

HIMACHAL PRADESH FOREST DEPARTMENT

RECASTING OF CATCHMENT AREA TREATMENT PLAN FOR SATLUJ BASIN OF HIMACHAL PRADESH

NATHPA JHAKHARI PROJECT (RAMPUR DIVISION)



NAIK ENVIRONMENT RESEARCH INSTITUTE LTD.
(NERIL)



RECASTING OF CATCHMENT AREA TREATMENT PLAN FOR SATLUJ BASIN OF HIMACHAL PRADESH

NATHPA JHAKHARI PROJECT (RAMPUR DIVISION)

Chapter	Content	Page No
1.	Introduction	1.1 to 1.10
2.	Over View	
	Consolidate	2.1
	summary	2.2
	Year wise Abstract	2.3.1 to 2.3.10
3.	Annual phasing Details	
	Afforestation Measures	3.1 to 3.3
	Soil & Water Conservation Endeavors	3.4 to 3.5
	Payment for Environmental Services	3.6
	Research, Training & Capacity build up, Publicity & Awareness, Documentation	3.6
	Infrastructure built up & Forest Protection	3.7 to 3.8
	Wild Life Measures	3.9
	Monitoring & Evaluation	3.9
	Institutional / Departmental Charges	3.9
	Contingencies	3.9
4.	Detailed data of All 9 MWS	4.1.1.1 to 4.9.3.5
	Annexure	
	Appendix	



NAIK ENVIRONMENT RESEARCH INSTITUTE LTD.



CHAPTER I

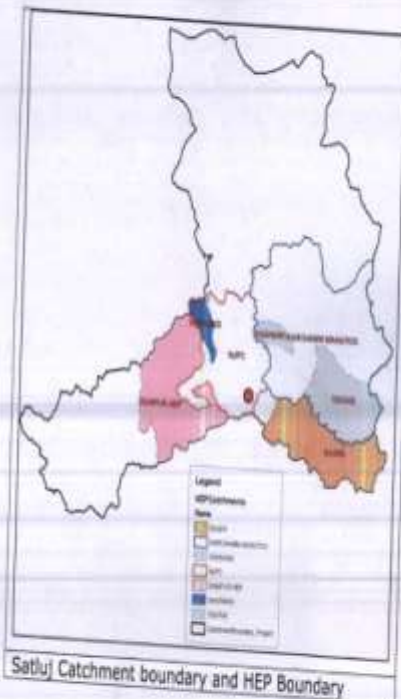
INTRODUCTION

CHAPTER 1: BACKGROUND FOR NATHPA JHAKHRI HYDRO ELECTRIC PROJECT

The Catchment Area treatment Plan for Nathpa Jhakhri Hydro Electric Project was prepared during May 2002. The Plan was prepared for a period of 10 years starting from 2001-02 to 2010-11 with total financial outlay of Rs. 29.57 crore (Rs. 12.55 crore in Kinnaur, Rs. 7.97 crore in Rampur and Rs. 9.05 crore in Wildlife Division- Sarahan). The actual implementation of the CAT Plan was started 2002-03 onwards.

The user agencies had released the first installment of the CAT Plan amount after the approval of CAT Plan and the funds were deposited in the Ad-hoc CAMPA (Compensatory Afforestation Fund Management and Planning Authority), which was not operational. Later, after the constitution of state CAMPA, the funds are now being released since 2009 onwards gradually to the state CAMPA, enabling the implementation of CAT Plans.

This time gap in the preparation of CAT Plan and their actual implementation has rendered the original CAT Plan document out dated and impractical to execute. Moreover, many changes have also taken place during the last few years because of the altered ground realities, review of technical / administrative decisions and new advances/ techniques in the field of soil and water conservation has necessitated the recasting of this CAT Plan.



About Comprehensive Catchment Area Treatment Plan:

NERIL was awarded the work of Preparation of Comprehensive Catchment Area Treatment (CCAT) Plan for the entire Satluj basin on 25th March, 2009 and actual work commenced on 1st April, 2009.

The Satluj Basin has a total catchment area of 20,000 sq. km. NERIL's study area stretched from Bilaspur district up to the Spiti valley, i.e. the Satluj basin above Kol Dam and its tributary-Spiti. The spatial unit of this study was Micro-watershed. The study area comprised of 179 micro-watersheds from Kol Dam to Wangtoo and 31 Subcatchments from Wangtoo to Spiti which were not demarcated further into micro-watersheds. Hence, the Subcatchments have been considered as a unit of study for such regions. NERIL team of field investigators have visited all the MWSs and SCs. (both inhabited and un-inhabited) to collect primary and secondary data w.r.t the demography, topography, plantation, status of current treatment measures, pressures on the MWS from various sources etc. Similarly, socio-economic data was collected through PRA's and RRA's by NERIL's team of field investigators and experts. GPS co-ordinates and photographs of all the locations visited were taken. Further, this CCAT Plan was completed and submitted to the H.P Forest Department in May, 2011.

On the basis of guidelines followed while preparing the CCAT Plan for Satluj basin, the H.P. Forest department has allotted the work of recasting of Annual Action Plans of the ongoing CAT Plans, including

Nathpa Jhakri Hydro Electric Project to NERIL. The task of recasting is based on ground realities and incorporates the recent advances in silt management and consonance with the stipulations on the project of Catchment Area Treatment Plan. The main objective for recasting of Action Plan is prioritizing the most cost effective vegetative measures and Bio-engineering methodology rather than the conventional approach of using civil structures. In addition, target oriented plantation to encourage moisture retention, reduce soil erodibility and improve soil and water conservation measures is also proposed.



INTRODUCTION

The Catchment Area of Nathpa Jhakhi Hydro Electric Project includes part of Rampur Range and Sarahan Range of Rampur Forest Division along with Nichar, Bhawanagar, Kilba and part of Kalpa Range in Kinnaur Forest Division and Rupi and Katgaon Ranges of WL Division Sarahan. The division wise total CAT Plan outlay and achievements up to 31/3/2011 including approved APO for the year 2011-12 is given as under. However, Division wise and year wise physical and financial consolidated progress report/ achievements is also attached as **APPENDIX**.

Sr. No.	Name of division	CAT Plan outlay	Achieved up to 31/3/2011 including APO for 2011-12	Balance
1.	Rampur	79706275	65964263	13742012
2.	Kinnaur	125527375	81564904	43962471
3.	WL Sarahan	90481520	50096000	40385520
	Total	295715170	197625167	98090003

The Balance amount of Nathpa Jhakhi Hydro Electric Project CAT Plan has been recasted on the basis of micro watersheds. The Nathpa Jhakhi HEP CAT plan is covered under two Forest Divisions and one WL Division which spread over 24 Subcatchments/Micro watersheds (excluding WL Division Sarahan).

A. The division wise Microwatersheds / Sub catchments are given as under

a) In Rampur Division (9 Microwatersheds)

Sq2a, Sq2b, Sq2c, Sq3a, Sq3b, Sq3c, Sq3f, Sq4a and Sq4b

b) In Kinnaur Division (12+3=15 Microwatersheds / sub catchments)

Sq4c, Sq4d, Sq5a, Sq5b, Sq5d, Sq5h, SC-01, SC-02, SC-03, SC-04, SC-10 and Part of SC-12 and inhibited MWS- Sq5c, Sq5f and Sq5g.

B. The following Forest Ranges are covered under the CAT-Plan

a) Rampur Forest Division

Rampur (Part) and Sarahan (Part)

b) Kinnaur Forest Division

Bhawanagar, Nichar, Kilba, Kalpa (Part).

c) WL Division Sarahan

Rupi and Katgaon



C. Division wise Panchayats falling under NJPC CAT plan are as under:

SCOPE OF WORK AND METHODOLOGY

As per guideline issued from the H.P. Forest department, the scope of work and task involving the recasting of balance (unspent) amount of the Nathpa Jhakhi Hydro Electric Project CAT Plan is as under:



1) Preparation of GIS baseline data available from the Comprehensive CAT (CCAT) Plan of Satluj River basin after proper delineation of Sub catchments/Micro watersheds falling in Nathpa Jhakhi Hydro Electric Project CAT Plan.

2) To enhance the base layer data of comprehensive CAT Plan by creation of new layers like:

a) Rampur Division.

Sarahan, Tayawal, Shahdhar, Kinhu, Dofda, Gopalpur, Dhar Gaura, Jhakhi, Richol (9 Panchayats)

b) Kinnaur Division.

Taranda, Bari, Ponda, Sungra, Nichar, Panvi, Jani Ramni, Kilba, Chagaon, Urni, Meeru, Yulla, (12 Panchayats)

c) WL Division Sarahan

Rupi, Chhota Kamba, Nathpa, Katgaon, Kafnu (5 Panchayats).



- Nurseries
- Forest roads
- Forest buildings, Rest houses
- Treatment already done/existing



- Future treatments proposed

All the above details will be sub catchment/ micro watershed specific.

3) Field reconnaissance

- a) NERIL has carried out thorough field reconnaissance of each micro watershed/subcatchment for existing works by taking their GPS coordinates along with their photographs. Also suggested scope for further improvement through Bio-engineering techniques which has been prescribed on site specific prescription under future management / treatment Plan accordingly.
- b) Prescription of the new works after extensive field visits / survey of the micro watershed. Further addition and deletion of the unexecuted works of the existing Nathpa Jhakhri Hydro Electric Project CAT Plan.
- c) After that, the works proposed have been prioritized and suitably spread spatially micro watershed/subcatchment wise over the next 10 years.
- d) More emphasis has been given on the cost effective Bio-engineering methodology and less on civil/stone structures.
- e) Further no civil works has been proposed beyond 30° - 35° slope.

4) Emphasis on Nursery management

Almost all the nurseries that fall in the Nathpa Jhakhri Hydro Electric Project CAT Plan have been visited during intensive field survey and site specific prescriptions for their improvement have been prescribed. Further suitable species to be raised in the nurseries has also been prescribed for Afforestation, including suitable bio engineering species for the areas falling in each micro watershed in each nursery. Improvement of infrastructure in each nursery like Water storage, Vermi compost etc. wherever required has also been suggested under future planning.



METHODOLOGY ADOPTED FOR RE-CASTING

To achieve the scope of work assigned to the consultant, following methodology has been adopted for recasting the Nathpa Jhakri Hydro Electric Project CAT Plan.

1. Sub Catchment wise planning which is further described under three heads:
 - Introduction of sub catchment.
 - Past management.
 - Future management/planning.
2. Reconnaissance/ Intensive Field Survey of each sub-catchment along with concerned implementing field staffs of the H.P. Forest Department.
3. Panoramic view of the subcatchment.
4. Identification of boundaries of the sub catchment.
5. Location in the Toposheets (MAP).
6. Works executed under concerned CAT Plan with GPS coordinates along with photographs of the works.
7. Works to be executed under different components along with GPS coordinates and photographs.

A brief account of each microwatershed/ sub catchments described under three heads is given as under:

a) Introduction of subcatchment:

The introductory part of the subcatchment contains the administrative/demographic, land use pattern, biodiversity and Socio-economic details along with GPS co-ordinates and panoramic view of the subcatchment.



b) Past management

The past management has been described under main components like soil conservation measures, Afforestation, Infrastructure development etc. of the old CAT Plan along with GPS co-ordinates, photographs and overlay on GIS baseline data.

c) Future management

The future management has been described under these nine main components as per guidelines issued by the Government of Himachal Pradesh as per **Annexure A**.



1. AFFORESTATION MEASURES:

The Afforestation measures has been categorized in 4 sub-components

a) Normal Afforestation:



Sr. No	Item	Percentages
1.	Afforestation, Maintenance, Pastures & Nurseries*	20
2.	Soil and water conservation measures*	25
3.	PES including study and its implementation	10
4.	Research, Capacity build-up, publicity	5
5.	Institutional charges/Departmental charges	7
6.	Monitoring & Evaluation	3
7.	Wildlife related interventions	5
8.	Infrastructural build-up	15
9.	Contingencies	10
	Total	100

*In CAT plans involving Protected Areas, these funds (Sr .no. 1 & 2) be re-allocated for Wild life activities, keeping in view specific requirements of the area.

This recasting plan aims at achieving the scope of work based on ground-realities and detail site specific prescription along with their GPS co-ordinates and photographs. In addition, division wise financial forecasting is done subcatchmentwise.

The technical description of the CAT Plan main components is as follows:

Under this component three strand barbed wire fencing with creosoted wooden fence posts and two layers of live-hedge plants to reinforce fencing has been prescribed with planting of 1100 plants per Ha out of which at least 20% would be trees of medicinal value and 10% of wild fruits species to maintain diversity.



b) Enrichment planting:

Under this component the area falling in degraded forest and improvement of the forest stocking has been proposed which aims at planting 800 tall plants per notional Ha.

c) Energy plantation:

The areas falling around habitations in small patches are proposed to be taken under this component. Five strand barbed wire fencing- 3 strand and 2 cross wire; with creosoted wooden fence posts and two layers of live hedge to reinforce fencing have been prescribed with planting of 5000 tall plants of fuel and fodder value per ha (spacing 2m x 1m).

d) Measures to handle Invasive species:

Under this component, the area infested with invasive weeds like lantana is proposed to be undertaken. The invasive weeds are to be eradicated and planted with 800 No of plants per Ha. (i.e. 300 Nos. tall plants and 500 Nos. bamboo) including sowing of native grass seeds. Extensive use of local grass to be broadcast over the area being treated is recommended. A one and half to two meter wide strip of lantana is to be retained along the periphery of the area being treated to obviate the need to do any fencing. Gaps, if any, in this protective strip be filled with stacks of cut lantana / live hedges. Involvement of User Groups for maintenance of such areas should be encouraged.

NOTE: In view of the recommendations/ suggestions to improve the executing of CAMPA works given wide APCCF (CAT and ES) H.P. no. - FT CAMPA/2010/CAT Plan/General Dated: 2/8/2011 (Refer Annexure B) & further as per office letter from chair person, executive committee HP state CAMPA-Cum-PCCF HP dated 21/01/2012 (Refer Annexure C).

1. Five years maintenance as per old practice prevalent in the forest department has been prescribed under Afforestation scheme.
2. The cost norms for each component of Afforestation measures listed above has been prepared on the basis of prevalent schedule of works and labour rates for Rampur circle. Refer Annexures 1 -10.
3. Provision for fencing under enrichment component has also been made on the lines of departmental schemes for enrichment component being implemented by the forest department.
4. The norms/ Schedule of Rates approved by the Competent Authority has been applied in the Recast CAT Plan.
5. Future escalation in the wages and unforeseen eventualities will be met with from the Contingencies component.



6. The proposed activities in the CAT Plan can be changed with prior approval of the Competent Authority as and when required.

2. SOIL AND WATER CONSERVATION MEASURES:

The soil and moisture conservation measures works have been prescribed and described under the following categories:

- a) Moisture retentive operations: staggered contour trenching (priority activity), bio-engineering species planting.
- b) Contoured live hedges.
- c) Vegetative structures- fascines, brush-wood check dams, bamboo crib etc. wherever applicable.
- d) Civil structures- masonry crate wire check dams, masonry dams, (primarily dry stone), check/protection walls.
- e) Drainage line treatment and landslide control, with site specific estimates, using interventions mentioned in a-d above.

The cost norms of soil and water conservation endeavors have also been prepared on the basis of prevalent schedule of work and labour rates for Rampur circle, **Annexures 1-10**.



3. PAYMENTS FOR ENVIRONMENTAL SERVICES:

- a) Soil conservation works in private land

The site specific financial outlay for the private areas for treatment has been prescribed. The amount kept for treatment will be released to the individual after completion/ treatment carried out by the owners of the land.

- b) The provision kept for JFMC'S for assisting the forest staff in each microwatershed / sub catchment under Forest protection measures will be released only after the entire satisfaction of forest staff, in case the JFMCs actively associate and prevent the forest offence successfully.

- c) With regard to distribution of GI pipe for hoisting the flags and/or poles of non-scheduled species to the individuals/households as per the list provided by the Panchayat. It will be done through concerned Panchayat in the presence of forest staff by keeping proper record. In case improper utilization of the materials, the concerned Panchayat will be responsible. It will be one time provision.





7. WILDLIFE MEASURES:

In view of the decision taken in the meeting held on 29.02.2012 at Rampur under the Chairmanship of Nodal Officer State Campa-cum-Conservator of Forests, CAT Plans, it has been decided that recasting pertaining to WL portion will also be done by NERIL. Therefore, the Recasting work for the same has been done and compiled in the Recast CAT Plan of NIHEP.

The recast output of Annual Action Plan of Nathpa Jhikhri Hydro Electric Project CAT Plan has been thoroughly discussed with the implementing divisions along with the concerned field staff in their respective division on the following dates:

Rampur division-18th Aug 2011

Kinnair division-20th Aug 2011

Wild Life Division Sarhan-9th April 2012

8. INFRASTRUCTURE BUILD UP AND FOREST PROTECTION:

The provision for infrastructure build up has been made on site specific basis after taking their GPS coordinates along with their photographs. With regard for distribution of non conventional energy



and fuel saving devices in catchment area on cost sharing basis, 50% provision has been made for the identified families, the list of which has been made available by the concerned forest staff.

The provision for distribution of LPG and Pressure cooker will be one time only and the mechanism for their distribution will be through concerned Panchayat in presence of forest staff by keeping proper record.



