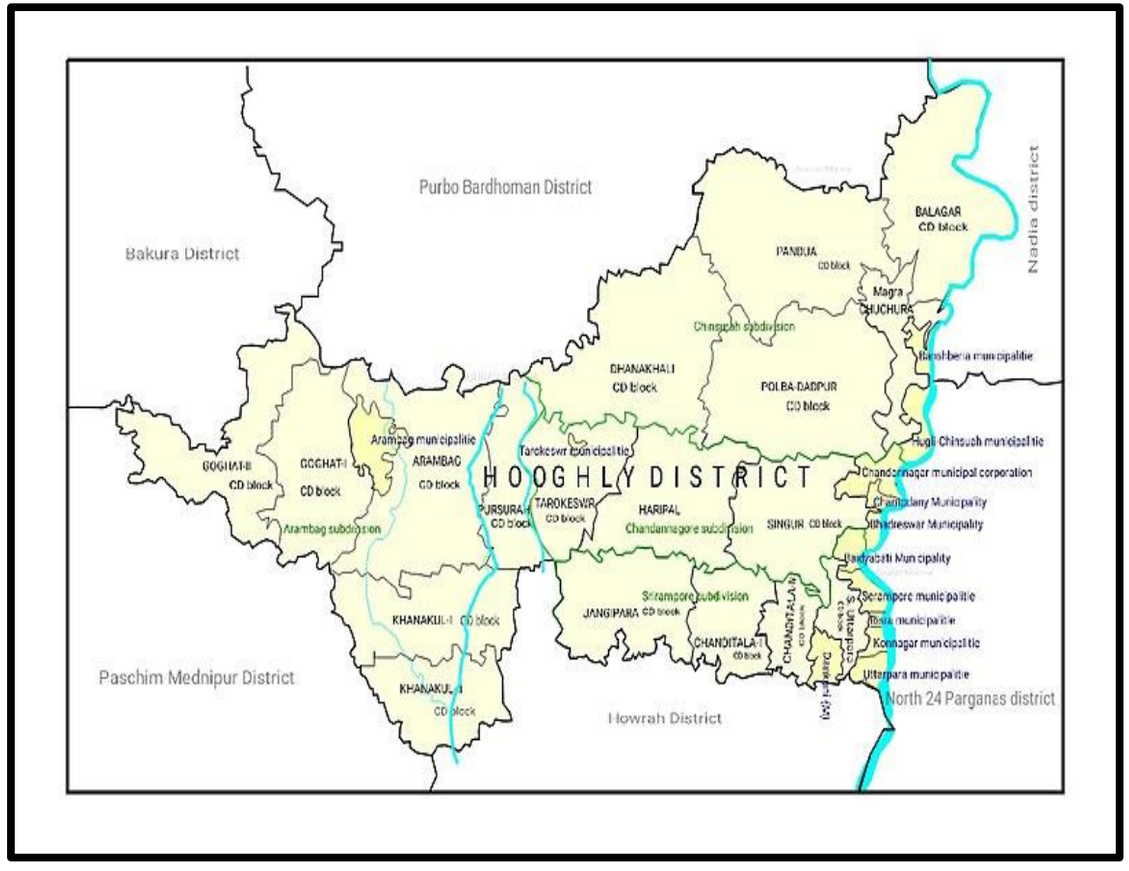
FILTER BED, CONSTRUCTED WETLAND & DEWATS FOR DISCHARGE POINT DRAIN TREATMENT IN NAMAMI GANGE DISTRICT, HOOGHLY

Presented by-

PANCHAYATS AND RURAL DEVELOPMENT DEPARTMENT , WEST BENGAL

Overview of Hooghly District

- Hooghly river forms the eastern border of the district.
- 12 (twelve) GPs of Chinsurah and Balagarh blocks are *Namami Gange* GP.
- Untreated liquid waste is a source of pollution for the river Ganges.
- GWM initiatives have been made to arrest flow of untreated grey water into Ganges.



