DETAILED PROJECT REPORT

of

UMLANGIA WATERSHED

UNDER

INTEGRATED WATERSHED MANAGEMENT PROGRAMME (IWMP)

PROJECT – I (2009 – 2010)

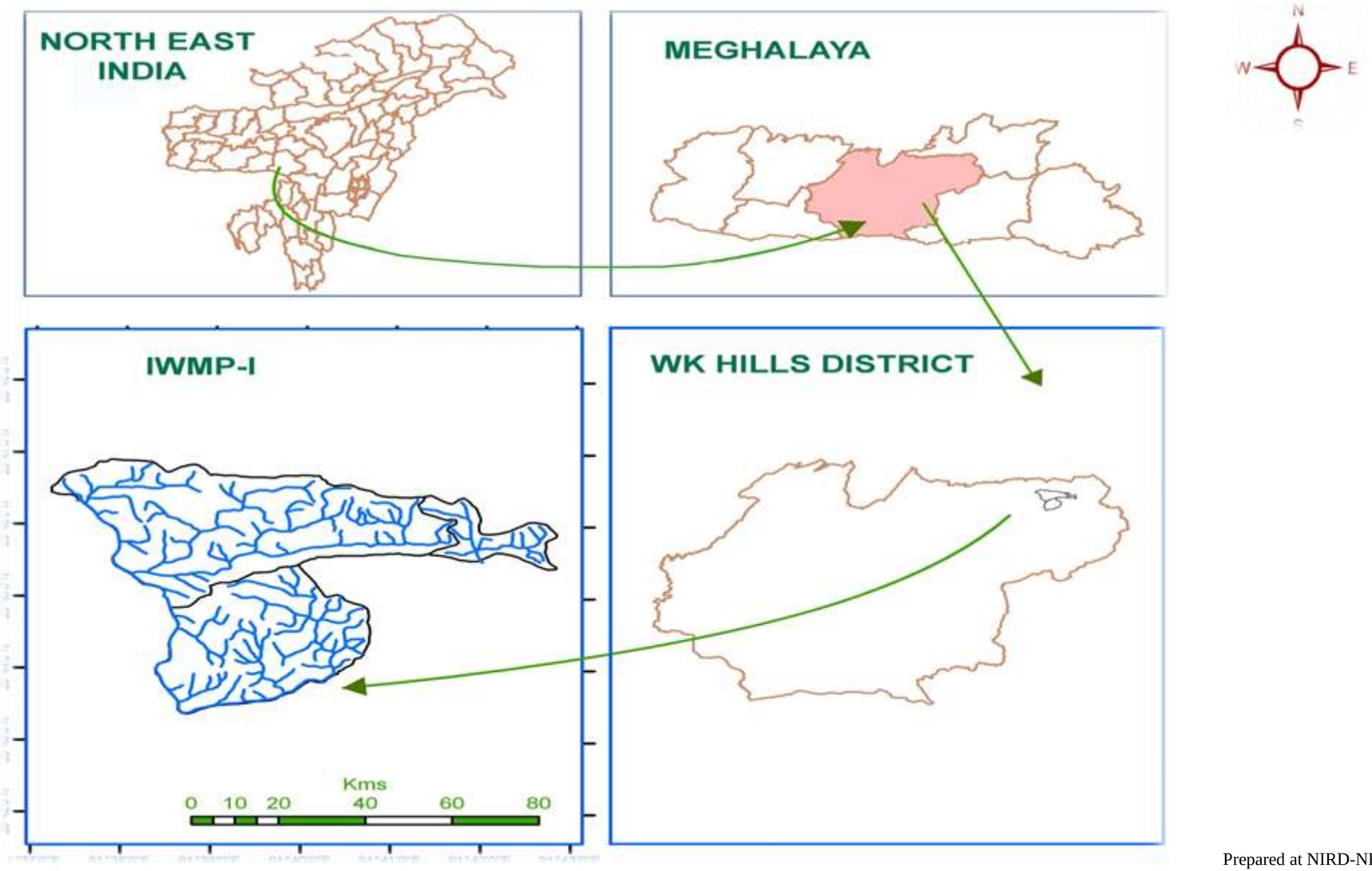
MAIRANG C&RD BLOCK, WEST KHASI HILLS DISTRICT, MEGHALAYA.

PROJECT IMPLEMENTATION AGENCY (IWMP)

WEST KHASI HILLS DISTRICT

SOIL & WATER CONSERVATION DIVISION: NONGSTOIN

MAP 1: LOCATION OF UMLANGIA WATERSHED, UNDER IWMP – I, WEST KHASI HILLS DISTRICT



Prepared at NIRD-NERC, Ghy

SUMMARY

Name of the Sate	:	Meghalaya
Name of the District	:	West Khasi Hills District
Name of the C&RD Block	:	Mairang
Name of the Villages	:	(i) Dongki-ingding (ii) Pathar Lyndan (iii) Lad Pnar Rim
		(iv) Lad Pnar Thymmai (v) Mawpat (vi) Mawpiah (vii) Umniangriang
Name of the Project	:	West Khasi Hills – IWMP – I
Total Geographical Area	:	2759 Ha
Total Treatment Area	:	1800 Ha
Total Project Cost	:	Rs. 270 Lakhs
Project Duration	:	5 Years
Project Implementing Agency	:	Soil & Water Conservation Division, Nongstoin.

A GLIMSE OF THE UMLANGIA MICRO WATERSHED

TABLE OF CONTENTS

CHAPTER I

INTRODUCTION AND BACKGROUND

1.1 Project Background:

The Umlangia (IWMP-I) project is located in Mairang C&RD Block, West Khasi Hills District of Meghalaya. Consisting of a cluster of 4 micro-watershed, the project area is drained by the Umlangia River and its tributaries flowing in a East-to-West direction. The total area is 2759 Ha. with 1800 Ha. to be treated under the Integrated Watershed Management Programme (IWMP).

The Project area is located at a distance of about 40 km from Mairang, the Civil Sub-Divisional and about 92 km from Nongstoin, the District Headquarter of West Khasi Hills District. The geographical location is between 91^0 37' 00" to 91^0 42' 05" E Longitude and 25^0 43' 00'' to 25^0 47' 00" N Latitude. The Project Area is well connected and is accessible by an all weather black-topped road.

A total of seven (7) villages are covered under the project. These are:-

1. Dongki – ingding
2. Pathar Lyndan
3. Lad Pnar Rim
4. Lad Pnar Thymmai
5. Mawpat
6. Mawpiah
7. Umniangriang

1.2 Micro-watershed Information:

The micro-watershed code is 3B1C4c4b, 3B1C44c4, 3B1C4c4d & 3B1C4c5k as codified by the North East Space Application Centre (NESAC) which are partially treated. The total area of the micro-watershed is 2759 Ha. with 1800 hectares to be treated under the Integrated Watershed Management Programme (IWMP).

1.3 Need and Scope for Watershed Development:

The micro-watersheds 3B1C4c4b, 3B1C44c4, 3B1C4c4d & 3B1C4c5k falls under the Medium to High Priority category as per the prioritization of watersheds by the North East Space Application Centre (NESAC). Topography of the project consist mostly of undulating rolling hills with moderate slopes. The elevation ranges from 600 metres to 1000 metres above mean sea level. Majority of the population of the project area is fully dependent on agriculture and farmers are marginal. Adverse climatic condition, poor mobilization of resources and inadequate infrastructural facilities made agriculture an unprofitable and subsistence enterprise. Even though the area receives ample rainfall during the monsoons, there is acute shortage of water during the dry seasons.

Inspite of these problems, there are vast potentialities for the development of agriculture in the areas. Therefore, the project would undoubtedly boost living standards of the people of the area through agriculture and allied activities. Jhum cultivation is practiced by most of the inhabitants of these villages on the slopes.

1.4 Aim of the Project and Production Strategy/ Approach:

The aim of the Project is to Scientifically managed the natural resources for achieving sustainable and enhanced production of the land so as to bring about overall upliftment of the socio-economic standard of the people in the watershed/project area.

Objectives:

- Enhance the productivity level of land and water resources in the context of agriculture and its allied activities.
- Improve the socio – economic setup of the people living in the project area.
- To achieve sustainable development through conservation and management of soil and water.
- Generate local employment – seasonal/perennial.
- And to reduce the disasters.

Keeping in view of the above, the major thrust area being considered here is the approach to the programme in the form of its capability which will be acceptable to the local communities and which can sustain their livelihood for the present and the future generation through the cost effective measures. The strategy being conducted here is not for the context of sudden change of land use but instead land use changes should be gradual. Locally available materials and indigenous potential crops have been strongly advocated here.

Immediate necessity of the farmer communities in terms of their cereal requirement (paddy) has been prioritized. The individual farm holding within the homes-stead have been given due important for improved production activities of integrated approach. Water resources management and conservation in the form of controlling measures and trapping of such resources for multi uses has been given due preference.

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

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

i. MGNREGS

ii. Border Area Development Programme (BADP)

iii. Total Sanitation Campaign (TSC)

iv. Swarnjayanti Gram Swarozgar Yojana (SGSY)

v. Indira Awas Yojana (IAY)

CHAPTER II

BASIC INFORMATION OF THE PROJECT AREA

2.1 Location:

The Project area is located within Mairang C&RD Block of Mairang Civil Sub-Division jurisdiction, West Khasi Hills District. It is situated at a distance of about 40 km from Mairang, the Civil Sub-Divisional Head Quarter and about 92 kms from Nongstoin the District Headquarter. The geographical location is between 91^0 37' 00" to 91^0 42' 05" E Longitude and 25^0 43' 00'' to 25^0 47' 00" N Latitude.

There are seven (7) villages within the Watershed which are as follows: –

1. Dongki – ingding
2. Pathar Lyndan
3. Lad Pnar Rim
4. Lad Pnar Thymmai
5. Mawpat
6. Mawpiah
7. Umniangriang

2.1.2 Physiography:

The physiography of the micro-watersheds is gentle to moderately undulating. The altitude ranges from a minimum of 600m to a high of 1000m above mean sea level. In the lower reaches (valley lands) the slope ranges from 15% to 50%, however, in the middle and upper reaches it is 1 % to 15%.

Table 2.1: Physiographic details

Elevation (metres)	Slope Range (%)	Order of watershed Sub/Micro-watershed	Major streams	Topography
600 m to 1100 m	<1% to 50 %	Micro Watershed	Umlangia River	Gentle to moderately sloping

2.1.3 Drainage: The major stream draining the micro-watershed is the Umlangia River which is a 5^{th} order stream flowing in a East-West direction. The slopes of the micro-watershed are dissected by numerous small tributaries flowing to the Umlangia River. The Drainage System may be classified as dendritic. The important rivers of the area are Umlangia and Umthangsniang,Umtluh, Umtiehsaw, Umdongkijrong, along with a number of tributaries and streamlets. It has been observed that all these tributaries and streamlets are perennial in nature.

Drainage density calculated is 3.35 Km/Km^2 & the average bifurcation ratio worked out is 3. 405. The total length of all the streams/rivers is 92.52 Km (Ist Order to Vth Order). There are 103 First Order streams, 25 Second Order streams, 10 Third Order streams, 2 Fourth Order streams and 1 Fifth Order stream.

Drainage Density = . Total length of stream/rivers in the Watershed (Km) .
Area of Watershed (Km^2)

Bifurcation Ratio = . Previous streams order (Nos. of segments) .
Next Order (Nos. of Segments)

2.1.4 Soil: Soil are generally deep to very deep with loam to clay loam in surface texture which is attributed to deep weathering, leaching and eluviations. Soils are generally fairly well drained with moderate permeability. The soil reaction is acidic ranging from 4.80 to 5.20. as per soil Fertility Testing. Report of available nutrient shows that Nitrogen content is medium, phosphorus is low and Potassium content is medium. Exposure to erosion hazard is moderately severe in the area.

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 Khasi Hills	West Khasi Hills – IWMP I	**Water erosion:**				
				a	Sheet	2759	2700 - 3200	10.50 – 32.50
				b	Rill			
				c	Gully			
				Sub total		2759	2700 - 3200	10.50 – 32.50
				Wind erosion		NA	NA	NA

2.1.5 Climate: The climate in this area is humid subtropical, which is directly influence by the South West Monsoon originally from Bay of Bengal and Arabian Sea. The whole year can be divided into four seasons – Summer, Monsoon (rainy), Autumn and Winter. The summer season extend from the last part of March to Mid May, is characterized relatively high temperature, occasionally thunder storm and high wind velocity. The rainy season commence with the onset south west monsoon in April/May and last upto October/November, though it rain intermittently for the whole year but this is the wettest period of the year. The rainy season is followed by short Autumn from Mid October to November which sharp decline of temperature then the winter season start which is extend to the start of March. This is the coldest season of the year, but the winter is not that severe. The average rainfall in this area is 2960mm.

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	
						Type	Area (ha)		Name	Area (ha)
1.	Meghalaya	Hills of Northern Slopes 600-1200m	1800 Ha	West Khasi Hills	West Khasi Hills, IWMP – I	Soil are generally deep to very deep with loam to clayey loam. Soils are generally fairly well drained with moderate permeability. Exposure to erosion hazard is moderately severe in the project area.	2759.00 Ha	4550 mm	Paddy	90 Ha.
									Maize	70 Ha.
									Ginger	60 Ha.
									Total	**220 Ha**

2.1.6 Agriculture: The economy of the area is predominantly agrarian. Majority of the people of the region depends on Agriculture and allied activities. The people mostly practice jhum. Inspite of the problems such as the geographical isolation, infrastructural deficiencies, socio – economic structures, etc there are potentialities for the development of agriculture in the areas. The main agriculture crops are paddy, maize, sweet potato, potato, ginger, turmeric, yam, varieties of chilies, pumpkin, live seed, soyabeans, and variety of vegetables, etc.

Horticulture: Orchard in a pure form does not exist in the watershed area but in a scattered manner fruit trees like pine apple, banana, papaya, mango (indigenous) eleaganus, citrus spps guava, jack fruits etc. are grown around their houses and in the same terraces in farm area. The condition of the fruit trees are not good and mostly are local varieties and stocking in poor. Due to inadequate management, yield and income from the fruit trees is not satisfactory.

Table 2.4: Crop yield and production

Crops	**Area (ha)**	**Average Yield (Quintal per Ha.)**	**Total Production (Qtl.)**
Paddy	95	17	1615
Maize	70	16	1200
Ginger	60	22	1100
Total	**220**	**55**	**3915**

2.1.7 Natural Vegetation: Natural Vegetation of the project area is fairly poor due to tremendous biotic factors such as recurring fire hazards, overgrazing and browsing. Over exploitation of timber and fuel wood particularly the jhum cultivation practices and charcoal burning etc. have destroyed the economical species and left scrub vegetation in most of the area. The following species area available in the Watershed area:

- *Pinus kesiya* (Diengkseh)
- *Schima wallichi* (Diengngan)
- *Michelia champaca* (Diengrai)
- *Shorea robusta* (Diengsal)
- *Isona ciliate*
- *Alnus spp.*
- *Bauhinia spp.*
- Bamboo
- *Socharim spp.*
- *Emblica spp* (gooseberry)

2.1.8 Socio-Economic Profile: The Socio – Economic set up of the people in the area is very poor. Although Agriculture is the main stay of the people, this sector could barely meet their livelihood requirements as it is largely mono – agriculture and low productivity of the land. The average Annual Income is about Rs.35000/- per family.

Demographic Status: The total population of the Watershed is 2982 attributed to 588 families of which 1456 are males and 1526 are females. The average size of the family is 5. The entire population is tribal, predominantly belonging to the Khasi Tribe.

The detail of the household in each of the villages in the watershed project is as follows:

Sl. No.	Villages	No. of Households	Population		Total
			Male	Female	
1	Dongki – ingding	118	300	303	603
2	Pathar Lyndan	196	449	548	997
3	Lad Pnar Rim	72	181	177	358
4	Lad Pnar Thymmai	45	123	116	239
5	Mawpat	46	108	119	227
6	Mawpiah	34	103	93	196
7	Umniangriang	77	192	170	362
	TOTAL	**588**	**1456**	**1526**	**2982**

Infrastructure facilities **:**

- *Roads:* Mairang – Ranigodown PWD road passes through the project area. Most of the villages within the project area are connected by the black topped roads except Mawpiah and Lad Pnar Thymmai which are connected by Kutcha road.
- *School:* There are several schools in the Project area which includes Lower Primary, Upper Primary and Secondary Schools run by the Govt. or the Missions.
- *Electricity :* Electric power supply is available in all the villages except Mawpiah. Almost all families own electric connections in their houses. So far electric power has been used only for lighting and other small house works.
- *Health :* The only health care facilities available is from the Govt. Public Health Centre which is situated at Dongki – Ingding.
- *Water Supply :* PHE's drinking Water Supply facility is available in all villages except Mawpiah which have to rely on natural water resources and by fetching water from some distances. However, during lean seasons water supply is erratic and entire population have to depend on springs and other natural sources.
- *Market Facility:* Market is available for disposal of their farm produce and forest produce in once a week at Dongki – Ingding, and weekly market at Nongkhlaw at a distance of 18 Kms and at Mairang at a distance of 40 Kms. However, the main market where the people sell their produce is at Shillong.

Table 2.5: Infrastructure Status.

1	2	3		4			
Name of District	**Name of Project**	**Parameters:**		**Status**			
West Khasi Hills	West Khasi Hills – IWMP I	(i)	No. of villages connected to the main road by an all-weather road.	5 Nos except Mawpiah and Lad Pnar Thymmai which are connected only by a kutcha road			
		(ii)	No. of village provided with electricity	6 nos. except Mawpiah			
		(iii)	No. of households without access to drinking water	75 nos.			
		(iv)	No. of educational institutions: Primary (P)/ Secondary (S)/ Higher Secondary (HS)/ Vocational institution (VI)	(P)	(S)	(HS)	(VI)
				9	1	Nil	Nil
		(v)	No. of village with access to Primary Health Centre	1			
		(vi)	No. of village with access Veterinary Dispensary	Nil			
		(vii)	No. of village with access Post Office	Nil			

1	2	3		4			
		(viii)	No. of village with access Banks	Nil			
		(ix)	No. of village with access Markets/ mandis	1			
		(x)	No. of village with access 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)	(S)	(PA)	(O)
				Nil	Nil	Nil	Nil
		(xiii)	No. of villages with access to Aganwadi Centres	1 No.			
		(xiv)	Any other facilities with no. of villages (please specify)	-			

2.1.9 Livestock: The important livestock of the Watershed includes Cattle rearing, Buffalo, Piggery, Poultry, Goatery, Duckery, Pisciculture, and Silviculture. Most of the livestock are farmed at a small scale and reared for meat purpose, ploughing and domestic consumption only. Bee-Keeping or Apiculture are also taken by few of the villagers in the project area.

Table 2.6: Existing livestock population

Type of Animal	Population
Cattle (Cows)	729
Goats	970
Piggery	487
Poultry	4302

2.1.10 Land ownership: There are primarily two types of land holding system, namely private lands (Ri Kynti i.e. individually owned land) and community lands (Ri Kur i.e. clan land and Ri Raid i.e. village community land).

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
West Khasi Hills	West Khasi Hills – IWMP I	(i) Large	80			99	99
		(ii) Small	214			77	77
		(iii) Marginal	245	245		44	44
		(iv) Landless	49	49			
		Sub – Total	588	292		220	220

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 Khasi Hills	West Khasi Hills – IWMP I	(i) Wasteland/ degraded land	1089.78	-		927.0 Ha	863	-	-	754
		(ii) Pastures	-	-	-	-	-	-	-	
		(iii) Private Agriculture land	220	-	-	-	163	-	-	
		(iv) Village woodlot	-	-	-	100	-	-	-	20
		(v) Forest	410.22	-	-	-	-	-	-	
		(vi) Village Ponds/ Tanks	-	-	-	1	-	-	-	
		(vii) Community Buildings	-	11	-	-	-	-	-	
		(viii) Weekly Markets	-	-	-	1	-	-	-	
		(ix) Permanent Markets	-	-	-	-	-	-	-	
		(x) Temples/ Places of worship	-	-	-	4	-	-	-	
		(xi) Others (Pl. specify)								
		Total	**1720 Ha**	**11**	**-**	**1028.0 Ha**	**1026 Ha**	**-**		**774**

2.1.11 Land use and land cover : As per the land use land cover map generated by NESAC, Meghalaya from Satellite Image taken during 2005 – 2006 (LISS – III, Image) the Watershed area has been broadly classified into the following land uses.

a)	Built-up Area	=	84.76 Ha
b)	Agricultural land-crop land-kharif crop	=	73.28 Ha
c)	Tree clad Area-close	=	258.40 Ha
d)	Tree clad Area-open	=	1326.06 Ha
e)	Wasteland - Dense scrub	=	859.07 Ha
f)	Wasteland – Open scrub	=	137.92 Ha
	Total	**=**	**2759.00 Ha**

2.2 Problems of the Area : The problem of the area of the Watershed as in the general common problems in the state is the unrepairable exploitation of natural resources like soil, water and vegetation. The entire watershed suffers from problems of mismanagement of lands, unscientific land use, frequently forest fires, indiscriminate tree felling, uncontrolled grazing, etc. have already given rise to much soil erosion and increase runoff in the area. Jhumming, the unscientific method of cultivation has not only reduced the Jhum cycle, low crop yield but had adversely affected the ecological balance within the area. Lack of Awareness and Knowledge on improved agricultural practices, low marketing potential and unutilized Wastelands adds to the already existing problems.

In addition to the above mentioned problems, farmers unawareness of the seriousness of the problem of mismanagement of land hence their lack of motivation and willingness to change their tradition method of farming and adopt another alternative and sustainable method of farming in arable land is another hurdle. Lack of extension, demonstration and infrastructure facilities also contributed to low yield in agriculture production.

The aforesaid problems identified through Participatory Rural Appraisal (PRA) Exercises need to be integrated in the process of farming of land use which will be acceptable to the village communities as a whole.

CHAPTER III

PROJECT PLANNING & INSTITUTION BUILDING

3.1.1 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. Base line datas and information obtain from various authentic sources of Government and Semi Government Instiyutions were incorporated in the course of preparation of Detailed Project Report.

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.