CHAPTER II

OVER VIEW

CONSOLIDATE

CONSOLIDATE NJ HEP

Sr. No.	Name of division	CAT Plan outlay	Achieved up to 31/3/2011 including APO for 2011-12	Balance
1.	Rampur	79706275	65964263	13742012
2.	Kinnaur	125527375	81564904	43962471
3.	WL Sarahan	90481520	50096000	40385520
	Total	295715170	197625167	98090003



SUMMARY

Annual phasing summary of NHEP CAT Plan Rampur Division (All amount in Lacs)													
Name of Component	Balance Amount to be released	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total	Balance
Afforestation Measures	30.48	3.00	21.43	3.34	1.14	0.71	0.40	0.38	0.14	0.00	0.00	30.48	0.00
Soil & Water Conservation Endeavors	34.36	0.00	22.86	11.50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	34.36	0.00
Payment for Environmental Services	13.74	0.00	1.21	1.25	1.50	2.70	2.40	2.25	2.00	0.78	0.00	13.74	0.00
Research, Training & Capacity build up, Publicity & Awareness, Documentation	6.87	0.00	0.00	0.00	0.00	2.87	2.00	2.00	0.00	0.00	0.00	6.87	0.00
Infrastructure built up & Forest Protection	17.61	0.00	3.00	14.61	0.00	0.00	0.00	0.00	0.00	0.00	0.00	17.61	0.00
Wild Life Measures	6.87	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	6.87
Monitoring & Evaluation	4.12	0.00	0.00	0.00	0.00	0.00	2.17	2.00	0.00	0.00	0.00	4.12	0.00
Institutional / Departmental Charges	9.62	0.00	5.45	0.65	0.65	0.55	0.45	0.45	0.37	0.45	0.40	9.62	0.00
Contingencies	13.74	0.00	5.65	3.60	0.45	0.80	0.90	0.80	0.40	0.25	0.89	13.74	0.00
Total	137.61	3.00	59.40	34.71	3.74	7.10	6.31	7.83	3.11	1.41	1.20	130.90	6.87

* Amount kept under Component Wild Life Measures has been transferred to WL Division



YEAR WISE ABSTRACT

Abstract action plan of NJHEP for First year (2011-12)

Name Of Component	Name Of Division	Physical Targets (Ha/Nos)							Total Financial (In Lacks)	
		Maintenance								
		New	I Year	II Year	III Year	IV Year	V Year	Total		
Afforestation Measures	(a) Normal Afforestation (in Ha)	Kinnaur	0	0	0	0	0	0	0	0.00
	(b) Enrichment (in Ha)	Kinnaur	0	0	0	0	0	0	0	0.00
	(1A)Nurseries (locations In Nos)								0	0.00
	(a) Normal Afforestation (in Ha)	Rampur	0	0	0	0	0	0	0	0.00
	(b) Enrichment (in Ha)	Rampur	0	0	0	0	0	0	0	0.00
	(1A)Nurseries (locations In Nos)								5	3.00
Soil & Water Conservation Endeavors	(a) Moisture Retentively Operations (locations In Nos)	Kinnaur							0	0.00
	(b) Live Hedge Fencing (locations In Nos)	Kinnaur							0	0.00
	(c) Vegetative structures (locations In Nos)	Kinnaur							0	0.00
	(d) Civil Structures (locations In Nos)	Kinnaur							0	0.00
	(e) Drainage line treatment & Land slide control. (locations In Nos)	Kinnaur							0	0.00
	(f) Stream Bank stabilizations (locations In Nos)	Kinnaur							0	0.00
	(a) Moisture Retentively Operations (locations In Nos)	Rampur							0	0.00
	(b) Live Hedge Fencing (locations In Nos)	Rampur							0	0.00
	(c) Vegetative structures (locations In Nos)	Rampur							0	0.00
	(d) Civil Structures (locations In Nos)	Rampur							0	0.00
	(e) Drainage line treatment & Land slide control. (locations In Nos)	Rampur							0	0.00
	(f) Stream Bank stabilizations (locations In Nos)	Rampur							0	0.00
Payment for Environmental Services	Kinnaur									0.00
	Rampur									0.00
Research, Training & Capacity build up, Publicity & Awareness, Documentation	Kinnaur									0.00
	Rampur									0.00

Infrastructure built up & Forest Protection	(a) Building for stay of staff, FRH/I Hut. (Locations in Nos)	Kinnaur							0	0.00
	(b) Forest Roads/ I Paths (Locations in Nos)								0	0.00
	(c) Augmentation of Water Supply. (Locations in Nos)								0	0.00
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)									0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									0.00
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
	(a) Building for stay of staff, FRH/I Hut. (Locations in Nos)	Rampur							0	0.00
	(b) Forest Roads/ I Paths (Locations in Nos)								0	0.00
	(c) Augmentation of Water Supply. (Locations in Nos)								0	0.00
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)									0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									0.00
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
Wild Life Measures	Kinnaur								0.00	
	Rampur								0.00	
Monitoring & Evaluation	Kinnaur								0.00	
	Rampur								0.00	
Institutional / Departmental Charges	Kinnaur								0.00	
	Rampur								0.00	
Contingencies	Kinnaur								0.00	
	Rampur								0.00	
Total for Kinnaur Division										0.00
Total for Rampur Division										3.00
Grand Total										3.00

Abstract action plan of NJHEP for Second year (2012-13)

Name Of Component	Name Of Division	Physical Targets (Ha/Nos)							Total Financial (In Lacks)
		Maintenance							
		New	I Year	II Year	III Year	IV Year	V Year	Total	
Afforestation Measures	(a) Normal Afforestation (In Ha)	0	0	28	61	82	0	171	2.65
	(b) Enrichment (In Ha)	26	0	0	3	23.6	0	52.6	8.02
	(1A) Nurseries (locations in Nos)							11	24.25
	(a) Normal Afforestation (In Ha)	0	0	15	30	0	0	25	0.94
	(b) Enrichment (In Ha)	17	0	5	15	0	0	37	4.24
	(1A) Nurseries (locations in Nos)							9	16.65
Soil & Water Conservation Endeavors	(a) Moisture Retentively Operations (locations in Nos)							0	0.00
	(b) Live Hedge Fencing (locations in Nos)							0	0.00
	(c) Vegetative structures (locations in Nos)							3	5.00
	(d) Civil Structures (locations in Nos)							10	61.50
	(e) Drainage line treatment & Land slide control, (locations in Nos)							0	0.00
	(f) Stream Bank stabilizations (locations in Nos)							0	0.00
	(a) Moisture Retentively Operations (locations in Nos)							0	0.00
	(b) Live Hedge Fencing (locations in Nos)							0	0.00
	(c) Vegetative structures (locations in Nos)							5	5.50
	(d) Civil Structures (locations in Nos)							9	17.36
	(e) Drainage line treatment & Land slide control, (locations in Nos)							0	0.00
	(f) Stream Bank stabilizations (locations in Nos)							0	0.00
Payment for Environmental Services	Kinnaur								2.50
	Rampur								1.01
Research, Training & Capacity build up, Publicity & Awareness, Documentation	Kinnaur								0.00
	Rampur								0.00



Infrastructure built up & Forest Protection	(a) Building for stay of staff, FRH/I Hut. (locations in Nos)	Kinnaur							20	37.45	
	(b) Forest Roads/ I Paths (locations in Nos)								6	10.35	
	(c) Augmentation of Water Supply. (locations in Nos)								2	2.50	
	(d) Vehicle & Operational Support to HPFD									0.00	
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)									0.00	
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00	
	(g) Construction & Repair of Boundary Pillars.									0.00	
	(h) Fire Protection Measures									0.00	
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00	
	(a) Building for stay of staff, FRH/I Hut. (locations in Nos)		Rampur							3	3.00
	(b) Forest Roads/ I Paths (locations in Nos)									0	0.00
(c) Augmentation of Water Supply. (locations in Nos)								0	0.00		
(d) Vehicle & Operational Support to HPFD									0.00		
(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)									0.00		
(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00		
(g) Construction & Repair of Boundary Pillars.									0.00		
(h) Fire Protection Measures									0.00		
(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00		
Wild Life Measures	Kinnaur									0.00	
Monitoring & Evaluation	Rampur									0.00	
	Kinnaur								0.00		
Institutional / Departmental Charges	Rampur								0.00		
	Kinnaur								1.00		
Contingencies	Rampur								5.45		
	Kinnaur								16.46		
Total for Kinnaur Division										5.45	
Total for Rampur Division										171.68	
Grand Total										59.39	
Grand Total										231.07	



Abstract action plan of NJHEP for Third year (2013-14)

Name Of Component	Name Of Division	Physical Targets (Ha/Nos)							Total Financial (In Lacs)
		Maintenance							
		New	I Year	II Year	III Year	IV Year	V Year	Total	
Afforestation Measures	(a) Normal Afforestation (In Ha)	0	0	0	28	61	82	171	1.42
	(b) Enrichment (In Ha)	12	26	0	0	3	33.6	64.6	5.33
	(1A) Nurseries (Locations In Nos)							3	3.50
	(a) Normal Afforestation (In Ha)	0	0	0	15	10	0	25	0.26
	(b) Enrichment (In Ha)	9	17	0	5	15	0	46	3.07
	(1A) Nurseries (Locations In Nos)							0	0.00
Soil & Water Conservation Endeavors	(a) Moisture Retentively Operations (Locations In Nos)							0	0.00
	(b) Live Hedge Fencing (Locations In Nos)							0	0.00
	(c) Vegetative structures (Locations In Nos)							1	2.00
	(d) Civil Structures (Locations In Nos)							10	53.50
	(e) Drainage line treatment & Land slide control (Locations In Nos)							0	0.00
	(f) Stream Bank stabilizations (Locations In Nos)							0	0.00
	(a) Moisture Retentively Operations (Locations In Nos)							0	0.00
	(b) Live Hedge Fencing (Locations In Nos)							0	0.00
	(c) Vegetative structures (Locations In Nos)							1	1.75
	(d) Civil Structures (Locations In Nos)							6	9.76
	(e) Drainage line treatment & Land slide control (Locations In Nos)							0	0.00
	(f) Stream Bank stabilizations (Locations In Nos)							0	0.00
Payment for Environmental Services	Kinnaur								1.50
	Rampur								1.05
Research, Training & Capacity build up, Publicity & Awareness, Documentation	Kinnaur								0.00
	Rampur								0.00



Infrastructure built up & Forest Protection	(a) Building for stay of staff, FRH/I Hut. (locations in Nos)	Kinnaur							3	8.00
	(b) Forest Roads/ Paths (locations in Nos)								1	3.17
	(c) Augmentation of Water Supply. (locations in Nos)								1	2.50
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers, Laptops, GPS, LCD Projector etc.)									0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									1.04
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
	(a) Building for stay of staff, FRH/I Hut. (locations in Nos)	Rampur							3	11.00
	(b) Forest Roads/ Paths (locations in Nos)								1	1.50
	(c) Augmentation of Water Supply. (locations in Nos)								2	2.11
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers, Laptops, GPS, LCD Projector etc.)									0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
(g) Construction & Repair of Boundary Pillars.									0.00	
(h) Fire Protection Measures									0.00	
(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00	
Wild Life Measures	Kinnaur								0.00	
	Rampur								0.00	
Monitoring & Evaluation	Kinnaur								3.00	
	Rampur								0.00	
Institutional / Departmental Changes	Kinnaur								2.15	
	Rampur								0.65	
Contingencies	Kinnaur								8.50	
	Rampur								1.60	
Total for Kinnaur Division									95.61	
Total for Rampur Division									34.75	
Grand Total									130.37	

Abstract action plan of NJHEP for Fourth year (2014-15)

Name Of Component	Name Of Division	Physical Targets (Ha/Nos)							Total Financial (In Lacks)
		Maintenance							
		New	I Year	II Year	III Year	IV Year	V Year	Total	
Afforestation Measures	(a) Normal Afforestation (In Ha)	0	0	0	0	0	39	39	0.34
	(b) Enrichment (In Ha)	19	12	26	0	0	3	60	8.00
	(1A)Nurseries (locations In Nos)							0	0.00
	(a) Normal Afforestation (In Ha)	0	0	0	0	15	10	25	0.16
	(b) Enrichment (In Ha)	0	9	17	0	5	15	46	0.98
	(1A)Nurseries (locations In Nos)							0	0.00
Soil & Water Conservation Endeavors	(a) Moisture Retentively Operations (locations In Nos)							0	0.00
	(b) Live Hedge Fencing (locations In Nos)							0	0.00
	(c) Vegetative structures (locations In Nos)							0	0.00
	(d) Civil Structures (locations In Nos)							4	13.50
	(e) Drainage line treatment & Land slide control. (locations In Nos)							0	0.00
	(f) Stream Bank stabilizations (locations In Nos)							0	0.00
	(a) Moisture Retentively Operations (locations In Nos)							0	0.00
	(b) Live Hedge Fencing (locations In Nos)							0	0.00
	(c) Vegetative structures (locations In Nos)							0	0.00
	(d) Civil Structures (locations In Nos)							0	0.00
	(e) Drainage line treatment & Land slide control. (locations In Nos)							0	0.00
	(f) Stream Bank stabilizations (locations In Nos)							0	0.00
Payment for Environmental Services	Kinnaur								4.25
	Rampur								1.50
Research, Training & Capacity build up, Publicity & Awareness, Documentation	Kinnaur								0.00
	Rampur								0.00



Infrastructure built up & Forest Protection	(a) Building for stay of staff, FRH/I Hut. (locations in Nos)	Kinnaur							0	0.00
	(b) Forest Roads/ I Paths (locations in Nos)								0	0.00
	(c) Augmentation of Water Supply. (locations in Nos)								0	0.00
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)									0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									0.93
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
	(a) Building for stay of staff, FRH/I Hut. (locations in Nos)	Rampur							0	0.00
	(b) Forest Roads/ I Paths (locations in Nos)								0	0.00
	(c) Augmentation of Water Supply. (locations in Nos)								0	0.00
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)									0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									0.00
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
Wild Life Measures	Kinnaur								0.00	
	Rampur								0.00	
Monitoring & Evaluation	Kinnaur								3.00	
	Rampur								0.00	
Institutional / Departmental Charges	Kinnaur								2.40	
	Rampur								0.65	
Contingencies	Kinnaur								4.00	
	Rampur								0.45	
Total for Kinnaur Division										
36.42										
Total for Rampur Division										
3.74										
Grand Total										
40.16										

Abstract action plan of NJHEP for Fifth year (2015-16)

Name Of Component	Name Of Division	Physical Targets (Ha/Nos)						Total Financial (In Lacks)	
		Maintenance							
		New	I Year	II Year	III Year	IV Year	V Year		Total
Afforestation Measures	(a) Normal Afforestation (in Ha)	0	0	0	0	0	0	0.00	
	(b) Enrichment (in Ha)	3	19	12	26	0	0	60	3.48
	(1A)Nurseries (locations In Nos)							0	0.00
	(a) Normal Afforestation (in Ha)	0	0	0	0	0	15	15	0.15
	(b) Enrichment (in Ha)	0	0	9	17	0	5	31	0.60
	(1A)Nurseries (locations In Nos)							0	0.00
Soil & Water Conservation Endeavors	(a) Moisture Retentively Operations (locations In Nos)							0	0.00
	(b) Live Hedge Fencing (locations In Nos)							0	0.00
	(c) Vegetative structures (locations In Nos)							0	0.00
	(d) Civil Structures (locations In Nos)							1	2.00
	(e) Drainage line treatment & Land slide control (locations In Nos)							0	0.00
	(f) Stream Bank stabilizations (locations In Nos)							0	0.00
	(a) Moisture Retentively Operations (locations In Nos)							0	0.00
	(b) Live Hedge Fencing (locations In Nos)							0	0.00
	(c) Vegetative structures (locations In Nos)							0	0.00
	(d) Civil Structures (locations In Nos)							0	0.00
	(e) Drainage line treatment & Land slide control (locations In Nos)							0	0.00
	(f) Stream Bank stabilizations (locations In Nos)							0	0.00
Payment for Environmental Services	Kinnaur								6.50
	Rampur								2.70
Research, Training & Capacity build up, Publicity & Awareness, Documentation	Kinnaur								9.00
	Rampur								2.87



Infrastructure built up & Forest Protection	(a) Building for stay of staff, FRH/T Hut. (locations In Nos)								0	0.00
	(b) Forest Roads/ I Paths (locations In Nos)								0	0.00
	(c) Augmentation of Water Supply. (locations In Nos)								0	0.00
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)	Kinnaur								0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									0.00
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
	(a) Building for stay of staff, FRH/T Hut. (locations In Nos)								0	0.00
	(b) Forest Roads/ I Paths (locations In Nos)								0	0.00
	(c) Augmentation of Water Supply. (locations In Nos)								0	0.00
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)	Rampur								0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									0.00
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
Wild Life Measures	Kinnaur									0.00
	Rampur									0.00
Monitoring & Evaluation	Kinnaur									2.00
	Rampur									0.00
Institutional / Departmental Charges	Kinnaur									16.00
	Rampur									0.55
Contingencies	Kinnaur									4.50
	Rampur									0.80
Total for Kinnaur Division										43.48
Total for Rampur Division										7.62
Grand Total										51.10



Abstract action plan of NJHEP for Sixth year (2016-17)

Component		Name Of	Physical Targets (Ha/Nos)						Total	Financial
			Maintenance							
			New	Year	5 Year	Year	Year	Year		
Afforestation Measures	(a) Normal Afforestation (In Ha)	Kinnaur	0	0	0	0	0	0	0	0.00
	(b) Enrichment (In Ha)		0	3	19	12	26	0	60	1.87
	(1A)Nurseries (locations In Nos)								0	0.00
	(a) Normal Afforestation (In Ha)	Rampur	0	0	0	0	0	0	0	0.00
	(b) Enrichment (In Ha)		0	0	0	9	17	0	26	0.40
	(1A)Nurseries (locations In Nos)								0	0.00
Soil & Water Conservation Endeavors	In Nos)	Kinnaur							0	0.00
	(b) Live Hedge Fencing (locations In Nos)								0	0.00
	(c) Vegetative structures (locations In Nos)								0	0.00
	(d) Civil Structures (locations In Nos)								0	0.00
	control. (locations In Nos)								0	0.00
	(f) Stream Bank stabilizations (locations In Nos)								0	0.00
	In Nos)	Rampur							0	0.00
	(b) Live Hedge Fencing (locations In Nos)								0	0.00
	(c) Vegetative structures (locations In Nos)								0	0.00
	(d) Civil Structures (locations In Nos)								0	0.00
	control. (locations In Nos)								0	0.00
	(f) Stream Bank stabilizations (locations In Nos)								0	0.00
Payment for Environmental Services		Kinnaur								6.40
		Rampur								2.45
Research, Training & Capacity build up, Publicity & Awareness, Documentation		Kinnaur								8.00
		Rampur								2.00

Infrastructure built up & Forest Protection	(locations in Nos)	Kinnaur								0	0.00
	(b) Forest Roads/ Paths (locations in Nos)									0	0.00
	In Nos)									0	0.00
	(d) Vehicle & Operational Support to HPFD (LCD Projector etc.)										0.00
	Meteorological Equipment										0.00
	(g) Construction & Repair of Boundary Pillars.										0.00
	(h) Fire Protection Measures										0.00
	Fuel Saving devices										0.00
	(b) Forest Roads/ Paths (locations in Nos)	Rampur								0	0.00
	In Nos)									0	0.00
	(d) Vehicle & Operational Support to HPFD (LCD Projector etc.)										0.00
	Meteorological Equipment										0.00
	(g) Construction & Repair of Boundary Pillars.										0.00
	(h) Fire Protection Measures										0.00
	Fuel Saving devices										0.00
	Wild Life Measures		Kinnaur								
Monitoring & Evaluation	Rampur									0.00	
	Kinnaur									2.00	
Institutional / Departmental Charges	Rampur									2.12	
	Kinnaur									0.45	
Contingencies	Rampur									2.50	
	Kinnaur									0.90	
Total for Kinnaur Division										22.77	
Total for Rampur Division										8.32	
Grand Total										31.09	



Abstract action plan of NJHEP for Seventh year (2017-18)

Name Of Component	Name Of Division	Physical Targets (Ha/Nos)							Total Financial (In Lacks)
		Maintenance							
		New	I Year	II Year	III Year	IV Year	V Year	Total	
Afforestation Measures	(a) Normal Afforestation (in Ha)	0	0	0	0	0	0	0	0.00
	(b) Enrichment (in Ha)	0	0	3	19	12	26	60	1.45
	(1A)Nurseries (locations in Nos)							0	0.00
	(a) Normal Afforestation (in Ha)	0	0	0	0	0	0	0	0.00
	(b) Enrichment (in Ha)	0	0	0	0	9	17	26	0.33
	(1A)Nurseries (locations in Nos)							0	0.00
Soil & Water Conservation Endeavors	(a) Moisture Retentively Operations (locations in Nos)							0	0.00
	(b) Live Hedge Fencing (locations in Nos)							0	0.00
	(c) Vegetative structures (locations in Nos)							0	0.00
	(d) Civil Structures (locations in Nos)							0	0.00
	(e) Drainage line treatment & Land slide control (locations in Nos)							0	0.00
	(f) Stream Bank stabilizations (locations in Nos)							0	0.00
	(a) Moisture Retentively Operations (locations in Nos)							0	0.00
	(b) Live Hedge Fencing (locations in Nos)							0	0.00
	(c) Vegetative structures (locations in Nos)							0	0.00
	(d) Civil Structures (locations in Nos)							0	0.00
	(e) Drainage line treatment & Land slide control (locations in Nos)							0	0.00
	(f) Stream Bank stabilizations (locations in Nos)							0	0.00
Payment for Environmental Services	Kinnaur								5.30
	Rampur								2.35
Research, Training & Capacity build up, Publicity & Awareness, Documentation	Kinnaur								4.98
	Rampur								2.00



