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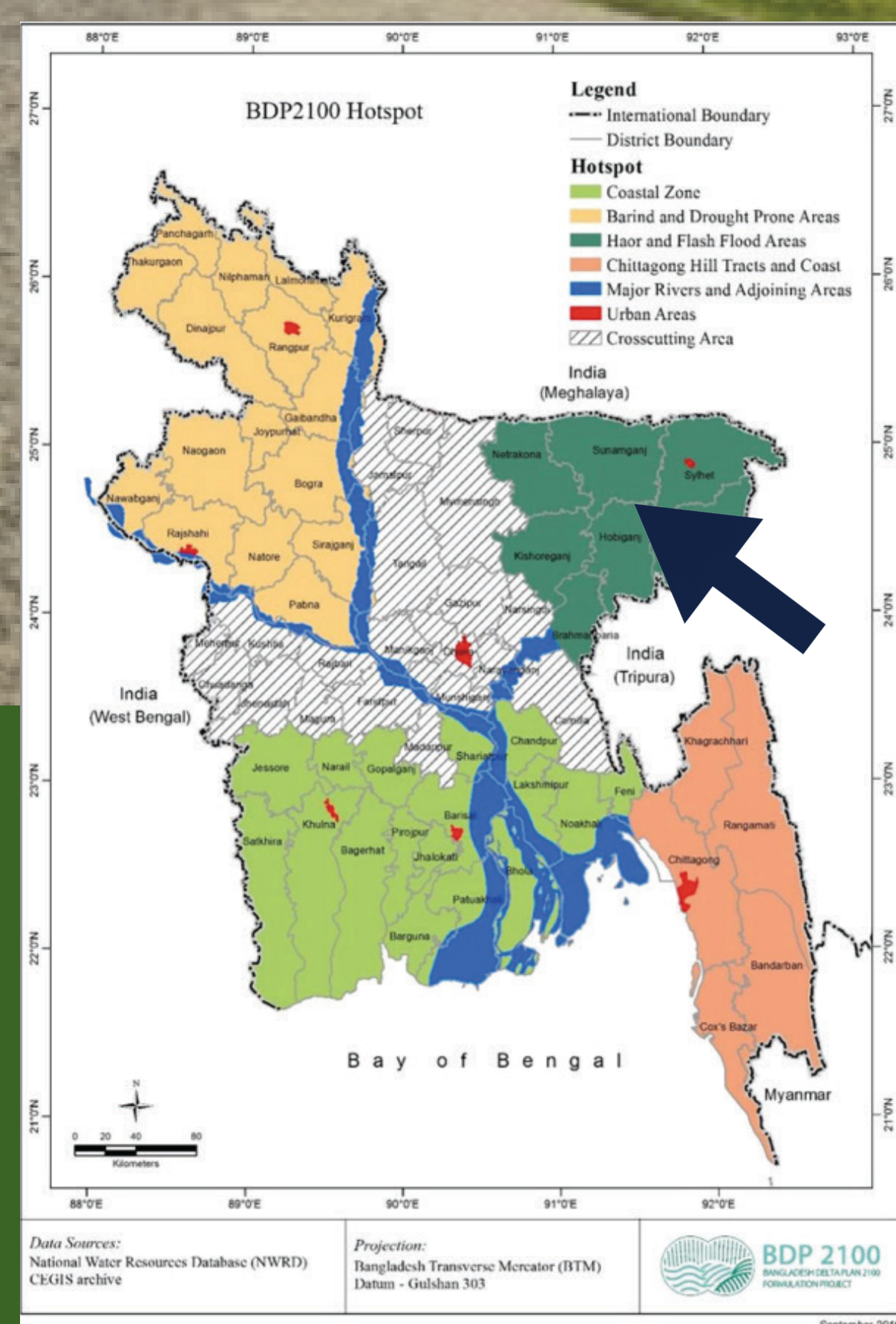
GFDRR
Global Facility for Disaster Reduction and Recovery



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Green Roads for Water Hotspot: Haors



Opportunities and Challenges

1 Improved flood retention, enhancing post-flood soil moisture for early season crops and fish breeding and capture fisheries.

- ➔ Carefully plan – even retrofit - roads, including drainage structures and overflow areas/ causeways to positively effect and flexibly manage to patterns of flood retention. Options:
 - Submersible road embankments
 - Road causeways with sluice gates// box culverts
 - Raised roads with designed spillways – preferably leading to recharge area or wetlands
 - Armoured road embankments to create water storage
 - Small ponds alongside roads that slowly release water and improve soil moisture and serve as fish spawning ground

2 Improve flood preparedness.

- ➔ Construct elevated roads with overflow capacity in lower lying areas (for livestock evacuation); include wide sections for temporary shelter

3 Facilitate fish migration.

- ➔ Sufficient culverts and bridges; well-designed and well-placed culverts, i.e. culverts that are not too steep, and have low/moderate velocity; that may have roughened surfaces; that have adequate water levels in dry season; and are connected to the downstream water body

4 Optimize functions with well-planned roadside vegetation, protect (submerged) roads from scour.

- ➔ Vegetation planting and species selection for scour control, but also direct productive use, embankment stability, dust/ pollution control, noise reduction, biodiversity and are suitable to local soil and climate

Examples of techniques



Overflow area with
armouring and
vegetative protection



Water reservoir
created with road
embankment



Vetiver grass as
slope stabilizer



Fish friendly culvert



Increasing Resilience of Rural Infrastructure and
Local Communities through Green Roads Concept