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

1	2	3
Sl.No.	**Scientific criteria/ inputs used**	**No. of projects in which scientific criteria were used**
A.	**Planning**	
	Cluster approach	Yes
	Whether technical back-stopping for the project has been arranged? If yes, mention the name of the Institute.	NESAC, Nongsder., NIRD, Guwahati
	Baseline survey	Yes
	Hydro-geological survey	No
	Contour mapping	No
	Participatory Net Planning (PNP)	No
	Remote sensing data-especially soil/ crop/ run-off cover	Yes
	Ridge to Valley treatment	Yes

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

31.2 Project Implementing Agency (PIAs):

The PIA is the Soil & Water Conservation Territorial Division, Nongstoin, West Khasi 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 Khasi Hills	West Khasi Hills – IWMP I	(i) Type of organization#	Government Agency
		(ii) Name of organization	Soil & Water Conservation Division, Nongstoin
		(iii) Designation & Address	Divisional Soil & Water Conservation Officer, Nongstoin, West Khasi Hills, Meghalaya.
		(iv) Telephone	0364 – 280236
		(v) Fax	0364 - 280236
		(vi) E-mail	soilnwatercon.ngn@gmail.com

3.2 Institution Building

i) Watershed Committee (WC):

The Watershed Committee of the Umlangia Watershed IWMP - I was constituted with the active involvement of the villagers with strong support of the Traditional Institutions (Village Durbar/Council). The Umlangia Watershed 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	19
Names of the Districts	Names of projects	Names of WCs	Date of Registration as a Society (dd/mm/ yyyy)	Name	Designation	M/F	SC	ST	SF	MF	LF	Landless	UG	SHG	GP	Any other	Educational qualification	Function/s assigned#
West Khasi Hills District	West Khasi Hills District IWMP – I	Umlangia WC		Lasting Kurbah	President	M	-	ST			√			√			III	
				B.H.Syiem	Secretary	F	-	ST								Govt employee	B.Sc.	
				Martina Ryntathiang	Member	M	-	ST		√							III	
				Primose War	Member	M	-	ST		√							III	
				Ristilla Kurbah	Member	F	-	ST		√							III	
				Plan Basaiawmoit	Member	M	-	ST									II	
				Wanlamlynti Ryntathiang	Member	M	-	ST									X	
				Drin K. THangmaw	Member	M	-	ST									II	
				Blos Marbaniang	Member	M	-	ST									III	
				Barkly Syiemiong	Member	M	-	ST									II	
				Stinda Basaiawmoit	Member	F	-	ST				√					II	
				Khamteibor Ryntathiang	Member	M	-	ST		√							II	
				Dwiewstiplin Marwein	Member	F	-	ST									IX	
				Alexander Nongkseh	Member	M	-	ST			√			√			III	
				Phrap Kurbah	Member	M	-	ST									III	

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 the under privilege - for the women and the landless. Discussions were held at length with the WDT for organizing training and capacity building 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
West Khasi Hills	WKH. IWMP-I	-	-	1no	1 No	(i) Landless									
						(ii) SF									
						(iii) MF	7	5	12	7	5	12			
						(iv) LF									

* (M – Male., F – Female)
** From Column no. 2,3 and 4, total no. of states, District and projects, respectively, from column 5 to 8, category-wise grand totals, may be given for the entire country at the end of the table.

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
West Khasi Hills	WKH IWMP-I					(i)Landless									
						(ii) SF									
						(iii) MF									
						(iv) LF									
Total															

* (M – Male., F – Female)
** From Column no. 2,3 and 4, total no. of states, District and projects, respectively, from column 5 to 8, category-wise grand totals, may be given for the entire country at the end of the table.

CHAPTER IV

PROJECT ACTIVITIES

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	West Khasi Hills	WKH-IWMP-I	Rs. 10.80	Drinking Water-14 nos	2.61	2.61	0	Improving rural connectivity, Better infrastructure, Better civic amenities, increase in availability of safe drinking water.	
					Washing Place -17 nos.	5.50	5.47	0		
					Foot Bridge -1 no	0.84	0.84	0		
					Public Toilet -1 no	1.23.	1.23	0		
					Utensil for cummunity asset -7 nos.	0.62	0.65	0		
					TOTAL	10.80	10.80	0		

ii) Other activities of Preparatory Phase:

1	2	3	4	5	6	7	8	9	10	11	12	13
Distt	Name of Projects	Initiation of village level institution	Capacity building	IEC activities	Baseline survey	Hydro geological survey	Identifying technical support agencies	Resource agreements	Preparation of DPR	Evaluation of DPR	Any other (please specify)	Cost incurred (Rs. In lakh)
West Khasi Hills	WKH – IWMP I	Formation of 1 no. W/C & 7 nos. Su-Watershed Committee at each benefiting village. - Formation of 1 WDT. - Community mobilization. - General meeting, general awareness, rapport building.	Roles and responsibility of W/C & Sub-W/C. Roles and responsibility of WDT's. Concepts, Roles & responsibilities of SHGs, UGs, Off-campus exposure trips to Research Institutes, Training Institutes. Project concepts, awareness about the programme and peoples participation.	Pamphlets, Posters & banners	Socio-economic surveys and Participatory Rural Appraisal Exercises GPS Survey Baseline Surveys for identifying work sites and intervention areas		NIRD, NER, Guwahati. SIRD, Nongsder, ICAR, Umiam, RRTC Umran, VTC, Kyrdemkulai, Fruit Garden, Shillong, NEHU, Shillong, NE-SAC, Umiam, CTI, Byrnihat, MRDS, Shillong, SCSTE, Shillong, BRO, Shillong, RGIIM, Shillong, RS Lyngdoh Training Centre, Smit	- Resolution and agreement with village committees for taking up developmental works. - Agreement for establishing and maintaining community forests. - Agreement to stop charcoal burning in project area. - Agreement to prevent poisoning of fishes in rivers. - Agreement for convergence of IWMP with other programmes.	Done	-		5.40

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									
Sl No	Name of States	Name of Districts	Name of Projects	Type of structures	Pre Project			Proposed Project									
								Augmentation/ repair of existing structures				Construction of new structures				Total target			
					No	Area irrigated (ha)	Storage capacity (m^3)	No	Area to be treated (ha)	Storage capacity	Estimated cost (in lakhs)	No	Area to be treated (ha)	Storage capacity (m^3)	Estimated cost (in lakhs)	No	Area to be treated (ha)	Storage capacity (m^3)	Estimated cost
1	Meghalaya	West Khasi Hills	West Khasi Hills – IWMP I	(i) Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				(ii) Pond	2	-	1320	-	-	-	-	38	65	5472	6.08	38	65	5472	6.08
				(iii) Lake	-	-	-	-	-	-	-			-	-			-	-
				(iv) Check Dam	-	-	-	-	-	-	-	30	96	5200	11.625	30	96	5200	11.625
				(v) Percolation Tank	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
				(vi) Channel	-	-	-	-	-	-	-	13244 Rm	122.74	-	5.3298	13244 Rm	122.74	-	5.3298
				(vii) Any others(please specify) a) Water Harvesting Structures								13	38.5	6360	9.529	13	38.5	6360	9.529
			Total																

Activities related to surface water resources in the project areas:

8											9	10
Achievement due to project												
Augmentation/ repair of existing structures				Construction of new structures				Total achievement			Change in storage capacity (col 8-6)	Change in irrigated area (ha) Col. (8-6)
No	Area irrigated (ha)	Storage capacity	Expenditure incurred (in lakhs)	No	Area irrigated (ha)	Storage capacity	Expenditure incurred (in lakhs)	Area irrigated (ha)	Storage capacity	Estimated incurred		-
				13	60		9.73 lakhs					
				17	5		5.50 lakhs					

4.2.2. Activities related to recharging ground water resources in the project areas:

		3	4	5	6		7								8								9
Sl No.	Names of State	Names of District	Names of project	Type of structures	Pre-project		Proposed target								Achievement due to project								Change in irrigated area (Col. 8-6) (ha)
							Augmentation/ repair of existing recharging structures			Construction of new recharging structures			Total target		Augmentation/ repair of existing recharging structures			Construction of new recharging structures			Total achievement		
					No.	Area irrigated (ha)	No.	Area to be irrigated (ha)	Estimated cost	No.	Area to be irrigated (ha)	Estimated cost	Area to be irrigated (ha)	Estimated cost	No.	Area irrigated (ha)	Expendi-ture incurred	No	Area irri-gated (ha)	Expendi-ture incurred	Area irri-gated (ha)	Expend i-ture incurred	
1	MEGHALAYA	West Khasi Hills	WKH IWMP - I	(i) Open wells						14	45.5												
				(ii) Bore wells																			
				(iii) Any others (Pl. specify) Small Dug-Out																			
				Total for the project																			

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				No. of UGs involved	Estimated Cost	Amount of WDF to be collected (Rs.)
		Structure/ activity proposed						
		Sl. No.	Type	No.#	Treatment (ha)			
West Khasi Hills	WKH – IWMP - I	1.	Drinking Wells	14		14	2.61	13050
		2.	Washing Place	17	44.6 Ha.	17	5.50	27500
		3.	Foot Bridge	1		1	0.84	4200
		4.	Public Toilet	1		1	1.23.	6150
	Total							**50900**

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.	Drinking Wells	14		14	2.61		1566		13050
2.	Washing Place	17	44.6 Ha.	17	5.50		3300		27500
3.	Foot Bridge	1		1	0.84		504		4200
4.	Public Toilet	1		1	1.23.		738		6150
	Total						6108		**50900**

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		
West Khasi Hills	West Khasi Hills – IWMP I	Name of activity	No. of SHGs involved	Average annual income from activity per SHG
		Tailoring / Knitting		
		Handloom/Weaving		
		Piggery/Poultry		
		Pisciculture		
		Processing Unit		
		Grocery Shop/Small Cottage Industry		

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		

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 project	Ridge area treatment		Drainage line treatment		Nursery raising		Land development		Crop demonstrations		Pasture development		Veterinary services		Fishery development		Non-conventional energy		Any other (please specify)		Total cost incurred (Rs. In lakhs)
		(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)		(b)	(a)	(b)	(a)	(b)	(a)	(b)	(a)	(b)	
West Khasi Hills District	WKH IWMP-I	Afforestation (Pine/Non Pine) (60 Ha)	3.60	Protection Wall (21 Nos)	9.24	Afforestation (Pine/Non Pine)	2.46	Contour Bunding (114 Ha)	8.55	Crop Demonstration (15 unit)	0.75	Agro-Horticulture (360 Ha)	19.08	Piggery/ Poultry/ Duckery /	12.62	11 (Nos)	11.0	-	-			**68.05**
		Improvement Of degraded Forest (470 Ha)	9.87	Check Dam/ Diversion Dam/ Headwater Dam (30 Nos)	11.625	Improvement of degraded Forest	7.05	Bench Terracing (31 Ha).	6.20													34.745
		Strip Plantation (2 Rows) (55 Ha)	1.3519	Water Harvesting (13 Nos)	9.529	Strip Plantation	9.944	Improvement of Existing Paddy Fields (247 Ha).	10.621													31.4459
				Small Dug-Out Ponds (38 Nos)	6.08	Agro-Horticulture	11.88	Peripheral Bunding (21577.8 Rm)	10.7889													28.7489
				Earthen Irrigation Channel (6737 Rm)	3.63798																	3.63798
				Run-off Disposal/ Diversion Channel (6507 Rm)	1.69182																	1.69182
TOTAL			14.8219		41.8038		31.334		36.1599		0.75		19.08		12.62		11.0					197.1

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) Pri-vate	(ii) Com-munity	(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./ cu.m./ rmt)	Expenditure incurred (Rs. in lakh)				Status of comple-tion	Actual month & year of completion (mm/yyyy)
											M	W	O	T			M	W	O	T		
West Khasi Hill District	WKH IWMP-I	Contour bund			L	P			UG/WC	114 Ha.	5.5	2.85		8.55	3 Years							
		Bench terracing			L	P			UG/WC	31 Ha.	4.14	2.06		6.20	3 Years							
		Check Dam/Diversion Dam/Head Water Dam		D			C		UG/WC	30 Nos.	7.75	3.875		11.625	3 Years							
		Protection Wall		D			C		UG/WC	21 Nos.	6.16	3.08		9.24	3 Years							
		Small Dug-out Pond		D		P			UG/WC	38 Nos	4.05	2.03		6.08	3 Years							
		Water Harvesting Structures		D			C		UG/WC	13 Nos	6.353	3.176		9.529	3 Years							
		Runoff Disposal/Diversion Channel		D		P			UG/WC	6507 Rm	1.13	0.56		1.69182	3 Years							
		Earthen Irrigation Channel		D		P			UG/WC	6737 Rm	2.425	1.212		3.63798	3 Years							
		Washing Place					C		UG/WC	17 Nos	3.66	1.84		5.50	3 Years							

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
				Paddy-18 Qtls	>20 Qtls												
				Maize-18 Qtls.	>20 Qtls												
				Ginger-25 Qtls.	>35 Qtls												

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

1	2	3	4			5			6	7				8			
District	Project	Name of structure/ work	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)	Area (ha)	No. of plants	Estimated cost (Rs. in lakhs)	Expected month & year of comple-tion (mm/ yyyy)	Area (ha)	No. of plants	Expendi-ture incurred (Rs. in lakhs)	Actual month & year of completion (mm/ yyyy)
West Khasi Hill District	WKH IWMP-I	Afforestation	R			Pvt.	C		UG/WC Farmers	60 Ha.	18000	6.06	3 years				
		Strip Plantation	R			Pvt.	C		UG/WC Farmers	55 Ha.	7370	2.3463	3 years				
		Improvement of Degraded Forest	R				C		UG/WC Farmers	470 Ha.	47000	16.92	3 years				
		Fuel wood							UG/WC Farmers								
		Agro- Horticulture			L				UG/WC Farmers	360 Ha.	72000	30.96	3 years				
		Others (Nursery raising)					C		UG/WC Farmers								

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														
Reduction in run off (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
						4		2.02	6.06					
						1.56		2.06	2.3463					
						11.5		5.64	16.92					
						20.64		10.32	30.96					

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)	Expenditure incurred (Rs. in lakh)	Actual month & year of completion (mm/yyyy)
West Khasi Hills	Umlangia IWMP I	Crop demonstration	P				0.75	3 years		
		Sericulture			SHG	Beneficiary SHG	1.0	3 years		
		Apicuture	P		SHG	Beneficiary SHG	1.44	3 years		
		Backyard poultry	P		SHG	Beneficiary SHG	12.62	3 years		
		Fisheries	P		SHG	Beneficiary SHG	11.0	3 years		
		Mushroom Cultivation			SHG	Beneficiary SHG	5.10	3 years		
		Vermicomposting	P		SHG	Beneficiary SHG	5.0	3 years		
		Processing Unit			SHG	Beneficiary SHG	9.5	3 years		
		Carpentry/Basketry/Black Smithy	P		SHG	Beneficiary SHG	3.40	3 years		

* 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				
Pre-project	Post project	SC	ST	Others	Women	Total	SC	ST	Others	Women	Total

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 contribution 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 Khasi Hills District	WKH IWMP - I	Dongki – ingding	Degraded Forest/Wasteland	Improvement of Existing Degrading Forest	470 Ha.	16.92	76	0.846							
		Pathar Lyndan	Streams	Footbridge	1 No.	0.84	>1000	0.042							
		Lad Pnar Rim	Community Land	Public Toilet	1 No	1.23	>800	0.0615							
		Lad Pnar Thymmai	Streams	CC Dam/Check Dam	30 Nos.	11.625	>1300	0.58125							
		Umniangriang	Springs	Drinking Wells	14 Nos.	2.61	350	0.1305							
		Mawpat	Community Land	Washing Place	17 Nos	5.50	570	0.275							
		Mapiah	Degraded Forest/Wasteland	Strip Plantation	55 Ha.	2.3463	400	0.117							
TOTA L						41.0715		2.05355							

CHAPTER V
PROJECT PHASING & BUDGETING

PLAN FOR RELEASE OF PROJECT FUND BY SLNA TO PROJECT IMPLEMENTATION AGENCY (PIA) & WATERSHED COMMITTEE FOR UMLANGIA WATERSHED (WEST KHASI HILLS, IWMP – PROJECT I)

(Physical in %) (Financial: Rs. in Lakhs)

Particulars in Budget Component	Prescribed Percentage (%)		PIA (%)		Watershed Committee (%)		Year wise Phasing & Breakup of Prescribed Percentage under Column 2										TOTAL	
							1st Year		2nd Year		3rd Year		4th Year		5th Year			
	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1. Administration																		
i. Administrative Cost	10 %	27.00	10 %	27.00	-	-	-	-	2 %	5.40	5 %	13.50	3 %	8.10	-	-	10 %	27.00
ii. Monitoring	1 %	2.70	1 %	2.70	-	-	-	-	0.2 %	0.54	0.5 %	1.35	0.3 %	0.81	-	-	1 %	2.70
iii. Evaluation	1 %	2.70	1 %	2.70	-	-	-	-	0.3 %	0.81	0.5 %	1.35	0.2 %	0.54	-	-	1 %	2.70
Total of 1	**12 %**	**32.4**	**12 %**	**32.4**	**-**	**-**	**-**	**-**	**2.5 %**	**6.75**	**6 %**	**16.20**	**3.5 %**	**9.45**	**-**	**-**	**12 %**	**32.4**
2. Preparatory Phase																		
i. Entry Point Activities	4 %	10.80	4 %	10.80	-	-	4 %	10.80	-	-	-	-	-	-	-	-	4 %	10.80
ii. Institutional, Capacity Building & Training, IEC Activities	5 %	13.50	5 %	13.50	-	-	1 %	2.70	2 %	5.40	1 %	2.70	1 %	2.70	-	-	5 %	13.50
iii. Preparation of DPR	1 %	2.70	1 %	2.70	-	-	1 %	2.70	-	-	-	-	-	-	-	-	1 %	2.70
Total of 2	**10 %**	**27.00**	**10 %**	**27.00**	**-**	**-**	**6 %**	**16.20**	**2 %**	**5.40**	**1 %**	**2.70**	**1 %**	**2.70**	**-**	**-**	**10 %**	**27.00**
3. Watershed Works Phase																		
i. Watershed Treatment / Development Works	50 %	135.00	-	-	50 %	135.0	-	-	7.5 %	20.25	35 %	94.50	7.5 %	20.25	-	-	50 %	135.00
ii. Livelihood Activities	10 %	27.00	-	-	10 %	27.00	-	-	1 %	2.70	3 %	8.10	6 %	16.20	-	-	10 %	27.00
iii. Production System & Micro Enterprises	13 %	35.10	-	-	13 %	35.10	-	-	1 %	2.70	5 %	13.50	7 %	18.90	-	-	13 %	35.10
Total of 3	**73 %**	**197.10**	**-**	**-**	**73 %**	**197.1**	**-**	**-**	**9.5 %**	**25.65**	**43 %**	**116.10**	**20.5 %**	**55.35**	**-**	**-**	**73 %**	**197.1**
4. Consolidation & Withdrawal Phase	5 %	13.50	5 %	13.50	-	-	-	-	-	-	-	-	-	-	5 %	13.50	5 %	13.50
Total of 4	**5 %**	**13.50**	**5 %**	**13.50**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**-**	**5 %**	**13.50**	**5 %**	**13.50**
TOTAL OF 1 TO 4	**100 %**	**270.00**	**27%**	**72.90**	**73 %**	**197.1**	**6 %**	**16.20**	**14 %**	**37.80**	**50 %**	**135.00**	**25 %**	**67.50**	**5 %**	**13.50**	**100 %**	**270.00**
Central Share (C.S) : 90 %								**14.58**		**34.02**		**121.50**		**60.75**		**12.15**		**243.00**
State Share (S.S.) : 10 %								**1.62**		**3.78**		**13.50**		**6.75**		**1.35**		**27.00**

Divisional Officer,
Cum
Project Leader
Project Implementation Agency (IWMP)
Soil & Water Conservation Division, Nongstoin

Deputy Commissioner,
West Khasi Hills District,
Nongstoin

WATERSHED TREATMENT PLAN OF UMLANGIA MICRO WATERSHED UNDER IWMP – WEST KHASI HILLS PROJECT - I

DISTRICT	**: West Khasi Hills**	**TOTAL GEOGRAPHICAL AREA**	**: 2759 Ha.**	**TOTAL PROJECT COST**	**: Rs. 270.00 Lakhs**
C & RD BLOCK	**: Mairang**	**TREATABLE AREA**	**: 1800 Ha.**	**CENTRAL SHARE**	**: Rs. 243.00 Lakhs**
		NOS. OF VILLAGES	**: 7 Nos.**	**STATE SHARE**	**: Rs. 27.00 Lakhs**

(Rupees in Lakhs)

Sl no	Particulars	Budget Head of Account	First Year		Second Year		Third Year		Fourth Year		Fifth Year		Budget Outlay	
			Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial	Physical	Financial
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
I	***ADMINISTRATION***													
A	**Administrative cost :** i. Honorarium to WDT Members. ii. Honorarium to Watershed Volunteers. iii. Honorarium to Watershed Committee Organizers. iv. Small Honorarium to Watershed Committee members. v. Small Honorarium to Sub Watershed Committee members. vi. Honorarium/Fees to Chartered Accountant. vii. Hiring Charge of Vehicles viii. Office expenses/overhead expenditure (stores & stationeries, POL, Printing of booklets, IWMP Guidelines, Signboard, Xerox, Typing and printing, Computer Set Purchase, etc.) ix. Documentation and Reporting (Cost of Cameras / Digital cameras, photography etc), Honorarium to office assistant, TA/DA of Staff, Hiring charge of Office Building.	2402 S&WC 800 - Other Expenditures			2.00%	5.40	5.00%	13.50	3.00%	8.10			10.00%	27.00
B	**Monitoring**	800 - Other Expenditures *02- Monitoring & Evaluation*			0.20%	0.54	0.50%	1.35	0.30%	0.81			1%	2.70
C	**Evaluation**				0.30%	0.81	0.50%	1.35	0.20%	0.54			1%	2.70
	Total of Administration (A+B+C)				**2.50%**	**6.75**	**6.00%**	**16.20**	**3.50%**	**9.45**			**12%**	**32.40**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
II	***PREPARATORY PHASE***													
A	***Entry Point Activities :***	800 - Other Expenditures *27-Minor works*	4.0 %	10.80									4.00%	10.80
B	**Institutional, Capacity Building & Training, IEC activities :** Awarenwess Campaign & Capacity Building of Farmers, Capacity Building of SHGs, UGs, Capacity Building of WDT/WV, Capacity Building of PIA, Institutional Training, Exposure Visit – Off Campus (SHGs, UGs WC, WDT) etc.	800 - Other Expenditures *04-Institution & Capacity Building 20-Other Administrative expenses*	1.0 %	2.70	2%	5.40	1%	2.70	1%	2.70			5%	13.50
C	**Preparation of Detailed Project Report** i. Cost of Resources Inventory Works ii. Cost of PRA Exercises iii Cost of Land Use Survey Works iv. Cost of Formulating	800 - Other Expenditures *05-Preparation of DPR*	1.0 %	0.80 1.15 0.25 0.50									1%	2.70
	Total of C		**1.0 %**	**2.70**									**1%**	**2.70**
	Total of Preparatory Phase (II) (A+B+C)		**6.0%**	**16.20**	**2%**	**5.40**	**1%**	**2.70**	**1%**	**2.70**			**10.00%**	**27.00**
	Total of I & II		**6.0%**	**16.20**	**4.50%**	**12.15**	**7%**	**18.90**	**4.50%**	**12.15**			**22.00%**	**59.40**
III	***WATERSHED WORKS PHASE***													
A	***Watershed Treatment/Development Works***													
i	**Arable Land Treatment**	800 - Other Expenditures *06-Watershed Treatment / Development works*												
	1. Contour Bunding @ 7500/Ha.						114 Ha.	8.55					114 Ha.	8.55
	2. Bench Terracing @ 20000/Ha.						24 Ha.	4.80	7 Ha.	1.40			31 Ha.	6.20
	3. Agro-Horticulture @ 8600/Ha.						360 Ha.	21.24	M	9.72			360 Ha.	30.96
	4. Improvement of Existing Paddy Fields @ 4300/Ha.						227 Ha.	9.761	20 Ha	0.86			247 Ha.	10.621
	5. Peripheral Bunding @ 50/Rm.				289 Rm	0.1445	11985.4Rm	5.9927	9303.4Rm	4.6517			21577.8Rm	10.7889
	6. Crop Demonstration @ 5000 Unit.						15 Unit	0.75					15 Unit	0.75
	Total of Arable Land Treatment (i)					**0.1445**		**51.0937**		**16.6317**				**67.8699**
ii	**Non Arable Land Treatment**	800 - Other Expenditures *06-Watershed Treatment / Development works*												
	1. Afforestation (Pine/Non Pine) @ 10100/Ha.						60 Ha.	4.32	M	1.74			60 Ha.	6.06
	2. Improvement of Degraded Forest @ 3600/Ha.				470 Ha.	12.22	M	4.70	-	-			470 Ha.	16.92
	3. Strip Plantation (2 Rows) @ 4266/Ha.						55 Ha.	1.6918	M	0.65450			55 Ha.	2.3463
	Total of Non Arable Land Treatment (ii)					**12.22**		**10.7118**		**2.3945**				**25.3263**

