

WBADMIP

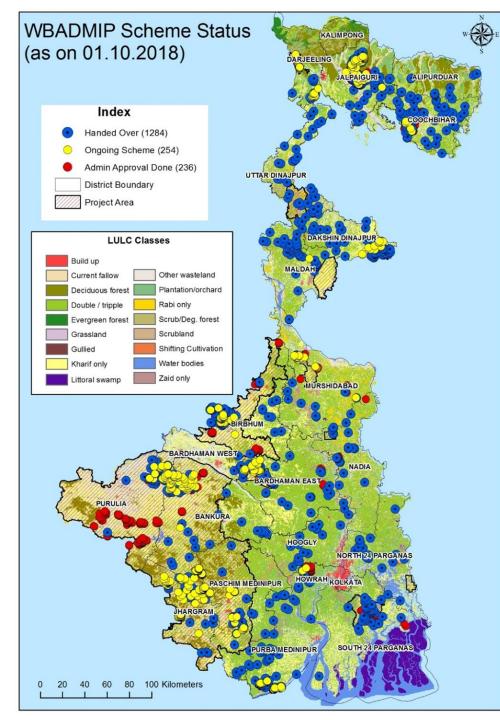
West Bengal Accelerated Development of Minor Irrigation Project WBADNIP

Supported by World Bank

Implemented by

Water Resources Investigation & Development Department

(WRI&DD) Government of West Bengal



Particulars **Project Duration Project Cost** Loan /Credit Amount (\$m) State Share Number of MI Schemes **Proposed Irrigated area Proposed Beneficiaries** Coverage

Salient Features of the WB ADMI Project Features January 2012 - December 2019 US\$ 205 million (INR 1380 Crores) US\$ 155 million [IBRD US\$ 30 million IDA USD 125 million] US\$ 50 million 2500 75000 Ha 1,00,000 Focus on underdeveloped districts **Project Objective-**To enhance the Agricultural

production of Small and Marginal Farmers in rainfed areas by Providing Assured Irrigation



Low Income of small and marginal farmers (identifying constraints)

• Supply Side Constraints :

High fixed cost to higher productivity

Externalities of surface irrigation schemes and market failure

Rent seeking in ground water based schemes (e.g. tube well)

Small Individual Scale

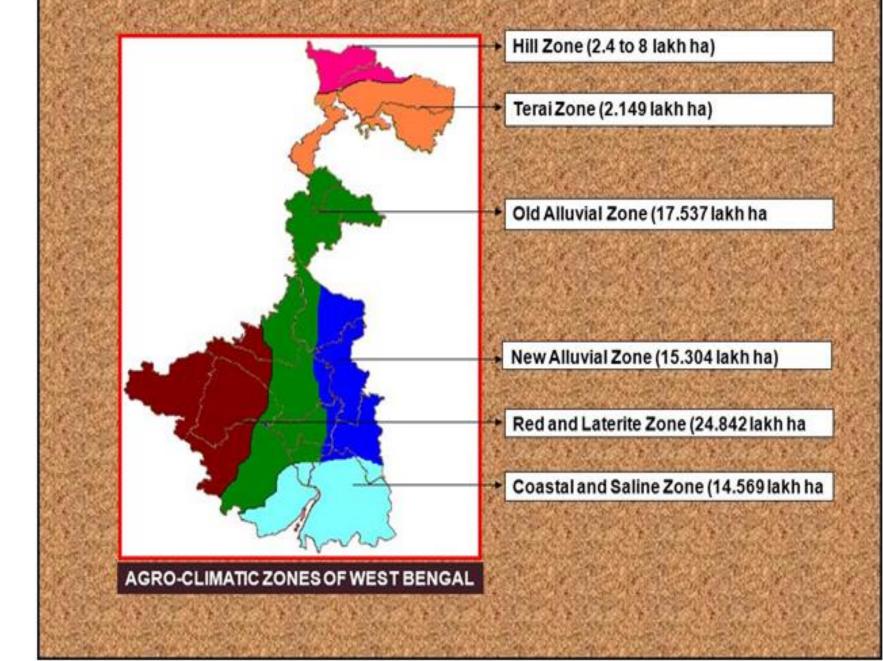
Knowledge Gap (weak extension channels)