Sr No	Particulars	Details
1	Total No of Blocks	18
2	Total No of GP	207
3	Total no of Villages	2,115
4	Total Population (2023)	44,79,591
5	Total Household (2023)	9,95,465

DETAILS OF GANGA BORDERING GP

No. of Blocks : 2

No. of Gram Panchayats: 12

No. of villages : 115

Total population: 2,30,623

Total household: 39.186

No. of drains : 307

No. of drains outlet to Ganga river : 39

No. of leach pit: 167

No. of filter chamber : 188

No. of constructed wetland: 3

No. of DEWATS : 2

IMPLEMENTATION PLAN

❑ Steps for LWM Implementation

Step 1
Five Days of Handholding Support to district technical persons by State GWM experts

Step 2
State Team Support for Design and Estimation of LWM Assets

Step 3
Planning and DPR preparation of GWM in all villages by NS with Vetting of DPR by district officials

Step 4
Field level demonstration

Step 5
Monitoring GWM progress by district and state team

Step 6
Time-to-Time Capacity Building and Training on GWM

STEP-1:
5 Days Handholding Support for District GWM

❑ Methodology Adopted for the Training

DAY 1- Detailed Orientation

- Classroom Orientation on GWM and field visit of District/ Block/ ISGP/ MGNREGS Engineers, Joint BDOs, and Nirman Sahayaks facilitated by GWM experts

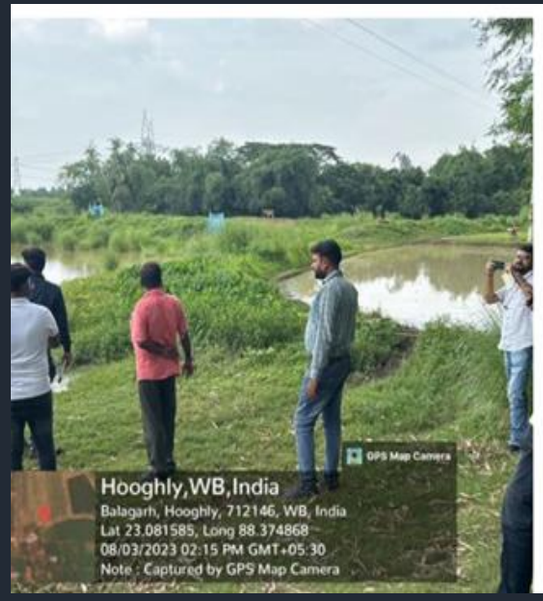
DAY 2 to 4- Field Visit and Data Collection

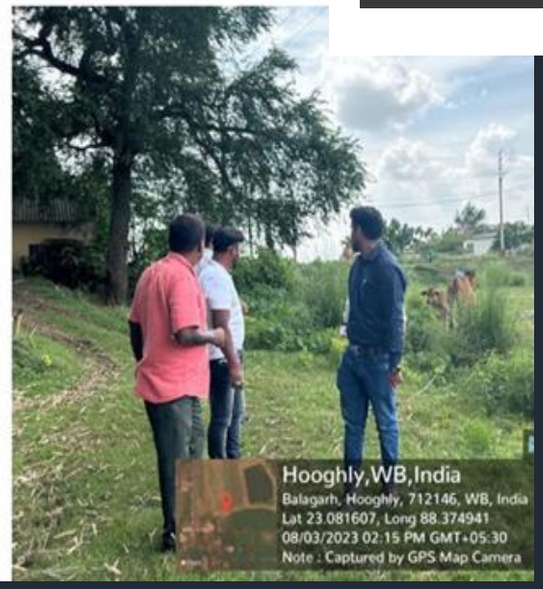
- During the period, team lead by Nirman Sahayak identified the probable intervention sites and collected requisite data