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
iii	**Drainage Line Treatment**	800 - Other Expenditures *06-Watershed Treatment/ Development works*												
	1. Protection Wall						21 Nos	9.24					21 Nos	9.24
	2. Check Dam				9 Nos	3.4875	21 Nos	8.1375					30 Nos	11.625
	3. Water Harvesting				6 Nos	4.398	7 Nos	5.131					13 Nos	9.529
	4. Small Dug-Out Ponds .						36 Nos	5.76	2 Nos	0.32			38 Nos	6.08
	5. Earthen Irrigation Channel						5500 Rm	2.97	1237 Rm	0.66798			6737 Rm	3.63798
	6. Run-off Disposal/Diversion Channel						5600 Rm	1.456	907 Rm	0.23582			6507 Rm	1.69182
	Total of Drainage Line Treatment (iii)					**7.88550**		**32.69450**		**1.2238**				**41.8038**
	Total of Watershed Treatment / Development Works (A)					**20.25**		**94.50**		**20.25**				**135.00**
B	***Livelihood Activities***													
	1. Carpentry / Black smithy / Basketry / Agri-implements @ 5000/No	800 - Other Expenditures *07-Livelihood activities*			8 Nos.	0.40	23 Nos	1.15	37 Nos	1.85			68 Nos	3.40
	2. Tailoring / Knitting @ 8000/No				8Nos.	0.64	7 Nos.	0.56	13 Nos	1.04			28 Nos	2.24
	3. Kitchen Garden with Compost Pit @ 2500/No				20 Nos	0.50	5 Nos	0.125	11 Nos.	0.275			36 Nos.	0.90
	4. Vermi-composting / Weaving @ 12500/No						9 Nos.	1.125	31 Nos.	3.875			40 Nos.	5.00
	5. Piggery/Poultry/Duckery@ 8000/unit				5 Units	0.40	37 units	2.96	52 Units	4.16			94 units	7.52
	6. Pisciculture @ 10000/No				6 Nos.	0.60	17 Nos	1.70	42 Nos	4.20			65 Nos	6.50
	7. Apiculture @ 8000/No				2 Nos	0.16	6 Nos.	0.48	10 Nos.	0.80			18 Nos	1.44
	Total of Livelihood Activities (B)					**2.70**		**8.10**		**16.20**				**27.00**
C	***Production System & Micro Enterprises***													
	1. Poultry/Piggery/Duckery @ 30000/No	800 - Other Expenditures *08-Production System & Micro Enterprises*			4 Units	1.20	5 Units	1.50	8 Units	2.40			17 Units	5.10
	2. Pisciculture @ 30000/No				2 No.	0.60	4 Nos	1.20	9 Nos	2.70			15 Nos	4.50
	3. Mushroom Cultivation @ 30000/No				1 No.	0.30	3 Nos	0.90	13 Nos	3.90			17 Nos	5.10
	4. Black Pepper @ 20000/No						1 No.	0.20	2 Ha.	0.40			3 Ha.	0.60
	5. Horticulture @ 15000/Ha.						14 Ha.	2.10					14 Ha.	2.10
	6. Sericulture @ 25000/Ha.						4 Ha.	1.0	2 Ha	0.10			4 Ha.	1.0
	7. Food / Fruit Processing @ 50000/No						9 Nos	4.50	6 Nos	3.00			15 Nos	7.50
	8. Rice Mill Operation @ 50000/No								4 Ha	2.00			4 Ha	2.00

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	
	9.	Grocery Shop / Small Cottage Industry @ 30000/No	800 - Other Expenditures *08-Production System & Micro Enterprises*			1 No.	0.30	6 Nos.	1.80	12 Nos	3.60			19 Nos	5.70
	10.	Cobbler @ 30000/No								2 Unit	0.60			2 unit	0.60
	11.	Soap making @ 30000/No						1 No.	0.30	1 No.	0.30			2 Units	0.60
	12.	Handloom / Weaving @ 30000/No				1 No.	0.30							1 No.	0.30
	Total of Production System & Micro Enterprises (C)					**1.0 %**	**2.70**	**5.0 %**	**13.50**	**7.0 %**	**18.90**			**13.0 %**	**35.10**
	TOTAL of *WATERSHED WORKS PHASE (* III)					**9.5 %**	**25.65**	**43.0 %**	**116.10**	**20.5 %**	**55.35**			**73.0 %**	**197.10**
IV	***CONSOLIDATION & WITHDRAWAL PHASE***														
	1. 2. 3. 4.	Repairs & Maintenance of CPR's Improving the sustainability of various interventions. Documentation of successful experiences & preparation of Consolidation Report. Capacity Building of W.C., SHGs, UGs for maintenance & operation of Assets during post project period.	800- Other Expenditures *09-Consolidation and withdrawal works*									5%	13.50	5%	13.50
	Total of Consolidation & Withdrawal Phase (IV)											**5%**	**13.50**	**5%**	**13.50**
	GRAND TOTAL OF I to IV			**6.0 %**	**16.20**	**14.0 %**	**37.80**	**50.0 %**	**135.00**	**25.0 %**	**67.50**	**5%**	**13.50**	**100 %**	**270.00**

Divisional Officer,
Cum
Project Leader
Project Implementation Agency (IWMP)
Soil & Water Conservation Division,
Nongstoin

Deputy Commissioner,
West Khasi Hills District,
Nongstoin

VILLAGE WISE ACTION PLAN OF UMLANGIA WATERSHED UNDER IWMP – I

Name of District : West Khasi Hills	**Nos. of Villages : 7 Nos**	**Physical in Ha/Nos/RM/Units**
Name of C&RD Block : Mairang C&RD Block	**Project Area : 1800 Ha.**	**Financial : Rs. in Lakhs**

Sl. No	ACTIVITIES	Dongki ingding		Pathar Lyndan		Mawpat		Lad Pnar Rim		Lad Pnar Thymmai		Umniangriang		Mawpiah		Total	
		Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin	Phy	Fin
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
A	**Watershed Treatment / Development Works**																
i.	**Arable Land Treatment**																
1.	Contour Bunding @ 7500/Ha.	19 Ha.	1.425	38 Ha.	2.85	11 Ha.	0.825	9 Ha.	0.675	9 Ha.	0.675	24 Ha.	1.80	4 Ha.	0.30	114 Ha.	8.55
2.	Bench Terracing @ 20000/Ha.	2 Ha.	0.40	7 Ha.	1.40	7 Ha.	1.40	7 Ha.	1.40	2 Ha.	0.40	3 Ha.	0.60	3 Ha.	0.60	31 Ha.	6.20
3.	Agro-Horticulture @ 8600/Ha.	75 Ha.	6.45	80 Ha.	6.88	30 Ha.	2.58	50 Ha.	4.30	45 Ha.	3.87	60 Ha.	5.16	20 Ha.	1.72	360 Ha.	30.96
4.	Improvement of Existing Paddy Fields @ 4300/Ha.	50 Ha.	2.15	80 Ha.	3.44	35 Ha.	1.505	35 Ha.	1.505	16 Ha.	0.688	20 Ha.	0.86	11 Ha.	0.473	247 Ha.	10.621
5.	Peripheral Bunding @ 50/Rm	3100 Rm	1.55	6007.8 Rm	30.039	2500 Rm	1.25	2600 Rm	1.30	2820 Rm	1.41	2600 Rm.	1.30	1950 Ha.	0.975	21577.8 Rm.	10.7889
6.	Crop Demonstration @ 5000 Unit.	3 Unit	0.15	2 Unit	0.10	2 Unit	0.10	2 Unit	0.10	2 Unit	0.10	2 Unit	0.10	2 Unit	0.10	15 Unit	0.75
	Total of Arable Land Treatment (i)		**12.125**		**17.6739**		**7.66**		**9.28**		**7.143**		**9.82**		**4.168**		**67.8699**
ii.	**Non Arable Land Treatment**																
1.	Afforestation (Pine/Non Pine) @ 10100/Ha.	12 Ha.	1.212	15 Ha.	1.515	10 Ha.	1.01	5 Ha.	0.505	6 Ha	0.606	5 Ha.	0.505	7 Ha.	0.707	60 Ha.	6.06
2.	Improvement of Degraded Forest 3600/Ha.	60 Ha.	2.16	70 Ha.	2.52	70 Ha.	2.52	80 Ha.	2.88	50 Ha.	1.80	50 Ha.	1.80	90 Ha.	3.24	470 Ha.	16.92
3.	Strip Plantation (2 Rows) @ 4266/Ha.	14 Ha.	0.59724	23 Ha.	0.98118	5 Ha.	0.2133	3 Ha.	0.12798	2 Ha.	0.08532	5 Ha.	0.2133	3 Ha.	0.12798	55 Ha.	2.34630
	Total of Non Arable Land Treatment (ii)	**86 Ha.**	**3.96924**	**108 Ha.**	**5.01618**	**85 Ha.**	**3.7433**	**83 Ha.**	**3.00798**	**52 Ha.**	**1.88532**	**55 Ha.**	**2.0133**	**93 Ha.**	**3.36798**	**585 Ha.**	**25.3263**
iii	**Drainage Line Treatment**																
1.	Protection Wall	2 Nos	0.88	3 Nos	1.32	9 Nos	3.96	2 Nos	0.88	1 No	0.44000	2 Nos	0.88	2 Nos	0.88	21 Nos	9.24
2.	Check Dam	3 Nos	1.1625	5 No.	1.9375	7 No.	2.7125	6 No.	2.325	3 No.	1.1625	4 No.	1.55	2 No.	0.775	30 No.	11.625
3.	Water Harvesting	2 Nos	1.466	2 Nos	1.466	1 No	0.733	4 No	2.932	2 No	1.466	1 No	0.733	1 No	0.733	13 Nos	9.529
4.	Small Dug-Out Ponds	7 Nos	1.12	8 Nos	1.28	5 Nos	0.80	4 Nos	0.64	5 Nos	0.80	4 Nos	0.64	5 Nos	0.80	38 Nos	6.08
5.	Earthen Irrigation Channel	913 Rm	0.49302	1354 Rm	0.73116	1266 Rm	0.68364	627 Rm	0.33858	718 Rm	0.38772	1123 Rm	0.60642	736 Rm	0.39744	6737 Rm	3.63798
6.	Run-off Disposal/Diversion Channel	1270 Rm	0.3302	1247 Rm	0.32422	1075 Rm	0.2795	879 Rm	0.22854	465 Rm	0.1209	1150 Rm	0.299	421 Rm	0.10946	6507 Rm	1.69182
	Total of Drainage Line Treatment (iii)		**5.45172**		**7.05888**		**9.16864**		**7.34412**		**4.37712**		**4.70842**		**3.69490**		**41.8038**
	Total of Watershed Treatment/Development Works (A)		21.54596		29.74896		20.57194		20.13710		14.01144		17.04672		11.93788		135.00

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
B	***Livelihood Activities***																
1.	Carpentry / Black smithy / Basketry / Agri-implements @ 5000/No	12 Nos	0.60	8 Nos	0.40	7 Nos	0.35	4 Nos	0.20	15 Nos	0.75	13 Nos	0.65	9 Nos	0.45	68 Nos	3.40
2.	Tailoring / Knitting @ 8000/No	4 Nos	0.32	2 Nos	0.16	2 Nos	0.16	7 Nos	0.56	4 Nos	0.32	4 Nos	0.32	5 Nos	0.40	28 Nos	2.24
3.	Kitchen Garden with Compost Pit@ 2500/No	5 Nos	0.125	7 Nos	0.175	4 Nos	0.10	5 Nos	0.125	4 Nos	0.10	7 Nos	0.175	4 Nos	0.10	36 Nos	0.90
4.	Vermi-composting / Weaving @ 12500/No	6 Nos	0.75	5 Nos	0.625	5 Nos	0.625	6 Nos	0.75	4 Nos	0.50	8 Nos	1.00	6 Nos	0.75	40 Nos	5.00
5.	Piggery/Poultry/Duckery@ 8000/No	15 Nos	1.20	13 Nos	1.04	15 Nos	1.20	12 Nos	0.96	11 Nos	0.88	14 Nos	1.12	4 Nos	1.12	94 Nos	7.52
6.	Pisciculture @ 10000/No	8 Nos	0.80	11 Nos	1.10	9 Nos	0.90	12 Nos	1.20	8 Nos	0.80	11 Nos	1.10	6 Nos	0.60	65 Nos	6.50
7.	Apiculture @ 8000/No	2 Nos	0.16	2 Nos	0.16	2 Nos	0.16	1 Nos	0.08	6 No	0.48	4 No	0.32	1 No	0.08	18 Nos	1.44
	Total of Livelihood Activities (B)	**52 Nos**	**3.955**	**48 Nos**	**3.66**	**44 Nos**	**3.495**	**47 Nos**	**3.875**	**52 Nos**	**3.83**	**61 Nos**	**4.685**	**45 Nos**	**3.50**	**349 Nos**	**27.00**
C	***Production System & Micro Enterprises***																
1.	Poultry/Piggery/Duckery @ 30000/unit	4 Units	1.20	3 Units	0.90	1 Unit	0.30	2 Units	0.60	2 Units	0.60	2 Units	0.60	3 Units	0.90	17 Units	5.10
2.	Pisciculture @ 3000/Unit	5 Units	1.50	2 Units	0.60	-	-	2 Units	0.60	4 Units	1.20	2 Units	0.60	-	-	15 Units	4.50
3.	Mushroom Cultivation @ 30000/No	2 Nos.	0.60	1 Nos.	0.30	1 No.	0.30	5 Nos.	1.50	5 Nos.	1.50	1 No.	0.30	2 Nos.	0.60	17 Nos.	5.10
4.	Black Pepper @ 20000/No	1 No.	0.20	-	-	-	-	1 No.	0.20	1 No.	0.20	-	-	-	-	3 Nos	0.60
5.	Horticulture @ 15000/Ha.	2 Ha.	0.30	1 Ha.	0.15	1 Ha.	0.15	2 Ha.	0.30	2 Ha.	0.30	4 Ha.	0.60	2 Ha.	0.30	14 Ha.	2.10
6.	Sericulture @ 5000/Ha.	-	-	-	-	-	-	3 Ha.	0.15	2 Ha.	0.50	2 Ha.	0.50	-	-	4 Ha.	1.00
7.	Food / Fruit Processing @ 50000/No	1 No.	0.50	4 Nos	2.0	3 No	1.50	2 Nos	1.00	1 No	0.50	3 Nos	1.50	1 No	0.50	15 Nos	7.50
8.	Rice Mill Operation @ 50000/No	-	-	-	-	2 Nos	1.00	1 No.	0.50	1 No.	0.50	-	-	-	-	4 Nos	2.00
9.	Grocery Shop / Small Cottage Industry @ 30000/No	4 Nos	1.20	1 No.	0.30	-	-	3 Nos	0.90	4 No	1.20	3 Nos	0.90	4 No	1.20	19 Nos	5.70
10.	Cobbler @30000/No	-	-	-	-	1 Nos	0.30	1 Nos	0.30	-	-	-	-	-	-	2 Nos	0.60
11.	Soap making @ 30000/No	-	-	-	-	-	-	-	-	1 No.	0.30	-	-	1 No.	0.30	2 No.	0.60
12.	Handloom / Weaving @ 30000/No	-	-	-	-	-	-	-	-	-	-	1 No.	0.30	-	-	1 No.	0.30
	Total of Production System & Micro Enterprises (C)		**5.20**		**4.50**		**3.55**		**5.90**		**7.10**		**5.15**		**3.80**		**35.10**
	TOTAL of *WATERSHED WORKS PHASE* (A+B+C)		**30.70096**		**37.80896**		**27.61694**		**29.91210**		**24.94144**		**26.88172**		**19.23788**		**197.10**

WDT Member
Community Organizer

WDT Member
(Forestry)

WDT Member
(Civil Engineering)

WDT Member
(Agriculture)

Project Leader
Umlangia Watershed Committee IWMP – I

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

1	2	3	4	5	6		7	8	9	10				11				
Sl No	Name of State	Name of Districts	Names of Projects	Year of sanction	Project duration (dd/mm/ yyyy)		Area of the projects	Project 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				Cultivated rainfed area	Cultivated irrigated area	Uncultivated wasteland		Pvt. Agri. Land	Forest land	Community land	Others (pl. specify)	Total area (ha)
												a) Temporary fallow	b) Permanent					
1	Meghalaya	West Khasi Hills	West Khasi Hills – IWMP I	2009-10	2009-10	2014-15	1800 Ha	270.00 Lakhs	3B1C4c4b, 3B1C44c4, 3B1C4c4d 3B1C4c5k	220	-	710	870	220	410.22	1028	1100.78	2759

Fund provision for the IWMP projects from all sources:

1	2	3		4										5
District	Name of Projects	IWMP Fund		Funds from other sources in addition to IWMP funds										Total
				Convergence funds		PPP		Community		Institutional finance		Others (Pl. specify)		
		Central Share	State Share	Name of Scheme	Amount (Lakhs)	Name of private sector	Financial contribution	Name	Financial contribution	Name	Financial contribution	Name	Financial contribution	
West Khasi Hills	West Khasi Hills – IWMP - I	243	27	NREGS	3.78									270
				Sericulture	4.00									

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

1	2	3	4	5				6				
				Distt. Agency's Project Account details				Watershed Committee (WC) account details:				
Sl. No.	Names of States	Name of Districts	Names of Projects	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	Megha laya	West Khasi Hills	West Khasi Hills – IWMP I	State Bank of India	31150653956	Saving	Shri K.M. Syiem, D.S. & W.C.O.	Umlangia Watershed Committee	SBI, Nongstoin	31475498844	Saving	Chairman W.C, Secretary W.C, Project Leader / WDT

Details of Convergence of IWMP with other Schemes:

	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 (a) Structures (b) livelihoods (c) Any other (pl. specify)#	Reference no. of activity/ task/ structure in DPR@	Level at which decision for convergence was taken$
1	West Khasi Hills	West Khasi Hills – IWMP I	* Community Rural Development Department NREGS	3.78	a) Water Harvesting c)i Afforestation	1 no. 110 Ha.	Deputy Commisioner
2			* Sericulture Department	4.0	ii. Rearing House	8 Nos	District Sericulture Officer

CERTIFICATE OF APPROVAL OF CONVERGENCE

OFFICE OF THE
DISTRICT RURAL DEVELOPMENT AGENCY
WEST KHASI HILLS DISTRICT
NONGSTOIN

No.DRDA/NG-63/Con/NREGA/09/ 30 **Dated Nongstoin the 22nd April, 2010**

CERTIFICATE OF APPROVAL

In pursuance to the Provision of Converge ce/Dovetailing of Mahatma Gandhi NREGA Operational Guidelines, the below mentioned projects are hereby approved to be taken up under convergence during the financial year 2010-11,2011-12 and 2012-13 with Soil and Water Conservation Department.

Block	Name of Project	Unit of Measurement	Name of Village	Fin. Year	Wages MGNR EGS	Materials Soil & WC Deptt	Total	Phy. target
Mairang C&RD Block	a). Afforestation 60 Ha	60Ha	Dongki ading, Pathar Lyndang, Mawpat, Ladpnar im, Ladpnarthymmai, Mawpian	2010-11	0.94	0.62	1.52	6
	b).Water Harvesting structure	2900 Cum	Ladpnar im,	2010-11	1.4	0.94	2.34	1
	c). Afforestation i). 60 Ha Maintenance ii). 50 Ha Creation	110 Ha	Dongki ading, Pathar Lyndang, Mawpat, Ladpna rim Ladpna thymmai, Mawpian, Umniar griang	2011-12	1.14	0.76	1.9	7
	d). Afforestation 50 Ha Maintenance	50 Ha	Umniar griang	2012-13	0.30	0.26	0.56	1

District Programme Coordinator
MGNREGA/NGNREGS
West Khasi Hills District
Nongstoin

District Programme Co-ordinator
N. K. E. G. A. West Khasi Hills
Nongstoin

CERTIFICATE OF APPROVAL OF CONVERGENCE

GOVERMENT OF MEGHALAYA
OFFICE OF THE DISTRICT SERICULTURE OFFICER,WEST KHASI HILLDISTRICT,
NONGSTOIN.

NO.DSN.(G)16/2009-2010/2 Dated:Nongstoin,the,13th.Apr.2010

From:- Shri.M.Laso,
District Sericulture Officer,
West Khasi Hills Nongstoin.

To,
The Divisional Officer,
Soil and Water Conservation Department
West Khasi Hills District, Nongstoin

Subject:- Convergence of Scheme for Eri Plantation Under IWMP of Dongingding Cluster.

Sir,

With reference to the subject cited above,I have the honour to inform that the 8(Eight)acres of EriPlantation that will be raised through your Department at Ledpnar thymmai and Umniangriang Village ofDongingdingCluster Under IWMP,these beneficiaries will be provided with 8(Eight) nos.of Eri Rearing Houses @Rs.50,000/-eachUnder Catalytic Development Programme of CSB for the year 2010-2011,if fund is available.

This is for favour of your kind information and necessary action.

Yours faithfully

(Shri.M.Laso)
District SericuOfficer,
West Khasi Hills Dist.,Nongstoin.

Copy to:-

1.The Director Sericulture and Weaving Meghalaya, Shillong for favour of kind information.

(Shri.M.Laso)
District Sericulture Officer,
West Khasi Hills Dist.Nongstoin.