• Demand Side Constraint:

Low demand for subsistence crops produced by farmers

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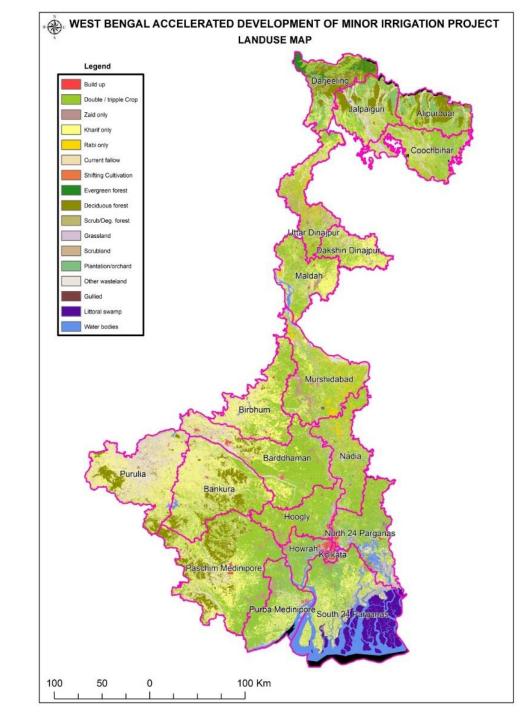


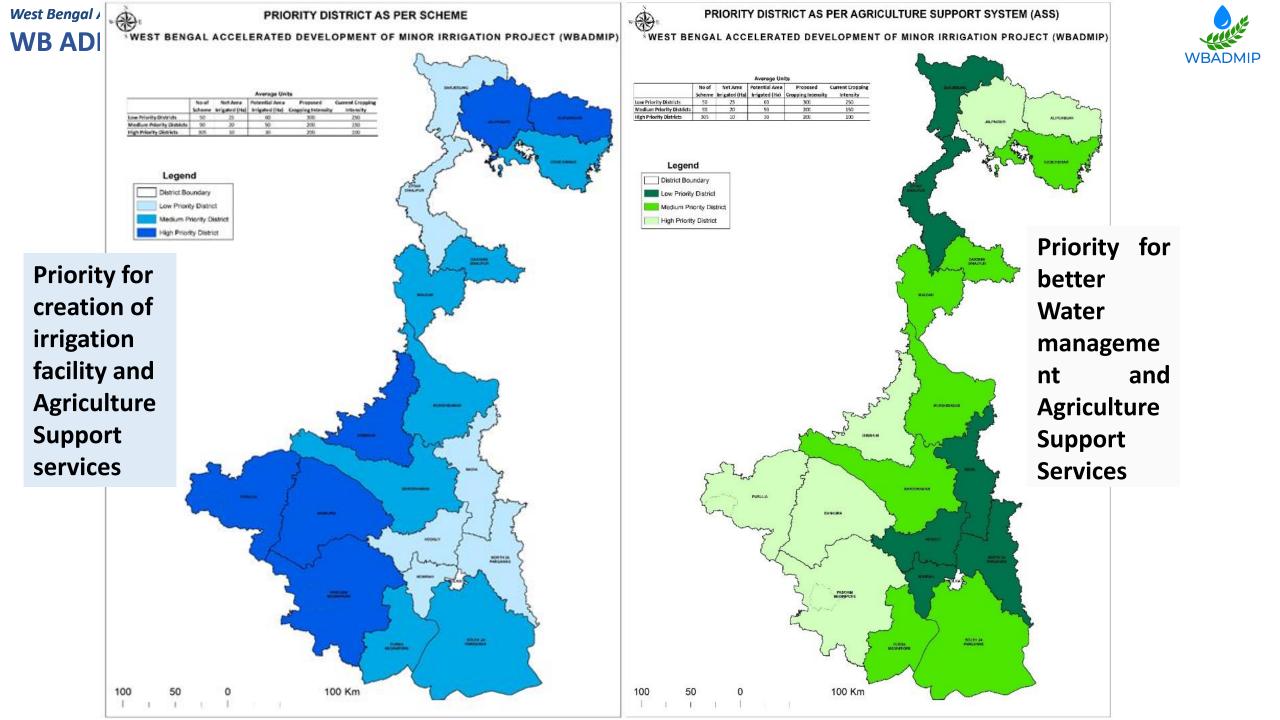


Village and Scheme selection criteria

Project is implemented across the state

- Priority to single cropped and Rainfed areas
 - Western lateritic zone
 - Northern Hilly Areas
 - Southern Saline Areas
- Land use Map based area selection
- Micro Watershed based integrated approach
- Involvement of women & tribal







