Climate Change Vulnerability & Adaptation Requirements in the North-West Barind Region of Bangladesh

Locally Led measures from A Regional Consultation Meeting

Date: 29th December, Wednesday

BRAC Centre Inn, Dhaka

Brot für die Welt

CCBVO সিসিবিভিও

Center for Participatory Research & Development CPRD

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Major Natural Hazards in the Northern Region

Northern region, specifically Barind tract is bearing the brunt of numerous natural Hazards and have disastrous consequences.

Drought

Erratic Rainfall

High Temperature/Heat wave

Floods

Riverbank Erosion

Coldness

Climate Change Impacts in the Northern Region

Drought

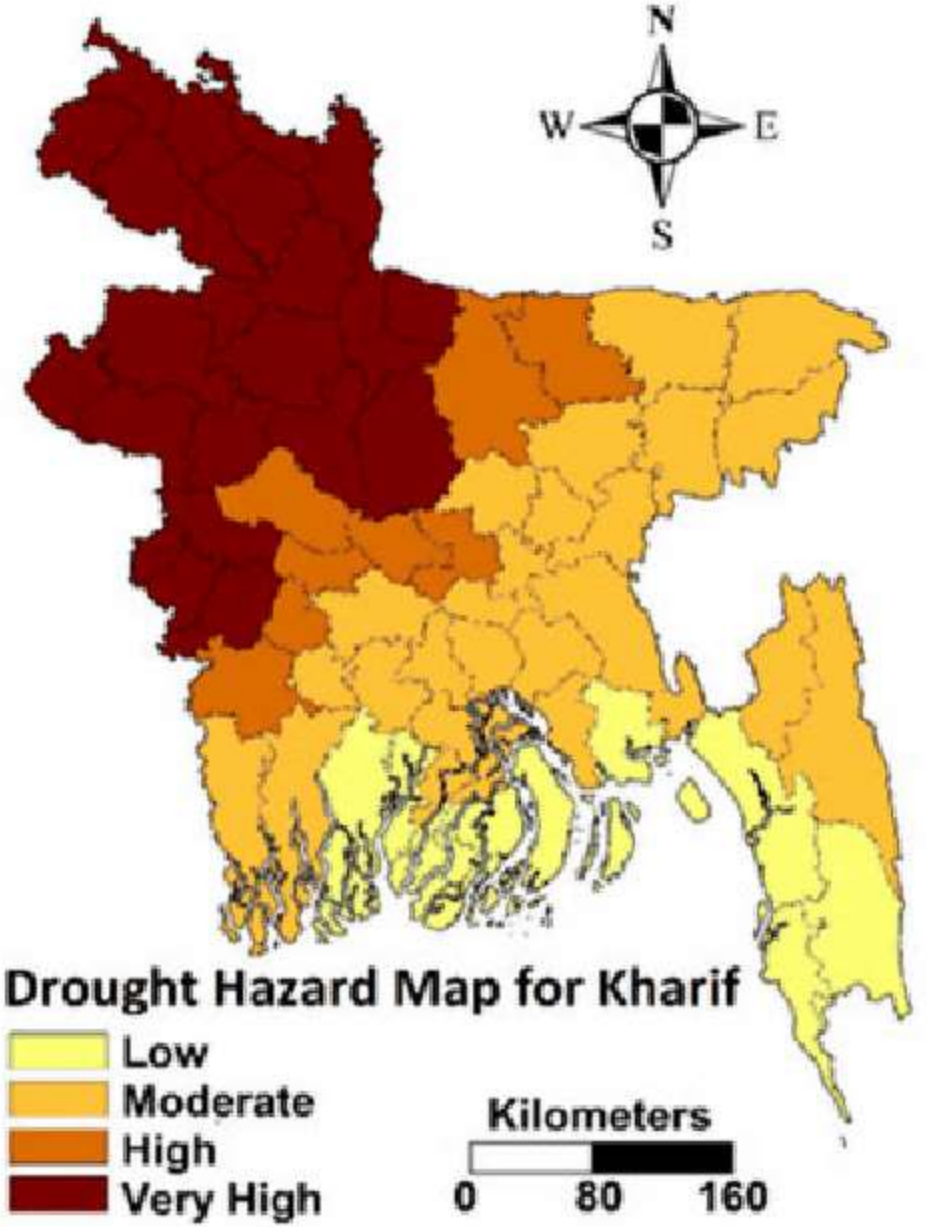
Flood

Drying up of Surface Water

Heat Wave

Drought & Erratic Rainfall

- A strong drought can cause greater than 40% damage to broadcast aus.
- During the kharif season, it causes significant destruction to the t.aman crop in approximately 2.32 million ha every year.
- The years 1992, 1994, 2006, and 2012 experienced moderate to severe droughts, and the year 2010 suffered from extreme drought.
- This region has already started to experience a shortage of rainwater, approximately 18%, in the monsoon season



Prolonged Effects of Drought

Drought causes:

- water shortages,
- Wells to dry,
- depletion of Groundwater and soil moisture,
- stream flow reduction,
- crops to wither leading to crop failure and scarcity in fodder for livestock.
- It affects communities directly dependent on rainfall for drinking water, crop production, and rearing of animals

Flood

- North-western region experiences both Riverine and Flash floods
- Excessive rainfall over the upstream areas during the monsoon causes heavy water flow in the rivers
- Every year agricultural land gets merged under water
- Flood causes both temporary migration and permanent displacement of people
- Water scarcity becomes acute during the flood and water-borne diseases flourish

Vulnerabilities of Climate Change & Adaptation Requirement

A regional dialogue conducted in the Rajshahi to explore the **perceived vulnerability** of climate change in different sectors.

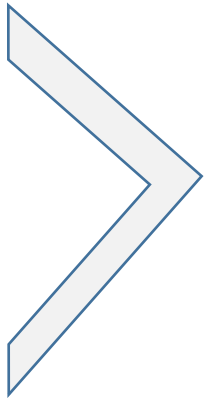