ACTION PLAN FOR CONVERGENCE OF IWMP WITH MGNREGS, SERICULTURE UNDER UMLANGIA WATERSHED IWMP – I

Financial Year	*Name of Worsk*	*Name of Villages*	*No of household*	*IWMP (40%)*	*MGNREGS*	*Sericulture*	*TOTAL*	*Remarks*
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**
2010 – 2011	1. Afforestration 60Ha @Rs.2600/Ha	Dongki Ingding, Pathar lyndan, Mawpat, Ladpnarrim, Lad Pnar thymmai Mawpiah	118 nos 196nos 46 nos 72 nos 45 nos 34 nos	62400.00	93600.00		156000.00	
	2. Water Harvesting Structure as per Estimate Rs.234000/-	Ladpnarrim	72 nos	93600.00	140400.00		234000.00	
	3. Sericulture 8 Acre @Rs.10000/-	Ladpnar Thymmai & Umniangriang	45 nos 77 nos	80000.00	-	400000.00	400000.00	Rearing House @Rs.50000/- unit for 8 Units
	TOTAL			**236000.00**	**234000.00**	**400000.00**	**870000.00**	
2011 – 2012	1. Afforestration (a) 60Ha Maintenance (b) 50 Ha Creation	Dongki Ingding, Pathar lyndan, Mawpat, Ladpnarrim, Lad Pnar Thymmai, Mawpiah & Umniangriang	118 nos 196nos 46 nos 72 nos 45 nos 34 nos 77 nos	24000.00 52000.00	36000.00 78000.00		60000.00 130000.00	
	TOTAL			**76000.00**	**114000.00**		**190000.00**	
2012 – 13	Afforestation 50 Ha Maintenance	Umniangriang	77 nos	26000.00	30000.00	-	56000.00	
	TOTAL			**26000.00**	**30000.00**	**-**	**56000.00**	
GRAND TOTAL				**338000.00**	**378000.00**	**400000.00**	**1116000.0**	

Divisional Officer,
Cum
Project Leader
Project Implementation Agency (IWMP)
Soil & Water Conservation Division,
Nongstoin

Public-Private Partnership in the IWMP projects:

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				

***** 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

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				
Sl. 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$	Accre-ditation 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	Director	Don-Bosco	Agri-Horti, Animal Husbandry, Entrepreneurship	NA					
4		ICAR	Umiam	Director	Central Govt.	Agri-Horti, Animal Husbandry, Entrepreneurship	NA					
5		VTC	Kyrdem Kulai	Director	State Govt.	Animal Husbandry	NA					
6		Fruit Garden	Shillong	Director	State 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 2009 – 10 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)**
SLNA								
DRDA/ZP cell								
PIAs								
WDTs								
UGs								-
SHGs								
WCs								
GPs								
Community								
Others Pl. specify)								

Table 6.3: Information, Education & Communication (IEC) activities for the year 09-10 as on 31/03/10 (dd/mm/yyy)*

	1	2	3	4	5
	Activity	**Executing agency**	**Estimated expenditure (Rs.)**	**Expenditure incurred (Rs.)**	**Outcome (may quantity, wherever possible)**
1.	Awareness	S&WC Division			Better Awareness and understanding about Project Concept. Better Awareness about Natural Resources Conservation
2.	PRA Exercises	S&WC Division			
3.	Exposure Visits	S&WC Division			
4.	Capacity Building	S&WC Division			

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.	Dongki Ingding,		100 %					100 %					100 %			
2.	Pathar lyndan,		100 %					100 %					100 %			
3.	Mawpat,		100 %					100 %					100 %			
4.	Ladpnarrim,		100 %					100 %					100 %			
5.	Lad Pnar Thymmai,		100 %					100 %					100 %			
6.	Mawpiah		100 %					100 %					100 %			
7.	Umniangriang		100 %					100 %					100 %			

Table 7.2 Migration Details:

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
				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 form 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)**	
64800	**64.80**	**540**	**5.40**	**108**	**10.80**	**81.00**

* 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**	
West Khasi Hills District	WKH-IWMP-I	Dongki Ingding,	Improvement of Degraded Forest, Footpath, Footbridges, CC Dam, Washing Palce, Drinking Wells	Fw, Wd P, Wi Wd	Lifetime	-		-		
		Pathar lyndan,				-		-		
		Mawpat,				-		-		
		Ladpnarrim,				-		-		
		Lad Pnar Thymmai,				-		-		
		Mawpiah				-		-		

* 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**
West Khasi Hills District	WKH-IWMP I	Open wells	-	-	-	-	-
		Bore wells	-	-	-	-	-
		Others (specify) Springs					

*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 monyhs in a year)**			**Quality of drinking water**			**Comments**
		Pre-project	**Post-project**	**Change in availability**	**Pre-project**	**Post-project**	**Change in quality**	
West Khasi Hills District	WKH-IWMP I							

*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**
West Khasi Hills District	WKH-IWMP I					

* 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					
Names of the Districts	**Name of Projects**	**Name of crops**	**Pre-project**						**Mid-term**						**Post-project**					
			Area (ha)		**Average Yield (Qtl) per ha.**		**Total Production (Qtl)**		**Area (ha)**		**Average Yield per ha (Qtl)**		**Total Production (Qtl)**		**Area (ha)**		**Average Yield per ha (Qtl)**		**Total Production (Qtl)**	
			Irri	**Rf.**	**Irri**	**Rf.**	**Irri**	**Rf.**	**Irri**	**Rf.**	**Irri**	**Rf.**	**Irri**	**Rf.**	**Irri**	**Rf.**	**Irri**	**Rf.**	**Irri**	**Rf.**
West Khasi Hills District	WKH-IWMP I	Paddy		95		15		1425												
		Maize		70		14		980												
		Ginger		60		20		1200												

* 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. No.	State	Names of the Districts	Name of Projects	Name of crops	Pre-project						Mid-term						Post-project					
					Area (ha)		Average Yield (Qtl) per ha.		Total Production (Qtl)		Area (ha)		Average Yield per ha (Qtl)		Total Production (Qtl)		Area (ha)		Average Yield per ha (Qtl)		Total Production (Qtl)	
					Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.
1	Meghalaya	West Khasi Hills	WKH-IWMP I																			
				Total for the District																		

* 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					
Sl No	Names of States	Names of the Districts	Name of Projects	Name of crops	Pre-project						Mid-term						Post-project					
					Area (ha)		Average Yield (Qtl) per ha.		Total Production (Qtl)		Area (ha)		Average Yield per ha (Qtl)		Total Production (Qtl)		Area (ha)		Average Yield per ha (Qtl)		Total Production (Qtl)	
					Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.	Irri	Rf.
1	Meghalaya	West Khasi Hills District	WKH-IWMP I		-	-	-	-	-	-		-		-		-		-		-		-
Total for the District																						

* 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
West Khasi Hills District	WKH-IWMP I	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 7.6.5 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
West Khasi Hills District	WKH-IWMP I	5 yrs			1584.5	115	-	-

* 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
West Khasi Hills District	WKH-IWMP I	5 yrs			-	360		

* 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 fuelwood (ha)			Achievement (ha)		
			Source/Name of report	Year of reference	Area already under fuelwood	Area under fuelwood proposed to be covered through IWMP	Area under fuelwood actually covered through IWMP	Change in area under fuelwood
West Khasi Hills District	WKH-IWMP I	5 yrs			1326..03	470	-	-

* 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**	
		Cow	729									
		Piggery	487		2922000							
		Poultry	4302		1505700							
		Goat	970									
Total for all Districts	Total for all projects											

* 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					
District	**Project**	**Name of activity**	**Fund required for the activity (Rs.)**	**Sources of funding (Rs.)**				Actual Expenditure incurred on activity (Rs.)	**No. of beneficiaries trained**					**No. of beneficiaries taking up activity**				
				Project Fund	**Benefi -ciary**	**Others (pl. specify)**	**Total**		**SC**	**ST**	**Other**	**Women**	**Total**	**SC**	**ST**	**Other**	**women**	**Total**
West Khasi Hills District	WKH-IWMP I	Tailoring		100%						**10**	**3**	**7**	**10**					
		Carpentry		100%						**11**	**11**	**-**	**11**					
		Vermi - composting		100%						**18**	**3**	**15**	**18**					
		Kitchen gardening		100%						**10**	**2**	**8**	**10**					

* 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	Benefi -ciary	Others (pl. specify)	Total		SF	MF	LF	Total	SF	MF	LF	Total
West Khasi Hills District	WKH-IWMP I	Piggery	2.10	100%			2.10									
		Poultry	1.50	100%			1.50									

* 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	

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 Khasi Hills	WKH-IWMP I	**(A) Backward linkages**			
		(i) Seed certification	-		
		(ii) Seed supply system	-		
		(iii) Fertilizer supply system	-		
		(iv) Pesticide supply system	-		
		(v) Credit institutions	-		
		(vi) Water supply	-		
		(vii) Extension services	-	2	3
		(viii) Nurseries	-	1	2
		(ix) Tools/machinery suppliers	-	1	2
		(x) Price Support system	-		
		(xi) Labour	-	740	1200
		(xii) Any other (please specify)	-		
		(A) Forward linkages			
		(i) Harvesting/threshing machinery	-		
		(ii) Storage (including cold storage)	-		
		(iii) Road network	1	1	1
		(iv) Transport facilities	1	1	1
		(v) Markets / Mandis	1	1	2
		(vi) Agro and other Industries	-		
		(vii) Milk and other collection centres	-		
		(viii) Labour			
		(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
		Status of water table		Poor	Good	
		Ground water structures repaired/ rejuvenated				
		Quality of drinking water		Moderate potable	Improved	
		Availability of drinking water		Insufficient	sufficient	
		Increase in irrigation potential		Rainfed	20	
		Change in cropping/ land use pattern		Mono-cropping	Double cropping	
		Area under agricultural crop				
		i Area under single crop		220 Ha	-	
		ii Area under double crop		-	140 Ha.	
		iii Area under multiple crop		-		
		Net increase in crop production area				
		Increase in area under vegetation			115	
		Increase in area under horticulture			360	
		Increase in area under fuel & fodder			470	
		Increase in milk production				
		No. of SHGs				
		Increase in no. of livelihoods		4	8	
		Increase in income				
		Migration				
		No. of school going children				
		SHG Federations formed			1	
		Credit linkage with banks				
		Resource use agreements				
		WDF collection & management				
		Summary of lessons learnt				

Table 7.10 Cost effectiveness of structures/ activities*

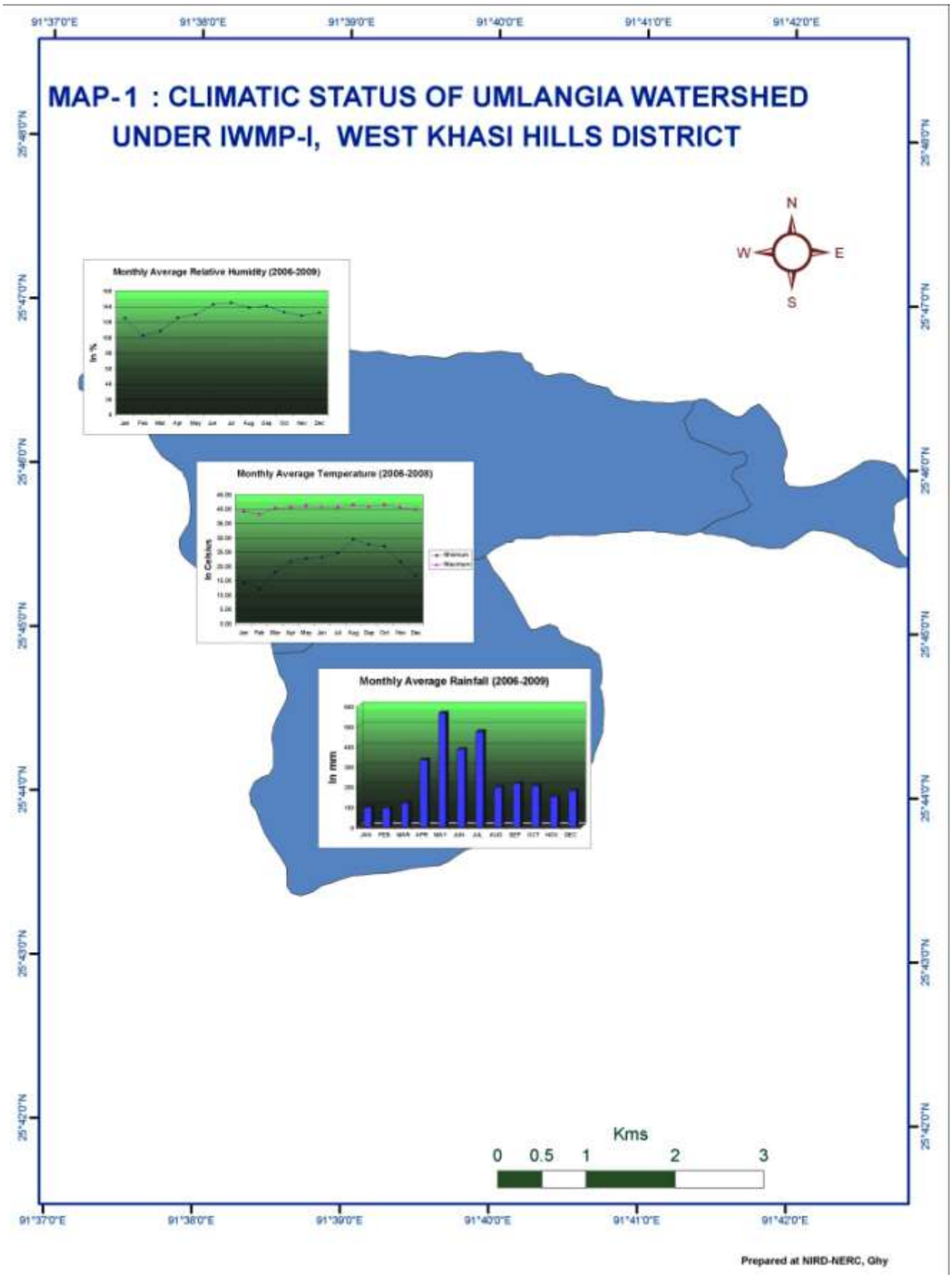
1	2	3	4	5	6	7	8	9	10
District	**Name of project**	**Name of WC**	**Name of structure/ activity**	**Estimated cost (Rs.)**	**Expected quantifiable benefits (Rs.)**	**Expenditure incurred (Rs.)**	**Actual quantifiable benefit (Rs.)**	**Benefit: Cost ratio#**	**IRR**
West Khasi Hills	WKH-IWMP I	Umlangia	As per Action Plan	2,10,60,000	2412845000	1731453000		1.39	

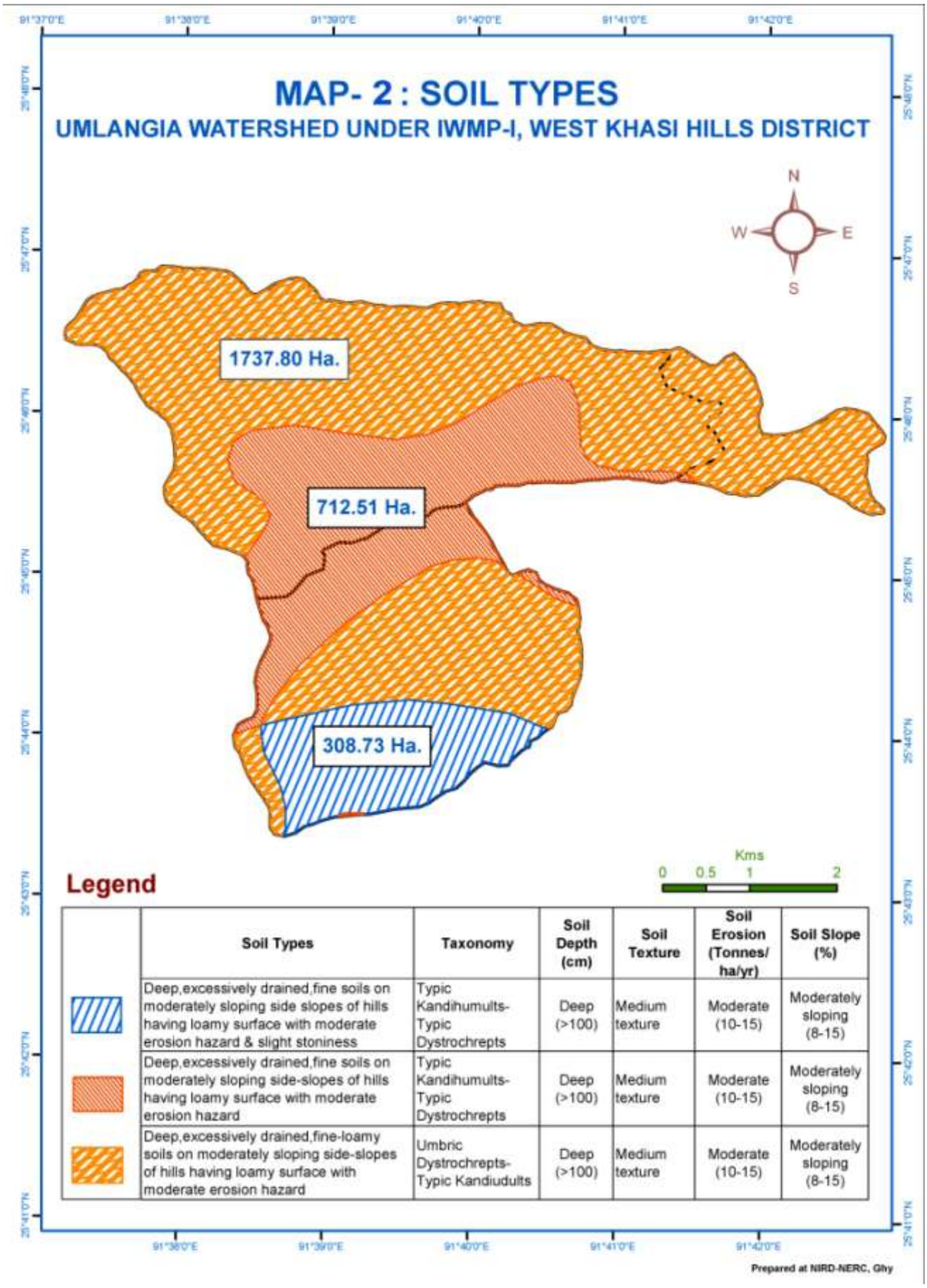
***** from column no. 2, total no. of States implementing the programme, from column no. 3, total no. of Districts; from Column no. 4, no. of projects, from column no. 5, no. of WCs, from column no. 6, no. of structures/ activities, from column no. 7 to 10, category-wise# totals, may be mentioned at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

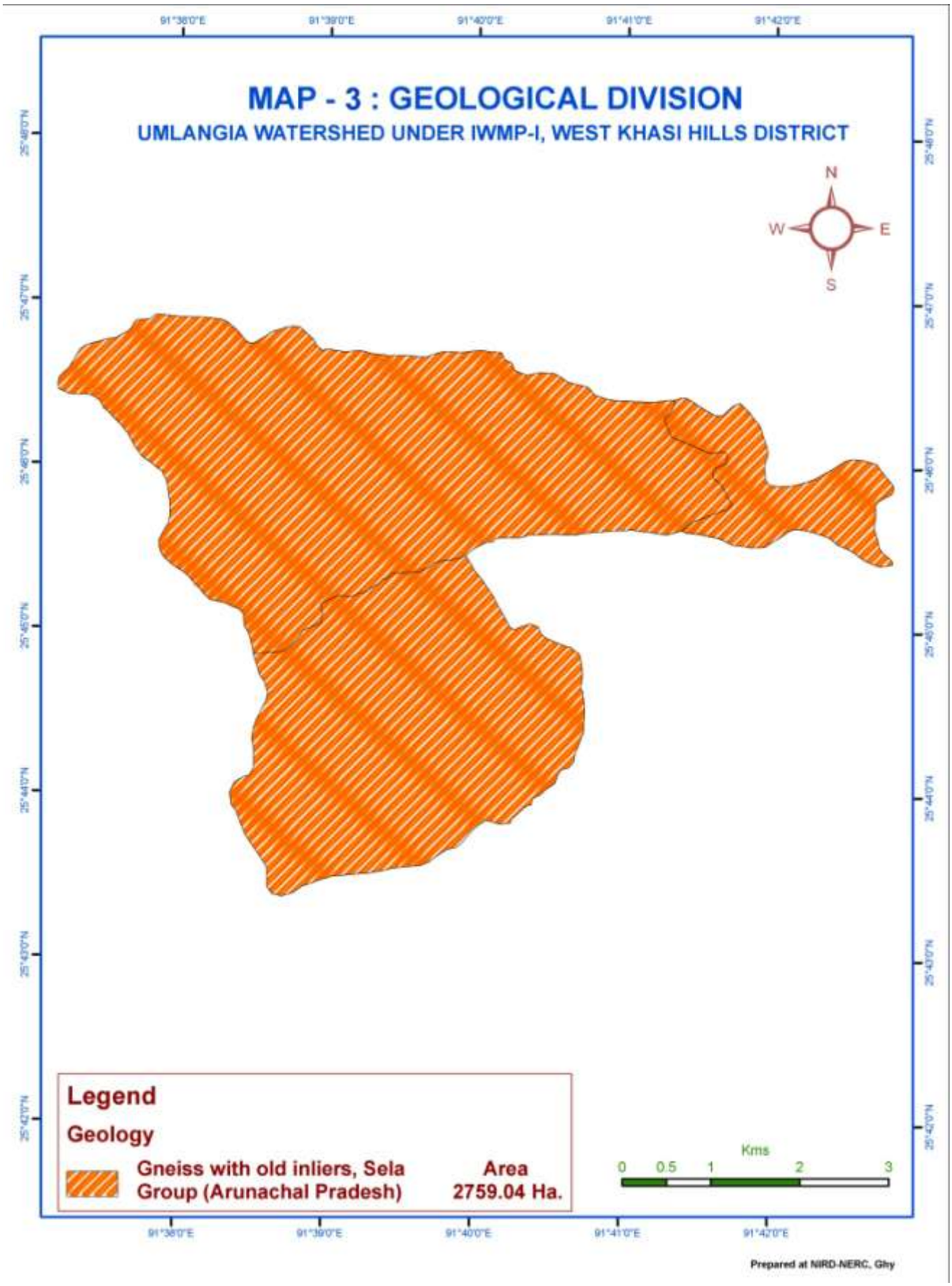
B:C ratio more than 1 – cost effective, less than 1 – Not cost effective