Farmer led Irrigation System

Pre-planning

• Identification and Selection of Schemes using Web GIS - single crop underdeveloped areas

Planning

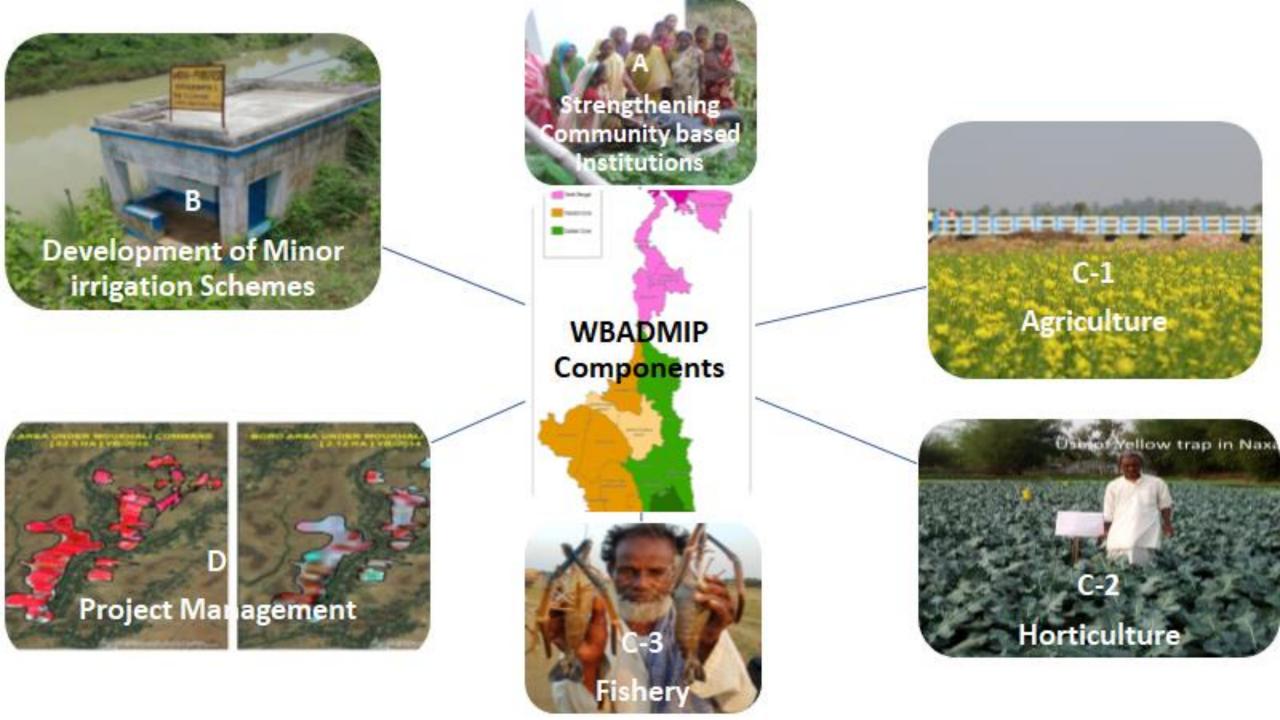
 Formation of Water User Association (WUA), Preparation of Scheme Development and Management Plan

Implementation

 Capacity building of WUA, Construction of MI Scheme, monitoring by WUA, Demonstrations of Agriculture and allied activities

Post Implementation

 Operation and maintenance of MI schemes by WUA, user charges, Dissemination and scaling up of good agriculture practices in command area



