UAPP611: Regional Watershed Management

Farakka Barrage Action Initiative and Response (FAIR)

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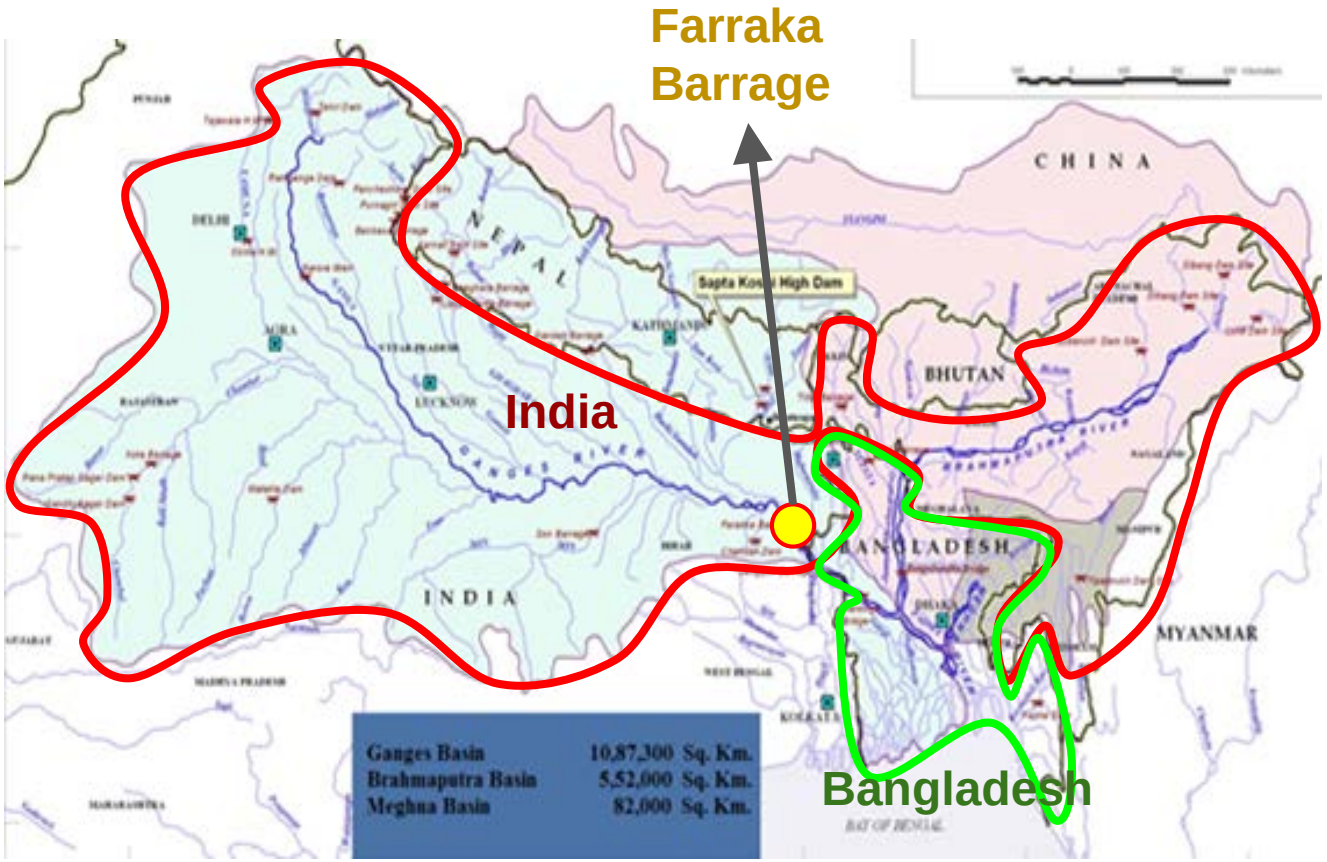
Mission

FAIR’s mission is to restore the social and environmental relationship (between human and environment and between India and Bangladesh) through the improved watershed management in the region of the Farakka Barrage by the year 2026.