Stakeholders from different level have identified the **possible adaptation measures** against the climate change vulnerabilities.

Discussed Sectors:

1. **Water Resource and Physical Infrastructure**
2. **Agriculture (including livestock & fisheries)**
3. **Women & Health**
4. **Indigenous Communities**

Climate Impacts on **Water Sector** & Required Adaptation Measures

Perceived Climate Vulnerabilities (Water Sector)



Scarcity of pure drinking water.	Depletion of ground water level.	Water shortage in underground aquifer.
Forced to collect water from distant place.	Agri-cultivation cost is increasing because of water shortage.	Subsidence of land due to excessive extraction of ground water.
Presence of excessive Arsenic in drinking water due to the depletion of water level.	Unplanned & Excessive extraction of underground water.	Overdependence on underground water resource.
Unplanned modernization of agricultural sector.	Change in crop pattern and food insecurity.	Drying up of Surface Water bodies (e.g. Rivers)

Possible Adaptation Measures for **Water Sector**

- Prioritizing pure drinking water for all
- Establishing community level water supply facility
- Following National Water Policy and Law properly.
- Coordination among the Govt. institutions
- Tree plantation and preservation of Forestry.
- Refinement of surface water as drinkable water source.
- Dredging/re-excavation of Rivers and Canals
- Modernization of agriculture by emphasizing food security
- Reduce unnecessary underground water extraction
- Establishing “Northern Rajshahi Irrigation System” to enhance use of surface water
- Raising awareness to prevent wastage of water
- Promoting crops breed and technology to reduce water consumption
- Increasing surface water reservoir
- Develop artificial water recharge system or recharge underground aquifer with rain water.
- Ensuring river flow according to the international law.

Climate Impacts on **Agriculture** & Required Adaptation Measures

Perceived Climate Vulnerabilities (Agriculture Sector)

Agri-cultivation:

- Paddy seedbeds are being ruined.
- Potato Plagues and low yield.
- Low yield of wheat.
- Low yield of Paddy.
- Uprising of crops plague and diseases.
- Irrigation problem and high production cost.
- More use of electricity.