Water User Association

- Inclusive community engagement
- Size varies from 15 to 150 farmer beneficiaries
- Involvement of WUAs in planning & Implementation
- Principles transparency, trust and participation
- Registered under Societies Registration Act
- Training and capacity building grading system
- Convergence with other initiatives
- Amount of corpus fund (INR in lakh): 105.7





Planning & Implementation / Resource Mobilization

10

Operation & Maintenance of MI Schemes

WUA

Empowering

communities

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Better Water Management (Maximizing benefits)

Role of Water Users Associations (WUAs)

Conflict resolution Maintaining equity Agriculture support services for Income generation

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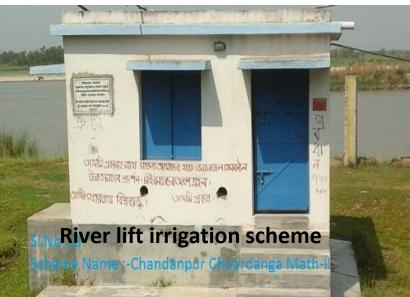


Water Detention Structure (Canal)

Minor Irrigation Schemes 1292 No Created



Water Detention Structure (Pond)



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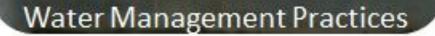
Water Conservation Structures through WUAs











Good Practices

Agriculture Support Services

Agriculture Inputs

Agriculture equipment's

Crop Diversification

Anna cultivation in Nadia district

Market Linkages

 Wasteland Development

 Orchard with Intercrops

Good Practices

Horticulture Services



Protected Cultivation

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West Bengal Accelerated Development of Minor Irrigation Project V

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Periodical Netting 22/04/20

Use of Maximum Waterbodies IIP



Water Quality Management

Services



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North Bengal



Culture of grass carp, deshi Magur and common carp in small hapa with poly lining in Darjeeling district. Spawn to fingerlings program IMC fish production.

Western Zone

Hatcheries of indigenous species, Spawn to Fingerling production involving Self Help Groups,

Culture of indigenous fish species like Chitala, Bhetki, Mourala, Fresh water giant Prawn etc.



Southern Zone

Canal fishery Poly culture of IMC, Monosex tilapia (Monopia) along with fresh water giant prawn; Mass production of IMC



Canal/creeks re-excavation in South 24 Parganas District

High Salinity Mono-cropped rainfed agriculture Sea water intrusion Silted old creeks Low productivity Migration for work

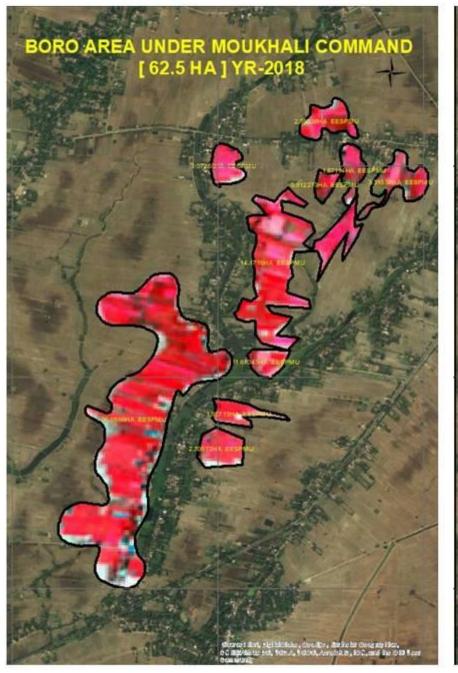


AFTER EXECUTION

NAME OF SCHEME: BALOIJHAKA WDS, BLOCK: CANNING ISUB DIVISION- CANNING

Canal re-excavation work (WDS) District - South 24 Parganas Created – 59 No Length - 210 KM Kharif Area irrigated - 2600 Ha Rabi Area irrigated - 3500 ha West Bengal Accelerated De WB ADMI Proje