Source: BANGLADESH – Audacity of Hope (n.d.) (https://mygoldenbengal.wordpress.com/2014/05/31/india-and-bangladesh-review-of-bilateral-opportunities/)

Background History

- The Ganges River flows from India to Bangladesh.
- The Ganges basin lies in four countries: China, Nepal, India, and Bangladesh.



Source: JRCB (n.d.)

Farakka Barrage

- Farakka Barrage construction was finished in 1975 by India to divert water of the Ganges River to the Hooghly River.
- It consequently resulted in the conflict between India and Bangladesh since Bangladesh's environment and agriculture are largely affected by it.

Source: Google Maps (https://www.google.com/maps/)

The Ganges Treaty 1996

In 1996, India and Bangladesh signed the Ganges Water Sharing Treaty, this treaty is intended to last 30 years. This treaty is to specifically address water flow during the dry season (January-May). The treaty stipulates that Bangladesh will receive at least a minimum of water flow or at least 50% of the water flow (Ganges Treaty, 1996).

Politics

- The Ganges Water Sharing Treaty is set to expire in 2026
  - Previous treaties between India and Bangladesh have lapsed
    - 1975 and 1988
  - Current treaty does not include all members of the Ganges Basin
- Currently no entity to implement or monitor Ganges treaties

Political Influences

(Source: Google Earth Pro)

- The current Ganges Water Sharing Treaty favors the hydro-hegemonic state
- No existing dispute resolution body with power

Recommendations

- A basin-wide water sharing entity should be formed by 2020
- Establish a financial mechanism by 2025
  - All basin members should share in costs
  - Applications for co-financing with NGOs should be completed by 2024
- Establish and ratify a multilateral new treaty by 2026

Impact on the Environment

- Unequal water sharing- Depleting water quality, poor surface water quality, water scarcity, and water burden
- Sedimentation, siltation, erosion
- Loss of biodiversity, flora and fauna.

Source: Sinha, 2016

Recommendations

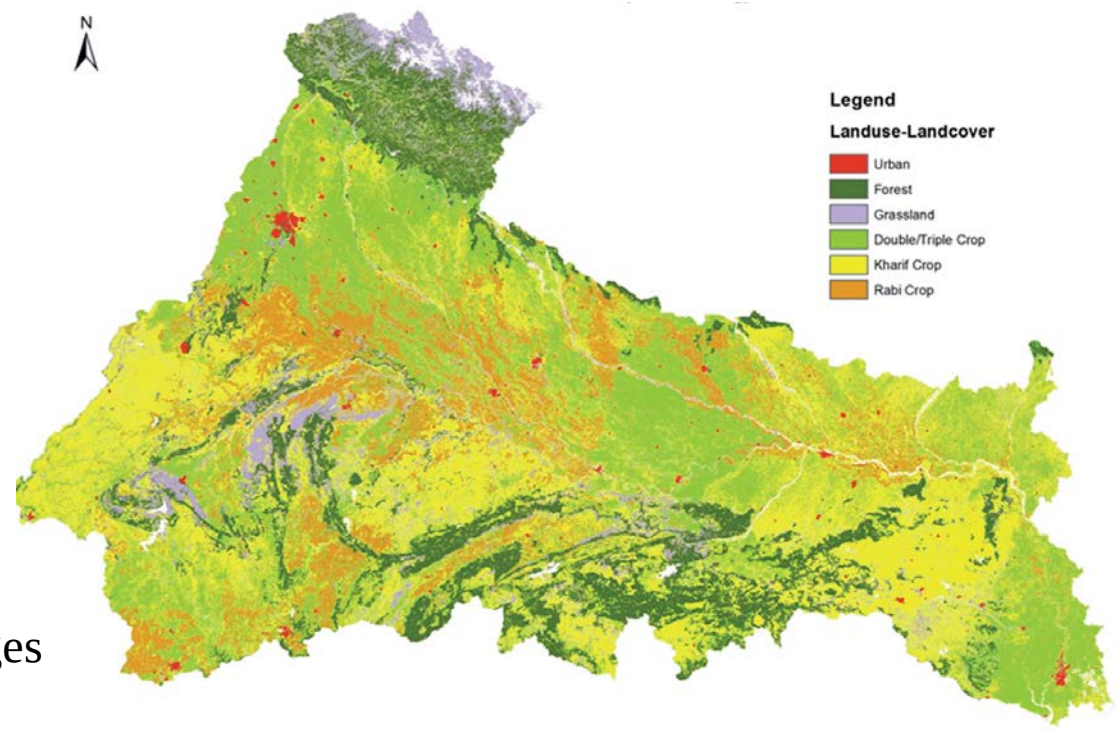
- ❑ Reduce over extraction of groundwater
- ❑ Explore better water management, and alternative water treatment techniques
- ❑ Formulate a silt management plan
- ❑ Design long term and short term biodiversity conservation plan