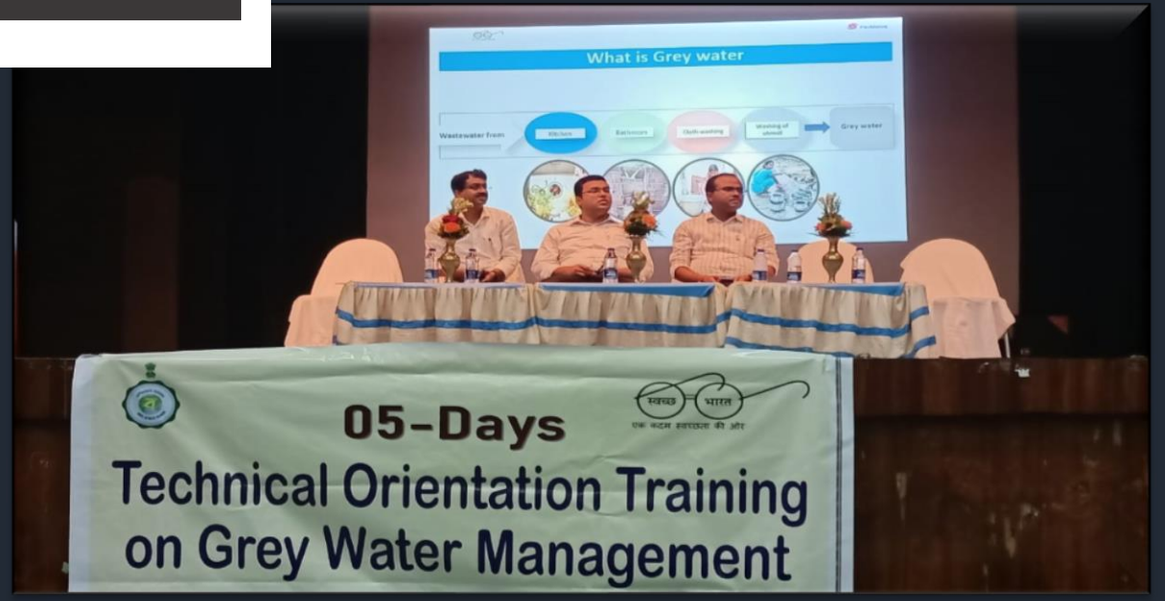
DAY 5- Meeting and Drawing Preparation

- Based on the information collected, appropriate technologies of GWM were discussed

DAY 1
ORIENTATION







DAY 2 to 4
FIELD SURVEY

DAY 5

INTERACTIVE SESSION

STEP-2&3:
State Team Support for Preparation of Drawing and Estimate

❑ **Assistance in preparation of Drawing & Estimates:**

Sr No	Description	Amendments
1	Technical intervention on GWM with selection criteria	F:\New folder\ hnical intervention
2	GWM technical advisory	F:\New folder\ l technical advisor
3	Construction of silt chamber advisory	F:\New folder\ stuction of silt cha
4	Model Estimate for DEWATS, Constructed Wetland, Filter Chamber, Leach Pit	F:\New folder\ del estimate GWM
5	Model Estimate of Integrated Settler with ABR	F:\New folder\ 4-PRD_08112023.
6	Fund Utilization	F:\New folder\ WM clarification.p

Model Estimate assisted the district team to prepare and check the estimates properly

