Detailed Project Report

Community Managed Micro Irrigation Scheme (CMMIS)

DPR ID:00173242

This project envisages the construction of **Solar** based Irrigation Scheme in village **Jamdalipaharpur** of **Jama** block of **Dumka** district and the total cost of the scheme comes out to be Rs. **5,10,713 (Five Lakh Ten Thousand Seven Hundred Thirteen Rupees)** only.

The proposed scheme is located near village **Jamdalipaharpur**, block **Jama**. This scheme is dependable on water from perennial **River**

This estimate comprises of

a. One **Pump House** (10'x10'x10')

b. **334** meter trench

c. **334** meters 160 mm (2.5 kgf/cm2) PVC pipe line

d. QC outlet (5 nos.)

e. **Solar** powered pump (BSP-3)

f. Solar panels, auto tracker, accessories and mechanical fittings.

The scheme will irrigate approx. **15.24 Acres** in Kharif, **13.34 Acres** in Rabi and **4.74 Acres** in summer benefitting to **21** families (**ST - 21**)

The total cost of the project has been arrived at on the basis of Schedule of Rate effective from 2018 Water Resources Department, Government of Jharkhand

a. One **Pump House** (10'x10'x10').

b. **334** meter trench

The remaining items is as per the tender price namely

c. **334** meters 160 mm (2.5 kgf/cm2) PVC pipe line

d. QC outlet (5 nos.)

e. **Solar** powered pump (BSP-3)

f. Solar panels, auto tracker, accessories and mechanical fittings.

No forest land is disturbed for construction of this project.

Therefore the scheme may be sanctioned at earliest so that the work can be taken up. Provision of items of work other than model drawing is provided as per site condition and direction of Departmental instruction.

1. Introduction

The recent SECC data shows that Jharkhand as one of the states with highest percentage (17% above national average) of families owning land. The same survey shows that 76% of the households have highest earning member earning less than Rs. 5,000 pm. With agriculture as the major source for rural employment, low water conservation and irrigation development leads to lower and vulnerable agricultural productivity; make food security and subsistence the primary concern of rural population of Jharkhand. The State produces barely half of its food grains requirement (the country is surplus by 9%) and the state has been classified as “extremely food insecure State”. The key bottleneck in enhancing farm-based livelihoods is lack of irrigation facilities (for e.g. only 10.6% of the state’s net sown area is under irrigation).

2. Micro Irrigation Pilot Project

The Government of Jharkhand seeing the need for reducing monsoon dependency of agriculture production and to give impetus to farm prosperity has sanctioned an ambitious pilot grant of Rs. 100 Cr. to SRLM (JSLPS). The focus of the block-grant is to demonstrate at scale the potential of micro-irrigation schemes in securing livelihoods for small-holder families and in developing robust “Agriculture Production Clusters” (APC). In pilot phase six blocks have been identified

3. Objective of the Project

I. Conduct awareness events and create demand for the irrigation in the project blocks

II. Identify potential sites and assess feasibility of the schemes (social, technical, agriculture readiness, market linkage)

III. Carry out technical survey, scheme design and execution of the scheme through multi-stakeholder engagement in transparent and time bound manner.

IV. Train farmers in scheme usage, crop planning, increase cropping intensity, and create market linkages for inputs and produce and facilitate creation of Agriculture Production Clusters.