Water Detention Structure in South 24 Parganas

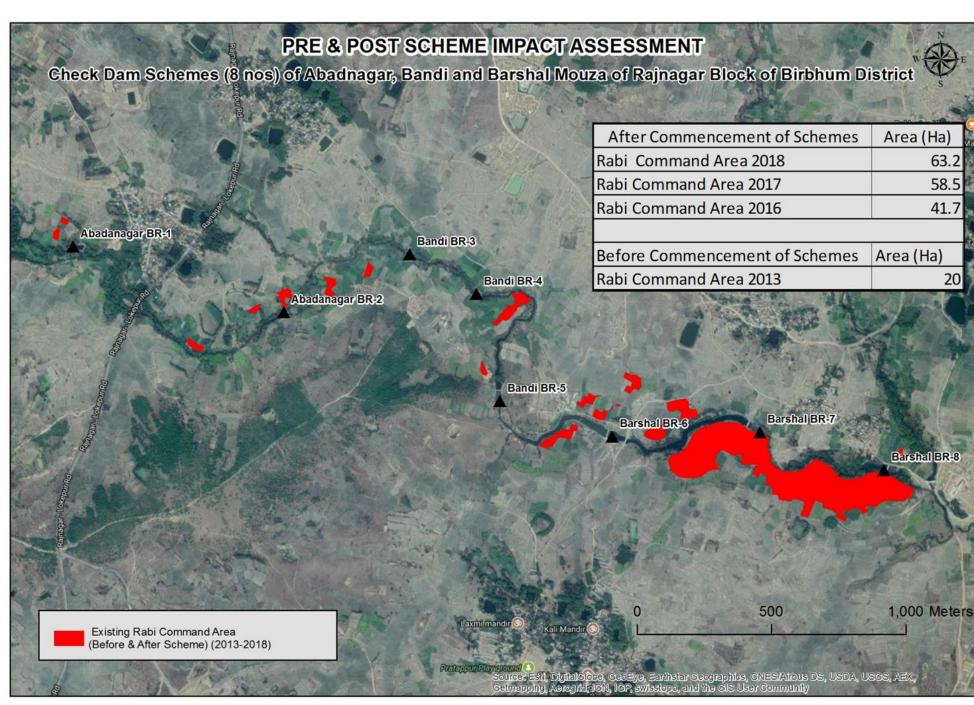


BORO AREA UNDER MOUKHALI COMMAND [2.12 HA] YR-2014

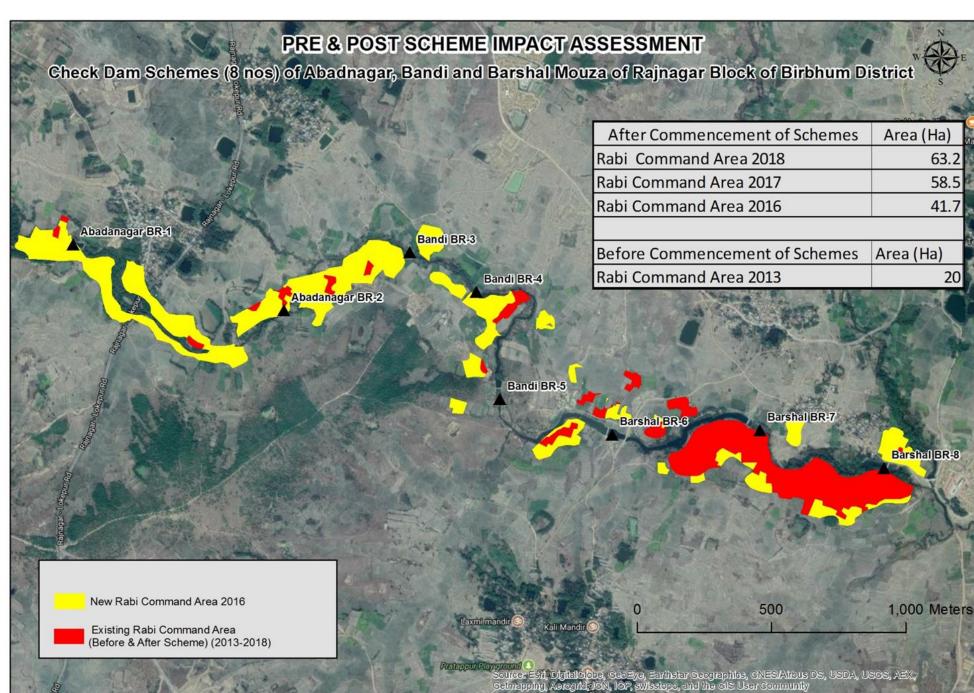


Check Dam Ranigram Birbhum

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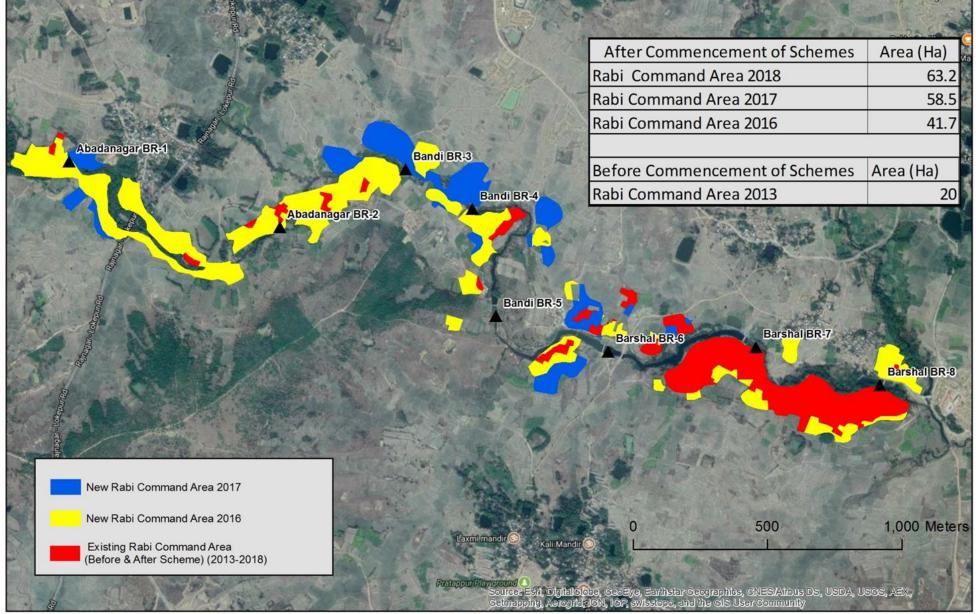