Infrastructure built up & Forest Protection	(a) Building for stay of staff, FRH/I Hut. (locations In Nos)	Kinnaur							0	0.00
	(b) Forest Roads/ I Paths (locations In Nos)								0	0.00
	(c) Augmentation of Water Supply. (locations In Nos)								0	0.00
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)									0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									0.00
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
	(a) Building for stay of staff, FRH/I Hut. (locations In Nos)	Rampur							0	0.00
	(b) Forest Roads/ I Paths (locations In Nos)								0	0.00
	(c) Augmentation of Water Supply. (locations In Nos)								0	0.00
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)									0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									0.00
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
Wild Life Measures	Kinnaur								0.00	
	Rampur								0.00	
Monitoring & Evaluation	Kinnaur								1.19	
	Rampur								2.00	
Institutional / Departmental Charges	Kinnaur								1.90	
	Rampur								0.45	
Contingencies	Kinnaur								2.00	
	Rampur								0.80	
Total for Kinnaur Division										17.82
Total for Rampur Division										7.83
Grand Total										25.65



Abstract action plan of NUHEP for Eighth year (2018-19)

Name Of Component	Name Of Division	Physical Targets (Ha/Nos)						Total Financial (In Lacks)	
		Maintenance							
		New	I Year	II Year	III Year	IV Year	V Year		Total
Afforestation Measures	(a) Normal Afforestation (In Ha)	0	0	0	0	0	0	0.00	
	(b) Enrichment (In Ha)	0	0	0	3	19	12	34	0.71
	(IA)Nurseries (locations In Nos)							0	0.00
	(a) Normal Afforestation (In Ha)	0	0	0	0	0	0	0	0.00
	(b) Enrichment (In Ha)	0	0	0	0	0	9	9	0.14
	(IA)Nurseries (locations In Nos)							0	0.00
Soil & Water Conservation Endeavors	(a) Moisture Retentively Operations (locations In Nos)							0	0.00
	(b) Live Hedge Fencing (locations In Nos)							0	0.00
	(c) Vegetative structures (locations In Nos)							0	0.00
	(d) Civil Structures (locations In Nos)							0	0.00
	(e) Drainage line treatment & Land slide control. (locations In Nos)							0	0.00
	(f) Stream Bank stabilizations (locations In Nos)							0	0.00
	(a) Moisture Retentively Operations (locations In Nos)							0	0.00
	(b) Live Hedge Fencing (locations In Nos)							0	0.00
	(c) Vegetative structures (locations In Nos)							0	0.00
	(d) Civil Structures (locations In Nos)							0	0.00
	(e) Drainage line treatment & Land slide control. (locations In Nos)							0	0.00
	(f) Stream Bank stabilizations (locations In Nos)							0	0.00
Payment for Environmental Services	Kinnaur								6.25
	Rampur								2.00
Research, Training & Capacity build up, Publicity & Awareness, Documentation	Kinnaur								0.00
	Rampur								0.00



Abstract action plan of NJHEP for Ninth year (2019-20)

Name Of Component	Name Of Division	Physical Targets (Ha/Nos)						Total Financial (In Lacks)	
		Maintenance							
		New	I Year	II Year	III Year	IV Year	V Year		Total
Afforestation Measures	(a) Normal Afforestation (In Ha)	0	0	0	0	0	0	0.00	
	(b) Enrichment (In Ha)	0	0	0	0	3	19	22	0.45
	(1A) Nurseries (locations In Nos)							0	0.00
	(a) Normal Afforestation (In Ha)	0	0	0	0	0	0	0	0.00
	(b) Enrichment (In Ha)	0	0	0	0	0	0	0	0.00
	(1A) Nurseries (locations In Nos)							0	0.00
Soil & Water Conservation Endeavors	(a) Moisture Retentively Operations (locations In Nos)							0	0.00
	(b) Live Hedge Fencing (locations In Nos)							0	0.00
	(c) Vegetative structures (locations In Nos)							0	0.00
	(d) Civil Structures (locations In Nos)							0	0.00
	(e) Drainage line treatment & Land slide control (locations In Nos)							0	0.00
	(f) Stream Bank stabilizations (locations In Nos)							0	0.00
	(a) Moisture Retentively Operations (locations In Nos)							0	0.00
	(b) Live Hedge Fencing (locations In Nos)							0	0.00
	(c) Vegetative structures (locations In Nos)							0	0.00
	(d) Civil Structures (locations In Nos)							0	0.00
	(e) Drainage line treatment & Land slide control (locations In Nos)							0	0.00
	(f) Stream Bank stabilizations (locations In Nos)							0	0.00
Payment for Environmental Services	Kinnaur								5.74
	Rampur								0.76
Research, Training & Capacity build up, Publicity & Awareness, Documentation	Kinnaur								0.00
	Rampur								0.00



Abstract action plan of NJHEP for Tenth year (2020-21)

Name Of Component	Name Of Division	Physical Targets (Ha/Nos)							Total Financial (In Lacks)	
		Maintenance								
		New	I Year	II Year	III Year	IV Year	V Year	Total		
Afforestation Measures	(a) Normal Afforestation (in Ha)	0	0	0	0	0	0	0	0.00	
	(b) Enrichment (in Ha)	0	0	0	0	0	0	3	0.06	
	(1A)Nurseries (locations in Nos)								0	0.00
	(a) Normal Afforestation (in Ha)	0	0	0	0	0	0	0	0.00	
	(b) Enrichment (in Ha)	0	0	0	0	0	0	0	0.00	
	(1A)Nurseries (locations in Nos)								0	0.00
Soil & Water Conservation Endeavors	(a) Moisture Retentively Operations (locations in Nos)								0	0.00
	(b) Live Hedge Fencing (locations in Nos)								0	0.00
	(c) Vegetative structures (locations in Nos)								0	0.00
	(d) Civil Structures (locations in Nos)								0	0.00
	(e) Drainage line treatment & Land slide control. (locations in Nos)								0	0.00
	(f) Stream Bank stabilizations (locations in Nos)								0	0.00
	(a) Moisture Retentively Operations (locations in Nos)								0	0.00
	(b) Live Hedge Fencing (locations in Nos)								0	0.00
	(c) Vegetative structures (locations in Nos)								0	0.00
	(d) Civil Structures (locations in Nos)								0	0.00
	(e) Drainage line treatment & Land slide control. (locations in Nos)								0	0.00
	(f) Stream Bank stabilizations (locations in Nos)								0	0.00
Payment for Environmental Services	Kinnaur									1.96
	Rampur									0.00
Research, Training & Capacity build up, Publicity & Awareness, Documentation	Kinnaur									0.00
	Rampur									0.00

Infrastructure Built up & Forest Protection	(a) Building for stay of staff, FRM/ Hut. (locations in Nos)	Kinnaur							0	0.00
	(b) Forest Roads/ Paths (locations in Nos)								0	0.00
	(c) Augmentation of Water Supply. (locations in Nos)								0	0.00
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)									0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									0.00
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
	(a) Building for stay of staff, FRM/ Hut. (locations in Nos)	Rampur							0	0.00
	(b) Forest Roads/ Paths (locations in Nos)								0	0.00
	(c) Augmentation of Water Supply. (locations in Nos)								0	0.00
	(d) Vehicle & Operational Support to HPFD									0.00
	(e) Office Equipment (computers,Laptops ,GPS, LCD Projector etc.)									0.00
	(f) Silt Monitoring & Purchase of Meteorological Equipment									0.00
	(g) Construction & Repair of Boundary Pillars.									0.00
	(h) Fire Protection Measures									0.00
	(i) Distribution of Non-conventional energy & Fuel Saving devices									0.00
Wild Life Measures	Kinnaur								0.00	
	Rampur								0.00	
Monitoring & Evaluation	Kinnaur								0.00	
	Rampur								0.00	
Institutional / Departmental Charges	Kinnaur								1.52	
	Rampur								0.40	
Contingencies	Kinnaur								3.00	
	Rampur								0.89	
Total for Kinnaur Division										6.54
Total for Rampur Division										1.29
Grand Total										7.83



CHAPTER III

ANNUAL PHASING
DETAILS

Chapter 3

APO for NJHEP (Rampur Division) (All amount in Lacks)

Afforestation Measures

Name of Sub Component	Name of Area	Name of Range	Name of Beat	Micro water shed	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
(a) Normal Afforestation	Shonkri (5 Ha. 2009-10)	Rampur	Jhakri	Sq2c		0.07	0.03	0.03							0.13
(a) Normal Afforestation	Kakshi (5 Ha. 2010-11)	Sarahan	Bhagawat	Sq3c		0.14	0.07	0.03	0.03						0.27
(a) Normal Afforestation	Badrai(5 Ha. 2010-11)	Sarahan	Bhagawat	Sq3c		0.14	0.07	0.03	0.03						0.27
(a) Normal Afforestation	Patchaich(5 Ha. 2010-11)	Sarahan	Bhagawat	Sq3c		0.14	0.07	0.03	0.03						0.27
(a) Normal Afforestation	UF-Suru (5 Ha. 2009-10)	Sarahan	Koot	Sq4b		0.07	0.03	0.03							0.13
(b) Enrichment	UF Sunda 5 ha. 2010-11	Rampur	Shanathli	Sq2a		0.10	0.04	0.02	0.02						0.19
(b) Enrichment	Duga Challon C-181b (2 Ha. New)	Rampur	Pashada	Sq2b		0.43	0.06	0.04	0.02	0.01	0.01				0.58
(b) Enrichment	C-179b(2 Ha. New)	Rampur	Sanathali	Sq2b			0.50	0.10	0.06	0.05	0.03	0.03			0.77
(b) Enrichment	C-181 (b) ii (5 Ha. 2009-10)	Rampur	Pashada	Sq2b		0.04	0.04	0.02							0.11
(b) Enrichment	Banauli (10 Ha. 2009-10)	Rampur	Pashada	Sq2b		0.09	0.05	0.05							0.18
(b) Enrichment	C-182 b Nal (3 ha. New)	Sarahan	Gopalpur	Sq2c		0.75	0.14	0.10	0.07	0.05	0.05				1.15



(b) Enrichment	Uchvala (2 Ha. New)	Sarahan	Dofda	Sq3a	0.50	0.10	0.06	0.05	0.03	0.03			0.77
(b) Enrichment	Deev C-183 (3 Ha. New)	Sarahan	Gopalpur	Sq3a	0.75	0.14	0.10	0.07	0.05	0.05			1.15
(b) Enrichment	UF-5 (Gabwa, 2 Ha. New)	Sarahan	Machnoo	Sq3b		0.50	0.10	0.06	0.05	0.03	0.03		0.77
(b) Enrichment	C-187 (5 Ha. New)	Sarahan	Bhagawat	Sq3c		1.25	0.24	0.16	0.12	0.08	0.08		1.92
(b) Enrichment	U.F. 6 c (Kimgidhar) (2 ha. New)	Sarahan	Sarahan	Sq4a	0.50	0.10	0.06	0.05	0.03	0.03			0.77
(b) Enrichment	UF 6a (5 Ha. New)	Sarahan	Badhal	Sq4b	1.09	0.16	0.10	0.04	0.02	0.02			1.44
(c) Energy Plantation	Na	Na	Na	Na									0.00
(d) Measure to handle invasive species.	Na	Na	Na	Na									0.00
(1A)Nurseries	Pachada Area 0.60 hac. Ht. 1599 mtr.			Sq2b	1.00	1.75							2.75
(1A)Nurseries	Jhakri, Area 0.60 hac. Ht. 1351 mtr.	Rampur	Jhakri	Sq2c	1.00	1.75							2.75
(1A)Nurseries	Gopalpur/Koti, Area 1 hac. Ht. 2348 mtr.	Sarahan	Gopalpur	Sq2c	0.60	3.15							3.75
(1A)Nurseries	Rattanpur, Area 0.30 hac. Ht. 1329 mtr.	Sarahan	Gopalpur	Sq2c	2.00								2.00



(1A)Nurseries	Kunni Area 0.10 Hac. Ht. 1530 mtr	Sarahan	sarahan	Sq3a	0.10	0.90																	1.00
(1A)Nurseries	Dofda Area 1 hac, Ht. 2244 mtr.	Sarahan	Dofda	Sq3a		2.50																	2.50
(1A)Nurseries	Daran Area 0.30 Hac. Ht. 2388 mtr	Sarahan	Dofda	Sq3b		1.00																	1.00
(1A)Nurseries	Kinoo Area 0.25 hac Ht. 2031 mtr.	Sarahan	Bhagawat	Sq3c		1.90																	1.90
(1A)Nurseries	Badhal Area 0.30 Hac. Ht. 1615 mtr	Sarahan	Badhal	Sq4b	0.30	1.70																	2.00
(1B)Pasture Reclamation.	Na	Na	Na	Na																			0.00



Soil & Water Conservation Endeavors

Name of Sub Component	Name of Area	Name of Range	Name of Beat	Micro water shed	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
(a) Moisture Retentively Operations	Na	Na	Na	Na											0.00
(b) Live Hedge Fencing	Na	Na	Na	Na											0.00
(c) Vegetative structures	Barauni Above Slide	Rampur	Jhakri	Sq2c		0.25									0.25
(c) Vegetative structures	Barauni Land Slide	Rampur	Pashada	Sq2c		1.00									1.00
(c) Vegetative structures	Bajwa Slip	Sarahan	Mashnoo	Sq3b		1.00									1.00
(c) Vegetative structures	Lotwa slip	Sarahan	Bhagawat	Sq3c		2.25									2.25
(c) Vegetative structures	Sodari Slip	Sarahan	Bhagawat	Sq3f			1.75								1.75
(c) Vegetative structures	Chakai Nala	Sarahan	Sarahan	Sq4a		1.00									1.00
(d) Civil Structures	Halog Nala	Rampur	Sonathli	Sq2b		1.50									1.50
(d) Civil Structures	Pashada Nala	Rampur	Pashada	Sq2b		2.00	0.50								2.50
(d) Civil Structures	Barauni Slip (main nala)	Sarahan	Gopalpur	Sq2c		2.50									2.50
(d) Civil Structures	Chadali Nala	Sarahan	Gopalpur	Sq2c		1.86									1.86
(d) Civil Structures	Koti Nala	Sarahan	Gopalpur	Sq2c		1.00									1.00
(d) Civil Structures	Uchhi Nala	Sarahan	Dofda	Sq3a		2.00	1.50								3.50
(d) Civil Structures	Rama Gad	Sarahan	Dofda	Sq3b		2.00	1.00								3.00
(d) Civil Structures	Garteda	Sarahan	Bhagawat	Sq3c			2.50								2.50



	Nala																						
(d) Civil Structures	Gharat Nala	Sarahan	Sarahan	Sq4a																3.00			
	Sahadhar																						
(d) Civil Structures	Slip	Sarahan	Sarahan	Sq4a																2.25			
(d) Civil Structures	Bastour slip			Sq4b																2.25	1.25	3.50	
(e) Drainage line treatment & Land slide control.	Na	Na	Na	Na																			0.00
(f) Stream Bank stabilizations	Na	Na	Na	Na																			0.00



Payment for Environmental Services

Name of Area	Name of Range	Name of Best	Micro water shed	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
			Sq2a					0.30	0.30	0.25	0.25	0.20		1.30
			Sq2b				0.30	0.30	0.25	0.25	0.20			1.30
Rattanpur slip	Sarahan	Gopalpur	Sq2c			1.05								1.05
			Sq2c					0.30	0.30	0.25	0.25	0.20		1.30
			Sq3a				0.30	0.30	0.25	0.25	0.20			1.30
			Sq3b				0.30	0.30	0.25	0.25	0.20			1.30
			Sq3c					0.30	0.30	0.25	0.25	0.20		1.30
			Sq3f				0.30	0.30	0.25	0.25	0.20			1.30
Unco	Sarahan	Sarahan	Sq4a		0.80									0.80
Chakal Nala	Sarahan	Sarahan	Sq4a		0.21									0.21
			Sq4a				0.30	0.30	0.25	0.25	0.20			1.30
			Sq4b					0.30	0.30	0.25	0.25	0.18		1.28

Research, Training & Capacity build up, Publicity

1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
				2.87	2.00	2.00				6.87



Infrastructure built up & Forest Protection

Name of Sub Component	Name of Area	Name of Range	Name of Beat	Micro watershed	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
(a) Building for stay of staff, FRH/I Hut.	Maintenance of FG Hut at Pashada	Pampur	Pashada	Sq2b		1.00									1.00
(a) Building for stay of staff, FRH/I Hut.	Construction of FG Hut at Jhakeri			Sq2c			7.00								7.00
(a) Building for stay of staff, FRH/I Hut.	Special repair of FG Hut Mashnoo Ht. 2102 mtr	Sarahan	Mashnoo	Sq3b			3.00								3.00
(a) Building for stay of staff, FRH/I Hut.	Maintenance of FG Hut Kinoo	Sarahan	Bhagawat	Sq3c		1.00									1.00
(a) Building for stay of staff, FRH/I Hut.	Maintenance of / Hut Kinoo	Sarahan	Bhagawat	Sq3c			1.00								1.00
(a) Building for stay of staff, FRH/I Hut.	Maintenance of Gang Hut Sarahan Ht. 2033 mtr	Sarahan	Sarahan	Sq4a		1.00									1.00
(b) Forest Roads/ Paths	Approach path to Range office	Sarahan	Sarahan	Sq4a			1.50								1.50
(c) Augmentation of Water Supply.	Special repair of FG Hut Mashnoo Ht. 2102 mtr	Sarahan	Mashnoo	Sq3b			0.75								0.75
(c) Augmentation of Water Supply.	Maintenance of FG Hut Kinoo	Sarahan	Bhagawat	Sq3c			1.36								1.36
(d) Vehicle & Operational Support to HPPD.	Na	Na	Na	Na											0.00



(e) Office Equipment (computers, Laptops, GPS, LCD Projector etc.)	Na	Na	Na	Na															0.00
(f) Silt Monitoring & Purchase of Meteorological Equipment	Na	Na	Na	Na															0.00
(g) Construction & Repair of Boundary Pillars.	Na	Na	Na	Na															0.00
(h) Fire Protection Measures	Na	Na	Na	Na															0.00
(i) Distribution of Non-conventional energy & Fuel Saving devices	Na	Na	Na	Na															0.00



Wild Life Measures

1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
									0.00	0.00

Monitoring & Evaluation

1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
					2.12	2.00				4.12

Institutional Departmental Charges

Name of Sub Component	1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
a i) Establishment Cost (Refund of Salary of CAT Plan Division to Govt.)		5.00									5.00
a ii) Establishment Cost (contractual Emoluments)		0.25	0.25	0.25	0.25	0.20	0.20	0.20	0.20	0.20	2.00
b) Office Expenses		0.20	0.20	0.20	0.20	0.15	0.15	0.15	0.15	0.10	1.50
c) Motor Vehicle & POL			0.20	0.20	0.10	0.10	0.10	0.10	0.10	0.10	1.00
d) Amenities to Staff and Labour								0.11941			0.12

Contingencies

1st Year	2nd Year	3rd Year	4th Year	5th Year	6th Year	7th Year	8th Year	9th Year	10th Year	Total
0.65	5.00	3.60	0.45	0.80	0.90	0.80	0.40	0.25	0.89	13.74

* The amount kept at the disposal of DFO CAT Plan and expended accordingly.



