

GOVERNMENT OF MEGHALAYA



DEPARTMENT OF SOIL & WATER CONSERVATION

DETAILED PROJECT REPORT OF DALMI MICRO WATERSHED UNDER INTEGRATED WATERSHED MANAGEMENT PROGRAMME

IWMP – VII 2010 – 2011



**TURA SOIL & WATER CONSERVATION(T)DIVISION
WEST GARO HILLS, MEGHALAYA
DALU C&RD BLOCK**

SUMMARY

Name of the State	:	Meghalaya
Name of the District	:	West Garo Hills District
Name of the C&RD Block	:	Dalu
Name of the Village	:	Onthapara
Name of the Project	:	West Garo Hills – IWMP – II
Total Geographical Area	:	657.6 Ha
Total Treatment Area	:	500 Ha
Total Project Cost	:	75 lakhs
Project Duration	:	5 Years
Project Implementing Agency	:	Soil & Water Conservation Territorial Division, Tura

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CHAPTER I

INTRODUCTION AND BACKGROUND

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INTRODUCTION AND BACKGROUND

1.1 Project Background:

The Dalmi (IWMP-VII) project is located in Dalu C&RD Block, West Garo Hills District of Meghalaya. Consisting of a single micro-watershed, the project area is drained by the Dalmi Stream and its tributaries flowing in a south-west direction. The total area is 657.6 Ha. with 500 to be treated under the Integrated Watershed Management Programme (IWMP).

The Project area is located at a distance of about 12 km from Dalu the C&RD Block Headquarter and about 48 km from Tura the District Head Quarter. Only one village (Onthapara) is covered under the project.

1.2 Micro-watershed Information:

The micro-watershed code is _____ as codified by the North East Space Application Centre (NESAC). The total area of the micro-watershed is 657.6 Ha., with 500 hectares to be treated under the Integrated Watershed Management Programme (IWMP).

1.3 Need and Scope for Watershed Development:

The micro-watershed Dalmi IWMP-VII falls under the High Priority category as per the prioritization of watersheds by the North East Space Application Centre (NESAC). The farmers are all marginal and Jhum cultivation is practiced by most of the inhabitants of these villages on the slopes.

Even though the area receives ample rainfall during the monsoons, there is acute shortage of water during the dry seasons and the villagers have to travel long distances for fetching water even for domestic use.

1.4 Other developmental projects/schemes running in the Project Area:

The other developmental projects/schemes undertaken in the Project Area are:-

- i. NREGS

CHAPTER II
BASIC INFORMATION OF THE PROJECT AREA

CHAPTER II

BASIC INFORMATION OF THE PROJECT AREA

2.1 Location:

The Project area is at West Garo Hills. It falls under Dalu C&RD Block of Tura Civil Sub-Division, West Garo Hills District. It is situated at a distance of about 12 km from Dalu the C&RD Block Headquarter and about 48 km from Tura the District Head Quarter. The geographical location is between 90°10'21.000" to 90°12'19.8000" E Longitude and 25°18'39.6000" to 25°15'41.4000" N Latitude. There is only one village (Onthapara) within the Watershed.

2.2 Physiography:

The physiography of the micro-watershed is highly undulating. The altitude ranges from a minimum of 150 m to a high of 300 m above mean sea level. In the lower reaches (valley lands) the slope ranges from 1 % to 5 %, however, in the middle and upper reaches it is greater than 50 %, and can reach up to 50 %.

Table 2.1: Physiographic details

Elevation (metres)	Slope Range (%)	Order of watershed Sub/Micro- watershed	Major streams	Topography
150-300	1% - 50%	2 nd order -Micro Watershed	Dalmi Stream	Gentle Slope

2.3 Drainage:

The major stream draining the micro-watershed is the Dalmi which is a 2nd order stream flowing in a South-West direction and join Thalang River at Nokdanpara.

2.4 Soil:

Soil Texture is gravelly on the sloping lands and clayey to loamy clay on the low lying areas. Soil depth varies from very shallow to deep. Soils are permeable and generally acidic in nature. Owing to highly undulating land form and absence of good vegetation cover, the area is exposed to erosion hazards. The soil nutrient status in the area shows a general trend of low phosphorous content

Table 2.2: Details of soil erosion in the project areas:

1	2	3	4	5	6	7	8	9
Sl. No.	Names of State	Names of District	Names of Projects	Cause	Types of erosion	Area affected (ha)	Run-off (mm/ year)	Average soil loss (Tonnes/ ha/ year)
1	Meghalaya	West Garo Hills	West Garo Hills – IWMP II	Water erosion:				
				A	Sheet	500		
				B	Rill			
				C	Gully			
				Sub total		500		
				Wind erosion		Nil	Nil	Nil

2.5 Climate:

The Watershed lies under Central Hyper-thermic Agro-climatic plateau. The average annual rainfall is about 3600mm. Monsoon normally starts in the middle of May and last till middle of October. About 80% of the total annual rainfall is received from June to September. May and June are the hottest month recording average maximum temperature of 32°C. December and January accounts for lowest of 10°C to 12°C.

Table 2.3: Agro-climatic zones of the project areas, soil types, average rainfall and major crops.

1	2	3	4	5	6	7		8	9	
Sl. No.	Name of State	Name of the Agro-climatic zone	Area (in ha)	Names of the districts	Names of the Projects	Major soil types		Average annual rainfall in mm (preceding 5 years' average)	Major crops	
						a) Type	b) Area (ha)		a) Name	b) Area (ha)
1	Meghalaya	Central Hyper-thermic plateau 150-300 m	500 Ha	West Garo Hills	West Garo Hills – IWMP – VII	–	500 Ha	3040 mm	Paddy	43
									Maize	15
									Ginger	20
								Total		78 Ha

2.5 Agriculture: Agriculture is the primary occupation of the people of the area. The people mostly practice jhum. The jhum plots vary from 0.5 to 1.0 Ha, and are cultivated for 3-4 years. The principal agricultural crops grown of the jhum fields are rice, ginger, millet, maize, yam and vegetables. Fruit crops are well suited in the lower reaches which include banana,mango,orange, pineapple, jackfruit, litchi. The slopes of the Dalmi are also very suitable for betel nut, betel leaf, black pepper, which contribute to the income of the people.

Table 2.4: Crop yield and production

Crops	Area (ha)	Average Yield (Qtl) per ha.	Total Production (Qtl.)
Paddy	43	20	860
Maize	15	15	225
Ginger	20	40	800

2.6 Natural Vegetation:

The tree species common to the watershed area includes Mirbelia Champaca,Artocarpus Chapalasa,Gmelina Arborea,Dendrocalamus Bambusa Spp,Shorea Robusta,vitree Pedangularis,Bohemia,Malabarica Sterospermum chelanais,Schima walichii,Bombax ceiba etc. However, due to jhum cultivation the forest cover of the area has reduced considerably.

Socio-Economic Profile:

Economically, the area is perhaps the most backward in the District. The main reason is due to the absence of road communication, primitive way of agricultural practices like jhumming and the difficult terrain of the area.

Demographic Status: The total households in the watershed project is 69 with a total population of 378, of which 175 are male and 203 are female. The detail of the household in each of the villages in the watershed project is as follows:

(i) Onthapara 378 Nos

Infrastructure facilities :

- 2.1.1 *Roads:* All the villages within the Project Area are not connected by road. The Project area depends entirely on the kutchra road.
- 2.1.2 *School:* there is only one L.P School and one U.P School within the Project Area run by the Government.
- 2.1.3 *Electricity :* 20% Households have the connection and some are yet to be connected.
- 2.1.4 *Health :* There is no Community Health Centre or sub-centre and the local population have to either depends on facility availability at Dalu Dispensary at a distance of 12 km.
- 2.1.5 *Water Supply :* Drinking water supply have been provided by the PHE Deptt. However, during lean season the entire population have to depend on springs available in the area as the supply is not sufficient to meet the daily requirement.
- 2.1.6 *Market :* There is no any market under this project area but the people of this watershed area sell their products at dalu-Barengapara weekly market 5 km away from the watershed area.

Table 2.5: Infrastructure Status.

1	2	3		4			
Name of District	Name of Project	Parameters:		Status			
WGH	WGH-IWMP-VII	(i)	Whether connected to the main road by an all weather road	NIL			
		(ii)	No. of households without electricity	20 %			
		(iii)	No. of households without access to drinking water	NIL			
		(iv)	No. of educational institutions: Primary (P)/ Secondary (S)/ Higher Secondary (HS)/ Vocational institution (VI)	(P) 1 U.P & 1 L.P	(S) NIL	(HS) NIL	(VI) NIL
		(v)	Distance of project village from nearest Primary Health Centre	5 km			
		(vi)	Distance of project village from nearest Veterinary Dispensary	5 km			
		(vii)	Distance of project village from nearest Post Office	5 km			
		(viii)	Distance of project village from nearest Banks	5 km			
		(ix)	Distance of project village from nearest Markets/ mandis	5 km			
		(x)	Distance of project village from nearest Agro-Industries	NIL			
		(xi)	Total quantity of surplus milk	NIL			
		(xii)	No. of milk collection centres (e.g. Union (U)/ Society (S)/ Private agency (PA)/ Others (O))	(U) NIL	(S) NIL	(PA) NIL	(O) NIL
		(xiii)	No. of villages with access to Aganwadi Centres	1 No			
		(xiv)	No. of worship place	2 Nos			
		(xv)	No. of Community Hall	NIL			
		(xvi)	No. of water tanks/Ringwell/Spring chamber	NIL			

2.7 Livestock:

There are only 3 kinds of livestock farming being farmed in the area viz. Piggery, Poultry and Bee-Keeping or Apiculture.

Table 2.6: Existing livestock population

Type of Animal	Population
Piggery	72 nos
Poultry	1346 nos
Cattle	207 nos

2.10 Land ownership:

The proposed project is under the “**A’king land tenure system.**”prevailing in Garo Hills District of Meghalaya in which a land is held a particular class {Mahari) under the custody of the Head of the Clan or a Village Chief called “**Nokma**” recognized as such by the Garo Hills District Councils.

Table 2.7: Land Holding:

1	2	3	4	5	6		
Name of District	Name of the Project	Types of Farmer	No. of households	No. of BPL households	Land holding (ha)		
					Irrigated	Rainfed	Total
WGH	WGH-IWMP-VII	(i) Large(>5 Ha)					
		(ii) Small(1-5 Ha)	15			18.30	18.30
		(iii) Marginal(<1 Ha)	54			24.70	24.70
		(iv) Landless					
		Sub - Total	69			43.00	43.00

Table 2.5: Common Property Resources in the Project Area

1	2	3	4				5			
Name of District	Name of the Projects	CPR Particulars	Total Area (ha) Area owned/ In possession of				Area available for treatment (ha)			
			Pvt. Person	Govt. (specify deptt.)	PRI	Any other (Community)	Pvt. Person	Govt. (specify deptt.)	PRI	Any other (Community)
West Garo Hills	WGH IWMP-VII	(i) Wasteland/ degraded land				158.75				10
		(ii) Private Agriculture Land	106				100			
		(iii) Orchards								
		(iv) Village woodlot								
		(v) Forest				31.76	15			
		(vi) Village Ponds/ Tanks								
		(vii) Community Buildings								
		(viii) Weekly Markets								
		(ix) Permanent Markets								
		(x) Temples/ Places of worship								
		(xi) Jhum Cultivation	20.73			75	20			71
		(xii) Permanent Cultivation	90				84			55
		(xiii) Habitation including streams								
		(xiv) Any other (Horticultural land)	75			100.36	65			80
	Total		291.73			365.87	299			201

2.8 Land use and land cover : As per the land use land cover map the Watershed area has been broadly classified into the following land uses.

a) Agricultural land-crop land-kharif crop	=	216.73	Ha
b) Wasteland-open scrub	=	31.76	Ha
c) Horticulture plantation	=	75.36	Ha
d) Forest-open	=	333.75	Ha
Total	=	657.6	Ha

2.9 Problems of the Area :

The primary problems of the area is jhumming. Majority of the population depends on Jhum Cultivation for their livelihood. Vast tracks of abandoned Jhum areas are converted to Broomstick cultivation areas which has further degraded the capability of the land. In other words, unscientific method of cultivation has not only reduced the Jhum cycle, low crop yield but had adversely affected the ecological balance within the area. Road communication is another infrastructural problems that the area is facing where large volume crops like pineapple, jackfruits etc do not find their way into the market which has resulted in poor socio-economic status of the people. However, to control or to overcome the said problems an innovative approach has been formulated and documented in the Action Plan or the Treatment Plan the Detailed Project Report. The method of identification of the problems is through the Participatory Rural Appraisal Exercises conducted in all the villages within the Watershed.

CHAPTER III

PROJECT PLANNING & INSTITUTION BUILDING

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PROJECT PLANNING & INSTITUTION BUILDING

3.1 Scientific Planning

- i) Base Line Survey: To establish a benchmark for assessing the impact of any intervention (pre-project & post project) a baseline survey is essential. The baseline survey included household census & socio-economic survey by using structured and semi –structured questionnaires, bio-physical survey to identify and assess the status of natural resources in the project area.
- ii) Participatory Rural Appraisal: To further obtain information on the project area, the people, resources, various PRA techniques like resource mapping, social mapping, seasonal calendars, matrix ranking, Venn diagrams were used.
- iii) GIS & Remote Sensing: To facilitate the process of prioritization and planning Geographic Information System was use. The land use and land cover (LULC) maps were prepared by the North Eastern Space Application Centre (NESAC) using the LISS III images (2006). The activities were located on the field by using GPS and accordingly transferred to the maps on GIS platform.

1	2	2
Sl.No.	Scientific criteria/ inputs used	No. of projects in which scientific criteria were used
A.	Planning	
	Cluster approach	3
	Whether technical back-stopping for the project has been arranged? If yes, mention the name of the Institute.	YES, i) NESAC, Nongsder ii) SLNA GIS Lab, Shillong
	Baseline survey	YES
	Hydro-geological survey	NO
	Contour mapping	NO
	Participatory Net Planning (PNP)	NO

Table 3.1: Details of Scientific Planning and Inputs in IWMP projects:

1	2	2
	Remote sensing data-especially soil/ crop/ run-off cover	YES
	Ridge to Valley treatment	YES
	Online IT connectivity between	
	(1) Project and DRDA cell/ZP	YES
	(2) DRDA and SLNA	YES
	(3) SLNA and DoLR	YES
	Availability of GIS layers	
	1. Cadastral map	NO
	2. Village boundaries	NO
	3. Drainage	YES
	4. Soil (Soil nutrient status)	YES
	5. Land use	YES
	6. Ground water status	NO
	7. Watershed boundaries	YES
	8. Activity	YES
	Crop simulation models [#]	NO
	Integrated coupled analyzer/ near infrared visible spectroscopy/ medium spectroscopy for high speed soil nutrient analysis	NO
	Normalized difference vegetation index (NDVI)#	YES
	Weather Stations	NO
B.	Inputs	
	1. Bio-pesticides	NO
	2. Organic manures	YES
	3. Vermi-compost	NO
	4. Bio-fertilizer	YES
	5. Water saving devices	YES
	6. Mechanized tools/ implements	NO
	7. Bio-fencing	YES
	8. Nutrient budgeting	YES
	9. Automatic water level recorders & sediment samplers	NO
	Any other (please specify)	

3.2 Project Implementing Agency:

The PIA is the Soil & Water Conservation Territorial Division, Tura West Garo Hills District of Meghalaya. The Project Manager will be the Divisional Soil and Water Conservation Officer and will be assisted by an Asst. Soil & Water Conservation Officer along with WDT members in which expertise is drawn from the relevant fields for achieving smooth and successful implementation of the project.

1	2	3	
Names of Districts	Names of projects	Details of PIA	
West Garo Hills	W.G.H. IWMP-VII	(i) Type of organization#	Government
		(ii) Name of organization	Soil & Water Conservation (T) Division,
		(iii) Designation & Address	Divisional Officer, Tura Soil & Water Cons.(T) Division, W.G.H, Tura Meghalaya.
		(iv) Telephone	03651-222354
		(v) Fax	03651-222354
		(vi) E-mail	turadivsoil@gmail.com

3.3 Institution Building

i) Watershed Committee (WC)

The Watershed Committee of the Dalmi Watershed IWMP-VII was constituted with the active involvement of the villagers with strong support of the Traditional Institutions (Village Durbar/Council). Dalmi Watershed Committee has been registered under the Society Registration Act 1983.

Table 3.2: Details of Watershed Committees (WC):

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
Names of the Districts	Names of projects	Names of WCs	Date of Registration as a Society (dd/mm/yyyy)	Designation	M/F	SC	ST	SF	MF	LF	Landless	UG	SHG	GP	Any other	Educational qualification	Function/s assigned#
West Garo Hills District	West Garo Hills District – IWMP – II	Dalmi		President	M	-	ST									Cl – VI	A to I
				Secretary	M	-	ST									P.U (Arts)	A to I
				Member	10 M	-	ST									Cl – IV to X	Do
				Member	1 F	-	ST										Do
				Member													

- | | | | |
|----|--|----|--|
| A. | PNP and PRA | B. | Planning |
| C. | Maintenance of Accounts | D. | Signing of cheques and making payments |
| E. | Supervision of construction activities | F. | Cost Estimation |
| G. | Verification & Measurement | H. | Record of labour employed |
| I. | Social Audit | J. | Any other (please specify). |

ii) Self Help Group

Awareness programmes were organized in the villages to inform and sensitize the people on the essence of organizing themselves in to homogenous groups for uplifting their livelihood especially for the women and the landless. Discussions were held at length with the WDT on the scope and procedure of group formation, availing credit, grading of the groups and so on.