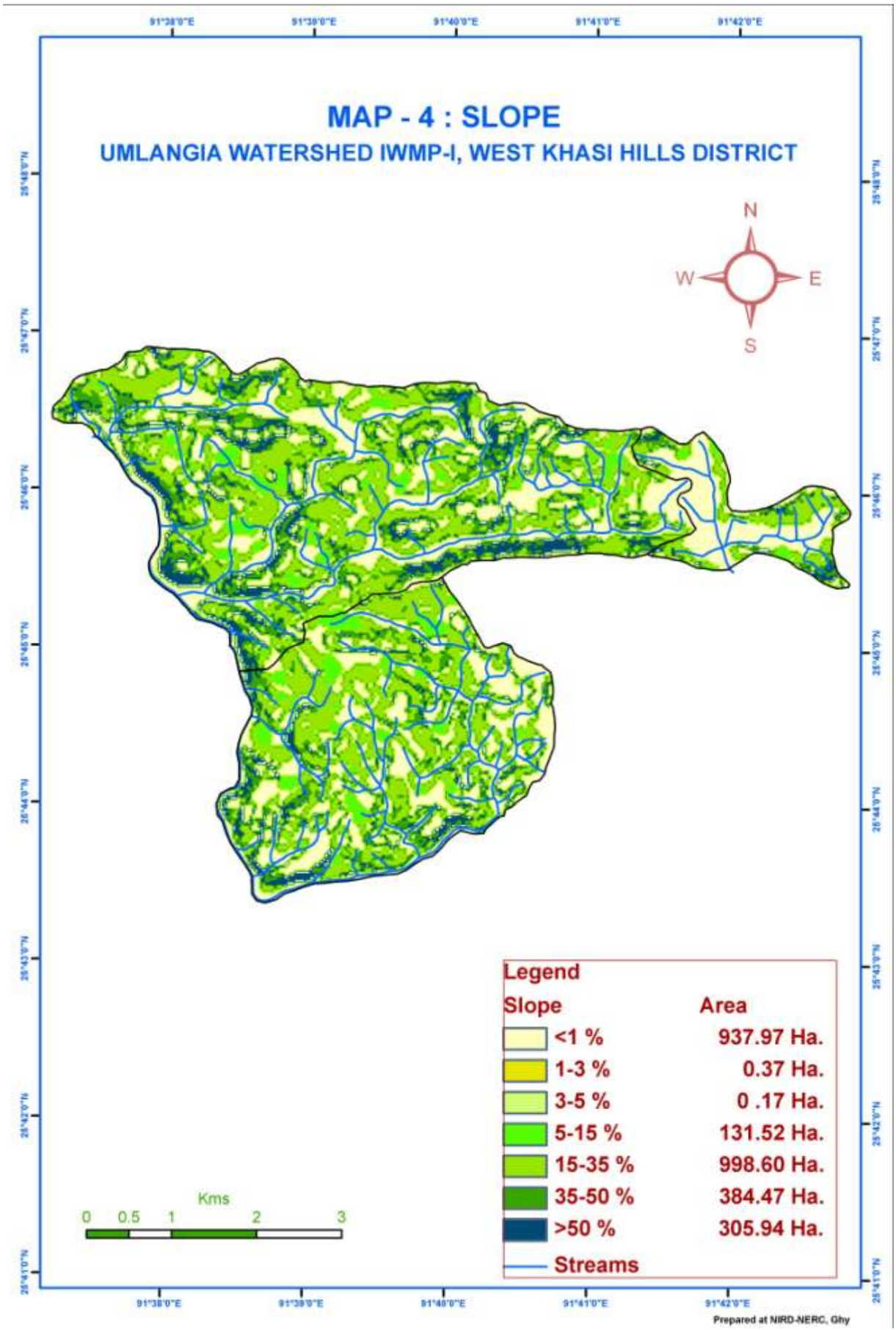
ANNEXURE I

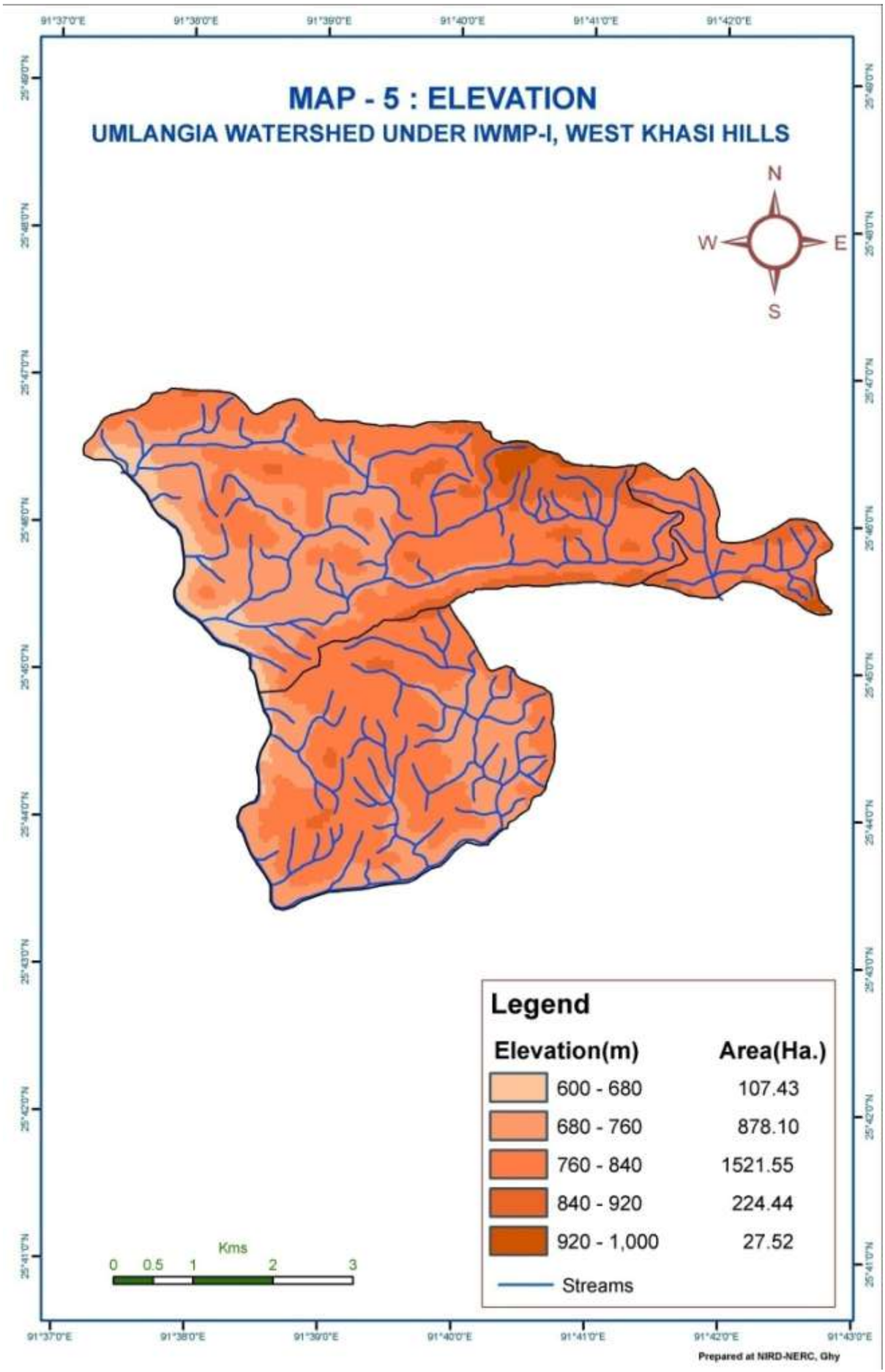
MAPS

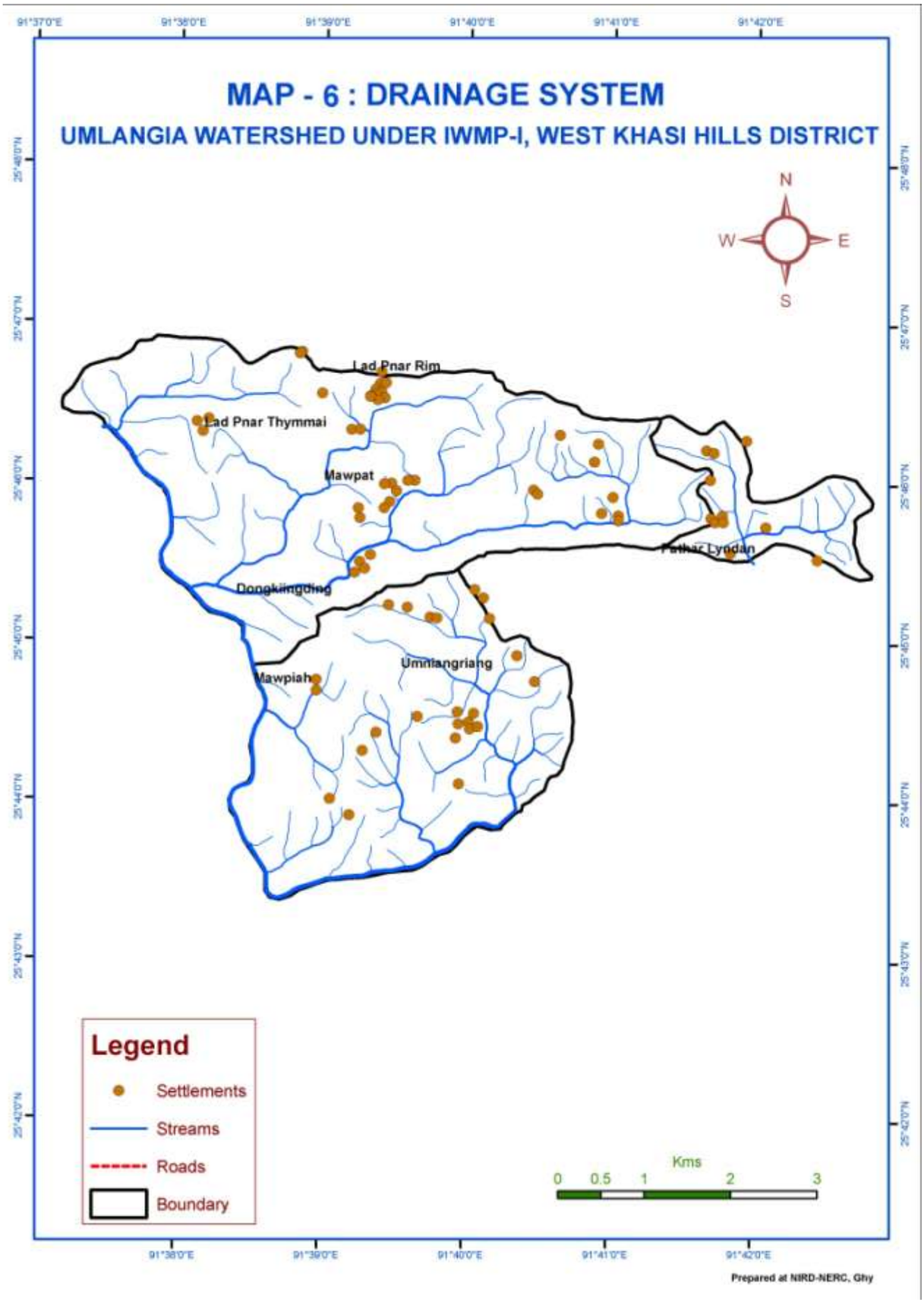


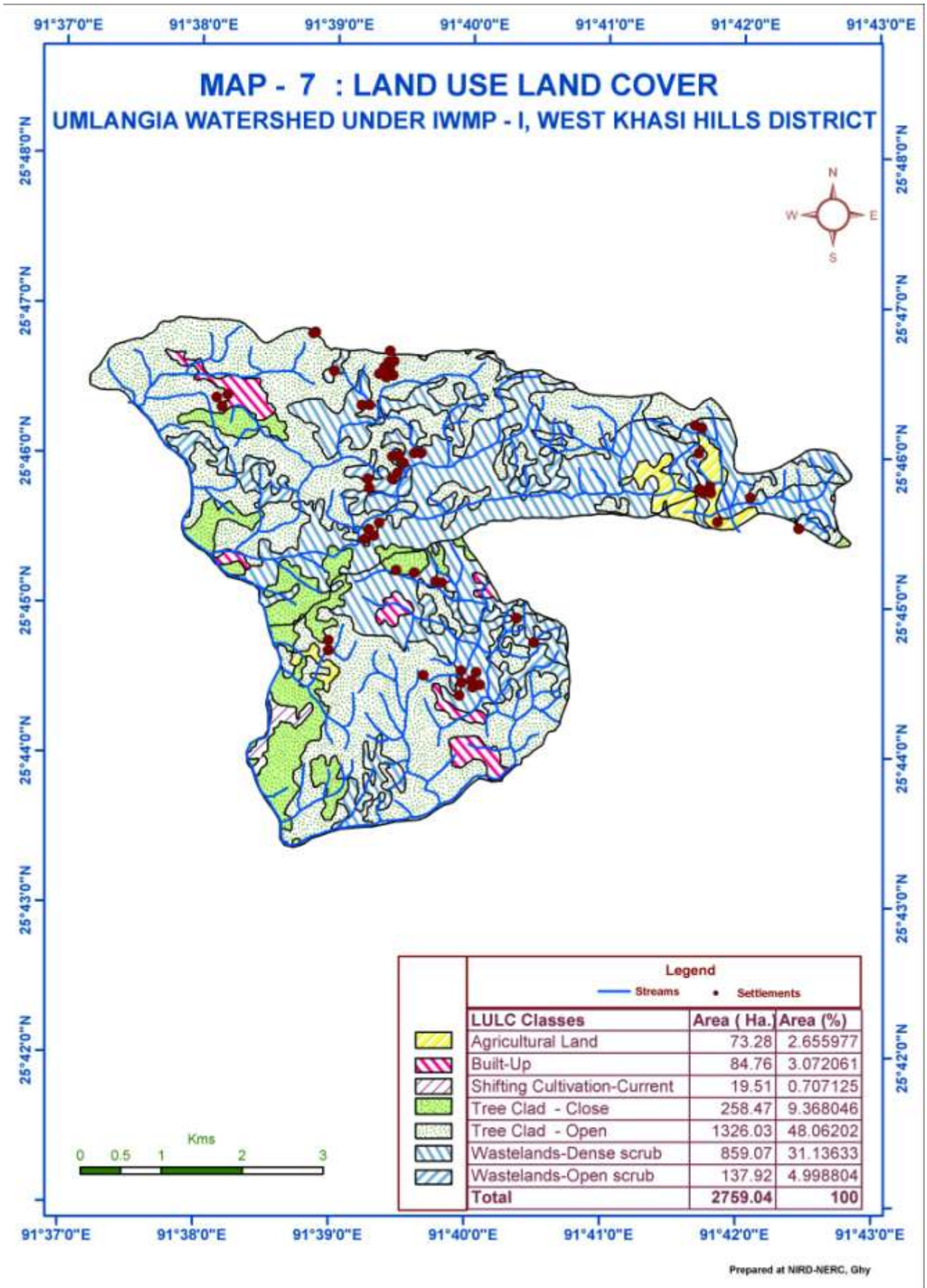

MAP- 2 : SOIL TYPES
UMLANGIA WATERSHED UNDER IWMP-I, WEST KHASI HILLS DISTRICT
N
W
E
S
1737.80 Ha.
712.51 Ha.
308.73 Ha.
Kms
0 0.5 1 2
Legend
Soil Types | Taxonomy | Soil Depth (cm) | Soil Texture | Soil Erosion (Tonnes/ ha/yr) | Soil Slope (%)
Deep,excessively drained,fine soils on moderately sloping side slopes of hills having loamy surface with moderate erosion hazard & slight stoniness | Typic Kandihumults-Typic Dystrochrepts | Deep (>100) | Medium texture | Moderate (10-15) | Moderately sloping (8-15)
Deep,excessively drained,fine soils on moderately sloping side-slopes of hills having loamy surface with moderate erosion hazard | Typic Kandihumults-Typic Dystrochrepts | Deep (>100) | Medium texture | Moderate (10-15) | Moderately sloping (8-15)
Deep,excessively drained,fine-loamy soils on moderately sloping side-slopes of hills having loamy surface with moderate erosion hazard | Umbric Dystrochrepts-Typic Kandiudults | Deep (>100) | Medium texture | Moderate (10-15) | Moderately sloping (8-15)
Prepared at NIRD-NERC, Ghy

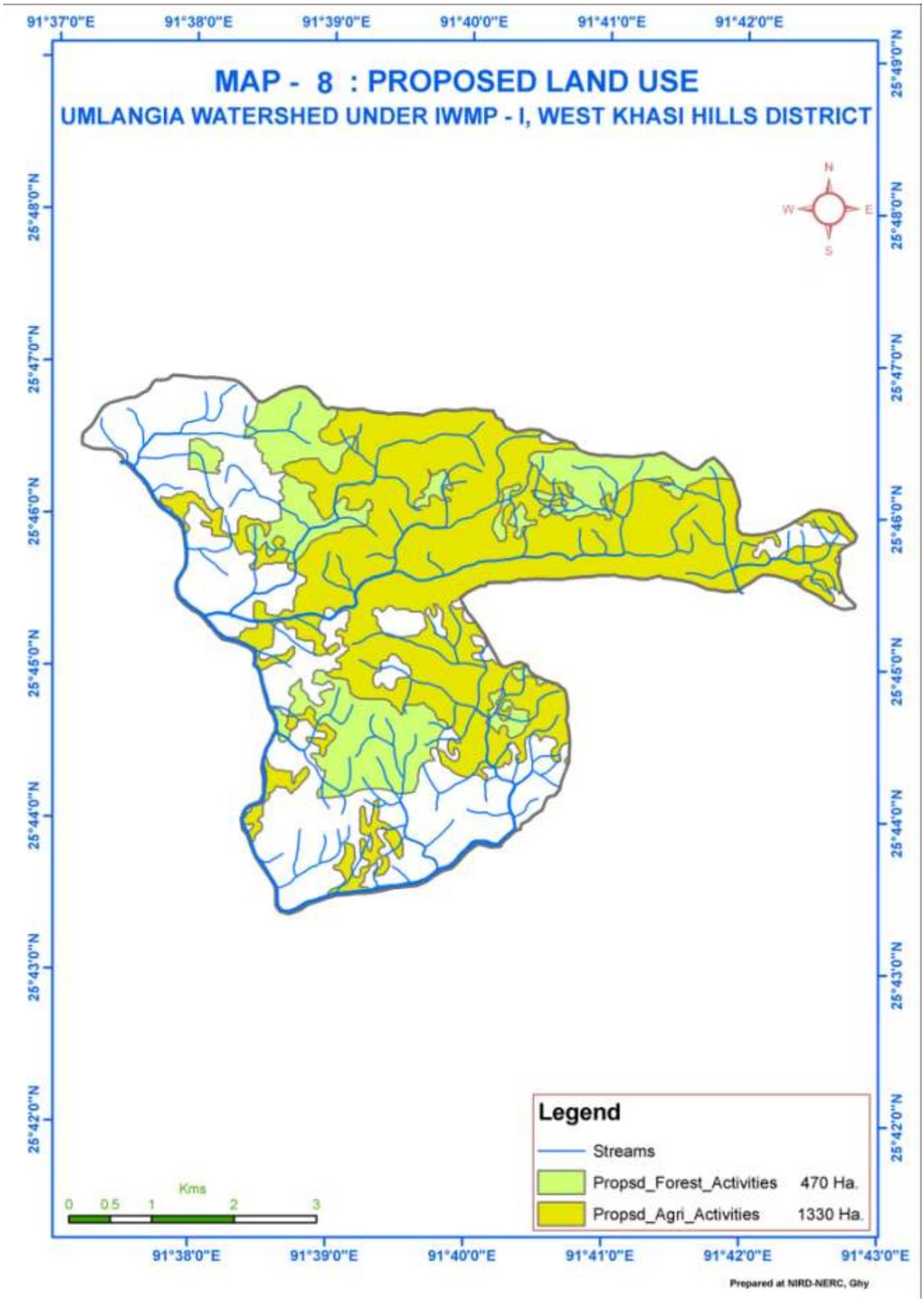

MAP - 3 : GEOLOGICAL DIVISION
UMLANGIA WATERSHED UNDER IWMP-I, WEST KHASI HILLS DISTRICT
N
W
E
S
91°38'0"E
91°39'0"E
91°40'0"E
91°41'0"E
91°42'0"E
25°46'0"N
25°47'0"N
25°48'0"N
25°49'0"N
25°50'0"N
25°51'0"N
Legend
Geology
Gneiss with old inliers, Sela Group (Arunachal Pradesh)
Area
2759.04 Ha.
Kms
0 0.5 1 2 3
Prepared at NIRD-NERC, Ghy

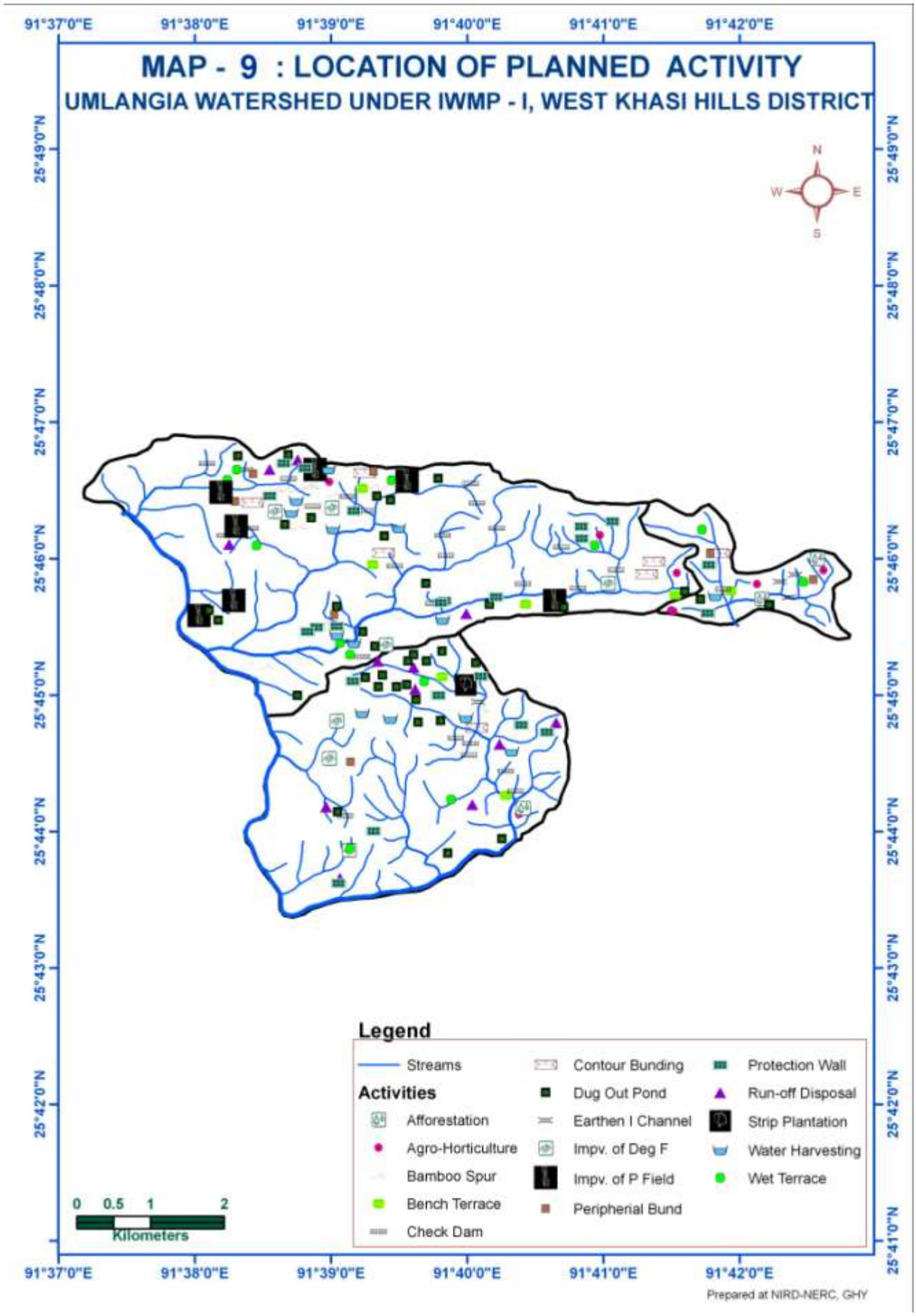

MAP - 4 : SLOPE
UMLANGIA WATERSHED IWMP-I, WEST KHASI HILLS DISTRICT
N
W
E
S
91°38'0"E
91°39'0"E
91°40'0"E
91°41'0"E
91°42'0"E
25°48'0"N
25°47'0"N
25°46'0"N
25°45'0"N
25°44'0"N
25°43'0"N
25°42'0"N
25°41'0"N
Kms
0 0.5 1 2 3
Legend
Slope
Area
<1 % 937.97 Ha.
1-3 % 0.37 Ha.
3-5 % 0 .17 Ha.
5-15 % 131.52 Ha.
15-35 % 998.60 Ha.
35-50 % 384.47 Ha.
>50 % 305.94 Ha.
Streams
Prepared at NIRD-NERC, Ghy


MAP - 5 : ELEVATION
UMLANGIA WATERSHED UNDER IWMP-I, WEST KHASI HILLS
N
W
E
S
91°37'0"E
91°38'0"E
91°39'0"E
91°40'0"E
91°41'0"E
91°42'0"E
91°43'0"E
25°49'0"N
25°48'0"N
25°47'0"N
25°46'0"N
25°45'0"N
25°44'0"N
25°43'0"N
25°42'0"N
25°41'0"N
Kms
0 0.5 1 2 3
Legend
Elevation(m) Area(Ha.)
600 - 680 107.43
680 - 760 878.10
760 - 840 1521.55
840 - 920 224.44
920 - 1,000 27.52
Streams
Prepared at NIRD-NERC, Ghy


