid out in front of a section of the dike. This reduces flood waves and compensates for required dike reinforcements.

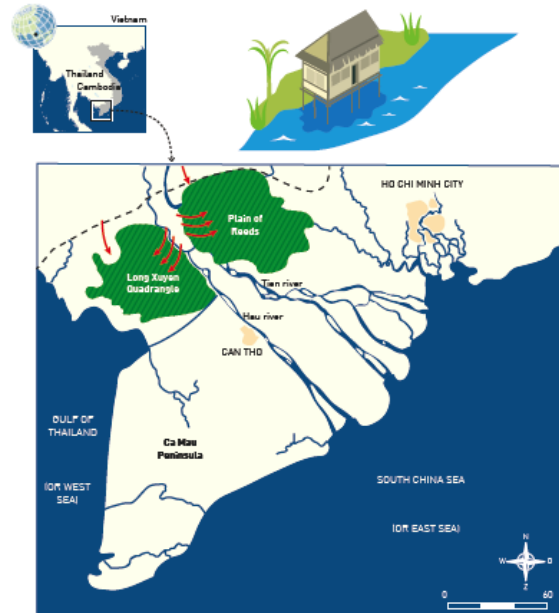


Long consultation process concluded by a central governmental decision to de-polder this area

Central plans and/or local consultation and implementation?

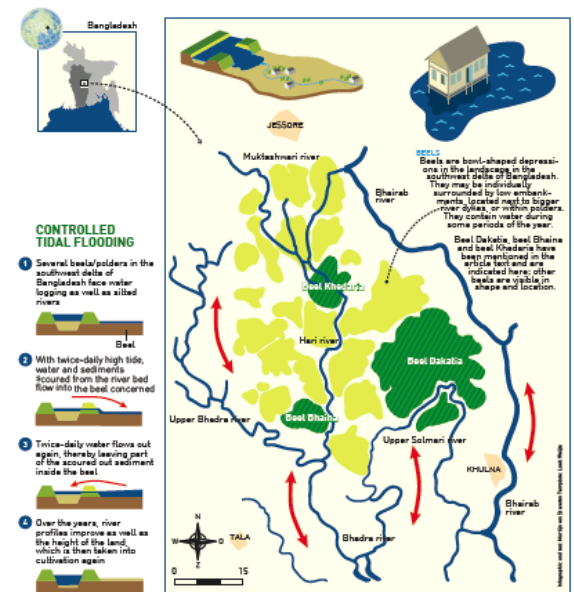
Controlled seasonal flooding in the Vietnamese Mekong delta

The Mekong delta is the low-lying region of the Mekong river basin, where numerous rivers and canals release water into the sea. The delta is to a large extent located within Vietnamese territory. Flood water drains into the Gulf of Thailand (or West Sea) via a number of large canals, and into the South China Sea (or East Sea) via a number of distributaries. The Mekong's Sino-Vietnamese name, Cuu Long, popularly translates as 'nine dragons', referring to the Mekong's nine historical branches conveying water towards the sea. A 'Smith dragon', however, could consist of sediment-laden flood water overflowing embankments during flood season. While in large parts of the delta this dynamic is prevented or reduced due to embankment construction, policy plans now propose to restore this form of controlled flooding in the upper regions.



Controlled flooding in beels/polders with Tidal River Management in the Bangladesh delta

Several beels/polders in the southwest delta of Bangladesh face water logging as well as silted rivers. This hampers effective drainage of water as well as agricultural production. Tidal River Management (TRM) involves the temporary (usually several years) removal of an embankment section adjacent to a beel or polder. During the years of tidal in- and outflow, the area is not suitable for agriculture but may be used for aquaculture. With twice-daily high tide, water and sediments scoured from the river bed flow into the beel concerned. Twice-daily water flows out again, thereby leaving part of the scoured out sediment inside the beel. Over the years, river profiles improve as well as the height of the land, which is then taken into cultivation again.



Local initiative to remove embankments to drain water and revive rivers