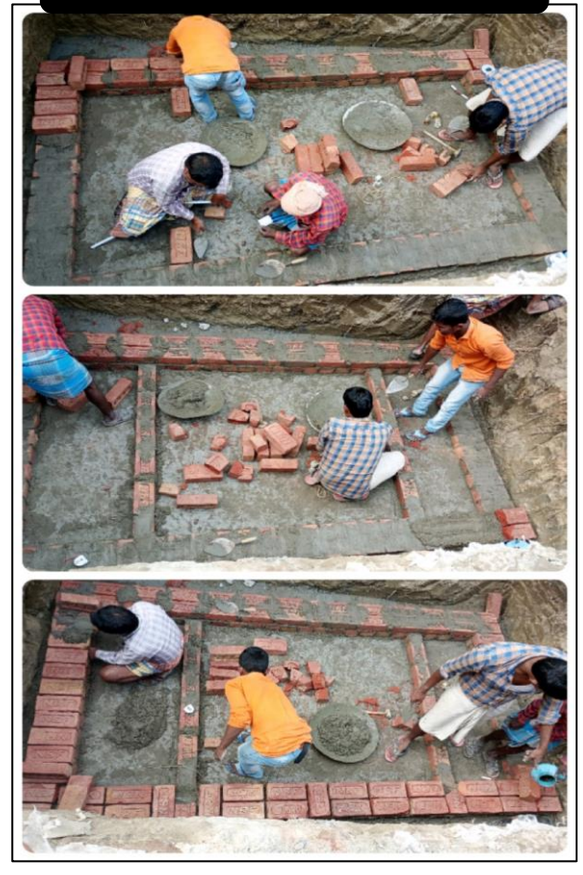
STEP-4: Field Demonstration

❑ **Support from State Team**

Field demonstration of LWM Assets

LEACH PIT

VERTICAL FILTER CHAMBER



CONSTRUCTED WETLAND

DEWATS

**As these were new type of construction hence it was required for proper implementation*

STEP-5: Review and Monitoring by District and State Team

❑ **Review Meeting for assessment of progress of district**

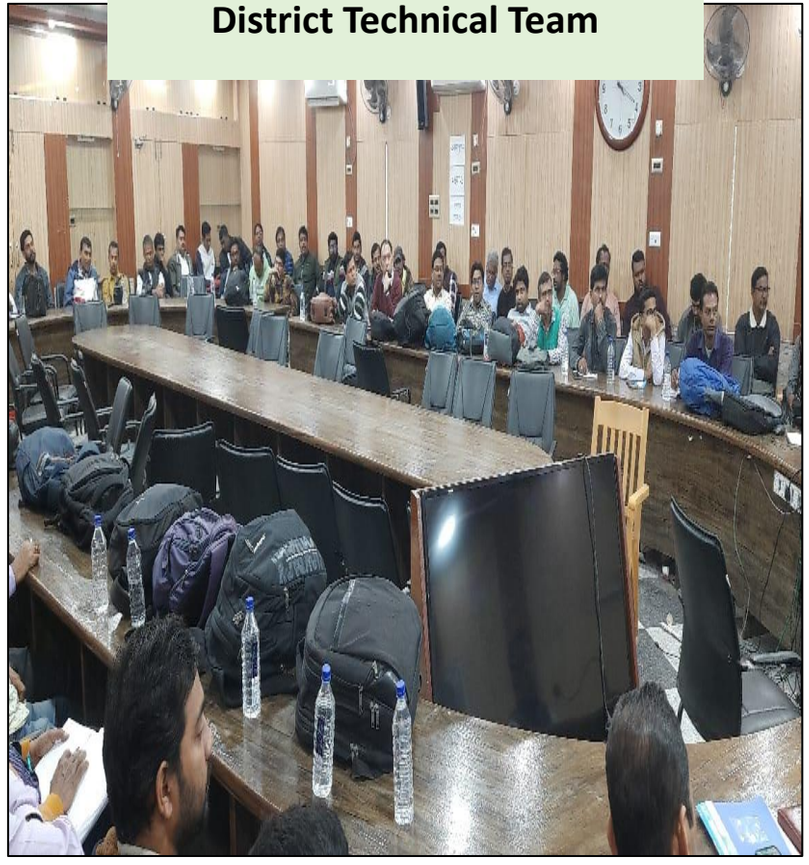
Regular monitoring by State through review meetings

Field Inspection by State and District Teams

STEP-6: Capacity Building and Training

❑ **Broad Objectives of the Support:**

Refresher Training Course for District Technical Team



Orientation of Gram Panchayat Pradhan, Gram Panchayat Secretary

Mason Training

DEWATS

at Nayasarai Village, Chandrahati 1

Influent Wastewater

Before

After

Treated Water

- *Planned for treatment of greywater from **100 households***
- *Components are settler tank, anaerobic baffle filter tank, and a polishing pond filled with gravel*
- ***Capacity 25 KLD***
- *The total project cost is **5 lakhs.***
- *The treated water is discharged into **the Kunti River , a tributary of the Ganges.**.*