4. SIEC and i-PFT

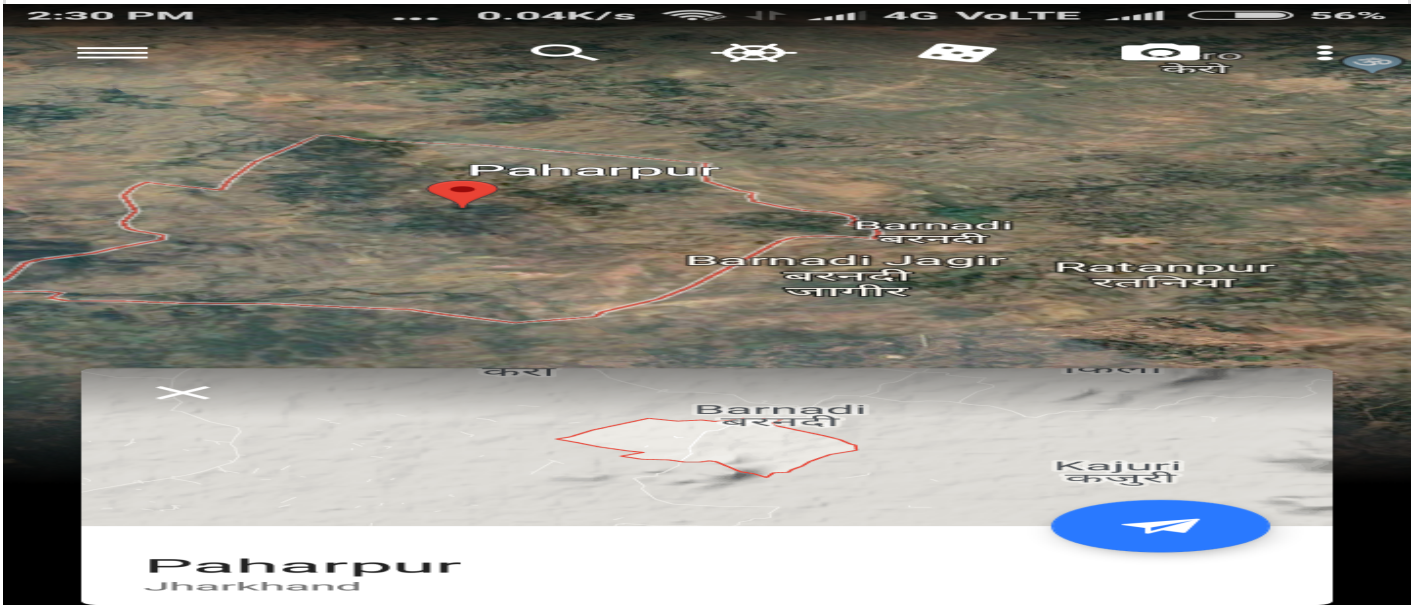
In order to fulfil the above Objectives, State irrigation Execution Cell (SIEC) embedded with Jharkhand State Livelihood Promotion Society (JSLPS) and Irrigation-Project Facilitation Team (i-PFT) at Block level, have conducted several awareness events in and through consultation with farmers have identified and conducted feasibility study of a scheme with following details.

Geographical information

District	Block	panchayat	Village	Hamlet	Geo coordinates	
					Latitude	Longitude
Dumka	Jama	Chhaikapathar	Jamdalipaharpur	SAUDI TOLA		

Topo Sheet

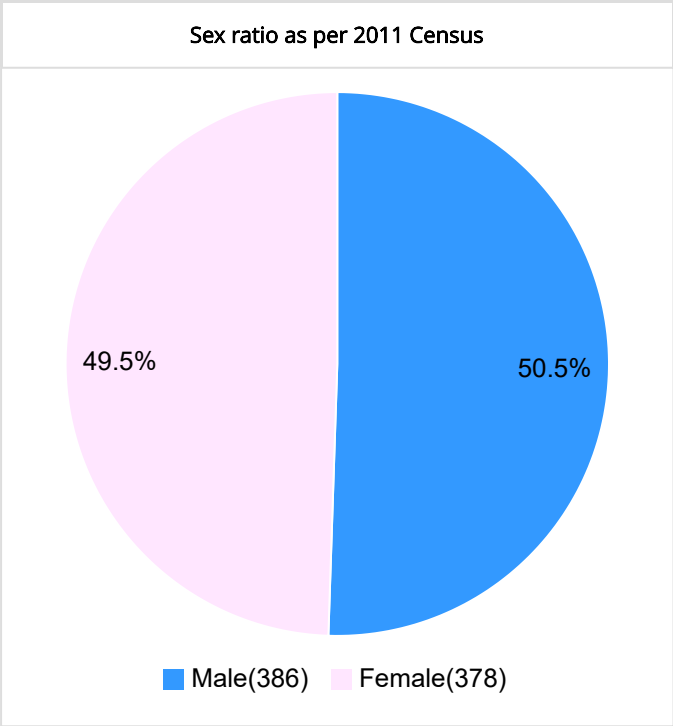
Google Map



5. Demographic Data

Male - Female Based on census-2011	
District	Dumka
Village	Jamdalipaharpur
Total Number of People	764
Number of Male	386
Number of Female	378

Social Groups Information	
Total Number of Farmers	21
Number of ST	21
Number of SC	0
Number of OBC	0
Number of Others	0



6. SHG

None of the families out of total 21 families in the scheme are already part of the SHGs operational in the Jamdalipaharpur village. Of these, None of the families have received training on agriculture from MKSP/JSLPS/NGO.