Fishery:

- Drying out of water reservoir.
- Over flow of ponds due to excessive rain.
- Higher production and rearing cost.
- Oxygen shortage in pond water.
- Extinction of fish breeds.
- Dismantle of ecology.

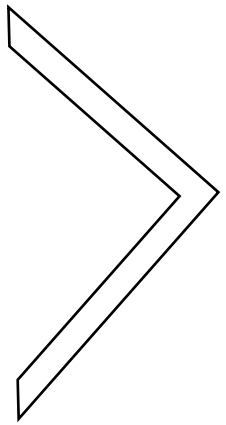
Livestock & Duck, Poultry:

- Uprising of plague and diseases
- Low productivity
- Higher production and rearing cost.
- Scarcity of domestic animals food.
- Problem in cross breeding

Forestry & Homestead gardening:

- Low productivity.
- Uprising of plague and diseases.
- Water shortage.

Possible Adaptation Measures for **Agriculture**



WATER

- Reduce the use of underground water.
- Preservation of rain water and increase its use.
- Excavation of pond and canals.
- Raising awareness on importance of water.
- Increasing drought resilient crops cultivation.
- Crops diversification.

FERTILIZER

- Reduce the use of chemical fertilizer and pesticides.
- Promoting the use of organic fertilizer and raise public awareness

TREE PLANTATION

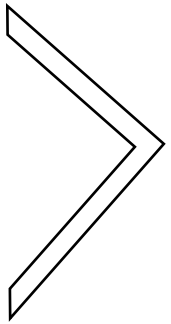
- Tree plantation and increase rural level greenery/forestry.
- Providing training and raising awareness on tree plantation.

OTHERS

- Setting up Industry & Bricks factory away from the agricultural field.

Climate Impacts on **Women & Health** and Required Adaptation Measures

Perceived Climate Vulnerabilities to Women & Health



Women accessibility & authority over fresh water resource and agriculture are decreasing.	Domestic and social level violence upon women are increasing.	Women are being detached from family bonding.
Women are losing their land & work opportunity due to corporate control over agri-sector.	Risks regarding women reproductive health are increasing.	People are facing food shortage and being suffered by malnutrition especially women.
Women are losing their freedom of growing nutritious food in homestead level.	Excessive use of chemical fertilizer and pesticide causing different health hazards and reducing availability of safe food.	Water scarcity hindering health hygiene and sanitation of the people.

Possible Adaptation Measures

- Recognition of women as farmer
- Ensure women's authority over production, procurement and marketing.
- Creating surface water reservoir and ensure accessibility of women.
- Raising awareness of to prevent violence against women.
- Ensuring job opportunity in village level so that male members of the family don't have to migrate in search of work.
- Promoting cooperative agri-cultivation and family level farming system.
- Proving low or no interest loan to the marginal farmers.
- Providing reproductive health service to the family level.
- Promoting drought resilient and eco-friendly framing technique.
- Increase maternal service in Barind region

Climate Impacts on **Indigenous Community** and Required Adaptation Measures

Climate Vulnerabilities of **Indigenous People**

- Freshwater Crisis
- Degradation of land and low fertility
- Loss of production & Food Crisis
- Drought and irregular rainfall
- Loss of natural resources
- Lack of working opportunity
- Lack of easily available nutritious food
- Health hazards and loss of physical efficiency
- Increased livelihood expense
- Increased storm and thunder storm

Possible Adaptation Measures for **Indigenous People**

- Re-excavation Ponds & Canals.
- Using Pond and Canals water for raring livestock and conducting agricultural cultivation.
- Using a water source in multiple purposes.
- Increase the usage of organic fertilizer.
- Reducing the use of chemical fertilizer and pesticides.
- Crops seed preservation.
- Tree plantation
- Planting local tree breeds and vegetables.
- Crop diversification.
- Homestead level duck/poultry rearing and vegetables cultivation.
- Providing irrigation facility by using river water.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THANK YOU

Questions, Please!