PRE & POST SCHEME IMPACT ASSESSMENT

Check Dam Schemes (8 nos) of Abadnagar, Bandi and Barshal Mouza of Rajnagar Block of Birbhum District

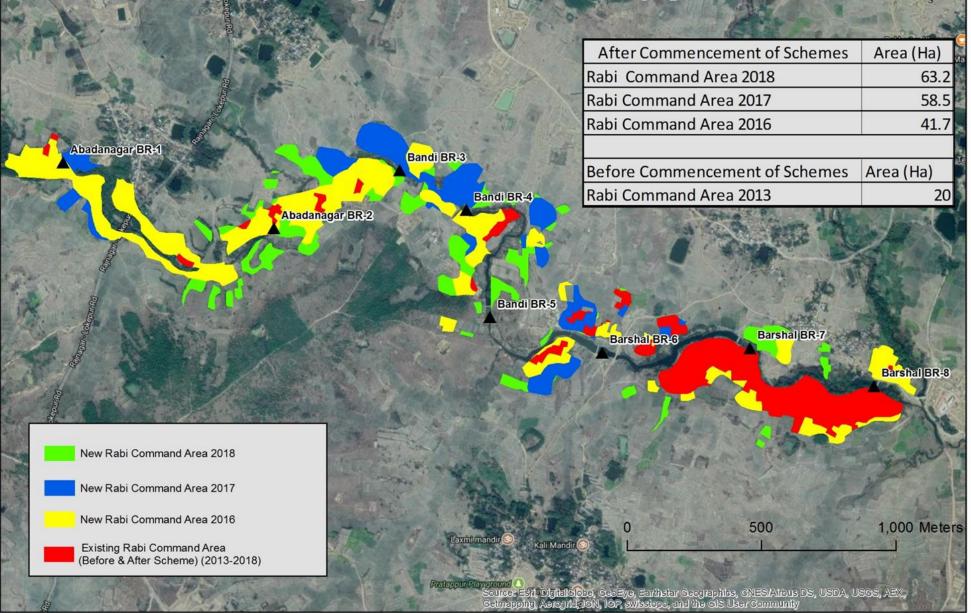




PRE & POST SCHEME IMPACT ASSESSMENT

Check Dam Schemes (8 nos) of Abadnagar, Bandi and Barshal Mouza of Rajnagar Block of Birbhum District