MAP - 6 : DRAINAGE SYSTEM
UMLANGIA WATERSHED UNDER IWMP-I, WEST KHASI HILLS DISTRICT
N
W
E
S
Lad Pnar Rim
Lad Pnar Thymmai
Mawpat
Pathar Lyndan
Dongkiingding
Umniangriang
Mawpiah
Legend
Settlements
Streams
Roads
Boundary
Kms
0 0.5 1 2 3
91°37'0"E
91°38'0"E
91°39'0"E
91°40'0"E
91°41'0"E
91°42'0"E
25°48'0"N
25°47'0"N
25°46'0"N
25°45'0"N
25°44'0"N
25°43'0"N
25°42'0"N
Prepared at NIRD-NERC, Ghy


MAP - 7 : LAND USE LAND COVER
UMLANGIA WATERSHED UNDER IWMP - I, WEST KHASI HILLS DISTRICT
91°37'0"E
91°38'0"E
91°39'0"E
91°40'0"E
91°41'0"E
91°42'0"E
91°43'0"E
25°48'0"N
25°47'0"N
25°46'0"N
25°45'0"N
25°44'0"N
25°43'0"N
25°42'0"N
N
W
E
S
Legend
Streams
Settlements
LULC Classes | Area (Ha.) | Area (%)
Agricultural Land | 73.28 | 2.655977
Built-Up | 84.76 | 3.072061
Shifting Cultivation-Current | 19.51 | 0.707125
Tree Clad - Close | 258.47 | 9.368046
Tree Clad - Open | 1326.03 | 48.06202
Wastelands-Dense scrub | 859.07 | 31.13633
Wastelands-Open scrub | 137.92 | 4.998804
Total | 2759.04 | 100
Kms
0 0.5 1 2 3
Prepared at NIRD-NERC, Ghy


MAP - 8 : PROPOSED LAND USE
UMLANGIA WATERSHED UNDER IWMP - I, WEST KHASI HILLS DISTRICT
91°37'0"E
91°38'0"E
91°39'0"E
91°40'0"E
91°41'0"E
91°42'0"E
91°43'0"E
25°49'0"N
25°48'0"N
25°47'0"N
25°46'0"N
25°45'0"N
25°44'0"N
25°43'0"N
25°42'0"N
N
W
E
S
Kms
0 0.5 1 2 3
Legend
Streams
Propsd_Forest_Activities 470 Ha.
Propsd_Agri_Activities 1330 Ha.
Prepared at NIRD-NERC, Ghy


MAP - 9 : LOCATION OF PLANNED ACTIVITY
UMLANGIA WATERSHED UNDER IWMP - I, WEST KHASI HILLS DISTRICT
91°37'0"E
91°38'0"E
91°39'0"E
91°40'0"E
91°41'0"E
91°42'0"E
25°49'0"N
25°48'0"N
25°47'0"N
25°46'0"N
25°45'0"N
25°44'0"N
25°43'0"N
25°42'0"N
25°41'0"N
N
W
E
S
Legend
Streams
Activities
Afforestation
Agro-Horticulture
Bamboo Spur
Bench Terrace
Check Dam
Contour Bunding
Dug Out Pond
Earthen I Channel
Impv. of Deg F
Impv. of P Field
Peripherial Bund
Protection Wall
Run-off Disposal
Strip Plantation
Water Harvesting
Wet Terrace
0 0.5 1 2
Kilometers
Prepared at NIRD-NERC, GHY

ANNEXURE II

SOCIO-ECONOMIC SURVEY DETAILS

STATEMENT SHOWING SOCIO-ECONOMIC SURVEY

Name of Watershed **: Umlangia Micro Watershed** Name of C&RD Block **: Mairang C&RD Block** Name of District **: West Khasi Hills District**

SL No	NAME OF VILLAGE	No. of House Hold	Nos of. Population			Total of Child below 12 Yrs both male & female of col. 6	Occupation	literacy		Land holding in ha/household			Name of Crops grown	Average yield of each crop in kg/ha	Livestock in nos				Total income of each family per annum (Rs.)
			Male	Female	Total			Literate	Illiterate	Arable	Non Arable	Total			Cattle	Goat	Piggery	Poultry	
1.	Dongki-ingding	118	300	303	603	223	Labour:22, Farmer:58, Carpentry:3, Business:1	295	273	145.5	152	297.5	Rice, Potato, Maize, Sweet potato, ginger, vegetable	1145 Kg/Ha.	187	307	120	643	25733
2.	Pathar Lyndan	196	449	548	997	349	Labour:24, Farmer:83, Cultivator:51, Carpentry:5, Teacher:3, Govt. Service:4, Others:4	431	509	180	316	496	Rice, Potato, Sweet Potato, vegetable	1340 Kg/Ha.	167	219	56	388	24665
3.	Lad Pnar Rim	72	181	177	358	107	Labour:10, Farmer:23, Cultivator:8, Carpentry:2, Business:1	188	149	65	112	177	Rice, Potato, Maize, vegetable	832 Kg/Ha.	86	79	64	457	17552
4.	Lad Pnar Thymmai	45	123	116	239	101	Labour:32, Farmer:27, Business:2, Govt. Service:3	89	136	73	45	118	Rice, Potato, Sweet Potato, vegetable	980 Kg/Ha.	87	58	49	712	16433
5.	Mawpat	46	108	119	227	70	Farmer:34, Carpentry:1, Business:1	115	99	57	56	113	Rice, Potato, Maize, vegetable	455 Kg/Ha.	56	77	39	541	24598
6.	Mawpiah	34	103	93	196	76	Farmer:18	96	89	65	32.5	97.5	Rice, Potato, vegetable	872 Kg/Ha.	68	52	67	383	22867
7.	Umniang-riang	77	192	170	362	148	Labour:28, Farmer:31, Cultivator:13, Carpentry:5, Business:6	124	218	81	98	179	Rice, Potato, Maize, ginger, vegetable	1054 Kg/Ha.	78	178	92	1178	15779
	TOTAL	588	1456	1526	2982	1074		1338	1473	666.5	811.5	1478		952 Kg/Ha.	729	970	487	4302	147627

ANNEXURE III
COST ESTIMATES

ESTIMATE FOR CONSTRUCTION OF DRINKING WELL UNDER UMLANGIA WATERSHED (IWMP – I)

(Based as per PWD Schedule of Rate for Road and Bridges for western Circle for the year 2007 – 2008)

1/3	(b)	Earthwork in excavation for Bridges, culvert below Lowest bed level etc. as directed.			
		1.50 x 1.80 x 1.80	=	4.86 m^3	
		@Rs.103.00/m^3			Rs.500.58
2/22		Providing stone masonry work in wing wall/guide wall with harmer dressed stone completed as directed.			
		1 x 1.50 x 2.50 x 0.30	=	1.13 m^3	
		1 x 1.50 x 2.80 x 0.30	=	1.26 m^3	
		2 x 1.20 x $\frac{2.50 + 2.80}{2}$ x 0.30	=	1.91 m^3	
	Less:	1 x 0.75 x 0.85 x 0.30	=	(-) 0.19 m^3	
			=	4.11 m^3	
		@Rs.1022.00/m^3			Rs.4200.00
3/40		Supplying, fitting, fixing, including bending cranking and placing in position as per approved design and drawings.			
		17 x 2.40 x 0.39	=	15.91 Kg	
		17 x 2.40 x 0.62	=	25.30 Kg	
			=	41.21 kg	

@Rs.3909.00/Qntl Rs.1602.69

4/38 Providing shuttering for dam wall with dressed planks Complete as directed.

Slab:	1 x 2.40 x 2.40	=	5.76 m^2
Drain:	2 x 5.00 x 0.15	=	1.50 m^2
		=	7.26 m^2

@Rs.281.00/ m^2 Rs.2040.06

5/24 (a) Providing stone pitching with one man size boulder not less than 25 x 25 x30cm including filling the interstices with spoil and carriage of stone within a distance of 200m complete as directed.

Well:	1.20 x 1.20 x 0.30	=	0.43 m^3
P/Form:	2.00 x 1.20 x 0.30	=	0.72 m^3
		=	1.15 m^3

@Rs.432.00/ m^3 Rs.496.80

6/26 Providing concrete in prop 1: 3: 6 with hard broken stone aggregate 40mm downgraded including necessary local carriage of stone aggregates, sand within 200meters and curing (Excluding shuttering) complete as directed.

2.00 x 1.20 x 0.75	=	1.80 m^3
2 x 5.00 x 0.15 x 0.10	=	0.15 m^3
1 x 5.00 x 0.15 x 0.10	=	0.07 m^3
	=	2.02 m^3

@Rs.2281.00/ m^3 Rs.4607.62

7/27 Providing cement concrete work in proportion 1: 2: 4 corresponding to M150 with hard broken stone aggregates 20mm downgraded including necessary carriage of stone and sand within a distance of 200m and curing.

Slab:	1 x 2.40 x 2.40 x 0.10	=	0.58 m^3	
	@Rs.2951.00/ m^3			Rs.1711.58

8/39 Providing 12mm thick cement plaster in proportion 1:4 Including screening sand clearing the surface and carriage of sand within 200mm complete and as directed.

	1 x 1.80 x 1.00	=	3.24 m^2	
	1 x 1.80 x 1.30	=	2.34 m^2	
	2 x 1.80 x $\frac{1.0 + 1.3}{2}$	=	4.14 m^2	
Slab:	1 x 1.20 x 1.20	=	1.44 m^2	
	1 x 2.40 x 2.40	=	5.76 m^2	
	2 x 2 x 2.40 x 0.10	=	0.96 m^2	
Drain:	2 x 5.00 x 0.15	=	1.50 m^2	
	1 x 5.00 x 0.15	=	0.75 m^2	
	2 x 5.00 x 0.10	=	1.00 m^2	
	1 x 1.20 x 2.00	=	2.40 m^2	
Less:	1 x 0.75 x 0.85	= (-)	0.64 m^2	
		=	22.89 m^2	
	@Rs.86.00/- m^2			Rs.1968.54
			TOTAL	**Rs.17128.29**
			SAY,	**Rs.17128.00**

(Rupees Seventeen Thousand One Hundred Twenty Eight)

ESTIMATE FOR CONSTRUCTION DRINKING WELL
UNDER UMLANGIA WATERSHED IWMP – I
(The rate based as per P.W.D Schedule of rates for Roads, Bridges and E & D Works 2007 - 2008)

1/3	(b)	Earthwork in excavation for bridges and culvert below the lowest bed level including dewatering etc. complete as directed.		
		1 x 3.40 x 2.40 x 1.80	= 14.69 m^3	
		@ Rs103.00/-m^3……		Rs.1513.07
2/25		Providing cement concrete work proportion 1:4:8 with hard broken stone aggregate 40mm, nominal size including necessary carriage of stone and sand within a distance of 200 metres and curing completed as directed.		
		2 x 3.00 x 0.20 x 0.20	= 0.24 m^3	
		2 x 2.00 x 0.20 x 0.20	= 0.16 m^3	
			= 0.40 m^3	
		@ Rs.2022.00/-m^3……		Rs.808.80
3/24	(a)	Providing stone pitching with one man size boulders Etc. as directed.		
		1 x 3.00 x 2.00 x 0.20	= 1.20 m^3	
		1 x 3.40 x 1.50 x 0.20	= 1.02 m^3	
			= 2.22 m^3	
		@ Rs.432.00/-m^3……		Rs.959.04

4/22 Providing regular masonry in retaining walls Brest walls and wing walls etc. with hammer dressed or blunt chisel dressed stones of heavy section etc. complete as directed.

1 x 3.00 x 0.20 x 3.00	=	1.80 m^3
1 x 3.00 x 0.20 x 2.40	=	1.44 m^3
2 x 2.00 x 0.20 x $\frac{3.00 + 2.40}{2}$	=	2.16 m^3
	=	5.40 m^3

@ Rs. 1022/-m^3..... Rs.5518.80

5/40 (b) Supplying, fitting, fixing including bending cranking to the design including supplying tying wire 20G complete as directed.

30 x 3.70	=	111.00 Rm		
27 x 3.30	=	89.10 Rm		
	=	200.10 Rm	=	1.24 Qntl

@ Rs. 3909/-Qntl..... Rs.4847.16

6/38 Providing shuttering with dressed planks not less than 25mm thick properly joined with battens proper level and removing the same after the concrete hardens complete as directed.

1 x 3.70 x 3.30	=	12.21 m^2

@ Rs. 281/-m^3..... Rs.3431.01

7/27 Providing C.C. in prop 1:2:4 corresponding to M150 with very hard stones aggregates of 20mm down graded including carriage of stone and sand within 200m complete as directed

1 x 3.70 x 3.30 x 0.10	=	1.22 m^3
1 x 3.40 x 1.50 x 0.10	=	0.51 m^3
	=	1.73 m^3

@ Rs. 2951/-m^3..... Rs.5105.23

8/39(a) Providing 12mm thick cement plaster including clearing the surface, curing carriage of sand within 200m, complete as directed.

Inside: 1 x 3.00 x 3.00	=	9.00 m^2
1 x 3.00 x 2.90	=	7.20 m^2
2 x 2.00 x $\frac{3.00 + 2.40}{2}$	=	10.80 m^2
Outside: 1 x 3.40 x 0.60	=	2.04 m^2
2 x 2.40 x $\frac{1.20 + 0.60}{2}$	=	4.32 m^2
2 x 3.70 x 3.30	=	24.42 m^2
1 x 3.40 x 1.50	=	5.10 m^2
	=	62.88 m^2

@ Rs. 86/-m^3..... Rs.5407.68

Total = Rs.27590.79

Say, = Rs.27590.00

(Rupees Twenty Seven Five Hundred Ninety) only

ESTIMATE FOR CONSTRUCTION OF WASHING PLACE
UNDER UMLANGIA WATERSHED (IWMP – I)
(Based as per PWD Schedule of Rate for Road and Bridges for western Circle for the year 2007 – 2008)

1/3 (C) Earth work in excavation for Proper grade including light dressing and removal of spoils up to 30m level and all lift.

2 x 4.20 x 0.60 x 0.45	=	2.27 m^3
2 x 3.00 x 0.60 x 0.45	=	1.62 m^3
	=	3.89 m^3

@ Rs. 103.00 / m^3……..…….…….……... Rs. 400.67

2/25 Providing cement concrete work proportion 1:4:8 with hard broken stone aggregate 40mm, nominal size including necessary carriage of stone and sand within a distance of 200 metres and curing (excluding shuttering) completed as directed.

2 x 4.20 x 0.60 x 0.10	=	0.50 m^3
2 x 3.00 x 0.60 x 0.10	=	0.36 m^3
	=	0.86 m^3

@ Rs. 2022.00 / m^3 …….....…… Rs. 1738.92

3/22 Providing regular masonry in retaining walls Brest walls and wing walls etc. with hammer dressed or blunt chisel dressed stones of heavy section (size not less than 25 x 25 x 30cm long) with proper key stones each not less than (25 x 25 x 75cm long) set in cement mortar 1:6 including carriage of stone within 200 metres holes at 1:2 to 1:5 metre a part staggered complete.

2 x 4.20 x 0.60 x 0.35	=	1.76 m^3	
2 x 4.20 x $\frac{0.60 + 0.30}{2}$ x 0.60	=	2.27 m^3	
2 x 3.00 x 0.60 x 0.35	=	1.26 m^3	
2 x 3.00 x $\frac{0.60 + 0.30}{2}$ x 0.60	=	1.62 m^3	
	=	6.91 m^3	

@Rs. 1022.00/ m^3 …….…….. Rs. 7062.02

4/22 Providing stone saling ……. Complete as directed.

4.20 x 3.00 x 0.15 = 1.89 m^3

@Rs. 432.00/ m^3 …….…….. Rs. 816.48

5/26 Providing concrete in prop 1: 3: 6 with hard broken stone aggregate 40mm down graded including necessary local carriage of stone aggregates, sand within 200meters and curing (Excluding shuttering) complete as directed.

4.20 x 3.00 x 0.116 = 1.46 m^3

@ Rs. 2281.00 / m^3……..……..…… Rs. 3330.26

6/5 Earthwork in filling or in an embankment in layers not exceeding 200cm thick including breaking clods, dressing and ramming and lead up to 30 m and lift up to 150 cm.

4.20 x 3.00 x 0.50 = 6.30 m^3

@ Rs. 108.00 / m^3……..……..…… Rs. 680.40

7/39 (a) Providing 12mm thick cement plastering in proportion 1: 4 including screening sand clearing the surface and carriage of sand within 200m, complete and directed.

4.20 x 3.00	=	12.60m^2
2 x 3.00 x 0.30	=	1.80 m^2
2 x 4.20 x 0.30	=	2.52 m^2
	=	16.92 m^2

@ Rs.86 / m^2……..……...……. Rs. 1455.12

Total: Rs. 15483.87

Say: Rs. 15490.00

(Rupees Fifteen Thousand Four Hundred Ninety) only

ESTIMATE FOR CONSTRUCTION WASHING PLATFORM UNDER UMLANGIA WATERSHED IWMP – I
(The rate based as per P.W.D Schedule of rates for Roads, Bridges and E & D Works 2007 - 2008)

1/3	(b)	Earthwork in excavation for bridges and culvert below the lowest bed level including dewatering etc. complete as directed.			
			=	14.69 m^3	
		@ Rs. 103/-m^3……			Rs 1513.07
2/25		Providing cement concrete work proportion 1:4:8 with hard broken stone aggregate 40mm, nominal size including necessary carriage of stone and sand within a distance of 200 metres and curing completed as directed.			
			=	0.40 m^3	
		@ Rs. 2022/-m^3……			Rs 808.80
3/24	(a)	Providing stone pitching with one man size boulders Etc. as directed.			
			=	2.22 m^3	
		W/Platform: 1 x 3.00 x 2.50 x 0.20	=	1.50 m^3	
			=	3.72 m^3	
		@ Rs. 432/-m^3……			Rs 1607.04

4/22 Providing regular masonry in retaining walls Brest walls and wing walls etc. with hammer dressed or blunt chisel dressed stones of heavy section etc. complete as directed.

= 5.40 m^3

@ Rs. 1022/-m^3…… Rs.5518.80

5/40 (b) Supplying, fitting, fixing including bending cranking to the design including supplying tying wire 20G complete as directed.

= 1.24 Qntl

@ Rs. 3909/-Qntl…… Rs.4847.16

6/38 Providing shuttering with dressed planks not less than 25mm thick properly joined with battens proper level and removing the same after the concrete hardens complete as directed.

= 12.21 m^2

@ Rs. 281/-m^3…… Rs.3431.01

7/27 Providing C.C. in prop 1:2:4 corresponding to M150 with very hard stones aggregates of 20mm down graded including carriage of stone and sand within 200m complete as directed

= 1.73 m^3

W/Platform: 3.00 x 2.50 x 0.10 = 0.75 m^3

= 2.48 m^3

@ Rs. 2951/-m^3…… Rs.7318.48

8/39(a) Providing 12mm thick cement plaster including clearing the surface, curing carriage of sand within 200m, complete as directed.

		=	62.88 m^2
W/Platform:	3.00 x 2.50	=	7.50 m^2
		=	70.38 m^2

@ Rs. 86/-m^3..... Rs.6052.68

9/3 Earthwork to the proper level and grade including light dressing providing cambering and super devotion as directed and removal of up to 3 metres lead and all lift.

(a) Soft or laminated rock or medium shale

$5.50 \times 6.00 \times \frac{1.20 + 0.60}{2}$ = 29.70 m^3

@ Rs.46/-m^3..... Rs.1366.20

Total = Rs.32463.24

Say, = Rs.32465.00

(Rupees Thirty Two Thousand Four Hundred Sixty Five) only

ESTIMATE FOR CONSTRUCTION WASHING PLACE UNDER UMLANGIA WATERSHED IWMP – I
(The rate based as per P.W.D Schedule of rates for Roads, Bridges and E & D Works 2007 - 2008)

1/3	(b)	Earthwork in excavation for bridges and culvert below the lowest bed level including dewatering etc. complete as directed.			
	Dam:	4.00 x 0.60 x 0.70	=	2.00 m^3	
	W/W	2 x 1.50 x 0.70 x 0.70	=	1.96 m^3	
	G/wall	2 x 3.00 x 0.70 x 0.70	=	2.94 m^3	
	W/P	3.00 x 1.50x 0.10	=	1.50 m^3	
	Curtain/W:	1.00 x 0.30 x 0.60	=	0.18 m^3	
		4.00 x 2.00 x 0.10	=	0.80 m^3	
			=	9.68 m^3	
			=	7.52 m^3	
		@Rs.103.00/ m^3……..			Rs.774.56
2/24	(a)	Providing stone pitching with one man size boulders Etc. as directed.			
		4.00 x 0.60 x 0.10	=	0.24 m^3	
		2 x 1.50 x 0.70 x 0.10	=	0.21 m^3	
		1 x 3.00 x 1.00 x 1.00	=	0.30 m^3	
		1 x 1.00 x 0.30 x 0.15	=	0.05 m^3	
		4.00 x 2.00 x 0.10	=	0.80 m^3	
		2 x 3.00 x 0.70 x 0.10	=	0.42 m^3	
			=	2.02 m^3	
		@Rs.432.00/m^3……..			Rs.872.64

3/26 Providing C.C. work in abutment wingwall and return wall in prop 1:3:6 with hard broken stone aggregates 40mm down graded including carriage of stones and sand within 200m complete

4.00 x 0.60 x 0.50	=	1.20 m^3
4.00 x $\frac{0.60 + 0.40}{2}$ x 0.90	=	1.80 m^3
4.00 x 0.30 x 0.40	=	0.48 m^3
1.00 x 3.00 x 0.15	=	0.45 m^3
1 x 1.00 x 0.30 x 1.00	=	0.30 m^3
2 x 3.00 x 1.50 x 0.15	=	1.35 m^3
4.00 x 2.00 x 0.15	=	1.20 m^3
	=	6.78 m^3

@Rs.2281.00/m^3…….. Rs.15465.18

4/25 Providing cement concrete work proportion 1:4:8 with hard broken stone aggregate 40mm, nominal size including necessary carriage of stone and sand within a distance of 200 metres and curing completed as directed.

4.00 x 0.60 x 0.10	=	0.24 m^3
2 x 1.50 x 0.70 x 0.10	=	0.21 m^3
2 x 3.00 x 0.70 x 0.10	=	0.42 m^3
	=	0.87 m^3

@Rs.2022.00/m^3…….. Rs.1759.14

5/22 Providing regular masonry in retaining walls Brest walls and wing walls etc. with hammer dressed or blunt chisel dressed stones of heavy section etc. complete as directed.

2 x 1.50 x 0.70 x 0.60	=	1.26 m^3
2 x 1.50 x $\frac{0.70 + 0.50}{2}$ x 1.20	=	2.15m^3
2 x 3.00 x 1.50 x 0.55	=	4.95 m^3
2 x 3.00 x 0.70 x 0.60	=	2.52 m^3
2 x 3.00 x $\frac{0.70+0.50}{2}$ x 1.20	=	4.32 m^3
	=	15.20 m^3

@Rs.1022.00/m^3…….. Rs.15534.40

6/38 Providing shuttering with dressed planks not less than 25mm thick properly joined with battens proper level and removing the same after the concrete hardens complete as directed.