7. Livelihood Sources in the Village

The existing livelihood sources are Agriculture. And important NTFP available are

Income from all the sources have been computed, into three broad categories, high, medium and low. The details are captured in the table below.

	Income Range	Number of families	% of Total
High	Upto 25000	60	60%
Medium	25000-50000	40	40%
Low	50000-100000	0	0%

None of the families receive remittance, which is 0% of the household income.

8. Site Information

Jamdalipaharpur village has a perennial water source, River (GUJHI GHAT) flow through the village and farmers already use this water to irrigate nearby farms approximately 11 acres (of 21 farmers) using their own pumps.

Based on the water availability till the month of April irrigation scheme is proposed for this village that can benefit 21 farmers to take kharif, rabi and summer crops.

The photograph of the water source and crop in the command area is presented:

Water Source

Existing Crop

9.

Feasibility of the Scheme

Feasibility assessment of the scheme comprises of social, technical, agriculture preparedness and market linkages.

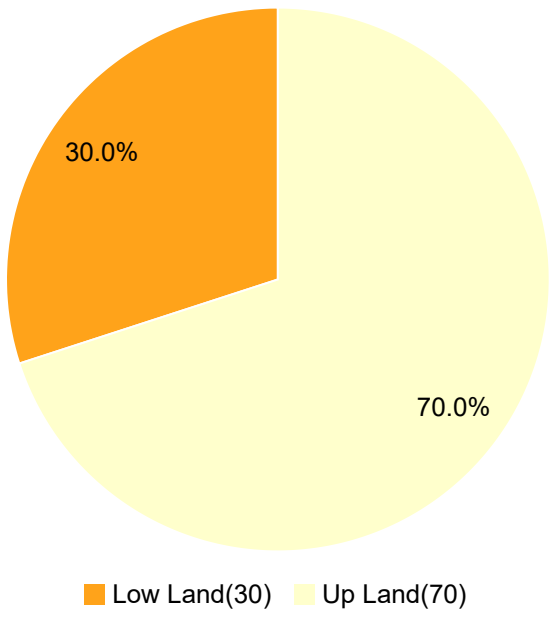
Land Information

The total command area is 11 acres, of which 13 is bounded with an average slope of 3%. Part of which is Low land, Up land. The soil type varies from location to location but broad categorisation is Loam, Sandy. The water retention capacity has been assessed and is found to be Medium. Based on the land and soil assessment, the irrigation interval suggested by the community is 07 days.

Existing Irrigated area in the village and its utilisation:

Land Type	Forest	Low_Land	Tikra	Up Land
Area (%)		30%		70%

Land Information



Existing Irrigated area in the village and its utilisation

Presently there are 07 acres of irrigated area in the village, and prominent sources are River. The source wise area and their utilisation is given in the table.

Sources	Dug well	Pond	Reservoir	River	Water Fall
Area (Acres)				13	
Cultivated area					07

Existing irrigation source

Existing irrigation source

Season	Kharif	Rabi	Summer
Crops	Cereals	Cereals	Cereals
Crop productivity(T/Ha)	3	4	
Quantity of produce	6	12	
Marketable Surplus (%)	10	50	
Market Access	6-25kms	6-25kms	6-25kms
Farm Power	80/20	80/20	80/20
Cropping intensity			155

