

Promoting Disaster Ready Inclusive Preparedness towards Adaptation (PRODRIPTA/প্রদৃপ্ত)

Standard Operating Procedure (SOP) of

Constructing Freshwater Reservoirs for Sustainable Irrigation Practices

In Patuakhali District, particularly in Kalapara and Rangabali Upazila, access to fresh water for irrigation is crucial to ensure agricultural crop cultivation, especially during the dry season. According to Climate Vulnerability and Capacity Analysis (CVCA), Community Adaptation Plan (CAP) and Baseline Plus survey, it has been identified that these regions face acute water scarcity during the dry season, causing significant challenges to agricultural productivity. The lack of freshwater sources leads to one cropping yearly, causing economic hardship for farmers who rely primarily on rainwater for irrigation. Furthermore, excessive rainfall during the rainy season, occurring within a short timeframe, leads to waterlogging. This phenomenon not only damages crop but also disrupts agricultural activities, particularly affecting the cultivation of Aman rice in this region.

There is a pressing need to develop sustainable solutions to ensure year-round access to fresh water for irrigation in these areas. Construction of freshwater reservoirs emerges as a viable approach to address this issue effectively. By harvesting and storing rainwater during the wet season, these reservoirs can provide a reliable source of irrigation water during the dry season, thereby promoting agricultural productivity and livelihood sustainability.

Objectives:

- ❖ Alleviate water scarcity during the dry season by constructing freshwater reservoirs.
- ❖ Provide reliable access to water for irrigation throughout the year, reducing dependency on erratic rainfall patterns.

Expected Outcomes:

- ❖ Increased agricultural productivity and food security through reliable access to water for irrigation throughout the year.
- ❖ Enhanced livelihood opportunities and income generation for farmers through multiple crop cultivation.

Reservoir selection criteria:

- ❖ **A minimum of 80-100 bighas of arable land** around the reservoir is required.
- ❖ **Canals** must be selected as reservoir.
- ❖ The selected **canals must be filled** with sedimentation and canal should be governmental property.
- ❖ The canals must a **sub-surface and rainfed** system. Canals with regular tidal phenomenon will be excluded to restrict saline water intrusion.

Selected Canals

SL	Name of Canals	Village	Union	Upazila	Existing Width (ft)	Existing Depth (ft)
1	Chhota Baisdia Canal	Chhota Baisdia	Chhota Baisdia	Rangabali	30	3
2	Char Laxmi Canal	Char Laxmi	Char Montaz	Rangabali	25	3
3	Sapakhali Pilghata Canal Or Sapakhali Sluice Gate Canal	Sapakhali	Mithaganj	Kalapara	55 30	4 3

Implementation Modalities

The intervention will be implemented following a mixed method which is given below:

1. Competitive procurement process for excavation using mechanical excavator
2. Cash for Work (CfW) for dressing and plantation activities

Tentative budget

Total 3 canals will be excavated in Mithaganj union of Kalapara upazila, Chhota Baisdia and Char Montaz union of Rangabali upazila. Tentative budget for the total intervention will be approximately BDT 3,600,000.00.

Excavation measurement

SL	Name of Canals	Length – L (ft)	Width – B (ft)	Depth – D (ft)	Total excavatable (cft)	Remarks
1	Chhota Baisdia Canal, Chhota Baisdia, Chhota Baisdia, Rangabali	1700	20	4	136,000	Mechanical excavation
2	Char Laxmi Canal, Char Laxmi, Chhota Baisdia, Rangabali	2400	15	4	144,000	Mechanical excavation
3	Sapakhali Pilghata Canal, Sapakhali, Mithaganj, Kalapara or Sapakhali Sluice Gate Canal, Sapakhali, Mithaganj, Kalapara	1500	20	4	120,000	Mechanical excavation

Timeline

All mandatory activities should be finished by mid May 2024.

- ❖ Finalize the name and location of the proposed canal by March 20, 2024.
- ❖ Obtain the mouza map of the proposed canal by March 25, 2024.
- ❖ Obtain approval for the canal from the relevant authority by March 31, 2024.
- ❖ Share the Standard Operating Procedures (SOP) and Bill of Quantities (BoQ) by March 21, 2024.
- ❖ Initiate the procurement process by March 24, 2024.
- ❖ Tendering process must be completed including issuing work order and associated processes by April 15, 2024.
- ❖ Select beneficiaries for the Cash for Work activities by April 10, 2024.
- ❖ Total intervention must be completed by May 15, 2024.
- ❖ Plantation on the embankment in June during World Environment Day 2024 observation. All the selected plants should be procured accordingly.

End