Table 3.3: Details of Self Help Groups (SHGs) in the project areas:

1	2	3				4				5			6		
Names of the Districts	Names of projects	Total no. of registered SHGs				No. of members				No. of SC/ST in each category			No. of BPL in each category		
		With only Men	With only Women	With both	Total	Categories	M	F	Total	M	F	Total	M	F	Total
W.G. H	W.G. HIW MP	2 No			2 No	(i) Landless									
						(ii) SF									
						(iii) MF	20		20	20		20	NA	NA	NA
						(iv) LF									

iii) User Group

To manage the assets created and ensure their sustainability User Groups will be formed. The people have been sensitized on the importance of ensuring that the assets created are sustainably used and the essentiality of having User Groups for maintenance and operation of their assets.

Table 3.4: User Group Details

1	2	3				4				5			6		
Names of Districts	Names of Projects	Total no. of Ugs				No. of members				No. of SC/ST in each category			No. of BPL in each category		
		Men	Women	Both	Total	Categories	M	F	Total	M	F	Total	M	F	Total
W.G.H	W.G.H. IWMP- VII					(i) Landless									
						(ii) SF									
						(iii) MF									
						(iv) LF									
Total					NIL				NIL			NIL			NIL

CHAPTER IV

PROJECT ACTIVITIES

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4.1 Preparatory Phase:

i) Entry Point Activities (EPA)

(Financial – Rs. in lakh)

1	2	3	4	5	6	7	8	9	10	11
Sl. No.	State	District	Names of Project	Amount earmarked for EPA	Entry Point Activities planned	Estimated cost	Expenditure incurred	Balance	Expected outcome	Actual outcome
1	Meghalaya	W.G.H	W.G.H IWMP-VII	3.00 Lakh	Construction of Spring Chamber/Ring well	3.00 Lakh	–	–	–	Increase in availability of drinking water

ii) Other activities of Preparatory Phase:

1	2	3	4	5	6	7	8	9	10	11	12	13
District	Name of Projects	Initiation of village level institution	Capacity building	IEC activities	Baseline survey	Hydro-geological survey	Identifying technical support agencies	Resource agree-ments	Preparation of DPR	Evaluation of DPR	Any other (please specify)	Cost incurred (Rs. In lakh)
W.G.H	W.G.H IWMP-VII	a) Rapport Building b) Community meeting c) Formation of	a) Project concept/roles and responsibility of W.C b) Concept/roles and responsibility of SHG and UG c) Concept/roles and responsibility of WDT members d) Off-campus exposure trip to research Institutes/Established farms etc.	a) Pamphlets b) Banners c) Posters	a) Participatory Rural Appraisals b) Socio Economic Survey	a) GPS survey b) Engineering Survey	a) NIRD b) SIRD c) ICAR d) NEHU	a) NOC with village headman for under-taking developmental works c) Agreement for convergence of NREGS scheme with IWMP with VEC.	a) Resource inventory works	Done		1.5

4.2 Watershed Works Phase:

4.2.1 Activities related to surface water resources in the project areas:

1	2	3	4	5	6			7											
S l. N o	Nam e of State s	Name of Distri cts	Name of Projects	Type of structures	Pre Project			Proposed Project											
					No	Area irriga ted (ha)	Stora ge capac ity	Augmentation/ repair of existing structures				Construction of new structures				Total target			
								No	Area to be treate d (ha)	Storag e capaci ty	Estimat ed cost (in lakhs)	No	Area to be treated (ha)	Storage capacit y (per unit)	Estimat ed cost (in lakhs)	No	Area to be treated (ha)	Storag e capaci ty (m³)	Estima ted cost
1	Me ghal aya	W.G. H	W.G.H - IWMP -VII	Dug out Pond	-	-	-	-	-	-	-	17	25	1390 m³	8.5	17	25	1390 m³	8.5
				Check Dam	-	-	-	-	-	-	-	3	75	765 m³	7.50	3	75	765 m³	7.50
				Conserva tion Pond	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				Irrigation Channel	-	-	-	-	-	-	-	1359 rmt	55	-	0.68	135 9 rmt	50	-	0.68
				Water harvesting farm pond	-	-	-	-	-	-	-	2	84	1425 m³	5.00	2	84	1425 m³	5.00
				Earthen Embankm ent	-	-	-	-	-	-	-	100	20	250 m³	0.7	60	20	250m³	0.7
			Total		-	-	-	-	-	-	-	-	259	3830 m³	22.38	-	259	3830 m³	22.38

4.2.3 Activities executed by User Groups in the Project Areas.

1	2	3						
Names of Districts	Names of Projects	Major activities of the UGs –Targets						
		Structure/ activity proposed				No. of UGs involved	Estimated Cost	Amount of WDF to be collected (Rs.)
		Sl. No.	Type	No.#	Treatment (ha)			
W.G.H	W.G.H-IWMP-VII	1	C.C.Check Dam Irrigation	3	75	1	7.50	0.375
		2	Stone Masonry Protection Wall	4	65	2	2.00	0.1
		3	Irrigation Channel	1359 rmt	55	2	0.68	0.034
		Total			195	5	10.18	0.509

4.2.4 Activities executed by User Groups in the Project Areas:

4									
Major activities of the UGs – Achievements									
Structure/ activity				No. of UGs involved	Expenditure incurred (Rs.)	No. of mandays			Amount of WDF collected (Rs.)
Sl. No.	Type	No.#	Treated Area (ha.)			SC	ST	F	
1	C.C.Check Dam Irrigation	3	75	1	7.50		1800	1200	0.375
2	Stone Masonry Protection Wall	4	65	2	2.00		480	320	0.1
3	Irrigation Channel	1067 rmt	50	2	0.5335		407	271	0.034
Total			195	5	10.18		2687	1791	0.509

4.2.5 Activities related to livelihoods by Self Help Groups (SHGs) in the project areas:

1	2	3		
Names of the Districts	Names of projects	Major activities of the SHGs		
		Name of activity	No. of SHGs involved	Average annual income from activity per SHG
W.G.H	W.G.H-IWMP-VII	Piggery	3	1.125
		Poultry	3	1.125
		Rubber budded Nursery	-	-
	Total		6	2.25

4.2.6 Activities related to livelihoods by Self Help Groups (SHGs) in the project areas:

4	5				6	7	8			9	10
No. of SHGs given training	Total assistance received by the SHG (Amount in Rs.)				Total annual Income generated (Rs.)	Total annual Savings (Rs.)	No. of SHGs Graded as			Total Amount of loan sanctioned by the bank(s)	No. of SHGs federated
	Loan from revolving fund	Training	Material	Others (pl. specify)			I	II	III		
8 Nos	NIL	1.60	NIL	Piggery	1.125	-	-	-	-	-	-
				Poultry	1.125	-	-	-	-	-	-
	Total	1.60	-	-	2.25	-	-	-	-	-	-

4.2.7 Other activities of watershed works phase:

1	2	3		4		5		6		7		8		9		10		11		12		13
District	Names of projects	Ridge area treatment		Drainage line treatment		Nursery raising		Land development		Crop demonstrations		Horticulture & Cash Crop Development		Veterinary services		Fishery development		Non-conventional energy		Any other (please specify)		Total cost incurred (Rs. In lakhs)
		(a)	(b) (Rs)	(a)	(b) (Rs)	(a)	(b) (Rs)	(a)	(b) (Rs)	(a)	(b)	(a)	(b)	(a)	(b) (Rs)	(a)	(b) (Rs)	(a)	(b)	(a)	(b)	
W G H	W.G. H IWM P-VII	i)Improvement of degraded forest (10 Ha)	0.36	i)check dam	7.50	i) Group rubber nursery (27800plant)	6.95	i)Wet Terra ce(10 Ha)	3.00	-	-	i)Rubber plantation(60 Ha)	5.72	i)piggery	0.90	Fisher y cum pigger y (25 unit)	1.00	-	-	i)Kitchen garden ing(30 Unit)	3.80	
				ii)protection wall	2.0							ii)Areca nut plantation (35 Ha)	3.52	ii)poltry	0.90					ii)Tail oring(5Unit)	0.40	
				iii)dug out pond	8.5							(iii)Citrus(orange)Plant ation (40 Ha)	3.52							iii)Car pentry(5Unit)	0.3	
				iv)farm pond	5.00																	
				v)channel	0.68																	
				vi)Emb ankment	0.7																	
	Total		0.36		24.38		6.95		3.00				12.76		1.8		1.00				4.50	54.75

4.2.8 Details of engineering structures in watershed works:

1	2	3	4			5			6	7					8							
District	Project	Name of structures	Type of treatment			Type of land			Executing agency	Target					Achievement							
			(i) Ridge area (R)	(ii) Drainage line (D)	(iii) Land Dev. (L)	(i) Private	(ii) Community	(iii) Others (pl. specify)	(i) UG (ii) SHG (iii) Others (pl. specify)	No. of units (No./cum./rmt)	Estimated cost (Rs. in lakh)				Expected month & year of completion (mm/yyyy)	No. of units (No./cum./rmt)	Expenditure incurred (Rs. in lakh)				Status of completion	Actual month & year of completion (mm/yyyy)
											M	W	O	T			M	W	O	T		
W.G.H	W.G.H-IWMP-VII	C.C.Check Dam		D			Community		UG/WC	3 Nos.	4.5	3		7.50	3 yrs	-	-	-	-	-	-	-
		Stone masonry Protection Wall		D			Community		UG/WC	3 Nos	1.2	0.8		2.00	3 yrs	-	-	-	-	-	-	-
		Wet Terrace			L	Private			UG/WC	10 Ha		3.00		3.00	3 yrs	-	-	-	-	-	-	-
		Dug-out Pond		D		Private			UG/WC	11 Nos		5.5		5.50	3 yrs	-	-	-	-	-	-	-
		Earthen Irrigation Channel		D			Community		UG/WC	1359 Rmt		0.68		0.68	3 yrs	-	-	-	-	-	-	-
		Water harvesting farm pond		D					UG/WC	Nos	3	2		5	3 yrs	-	-	-	-	-	-	-
										8.7	14.9	8	23.68		-	-	-	-	-	-		

4.2.9 Details of engineering structures in watershed works.

9																	
Outcomes																	
Reduction in run off (cu.m)	Area treated# (ha)	Water level (m)		Production (quintal)		Income (Rs.)		Mandays generated					No. of beneficiaries				
		Pre- project	Post project	Pre- project	Post project	Pre- project	Post project	SC	ST	Others (Men)	Women	Total	SC	ST	Others	Women	Total
NA	415	NA	NA						100%		8000	1495		100 %	54	15	69
													600				

2.10 Details of activities connected with vegetative cover in watershed works:

1	2	3	4			5			6	7				8			
Distr ict	Pro ject	Name of structure/ work	Type of treatment			Type of land			Executing agency	Target				Achievement			
			(i) Ridge area (R)	(ii) Draina ge line (D)	(iii) Land dev. (L)	(i) Priv ate	(ii) Com munit y	(iii) Other s (pl. specif y)	(i) UG (ii)SHG (iii) Others (pl. specify)	Area (ha)	No. of plants	Estimate d cost (Rs. in lakh)	Expected month & year of comple- tion (mm/ yyyy)	Area (ha)	No. of plants	Expendi- ture incurred (Rs. in lakh)	Actual month & year of comple-tion (mm/ yyyy)
WG H	IW MP - VII	Improvement of degraded forest	R				C		WC	10 Ha	10,000	0.36	3 yrs	-	-	-	-
		Rubber Plantation	R			P			Farmers	60 Ha	27,000	5.71	3 yrs	-	-	-	-
		Arecanut	R			P			Farmers	35 Ha	47,950	3.52	3 yrs	-	-	-	-
		Citrus (orange)	R			P			Farmers	40 Ha	20,000	3.52	3 yrs	-	-	-	-

in case two or more activities are executed over same area, the figures in area treated should be accounted only once and should reflect only the actual watershed area treated.

4.2.11 Details of vegetative structures in watershed works: Phase – II (contd.):

9															
Outcomes															
Name of activities	Reduction in runoff (cu.m)	Production (quintal)		Income (Rs.)		Mandays generated					No. of beneficiaries				
		Pre-project	Post project	Pre-project	Post project	SC	ST	Others	Women	Total	SC	ST	Others	Women	Total
Improvement of degraded forest	NA	0					100 %	250	110	360		100%	54	15	69
							100 %					100%			
Rubber Plantation	NA	0	120	0	1440,000		100 %	4200	1800	6000		100%	26	14	40
							100 %					100%			
Arecanut	NA	350	780	280,000	620,400		100 %	2400	1020	3420		100%	28	12	40
Citrus (orange)	NA						100 %	664	443	1107		100%			
TOTAL							100 %	7514	3373	10887		100 %	108	41	149

4.2.12 Details of allied / other activities:

1	2	3	4			5	6		7	
District	Project	Name of activity@	Type of land			Executing agency	Target		Achievement	
			(i) Private	(ii) Community	(iii) Others (landless)	(i) UG (ii) SHG (iii) Others (pl. specify)	Estimated cost (Rs. in lakh)	Expected month & year of completion (mm/yyyy)	Expendi-ture incurred (Rs. in lakh)	Actual month & year of completion (mm/yyyy)
West Garo Hills	W.G.H IWMP-II	Kitchen gardening	√		Individual	Private	3.80	31/3/2014	-	-
		Tailoring	√		Individual	Private	0.40	31/3/2014		
		Piggery			Individual	SHG/UG	0.90	31/3/2012	-	-
		Carpentry	√		Individual	Private	0.30	31/3/2014		
		Poultry			SHG	SHG/UG	0.90	31/3/2013	-	-
		Fisherry cum piggery unit			SHG	Private	1.00	31/3/2014	-	-
		Group rubber nursery	√		SHG	SHG/UG	6.9	31/3/2014	-	-
		Total					14.2		-	-

* from column no. 2, no. of States; from column no. 3, no. of Districts; from column no. 4, total no. of Projects; from column no. 5, activity-wise totals, from column no. 6, type-wise totals, from coulmn no. 7, agency-wise totals, from column no. 8, total estimated cost, from column no. 9, total expenditure incurred, structure-wise no. of completed works, from column no. 10, item-wise totals, for the entire country may be indicated at the end of the table

@The activities given in this column are merely indicative and States are free to choose any other activity suited to the project area.

4.2.13 Details of allied / other activities:

	8											
	Outcomes											
	Income (Rs.)		Mandays generated					No. of beneficiaries				
Name of activities	Pre-project	Post project	SC	ST	Others	Women	Total	SC	ST	Others	Women	Total
Kitchen gardening	6000-7000	20,000 - 25,000		24 00		2100	4500		20	NIL	10	30
Piggery	30,000-35,000	60,000 - 70,000		35 0		650	1000		0	NIL	30	30
Poultry	14,000-16,000	40,000 - 45,000		37 0		630	1000		0	NIL	30	30
Fishery cum piggery	NIL	55,000 - 60,000		16 0		90	250		18	NIL	7	25
Group rubber nursery	NIL	85,000 - 90,000		32 00		1300	4500		40	NIL	0	40
	Total			64 80		4770	11250		78		77	155

4.3 Consolidation and withdrawal phase

Details of activities in the CPRs in the project areas:

1	2	3	4	5	6				7						
Names of the Districts	Names of projects	Name(s) of the villages	CPR particulars	Activity proposed	Target				Achievement						
					Target area under the activity (ha)	Estimated expenditure (Rs.)	Expected no. of beneficiaries	Estimated contri-bution to WDF (Rs.)	Area treated under the activity (ha)	Expenditure incurred (Rs.)	Actual no. of beneficiaries	No. of mandays			WDF collected (Rs.)
												SC	ST	F	
West Garo Hills	WGH IWMP-VII	(i)Onthapara	-	Repairing maintainance of CPR'S	-	1.75	-	0.0875	-	-	-	-	-	-	-
									-	-	-	-	-	-	-
									-	-	-	-	-	-	-
									-	-	-	-	-	-	-
									-	-	-	-	-	-	-
									-	-	-	-	-	-	-

CHAPTER V
PROJECT PHASING & BUDGETING

PROJECT PHASING & BUDGETING

ACTION PLAN OF DALMI WATERSHED UNDER IWMP TERRITORIAL DIVISION: TURA

Name of District :- West Garo Hills

No. of Villages: 1 nos

Name of C&RD Block:- DALU

Project Area : 500 Ha

[illegible]