10. Technical Survey- Data Presentation, Computation

BS	Hi	FS	Up	Low	Height	Distance	Cum distance	RL	Is there an outlet here?	Friction head loss	Miscellaneous head loss	Total head	Design discharge
						0	0	0					
2.305	1.4		2.525	2.085	2.31	44	44.00	0.91					
		0.265	0.345	0.185	2.31	16	60	2.04	Yes	0.23	0.23	2.50	16.61
2.725	1.4		2.945	2.505	4.765	44	104	3.37					
		0.695	0.885	0.505	4.77	38	142	4.07	Yes	0.54	0.46	5.07	13.56
3.145	1.4		3.275	3.015	7.215	26	168	5.81					
		0.595	0.795	0.395	7.21	40	208	6.62	No				
4.705	1.4		4.845	4.565	11.325	28	236	9.92					
		0.575	0.665	0.485	11.32	18	254	10.75	Yes	0.97	1.17	12.89	14.58
2.745	1.4		2.865	2.625	13.495	24	278	12.10					
		0.565	0.715	0.415	13.50	30	308	12.94	Yes	1.17	1.41	15.52	10.21
1.735	1.4		1.825	1.645	14.675	18	326	13.27					
		0.785	0.825	0.745	14.67	8	334	13.88	Yes	1.27	1.52	16.67	8.75

Static head	Friction head Loss	Miscellaneous head loss	Total head	Lps	Type of pump	Design discharge	Pipe dia
13.88	1.27	1.52	16.67	9	BSP-3	10	140

The required discharge based on command area **11 acres**, irrigation interval **07 days**, depth of irrigation **0.05 m** and hours of operation **9 hour** in a day at 80% efficiency

If pipe dia is equal to 160

BS	Hi	FS	Up	Low	Height	Distance	Cum distance	RL	Is there an outlet here?	Friction head loss	Miscellaneous head loss	Total head	Design discharge
						0	0	0					
2.305	1.4		2.525	2.085	2.31	44	44.00	0.91					
		0.265	0.345	0.185	2.31	16	60	2.04	Yes	0.03	0.21	2.28	16.61
2.725	1.4		2.945	2.505	4.765	44	104	3.37					
		0.695	0.885	0.505	4.77	38	142	4.07	Yes	0.06	0.41	4.54	16.61
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		0.575	0.665	0.485	11.32	18	254	10.75	Yes	0.03	1.08	11.86	16.04
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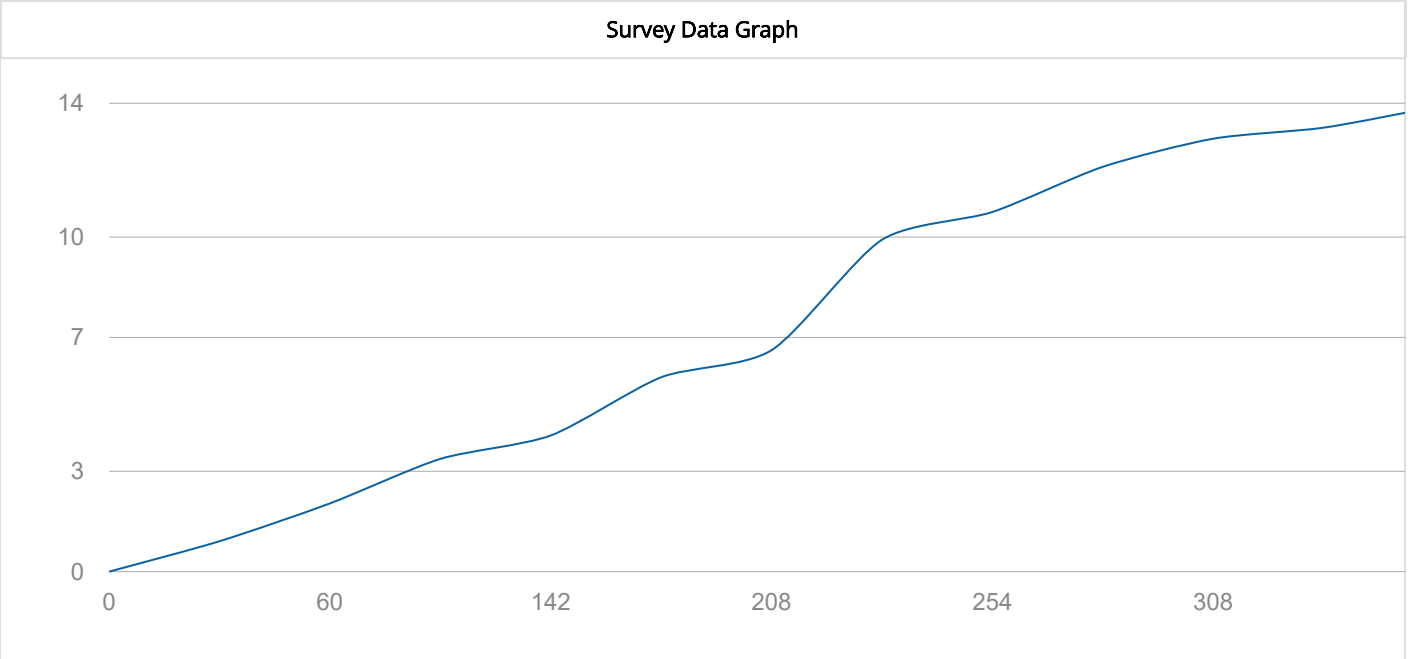
		0.565	0.715	0.415	13.50	30	308	12.94	Yes	0.05	1.3	14.29	11.67
1.735	1.4		1.825	1.645	14.675	18	326	13.27					
		0.785	0.825	0.745	14.67	8	334	13.88	Yes	0.01	1.39	15.28	10.21