2 x 4.00 x 1.20	=	9.60 m^2
1.00 x 0.55	=	0.55 m^2
	=	10.15 m^2

@Rs. 281.00/m^2…….. Rs.2852.15

9/39(a) Providing 12mm thick cement plaster including clearing the surface, curing carriage of sand within 200m, complete as directed.

2 x 4.00 x 1.20	=	9.60 m^2
1 x 4.00 x 0.40	=	1.60 m^2
2 x 3.00 x 1.50	=	9.00 m^2
2 x 3.00 x 0.60	=	3.60 m^2
1 x 1.00 x 0.60	=	0.60 m^2
1 x 1.00 x 0.30	=	0.30 m^2
2 x 3.00 x 1.20	=	7.20 m^2
2 x 3.00 x 0.50	=	3.00 m^2
2 x 2.00 x 1.20	=	4.80 m^2
1 x 2.00 x 0.50	=	1.00 m^2
	=	40.70 m^2

@Rs. 86.00/m^2…….. Rs.3500.20

Total = Rs.40758.27

Say, = Rs.40760.00

(Rupees Forty Thousand Seven Hundred Sixty) only

ESTIMATE FOR CONSTRUCTION WASHING PLACE UNDER UMLANGIA WATERSHED IWMP – I
(The rate based as per P.W.D Schedule of rates for Roads, Bridges and E & D Works 2007 - 2008)

1/3 (b) Earthwork in excavation for bridges and culvert below the lowest bed level including dewatering etc. complete as directed.

Dam:	5.00 x 0.60 x 0.70	=	2.00 m^3
W/W	2 x 2.00 x 0.70 x 0.70	=	1.96 m^3
W/P	3.00 x 5.00x 0.10	=	1.50 m^3
Curtain/W:	2.00 x 3.00 x 0.70 x 0.70	=	2.94 m^3
		=	9.68 m^3

@Rs.103.00/ m^3…….. Rs.997.04

2/24 (a) Providing stone pitching with one man size boulders Etc. as directed.

5.00 x 0.60 x 0.10	=	0.30 m^3
2 x 2.00 x 0.70 x 0.10	=	0.28 m^3
1 x 3.00 x 1.00 x 1.00	=	0.05 m^3
1 x 1.00 x 0.30 x 0.15	=	0.05 m^3
5.00 x 2.00 x 0.10	=	1.20 m^3
2 x 3.00 x 0.70 x 0.10	=	0.42 m^3
	=	2.35 m^3

@Rs.432.00/m^3…….. Rs.1015.20

3/26 Providing C.C. work in abutment wingwall and return wall in prop 1:3:6 with hard broken stone aggregates 40mm down graded including carriage of stones and sand within 200m complete

5.00 x 0.60 x 0.50	=	1.50 m^3
5.00 x $\frac{0.60 + 0.40}{2}$ x 0.90	=	2.25 m^3
5.00 x 0.30 x 0.40	=	0.60 m^3
1 x 3.00 x 0.15	=	0.45 m^3

1 x 1.00 x 0.30 x 1.00	=	0.30 m^3	
2 x 3.00 x 1.50 x 0.15	=	1.35 m^3	
5.00 x 2.00 x 0.15	=	1.50 m^3	
	=	7.95 m^3	
@Rs.2281.00/m^3……..			Rs.18133.95

4/25 Providing cement concrete work proportion 1:4:8 with hard broken stone aggregate 40mm, nominal size including necessary carriage of stone and sand within a distance of 200 metres and curing completed as directed.

5.00 x 0.60 x 0.10	=	0.30 m^3	
2 x 2.00 x 0.70 x 0.10	=	0.28 m^3	
2 x 3.00 x 0.70 x 0.10	=	0.42 m^3	
	=	0.92 m^3	
@Rs.2022.00/m^3……..			Rs.1860.24

5/22 Providing regular masonry in retaining walls Brest walls and wing walls etc. with hammer dressed or blunt chisel dressed stones of heavy section etc. complete as directed.

2 x 2.00 x 0.70 x 0.60	=	1.68 m^3	
2 x 2.00 x $\frac{0.70 + 0.50}{2}$ x 1.20	=	2.88 m^3	
2 x 3.00 x 1.50 x 0.55	=	4.95 m^3	
2 x 3.00 x 0.70 x 0.60	=	2.52 m^3	
2 x 3.00 x $\frac{0.70+0.50}{2}$ x 1.20	=	4.32 m^3	
	=	16.35 m^3	
@Rs.1022.00/m^3……..			Rs.16709.70

6/38 Providing shuttering with dressed planks not less than 25mm thick properly joined with battens proper level and removing the same after the concrete hardens complete as directed.

2 x 5.00 x 1.20	=	12.00 m^2	
1.00 x 0.55	=	0.55 m^2	
	=	12.55 m^2	

@Rs. 281.00/m^2…….. Rs.3526.55

9/39(a) Providing 12mm thick cement plaster including clearing the surface, curing carriage of sand within 200m, complete as directed.

2 x 5.00 x 1.20	=	12.00 m^2
1 x 5.00 x 0.40	=	2.00 m^2
2 x 3.00 x 1.50	=	9.00 m^2
2 x 3.00 x 0.60	=	3.60 m^2
1 x 1.00 x 0.60	=	0.60 m^2
1 x 1.00 x 0.30	=	0.30 m^2
2 x 3.00 x 1.20	=	7.20 m^2
2 x 3.00 x 0.50	=	3.00 m^2
2 x 2.00 x 1.20	=	4.80 m^2
2 x 2.00 x 0.50	=	2.00 m^2
	=	44.50 m^2

@Rs. 281.00/m^2…….. Rs.3827.00

Total = Rs.46069.68

Say, = Rs.46070.00

(Rupees Forty Six Thousand Seventy) only

ESTIMATE FOR CONSTRUCTION FOOTBRIDGE UNDER UMLANGIA WATERSHED IWMP – I
(The rate based as per P.W.D Schedule of rates for Roads, Bridges and E & D Works 2007 - 2008)

1/3 Earthwork in excavation etc.

Abutment: 2 x 1.20 x 1.00 x 1.00 = 2.40 m^3

@Rs.103.00/ m^3…….. Rs.247.20

2/25 Providing C.C. 1:4:8 etc ….complete as directed

Foundation: 2 x 1.00 x 0.05 = 0.10 m^3

@Rs.2022.00/ m^3…….. Rs.202.20

3/23 (a) Stone Masonry …….etc complete as directed.

Abutment: 2 x 1.20 x 1.00 x 0.95 = 2.28 m^3

2 x 1.20 x $\frac{1.20 + 0.40}{2}$ x 1.70 = 2.856 m^3

= 5.136 m^3

@Rs.1022.00/ m^3…….. Rs.5248.99

4/40 (b) Steel reinforcement…… etc complete as directed

12mm	2 x 4 x 6.00	= 48.00 x 0.89 =	42.72 Kg
	2 x 1 x 7.00	= 14.00 x 0.89 =	12.46 Kg
10mm	11 x 6.00	= 66.00 x 0.62 =	40.92 Kg
C/c	60 x 1.20	= 72.00 x 0.62 =	44.64 Kg
Post Rol.	20 x 1.00	= 20.00 x 0.62 =	12.40 Kg
Ring	2 x 41 x 0.65	= 53.30 x 0.22 =	11.73 Kg
	8 x 7 x 1.05	= 58.80 x 0.22 =	12.94 Kg
			177.81 Kg = 1.78 Qntl.

@Rs.3909.00/Qntl…….. Rs.6958.02

5/38 Providing Shuttering ……etc complete as directed.

Beam:	2 x 6.00 x 0.80	=	9.60 m^2
Slab:	1 x 6.00 x 1.20	=	7.20 m^2
		=	16.80 m^2

@Rs.281.00/ m^2…….. Rs.4720.80

6/28 Providing cement concrete in propn. 1:2:4 …etc. complete

Beam:	2 x 6.00 x 0.20 x 0.30	=	0.72 m^3
Slab:	1 x 6.00 x 1.20 x 0.10	=	0.72 m^3
Post:	8 x 0.15 x 0.15 x 1.00	=	0.18 m^3
		=	1.62 m^3

@Rs.2951.00/ m^3…… Rs.4780.62

7/3 Providing plastering ……etc complete as directed.

Post :	8 x 0.60 x 1.00	=	4.80 m^2
Floor:	1 x 1.20 x 0.60	=	7.20 m^2
		=	12.00 m^2

@Rs.86.00/ m^2…….. Rs.1032.00

8 Pipe for railing ……..etc. complete as directed.

= 4Nos 625mm G.I. Pipe

@Rs.1200.00/ each …… Rs.4800.00

Total: Rs.27989.83

Say, Rs.28000.00

(Rupees Twenty Eight Thousand) only

ESTIMATE FOR CONSTRUCTION OF PUBLIC TOILET
UNDER UMLANGIA WATERSHED (IWMP – I)
(Based as per PWD Schedule of Rate for Road and Bridges for western Circle for the year 2007 – 2008)

Center line:	2 x 4.70	=	9.40 Rm
	3 X 2.20	=	6.60 Rm
		=	16.00 Rm

1/1.1 Earthwork in/excavation in foundation trenches including dressing of sides and ramming etc as directed complete.

Post:	6 x 0.65 x 0.65 x 0.75	=	1.90 m^3
Wall Length:	16.00 – (6 x 0.65)	=12.10 Rm	
Wall:	1 x 12.10 x 0.45 x 0.30	=	1.63 m^3
Step:	2 x 1.00 x 0.60 x 0.20	=	0.24 m^3
Septic Tank:	1 x 2.66 x 1.41 x 1.25	=	4.69 m^3
		=	8.46 m^3

@ Rs.85.00/ m^3…… Rs.719.10

2/4.5 Providing 100mm thick soling with approved quality of stone including carriage ramming consolidating and filling the interstices with stone aggregate complete

Post:	6 x 0.65 x 0.65	=	2.54 m^3
Wall Length:	1 x (16.00 – (6 x 0.65)=14.50 Rm		
Wall:	1 x 14.50 x 0.45	=	6.53 m^3
Floor:	1 x 2.05 x 2.05	=	4.20 m^3
	1 x 2.05 x 2.35	=	4.82 m^3
Septic Tank:	1 x 2.60 x 1.41	=	3.67 m^3
		=	21.76 m^3

@ Rs.108.00/ m^3…… Rs.2350.08

3/2.1 Providing and laying cement concrete in Prop. 1:4:8 as directed complete.

Post:	6 x 0.65 x 0.65 x 0.10	=	2.54 m^2
Wall:	1 x 14.50 x 0.45 x 0.10	=	0.65 m^2
Step:	2 x 1.20 x 0.60 x 0.10	=	0.14 m^2
		=	1.04 m^2

@ Rs.2351.00/ m^2…… Rs.2445.04

4/6.2 Providing for steel reinforcements for RCC work including cutting, bending, cranking and tying in position with binding wire, 20 gauge complete as directed.

A. 12mm dia Tor Steel Rod

Post:	3 x 4.00 x 3.30	=	39.60 Rm
	3 x 4.00 x 3.15	=	37.80 Rm
Tie Beam:	4 x 16.00	=	64.00 Rm
Slab Beam:	2 x 4.00 x 4.70	=	37.60 Rm
	2 x 4.00 x 2.20	=	17.60 Rm
		=	196.60 Rm = 1.75 Qntl

B. 10mm dia Tor Steel Rod.

Slab –

Short Span

(i) Size:	(2.80 x 2.20) m	=	1 No
St. Bar:	1 x 15 x 2.80	=	42.00 Rm
Cr. Up bar:	1 x 4.00 x 3.00	=	12.00 Rm
Extra top over support:	1 x 2 x 3 x 0.85	=	2.10 Rm
(ii) Size:	(2.80 x 2.50) m	=	1 No
St. Bar:	1 x 17 x 2.80	=	47.60 Rm
Cr. Up bar:	1 x 5.00 x 3.00	=	15.00 Rm
Extra top over support:	1 x 2 x 4 x 0.85	=	6.80 Rm
(iii) Roof Chajja:	2 x 3.00 x 1.30	=	7.80 Rm
(iv) Roof Chajja over step:	2 x 5 x 1.20	=	7.80 Rm
(v) Septic Tank:			
Slab cover:	1 x 20 x 2.50	=	50.00 Rm
	1 x 10 x 1.25	=	12.50 Rm
Baffle Walls:	1 x 5 x 0.35	=	4.25 Rm

	1 x 2 x 6.00 x 0.60	=	7.20 Rm
	1 x 6.00 x 0.85	=	5.10 Rm
		=	227.35 Rm = 1.41 Qntl

C. 8mm dia Tor Steel Rod.

Slab -

Long Span

(i)	Size:	(2.80 x 2.20) m	=	1 No
	St. Bar:	1 x 15 x 2.20	=	33.00 Rm
	Cr. Up bar:	1 x 4.00 x 2.40	=	9.60 Rm
	Extra top over support:	1 x 4.00 x 1.10	=	4.40 Rm
		1 x 4.00 x 0.85	=	3.40 Rm
(ii)	Size:	(2.80 x 2.50) m	=	1 No
	St. Bar:	1 x 15 x 2.50	=	37.50 Rm
	Cr. Up bar:	1 x 4.00 x 2.70	=	10.80 Rm
	Extra top over support:	1 x 4.00 x 1.05	=	4.20 Rm
		1x 4.00 x 0.80	=	3.20 Rm
(iii)	Roof Chajja:	2 x 6.00 x 0.30	=	3.60 Rm
(iv)	Roof Chajja over step:	2 x 6.00 x 1.20	=	14.40 Rm
			=	124.10 Rm = 0.48 Qntl

Total of A + B + C = (1.75 + 1.41 + 0.48) = 3.64 Qntl

@ Rs.5373.00/ Qntl……. Rs.19557.72

5/6.1 Providing mild steel reinforcement for RCC work including cutting, bending, cranking and tying in position with binding wire, 20 gauge complete as directed.

Post:	3 x 21	=	63 Nos
	3 x 20	=	60 Nos
		=	123 Nos x 0.45 = 55.35 Rm
Tie Beam:	1x 102 x 0.55	=	56.10 Rm
Slab Beam:	1 x 119 x 0.55`	=	65.45 Rm
		=	176.90 Rm = 0.39 Qntl

@ Rs.4704.00/ Qntl……..…. Rs.1834.56

6/2.9 Providing shuttering including centering for flats surface such as slabs, shelves, chajja and for vertical complete as directed.

Post:	6 x 2 x 0.45	=	5.40 Rm
	6 x 2 x 0.50	=	6.00 Rm
		=	11.40 x 0.10 = 1.14 m^2
Up to P.L:	6 x 2.00 x 0.15	=	1.80 Rm
	6 x 2.00 x 0.50	=	2.40 Rm
		=	4.20 Rm x 0.75 = 3.15 m^2
P.L. to top:	3 x 2.00 x 0.15	=	0.90 Rm
	3 x 2.00 x 0.20	=	1.20 Rm
		=	2.10 Rm x 2.15 = 4.52 m^2
			1 (2.10 x 2.00) = 4.20 m^2
Tie Beam Length:			
	2 x 4.70 – (2 x 0.25)	=	8.90 Rm
	3 x 2.20 – (1 x 0.25)	=	6.35 Rm
		=	15.25 Rm
	2 x 0.10 x 15.25	=	3.05 m^2
Slab Beam Length:			
	2 x 4.70 – (2 x 0.15)	=	9.10 Rm
	4 x 2.20 – (1 x 0.15)	=	8.65 Rm
		=	17.75 Rm
	2 x 0.20	=	0.40 Rm
	1 x 0.20	=	0.20 Rm
		=	0.60 Rm x 17.75 = 10.65 m^2
Slab:	1 (2.05 x 2.05)	=	4.20 m^2
	1 (2.05 x 2.35)	=	4.82 m^2
	2 (5.00 x 0.30)	=	3.00 m^2
	2 (1.30 x 0.30)	=	0.78 m^2
	2 (1.20 x 0.60)	=	1.44 m^2
Septic Tank - Baffle Wall:	2 x 0.60	=	1.20 Rm
	2 x 0.75	=	1.50 Rm
		=	2.70 x 0.75 = 2.02 m^2
			1 (0.70 x 0.15) = 0.11 m^2

= 43.08 m^2

@ Rs.148.00/ m^2…….. Rs.6375.84

7/2.3 Providing and laying cement concrete in Prop. 1:2:4 as directed complete.

Post:	6 x 0.45 x 0.45 x 0.10	=	0 .12 m^3
	$6 \times \frac{0.45 + 0.15}{2} \times \frac{0.45 + 0.15}{2} \times 0.15$	=	0.08 m^3
	6 x 0.15 x 0.15 x 0.75	=	0.10 m^3
Tie Beam:	1 x 15.25 x 0.10 x 0.25	=	0.38 m^3
Septic Tank -			
Floor:	$1 \times 2.00 \times 0.75 \times \frac{0.08 + 0.05}{2}$	=	0.10 m^3
Cover:	1 x 2.50 x 1.25 x 0.08	=	0.25 m^3
Baffle Wall:	1 x 0.60 x 0.75 x 0.10	=	0.04 m^3
	1 x 0.75 x 0.75 x 0.10	=	0.06 m^3
		=	1.13 m^3

@ Rs.3201.00/ m^3……. Rs.3617.13

8/2.3 Providing and laying cement concrete in Prop. 1:2:4 as directed complete.

(a) Up to first floor level –

Post:	3 x 0.15 x 0.15 x 2.15	=	0.15 m^3
	3 x 0.15 x 0.15 x 2.00	=	0.14 m^3
Slab Beam:	1 x 0.20 x 0.20 x 17.75	=	0.71 m^3
Slab:	1 x 2.05 x 2.05 x 0.10	=	0.42 m^3
	1 x 2.05 x 2.35 x 0.10	=	0.48 m^3
	2 x 5.00 x 0.30 x 0.10	=	0.30 m^3
	2 x 1.30 x 0.30 x 0.10	=	0.08 m^3
	2 x 1.20 x 0.60 x 0.10	=	0.01 m^3
		=	2.29 m^3

@ Rs.3247.00/ m^3……. Rs.7435.63

9/3.9 Brick work…….. etc. complete as directed.

(a) Below Plinth –

Septic Tank:	2 x 2.50	=	5.00 Rm

	2 x 0.75	=	1.50 Rm
		=	6.50 Rm x 0.25 x 1.00 = 1.63 m^3
Steps:	2 x 1.20 x 0.60 x 0.25	=	0.36 m^3
	2 x 1.20 x 0.30 x 0.25	=	0.18 m^3
		=	2.17 m^3

@ Rs.3072.00/ m^3……. Rs.6666.24

(b) For super structure –

Walling:	1 x 2.05 x 1.95	=	4.00 m^2
	1 x 2.20 x 1.95	=	4.29 m^2
	1 x 2.05 x 1.80	=	3.69 m^2
	1 x 2.20 x 1.80	=	3.96 m^2
	2 x 1.20 x 1.80	=	4.32 m^2
	3 x 0.50 x 1.80	=	2.70 m^2
	3 x 2.05 x $\frac{1.95 + 1.80}{2}$	=	11.53 m^2
		=	34.49 m^2
Deduction for –			
Door:	2 x 1.00 x 1.95	=	3.95 m^2
	3 x 0.75 x 1.90	=	4.28 m^2
Vent:	5 x 0.30 x 0.30	=	0.45 m^2
		=	8.68 m^2
	1 (34.49 – 8.68) m^2	=	25.81m^2

@ Rs.384.00/ m^3…… Rs.9911.04

10/1.3 Earth work in excavation for dam below the lowest bed level including dewatering etc. complete as directed.

Plinth filling –

	20% of 8.45 m^3	=	1.69 m^3

@ Rs.42.00/ m^3…….. Rs.70.98

11/4.7 Providing C.C. Floor 65mm thick in prop 1:3:6 to the proper level and slope including ramming and curing complete as directed.

2 x 2.05 x 2.05	=	4.20 m^2
2 x 2.05 x 2.35	=	4.82 m^2
	=	9.02m^2

@Rs.187.00/m^2……. Rs.1686.74

12/4.10 Providing C.C. topping prop 1:1:2 to the proper level and slope including curing and trowel finished with a floating coat of cement slurry complete as directed

(a) 20mm thick topping

Vide Item No.11/4.7 = 9.02 m^2

@Rs.146.00/m^2…….. Rs.1316.92

13/2.2 Providing and laying cement concrete in Prop. 1:3:6 as directed complete.

Septic Tank: 1 x 2.66 x 1.41 x 0.15 = 0.56 m^3

@Rs.2662.00/m^3…….. Rs.1490.72

14/6.9 Providing of steel casement windows as per I.S. specification including fitting, fixing in position with legs etc, including priding and fixing handles, lacking argents etc. complete as directed.

(b) Operable with horizontal glazing bars:

Vent: 5 x 0.30 x 0.30 = 0.45 m^2

@ Rs.1009.00/m^2……..... Rs.454.05

15/7.13 Providing and fixing 38mm thick fall paneled shutter including iron hinges, tower bolts, screws etc. as

directed complete

Door	2 x 0.90 x 1.90	=	3.42 m^2
	3 x 0.65 x 1.80	=	3.51m^2
		=	6.93 m^2

@ Rs.1142.00/m^2……..... Rs.7914.06

16/7.1 Providing dressed and rebated wood works…

Chowkats:	2 x 2.00 x 1.95	=	7.80 Rm
	2 x 1.00 x 1.10	=	2.20 Rm
	3 x 2.00 x 0.75	=	4.50 Rm
	3 x 1.00 x 0.90	=	2.70 Rm
		= 17.20 Rm x 0.10 x 0.08 = 0.14 m^3	

@Rs.18136.00/m^2……. Rs.2539.04

17/4.2 Supply…….tiles……etc. complete as directed.

Toilet:	8 x 2.05	=	16.70Rm
	6 x 1.10	=	6.60Rm
		=	23.00Rm x 0.09=20.70m^2
Urinal:	2 x 0.06	=	1.20Rm
	2 x 0.70	=	1.40Rm
		=	2.60Rm x 0.0 = 2.34m^2

Deduction:

Door:	3 x 0.65 x 0.90		= (-) 1.75 m^2
			= 21.28 m^2

@Rs.830.00/m^2……. Rs.17662.40

18/ Glazing….. etc. complete as directed.

Vide Item No.14/6.9 = 0.45 m^2

@Rs.552.00/m^2…….. Rs.248.40

19/4.1 Providing 12mm thick cement plaster i/c cleaning the surface and curing complete as directed.