1	2	3	4	5	6	7	8	9	10	11	12	13	14
C	Institution & Capacity Building : - 5%	1%		2%		1%		1%				5%	
i	Awareness Campaign & Capacity building of farmer	1	0.20	1	0.20	1	0.20					3	0.60
ii	Exposure visits - Off Campus	1	0.35	1	0.30	1	0.35					3	1.00
iii	Capacity building of SHG's/UG's.	1	0.20	3	0.60	1	0.20	1	0.35			6	1.35
iv	Capacity building of WC Members.			1	0.20			1	0.20			2	0.40
v	Capacity building of WDT/WV			1	0.20			1	0.20			2	0.40
	Total of C:		0.75		1.50		0.75		0.75				3.75
D	Detailed Project Report: 1%		1%										
i	Cost of Resources Inventories works		0.25										0.25
ii	Cost of PRA Exercises		0.10										0.10
iii	Cost of Land use Survey works		0.25										0.25
iv	Cost of formulating		0.15										0.15
	Total of D:		0.75										0.75
E	Monitoring & Evaluatio: 2%												
i	Cost of Monitoring			0.2%	0.15	0.5%	0.375	0.3%	0.225			1%	0.75
ii	Cost of Evaluation			0.3%	0.225	0.5%	0.375	0.2%	0.15			1%	0.75
	Total of E:				0.375		0.75		0.375				1.50
	TOTAL OF I (A - E)		4.50		3.375		5.25		3.375				16.50
II	PROJECT COST WATERSHED WORKS PHASE: 50%												
A	Arable Land Treatment:												
i	Wet terrace@20,000/-Ha(15 Ha)			5	1.00	10	2.00					15	3.00
ii	Rubber plantation- 65 ha												
	(a) Pre-works & 1st yr. planting @Rs.5900/ha			15	0.885	50	2.95					65	3.835
	(b) 2 nd yr planting @Rs.2900					15	0.435	50	1.45				1.885
iii	Arecanut plantation -40 ha												
	(a) Pre-works & 1st yr. planting @Rs.5900/Ha				0	40	2.36					40	2.36
	(b)2 nd yr. planting@ 2900/ha						0	40	1.160				1.160
iv	Citrus(orange) plantation -40 ha												
	(a) Pre-works & 1st yr. planting @Rs.5900/Ha					40	2.36						2.36
	(b)2 nd yr. planting@ 2900/ha						0	40	1.160				1.160
	TOTAL OF - A				1.885		10.105		3.77				15.76
B	Non-Arable Land treatment:												
	Improvement of degraded forest @3600/10 ha				0	10	0.36					10	0.36
	Total of B:						0.36						0.36

1	2	3	4	5	6	7	8	9	10	11	12	13	14
C	Drainage Line Treatment:												
i	C.C.Check-Cum-Irrigation dam @2,50,000/ each - 75 Ha			1	2.50	2	5.00					3	7.50
ii	Stone masonry protection wall @50,000/each - 65 ha			1	0.50	3		2	1.00			4	2.00
iii	Dug-out pond @50,000/-each -15 ha			1	0.50	8	4	2	1			11	5.5
iv	Water harvesting farm pond @2,50,000/- each -84 ha					2	5.00					2	5.00
v	Earthen irrigation channel @Rs. 50 /- Rm. -55 ha			479	0.240	570	0.285	310	0.155			1359	0.68
vi	Earthen embankment @700/- 20 ha							100	0.7			100	0.7
	TOTAL OF C				3.74		15.785		1.855				21.38
	TOTAL OF A+B+C			7.5%	5.625	35%	26.25	7.5%	5.625			50%	37.50
D	Livelihood Activities for landless person: 10%												
i	Tailoring@8000/ unit							5	0.4			5	0.4
ii	Carpentry@ 5000/- unit							6	0.3			6	0.3
iii	Kitchen garden@ 2500/-unit- 6 Ha			30	0.75	50	1.25	72	1.8			152	3.80
iv	Dug-out pond @50,000/-each -10 ha					2	1.00	4	2.00			6	3.00
	Total of D:			1%	0.75	3%	2.25	6%	4.50			10%	7.50
E	Production system and Micro Enterprises (SHG's) - 13%												
i	Piggery unit @Rs.30,000 /- per unit			1	0.30			2	0.60			3	0.90
ii	Poultry unit @Rs.30,000 /- per unit					1	0.3	2	0.60			3	0.90
iv	Fishery cum piggery unit @25000 /- per unit							4	1			4	1.00
v	Group Rubber nursery @25000/- per plant			1800	0.45	13800	3.45	12200	3.05			27800	6.95
	Total of E:			1%	0.75	5%	3.75	7%	5.25			13%	9.75

1	2	3	4	5	6	7	8	9	10	11	12	13	14
F	Consolidation & Exit Phase:												
i	Repairing maintainance of CPR's										1.75		1.75
ii	Improveing the sustainability of various intervention										1.00		1.00
iii	Documentation of successful experience and preparation of complation report										1.00		1.00
	Total of F:										3.75		3.75
	Total of II (A+B+C+D+E+F)				7.125		32.25		15.375		3.75		58.50
	Grand Total (I+II)	6%	4.50	14%	10.50	50%	37.50	25%	18.75	5%	3.75	100%	75.00

Details of the types of areas covered under the IWMP Programme:

1	2	3	4	5	6		7	8	9	10				11				
S L N o	Name of State	Name of Distri cts	Names of Project s	Year of sanc tion	Project duration (dd/mm/ yyyy)		Area of the project s	Projec t cost (Rs. In lakh)	Names of Micro watersheds & Code nos. (as per DoLR's unique codification)	Area (ha) of the projects				Area details (ha) (falling within the projects)				
					From	To												
										Cultiv ated rainfe d area	Cultiv ated irrigat ed area	Uncultivated wasteland		Pvt. Agri · Land	Fores t land	Com m unity land	Others (pl. specify)	Tota l area (ha)
												a) Tempor ary fallow	b) Per manen t				Hortic ulture	
1	Meghalay a	West Garo Hills	W.G.H IWMP -VII	201 0	2010	31/3 / 201 5	500	7.5	Dalmi	43.00	0	446	11.00	25	10	320	145	500

Fund provision for the IWMP projects from all sources:

[illegible]

Details of Project Fund Accounts of Distt. Agency and Watershed Committees:

1	2	3	4	5				6				
Sl. No.	Names of States	Name of Districts	Names of Projects	Distt. Agency's Project Account details				Watershed Committee (WC) account details:				
				Name of the Bank and Branch where project account has been opened	Account Number (to be obtained confidentially)	Account type (Savings/ Current/ Others)	Name & Designation of authorized persons who operate the account.	Name of Watershed Committee	Name of the Bank and Branch where project account has been opened	Account number (to be obtained confidentially)	Account type (Savings/ current others)	Name & Designation of authorized persons who operate the account.
1	Meghalaya	W.G.H	W.G.H IWMP-VII	Axis Bank Hawakhana Tura	911-010017462976	Current	Chairman W.C-Shri Olison Sangma Secretary W.C-Shri. Bistu Mohan Rabha	Dalmi Micro Watershed	Axis Bank Hawakhana Tura	911-010017462976	Current	Chairman W.C-Shri Olison Sangma Secretary W.C- Shri. Bistu Mohan Rabha

Public-Private Partnership in the IWMP projects: NIL

1	2	3	4			5		6	7	8	9
District	Name of project	Name of Private Sector Partner Agency	Type of agreement signed			Financial contribution		Partnership Interventions	Expected Outcomes	Actual Outcomes	Comments
			a)MoU	b)Contract	c) Any other (pl. specify)	IWMP	Private sector				
WGH	WGH-IWMP-VII										
		NIL	NIL			NIL	NIL	NIL	NIL	NIL	NIL

* from Column no. 2, total no. of States implementing the programme, from Column no. 3, total no. of Districts; from Column no. 4, total no. of projects under PPP; from Column no. 5, total no. of private companies/ agencies, from column no. 7, total amounts may be mentioned at the end of the table for the entire country.

CHAPTER VI

CAPACITY BUILDING

CHAPTER VI CAPACITY BUILDING

Capacity Building is a process to systematically upgrade the skill of individuals or groups for achieving a specific target. Capacity building in the project has been planned for all the stake holders involved i.e. State Level, District Level, Project Level and Village Level. The relevant details pertaining to Capacity Building has been shown below.

Table 6.1: List of approved Training Institutes for Capacity Building:

1	2	3	4	5	6	7	8	9				
S. No	State	Name of the Training Institute	Full Address with contact no., website & e-mail	Name & Designation of the Head of Institute	Type of Institute [#]	Area(s) of specialization ^{\$}	Accreditation details	Performance				
								Reference Year	No. of trainings assigned	No. of trainees to be trained	No. of trainings conducted	No. of trainees trained
1	Meghalaya	NIRD (NER)	Guwahati	Director	Central Govt.	Remote Sensing, Rural Devt.	NA	–	–	–	–	–
2		SIRD	Nongsder	Director	State Govt.	Capacity Building	NA	–	–	–	–	–
3		RRTC	Umran Meghalaya	Director	Don-Bosco	Agri-Horti, Animal Husbandry, Entrepreneurship	NA	–	–	–	–	–
4		ICAR/ KVIC	Umiam/Tura Meghalaya	Director	Central Govt.	Do	NA	–	–	–	–	–
5		MRDS	Shillong Meghalaya	Director	State Govt.	Animal Husbandry	NA	–	–	–	–	–
6		NEHU	Shillong/Tura Meghalaya	Director	Central Govt.	Agri-Horti, Fruit Processing	NA	–	–	–	–	–

- From Column no. 2, total no. of States implementing the programme, from Column no. 3, no. of training institutes, from column No. 9, total no. of category-wise trainings and trainees may be given at the end of the table for the entire country
- # Central govt. Dept./ State govt. Dept./ Autonomous Body/ Research Institutes/ Universities/ Others (pl. specify)

\$ Capacity Building/ Agriculture/ Horticulture/ Animal Husbandry/ Pisciculture/ Remote Sensing/ Water conservation/ Ground water/ Forestry/ livelihoods/ entrepreneurship development/ others (pl. specify)

@ The training institutes must fulfill the conditions mentioned in the operations guidelines.

- (i) Technical experts in fields required by IWMP
- (ii) Past experiences
- (iii) Annual Turnover
- (iv) Receives funds either from the Central or State Government
- (v) Publications
- (vi) Not blacklisted by any Govt. organizations
- (vii) Audited accounts
- (viii) Organizational structure

Table 6.2: Capacity Building activities for the year 2010 – 11 as on 31/03/2010 (dd/mm/yyyy)*

1	2	3	4	5	6		7	
Project Stakeholders	Total no. of persons	No. of persons trained so far	No. of persons to be trained during current financial year	No. of persons trained during current financial year	Sources of funding for training		Funds utilized (Lakhs)	
					a) DoLR	b) Any other (Pl. specify)	a) DoLR	b) Any other (Pl. specify)
PIAs	10	NIL	10	NIL	3.75	NIL	0.75	NIL
WDTs	5	NIL	5	NIL				
UGs	40	NIL	40	NIL				
SHGs	50	NIL	50	NIL				
WCs	11	NIL	11	NIL				
GPs	NIL	NIL	NIL	NIL				
Community	280	NIL	150	NIL				
Others Pl. specify)								
TOTAL	396	0	266	0	3.75	0	0.75	0

Table 6.3: Information, Education & Communication (IEC) activities for the year 10-11 as on 31/03/10 (dd/mm/yyyy)*

	1	2	3	4	5
	Activity	Executing agency	Estimated expenditure (Rs.)	Expenditure incurred (Rs.)	Outcome (may quantity, wherever possible)
1.	Resources Inventories Works	S&WC (T) Division	0.25	–	–
2.	Land Use Survey Works	S&WC (T) Division	0.25	–	–
3.	Cost of formulating	S&WC (T) Division	0.15	–	–
		Total	0.65	–	–

CHAPTER VII
EXPECTED OUTCOME

CHAPTER VII EXPECTED OUTCOME

Table 7.1 Employment related outcomes:

Sl No	Name of Village	1										2				
		Wage employment										Self employment				
		No. of mandays					No. of beneficiaries					No. of beneficiaries				
		SC	ST	Others	Women	Total	SC	ST	Others	Women	Total	SC	ST	Others	Women	Total
1.	Onthapara		29,670		15,700	45,370		54		15	69		54		15	69

1	2	3	4	5	6	7	8	9	10	
Names of the Districts	Names of Projects	Name of village	No. of persons migrating	No. of days per year of migration	Major reason(s) for migrating	Distance of destination of migration from the village (km)	Occupation during migration	Income from such occupation (Rs. in lakh)	For reduced migration identify major activities of IWMP responsible	
									(a) Structures	(b) Livelihoods
WGH	WGH-IWMP-VII	Onthapara		N	I	L				

* From column no. 2, total number of States; from column no. 3, total no. of Districts; from column no. 4, total no. of projects; from column no. 5, total no. of villages; from column no. 6, total no. of persons migrating; from column no. 7, average no. of days for annual migration; from column no. 9, average distance of migration from the village and from column no. 11, average income from occupation during migration, for the entire country may be given at the end of the Table.

Table 7.3 Economic benefits accrued to women:

1		2		3		4
Wages		Training		Livelihoods		Total (Rs. in lakh)
Woman days	Amount (Rs. in lakh)	No. of women participants	Amount (Rs. in lakh)	No. of women beneficiaries	Value of assistance provided (Rs. in lakh)	
15,700	15.70	69	0.40	69	3.00	19.10

* from Column no. 2, total no. of States implementing the programme, from Column no. 3 to 6, category-wise totals, may be mentioned at the end of the table for the entire country.

Table 7.4 Details of rights conferred in the CPRs of the project areas:

1	2	3	4	5	6	7				8
Names of the Districts	Names of the projects	Names of the villages	Particular of CPR	Nature of right	Period of right	Beneficiary details (no. of families)				User Charges (Rs.)
						SC	St	Others	Total	
Meghalaya	W.G.H IWMP-VII	Onthapara	Reserved forest	FW/MF P/T	Unspecified		69		69	NIL
			Spring Chamber	Wd	Unspecified		50		50	NIL
			Check dam	Wi	Unspecified		52		52	NIL
			Irrigation Channel	Wi	Unspecified		52		52	NIL
		Total					223		223	

* From column no. 2, no. of States; from column no. 3, no. of Districts; from column no. 4, no. of projects; from column no. 5, no. of villages; from column nos. 9 & 10, particular-wise totals for the entire country may be given at the end of the table.

@ In column no. 6, the categories given in table no. M(SP) 10, column 5 may be filled as required.

In column no. 7, only the letter assigned to each type, as given below, needs to be typed.

F	for right to	fishing [culture, harvest and sale]
Fw	for right to	collect firewood for domestic purposes
G	for right to	grazing for cattle and
MFP	for right to	collect and sell minor forest produces
P	for right to	passage across the CPR
Rd	for right to	construct a road for access to individual property
S/M	for right to	collect and sell sand and minerals
T	for right to	collect timber for construction of house
Wd	for right to	collect/ use water for drinking
Wi	for right to	use water for irrigation
O	for any right other than indicated above (please specify)	

Table 7.5 Water related outcomes:
Table 7.5.1 Details of average ground water table depth in the project areas of the Country: State-wise * (in metres)

1	2	3	4	5	6	7	8
Names of Districts	Names of Projects	Sources	Pre-Project level	Mid-term project level	Post-Project level	Increase/decrease (Col. 8 – Col. 6)	Remarks
Meghalaya	W.G.H IWMP-VII	Open Well	NA	NA	NA	NA	NA
		Bore Well	NA	NA	NA	NA	NA
		Other (specific) Spring	NA	NA	NA	NA	NA

* From column no. 2, total number of States; from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column nos. 6 to 9, the average measurements, category-wise, for the entire country may be given at the end of the table. The data must be based on the average of the Ground Water Table collected by PIA with the help of concerned technical expert in the same sample of 10 % of selected wells and bore wells in the villages in the watershed project area during pre-project, mid-term and post-project periods.

Table 7.5.2 Status of Drinking water:

1	2	3			4			5
District	Name of the project	Availability of drinking water (no. of months in a year)			Quality of drinking water			Comments
		Pre-project	Post-project	Change in availability	Pre-project	Post-project	Change in quality	
Meghalaya	WGH IWMP-VII	10 months	12 months	2 months	Unsafe	Potable	Improved	Better drinking water supply

* From column no. 2, total number of States implementing the programme, from column no. 3, total no. of Districts; from column no. 4, category-wise no. of projects, from column no. 5, average no. of months may be given at the end of the table for the entire country.

Table 7.5.3 Water Use efficiency:

1	2	3	4			
District	Name of the project	Name of major crop	Water savings in cu.m.			
			through water saving devices ^{\$}	through water conserving agronomic practices [#]	Any other (pl specify)	Total
W.G.H	WGH IWMP-VII	Paddy	NA	NA	NA	
		Maize	NA	NA	NA	

* From column no. 2, total number of States implementing the programme, from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column no. 6, practice-wise totals may be mentioned at the end of the table for the entire country.

^{\$} Sprinkler, Drip, PVC pipe, etc.