Source : Singha, 2016

Impact on Agriculture

- ❏ Maximum land used for cultivation purpose
- ❏ Economy mostly agriculture dependent
- ❏ Major source of income and occupation

- ❏ Agriculture largely depends on the water supply from the Ganges River and its distributaries

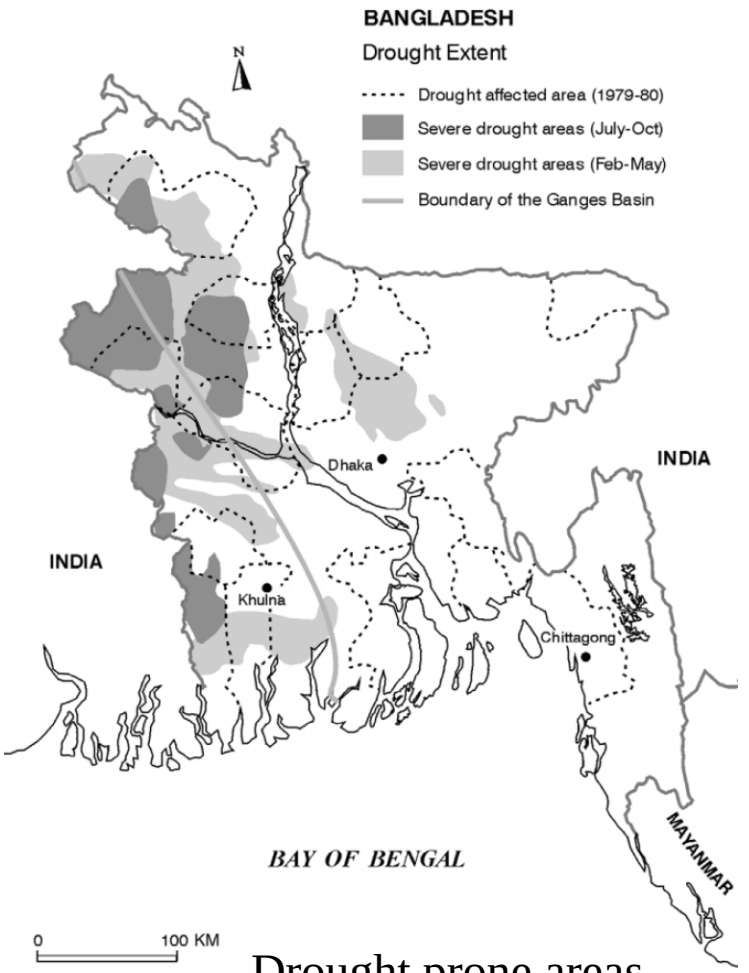


Landuse-Landcover of Ganges river basin (Jin et al., 2015)

Impact on Agriculture

- Adversely impacts the south-western Bangladesh
- Shortage of surface water for irrigation
- Decreased discharge in the dry season, increased discharge in the monsoon period (Gain and Giupponi, 2014; Asafuddowla 1993 in Mia et al., 2009)
- More floods and droughts in post-Farakka period

- Directly affected 65% of crops production
- 34% crops were damaged (Mia et al., 2009)
- Production loss of US$ 56.9 million in 1992-1993 with 3.2% reduction in rice cultivation (Mirza & Hossain, 2004)
- Declined GDP contribution