CHAPTER IV

DETAILED DATA OF MICRO WATERSHEDS

MICRO WATERSHED

Sq2a

MANAGEMENT PLAN OF - Sq2a MWS (UNDER NJHEP)									
INTRODUCTION									
LOCATION (BOUNDARIES)					GENERAL DESCRIPTION OF MWS				
AREA OF MWS	LATITUDE	LONGITUDE	ALTITUDE	SLOPE	SOIL	FOREST			PANCHAYAT
						RANGE	BLOCK	BEAT	
1608 ha.	31 26' to 29 77 39' to 43'	1070 to 3085	30 to 80		Sandy/ Clay loam	Rampur Rampur	Rampur, Nogli	Nogli, Rampur, Peshada, Sanathali	Shingla, Racholi, Part of Dansa

LAND USE					DEMOGRAPHY			
RF	DPF	UPF	PRIVATE LAND (Agri+Horti)	WASTE LAND	TOTAL	HOUSE HOLD	HUMAN POPULATION	LIVE STOCK POPULATION
(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in Nos.)	(in Nos.)	(in Nos.)
	1155	0	182	271	1608	497	2907	972

FLORA

TREES Open to very open sprinkled trees of BAN OAK, SHISHAM, EUCLYPTUS, WILLOW, CHIL , MALLOTUS, DRAIX, KAIL, BEJHAL

HERBS & SHRUBS BERBARIS, PRINSCPIA, ZANTHOXYLUM, ROSA MOSCHATA, RUBUS, MARIANDRA, COLEBROOKIA, ZIZYPHUS, GIRARDIANA, ADHATODA, BER, EUONYMOUS, PLECTRANTHUS, AGAVE, EUPHORBIA, OPENITIA ETC.

GRASSES ARUNDO-DONAX

MEDICINAL HERBS BANAFSHA, DIASCORIA ETC.

FAUNA

ANIMALS BLACK BEAR, LEOPARD, MONKEYS & OTHERS SMALL MAMMALS

BIRDS/PHEASANTS KALIZ & OTHER BIRDS



MWS :- Sq2a (NJHEP Kinnaur Division)



Naik Environment Research Institute Ltd

PAST HISTORY OF MANAGEMENT				
Name of Component	Name of Area	GPS Coordinates	Observation	Remarks
Soil & Moisture conservation	Thanti Slip	31 26'51", 77 39'11"	It originates from just below Kandi approach road. The slip has been treated during 2008-09 in NIHEP CAT Plan under Active Land Slide component. By constructing check wall 19 nos (12 in crate & 7 in dry). The slip is now almost stable and bio species like Colebrookia, Desmodium, Zanthoxylum, Firal, Shisham, Poplar, Salix, Plectranthus and Murj grass are coming naturally.	No treatment is required.
	Khaneri Nala	31 27'37", 77 40'20"	The nala originates from Jabaha and has been treated under NIHEP CAT Plan 2009-10 by constructing check dam =4 no dry and P/wall=9 dry. The nala is deep and trees like Shisham, Semal, Poplar are coming naturally.	No treatment is required.
	Darshai Nala	31 27'02", 77 40'10"	It is continuation of Bralta nala and is situated below Gaura road. Nala has been treated during 2009-10 by constructing check dam 6nos. In crate and protection wall 4 nos. In crate. The nala is full of biological species.	No treatment required.
Afforestation	UF Sunde 5 ha.	31 26'26", 77 39'15"	Area has been closed during 2010-11 under component Assistant Natural Regeneration. The area is situated about 150 mtr above Karali road. Aspect is north west and area is almost blank with sprinkled trees of Kail, Chil and Deodar. The bushes like Euonymus, Kul, Berberis, Rubus, Zanthoxylum etc are also existing in the area. The area has been planted with Kainth 1230, Rittha 1570, Rubirika 1200, Total 4000. Presently the survival percentage is 35 to 40%.	The area is protected from all type of forest offences and maintained as per availability of the fund.
Nurseries				
Rural Infrastructure Development				



Soil & Water Conservation Endeavors

Thanti Slo



Khaneri Nala



Dershai Nala



Afforestation
UF Sunda 5 ha



FUTURE PLANNING								
Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in lacs.)
Afforestation Measures								
(x) Normal Afforestation								
(x) Enrichment	SF Sands 5 ha. 2010-11	11 25'31", 77 39'54"	Area has been closed during 2010-11 under component Assisted Natural Regeneration. The area is situated about 150 mtr above Kanoli road. Aspect is north west and area is almost blank with sprinkled trees of Kail, Oil and Deodar. The bushes like Eucrymus, Kij, Berberis, Ficus, Zanthoxylum etc are also existing in the area. The area has been planted with Karoh 1230, Aitha 1570, Puleinia 1200, Total 4000. Presently the survival percentage is 35 to 40%.	The area is protected from all type of forest offences and maintained as per availability of the fund.	Ha./ month (2nd year)	5	2250	0.2046
					Ha./ month (3rd year)		854	0.0432
					Ha./ month (4th year)		450	0.0225
					Ha./ month (5th year)		450	0.0225
(c) Energy Plantation								
(j) Measure to handle invasive species								
Nurseries								
Pasture Reclamation.								
Total Afforestation and Nurseries								0.28

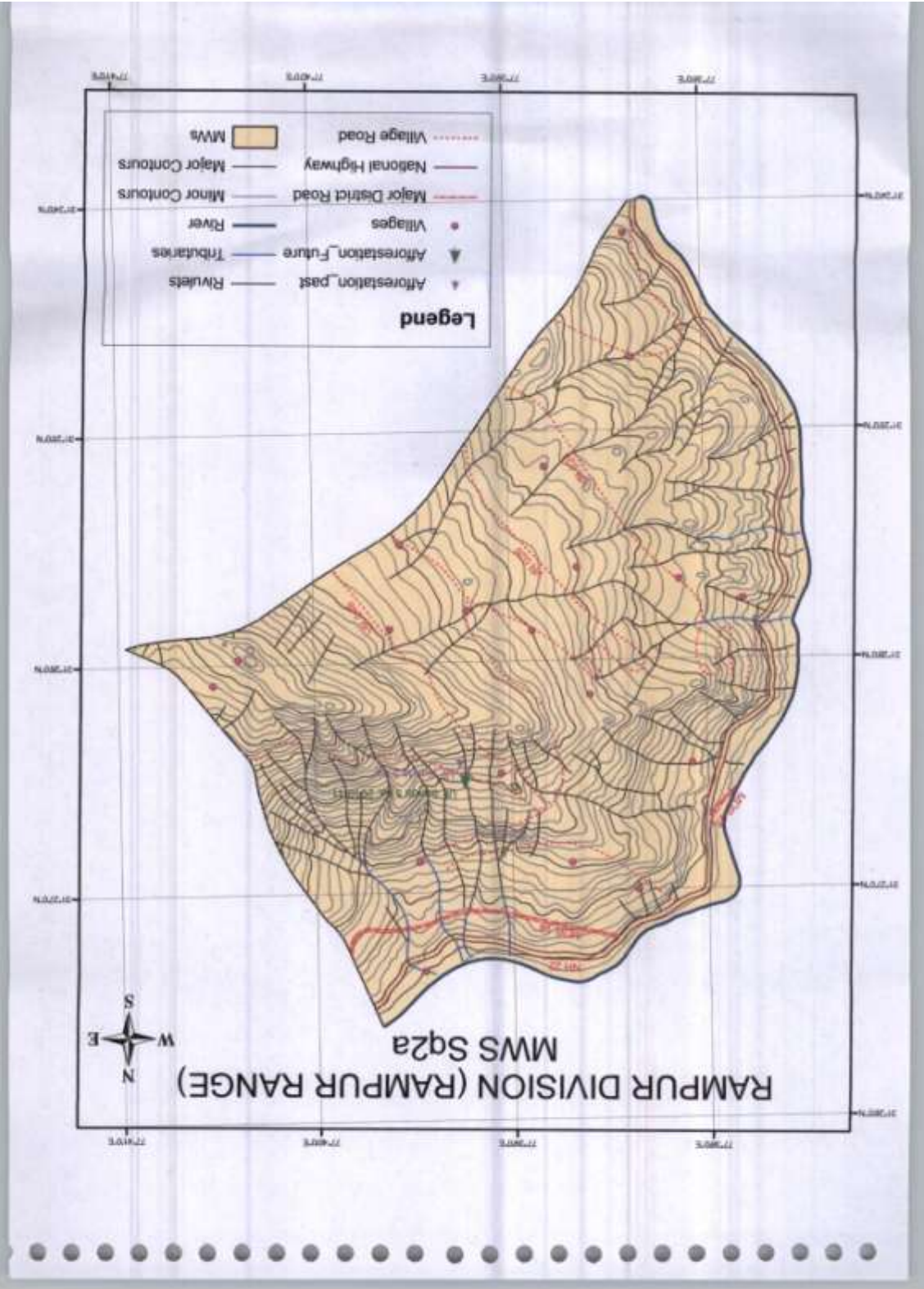


Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (In Lacs.)
Soil & Water Conservation Endeavors								
(a) Measure Refectively Operations								
(b) Live Hedge Fencing								
(c) Vegetative structures								
(d) Civil Structures								
(e) Drainage line treatment & Land slide control.								
(f) Stream bank stabilizations								
Total Soil & Water Conservation Endeavors								
								0.00
Payment for Environmental Services			<p>(i) The sub-micro water shed is fire prone. It is therefore, recommended that the JPKCs of the micro water shed will be involved in all type of forest protection activities. (ii) The villages located in the sub micro water shed are mostly agricultural / horticultural and fall 2 to 3 no of poles annually for keeping the dry grass in the rooves. The people will be given / provided 3 nos of poles of non schedule species, so that people don't fall the poles from the forest for this purpose.</p>	<p>(i) Lump sum provision has been kept for this purpose which will be given to the JPKC, which actively involve in the forest protection in the micro water shed. (ii) The people located in the sub micro water shed will be provided 3 nos of poles of non schedule species for the purpose of keeping the dry grasses.</p>		JPKCs and 3 No of poles	Lumpsum	1.30
Total Payment for Environmental Services								
								1.30



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Aggs)	Rate	Approximate Financial Outlay (in BCC)
Infrastructure built up & Forest Protection								
(a) Building for stay of staff, PEST PUL.								
(b) Forest Road/1 Paths								
(c) Augmentation of Water Supply.								
(d) Vehicle & Operational Support to WFO								
(e) Office Equipment								
(f) Site Monitoring & Purchase of Meteorological Equipment								
(g) Construction & Repair of boundary Fences.								
(h) Fire Protection Measures								
(i) Distribution of Non-conventional energy & Fuel Saving devices								
Total Infrastructure built up								0.89
Grand Total								1.48





MICRO WATERSHED

Sq2b

MANAGEMENT PLAN OF - 502b MWS (UNDER NJHEP)										
LOCATION (BOUNDARIES)				GENERAL DESCRIPTION OF MWS						
INTRODUCTION				FOREST		RANGE		BEAT		PANCHAYAT
AREA OF MWS	LATITUDE	LONGITUDE	ALTITUDE	SLOPE	SOIL	RANGE	BLOCK	BEAT		
1606	31° 26' 10"	77° 39' 16" 43"	1070 to 3085	30 to 85	sandy loam	Rampur	Rampur	Sanathali & Pashlada	Racholi	

LAND USE		DEMOGRAPHY					LIVE STOCK POPULATION		
RF	DPF	UPF	PRIVATE LAND (Agri+Horti)	WASTE LAND	TOTAL	HOUSE HOLD	HUMAN POPULATION		
(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in Nos.)	(in Nos.)	(in Nos.)	
	1155		182	271	1608	497	2907	972	

FLORA

TREES KAIL, DEODAR, FIR, SPRUCE, KHARSU, EUCLYPTUS, SIRIS, BOMBAX, AESCULUS, WALNUT, BIRDCHERY, MAPPLE, KUNISH, BAW OAK, MOHRO, CHIL, TAXUS, LITSEA, RHODODENDRON ETC.

HERBS & SHRUBS BERBARIS, PRINCEPIA, ROSA MOSCHATA, RUBUS, DEBREGGIA, THALICTRUM, DESDOMODIUM, VIDUA, GIMARDIANA, VIBURNUM, POLYGONUM, FRAGERIA, FERL, SKIMMIA, LONICERA, CRATEGUS, ARUNDINARIA, SPIRAEA, KUT, INDIGOFERA, STROBILANTHES, SAXIFRAGA, DEUTZIA, AINSLIAEA, STROBILANTHES, SALVIA ETC.

GRASSES ARUNDO-DONAX, MUNI GRASS

MEDICINAL HERBS BANAFSHA, DIASCORJA ETC.

ANIMALS BLACK BEAR, LEOPARD, MONKEYS & OTHERS SHALL RIAMIMALS

BIRDS/PHEASANTS KALIZ. & OTHER BIRDS



MWS :-Sq2b (NJHEP Rampur Division)



Nalk Environment Research Institute Ltd

PAST HISTORY OF MANAGEMENT			
Name of Component	Name of Area	GPS Coordinates	Observation
Soil & Moisture conservation	Hillog Nala	31 27'04", 77 40'51"	It originates from Sanathli 179 forest. It is a seasonal nala. The top portion of nala is precipitous. Nala has been treated under NHEP CAT Plan during 2010-11 by constructing check dam 2 no. in crate, protection wall 2 no. in crate. Beside this biological species like Rubia 2500, Agave 3600, Dodinia 2000 has also been planted. During 2005-06 this nala has also been treated in the name of Jabaha nala under NHEP CAT Plan. Few old structure has been damaged which requires repair/ reconstruction.
	Peshada Nala	31 27'36", 77 41'43"	It originates from Banawali C180 B-III and is about 3 Km in length. It is dry and seasonal nala. The slope is precipitous in the top, moderate and gentle below the road. Nala has been treated under NHEP CAT Plan during 2005-06 by constructing check dam 1 no. in crate, protection wall 4 no. in crate. During 2005-07 check dam 3 no with crate, 1 no without crate, protection wall 1 with crate and 7 no without crate. During 2008-09 check dam 6 nos with crate, P/wall (4 with crate & 2 dry), during 2009-10 check dam 15 no with crate or protection wall (7 no in crate & 14 in dry). Bio species like Spiraea, Barbatis, Kul, & Debreogissa are coming naturally. Silt has been deposited behind the structure. One branch of nala remains to be treated.
	Peshada Slip	31 27'36", 77 41'43"	It is located on the left side of Peshada nala and above Geura road. Treatment has been done during 2008-09 by constructing 21 no of protection wall (14 in crate & 7 dry). No further treatment is required.
	C-181.A Land slide	31 27'38", 77 41'43"	The slide is situated near peshada nursery and quarry point. The slide has been treated under the component of stabilization of active land slide during 2005-06 by constructing 21 no. o/nala (8 in crate & 13 in dry). During 2008-09 protection wall 57 nos (36 in crate & 21 in dry) and during 2009-10 39 no. protection wall (30 in crate, 9 in dry). No further treatment is required.
	Khareri nala near hospital	31 27'43", 77 40'27"	The nala originates from Mirganal and is situated near Mahatma Gandhi Govt. Hospital Rampur (Khaneri). The nala has been treated under NHEP CAT during 2009-10 by constructing check dam 8 nos and protection wall 19 no (17 in crate & 2 in dry). The nala is full of vegetation & and Euclyptus plantation also exists along the nala.
			Remarks
			Biological interventions along with other civil structures required are given under future management.
			Biological interventions along with other civil structures required are given under future management.
			No treatment is required.
			No further treatment is required.
			No treatment is required.



Name of Component	Name of Area	GPS Coordinates	Observation	Remarks
Afforestation	Pashada Area 5 h.c.	31.28°07', 77°41'20"	The area was closed during 2004-05 under NIHEP CAT Plan and is now established plantation. It is situated just below Gaura road and around pashada nursery. The area has been planted with Chil, Rubinia, Poplar, Chulli, Daroo etc. The Rubinia and Chil are doing excellently and has now reached into pole stage.	The area / plantation be protected from all type of forest offences so that it can be developed into forest.
Road Side Erosion Control	From Mirga nala to Pashada	31.27°38', 77°41'43"	Check wells in crata wire 19 nos., has been constructed along above Gaura road under the component road side erosion control during 2009-10. The area along the road is now stable and full of vegetation.	No treatment required
Nurseries				
Rural Infrastructure Development	Bawari at Pashada	31.28°03', 77°41'31"	IT is located below Gaura road and Pashada village. The bawari was constructed during 2004-05 under NIHEP CAT Plan and is being used by the local inhabitants.	The bawari be kept neat & clean and maintained regularly.
Avenue Plantation	Balti Dhar	31.28°27', 77°41'23"	A small spot / area at Balti dhar has been fenced with 8/wire during 2010-11 under the component avenue plantation. The spot is situated on the left side of Rampur Gaura road. The site is beautifully located and one can have view of Nigbha 'Inaki' project area. This spot has been planted with ornamental plants like Techurna, Cylandra, Rose, Bottle Brush, Kanair, Har sharnigar, Bougainvillea & pipal etc	The following intervention are required to be done 1) Raising of lawn grass 2) Fixing of Slogen and Sign boards. Since there is no such component in the recasting of CAT Plan. However, Rs. 0.50 lac approximately may be arranged from other schemes.