[#] Vermi-compost, organic manuring, Mulching, Check basin, Alternate furrow, Ridges & furrow & other scientific practices

Table 7.6: Vegetation/ crop related outcomes:
Table 7.6.1 Details of Karif crop area and yield in the project areas:

1	2	3	4						5						6					
Name s of the Distri cts	Name of Projec ts	Name of crops	Pre-project						Mid-term						Post-project					
			Area (ha)		Avera ge Yield (Qtl) per ha.		Total Producti on (Qtl)		Area (ha)		Averag e Yield per ha (Qtl)		Total Productio n (Qtl)		Area (ha)		Averag e Yield per ha (Qtl)		Total Production (Qtl)	
			Irr i	Rf .	Ir ri	Rf .	Ir ri	Rf.	Irr i	Rf .	Ir ri	Rf.	Irri	Rf.	Irr i	Rf .	Ir ri	Rf.	Irri	Rf.
W.G. H	WGH IWMP -VII	Paddy	-	43	-	2 0	-	860	43	10	3 6	20	15 48	200	53	32	36	20	1908	640
		Maize	-	15	-	1 5	-	225	0	15	0	15	0	225	0	15	0	15	0	225
		Vegetable	-	8	-	2 4	-	192	8	7	3 5	24	28 0	168	10	5	35	24	350	120
		Total	-	66	-	5 9	-	127 7	51	32	7 1	59	18 28	593	63	52	71	59	2258	985

* From column no. 2, total number of States; from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column no. 5, total no. of crops; from column no. 6 to 8, the totals for the area, average yield per ha and total production, category-wise, for the entire country may be given at the end of the Table.
 Irri. – Irrigated Rf – Rainfed

Table 7.6.2 Details of Rabi crop area and yield in the project areas:

1	2	3	4	5	6						7						8					
Sl N o.	Names of States	Names of the Distric ts	Name of Proje cts	Name of crops	Pre-project						Mid-term						Post-project					
					Area (ha)		Averag e Yield (Qtl) per ha.		Total Produ ction (Qtl)		Area (ha)		Averag e Yield per ha (Qtl)		Total Producti on (Qtl)		Area (ha)		Avera ge Yield per ha (Qtl)		Total Producti on (Qtl)	
					Ir ri	R f.	Ir ri	Rf .	Ir ri	Rf .	Ir ri	Rf.	Irr i	Rf .	Irri	Rf.	Irr i	Rf.	Irr i	R f.	Irri	Rf.
1	Meghal aya	West Garo Hills	WGH IWM P-VII	Paddy	–	–	–	–	–	–	43	–	36	–	15 48	–	53	–	36	–	190 8	–
				Vegeta bles	–	–	–	–	–	–	8	–	35	–	28 0	–	8	–	35	–	280	–
				Total	–	–	–	–	–	–	51	–	60	–	18 28	–	61	–	71	–	218 8	–

* From column no. 2, total number of States; from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column no. 5, total no. of crops; from column no. 6 to 8, the totals for the area, average yield per ha and total production, category-wise, for the entire country may be given at the end of the Table.

Irri. – Irrigated Rf – Rainfed

Table 7.6.3 Details of Zaid crop area and yield in the project areas of the Country: State-wise:

1	2	3	4	5	6						7						8					
SI N o.	Names of States	Names of the District s	Name of Proje cts	Nam e of crops	Pre-project						Mid-term						Post-project					
					Area (ha)		Averag e Yield (Qtl) per ha.		Total Produc tion (Qtl)		Area (ha)		Averag e Yield per ha (Qtl)		Total Product ion (Qtl)		Area (ha)		Avera ge Yield per ha (Qtl)		Total Producti on (Qtl)	
					Irr i	Rf.	Irr i	Rf .	Ir ri	Rf .	Irr i	Rf.	Irr i	Rf .	Irri	Rf .	Irri	Rf.	Irr i	R f.	Irri	Rf.
	Meghala ya	West Garo Hills	WGH IWMP -VII	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

* From column no. 2, total number of States; from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column no. 5, total no. of crops; from column no. 6 to 8, the totals for the area, average yield per ha and total production, category-wise, for the entire country may be given at the end of the Table.

Irri. – Irrigated Rf – Rainfed.

Table 7.6.4 Increase/ Decrease in area under fodder:

1	2	3	4			5		
District	Name of project	Duration of Project	Existing area under fodder (ha)			Achievement (ha)		
			Source/Name of report	Year of reference	Area already under fodder	Area under fodder proposed to be covered through IWMP	Area under fodder actually covered through IWMP	Change in area under fodder
W.G.H	W.G.H IWMP-VII	5 yrs	NA	NA	NA	NIL	NIL	NIL

* From column no. 2, total number of States implementing the programme, from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column nos. 6 & 7, total area in ha may be given at the end of the table for the entire country.

Table 7.6.5 Increase/ Decrease in Forest/vegetation cover:

1	2	3	4			5		
District	Name of project	Duration of Project	Existing area tree cover (ha)			Achievement (ha)		
			Source/Name of report	Year of reference	Area already under forest/vegetative cover	Forest/vegetative cover area proposed to be covered under IWMP	Forest/vegetative cover area actually covered under IWMP	Change in forest/vegetative cover area
W.G.H	W.G.H IWMP-VII	5 yrs	As per LULC	2011	40	15	15	15

* From column no. 2, total number of States implementing the programme, from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column nos. 6 & 7, total area in ha may be given at the end of the table for the entire country.

Table 7.6.6 Increase/ Decrease in area under horticulture:

1	2	3	4			5		
District	Name of project	Duration of Project	Existing area under horticulture (ha)			Achievement (ha)		
			Source/Name of report	Year of reference	Area already under horticulture	Area under horticulture proposed to be covered through IWMP	Area under horticulture actually covered through IWMP	Change in area under horticulture
W.G.H	W.G.H IWMP-VII	5 yrs	As per LULC	2011	75.36	145	145	145

* From column no. 2, total number of States implementing the programme, from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column nos. 6 & 7, total area in ha may be given at the end of the table for the entire country.

Table 7.6.7 Increase/ Decrease in area under fuel-wood:

1	2	3	4			5		
District	Name of project	Duration of Project	Existing area under fodder (ha)			Achievement (ha)		
			Source/Name of report	Year of reference	Area already under fuel-wood	Area under fuel-wood proposed to be covered under IWMP	Area under fuel-wood actually covered under IWMP	Change in area under fuel-wood
W.G.H	W.G.H IWMP-VII	5 yrs	—	-	—	—	—	—

* From column no. 2, total number of States implementing the programme, from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column nos. 6 & 7, total area in ha may be given at the end of the table for the entire country.

Table 7.7 Livelihood related outcomes:

Table 7.7.1 Details of livestock in the project areas (for fluids please mention in litres, for solids please mention in kgs. and income in Rs.):

1	2	3	4			5			6			7
Names of the Districts	Name of Projects	Type of Animal	Pre-project			Mid-term			Post-project			Remarks
			No.	Yield	Income	No.	Yield	Income	No.	Yield	Income	
West Garo Hills	W.G.H IWMP-VII	Milch-animal	207	100 lits	0.04 /-							-
		Piggery	72	2880	4.32 /-	90	3600 Kgs	5.4	150	5000 Kgs	6.5	-
		Poultry	1346	2019 Kgs	4 /-	1500	2250 Kgs	4.5	2000	3000 Kgs	6.00	-
	Total for all projects		1420	4999	8.36	1590	5850	9.9	2150	8000	12.5	-

* From column no. 2, total number of States; from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column nos. 5 to 8, the total nos. of animals and the average yield and incomes, category-wise, for the entire country may be given at the end of the Table.

Table 7.7.2 Details of other livelihoods created for landless people:

1	2	3	4	5				6	7					8				
Distr ict	Pr oje ct	Name of activit y	Fund requir ed for the activit y (Rs.)	Sources of funding (Rs.)				Actual Expendi ture incurred on activity (Rs.)	No. of beneficiaries trained					No. of beneficiaries taking up activity				
				Proje ct Fund	Bene fi - ciar y	Other s (pl. specif y)	Tota l		S C	ST	Oth ers	Wo men	T ot al	S C	S T	Ot he rs	Wo men	Tot al
West Garo Hills	W G H IW M P- VII	Kitchen gardeni ng	3.85	—	—	—	—	—	—	—	—	—	—	—	12	—	8	20
		Dug out Pond	3.00	—	—	—	—	—	—	—	—	—	—	—	9	—	4	13
		Tailorin g	0.40															
		Carpent ry	0.30															
		Total	7.55												21		12	33

(Contd.)

* From column no. 2, total number of States; from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column no. 5, total no. of activities; from column no. 6, total funds required for the activity, from column no. 7 to 12, category-wise totals, from column no. 13, category-wise totals, for the entire country may be given at the end of the Table.

Table 7.7.3 Details of other livelihoods created for landless people:

9		10	11				12
No. of persons employed indirectly in the activity		Annual increase in income due to activity (Rs.)	Impact of livelihoods programme				Any other information (pl. Specify)
			Migration (No. of beneficiaries)		Development of backward-forward linkages		
Total	Grand Total (8+9)		Pre-project	Post-project	Pre-project	Post-project	
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-
-	-	-	-	-	-	-	-

Table 7.7.4 Details of other livelihoods created for farmers:

1	2	3	4	5				6	7				8			
District	Project	Name of activity	Fund required for the activity (Rs.) in lakhs	Sources of funding (Rs.) in Lakhs				Actual Expenditure incurred on activity (Rs.)	No. of farmers trained				No. of farmers taking up activity			
				Project Fund	Beneficiary	Others (pl. specify)	Total		SF	MF	LF	Total	SF	MF	LF	Total
West Garo Hills	WGH IWMP -VII	Wet terrace	3.00	3.00	NIL	NIL	3.00	—	15	—	—	15	15	—	—	15
		Dug-out pond	3.00	.50	NIL	NIL	3.00	—	17	—	—	17	17	—	—	17
		Rubber Plantation	5.71	5.71	NIL	NIL	5.71	—	40	—	—	40	40	—	—	40
		Arecanut Plantation	3.52	3.99	NIL	NIL	3.52	—	30	—	—	30	30	—	—	30
		Citrus (orange) Plantation	3.52	3.52	NIL	NIL	3.52									
		Total	18.75	18.75	0	0	18.75		102			102	102			102

* From column no. 2, total number of States; from column no. 3, total no. of Districts; from column no. 4, total no. of projects, from column no. 5, total no. of activities; from column no. 6, total funds required for the activity, from column no. 7 to 12, category-wise totals, from column no. 13, category-wise totals, for the entire country may be given at the end of the Table.

Table 7.7.5 Details of other livelihoods created for farmers * (contd.)

9		10	11				12
No. of persons employed indirectly in the activity		Annual increase in income due to activity (Rs.)	Impact of livelihoods programme				Any other information (pl. Specify)
			Migration (No. of beneficiaries)		Development of backward-forward linkages		
Total	Grand Total (8+9)		Pre-project	Post-project	Pre-project	Post-project	
NIL	NIL	NIL	NIL	NIL	NIL	NIL	—
NIL	NIL	NIL	NIL	NIL	NIL	NIL	—
NIL	NIL	NIL	NIL	NIL	NIL	NIL	—
NIL	NIL	NIL	NIL	NIL	NIL	NIL	—

Table 7.8 Marketing related outcomes:

Backward-Forward linkages *

1	2	3	4	5	6
District	Project	Type of Marketing Facility	Pre-project (no.)	During the project (no.)	Post-project (no.)
West Garo Hills	WGH-IWMP-VII	(A) Backward linkages	-	-	-
		(i) Seed certification	-	-	-
		(ii) Seed supply system	-	-	-
		(iii) Fertilizer supply system	-	-	-
		(iv) Pesticide supply system	-	-	-
		(v) Credit institutions	-	1	1
		(vi) Water supply	-	1	2
		(vii) Extension services	-	-	-
		(viii) Nurseries	-	-	-
		(ix) Tools/machinery suppliers	-	-	-
		(x) Price Support system	-	-	-
		(xi) Labour	-	-	-
		(xii) Any other (please specify)	-	-	-
		(A) Forward linkages	-	-	-
		(i) Harvesting/threshing machinery	-	-	-
		(ii) Storage (including cold storage)	-	-	-
		(iii) Road network	-	-	-
		(iv) Transport facilities	-	-	-
		(v) Markets / Mandis	-	-	-
		(vi) Agro and other Industries	-	-	-
		(vii) Milk and other collection centres	-	-	-
		(viii) Labour	-	5	5
		(ix) Any other (please specify)	-	-	-

* from column no. 2, total no. of States implementing the programme, from column no. 3, total no. of Districts; from column no. 4, total no. of projects; from column no. 6, 7 & 8, category-wise totals may be given at the end of the table for the entire country.

Table 7.9 Abstract of outcomes:

1	2	3	4	5	6	7
Sl. No.	State	Item	Unit	Pre-project Status	Post-project Status	Remarks
1	Meghalaya	Status of water table	-	Lack of management	Improved	Better drinking water supply
		Ground water structures repaired/ rejuvenated	-	-	-	-
		Quality of drinking water	5 nos	Unsafe	Better quality	-
		Availability of drinking water	-	10 months in a year	12 months availability	-
		Increase in irrigation potential	-	-	-	-
		Change in cropping/ land use pattern	-	Single-cropping	-	-
		Area under agricultural crop	-	-	-	-
		i Area under single crop	Ha	216.73	-	-
		ii Area under double crop	Ha	-	-	-
		iii Area under multiple crop	Ha	-	-	-
		Net increase in crop production area	Ha	-	-	-
		Increase in area under vegetation	Ha	31.76	81.76	-
		Increase in area under horticulture	Ha	75.36	190.36	-
		Increase in area under fuel & fodder	Ha	333.75	383.75	-
		Increase in milk production	-	-	-	-
		No. of SHGs	2 nos	20 nos	20 nos	-
		Increase in no. of livelihoods	-	-	-	-
		Increase in income	-	-	-	-
		Migration	-	-	-	-
		No. of school going children	-	-	-	-
		SHG Federations formed	-	-	-	-
		Credit linkage with banks	-	1 nos	1 nos	-
		Resource use agreements	-	-	-	-
		WDF collection & management	-	-	-	-
		Summary of lessons learnt	-			

Table 7.10 Cost effectiveness of structures/ activities*

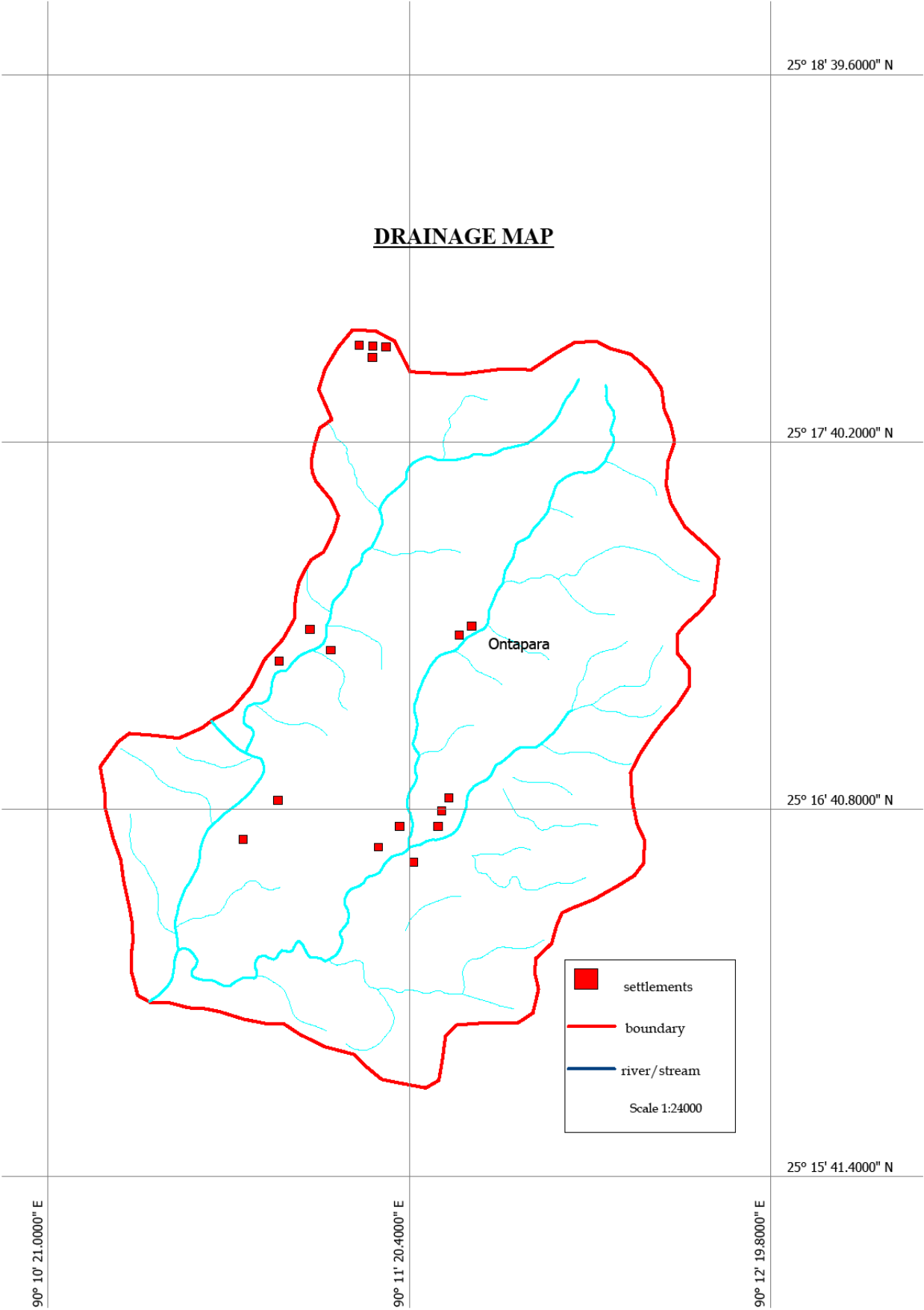
1	2	3	4	5	6	7	8	9
District	Name of project	Name of WC	Name of structure/ activity	Estimated cost (Rs.)	Expected quantifiable benefits (Rs.)	Expenditure incurred (Rs.)	Actual quantifiable benefit (Rs.)	Benefit: Cost ratio [#]
WGH	WGH-IWMP-VII	Dalmi	As per treatment plan	54.75	101.1	-	-	1:1.84

* from column no. 2, total no. of States implementing the programme, from column no. 3, total no. of Districts; from Column no. 4, no. of projects, from column no. 5, no. of WCs, from column no. 6, no. of structures/ activities, from column no. 7 to 10, category-wise# totals, may be mentioned at the end of the table for the entire country.