Technical survey results are



	Value (mtrs)
Total Length	334
Total static Head	13.88
Frictional Head	1.27
Miscelleaneous Head	1.52
Total Head	16.67

Type of scheme **Solar**

11. Technical Design

Water Source

Command Area

12. Cost Estimates

S No.	Particular		Unit description and dimension	Cost basis	Total Cost
1	Water Collection structure	Nil (Solar)	No	Approved rate(fixed)	0
2	Pump House		No (10 ftx 10 ft x10 ft)	Approved rate(fixed)	80,516
3	Pipe trench (334 mtrs)		Length(in mtrs)	Approved rate(variable as per length)	25,134
4	Pump foundation, Pump Set, 500 mtrs PVC pipe, 5 outlets and accessories		Set(Tender Price)	Tender Price(Fixed)	4,96,695
5	Add/subtract (pipe length 166 mtrs with rate @Rs.552/mtr as per tender price) to/from () for extra/less PVC pipe (part of tender price, fixed at 500 mtrs).		Length	Tender Price	-91632
				Total Cost	**5,10,713**

Total Amount: **5,10,713 (Five Lakh Ten Thousand Seven Hundred Thirteen Rupees).**

Cropping Intensity: 210.70

14. Farmer Data

S.no.	Farmer Name	Command Area (In acres)	Total Income	Is SHG Member	Registered Date	Signature
1	Nandulal Murmu	2	30000	No	14-Feb-2020	Click Here
2	Sonamuni Baski	1.5	49000	No	14-Feb-2020	Click Here
3	Rasmuni Marandi	2.4	37000	No	14-Feb-2020	Click Here
4	Sunil Murmu	1	27000	No	14-Feb-2020	Click Here
5	Chudki Tudu	1	27000	No	14-Feb-2020	Click Here
6	Shrishal Murmu	1.4	32000	No	14-Feb-2020	Click Here
7	Rabish Murmu	2.2	47000	No	14-Feb-2020	Click Here
8	Bilush Murmu	1.2	25000	No	14-Feb-2020	Click Here
9	Aleshan Hansda	0.3	15000	No	14-Feb-2020	Click Here
10	Kulin Tudu	0.06	20000	No	14-Feb-2020	Click Here
11	Siwan Murmu	0.08	18000	No	14-Feb-2020	Click Here
12	Mihiram Murmu	0.4	22500	No	14-Feb-2020	Click Here
13	Ganesh Murmu	0.2	18000	No	14-Feb-2020	Click Here
14	Sadamuni Hembrum	0.2	18000	No	14-Feb-2020	Click Here
15	Manoj Kumar Murmu	0.8	18000	No	14-Feb-2020	Click Here
16	Viswajeet Murmu	0.8	28000	No	14-Feb-2020	Click Here

(http://jmis.kuzaedge.com/jmis/dpr)