Drought prone areas
(Mirza and Hossain, 2004)

Recommendations

Find alternative solutions to adapt with the existing situation in short term basis (5-10 years)

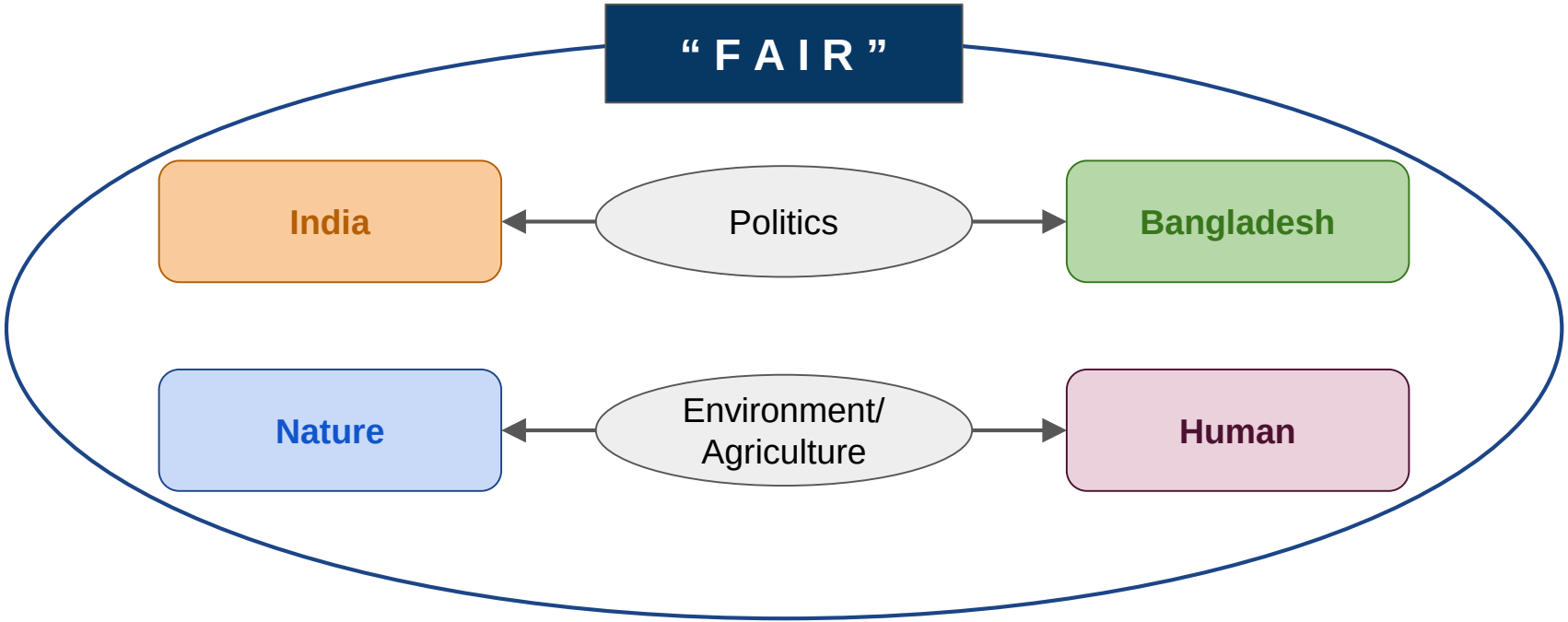
- ❑ Alter cropping based on land fertility, water supply from dam and rainfall
- ❑ Shifting single crop to double crop
- ❑ Cultivation of less water demanding crops like wheat, jute and rabi rice

- ❑ Community involvement for best management practices
- ❑ Mass education program by Govt., national and international NGOs
- ❑ Promote conscious use of irrigation water

Shaw and Mallick, 2013 (pg.264)

Conclusion

“Harmonization between human and environment and between India and Bangladesh through the improved watershed management”



Thank You

Questions/Comments?

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