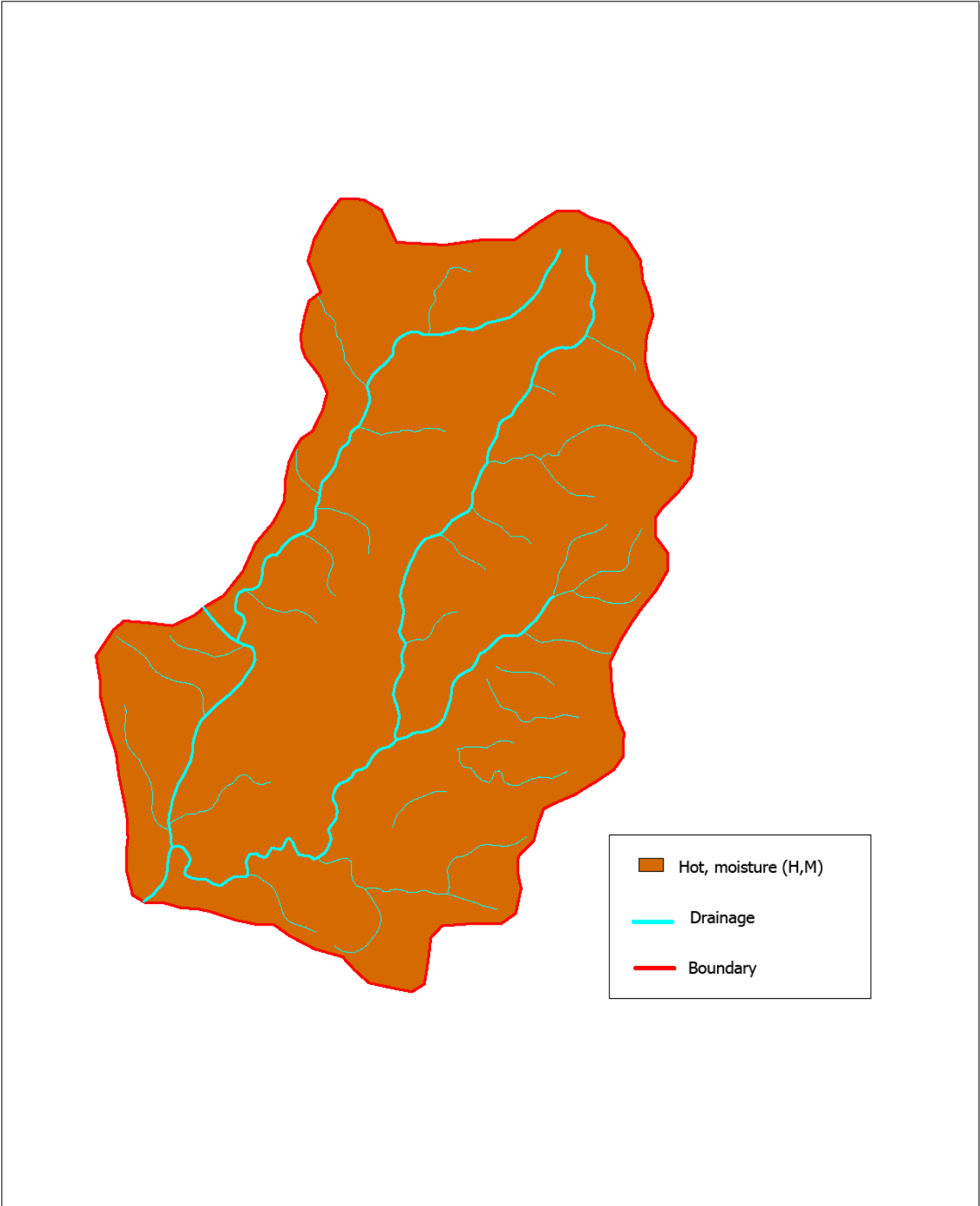
[#] B:C ratio more than 1 – cost effective
less than 1 – Not cost effective

ANNEXTURE-I

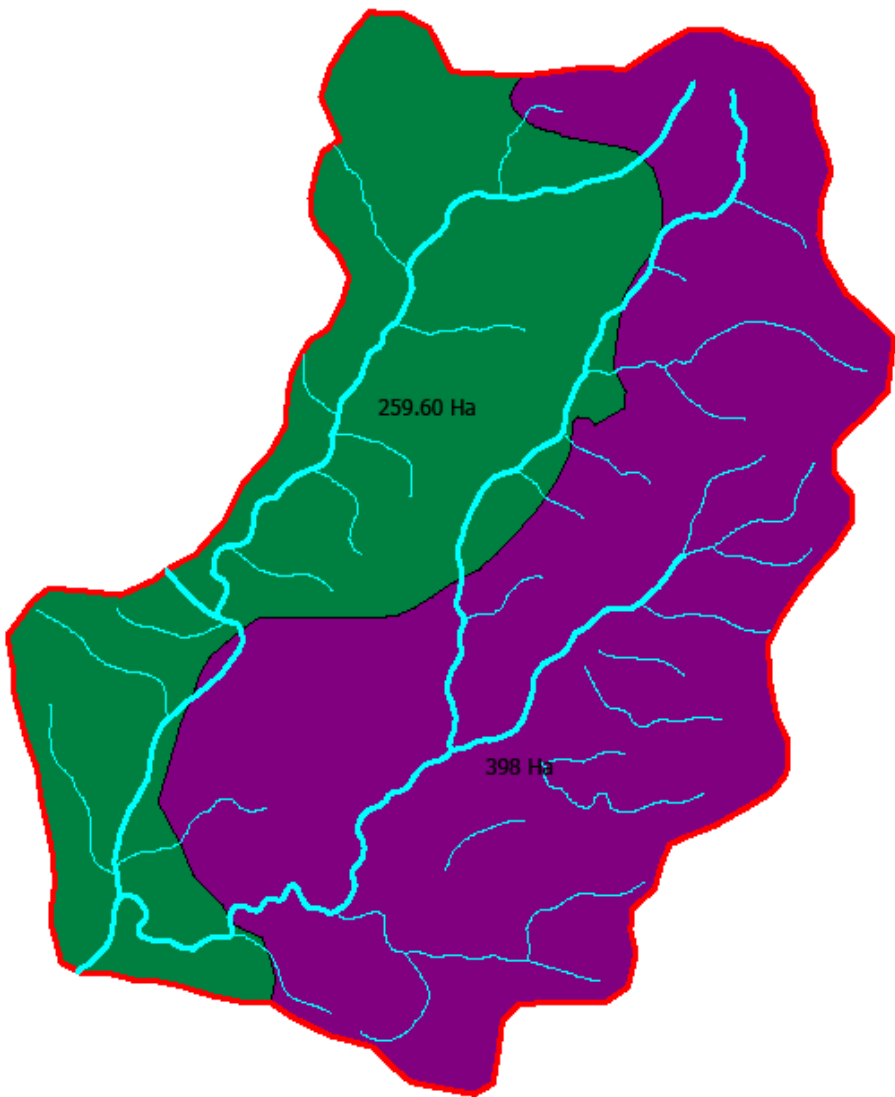
MAPS



AGROCLIMATIC ZONE MAP

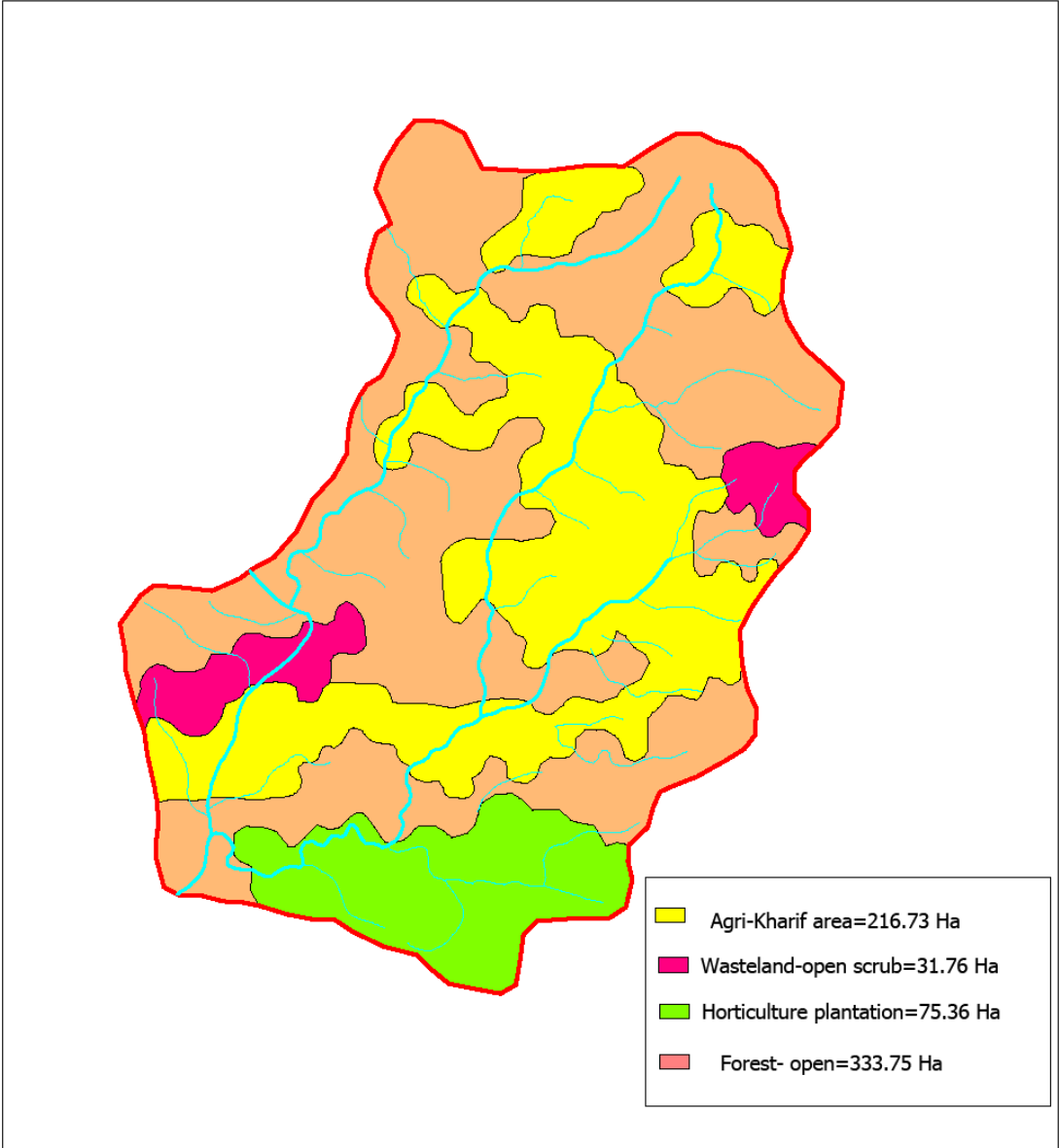


SOIL MAP

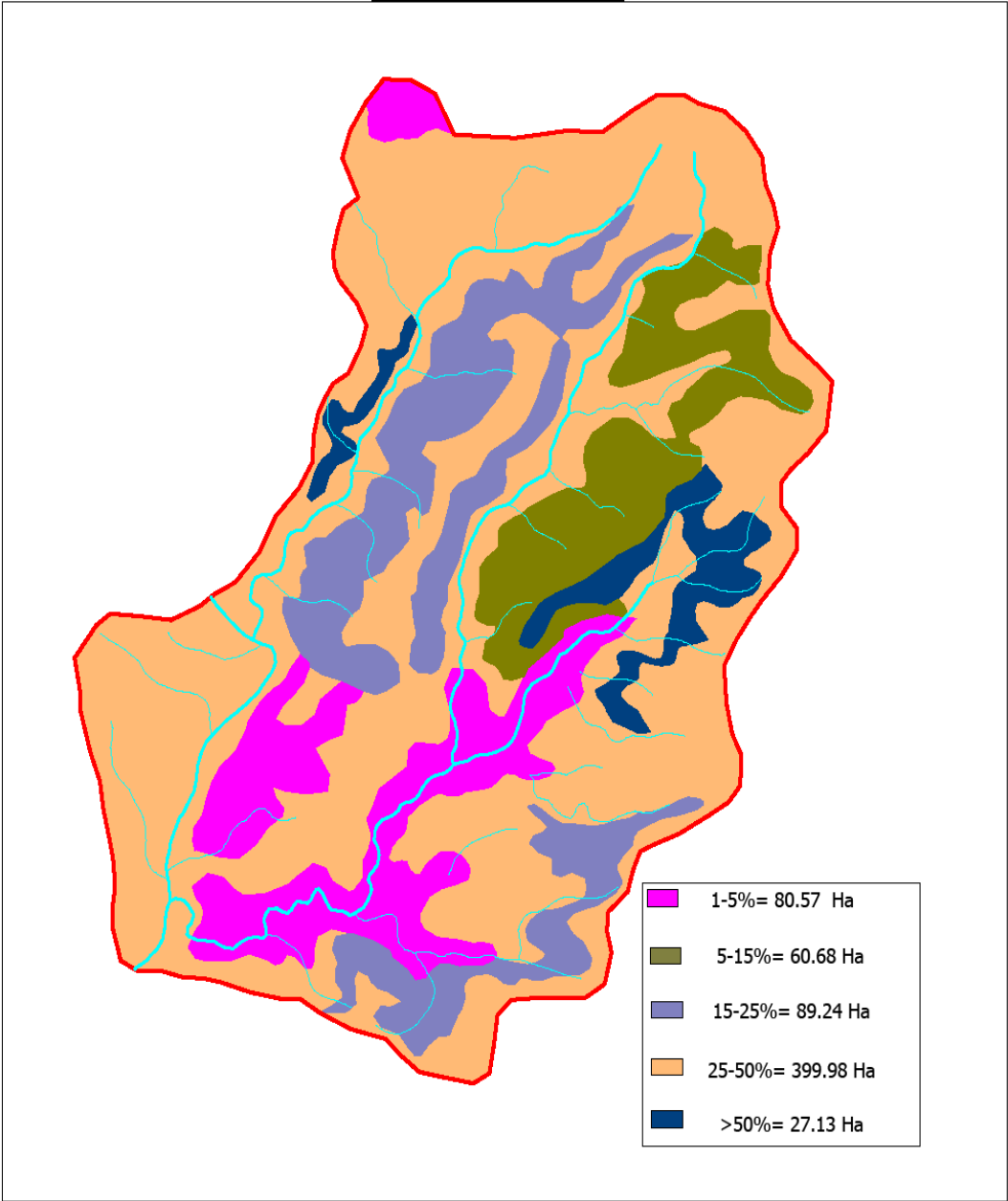


- Moderately Deep, excessively drained coarse loamy soils
- Deep, poorly drained clay fine soil