Construction of DEWATS

Drain carries Grey water

Grey water comes into settler tank

Water comes into ABR

H P G F

Treated Water comes into Polishing Pond

PHASES OF CONSTRUCTION OF DEWATs

CONSTRUCTED WETLAND

at Nayasarai Village, Chandrahati 1

Before

After

Ongoing Construction

- *Planned for greywater from **80 HHs***
- *Components are settler tank, Horizontal Planted Gravel Filter (HPGF) bed.*
- *Capacity is **15 KLD***
- *The total project cost is **4 lakhs.***
- *Treated water is discharged into **the Kunti River***

DEWATS

at Bishpara Raghunathpur, Chandrahati 1

Treated Water

Before | **After**

- *Planned to treat grey water from **100 HHs** .*
- *To solve this problem, **Integrated Settler with ABR** of **25 kld** capacity has been constructed.*
- *Initially, the BOD of wastewater was 120 mg/l, which has been successfully reduced to 27 mg/l.*
- *Treated water is now used for irrigation purpose.*

COMMUNITY LEACH PIT

VERTICLE FILTER CHAMBER

BEFORE

AFTER

Raghunathpur Village
Chandrahati 1 GP

BEFORE

AFTER

Bishpara Village,
Chandrahati 1 GP

Small Drain Treatment Having Outlet To Ganga River

VERTICAL FILTER CHABMER

AT VARIOUS OUTLET POINTS OF GANGA RIVER

VERTICAL FILTER CHAMBER

at various locations in District

For Hand Pump

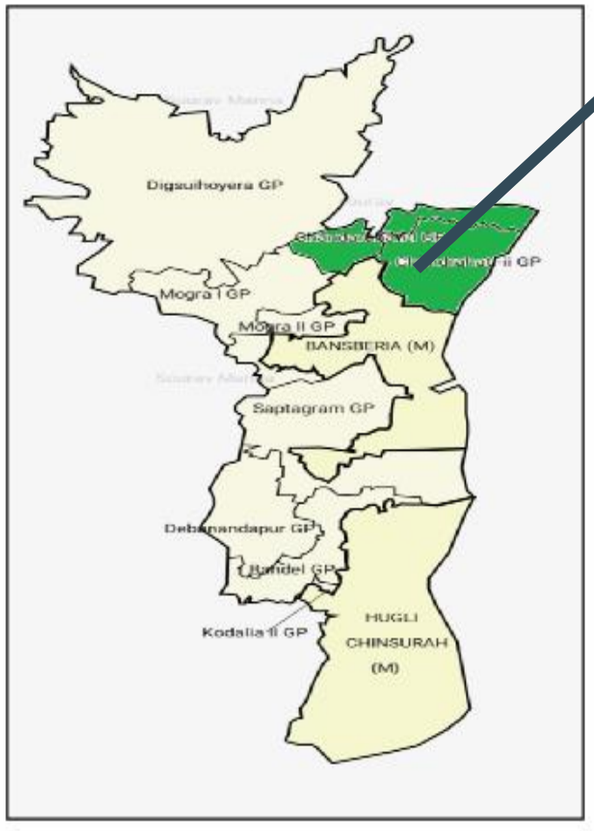
VERTICAL FILTER CHAMBER

At various locations in the District

For Small Drain Treatment Carrying Wastewater From 25-30 HH




TREATING WASTE WATER FLOW INTO THE GANGA



Chinsurah-Mogra Block

CHANDRAHATI-I GRAM PANCHAYAT						
Sl No.	Village Name	Household	Total Population	No of Outlet Points To Kunti River	GWM Assets	
					Filter Chamber	Constructed Wetland/ DEWATS
1	Nayasarai	612	2,405	3	1	2
2	Raghunathpur	652	2,698	3	2	1
3	Bishpara Chapatala	541	2,164	2	2	0
4	Bishpara Panchanantala	552	2,210	2	2	0
5	Bishpara	580	2,321	1	1	0
6	Chapatala	570	2,481	1	1	0
Total		**3,507**	**14,279**	**12**	**9**	**3**

*Following a comprehensive survey, **Chandrahati 1 GP in Chinsurah-mogra block** was selected for demonstration of pilot projects to manage wastewater*


Confluence of River Kunti & Ganges
Thank you