Soil & Water Conservation Endeavors

Holog Nala



Pashada Nala



C-181 A Land slide



Khaneri nala near hospital



Naik Environment Research Institute Ltd

Afforestation
Pashada Area 5 hac



Road Side Erosion Control
From Mirga nala to Pashada



Naik Environment Research Institute Ltd

Rural Infrastructure Development
Bawari at Pashada



Avenue Plantation
Balti Dhar



Naik Environment Research Institute Ltd

FUTURE PLANNING						
Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Approximate Financial Outlay (In lacs.)
(a) Normal Afforestation						
	Duga Challen C-181b (2 Ha. New)	31 28'45" 77 42'03"	The proposed area is situated near Haldole village. It is open to very open pure Chilli Forest. The area about 5 Ha. is proposed to be taken under enrichment component so as to restock the area. The proposed area along with GPS co ordinates has been provided by DFO Rampur/RO Rampur.	1) Wire fencing. 2) Planting of Chilli from Pashada nursery.	Ha	28784 0.57568
(b) Enrichment	C-179b(2 Ha. New)	31 27'09" 77 40'48"	The proposed area is situated near Sanathali village. It is open to very open Decdar, Kail and Rai forest. The area about 5 Ha. is proposed to be taken under enrichment component so as to restock the area. The proposed area along with GPS co ordinates has been provided by DFO Rampur/RO Rampur.	1) Wire fencing. 2) Planting of Decodar from Pashada nursery.	Ha	38340 0.77
	C-181 (b) ii (5 Ha. 2009-10)	31 27'07" 77 42'08"	The area has been closed under Replenishment afforestation component during 2009-10. The detail of plantation along with GPS co ordinate has been provided by DFO Rampur/RO Rampur. The area is situated near Banoulisour.	Fence require repair and the area be protected from all types of biotic interferences. And the area be maintained as per availability of funds.	Ha.(maint. 3rd year) Ha.(maint. 4th year) Ha.(maint. 5th year)	864 450 450 0.0432 0.0225 0.0225
	Banauli (10 Ha. 2009-10)	31 27'24" 77 42'25"	The area has been closed under Assisted Natural Regeneration component during 2009-10. The detail of plantation along with GPS co ordinates has been provided by DFO Rampur/RO Rampur. The area is situated below Banoulisour.	Fence require repair and the area be protected from all types of biotic interferences. And the area be maintained as per availability of funds.	Ha.(maint. 3rd year) Ha.(maint. 4th year) Ha.(maint. 5th year)	864 450 450 0.0864 0.045 0.045



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lac.)
(C) Energy Plantation (d) Measure to handle invasive species.								
Nurseries	Pashada Area 0.60 hac. Hs. 1599 mtr.	31 28'10" 77 41'28"	The nursery is situated about 500 mtr below Gaira road, near middle school Pashada and above Pashada khad. Aspect is north east. Slope is moderate. Middle to mature chili, Deodar trees are also located on the boundary of nursery. 5 No. Vermicompost are available put to use. The irrigation is through alkalith pipe about 250 mtr from Pashada bawari. There is no storage tank. The nursery contains following stock: Chulli 970, Deodar 30000, Agraye 17000, Khair 812, Kainth 4500, Ban 110, Pasa 7290, Ritha 4120, Sirta 1220, Walnut 150, Willow 3500, Roza 500, Daru 2300, Robonia 6725.	i) Extension of nursery ii) Construction of nursery store/ shed. iii) Storage tank 1000 Ltr. 2 nos iv) Raising of bio species like Karmel, Behal, Kur, Rubus, Sprea, Debregressia, Zanthoxylum etc.	No.	1	Lumpsum	2.75
Pasture Reclamation								
Total Afforestation and Nurseries								4.36025



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (In Lacs.)
Soil & Water Conservation Endeavors								
(a) Hoiture Retentively Operations								
(b) Live Hedge Fencing								
(c) Vegetative structures								
(d) Civil Structures	Hahog Nala	31 37'04" 77 49'51"	It originates from Sarasthi 170 forest. It is a seasonal nala. The top portion of nala is precipitous. Nala has been treated under NHEP CAT Plan during 2010-11 by constructing check-dam 2 no. in craters, protection wall 2 no. in craters. Beside this biological species like Rubinia 2500, Agave 5600, Dodonaea 2000 has also been planted. During 2005-06 this nala has also been treated in the name of Jalathia nala under NHEP CAT Plan. Few old structure has been damaged which requires repair/ reconstruction.	i) Repair of old structure ii) Biological interventions like planting of Karml, Zanthoxylum, Debruggassia etc. iii) Construction of Brushwood check dam	Ha.	2.2	67500	1.50
					Cum	77	650	



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in lacs.)
			It originates from Benauli C180 B-III and is about 3 Km in length. It is dry and seasonal nala. The slope is precipitous in the top, moderate and gentle below the road. Nala has been treated under JhREJ CAT Plan during 2005-06 by constructing check dam 1 no. in crate, protection wall 4 no. in crate. During 2006-07 check dam 3 no with crate, 1 no without crate, protection wall 1 with crate and 7 no without crate. During 2008-09 check dam 6 nos with crate, Pivell (4 with crate or protection wall (7 no in crate & 14 no dry). Bio species like Spiraea, Berberis, Kuli, & Delongiella are coming naturally. Site has been deposited behind the structure. One branch of nala remains to be treated.		Ha.	1.5	67500	
(e) Drainage line treatment & Land slide control.	Parvada Nala	31 27'58" 77 41'43"		1) Construction of check dam / protection wall. 2) Biological intervention like planting of Kasmal, Zanthoxylum, Debriggassa, Kuli, Spiraea etc.	Cum	153	1307	2.50
(f) Stream bank stabilizations								
Total Soil & Water Conservation Endeavors								
								4.00



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (In Lacs.)
Payment for Environmental Services			<p>i) The sub-micro water shed is fire prone. It is therefore, recommended that the JPHCs of the micro water shed will be involved in all type of forest protection activities. ii) The villagers located in the sub micro water shed are mostly agriculturalist / horticulturalist and fell 2 to 3 no of poles annually for keeping the dry grass in the open. The people will be given / provided 3 nos of poles of non schedule species, so that people don't fell the poles from the forest from this purpose.</p>	<p>i) Lump sum provision has been kept for this purpose which will be given to the JPHCs, which actively involve themselves in forest protection in the micro water shed. ii) The people located in the sub micro water shed shall be provided 3 no of poles of non scheduled species for the purpose of keeping the dry grasses.</p>	No.	JPHCs and 3 No of poles	Lumpsum	1.30
Total Payment for Environmental Services								
Infrastructure built up & Forest Protection								
(a) Building for stay of staff, FSH/ H.U.	Maintenance of FG Hut at Pashada	31 28'04", 77 41'24"	The hut is situated about 100 to 120 mtr above Gaura road and near Pashada village. It requires maintenance as per detail given under treatment prescribed	i) Painting of CG roofing ii) Sanitary fitting, iii) Development of compound	No.	1	Lumpsum	1.00
(b) Forest Roads/ Paths								
(c) Alignment of Water Supply.								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (In Lacs.)
(d) Vehicle & Operational Support to JEPD								
(e) Office Equipment								
(f) Site Monitoring & Purchase of Meteorological Equipment								
(g) Construction & Repair of Boundary Pillars.								
(h) Fire Protection Measures								
(i) Distribution of Non-conventional energy & Fuel Saving devices								
Total Infrastructure built up								1.00
Grand Total								10.46



Soil & Water Conservation Endeavors

Halog Nala



Pashada Nala



Naik Environment Research Institute Ltd

Infrastructure built up & Forest Protection

Maintenance of FG Hut at Pashada



Naik Environment Research Institute Ltd

Nurseries

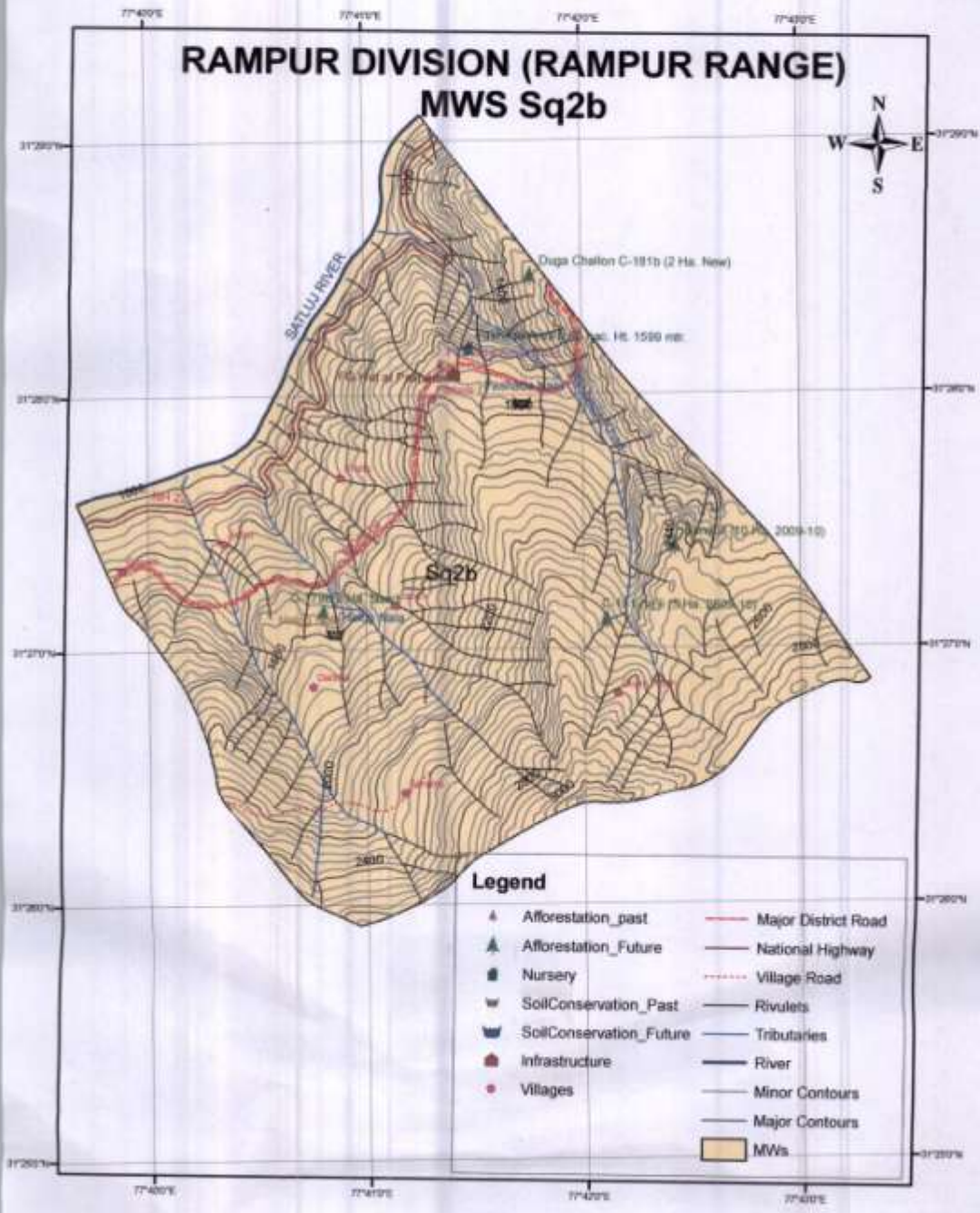
Sq2b

Pashada Area 0.60 hac, Ht. 1599 mtr.



Naik Environment Research Institute Ltd

RAMPUR DIVISION (RAMPUR RANGE) MWS Sq2b



Legend

- | | |
|---------------------------|-----------------------|
| ▲ Afforestation_past | — Major District Road |
| ▲ Afforestation_Future | — National Highway |
| ■ Nursery | — Village Road |
| ⊞ SoilConservation_Past | — Rivulets |
| ⊞ SoilConservation_Future | — Tributaries |
| ■ Infrastructure | — River |
| ● Villages | — Minor Contours |
| | — Major Contours |
| | ■ MWs |

MICRO WATERSHED

Sq2c

MANAGEMENT PLAN OF – Sg2c MWS (UNDER NJHEP)									
LOCATION (BOUNDARIES)		GENERAL DESCRIPTION OF MWS							
AREA OF MWS	LATITUDE	LONGITUDE	ALTITUDE	SLOPE	SOIL	FOREST		PANCHAYAT	
						RANGE	BLOCK		BEAT
2156	31 27' to 31'	77 41 to 46'	1420 to 2945	20 to 75	lime and clay loam	Rampur & Sarahan	Rampur & Gopalpur	Pashada, Gopalpur & Jhakra	Racholi, Gaura & Jhakra

LAND USE		DEMOGRAPHY					LIVE STOCK POPULATION	
RF	DPF	UPF	PRIVATE LAND (Agri+Horti)	WASTE LAND	TOTAL	HOUSE HOLD		HUMAN POPULATION
(In HA)	(In HA)	(In HA)	(In HA)	(In HA)	(In HA)	(In Nos.)	(In Nos.)	(In Nos.)
	654	176	1276	50	2156	3055	12220	1978

TREES KAIL, DEODAR, FIR, SPRUCE, KHARSU, EUCLYPTUS, SIRIS, BOMBAX, AESOULUS, WALNUT, BIRDCHEERY, MAPPLE, KUNISH, BAN OAK, MOHRO, PIERISOVALIFOLJA, CHIL, SHISHAM, TAXIUS, LITSEA, RHODODENDRON, POPULUS, ETC.

HERBS & SHRUBS BERBARIS, PRINSCPEIA, ROSA MOSCHATA, RUBUS, DEBREGSSIA, PLECTRANTHUS, DESOMODIUM, VIOLA, GIRARDIANA, VIBURNUM, POLYGONUM, FRAGERIA, FIRAL, LONICERA, CRATEGUS, ARUNDINARIA, SPIRAEA, KUI, INDIGOFERA, RUMAX, DEUTIZIA, AINSLIAEA, STROBILANTHES, SALVIA , COBRA PLANT ETC.

GRASSES ARIUNDO-DONAX, MUNJ GRASS

MEDICINAL HERBS BANAFSHA, DIASCORIA ETC.

ANIMALS **FAUNA** BLACK BEAR, LEOPARD, MONKEYS & OTHERS SMALL MAMMALS

BIRDS/PHEASANTS KALIZ, MONAL, KOKLASH & OTHER BIRDS



MWS :- Sq2c (NJHEP Rampur Division)



Naik Environment Research Institute Ltd

PAST HISTORY OF MANAGEMENT

Name of Component	Name of Area	GPS Coordinates	Observation	Remarks
	Barauni Above Slide	31 29°01', 77 41'42"	It is situated above NH-22 on the right bank of Barauni nala. The nala has been treated during 2009-10 & 2010-11 under NJHEP CAT Plan. The structure has been constructed but record was not made available. The nala requires biological interventions.	Biological interventions required are given under future management.
	Jhakeri Nala	31 29°29', 77 42'16"	It originates from Gaura and is perennial. The nala has been treated under NJHEP CAT Plan during 2008-09 & 2009-10 as detail given below: 2008-09 : Check dam 2 no. in crate, Protection wall 25 No. 21 in crate 4 dry, 2009-10 : Protection wall 28 with crate, check dam 4 no. (3 in crate & 1 dry). The nala is full of vegetation and Shisham is coming naturally. The nala is also covered with Ricinus below NH 22 Jhakeri bridge. No treatment is required.	No treatment is required.
Soil & Moisture conservation	Barauni Slip (main nala)	31 28°10', 77 42'17"	It is situated along Rampur - Gaura road and originates from C-182 Phareodi. The nala/slip has been treated during 2009-10 & 2010-11 under NJHEP CAT Plan. The following structure has been constructed:- Check walls 19 nos in crate. A small slip is situated on the right side of the main nala which requires treatment.	The main nala is to be treated under comprehensive CAT Plan from the top. Diversion drain is prescribed to be constructed from the top of the nala. However, in the mean time some biological interventions are required in this nala and small slip adjoining to this nala as per detail given under future management.
	Chaudhli Nala	31 29°12', 77 44'31"	It originates from Gopalpur (halot) and is seasonal nala. The nala runs along PH Gopalpur and the nala is deep and narrow. The nala has been treated during 2009-10 from top to bottom UPTD Ratanpur (Sharanpur) by constructing 19 nos. check dam (in crate 17 nos, 2 nos dry) and 24 nos check walls in crate. The nala is full of biological species. Most of the structures has been damaged which needs to be repaired.	Repairing of damaged structures is prescribed in this nala as per detail given under future management.
	WHS Dujru	31 27°58', 77 43'47"	It is situated amidst forest and near to Deepak's orchard. It was constructed during 2009-10 and the water will be used by the near by people.	No treatment is required.



Name of Component	Name of Area	GPS Coordinates	Observation	Remarks
Soil & Moisture conservation	Koti Nala	31 28'10", 77 43'38"	It originates from Koti (Ropi/Phacoti) on the right side of Kapti village. It is seasonal nala and has been treated during 2009-10 from top to bottom by constructing check dam 10 nos. and check wall 16 nos all in crates. Planting / ponding of willow and chabon has also been done. Some structures has been damaged partially. No is coming naturally.	Only repairing of partially damaged structure is required as erosion under future management.
	Basahra Nala	31 29'34", 77 43'30"	It originates from Gaura / Koti. Above Gaura it is known as Koti Nala and below Jaidid it is known as Basahra nala. The total length is about 4 kms and is perennial nala. It has been treated before 2009-10 from top to bottom. During 2009-10 one number big check dam has been constructed which has given way. The structure has been silted. The nala is flat down below above Kattanpur to Shah road which required channelization.	Channelization of the nala, repair of old structure and biological interventions are required as erosion under future management and may be treated from Comprehensive CAT Plan.
Afforestation				
Road Side Erosion Control				
Nurseries				
Rural Infrastructure Development				
Private land treatment	Basahra Land	31 29'32", 77 43'30"	The private land situated along Basahra Nala has been treated under private level treatment component during 2009-10 by constructing check walls in crates. The bio species like Desmodium, Desregissia, Plectranthus etc are also coming naturally.	No treatment prescribed.
Repair / Construction of Boundary pillars	Near WHS water harvesting structure Dugru	31 27'59", 77 43'48"	The main boundary pillar no. 385 was located near Deepak's orchards. The condition of the boundary pillars is not good which was found to be half damaged and buried under the soil. The local staff present has been directed to repair the boundary pillar immediately and locate the remaining pillars also. As per field staff the sufficient funds are available for this purpose and therefore no provision has been kept under this component.	As per field staff sufficient funds are available for this purpose and therefore no provision has been kept under this component.



Soil & Water Conservation Endeavors

Berauni Above Slide



Jhakra Nala



Barauni Sijp (main nala)



Chaudali Nala



WHS Dugru



Koti Nala



Naik Environment Research Institute Ltd

Basahra Nala



Private land treatment
Basahra Land



Malk Environment Research Institute Ltd

Repair / Construction of Boundary pillars

Near WHS water harvesting structure Dugru



Naik Environment Research Institute Ltd

FUTURE PLANNING								
Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in lacs.)
(a) Normal Afforestation	Shukon (5 Ha. 2009-10)	31 29'23", 77 42'28"	The area has been closed under rehabilitation of degraded forest during 2009-10. The area is fenced with barbed wire fencing. Slope is moderate to steep. The area is situated above Jharkhand Helipad. The detail of plantation along with GPS co ordinates has been provided by DFO Rampur/ RO Rampur.	Fence require repair and the area be protected from all types of biotic interferences. And the area be maintained as per availability of funds.	Ha. (maint. 3rd year)	1320	0.064	
					Ha. (maint. 4th year)	650	0.0325	
(b) Enrichment					Ha. (maint. 5th year)	650	0.0325	
(c) Energy Plantation	C-182 b Hal (3 Ha. New)	31 27'29", 77 42'56"	The proposed area is situated above Rampur- Gaura road and on the right bank of Brownish khali. It is open to very open decidur and Kail forest. The area about 5 Ha. is proposed to be taken under enrichment component so as to relook the area. The proposed area along with GPS co ordinates has been provided by DFO Rampur/ RO Sarikhan.	1) 8 wire fencing. 2) Planting of Decidur from KOB nursery.	Ha	38340	1.15	
(d) Measure to handle Invasive species.								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in lacs.)
Nurseries	Jharkh, Area 0.60 Hec. Hc. 1351 mtr.	31° 28' 59" N, 77° 41' 49" E	The nursery is situated just above quarry site approach road. The aspect is south east & irrigation is through. A pipe about 800 mtr. from Barahni khad and then stored in storage tank. It is a well laid and well maintained nursery. The nursery consists of following stocks: Ban oak 10700, Jakananda 1500, Mahru 240, Jemmun 2900, Palla 5370, Dera 4750, Shisham 1940, Kainth 3210, Raha 9920, Sims 5000, Babula 4782, Chh 10360, Ipomoea 140, Codonopsis 3920 Agave 42602. Vermicompost pits 4 nos. are available and put to use.	i) Extension of nursery ii) Construction of nursery store/ shed. iii) Repair / Maintenance of Storage tank. iv) Raising of Bio species like Bahal, Karmal, Rubus, Desmodium, Zanthoxylum etc.	lit.	1	Lumpsum 2.75	
	Koti, Area 1 Hec. Hc. 2348 mtr.	31° 28' 10" N, 77° 43' 49" E	The nursery is located amidst Deodar, Rai forest. It is nicely located nursery and irrigation is through open channel upto storage tank and then through Alu pipe from storage tank above nursery. The aspect is northern. The minor able road is also running just above the nursery. The nursery consist of Deodar above 2 years 23244, Deodar in 9/Bag 27800, Khairpur 3042, Deodar under germination 63 beds, Toru 15 beds under germination, Rubia 18,400 under germination, Coriaria Columba 1400 nos. 40/yr old 945 nos. 5 nos of vermicompost pits are available and are functional.	The following actions are required:- i) Extension of nursery ii) Construction of nursery store/ shed. iii) Vermicompost pits iv) Establishment of Poly house v) Raising of Bio species like Koi, Bahal, Kachinval, Indigolera, Desmodium, Viburnum, Spiraea etc. vi) Tree species like Happle, Bircherry, Ply/Spruce, Taxus etc. vii) Construction of 100 mtr. irrigation channel.	No.	1	Lumpsum 3.75	