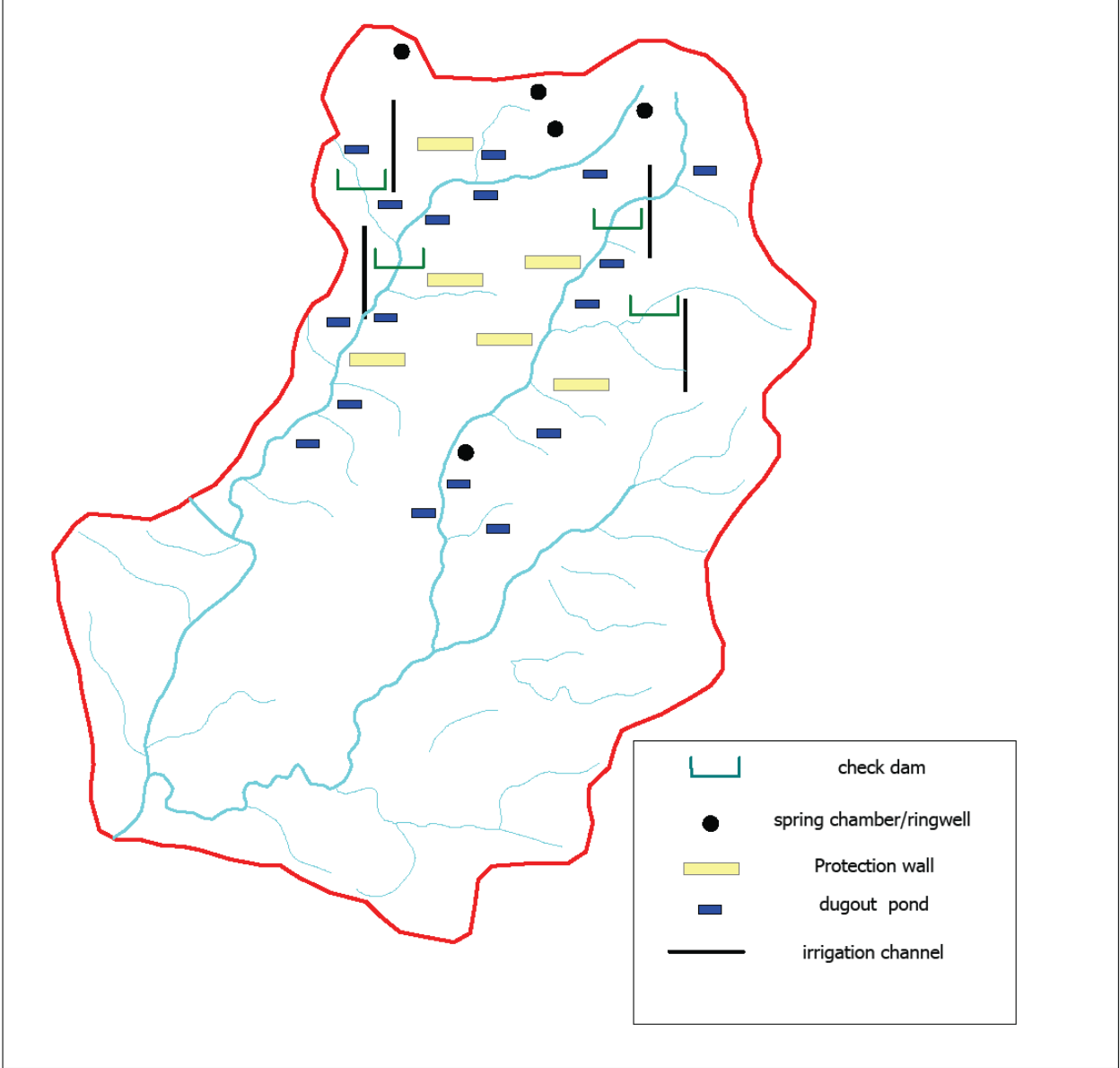
LAND USE LAND COVER MAP



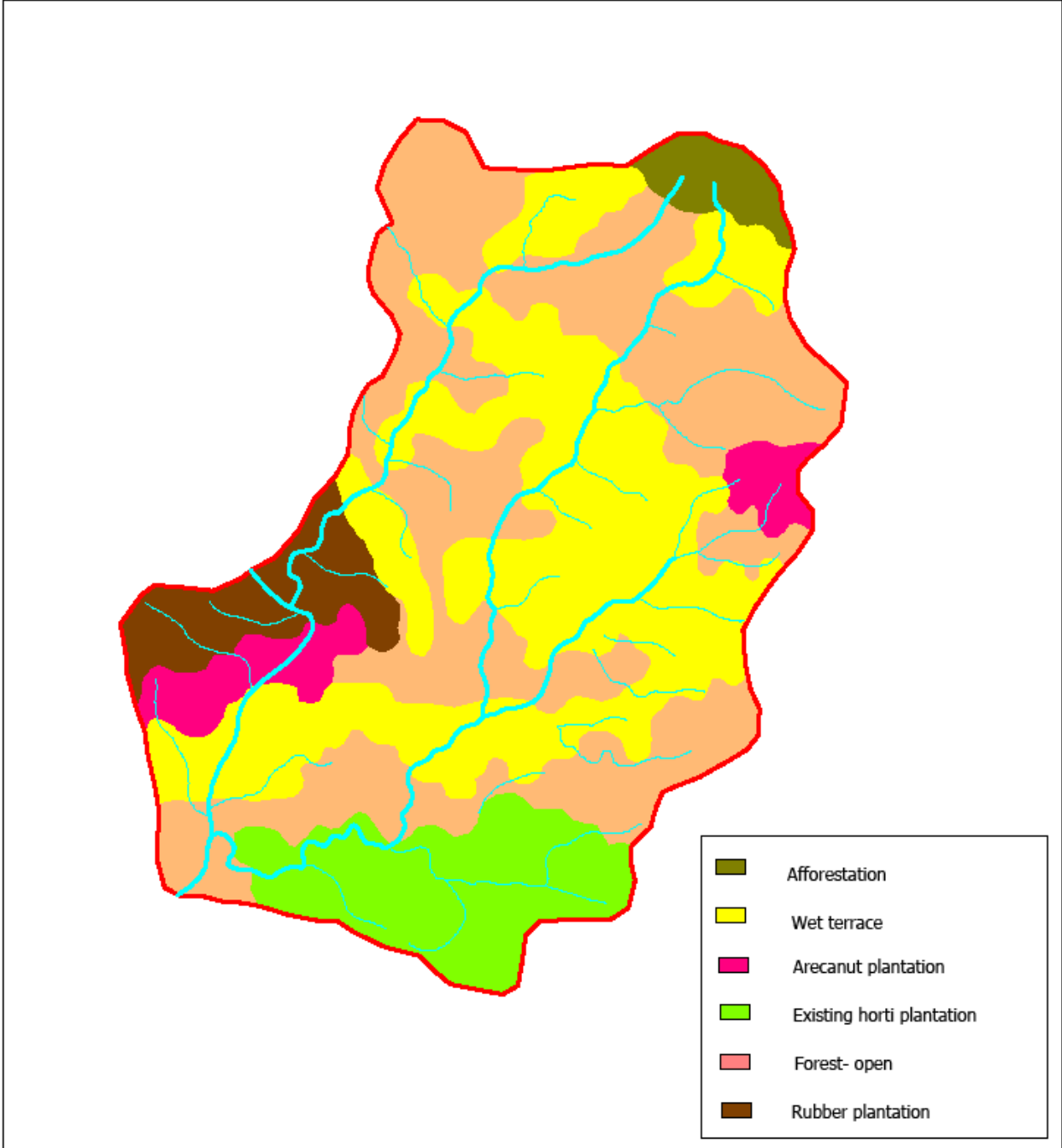
SLOPE MAP



PROPOSED ENGINEERING STRUCTURE



PROPOSED LAND USE MAP



•

ANNEXTURE-III

COST ESTIMATES

MODEL NORMS PER HACTARE FOR TERRACING (IWMP)

A. Technical Parameters .

i) Average terrace width recommended (m)	15.00
ii) Vertical Interval (VI) = $W \times S / 100 - S$	2.5
iii) Terrace Length (m) = $A / W + VI$	767.00
iv) Earthwork = $12.50 \times W \times S \text{ m}^3$	1200.00
v) Shoulder Bund Length	779.00
vi) Shoulder Bund Length x-section (m^2)	0.08
vii) Earthwork for shoulder Bund (m^3)	62.32
viii) Area available for cultivation (Ha.)	0.87

B. Cost estimate .

	Amount.
i) Jungle clearance including uprooting of stumps (L/s)	2000.00
ii) Cost of terracing @ Rs. 10/- m^3	15000.00
iii) Cost of shoulder Bund @ Rs. 7/- m^3	850.00
iv) Dressing, shaping and grading of terrace	950.00
v) Water Disposal structure (L/s)	1200.00
G. Total	20000.00

(Rupees twenty thousand) only .

MODEL NORMS PER HA. FOR IMPROVEMENT OF DEGRADED FOREST (IWMP).

(Rate as per PWD SOR for R & B for 2008-09)

A. Preliminary works.

i) site clearance 3 mandays @ Rs. 100/- each	Rs. 300.00
ii) Pit digging (0.30 x 0.30 x 0.30) m 100 nos. @ Rs. 4/- each	<u>Rs. 400.00</u>
sub - total	Rs. 700.00

B. I st year Planting .

i) Cost of planting material 100 nos. @ Rs. 8/- each	Rs. 800.00
ii) Cost of planting 100 nos. @ Rs. 2/- each	Rs. 200.00
iii) Round weeding 4 times - 5 mandays @ Rs. 100/- each	Rs. 500.00
iv) Plant protection measures 4 mandays @ Rs. 100/- each	<u>Rs. 400.00</u>
sub-total	Rs. 1900.00

C. II year Planting .

i) Refilling 10%	Rs. 100.00
ii) Round weeding - 4 times- 5 mandays @ Rs. 100/- each	Rs. 500.00
iii) Plant protection measures - 4 mandays @ Rs. 100/- each	<u>Rs. 400.00</u>
Sub-total	Rs. 1000.00
Grand Total	Rs. 3600.00

(Rupees three thousand six hundred) only.

MODEL NORMS PER HACTARE FOR RUBBER CULTIVATION .

Spacing - (4.75 x 4.75) m

Plant density - 450 nos.

A. Preliminary works
:

i) Cost of seedling L/s.....	Rs. 800.00	
ii) Box terracing including pit digging (0.45 x 0.45 x 0.45) m ..L/s...Rs. 1350.00	<u>500.00</u>
sub-total	Rs. 9000.00	1300.00

B. I st Year Planting .

i) Cost of Fertilisers (NPK 45:30:45) including transportation	Rs. 2000.00	
ii) Cost of 2 times application (June-July and September - October)		
14 mandays @ Rs. 100/- each	Rs. 1400.00	
iii) 1st year weeding	Rs. 1200.00	
Sub-total	Rs. 4600.00	

C. II nd year maintenance .

i) 2nd year weeding	Rs. 2700.00	
Sub-total	Rs. 2700.00	

Grand Total Rs. 8600.00

**(Rupeeseight thousand six hundred)
only.**

COST ESTIMATE PER UNIT FOR INTEGRATED FARMING SYSTEM (IWMP).

A. Piggery ;		
i) Construction of sty @ Rs. 20000/- each	Rs.	20000.00
ii) Cost of Piglets - 10 nos. @ Rs. 20000/- each	Rs.	20000.00
iii) Cost of feeds for 6 months (L/s)	Rs.	10000.00
 B. Construction of Dug out Pond (25.00 x 25.00) m (as per estimate)	Rs.	60000.00
 Supply of fingerlings -1500 nos. @ Rs.3000/- per 1000 nos.		
C. (L/s)	Rs.	4500.00
 D. Kitchen Garden ;		
i) Site preparation including Bunding, shaping etc.	Rs.	3500.00
ii) cost of F.Y.M. including cost of applicaton	Rs.	4000.00
iii) Cost of equipmqnts and tools etc.	Rs.	1500.00
iv) Cost of seeds including sowing etc.	Rs.	1500.00
 G. Total	Rs.	125000.00

**(Rupees one lakh twenty five thousand)
only.**

Estimate for the construction of Ring Well.
(Based as per P.W.D. S.O.R. for roads, bridges and E&D works 2009-2010)

¹/134 Excavation for structures.
 (1) Ordinary Soil.
 A.(ii) 3m. to 6 m. depth.

$$\begin{aligned}
 &1 \times \frac{\pi}{4} \times (1.20) \times 5.25 = 5.93 \text{ m}^3 \\
 &1 \times \frac{\pi}{4} \times (4.20) \times 0.30 = 4.15 \text{ m}^3 \\
 \text{Less: } &1 \times \frac{\pi}{4} \times (1.20) \times 0.30 = \underline{(-)0.34 \text{ m}^3} \\
 &= 9.74 \text{ m}^3
 \end{aligned}$$

(i) Upto 3m.depth.

@ Rs. 61 /- m³ Rs. **594.14**

$$1 \times 8.00 \times 0.50 \times 0.45 = 1.80 \text{ m}^3$$

@ Rs. 47 /- m³ Rs. **84.60**

²/69 Providing and paying reinforced c.c.pipe for ring well including fixing collar with cement mortar 1:2 etc.
 (A) 1200mm dia.
 Length = 6.25 metres.

@ Rs. 5621 /- m Rs. **35131.25**

³/103 Providing and laying of dry rubble flooring complete.

$$1 \times \pi \times 4.20 \times 1.50 \times 0.25 = 4.95 \text{ m}^3$$

$$\begin{aligned}
 1 \times 8.00 \times 0.20 \times 0.10 &= 0.16 \text{ m}^3 \\
 \hline
 &5.11 \text{ m}^3
 \end{aligned}$$

@ Rs. 1065 /- m³ Rs. **5442.15**

⁴/141 Plain/Reinforced c.c. in open foundation complete.

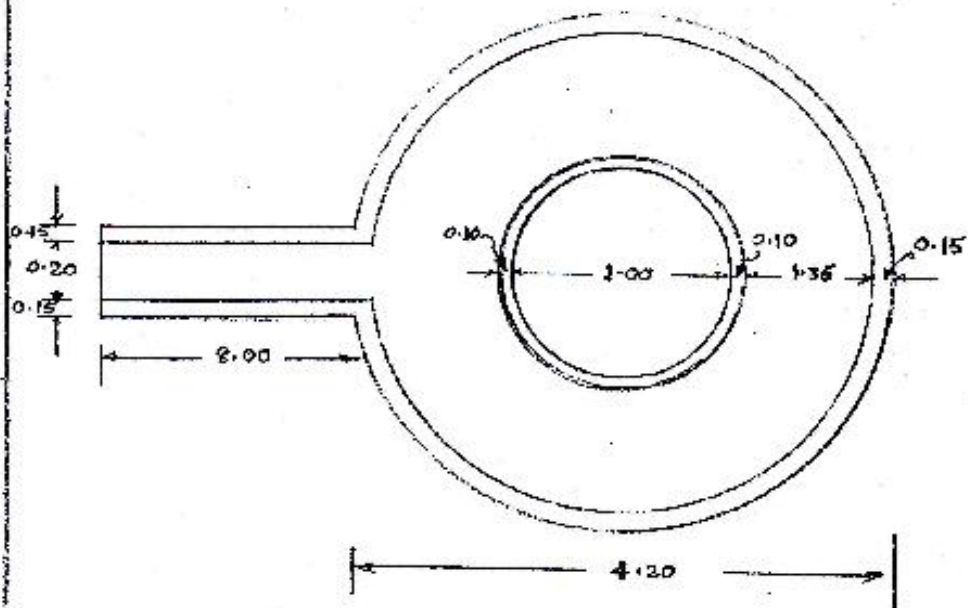
(A) PCC G - M
-15

$$\begin{array}{rclclclcl}
 1 & \times & \pi & \times & 4.20 & \times & 1.50 \times 0.15 & = & 2.97 & \text{m}^3 \\
 1 & \times & \pi & \times & 4.20 & \times & 0.15 \times 0.15 & = & 0.30 & \text{m}^3 \\
 2 & \times & 8.00 & \times & 0.15 & \times & 0.45 & = & 1.08 & \text{m}^3 \\
 1 & \times & 8.00 & \times & 0.20 & \times & 0.15 & = & 0.24 & \text{m}^3 \\
 & & & & & & & & \hline
 & & & & & & & & 4.59 & \text{m}^3
 \end{array}$$

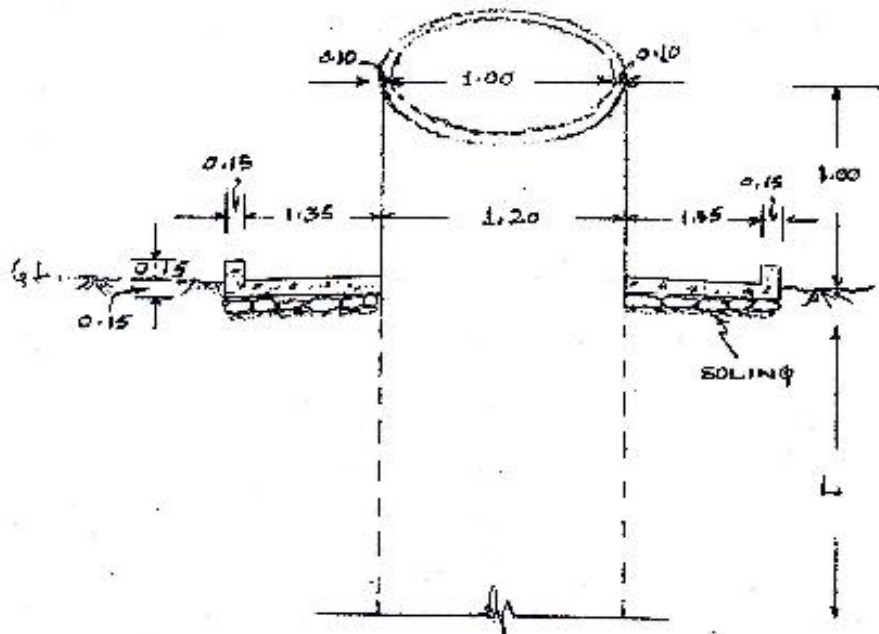
	@	Rs.	4090	/-	m ³	Rs.	18773.10
GRAND TOTAL :						Rs.	60025.24
Say Rs. 60,000/-							
(Rupees Sixty Thousand) only.							

DRAWING OF RING WELL

NOT TO SCALE



PLAN



CROSS SECTION

ESTIMATE FOR THE CONSTRUCTION OF C.C CHECK DAM.

(Based as per P.W.D., Schedule of rates for roads, bridges and E & D works for the year 2009-2010).

- 1/134. Excavation for structures.
(I) Ordinary soil.
A. Manual means.
(i) Upto 3.00m depth.

M/dam :	1 x 10.00 x 1.20 x 1.25	=	15.00m ³
G/wall :	2 x 4.60 x 0.50 x 0.80	=	3.68m ³
W/wall :	2 x 4.00 x 0.50 x 0.80	=	3.20m ³
T/wall :	1 x 6.60 x 0.60 x 1.00	=	3.96m ³
Apron :	1 x 4.60 x 6.00 x 0.45	=	12.42m ³

		=	38.26m ³

@ Rs. 47/- m³ Rs. 1798.22

- 2/137. Providing c.c. work in 1:3:6 foundation etc.

M/dam :	1 x 10.00 x 1.20 x 0.23	=	2.76m ³
---------	-------------------------	---	--------------------

@ Rs. 3571/- m³ Rs. 9855.96

- 3/141(a). Plain/ reinforcement c.c. in open foundation etc.