Introducing Solar Irrigation System

- . Total number of solar system installed and handed over: 138
- . Managed by WUA (irrigation plan discussed in weekly meetings)
- . Operator normally from the household which provides land
- . User fee (either hourly or per bigha basis) part of it goes to the operator
- . Water discharge: Designed for 30 cubic meter per hour (5 H.P.)
- . Design has been further optimised in view of changing technology and falling price
- . Used for 200 days (approx.) possibility for net metering



Mix fruit plantation in wasteland areas More than 1500 Ha land with 4 Lakh plantation already completed

- Uncultivable dry uplands lying fallow for years; used only for grazing
- Water User Association operating as the implementing agency
- Involving stakeholders 70% of beneficiaries are the poor from Tribal community - mostly women
- Micro-Irrigation structures for irrigation
- Low/very low water requiring crops as intercropping to provide additional revenue stream
- Mixed fruit tree plantation of Mango, Guava, Citrus, Jackfruit, Pineapple, Cashew, etc. - to ensure income round the year



Mix fruit plantation with Intercropping within orchard using Hapa





Active women involvement in Project activities

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Innovations by WUAs







WB ADMI Project Supported by World Bank Promoting Innovative technologies and better water management practices







Improving conveyance efficiency





Good even furrows



Improving conveyance efficiency



Well formed furrows in basin



IoT (Internet of Things) based water management

- Water monitoring sensors used for a pilot study
- System Design by I.I.T Kharagpur
- Number of irrigation needed for Kharif reduced by almost 30 percent
- Expected to bring in behavioral changes in farmers, reduce cost of irrigation and enhance productivity
- 25 percent enhancement in yield due to less water stagnation and better root volume





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Result framework indicators 2012-2019

| Key Outcome Indicators | Commitment |
|--|------------------|
| | By December 2019 |
| Operational water user associations created and/or strengthened (number) | 2500 |
| Water users provided with new/improved irrigation and drainage services (Number) | 100000 |
| Area provided with irrigation and drainage services (ha) | 75000 |
| Farmers in project area adopting improved production techniques (Number) | 40000 |



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| Key Outcome Indicators | Commitment |
|--|------------------|
| | By December 2019 |
| Increase in value of produce | 140% |
| Change in Cropping intensity | 170% |
| Area diversified to less Water intensive Crops | 20% |
| Increase in Production of Paddy (Metric tons/year) | 95000 |
| Increase in Production of Pulses (Metric tons/year) | 3500 |
| Increase in Production of Oilseed (Metric tons/year) | 8800 |



| Key Outcome Indicators | Commitment |
|--|------------------|
| | By December 2019 |
| Water users provided with irrigation and drainage services | |
| Total Farmers | 100,000 |
| Female | 12000 |
| Small & Marginal Farmers | 80% |
| Tribal Farmers | 13% |







Financial Summary of the Project - November 2019

| Particulars | Approval | Status by November 2019 |
|---|--------------------------------|-------------------------|
| Date of Approval | 4 th October 2011 | |
| Date of Project Effectiveness | 19 th March 2012 | |
| New Date of Closing | 20 th December 2019 | |
| Loan /Credit Amount in US\$ million | Project Cost | 205 |
| | World Bank IBRD | 30 |
| | World Bank IDA | 125 |
| | State share | 50 |
| Cumulative Disbursements in US\$ million | NA | 120 |
| Pending request for Disbursements in US\$ million | NA | 13 |
| Cumulative Expenditure in US\$ million | 168 | 147 |
| Implementation Progress Rating | Satisfactory | Satisfactory |
| Development Objective Rating | Satisfactory | Moderately Satisfactory |

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Already reached 1,00,000 households by providing assured irrigation

facility in 65000 Ha area and continues



For more details

WBADMIP

West Bengal Accelerated Development of Minor Irrigation Project

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