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (In lacs.)
Nurseries	Batangas, Area 0.30 hac. HL. 1329 mb.	11 30'20" , 77 44'18"	The nursery is located about 150 mtr. just below BH-22 near Batangas. It is a well laid nursery. The aspect is southern. The nursery is surrounded by Chl / Eucalyptus forest. Irrigation is through aluminum pipe from batangas side and stored in Sotas tank which is leaking. 16 mt of vermicompost pits are available and are functional. The nursery contain following stock:- Biba 22615 in P bag, Ben 22206, Agave 20250, Kul 20715 (Under germination in 4 bags), Melbens 12625 not germination, Kudina 2325, Chl 15625, Jakananda 7605, Silver Oak 507, Sheastain 3550 (All failed), Kanth 3928, Daroo 180, (Dobonia, Bercana).	The following actions are required:- 1) No scope for Extension of nursery. 2) Construction of nursery stone/ sheet. 3) Basing of bioactive like Zanthoxylum, Kul, Bekhal, Kathal, Subul (deoptus etc.) 4) One storage tank 1000 lt capacity.	No.	1	Lumpsum 2	
Pasture Reclamation								
Total Afforestation and Nurseries								
Soil & Water Conservation Endeavors								
(a) Moisture Retention Operations								
(b) Live Hedge Fencing								
								9.78



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in Lacs.)
(c) Vegetative structures	Barauni Above Slide	31 28'13", 77 42'10"	It is situated above NH-32 on the right bank of Barauni nala. The slip has been treated during 2009-10 & 2010-11 under MJPET CAT Plan. The structure has been constructed but record was not made available. The nala requires biological interventions.	i) PWD to construct B/wall ii) Biological intervention like HBG and Planting of bio species	Hs.	0.35	67500	0.23
(c) Vegetative structures	Barauni Land Slide	31 28'13", 77 42'10"	It is situated in between Gaura road loops. The slip is full of grass. A patch of forest consisting of Kail, Chit & Ban trees are standing which are also in the danger due to origin of this slide. A biological interventions are required to be done in order to protect the trees.	i) PWD to construct B/wall 3 nos. ii) Sprinkling of seeds of Kumaik, Kundi, Pinnacops, Kacowal, Spirees, Frel an Kail iii) Biological intervention like HBG, including Planting of bio species	Hs.	1.5	67500	1.00
(d) Civil Structures	Barauni Slip (main nala)	31 28'19", 77 42'17"	It is situated along Rampur - Gaura road and originates from C-182 Phareedi. The nala/ slip has been treated during 2009-10 & 2010-11 under MJPET CAT Plan. The following structure has been constructed :- Check walls 19 nos in crabs. A small slip is situated on the right side of the main nala which requires treatment.	i) Broadcasting of seeds of Kumaik, Frel, Kupsia, Alantus and planting of bio species like Subus Elatrus, Desmodium etc. in the main nala above and below Gaura road. ii) The slip on the right side of the main nala is to be treated by biological interventions like HBG/ Frazones / broadcasting of bio seeds. In addition to this the slip is to be treated by constructing Crabs wire protection wall and planting of Populus and Alnus etc.	Hs.	1.85	67500	2.56
					Cum	185	1080	



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (In lacs.)
(d) Civil Structures	Cheddi Nala	31 29'12" 77 44'31"	It originates from Gopalpur (Haliot) and is seasonal nala. The nala runs along PNH Gopalpur and the nala is deep and narrow. The nala has been treated during 2009-10 from top to bottom (JPTD Barampur (Sharanpur) by constructing 19 nos. check dam (in crabs 17 nos., 2 nos dry) and 24 nos check walls in crabs. The nala is full of biological species. Most of the structures has been damaged which needs to be repaired.	a) Repairing of damaged structures.	Cum	308	650	1.86
	Koti Nala	31 29'10" 77 43'30"	It originates from Koti (Rugi/Phanasi) on the right side of Kapti village. It is seasonal nala and has been treated during 2009-10 from top to bottom by constructing check dam 10 nos. and check wall 16 nos all in crabs. Planting / ponding of willow and chhaloon has also been done. Some structures has been damaged partially. No is coming naturally.	b) Repairing of partially damaged structure.	Cum	154	650	1.00
(e) Drainage line treatment & Land slide control.								
(f) Stream Bank stabilizations								
Total Soil & Water Conservation Endeavors								6.61



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in Lacs.)
Payment for Environmental Services	Battapur slp	11 30'18", 77 44'19"	The slp is situated just below NH-32 near Battapur and on the left side of Battapur nala which is continuation of Charal nala. Crute wire structure has been constructed by PWD during 2010-11. The land owner be advised to treat the slp through bio logical intervention.	(i) Broadcasting of seeds of <i>Albizia</i> & <i>Leucaena</i> . (ii) Planting of willow, <i>Acacia</i> & <i>Kuruk</i> . (iii) Harvesting of bio species like <i>Delonix</i> , <i>Moringa</i> , <i>Albizia</i> and <i>Frax</i> etc.	Ns.	1.5	67500	1.05
			(i) The sub-micro water shed is fine prove. It is therefore, recommended that the JPHCs of the micro water shed will be involved in all type of forest protection activities. (ii) The villagers located in the sub micro water shed are mostly agricultural / horticultural and till 2 to 3 no of poles annually for keeping the dry grass in the open. The people will be given / provided 3 nos of poles of non schedule species, so that people don't fell the poles from the forest from this purpose.	(i) Lump sum provision has been made for this purpose which will be given to the JPHCs, which actively involve themselves in forest protection in the micro water shed. (ii) The people located in the sub micro water shed shall be provided 3 no of poles of non scheduled species for the purpose of keeping the dry grasses.	Ns.	2PHCs and 3 No of poles	Lumpsum 1.30	
Total Payment for Environmental Services								
Infrastructure built up & Forest Protection								
(a) Building for stay of staff, FBVI Hd.	Construction of PG hut at Jain		There is no forest guard hut in Jain beat and the forest guard is residing in the fire accommodation. For effective patrolling/ protection of forest and implementation of CAT Plan works, it is necessary to construct a new forest guard hut.	Construction of new forest guard hut.	Mtr.	3	Lumpsum 7.06	
(b) Forest Roads/ I Paths								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in Lacs.)
(C) Augmentation of Water Supply.								
(d) Vehicle & Operational Support for HPPD								
(e) Office Equipment								
(F) Site Monitoring & Purchase of Meteorological Equipment.								
(g) Construction & Repair of Boundary Pillars.								
(H) Fire Protection Measures								
(I) Distribution of Non-conventional energy & Fuel Saving devices								
Total Infrastructure built up								7.00
Grand Total								25.74



Nurseries

Sq2c

Jhakri, Area 0.60 hac. Ht. 1351 mtr.



Koti, Area 1 hac. Ht. 2348 mtr.



Rattanpur, Area 0.30 hac. Ht. 1329 mtr.



Naik Environment Research Institute Ltd

Soil & Water Conservation Endeavors

Barauni Above Slide



Barauni Land Slide



Barauni Slip (main nala)



Chadail Nala



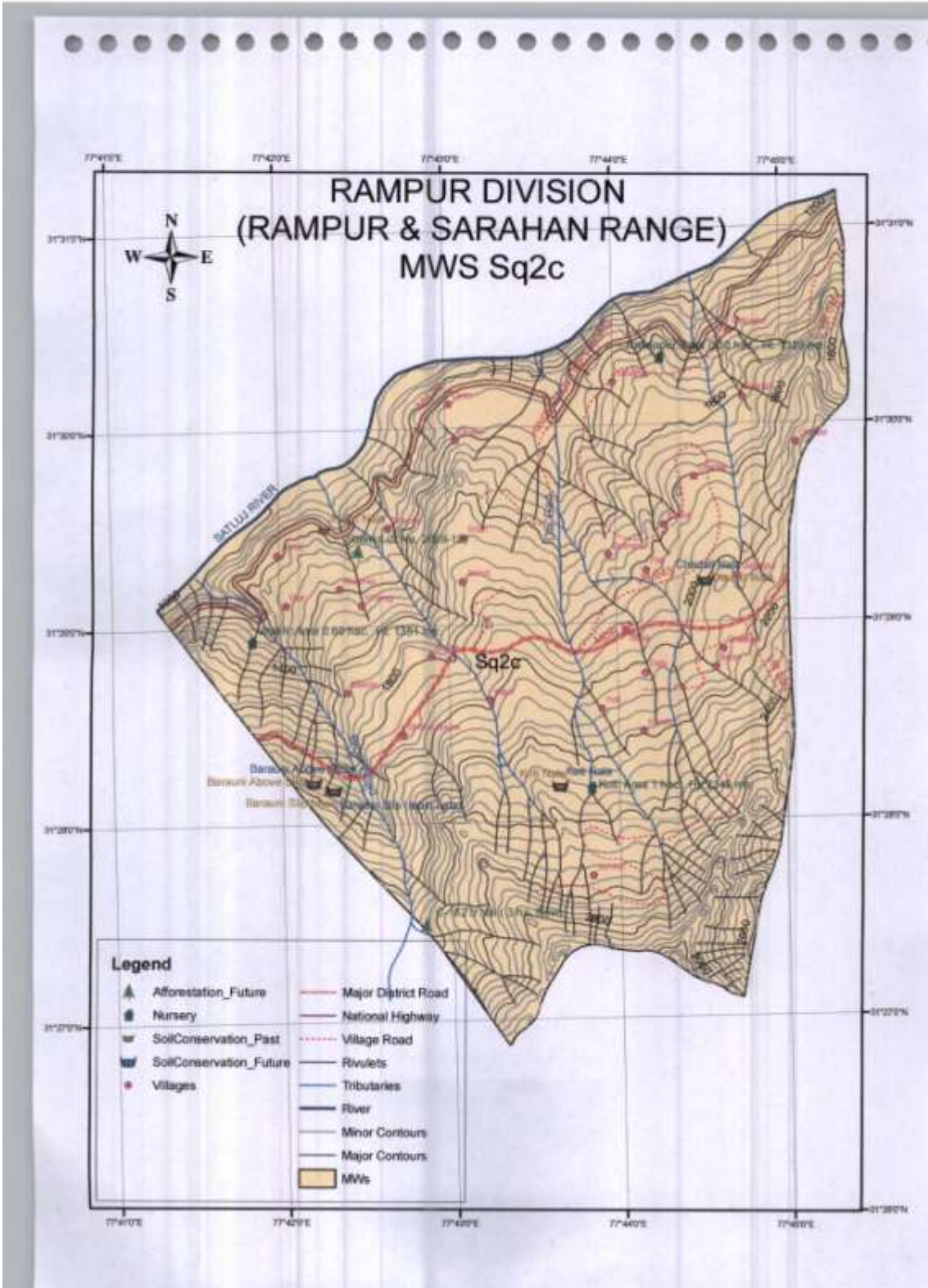
Koti Nala



Rattanpur slip



Nalk Environment Research Institute Ltd



MICRO WATERSHED

Sq3a

MANAGEMENT PLAN OF - So3a MWS (UNDER NJHEP)									
LOCATION (BOUNDARIES)				GENERAL DESCRIPTION OF MWS					
AREA OF MWS	INTRODUCTION			FOREST					
	LATITUDE	LONGITUDE	ALTITUDE	SLOPE	SOIL	RANGE	BLOCK	BEAT	PANCHAYAT
1976	31 26' to 32'	77 44' to 48'	1105 to 2960	30 to 80	clay loam and sandy	Sarahan	Sarahan & Gopalpur	Dolda & Sarahan	Dolda, Shahdhar

LAND USE				DEMOGRAPHY				
RF	DPP	UPF	PRIVATE LAND (Agri+Horti)	WASTE LAND	TOTAL	HOUSE HOLD	HUMAN POPULATION	LIVE STOCK POPULATION
(In HA)	(In HA)	(In HA)	(In HA)	(In HA)	(In HA)	(In Nos.)	(In Nos.)	(In Nos.)
	124	476	574	802	1976	804	5554	2066

FLORA

TREES KAIL, DEODAR, AESCULUS, WALNUT, BIRDCHERY, MAPPLE, KUNISH, BAN OAK, MOHRO, CHIL, SHISHAM, SPRUCE, RHODODENDRON, POPULUS, ETC.

HERBS & SHRUBS BERBARIS, PRINSCPEIA, ROSA MOSCHATA, RUBUS, DEBREGSSIA, PLECTRANTHUS, DESDOMODIUM, VIOLA, GIRARDIANA, VIBURNUM, POLYGONUM, FRAGERIA, CRATEGUS, FIRAL, SPIRAEA, INDIGOFEA, RUMAX, DEUTIZIA, AINSLJAEA, STROBILANTHES, SALVIA ETC.

GRASSES ARUNDO-DOINAX, MUNI GRASS

MEDICINAL HERBS BANAFSHA, DIASCORIA ETC.

FAUNA

ANIMALS BLACK BEAR, LEOPARD, MONKEYS & OTHERS SMALL MAMMALS

BIRDS/PHEASANTS KALIZ, MOMAL, KOKLASH & OTHER BIRDS



MWS :- Sq3a (NJHEP Rampur Division)



Naik Environment Research Institute Ltd

PAST HISTORY OF MANAGEMENT

Name of Component	Name of Area	GPS Coordinates	Observation	Remarks
Soil & Moisture conservation	Kuni Nala	31 30'04", 77 45'56"	It originates from and below kinoo road. It has two branches. One branch of the nala is seasonal and 2nd branch is perennial. The nala is full of vegetation and treated during 2008-09 and 2009-10 by constructing check dam / check walls in crate.	No scope for treatment.
	Uchi Nala	31 29'51", 77 45'18" 31 28'20", 77 45'37"	It originates from Dasmala (UF 04) forest. It is a perennial nala. The nala has been treated in between upto Funja village during 2009-10 by constructing check dam 4 nos and C-wall 42 numbers all in crate. This nala meets with manglad khad near Majhawall. The length of nala is about 3 Kms. The nala is full of Kunish trees. The nala below Shah village has been treated under MNREGA.	The nala requires treatment by constructing civil works and biological interventions as given under future management.
Afforestation				
Road Side Erosion Control				
Nurseries				
Rural Infrastructure Development				
Private land treatment				
Repair / Construction of Boundary pillars				



Soil & Water Conservation Endeavors

Kuni Nala



Uchhi Nala



Nalik Environment Research Institute Ltd

FUTURE PLANNING								
Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (In lacs.)
Afforestation Measures								
(a) Normal Afforestation	Uchinata (2 Ha. New)		The proposed area is situated above Gopalpur-Mashnoo road and near to Dofda nursery . It is open to very open Deodar, Kail and Rai Forest. The area about 5 Ha. is proposed to be taken under enrichment component so as to restock the area. The proposed area along with GPS co ordinates has been provided by DFO Rampur/RO Sarahan.	1)B/wire fencing. 2)Planting of Deodar from Dofda nursery.	Ha	5	38340	0.77
(b) Enrichment	Deev B. Noshani C-183 (3 Ha. New)		The proposed area is situated above Gopalpur village . It is open to very open Rai,Deodar and Kail Forest. The area about 15 Ha(Deev & Noshani, Roghi) 5 ha. each). is proposed to be taken under enrichment component so as to restock the area. The proposed area along with GPS co ordinates has been provided by DFO Rampur/RO Sarahan.	1)B/wire fencing. 2)Planting of Deodar from Koti nursery.	Ha	15	38340	1.15
(c) Energy Plantation								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in lacs.)
(d) Measure to handle invasive species.								
Nurseries	Kunni Area 0.10 Hac. Ht. 1530 mtr	31 30'09", 77 45'55"	It is situated just above Kotla, Kunni, Shah dhar road near Kunni village. The aspect is south west irrigation is from Kunni nala through Alkathine pipe about 100 mtr and then to nursery. There is no storage. 6 no of vermicompost pits are available and put to use. The nursery contain following stock: Ritha 350, Rubinia 5250, Daroo 300, Kul 10,000. The Kul has started germinating in p bags.	i) Extension of nursery ii) Storage tank one no. 1000 litres. iii) Raising of biospecies like Firal, Kashmal, Debriggissia, Bekhal, and paper mulberry etc.	No.	1	Lumpsum	1.00
	Dofsa Area 1 hac., Ht. 2244 mtr.	31 27'38", 77 45'09"	The nursery is situated about 1/2 Km above Gopalpur Mashnoo road and on the left side of Dashimela nala and on right side of Chandubala nala. Both the nalas meet down below and form as Uchhi khad. Irrigation is through permanent source of adjoining nala through Alkathine pipe. The aspect is northern. It is an ideal nursery for Deodar. 5 Nos. vermicompost pits has been constructed 2010-11 and put to use. The following stocks exist in the nursery: Ban 20000 in p bags, Deodar 24,800 in beds above 2years, Khanoor 1680 in beds, Kul 32000 in p bags under germination, Kunish 18000 in p bags under germination, Robinie 11400.	i) No scope of for extension ii) Construction of nursery store/ shed iii) Storage tank 1000 Ltr iv) Raising of bio species like Crategus, Spiraea, Kashmal, Indigofera, Desmodium etc.	No.	1	Lumpsum	2.5



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
Total Afforestation and Nurseries								
Soil & Water Conservation Endeavors								
(a) Moisture Retentively Operations								
(b) Live Hedge Fencing								
(c) Vegetative structures								
(d) Civil Structures	Uchhi Nala	31 29'51", 77 45'18"	It originates from Dasmala (UF 04) forest. It is a perennial nala. The nala has been treated in between upto Funiya village during 2009-10 by constructing check dam 4 nos and C/Wall 42 numbers all in crate. This nala meets with manglad khed near Majhewal. The length of nala is about 3 Kms. The nala is full of Kuniah trees. The nala below Shah village has been treated under MNRREGA.	The nala requires treatment by constructing civil works and biological interventions as under: a) Pollarding of Kuniah b) Construction of protection walls & Check dams in crate	Ha.	2.2	67500	3.50
		31 28'20", 77 45'37"						
(e) Drainage line treatment & Land slide control.					Cum	191	1307	
								5.42



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
(F) Stream Bank stabilizations								
Total Soil & Water Conservation Endeavors								
Payment for Environmental Services			<p>i) The sub-micro water shed is fire prone. It is therefore, recommended that the JFMC's of the micro water shed will be involved in all type of forest protection activities. ii) The villagers located in the sub micro water shed are mostly agriculturalist / horticulturalist and fell 2 to 3 no of poles annually for keeping the dry grass in the open. The people will be given / provided 3 nos of poles of non schedule species, so that people don't fell the poles from the forest from this purpose.</p>	<p>i) Lump sum provision has been kept for this purpose which will be given to the JFMC's, which actively involve themselves in forest protection in the micro water shed. ii) The people located in the sub micro water shed shall be provided 3 no of poles of non scheduled species for the purpose of keeping the dry grasses.</p>	No.	JFMC's and 3 No of poles	Lumpsum	1.30
Total Payment for Environmental Services								
								1.30