M/dam :	1 x 10.00 x 0.90 x 1.00	=	9.00m ³
	1 x 10.00 x $\frac{0.45 + 0.90}{2}$ x 1.80	=	12.15m ³
	2 x 2.00 x 0.45 x 0.75	=	1.35m ³
G/wall :	2 x 4.60 x 0.30 x 0.80	=	2.21m ³
	2 x 5.45 x 0.30 x 2.55	=	8.33m ³
Less :	2 x ½ x 3.20 x 0.30 x 1.35	= (-)	1.30m ³
W/wall :	2 x 4.00 x 0.30 x 3.35	=	8.04m ³
T/wall :	1 x 6.60 x 0.40 x 1.00	=	2.64m ³
Apron :	1 x 6.15 x 6.00 x 0.15	=	5.54m ³

		=	47.96m ³

@ Rs. 4090/- m³ Rs. 196156.40

4/140(b). Stone masonry work in cement mortar 1:3 etc. complete.

$$\begin{array}{lcl} \text{Apron :} & 1 \times 4.60 \times 6.00 \times 0.30 & = 8.28\text{m}^3 \\ & 1 \times \frac{1}{2} \times 1.80 \times 6.00 \times 1.80 & = 9.72\text{m}^3 \end{array}$$

$$\begin{array}{lcl} \text{Less :} & 1 \times \frac{1}{2} \times 0.45 \times 6.00 \times 1.80 & = (-) 2.43\text{m}^3 \\ & & \text{-----} \\ & & = 15.57\text{m}^3 \end{array}$$

$$\begin{array}{lcl} @ \text{ Rs. } 2714/- \text{ m}^3 & \text{.....} & \text{Rs. } 42256.98 \end{array}$$

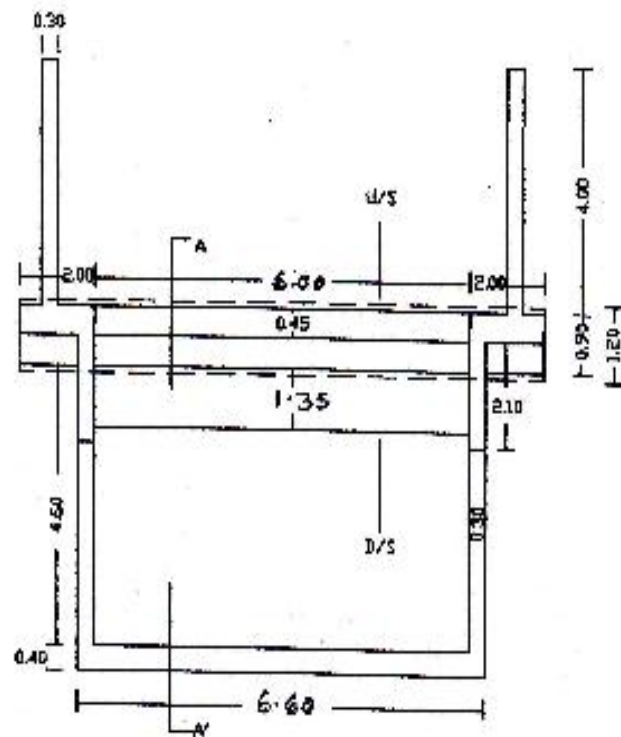
GRAND TOTAL = Rs. 250067.56

Say, Rs. 2,50,000.00

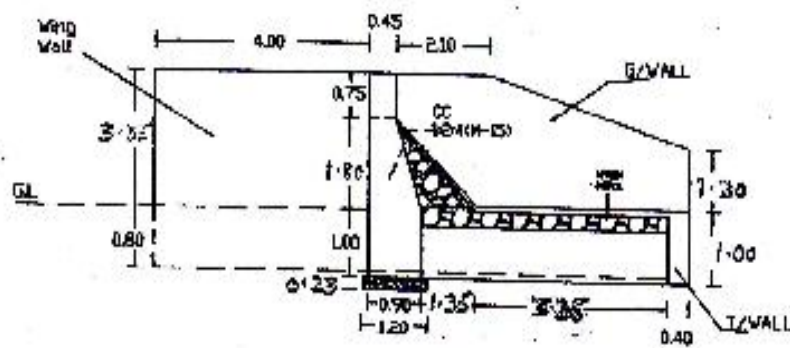
(Rupees Two lakh fifty thousand) only.

C. C. CHECK DAM

Not to Scale



PLAN



C/S At A-A'

ESTIMATE FOR THE CONSTRUCTION OF C.C. CORE WALL WITH EARTH FILLED DAM (EARTHEN EMBANKMENT) FOR WATER HARVESTING STRUCTURES.

(Rates as per P.W.D S.O.R for Roads, Bridges and E & D Works 2009-2010).

1/134.	Excavation for structures. (I) Ordinary soil. (A) Manual Means. (i) Upto 3m depth.		
	Core wall :	$1 \times 18.00 \times 1.20 \times 1.25$	$= 27.00\text{m}^3$
	L/Channel :	$1 \times 8.00 \times 1.40 \times 1.10$	$= 12.32\text{m}^3$

			$= 39.32\text{m}^3$
	@ Rs. 47/- m^3	Rs. 1848.04
2/137.	P.C.C 1:3:6 in foundation.....etc.		
	Core wall :	$1 \times 18.00 \times 1.20 \times 0.11$	$= 2.38\text{m}^3$
	@ Rs. 3571/- m^3	Rs. 8498.98
3/141.	Plain/reinforced c.c in open foundation complete. (A) P.C.C M-15.		
	Core wall :	$1 \times 18.00 \times \frac{0.40 + 1.00}{2} \times 3.50$	$= 44.10\text{m}^3$
	L/channel :	$2 \times 8.00 \times 0.20 \times 1.15$	$= 3.68\text{m}^3$
		$1 \times 8.00 \times 1.00 \times 0.10$	$= 0.80\text{m}^3$

			$= 48.58\text{m}^3$
	@ Rs. 4090/- m^3	Rs. 198692.20

4/28. Construction of embankment.

$$\begin{aligned}\text{Dam :} & \quad 1 \times 18.00 \times \frac{2.50 + 8.50}{2} \times 3.00 & = 297.00\text{m}^3 \\ \text{Less :} & \quad 1 \times 18.00 \times \frac{0.40 + 0.80}{2} \times 2.50 & = (-) 27.00\text{m}^3 \\ & & \text{-----} \\ & & = 270.00\text{m}^3\end{aligned}$$

@ Rs. 71/- m³ Rs. 19170.00

5/100(I). Providing and laying stone/ boulders pitching on slope ...etc.

(I) Stone /boulders.

Dam U/S :

$$1 \times 18.00 \times 4.24 \times 0.20 = 15.26\text{m}^3$$

L/Channel : 1 x 8.00 x 1.00 x 0.20

$$\begin{aligned}& = 1.60\text{m}^3 \\ & \text{-----} \\ & = 16.86\text{m}^3\end{aligned}$$

@ Rs. 1086/- m³ Rs. 18309.96

6/37. Turfing with sods.

$$\text{Dam D/S :} \quad 1 \times 18.00 \times 4.24 = 76.32\text{m}^2$$

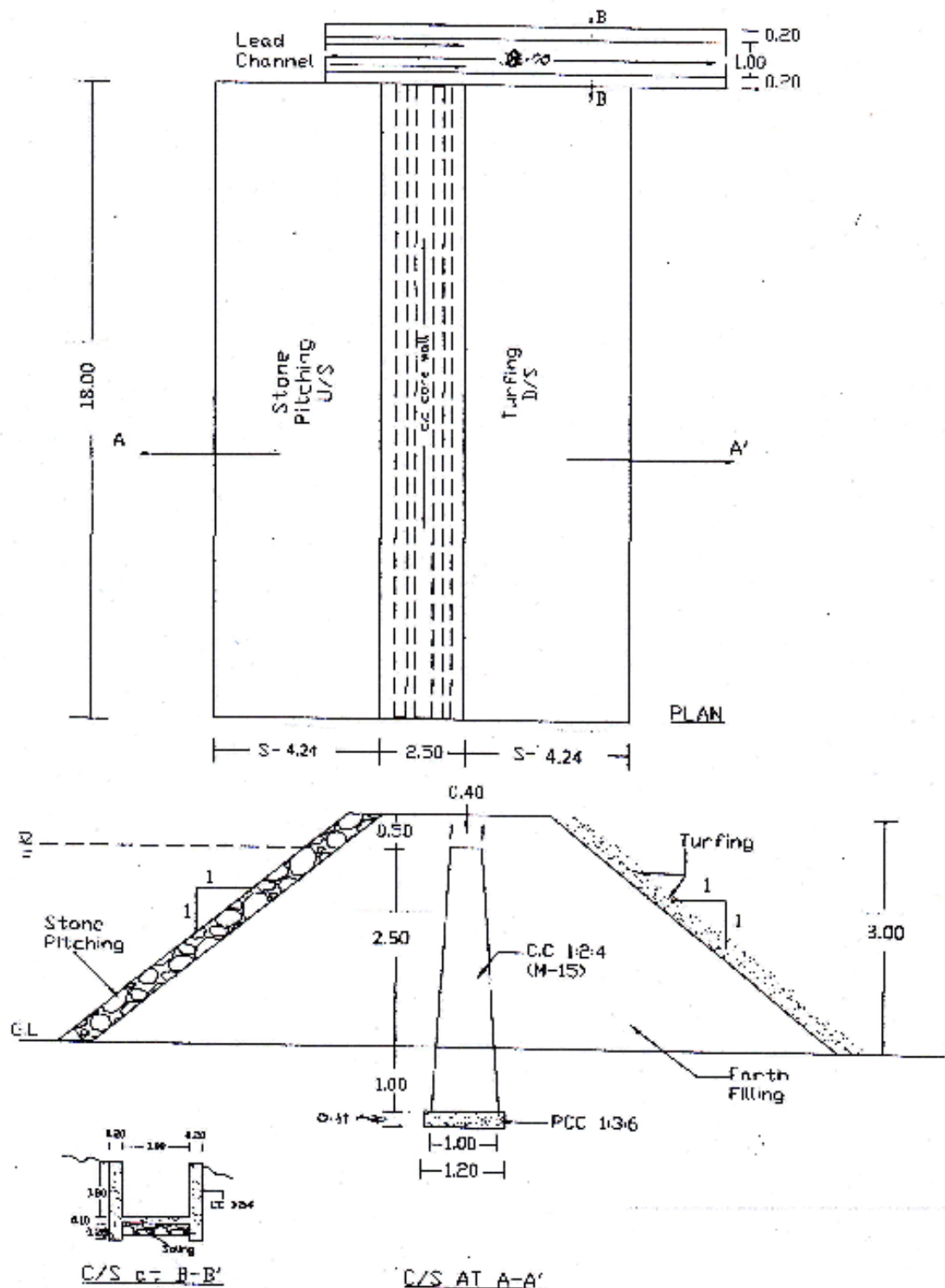
@ Rs. 46/- m² Rs. 3510.72

GRAND TOTAL = Rs. 250029.90

Say, Rs. 2,50,000.00

(Rupees Two lakh fifty thousand) only.

C.C. Core Wall With Earthen Filled Dam
Embankment For Water Harvesting Structure



NB: All Dimension are
In Metre

Not to Scale

ESTIMATE FOR THE CONSTRUCTION OF DUG OUT POND.

(Rates as per P.W.D S.O.R for Roads, Bridges and E & D Works 2009-2010).

1/30(i). Excavation in cutting in soil by manual means.

Dug out Pond :

$$\text{Vol : } \frac{D}{6} (26.00 \times 24.00) + 4 (24.00 \times 22.00) + (22.00 \times 20.00)$$

$$= \frac{2.00}{6} (624.00) + (2112.00) + (440.00)$$

$$= \frac{2.00}{6} (3176.00)$$

$$= 1058.67\text{m}^3$$

@ Rs. 47/- m³

.....

Rs. 49757.49

2/44(i). Surface drains in soil.
(A) Manual Means.

Length : 10.00 metres.

@ Rs. 25/- m³

.....

Rs. 250.00

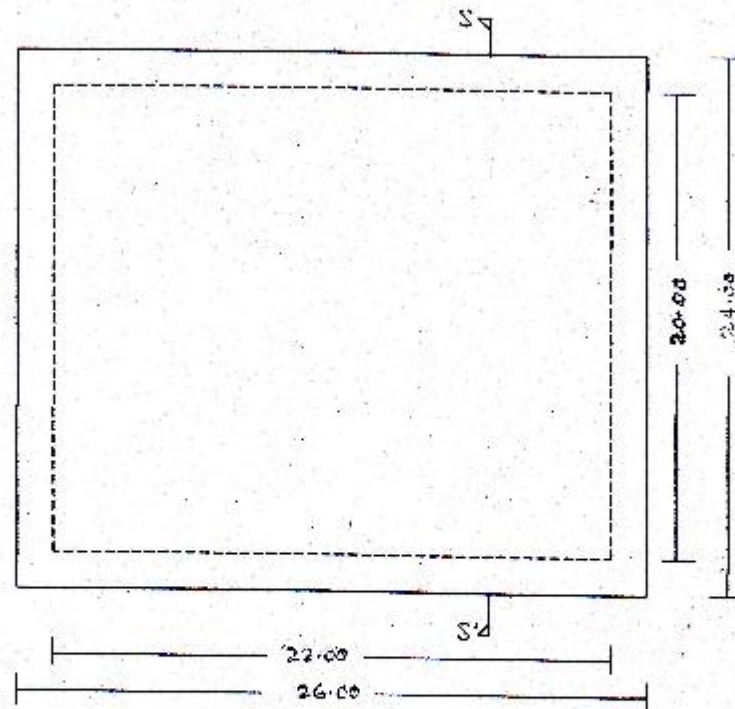
GRAND TOTAL = Rs. 50007.49

Say, Rs. 50,000.00

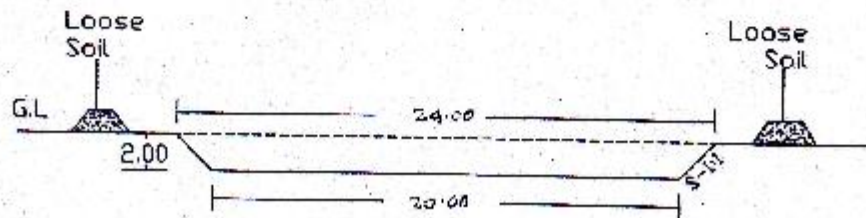
(Rupees Fifty thousand) only

DUG OUT POND

Not to Scale



PLAN



C/S AT S-S'

ESTIMATE FOR THE CONSTRUCTION OF STONE MASONRY PROTECTION WALL.

(Rates as per P.W.D S.O.R for Roads, Bridges and E & D Works 2009-2010).

1/134. Excavation for structures.

(I) Ordinary soil.

(A) Manual Means.

(i) Upto 3m depth.

$$1 \times 10.00 \times 1.35 \times \frac{1}{2} (1.10 + 0.60) = 11.48\text{m}^3$$

$$1 \times 10.00 \times \frac{1}{2} \times 1.35 \times 0.38 = 2.57\text{m}^3$$

$$\text{-----}$$
$$= 14.05\text{m}^3$$

@ Rs. 47/- m³ Rs. 660.35

2/137. P.C.C 1:3:6 in foundation.....etc.

$$1 \times 10.00 \times 1.35 \times 0.10 = 1.35\text{m}^3$$

@ Rs. 3571/- m³ Rs. 4820.85

3/140(b). Stone masonry works in cement mortar 1:3 etc.