Plinth:	1 x 4.70	=	4.70 Rm		
	2 x 2.20	=	4.40 Rm		
		=	9.10 Rm x 0.45 =		4.10 m^2
Walling:	2 x 4.70 x 1.80			=	16.92 m^2
	2 x 4.70 x 1.95			=	18.33 m^2
	3 x 2.00 x 2.05 x $\frac{1.95 + 1.80}{2}$			=	23.06 m^2
	2 x 2.00 x 1.15 x 1.80			=	8.28 m^2
	3 x 2.00 x 1.00 x 1.80			=	10.80 m^2
Slab Beam:	1 x 17.75 x 0.40			=	7.10 m^2
Slab:	1 x 2.05 x 2.05			=	4.20 m^2
	1 x 2.05 x 2.35			=	4.82 m^2
	2 x 5.00 x 0.30			=	3.00 m^2
	2 x 1.30 x 0.30			=	0.78 m^2
	2 x 1.20 x 0.60			=	1.44 m^2
Septic Tank:	1 x 2.00	=	2.00 Rm		
	1 x 0.75	=	0.75 Rm		
		=	2.75 Rm x 1.00 =		2.75 m^2
Baffle Walls:	1 x 0.60 x 0.75			=	0.45 m^2
	1 x 0.75 x 0.10			=	0.07 m^2
	1 x 0.75 x 0.75			=	0.56 m^2
	1 x 0.75 x 0.10			=	0.07 m^2
Floor:	1 x 3.00 x 0.75			=	1.50 m^2
				=	108.23 m^2
Deduction for:					
Door:	2 x 2.00 x 1.00 x 1.95			= (-)	7.80 m^2
	3 x 2.00 x 0.70 x 1.80			= (-)	7.56 m^2
Vent:	5 x 2.00 x 0.30 x 0.30			= (-)	0.90 m^2
				=	16.26 m^2
	1 (108.23 – 16.26) m^2			=	91.97 m^2

@Rs.95.00/m^2…….. Rs.8737.15

20/10.8 Distempering with acrylic washable distemper of approved shade, 1 (one) coat…etc.

Wall:	2 x 4.70 x 1.80	=	16.92 m^2
	2 x 4.70 x 1.95	=	18.33 m^2
	3 x 2.00 x 2.05 x $\frac{1.95 + 1.80}{2}$	=	23.06 m^2
	2 x 2.00 x 1.15 x 1.80	=	8.28 m^2
	3 x 2.00 x 1.00 x 1.80	=	10.88 m^2
Slab Beam:	1 x 17.75 x 0.40	=	7.10 m^2
Slab:	1 x 2.05 x 2.05	=	4.20 m^2
	1 x 2.05 x 2.35	=	4.82 m^2
	2 x 5.00 x 0.30	=	3.00 m^2
	2 x 1.30 x 0.30	=	0.78 m^2
	2 x 1.20 x 0.60	=	1.44 m^2
		=	98.73m^2
Deduction for opening Vide item No 19/4.1		=	16.26 m^2
		=	82.47 m^2

@Rs.63.00/m^2…….. Rs.5195.61

21/10.22 Apply ready mixed paint coat of approved brand & quality as per specification etc. complete

Door:	2 x 0.90 x 1.90 x 2.60	=	8.89 m^2
Vent:	5 x 0.30 x 0.30 x 2/3	=	0.30 m^2
Charllats:	1 x 17.20 x 0.22	=	3.78 m^2
		=	12.97 m^2

@Rs.18.00/m^2…… Rs.233.46

22/10.12 Painting with best quality synthetic enamel of approved make & brand including clearing the surface etc. complete as directed.

Vide Item No.21/10.22 = 12.97 m^2

@Rs.77.00/m^2…… Rs. 998.69

23/11.2 (a) Water closet

3 Nos

@Rs.940.00/ Each …… Rs.2820.00

(b) Labour for fitting

3 Nos

@Rs.306.00/ Each …… Rs.918.00

24/11.6 (a) Urinal

2 Nos

@Rs.647.00/ Each …… Rs.1294.0

(b) Labour for fitting

2 Nos

@Rs.185.00/Each…… Rs.370.00

25/11.29 10mm dia.

10.00m

@Rs.337.00/Rm…… Rs.3370.00

26/ Fitting

(a) Plain Bend:	2 Nos	@ Rs. 211.00/Each……	Rs.422.00
(b) 100x5H/Bend:	3 Nos	@ Rs. 366.00/Each……	Rs.1098.00
(c) Socket:	2 Nos	@ Rs. 211.00/Each……	Rs.422.00
(d) Cowls:	3 Nos	@ Rs. 211.00/Each……	Rs.633.00

27/11.7 Vent Pipe

3 x 2.80Rm = 8.40 Rm

@Rs.265.00/Rm…… Rs.2226.00

28/ Soak pit

1 x 2.40 x 1.80 x 1.20 = 5.18 m^3

@Rs.427.00/m^3…… Rs.2211.86

29/11.25	Inspection pit		
	1 No		
	@Rs.394.00/Each……		Rs.394.00
		Rs.	**123427.60**
		Say Rs.	**123430.00**

(Rupees One Lakhs Twenty Three Thousand Four Hundred Thirty) only

COST NORMS FOR EARTHEN CONTOUR BUND (INTEGRATED WATERSHED MANAGEMENT PROGRAMME)
(Rate as per PWD, SOR for R&B 2008 – 2009)

A. CONTOUR BUNDS SPECIFICATION & COSTS

Top Width	=	0.5 m
Bottom Width	=	1.0 m
Height	=	0.77 m
Spacing	=	20 m
Total Length	=	5 x 100 = 500 m

1/3 (a) Earthwork in excavation etc. in ordinary soil etc.

$$500\text{m} \times \frac{0.5+1.0}{2}\text{m} \times 0.77 = 288.5\text{m}^3$$

@ Rs.26.00/ m^3 = Rs.7500.00

Total = Rs.7500.00

(Rupees Seven Thousand Five Hundred) only.

MODEL NORMS PER HECTARE FOR AGRO – HORTICULTURE WITH CITRUS FRUIT (INTEGRATED WATERSHED MANAGEMENT PROGRAMME)

Spacing - 8m x 6.3m

Plant Density - 200 Nos.

A.	Creation			
I.	Site clearance 3 mandays @ Rs.100/- per manday		-	Rs. 300.00
II.	Pit digging (pit size 0.45m x 0.45m x 0.45m) 200 Nos. @ Rs.5/- each		-	Rs.1000.00
III.	Cost of planting materials 200 Nos. @ Rs.10/- each		-	Rs.2000.00
IV.	Cost of planting 200 Nos. @ Rs. 3/- each		-	Rs. 600.00
V.	Weeding two times 20 mandays @ Rs.100/- per manday		-	Rs.2000.00
		Total	-	Rs.5900.00
B.	Maintenance			
I.	Refilling vacancy (10%)		-	Rs. 360.00
II.	Weeding two times 20 mandays @ Rs.100/- per manday		-	Rs.2000.00
III	Plant protection measures including cost of chemical		-	Rs. 340.00
		Total	-	Rs.2700.00

Grand Total A+B = Rs.5900.00 + Rs.2700.00 = Rs.8600.00

(Rupees Eight Thousand Six Hundred) only.

COST NORMS FOR IMPROVEMENT OF EXISTING PADDY FIELD (INTEGRATED WATERSHED MANAGEMENT PROGRAMME)
(Rate as per PWD, SOR for R&B 2008 – 2009)

A. MARGINAL BUND

$$50 \text{ x } \frac{0.40 + 0.70}{2} \text{ x } 0.60 = 16.5 \text{ m}^3$$

B. SHOULDER BUND

1/3 (a) Earthwork in excavation etc. in ordinary soil.

$$10 \text{ Nos. x } 50 \text{ x } \frac{0.50 + 0.30}{2} \text{ x } 0.50 = 100.00 \text{ m}^3$$

Land leveling L.S = $\frac{50.00 \text{ m}^3}{166.5 \text{ m}^3}$

@ Rs.26.00/- per m^3 = Rs.4329.00
Total = Rs.4329.00

Say Rs.4,300.00

(Rupees Four thousand three hundred) only.

COST NORMS FOR PERIPHERAL BUNDING/EARTHEN PERIPHERAL BUND WITH LIVE VEGETATION PER METRE
(INTEGRATED WATERSHED MANAGEMENT PROGRAMME)
(Rate as per PWD, SOR for R&B 2008 – 2009)

A. PERIPHERAL BUNDS SPECIFICATION & COSTS

Top Width	=	1.0 m
Bottom Width	=	1.2 m
Height	=	1.0 m

1/3 (a) Earthwork in excavation etc. in ordinary soil etc.

$$1.0\text{m} \times \frac{1.0+1.2}{2}\text{ m} \times 1.0\text{m} = 1.10\text{m}^3$$

@ Rs.39.00/ m^3 = Rs.43.00

2. Supplying and planting of live hedges on toe of bunds with local shrubs/cutting etc. per Running metre in L.S = Rs. 7.00

Total = Rs.50.00

(Rupees Fifty) only.

MODEL NORMS PER HECTARE FOR AFFORESTATION WITH PINE/ NON-PINE (INTEGRATED WATERSHED MANAGEMENT PROGRAMME)

Spacing 6m x 5.5m, Plant Density – 300 Nos.

B.	Creation			
J.	Jungle clearance etc. 5 mandays @ Rs.100/- per manday		-	Rs. 500.00
II.	Pit digging (pit size 0.30m x 0.30m x 0.30m) 300 Nos. @ Rs.4/- each		-	Rs. 1200.00
III.	Cost of planting materials 300 Nos. @ Rs.8/- each		-	Rs. 2400.00
IV.	Cost of planting 300 Nos. @ Rs. 2/- each		-	Rs. 600.00
V.	Weeding two times 20 mandays @ Rs.100/- per manday		-	Rs. 2000.00
VI.	Fire protection measures 5 mandays @ Rs.100/- per manday		-	Rs. 500.00
		Total	-	Rs. 7200.00
C.	Maintenance			
I.	Vacancy refilling (10%)		-	Rs. 400.00
II.	Weeding two times 20 mandays @ Rs.100/- per manday		-	Rs. 2000.00
III.	Fire protection measures 5 mandays @ Rs.100/- per manday		-	Rs. 500.00
		Total	-	**Rs. 2900.00**

Grand Total (A+B) Rs.7200.00 + Rs.2900.00 = Rs.10100.00

(Rupees Ten thousand one hundred) only.

MODEL NORMS PER HECTARE FOR IMPROVEMENT OF DEGRADED FOREST (INTEGRATED WATERSHED MANAGEMENT PROGRAMME)

C.	Creation		
K.	Site clearance 3 mandays @ Rs.100/- per manday	-	Rs. 300.00
II.	Pit digging (pit size 0.30m x 0.30m x 0.30m) 100 Nos. @ Rs.4/- each	-	Rs. 400.00
III.	Cost of planting materials 100 Nos. @ Rs.8/- each	-	Rs. 800.00
IV.	Cost of planting 100 Nos. @ Rs. 2/- each	-	Rs. 200.00
V.	Round Weeding around the plant four times 5 mandays @ Rs.100/- per manday	-	Rs. 500.00
VI.	Fire protection measures 4 mandays @ Rs.100/- per manday	-	Rs. 400.00
	Total	-	Rs.2600.00
B.	Maintenance		
I.	Refilling vacancy (10%)	-	Rs. 100.00
III.	Round Weeding around the plant four times 5 mandays @ Rs.100/- per manday	-	Rs. 500.00
III.	Fire protection measures 4 mandays @ Rs.100/- per manday	-	Rs. 400.00
	Total	-	Rs.1000.00

Grand Total A+B = Rs.2600.00 + Rs.1000.00 = Rs.3600.00

(Rupees Three thousand six hundred) only.

MODEL NORMS PER HECTARE OF STRIP PLANTATION TWO ROWS ALONG THE BOUNDARY WITH FAST GROWING SPECIES (INTEGRATED WATERSHED MANAGEMENT PROGRAMME)

Spacing 6m from plant to plant, 2.5m from row to row

D.	Creation		
L.	Site clearance 2 mandays @ Rs.100/- per manday	-	Rs. 200.00
II.	Pit digging (pit size 0.30m x 0.30m x 0.30m) 134 Nos. @ Rs.4/- each	-	Rs. 536.00
III.	Cost of planting materials 134 Nos. @ Rs.8/- each	-	Rs.1072.00
IV.	Cost of planting 134 Nos. @ Rs. 2/- each	-	Rs. 268.00
V.	Round Weeding around the plant two times 6 mandays @ Rs.100/- per manday	-	Rs. 600.00
VI.	Fire protection measures 4 mandays @ Rs.100/- per manday	-	Rs. 400.00
	Total	-	Rs.3076.00
B.	Maintenance		
I.	Refilling vacancy (10%)	-	Rs. 190.00
IV.	Round Weeding around the plant two times 6 mandays @ Rs.100/- per manday	-	Rs. 600.00
III.	Fire protection measures 4 mandays @ Rs.100/- per manday	-	Rs. 400.00
	Total	-	Rs.1190.00

Grand Total A+B = Rs.3076.00 + Rs.1190.00 = Rs.4266.00

(Rupees Four thousand two hundred sixty six) only.

ESTIMATE FOR CONSTRUCTION PROTECTION WALL
UNDER UMLANGIA WATERSHED IWMP – I
(The rate based as per P.W.D Schedule of rates for Roads, Bridges and E & D Works 2007 - 2008)

1/3 Earthwork in excavation for bridges and culvert below the lowest bed level including dewatering and bailing out water in order to keep the foundation trenches of water and protecting the sides of foundation etc. complete

20.00 x 0.90 x 0.70 = 12.60 m^3

@ Rs. 53/-m^3…… Rs 667.80

2/25 Providing C.C. work prop 1:4:8 with hard broken stones aggregates 40mm nominal sizes including necessary carriage of stones and sand within a distance 200m complete and curing.

20.00 x 0.90 x 0.10 = 1.80 m^3

@ Rs. 2022/-m^3…… Rs.3639.60

5/22 Providing stone masonry work in wing wall/guide wall with harmer dressed stone of heavy section 25 x 25 x30cm complete as directed.

$20.00 \times \frac{0.90 + 0.50}{2} \times 2.00$ = 28.00 m^3

20.00 x 0.90 x 0.60 = 10.80 m^3

= 38.80 m^3

@ Rs. 1022/-m^3…… Rs.39653.60

Total = Rs.43961.00

Say, Rs.44000.00

(Rupees Forty Four Thousand) only

MODEL ESTIMATE FOR CONSTRUCTION OF C.C.CHECKDAM

(The rate based as per P.W.D. Schedule of rates for Roads, Bridges and E&D Works 2008-2009)

1/5 (a) Earthwork in excavation for abutment and wing walls of bridges and culverts, up to the desired founding level including dewatering, bailing out of water and protecting the foundation sides by adequate shoring, scaffolding and including levelling the foundation longitudinally and transversely etc.

1 x 8.00 x 1.00 x 0.50	=	4.00 m^3	
1 x 7.00 x 1.50 x 0.30	=	3.15 m^3	
		7.15 m^3	
		@ Rs. 103.00/m^3	Rs. 736.45

2/26 Providing cement concrete work in proportion 1:4:8 with hard broken stone aggregates 40mm down graded, including necessary carriage of stone and sand within a distance of 200m and curing, complete as directed.

1 x 8.00 x 1.00 x 0.10	=	0.80 m^3	
		@ Rs. 2022.00/m^3	Rs. 1617.60

3/41 (a) Providing shuttering with dressed planks not less than 25mm thick properly joined including battens, props to the proper level and removing the same after the concrete hardened.

1 x 8.00 x 1.10	=	8.80 m^2	
1 x 8.00 x 1.20	=	9.60 m^2	
2 x 3.50 x 0.40	=	2.80 m^2	
1 x 7.00 x 0.05	=	0.35 m^2	
		21.55 m^2	
		@ Rs. 295.00/m^2	Rs. 6055.55

4/28 Providing cement concrete work in abutments, wing walls and return walls in proportion 1:3:6 with hard broken stone aggregates 40mm down graded including necessary carriage of stone and sand within a distance of 200m etc.

1 x 8.00 x 1.00 x 0.40	=	3.20 m^3	
1 x 8.00 x ((1.00 + 0.50)/2) x 1.10	=	6.60 m^3	
2 x 1.50 x 0.50 x 0.40	=	0.60 m^3	
1 x 7.00 x 1.50 x 0.10	=	1.05 m^3	
		11.45 m^3	
		@ Rs. 2281.00/m^3	Rs. 26117.45

5/24 Providing stone pitching with one man size boulders not less than 25cm x 25cm x 30cm long including filling the interstices with spoils and carriage of stone within a distance of 200m complete as directed.

1 x 7.00 x 1.50 x 0.25	=	2.625 m^3	
		@ Rs. 432.00/m^3	Rs. 1134.00

6/27 Providing 12mm thick cement plastering including cleaning urface, curing and carriage of sand within 200m complete.

1 x 8.00 x 1.10	=	0.60 m^2	
1 x 8.00 x 1.20	=	9.60 m^2	
2 x 3.50 x 0.40	=	2.80 m^2	
1 x 8.00 x 0.50	=	4.00 m^2	
1 x 7.00 x 1.50	=	10.50 m^2	
		@ Rs. 93.00/m^2	Rs. 3070.20
		TOTAL	Rs. 38750.00

Say (Rupees Thity Eight Thousand Seven Hundred Fifty) only

ESTIMATE FOR CONSTRUCTION WATER HAVESTING STRUCTURES UNDER UMLANGIA WATERSHED IWMP – I
(The rate based as per P.W.D Schedule of rates for Roads, Bridges and E & D Works 2007 - 2008)

1/3 Earthwork in excavation for bridges and culvert below the lowest bed level including dewatering and bailing out water in order to keep the foundation trenches of water and protecting the sides of foundation etc. complete

15.00 x 1.00 x 0.50	=	7.50 m^3
4.40 x 1.50 x 0.35	=	2.31 m^3
1.90 x 0.20 x 0.30	=	0.12 m^3
	=	9.93 m^3

@ Rs. 103/-m^3…… Rs 1022.79

2/25 Providing C.C. work prop 1:4:8 with hard broken stones aggregates 40mm nominal sizes including necessary carriage of stones and sand within a distance 200m complete and curing.

15.00 x 1.00 x 0.10	=	1.50 m^3

@ Rs. 2022/-m^3…… Rs 3033.00

3/38 Providing shuttering for dam wall with dressed planks not less than 25mm thick properly joined with battens of minimum sizes 75mm x 100mm at a spacing of not more than 600mm centre to centre to the proper level including covering in the contact face with polythene sheet and removing the same after the concrete hardens complete as directed.

15.00 x 1.10	=	16.50 m^2
15.00 x 1.20	=	18.00 m^2
2 x 11.00 x 0.40	=	8.80 m^2
4 x 0.40 x 0.30	=	0.48 m^2
4 x 1.20 x 0.30	=	1.44 m^2
4 x 1.70 x 0.30	=	2.04 m^2
2 x 1.20 x 0.20	=	0.48 m^2
2 x 0.40 x 0.20	=	0.16 m^2
2 x 4.40 x 0.20	=	1.76 m^2
	=	49.66 m^2

@ Rs. 281/-m^2…… Rs 13954.46

4/26 Providing cement concrete work in abut man, wing wall, and return wall in proportion 1:3:6 with hard broken stone aggregates 40mm down graded including necessary local carriage of stone aggregates, sand within 200m and complete as directed.

15.00 x 1.00 x 0.40	=	6.00 m^3
15.00 x $\frac{1.00+0.50}{2}$ x 1.10	=	12.38 m^3
2 x 5.50 x 0.50 x 0.40	=	2.20 m^3
2 x 1.70 x 0.50 x 0.20	=	0.34 m^3
2 x 1.20 x 0.30 x 0.20	=	0.14 m^3
2 x 0.40 x 0.30 x 0.20	=	0.05 m^3
1 x 1.90 x 0.50 x 0.20	=	0.19 m^3
1 x 4.40 x 1.50 x 0.10	=	0.81 m^3
	=	22.11 m^3

@ Rs. 2281.00/-m^3…… Rs 50432.91

5/24 Providing stone pitching with one man size boulder not less than 25 x 25 x30cm including filling the interstices with spoil and carriage of stone within a distance of 200m complete as directed.

4.40 x 1.50 x 0.25	=	1.65 m^3

@ Rs. 432.00/-m^3..... Rs 712.80

6/39 Providing 12mm thick cement plaster including clearing the surface, curing carriage of sand within 200m, complete as directed.

15.00 x 1.10	=	16.50 m^2
15.00 x 1.20	=	18.00 m^2
2 x 2 x 5.50 x 0.40	=	8.80 m^2
4 x 1.70 x 0.30	=	2.04 m^2
4 x 0.40 x 0.30	=	0.48 m^2
2 x 1.20 x 0.20	=	0.48 m^2
2 x 0.40 x 0.20	=	0.16 m^2
2 x 4.40 x 0.20	=	1.76 m^2
	=	48.22 m^2

@ Rs. 86/-m^2..... Rs 4146.92

Total = Rs.73302.88

Say, = Rs.73300.00

(Rupees Seventy Three Thousand Three Hundred) only

ESTIMATE FOR CONSTRUCTION OF FARM POND

(The rate based as per M.P.W.D Schedule of rates for Roads, Bridges and E & D Works 2008 - 2009)

1/3 (d) Earthwork in excavation to the proper grade including light dressing, providing cambering and superlative as directed and removal of spoils up to 30m lead and all lift.
Soft or laminated rock or medium shale.

$$V = \frac{1.20}{6} \{ 20 \times 10 + 18.8 \times 8.8 + 4 (19.4 \times 9.40) \}$$

$V = 219.00\ m^3$ @ Rs.53.00/m^3 Rs. 11607.00

2/14 (ii) Cutting road side drain including dressing, grading and removal of spoils up to 15.0 m complete as directed.
In ordinary soil, comprising of black cotton soil, green vegetation soil, red soil, loamy soil, clay, soft shale and loose moorum etc.

126 Rm @ Rs.35.00/Rm Rs. 4410.00

TOTAL: Rs.16017.00

Say Rs.16, 000.00

(Rupees Sixteen thousand) only.

COST NORMS FOR RUN – OFF DISPOSAL CHANNEL/DIVERSION DRAIN
(INTEGRATED WATERSHED MANAGEMENT PROGRAMME)

(Rate as per PWD, SOR for R&B 2008 – 2009)

Specification - Top Width - 1.00m
Bottom Width - 0.70m
Depth - 1.2m

1/3 (a) Earthwork in excavation etc. in ordinary soil.

$1m \times \frac{1.00 + 0.7}{2} \times 1.2m = 1.02\ m^3$

@ Rs.26.00/- per m^3 = Rs.26.52
Total = Rs.26.52

Say Rs.26.00

(Rupees Twenty six) only.

JOINT DORBAR

DONGKI – INGDING, MAWPAT, PATHAR LYNDAN, LAD PNAR RIM, LAD PNAR THYMMAI, MAWPIAH, UMNIANGRIANG

NO OBJECTON CERTIFICATE

Ka Joint Dorbar jong ki Hynniew Shnong ki ba hap hapoh ka Umlangia IWMP kaba la shong ha ka 28th December 2009 da kawei ka jingmut la rai ban ia pdiang ia ka jingpyntrei ia kane ka Scheme lynghi ka Soil & Water Conservation Department na ka bynta ka roi ka par jong kane ka thain baroh kawei.

Ngi kular ruh ba ngin iatrei lang na ka liang ka Shnong jong ngi bad ki briew napoh ka Office jong phi.

	Signature & Seal
1. Sordar, Dongki – Ingding	
2. Sordar, Pathar Lyndan	Sordar Shnong Pathar Lyndan
3. Sordar, Lad Pnar Rim	(Shri. P. Basaiawmoit) Sordar Shnong Lad Pnar Rim
4. Sordar, Lad Pnar Thymmai	Sordar Shnong Ladpnar Thymmai
5. Sordar, Mawpat	
6. Sordar, Mawpiah	Sordar Shnong Mawpiah.
7. Sordar, Umniangriang	Sordar Shnong Umniangriang