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in lacs.)
Infrastructure built up & Forest Protection								
(a) Building for stay of staff, FRH/I Hut.		---						
(b) Forest Roads/ 1 Paths								
(c) Augmentation of Water Supply.								
(d) Vehicle & Operational Support to HPFD								
(e) Office Equipment								
(f) Silt Monitoring & Purchase of Meteorological Equipment								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
(O) Construction & Repair of Boundary Pillars.								
(N) Fire Protection Measures								
(I) Distribution of Non-conventional energy & Fuel Saving devices								
Total Infrastructure built up								0.00
Grand Total								10.22



Soil & Water Conservation Endeavors

Uchhi Nala



Naik Environment Research Institute Ltd

Nurseries

Sq3a

Kunni Area 0.10 Hac. Ht. 1530 mtr

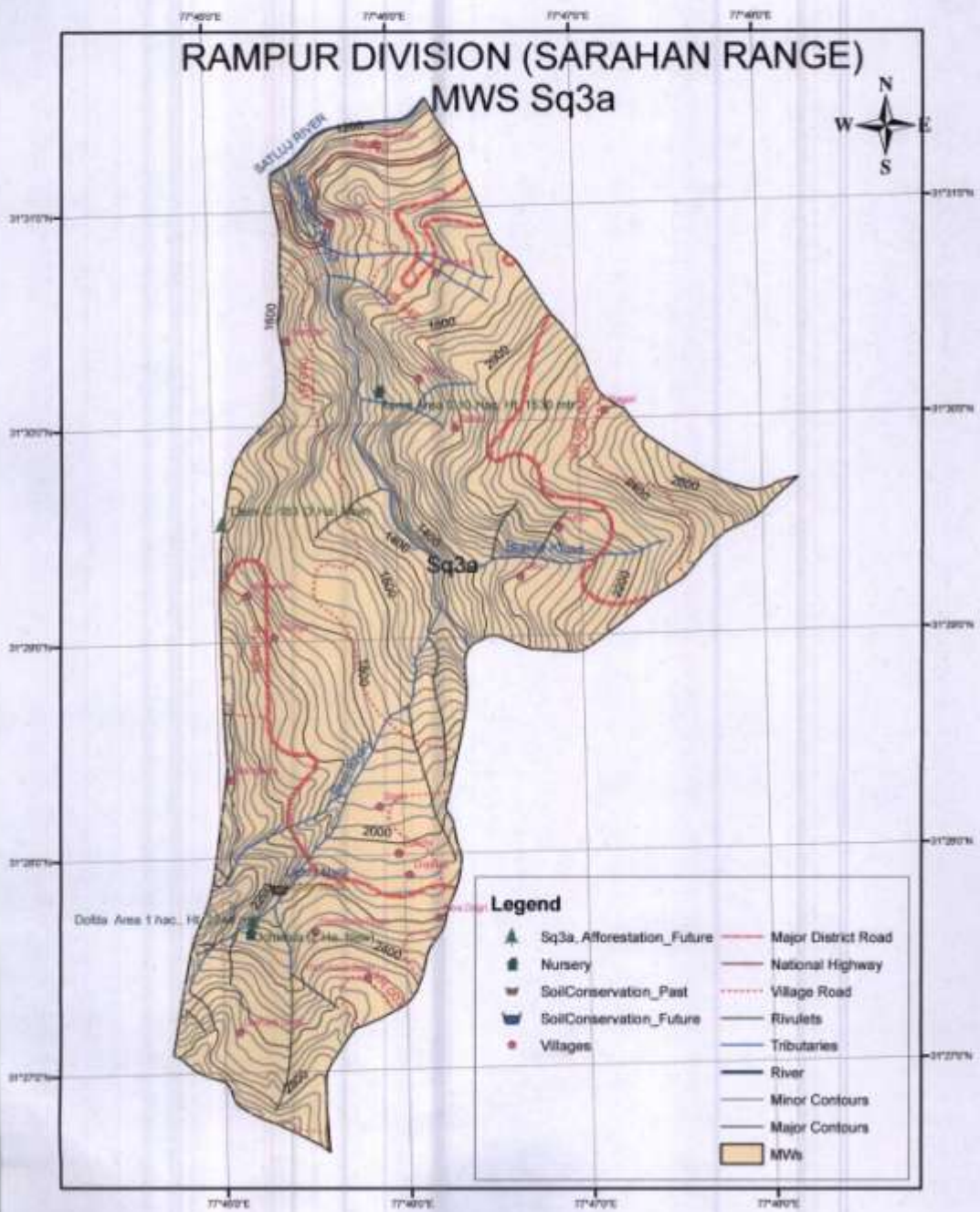


Dofda Area 1 hac., Ht. 2244 mtr.



Naik Environment Research Institute Ltd

RAMPUR DIVISION (SARAHAN RANGE) MWS Sq3a



MICRO WATERSHED

Sq3b

MANAGEMENT PLAN OF - Sq3b MWS (UNDER NJHEP)

LOCATION (BOUNDARIES)		GENERAL DESCRIPTION OF MWS					PANCHAYAT		
AREA OF MWS	LATITUDE	LONGITUDE	ALTITUDE	SLOPE	SOIL	RANGE		BLOCK	BEAT
2192	31 26' to 29'	77 45' to 50'	1390 to 3386	40 to 80	sandy loam and clay	Sarahan	Gopalpur	Dofda & Mastnoo	Dofda

LAND USE		DEMOGRAPHY				LIVE STOCK POPULATION (in Nos.)		
RF (in HA)	DPF (in HA)	UPF (in HA)	PRIVATE LAND (Agri+Horti) (in HA)	WASTE LAND (in HA)	TOTAL (in HA)		HOUSE HOLD (in Nos.)	HUMAN POPULATION (in Nos.)
828		324	363	677	2192	262	1300	873

FLORA

TREES KAIL, DEODAR, AESCULUS, WALNUT, BIRDCHEERRY, MAPPLE, KUNISH, MOHRO, FIR, SPRUCE, RHODODENDRON, POPULUS, KHARSU, CORYLUS ETC.

HERBS & SHRUBS BERBARIS, PRINSCIEPIA, ROSA MOSCHATA, RUBUS, DEBREGSSIA, DESDOMIDIUM, VIOLA, GIRARDIANA, VIBURNUM, POLYGONUM, FRAGERIA, CRATEGUS, FIRAL, SPIRAEA, INDIGOFFERA, RUMAX, LONISERA, DAPHNE, BALSOM, COBRA PLANT, DEUTIZIA, AINSLJAEA, STROBILANTHES, SALVIA ETC.

GRASSES ARUNDO-DONAX, MUNJ GRASS

MEDICINAL HERBS BANAFSHA, DIASCORIA, MOHARA, KARU, DHOOP, Patish, Bhutkeash; Dioscoria, Salam Pamja, Salam Missry, Kuth, Bankakari,

ANIMALS BLACK BEAR, LEOPARD, MONKEYS & OTHERS SMALL MAMMALS

BIRDS/PHEASANTS KALIZ, MONAL, KOKLASH, TRAGOPAN & OTHER BIRDS



MWS :- Sq3b (NJHEP Rampur Division)



Maik Environment Research Institute Ltd

PAST HISTORY OF MANAGEMENT				
Name of Component	Name of Area	GPS Coordinates	Observation	Remarks
Soil & Moisture conservation	Rama Gad	31 26'57", 77 46'13"	It originates from Gotwa. It has two tributaries which meet just below Daran bridge. It has been treated during 2009-10 by constructing check dam 12 nos, and check wall 31 no in crate. The Daran tributary requires treatment in order to train the nalla. Silt has been deposited behind the old structures. The Rama Gad has been treated from top upto Dofta - Mashnu bridge.	Construction of civil works along with bio engineering interventions are required as per detail given under future management.
Afforestation	Daran Area 10 hac.	31 26'55", 77 46'09"	The area is situated just below Daran nursery and has been closed during 2005-06 under NTFP component. Area is fenced with B/wire fencing which needs repairing. The area has been planted with medicinal herbs.	No treatment prescribed.
Road Side Erosion Control				
Nurseries				
Rural Infrastructure Development				
Private land treatment				
Repair / Construction of Boundary pillars				



Soil & Water Conservation Endeavors
Rama Gad



Afforestation
Daran Area 10 hac.



Naik Environment Research Institute Ltd

FUTURE PLANNING								
Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (In lacs.)
Afforestation Measures								
(a) Normal Afforestation								
(b) Enrichment	UF-5 (Luhari Tikari, Kotmi, Gabwa, 2 Ha. New)		The proposed area is situated above Mashnu and Rama village. It is an open to very open Deodar, Kail, Rai and Fir Forest. An area about 5 Ha. in Gabwa is proposed to be taken under enrichment component so as to restock the area. The proposed area along with GPS co ordinates has been provided by DFO Rampur/ RO Sarahan.	1)B/wire fencing. 2)Planting of Deodar from Doldra nursery.	Ha	5	38340	0.77
(c) Energy Plantation								
(d) Measure to handle invasive species.								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (In fact.)
Nurseries	Daran Area 0.30 Hac. Ht. 2388 mtr	31 26'55" 77 46'04"	It is situated about 300 mtr above Daran road and just below Daran village. It is basically medicinal plant nursery. The aspect is south west. Irrigation is through Alkabline pipe about 200 mtr from Daran gad and no storage. There is no vermicompost pits. The nursery consist of following stock: Dioscoria 7570, Bhutkesh 5700, Chukri 3500, Karoo 1100, Chora 3000 in beds and 10000 in P/bag under germination, Butch 2000, Salam Panja 5 beds (under germination), Kuth 2500, Ban Kakri 25, Salim Missry and Rattan jot.	i) Water storage tank 1000 ltr 1 no, ii) Alkabline Pipe 25 mm., 300 Mtr iii) Vermicompost pits iv) Raising of Biospecies like Indigolifera, Spiraea, Desmodium, Kashmal etc	No.	1	Lumpsum	1.00
Pasture Reclamation								
Total Afforestation and Nurseries								
Soil & Water Conservation Endeavors								
(a) Moisture Retentively Operations								
(b) Live Hedge Fencing								
								1.77



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
(c) Vegetative structures	Bajwa Slip	31 27'01" 77 48'12"	It originates from Bajwa to Thachwa path. It is situated on the left bank of Bajwa khad and about 1/2 km above Mashnoo - Kinoo road. The slip requires vegetative interventions.	i) Construction of vegetative pollarding and fascines ii) HBL iii) Sprinkling of kail seeds iv) Planting of bio species like Spiraea, Desmodium, Kasmal etc.	Ha	1.5	67500	1.00
(d) Civil Structures	Rama Gad	31 26'57" 77 46'13"	It originates from Gabwa. It has two tributaries which meets just below Daran bridge. It has been treated during 2009-10 by constructing check dam 12 nos, and check wall 31 no in crate. The Daran tributary requires treatment in order to train the nala. Silt has been deposited behind the old structures. The Rama Gad has been treed from top upto Dofda - Mashnu bridge.	i) Construction of check dams and P/walls in crate ii) Pollarding of Populus, Kunish	Ha. Cum	1.5 230	67500 1307	3.00
(e) Drainage line treatment & Land slide control.								
(f) Stream Bank stabilizations								
Total Soil & Water Conservation Endeavors								4.00



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
Payment for Environmental Services			<p>i) The sub-micro water shed is fire prone. It is therefore, recommended that the JPMC's of the micro water shed will be involved in all type of forest protection activities. ii) The villagers located in the sub micro water shed are mostly agriculturalist / horticulturalist and fell 2 to 3 no of poles annually for keeping the dry grass in the open. The people will be given / provided 3 nos of poles of non schedule species, so that people don't fell the poles from the forest from this purpose.</p>	<p>i) Lump sum provision has been kept for this purpose which will be given to the JPMC's, which actively involve themselves in forest protection in the micro water shed. ii) The people located in the sub micro water shed shall be provided 3 no of poles of non scheduled species for the purpose of keeping the dry grasses.</p>	No.	JPMC's and 3 No of poles	Lumpsum	1.30
Total Payment for Environmental Services								1.30



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (In laacs.)
Infrastructure built up & Forest Protection								
(a) Building for stay of staff, FRH/1 Hut.	Special repair of FG Hut Mashnoo HT. 2102 mtr	31 27'42", 77 47'02"	It is located on the right side of GHS Mashnoo and at a distance about 100 mtr above road. The hut is in a dilapidated condition and requires special repair.	i) Cement Plastering in rooms and side walls ii) Replacement of CGI roofing and repair of ceiling iii) Maintenance of sanitary and electrification iv) Construction of side drains v) Replacement of eave boards vi) Cement flooring in the rooms & veranda vii) Repair of kitchen which has developed cracks	No.	1	Lumpsum	3.00
(b) Forest Roads/ 1 Paths								
(c) Augmentation of Water Supply.	Special repair of FG Hut Mashnoo HT. 2102 mtr	31 27'42", 77 47'02"	It is located on the right side of GHS Mashnoo and at a distance about 100 mtr above road. The hut is in a dilapidated condition and requires special repair. There is scarcity of water which require augmentation from near by JPH source.	Augmentation of water supply including internal and external fitting.	No.	1	Lumpsum	0.75



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (In laacs.)
(d) Vehicle & Operational Support to HPPD								
(e) Office Equipment								
(f) Silt Monitoring & Purchase of Meteorological Equipment								
(g) Construction & Repair of Boundary Pillars.								
(h) Fire Protection Measures								
(i) Distribution of Non-conventional energy & Fuel Saving devices								
Total Infrastructure built up								3.75
Grand Total								10.82



Soil & Water Conservation Endeavors

Bajwa Slip



Rama Gad



Naik Environment Research Institute Ltd

Infrastructure built up & Forest Protection

Special repair of FG Hut Mashnoo HT. 2102 mtr



Naik Environment Research Institute Ltd

Nurseries

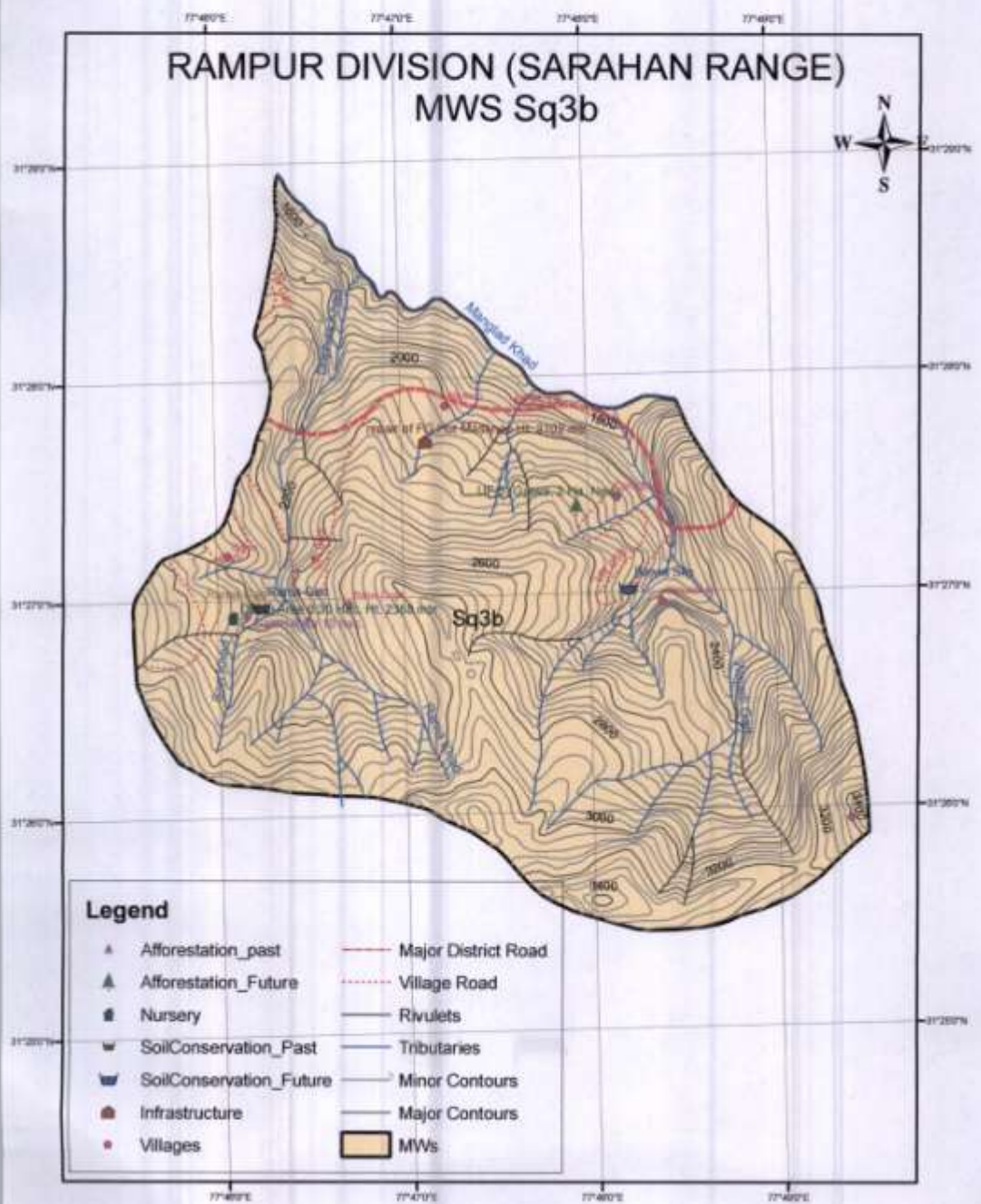
Sq3b

Daran Area 0.30 Hac. Ht. 2388 mtr



Naik Environment Research Institute Ltd

RAMPUR DIVISION (SARAHAN RANGE) MWS Sq3b



Legend

- | | |
|---------------------------|-----------------------|
| ▲ Afforestation_past | — Major District Road |
| ▲ Afforestation_Future | ⋯ Village Road |
| ■ Nursery | — Rivulets |
| ⊞ SoilConservation_Past | — Tributaries |
| ⊞ SoilConservation_Future | — Minor Contours |
| ● Infrastructure | — Major Contours |
| ● Villages | ■ MWs |

MICRO WATERSHED

Sq3c

MANAGEMENT PLAN OF - 503c MWS (UNDER NJHEP)									
LOCATION (BOUNDARIES)			GENERAL DESCRIPTION OF MWS						
AREA OF MWS	LATITUDE	LONGITUDE	ALTITUDE	SLOPE	SOIL	FOREST			PANCHAYAT
						RANGE	BLOCK	BEAT	
1480	31.27' to 30'	77 46' to 51'	1390 to 3775	40 to 85	sandy clay loam	Sarahan	Sarahan	Bhagawat	Kinoo

LAND USE		DEMOGRAPHY					LIVE STOCK POPULATION
RF	DPF	UPF	PRIVATE LAND (Agri+Horti)	WASTE LAND	TOTAL	HOUSE HOLD	
(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in Nos.)	(in Nos.)
	403		495	582	1480	318	1635
							4260

FLORA

TREES KAIL, DODAR, AESCULUS, WALNUT, BIRDCHERY, MAPPLE, KUNISH, MOHRO, FIR, BAN OAK, SPRUCE, RHODODENDRON, POPULUS, KHARISU ETC.

HERBS & SHRUBS BERBARIS, PRINSCERIA, ROSA MOSCHATA, RUBUS, DEBREGSSIA, DESDOMODIUM, VIOLA, GIBARDIANA, VIBURNUM, POLYGONUM, FRAGERIA, COTONEASTER, THALICTRUM, FIRAL, SPIRAEA, INDIGOFERA, RUMAX, ARUNDINARIA, LONICERA, DAPHNE, BALSOM, DEUTIZIA, AINSLIAEA, STROBILANTHES, SALVIA ETC.