$$1 \times 10.00 \times \frac{0.60 + 1.10}{2} \times 1.75 = 14.88\text{m}^3$$

$$1 \times 10.00 \times \frac{1}{2} \times 1.10 \times 0.28 = 1.54\text{m}^3$$

$$\text{-----}$$
$$= 16.42\text{m}^3$$

@ Rs. 2714/- m³ Rs. 44563.88

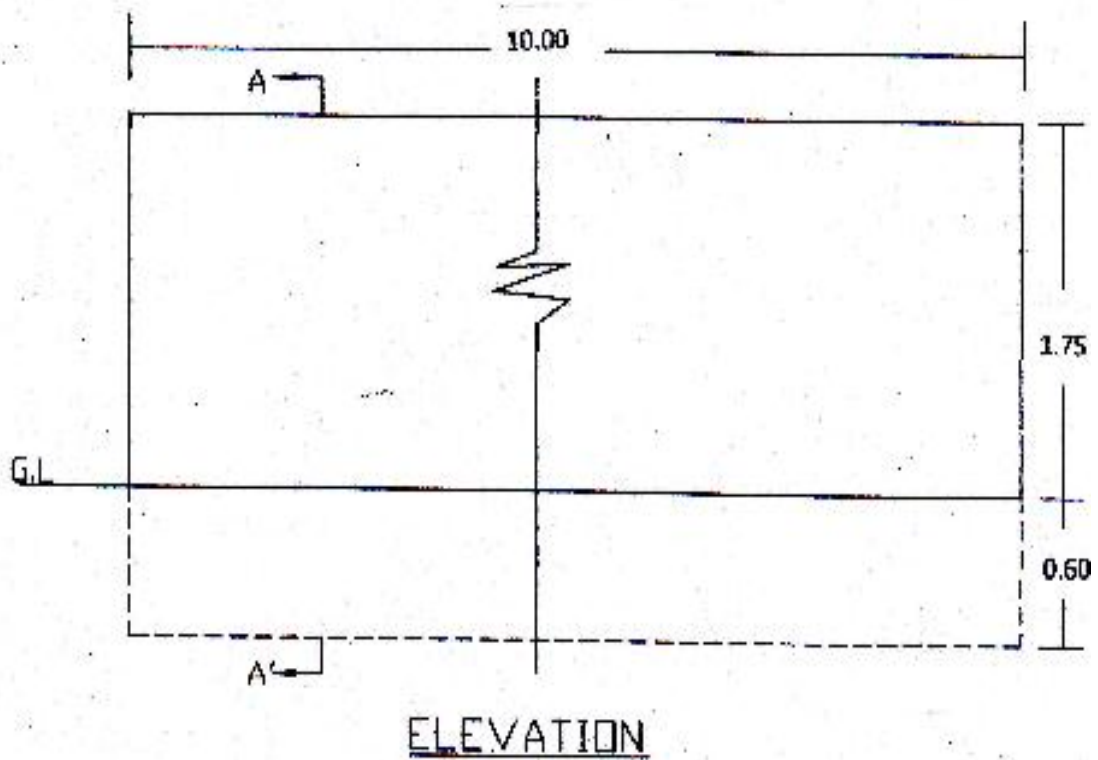
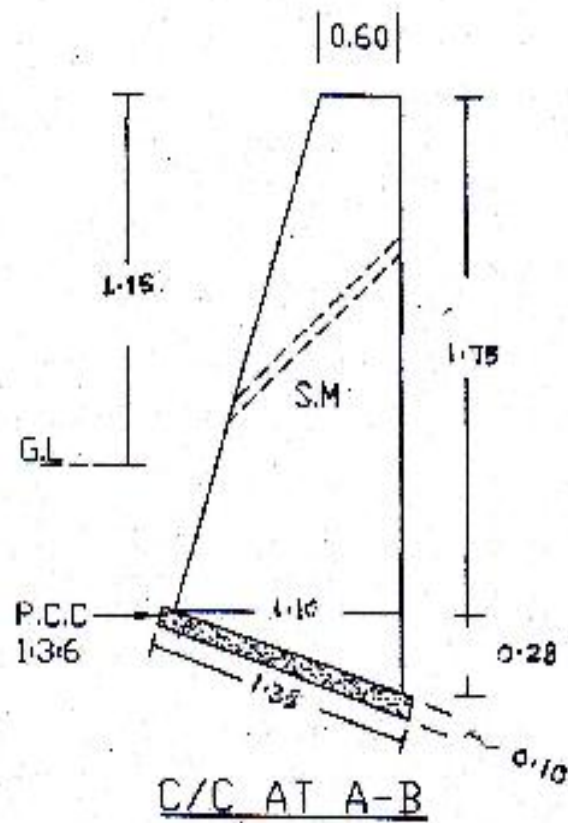
GRAND TOTAL = Rs. 50045.08

Say, Rs. 50,000.00

(Rupees Fifty thousand) only.

STONE MASONRY PROTECTION WALL

Not to Scale



ANNEXTURE-IV

MoA,Sub Committee Details Etc.

SANJAY GOYAL, IAS
DISTRICT MAGISTRATE
WEST GARO HILLS DISTRICT,
TURA, MEGHALAYA- 794001



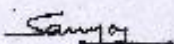
Phone: 03651-223835(O), 223826(R)
Fax: 03651-221179, 222226
e-mail: sanjaygoyal_ias@yahoo.com

TO WHOM IT MAY CONCERN

This is to certify that centrally sponsored schemes like NREGS, BRGF, RKVY, NRHS and Total Sanitation Campaign etc can be convered with Watershed Projects/Programmee within West Gato Hills District.

Dated : Tura
The 14th April, 2011.




(Sanjay Goyal)
Deputy Commissioner,
West Garo Hills Dist, Tura.

Details of Convergence of IWMP with other Schemes:

Name of Villages: Onthapara

	1	2	3	4	5			6	7
Sl. No.	District	Names of projects	Names of Departments with Schemes converging with IWMP	Fund made available to IWMP due to convergence (Rs. in lakh)	Name of activity/task/structure undertaken with converged funds			Reference no. of activity/ task/ structure in DPR [@]	Level at which decision for convergence was taken ^s
					(a) Structures (b)Livelihoods (C)Any other (pl specify)	Nos/Rmt/Ha	Amount(Rs)		
1	WGH	WGH-IWMP-VII	NREGS (DRDA, West Garo Hils, Meghalaya)	4596400	a)Dugout pond	18 Nos	900000	Enclosure of Abstract of Perspective Plan for Convergence of NREGs with IWMP in DPR	District Level
					b)Stone masonry protection wall	14 Nos	700000		
					c) Water harvesting farm pond	4 Nos	1000000		
					d) C.C Check cum Irrigation dam	5 Nos	1250000		
					e) Earthen irrigation channel	1484 Rmt	72400		
					f) Wet terrace	10 Ha	150000		
					g)Rubber Plantation	40 Ha	292000		
					h) Arecanut Plantation	30 Ha	232000		
				Grand Total			4596400		

Grand Total: Forty five lakhs ninety six thousand and four hundred only.

Enclosed: Abstract of Perspective Plan for Convergence of NREGS with IWMP.

ABSTRACT OF PERSPECTIVE PLAN FOR CONVERGENCE OF NREGs WITH IWMP AT ONTHAPARA VILLAGE

Name of the Village : **Onthapara**

Total Wages Component (@Rs. 117/- per m/days = Rs. 854100.00

Total No. of Job Card Holder : 73 Nos

Amount earmarked for Convergence per annum = Rs. 854101.00
(Rupees Eight lakh fifty four thousand and one hundred) only

SL.No	ACTIVITY	UNIT	PROJECT PERIOD												Total			Mandays to be Generated
			2011-12			2012-13			2013-14			2014-15						
			PHY	FIN		PHY	FIN		PHY	FIN		PHY	FIN		PHY	FIN		
				Wages	material		Wages	Material		Wages	Material		Wages	Material		Wages	Material	
1	Dugout pond @50000/- per No.	Nos.	8	400000		1	50000		3	15000		6	300000		18	900000		7692
2	Stone masoury protection wall @50000 per No	Nos.	7	210000	140000	2	60000	40000	2	60000	40000	3	90000	60000	14	420000	280000	3590
3	Water harvesting farm pond @250000/- per No.	Nos.	-	-	-	2	300000	200000	2	300000	200000	-	-	-	4	600000	400000	5128
4	C.C.Check-cum-irrigation dam @250000/- per No.	Nos.	1	150000	100000	1	150000	100000	1	150000	100000	2	300000	200000	5	750000	500000	6410
5	Earthen irrigation channel @50/- per rmt	Ha.	382	19100	-	342	17100		242	12000		482	24100		1484	72400	-	619
6	Wet-terrace @15000/- per ha.	Ha.	5	75000	-	5	75000	-	-	-	-	-	-	-	10	150000	-	1282
7	Rubber plantation:		-	-	-			-			-		-	-			-	
	(i)Planting @1800/- per ha	Ha.	-	-	-	30	54000	-	10	18000	-		-	-	40	72000	-	616
	(ii)Weeding @2000/- ha	Ha.	-	-	-	30	60000	-	40	80000	-	40	80000	-	40	220000	-	1880
8	Arecanut plantation:		-	-	-			-			-	-	-	-			-	-
	(i)Planting @2400/- per ha	Ha.	-	-	-	20	48000	-	10	24000	-	-	-	-	30	72000	-	615
	(ii)Weeding @2000/- ha	Ha.	-	-	-	20	40000	-	30	60000	-	30	60000	-	30	160000	-	1368
	GRAND TOTAL		-	854100	240000		854100	340000		719000	340000		854100	260000		3416400	1180000	29200

Amount allocated for convergence for the period 2011-12 to 2014-15

1	Wages Component:	=	Rs.	3416400.00
2	Material Components:	=	Rs.	1180000.00
	Grand Total	=	Rs.	4596400.00

Grand Total (Rupees Forty five lakh ninety six thousand and four hundred) only

President
Onthapara VEC
Dalu Block, WGH

Secretary
Onthapara VEC
Dalu Block, WGH

ABSTRACT OF PERSPECTIVE PLAN FOR CONVERGENCE OF NREGS WITH IWMP AT ONTHAPARA VILLAGE
UNDER DALMI MICRO WATERSHED, WGH-IWMP-VII

Name of the Village : **Onthapara** Total Wages Component (@Rs. 117/- per m/days) = Rs. 854100.00
Total No. of Job Card Holder : 73 Nos Amount earmarked for Convergence per annum = Rs. 854101.00
(Rupees Eight lakh fifty four thousand and one hundred) only

SL No	ACTIVITY	UNIT	PROJECT PERIOD										Total				Mandays to be Generated
			2011-12		2012-13		2013-14		2014-15								
			PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN	PHY	FIN					
													Wages	Material	Wages	Material	
1	Dugout pond @50000/- per No.	Nos.	8	400000	1	50000	3	15000	6	300000	18	900000	7692				
2	Stone masonry protection wall @50000 per No	Nos.	7	210000	2	60000	2	60000	3	90000	14	420000	3590				
3	Water harvesting farm pond @250000/- per No	Nos.			2	300000	2	300000			4	600000	5128				
4	C.C. Check-cum-irrigation dam @250000/- per No.	Nos.	1	150000	1	150000	1	150000	2	300000	5	750000	6410				
5	Earthen irrigation channel @50/- per mt	Ha.	382	19100	342	17100	242	12000	482	24100	1484	72400	619				
6	Well/terrace @15000/- per ha.	Ha.	5	75000	5	75000	-	-	-	-	10	150000	1282				
7	Rubber plantation:																
	(i) Planting @1800/- per ha	Ha.			30	54000	10	18000			40	72000	616				
	(ii) Weeding @2000/- ha	Ha.			30	60000	40	80000			40	220000	1880				
8	Arecanut plantation:																
	(i) Planting @2400/- per ha	Ha.			20	48000	10	24000			30	72000	615				
	(ii) Weeding @2000/- ha	Ha.			20	40000	30	60000	30	60000	30	180000	1368				
	GRAND TOTAL			854100	240000		854100	340000		719000		346400	1180000	29200			

Amount allocated for convergence for the period 2011-12 to 2014-15

1 Wages Component:	=	Rs.	3416400.00
2 Material Components:	=	Rs.	1180000.00
Grand Total	=	Rs.	4596400.00

Grand Total (Rupees Forty five lakh ninety six thousand and four hundred) only

Prabir Sengupta
President
Onthapara V.E.C. (MREGS)
Datu Block, WGH-IWMP-VII,
West Garo Hills

Prabir Sengupta
Secretary
Onthapara V.E.C. (MREGS)
Datu Block, WGH-IWMP-VII,
West Garo Hills

AGREEMENT FOR CONVERGENCE OF SCHEME

The Village Employment Councils (VEC) and the Communities of Dalmi Villages, Dalu Blocks, West Garo Hills, Meghalaya have no objection to the Convergence of NREGS with Integrated Management Project (IWMP) at Onthapara village under Dalmi Micro-Watershed, WGH-IWMP-VII being implemented by Tura Soil & Water Conservation (T) Division.

We also agreed to allocated and commit Funds for wage as well as material component under NREGS in our Annual Work Plan for various Soil & Water Conservation Works which shall be taken up during the Project Period (2010-11 to 2013-14). The wage and material component under NREGS shall be utilised for following works:

1. Dugout Pond.
2. Wet Terrace.
3. C. C. Check Dam Cum Irrigation Dam.
4. Areca nut Plantation.
5. Earthen Irrigation Channel.
6. Water Harvesting Farm Pond.
7. Rubber Plantation.
8. Stone Masonry Protection Wall.

Abhishekina Sangma
President, ~~President~~
Village Employment Council (NREGS)
Onthapara V.E.C.
Dalu Dev. Block
Dalu Block, West Garo Hills.

Josip Sangma
Secretary, ~~Secretary~~
Village Employment Council
Onthapara V.E.C.
Dalu Dev. Block
Dalu Block, West Garo Hills.

**NO OBJECTION CERTIFICATE OF THE AKING NOKMA FOR DALMI MICRO
WATERSHED DEVELOPMENT PROJECT TO BE TAKEN UP UNDER I.W.M.P.IV
PROJECT BY TURA SOIL & WATER CONSERVATION (T) DIVISION**

The A'king Nokma of Onthapara village under Dalmi Micro Watershed Project WGH-IWMP-IV has No Objection to the Entry Point Activity (EPA) to be undertaking in my A'king land by Soil & Water Conservation Department.

The villagers of Onthapara A'king Land are ready to accept the Development Scheme after clear understanding of the objectives and the activities proposed under the project to be implemented in our Watershed area.

There will be No Objection in future from the villagers of the watershed area as they have understood the objectives of the proposed scheme of the Soil & Water Conservation Department.

Name & Signature of A'king Nokma



R.T.G. 61.
Chenji D. Sangma

Ma Ch. D. Sangma
Nokma II-12 (12)
Onthapara A'king
West Garo Hills

Countersigned by

Divisional Officer,
Tura Soil & Water Conservation (T) Division,
West Garo Hills, Meghalaya.

ABSTRACT OF PERSPECTIVE PLAN FOR CONVERGENCE OF NREGs WITH IWMP AT ONTHAPARA VILLAGE

Name of the Village : Onthapara	Total Wages Component (@Rs. 117/- per m/days	=	Rs.	854100.00
--	--	---	-----	-----------

Total No. of Job Card Holder : 73 Nos	Amount earmarked for Convergence per annum	=	Rs.	854101.00
---------------------------------------	--	---	-----	-----------

(Rupees Eight lakh fifty four thousand and one hundred) only

SL.No	ACTIVITY	UNIT	PROJECT PERIOD												Total			Mandays to be Generated
			2011-12			2012-13			2013-14			2014-15						
			PHY	FIN		PHY	FIN		PHY	FIN		PHY	FIN		PHY	FIN		
				Wages	material		Wages	Material		Wages	Material		Wages	Material		Wages	Material	
1	Dugout pond @50000/- per No.	Nos.	8	400000		1	50000		3	15000		6	300000		18	900000		7692
2	Stone masoury protection wall @50000 per No	Nos.	7	210000	140000	2	60000	40000	2	60000	40000	3	90000	60000	14	420000	280000	3590
3	Water harvesting farm pond @250000/- per No.	Nos.	-	-	-	2	300000	200000	2	300000	200000	-	-	-	4	600000	400000	5128
4	C.C.Check-cum-irrigation dam @250000/- per No.	Nos.	1	150000	100000	1	150000	100000	1	150000	100000	2	300000	200000	5	750000	500000	6410
5	Earthen irrigation channel @50/- per rmt	Ha.	382	19100	-	342	17100		242	12000		482	24100		1484	72400	-	619
6	Wet-terrace @15000/- per ha.	Ha.	5	75000	-	5	75000	-	-	-	-	-	-	-	10	150000	-	1282
7	Rubber plantation:		-	-	-			-			-			-			-	
	(i)Planting @1800/- per ha	Ha.	-	-	-	30	54000	-	10	18000	-		-	-	40	72000	-	616
	(ii)Weeding @2000/- ha	Ha.	-	-	-	30	60000	-	40	80000	-	40	80000	-	40	220000	-	1880
8	Areca nut plantation:		-	-	-			-			-	-	-	-			-	-
	(i)Planting @2400/- per ha	Ha.	-	-	-	20	48000	-	10	24000	-	-	-	-	30	72000	-	615
	(ii)Weeding @2000/- ha	Ha.	-	-	-	20	40000	-	30	60000	-	30	60000	-	30	160000	-	1368
	GRAND TOTAL		-	854100	240000		854100	340000		719000	340000		854100	260000		3416400	1180000	29200

Amount allocated for convergence for the period 2011-12 to 2014-

1	Wages Component:	=	Rs.	3416400.00
2	Material Components:	=	Rs.	1180000.00
	Grand Total	=	Rs.	4596400.00

President
Onthapara VEC
Dalu Block, WGH

Secretary
Onthapara VEC
Dalu Block, WGH

Details of Convergence of IWMP with other Schemes:

Name of Villages: Onthapara

	1	2	3	4	5			6	7
Sl. No.	District	Names of projects	Names of Departments with Schemes converging with IWMP	Fund made available to IWMP due to convergence (Rs. in lakh)	Name of activity/task/structure undertaken with converged funds			Reference no. of activity/ task/ structure in DPR®	Level at which decision for convergence was taken ^s
					(a) Structures (b)Livelihoods (C)Any other (pl specify)	Nos/Rmt/Ha	Amount(Rs)		
1	WGH	WGH-IWMP-VII	NREGS (DRDA, West Garo Hills, Meghalaya)	4596400	a)Dugout pond	18 Nos	900000	Enclosure of Abstract of Perspective Plan for Convergence of NREGs with IWMP in DPR	District Level
					b)Stone masonry protection wall	14 Nos	700000		
					c) Water harvesting farm pond	4 Nos	1000000		
					d) C.C Check cum Irrigation dam	5 Nos	1250000		
					e) Earthen irrigation channel	1484 Rmt	72400		
					f) Wet terrace	10 Ha	150000		
					g)Rubber Plantation	40 Ha	292000		
					h) Arecanut Plantation	30 Ha	232000		
				Grand Total			4596400		

Grand Total: Forty five lakhs ninety six thousand and four hundred only.

Enclosed: Abstract of Perspective Plan for Convergence of NREGS with IWMP.