GRASSES ARUNDO-DONAX, MUNJ GRASS

MEDICINAL HERBS BANAFSHA, DIASCORIA , MOHARA, KARU, DHOOP, PATISH, BHUTKESH, DIOSCORIA, SALAM PANJA, SALAM MISSRY, KUTH, BANKAKARI, ETC.

FAUNA

ANIMALS BLACK BEAR, LEOPARD, MONKEYS & OTHERS SMALL MAMMALS

BIRDS/PHEASANTS KALIZ, MONAL, KOKLASH, TRAGOPAN & OTHER BIRDS



MWS :- Sq3c (NJHEP Rampur Division)



Nalk Environment Research Institute Ltd

PAST HISTORY OF MANAGEMENT

Name of Component	Name of Area	GPS Coordinates	Observation	Remarks
Soil & Moisture conservation	Garnada Nala	31.28°59", 77°49'10"	The nala originates from Hundbar. It is a steep, deep narrow and perennial nala. The nala meets with Mangled Khad just below Manglad bridge. The nala is full of bio species. It has been treated during 2008-09 by constructing protection wall 11, check dam 1 no in crata and during 2009-10 protection wall 6 dry and P/wall 10 no in crata under RHEP CAT Plan. It still require treatment.	Biological intervention along with construction of P/wall and check dams in crata are required to be done as per detail given under future management.
Afforestation	UF Khakshi 5 hac.	31.28°01", 77°49'16"	The area has been closed during 2010-11 under rehabilitation of degraded forest component in RHEP CAT Plan. The area is situated just below Bhagawat link road. The area is steep to very steep with shrubs like Diosmodium, Firal and few trees of Robinia. The area is full of grasses and planted with BAN 1102, Sims 200, Kalith 498, Mohno 360, Daroo 590, Robinia 700, Drake 170, Behul 180, Kimmoun Dakh 50, Diosmodia 1600, Chora 700, Bhukesh 1000. The area has been fenced with B/wire in stone pillars. The overall survival percentage 35 to 40%.	The area is to be maintained as per availability of funds and well protected.
Road Side Erosion Control				
Nurseries				
Rural Infrastructure Development				
Private land treatment				
Repair / Construction of Boundary pillars				



Soil & Water Conservation Endeavors
Garteda Nala



Afforestation
UF Khakshi 5 hac



Naik Environment Research Institute Ltd



FUTURE PLANNING

Name of Component	Name of Area	GPS Coordinate	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (In lacrs.)
Afforestation Measures								
(a) Normal Afforestation	Kokoh (5 Ha, 2010-11)		The area has been closed under rehabilitation of degraded forest during 2010-11. The area is fenced with barbed wire fencing. Slope is moderate to steep. The area is situated near to Garada slip. The detail of plantation along with GPS co ordinates has been provided by DFO Rampur/ RO Sarahah.	Fence require repair and the area be protected from all types of biotic interferences. And the area be maintained as per availability of funds.	Ha. (maint. 2nd year)		2700	0.135
					Ha. (maint. 3rd year)	5	1320	0.066
					Ha. (maint. 4th year)		650	0.0325
					Ha. (maint. 5th year)		650	0.0325
(a) Normal Afforestation	Badrak (5 Ha, 2010-11)	11 32'39" 77 48'15"	The area has been closed under rehabilitation of degraded forest during 2010-11. The area is fenced with barbed wire fencing. Slope is moderate to steep. The area is situated beyond Dhara village. The detail of plantation along with GPS co ordinates has been provided by DFO Rampur/ RO Sarahah.	Fence require repair and the area be protected from all types of biotic interferences. And the area be maintained as per availability of funds.	Ha. (maint. 2nd year)		2700	0.135
					Ha. (maint. 3rd year)	5	1320	0.066
					Ha. (maint. 4th year)		650	0.0325
					Ha. (maint. 5th year)		650	0.0325
(a) Normal Afforestation	Pachach (5 Ha, 2010-11)		The area has been closed under rehabilitation of degraded forest during 2010-11. The area is fenced with barbed wire fencing. Slope is moderate to steep. The area is situated above Kinoo village. The detail of plantation along with GPS co ordinates has been provided by DFO Rampur/ RO Sarahah.	Fence require repair and the area be protected from all types of biotic interferences. And the area be maintained as per availability of funds.	Ha. (maint. 2nd year)		2700	0.135
					Ha. (maint. 3rd year)	5	1320	0.066
					Ha. (maint. 4th year)		650	0.0325
					Ha. (maint. 5th year)		650	0.0325





Name of Component	Name of Area	GPS Coordinate	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in Rm)
(b) Enrichment	C-187 (5 Ha, New)	31 28'13" 77 50'40"	The proposed area is situated beyond Badli village and Tshah track. It is open to very open mixed forest of Raj, Kail and Decodar. An area about 10 Ha. is proposed to be taken under enrichment component so as to network the area. The proposed area along with GPS coordinates has been provided by DFO Ranpur/ RD Serelvan.	1) Barbed wire fencing. 2) Planting of Decodar from Kinoo and Doride nursery.	Ha	5	38340	1,917
(c) Energy Plantation								
(d) Measure to handle invasive species.								
Nurseries	Kinoo Area 0.25 Ha. 77 48'44" 2031 mtr.	31 28'05" 77 48'44"	It is located near forest colony Kinoo and about 150 to 200 mtr above Kinoo plantation road and about 250 mtr down to Kinoo - Bhagawat road. The nursery is being maintained in two parts. The irrigation is through Alkabhine pipe from permanent source of Kinoo nala about 250 to 300 mtr. through water channel and then direct to nursery. The nursery contains Decodar 10000 above 2.5 years. One number of vermicompost pit is available but not put to use.	1) Extension of nursery (1 to 4 plots) 2) Water storage tank to be brought from abandoned RTTP nursery at Bhagawat 3) Raising of site species like Kashtina, Demodolum, Sporea, Kiu, Shekhal, Destruggesia, Fyal, Nangal, Willow, Chabson and Kurish etc.	No.	1	Lumpsum	1.90

Name of Component	Name of Area	GPS Coordinate	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in laacs.)
Soil & Water Conservation Endeavors								
Total Afforestation and Nurseries								
(a) Moisture Retentively Operations								4.52
(b) Live Hedge fencing								
(c) Vegetative structures	Lotwa slip	31 28'01" 77 48'18"	It is situated just above Kinoo-Sarahan road. It originates from and below Kinoo road. It is a small slip but active during rainy seasons. It is to be treated mainly biological interventions and construction of diversion drain along the road which is the root cause for this slip.	i) Construction of diversion drain along the road ii) Vegetative palisade / HBL iii) Planting of Populus, Chaloon, Kuntsh, Willow, Firal, Dehreggestia, Spiraea, Saabuckthorn etc.	Ha.	1.5	67500	2.25
(d) Civil Structures	Garteda Nala	31 28'08" 77 49'10"	The nala originates from Hursidher. It is a steep, deep narrow and perennial nala. The nala meets with Manglad Khad just below Manglad bridge. The nala is full of bio species. It has been treated during 2008-09 by constructing protection wall 11, check dam 1 no in crate and during 2009-10 protection wall 5 dry and P/wall 10 in crate under R-REP CAT Plan. It still require treatment.	i) Construction of check dams and protection wall in crate wire ii) Follarding of Kuntsh and Chaloon	Ha.	1.5	67500	2.50
					km.	500	27100/100 mta	
					Cum	153	1307	



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
(e) Drainage line treatment & Land slide control.								
(f) Stream Bank stabilizations								
Total Soil & Water Conservation Endeavors								
Payment for Environmental Services			<p>i) The sub-micro water shed is fire prone. It is therefore, recommended that the JFMC's of the micro water shed will be involved in all type of forest protection activities.</p> <p>ii) The villagers located in the sub micro water shed are mostly agriculturalist / horticulturalist and fell 2 to 3 no of poles annually for keeping the dry grass in the open. The people will be given / provided 3 nos of poles of non schedule species, so that people don't fell the poles from the forest from this purpose.</p>	<p>i) Lump sum provision has been kept for this purpose which will be given to the JFMC's, which actively involve themselves in forest protection in the micro water shed. ii) The people located in the sub micro water shed shall be provided 3 no of poles of non scheduled species for the purpose of keeping the dry grasses.</p>	No.	JFMC's and 3 No of poles	Lumpsum	1.30
Total Payment for Environmental Services								1.30



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in lack.)
Infrastructure built up & Forest Protection								
(a) building for stay of staff, PRH/1 Hut.	Maintenance of FG Hut Kinoo	31 28'05", 77 48'43"	It is situated below Kinoo village about 250 mtr down from Kinoo - Bhagawat road and about 150 mtrs above Kinoo - Mashnoo road. The FG Hut requires maintenance as per detail given under treatment prescribed.	i) Construction of side drain and plinth protection ii) repair of electricity iii) Plastering and flooring. iv) Painting of CGI roofing v) Sanitary fitting	No.	1	Lumpsum	1.00
			It is located near FG hut Kinoo. The inspection hut though constructed about decade back but not put to use resulting in bad condition. The 1 hut has developed cracks and main hole cover is also required to be put on the septic tank. After maintenance the hut may be utilized.	i) Filling up of the cracks ii) Painting of CGI roofing iii) Repair of electricity iv) Main hole covers	No.	1	Lumpsum	1.00
(b) Forest Roads/ 1 Paths								
(c) Augmentation of Water Supply.	Maintenance of FG Hut Kinoo	31 28'05", 77 48'43"	It is situated below Kinoo village about 250 mtr down from Kinoo - Bhagawat road and about 150 mtrs above Kinoo - Mashnoo road. There is scarcity of water supply which is required to be augmented from Bhagawat PPH source.	i) GI fitting internal and external ii) Water supply from main line of PPH source to FG Hut about 150 mtr.	No.	1	Lumpsum	1.36



Name of Component	Name of Area	GPS Coordinate #	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (In lacs.)
(d) Vehicle & Operational Support to HPFD								
(e) Office Equipment								
(f) Soil Monitoring & Purchase of Meteorological Equipment								
(g) Construction & Repair of Boundary Pillars.								
(h) Fire Protection Measures								
(i) Distribution of Non-conventional energy & Fuel Saving devices								
Total Infrastructure built up								3.36
Grand Total								14.03



Soil & Water Conservation Endeavors

Lotwa slip



Garteda Nala



Naik Environment Research Institute Ltd

Infrastructure built up & Forest Protection

Maintenance of FG Hut Kinoo



Maintenance of I/ Hut Kinoo



Nalk Environment Research Institute Ltd

Nurseries

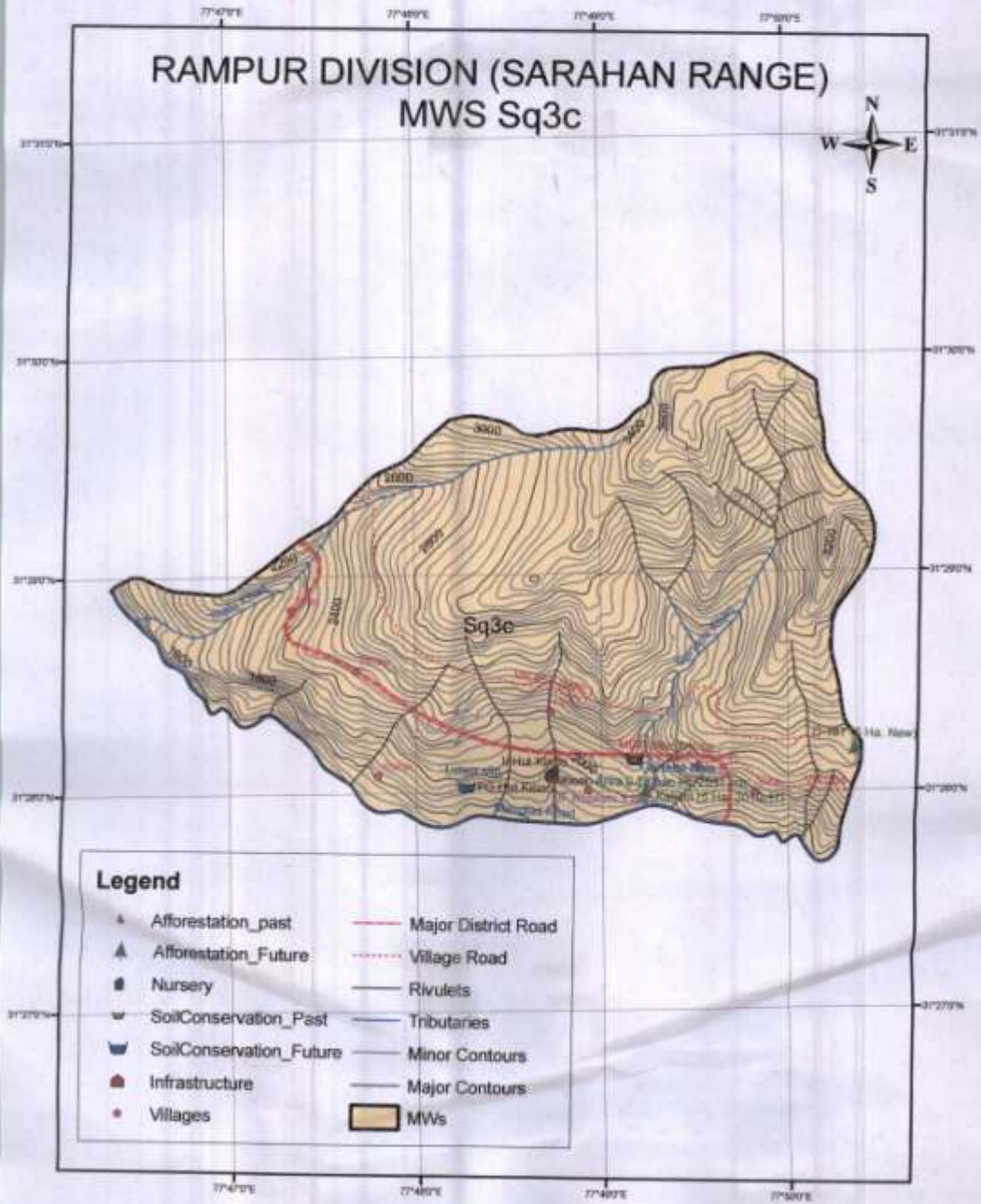
Sq3c

Kinoo Area 0.25 hac Ht. 2031 mtr.



Nalk Environment Research Institute Ltd

RAMPUR DIVISION (SARAHAN RANGE) MWS Sq3c



Legend

- ▲ Afforestation_past
- ▲ Afforestation_Future
- Nursery
- ⊞ SoilConservation_Past
- ⊞ SoilConservation_Future
- Infrastructure
- Villages
- Major District Road
- ⋯ Village Road
- Rivulets
- Tributaries
- Minor Contours
- Major Contours
- MWs

MICRO WATERSHED

Sq3f

MANAGEMENT PLAN OF - Sq3f MWS (UNDER NJHEP)										
LOCATION (BOUNDARIES)					INTRODUCTION					
AREA OF MWS	LATITUDE		LONGITUDE		ALTITUDE	SLOPE	SOIL	GENERAL DESCRIPTION OF MWS		
	RANGE		BLOCK					FOREST	BEAT	PANCHAYAT
1284	31 26' to 32'	77 50' to 54'	2630 to 4395	40 to 50	clay lime	Sarahan	Sarahan	Bhagawat	Kinoo	

LAND USE				DEMOGRAPHY				
RF	DPF	UPF	PRIVATE LAND (Agri+Horti)	WASTE LAND	TOTAL	HOUSE HOLD	HUMAN POPULATION	LIVE STOCK POPULATION
(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in Nos.)	(in Nos.)	(in Nos.)
	1634			150	1784	0	0	0

FLORA

TREES KAIL, DEODAR, AESCULUS, WALNUT, BIRCHERRY, MAPPLE, KUNISH, MOHRO, SPRUCE, RHODODENDRON, POPULUS, KHARSU ETC.

HERBS & SHRUBS BERBARIS, PRINSCPEIA, ROSA MOSCHATA, RUBUS, DEBREGSSIA, DESDOMODIUM, VIOLA, GIRARDIANA, VIBURNUM, POLYGONUM, FRAGERIA, FIRAL, SPIRAEA, INDIGIFERA, RUMAX, ARUNDINARIA, LONICERA, DAPHNE, AINSLIAEA, SALVIA ETC.

GRASSES ARUNDO-DONAX, MUNJ GRASS

MEDICINAL HERBS BANAFSHA, DIASCORIA, MOHARA, KARU, DHOOP, PATISH, SALAM PANJA, SALAM MISSRY, KUTH, BANKAKARI, ETC.

ANIMALS BLACK BEAR, LEOPARD, MONKEYS & OTHERS SMALL MAMMALS

BIRDS/PHEASANTS KALIZ, MONAL, KOKLASH, TRAGOPAN & OTHER BIRDS



MWS :- Sq3f (NJHEP Rampur Division)



Naik Environment Research Institute Ltd

PAST HISTORY OF MANAGEMENT

Name of Component	Name of Area	GPS Coordinates	Observation	Remarks
Soil & Moisture conservation	Badam Slip	31 28'12", 77 50'32"	It originates from DPT 185 Manglad (Dhara) forest. It is situated on the left bank of Baghwanat rabi (Bakhand gad) and on the right side of Manglad khad. The slip is full of boulders, Calcareous soil and is with in the closed area. The rock is lime formation. The slip is in three parts which requires treatment. In between the slips there is a vertical strip of Kunish trees otherwise, all the three slips forms one big area. The slip is situated in plantation area has been treated during past but the structure constructed has not survived. This slip needs treatment through biological interventions. However, the remaining slips can be taken up under comprehensive CAT Plan.	Biological interventions are required to be done as per costal given under future management.
A/forestation	UF Badari S hac.	31 28'12", 77 50'32"	The area has been closed during 2010-11 under rehabilitation of degraded forest component in RHP CAT Plan. The area is situated on the left bank of Badari gad (Bakhand gad). The slope is steep to very steep and trees like Kunish, Megpale are standing in the area. The area has been planted with Karith 1500, Khanoor 2350, Dioscoria 1000, Bhukesh 200, Chukri 150, Chora 200. The area has been fenced with 8/yrms. There is heavy grazing pressure. The overall survive percentage is less than 20%.	The area is to be maintained as per availability of funds and well protected.
Road Side Erosion Control				
Nurseries				
Rural Infrastructure Development				
Private land treatment				
Repair / Construction of Boundary pillars				



Soil & Water Conservation Endeavors
Badari Slip



Afforestation
UF Badari 5 hac



Naik Environment Research Institute Ltd

FUTURE PLANNING								
Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in lacs.)
Afforestation Measures								
(a) Normal Afforestation								
(b) Enrichment								
(c) Energy Plantation								
(d) Measure to handle Invasive species.								
Nurseries								
Pasture Reclamation								
Total Afforestation and Nurseries								0.00
Soil & Water Conservation Endeavors								
(a) Moisture Retentivity Operations								
(b) Live Hedge Fencing								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
(c) Vegetative structures	Budari Slip	31.28°12', 77°50'32"	It originates from DPF 185 Manglad (Ohara) forest. It is situated on the left bank of Baghawati nala (Bakhind ghat) and on the right side of Manglad khed. The slip is full of boulders, Calcareous soil and is with in the closed area. The rock is lime formation. The slip is in three parts which requires treatment. In between the slips there is a vertical strip of Kumadh trees otherwise, all the three slips forms one big area. The slip is situated in plantation area has been treated during past but the structure constructed has not survived. This slip needs treatment through biological interventions. However, the remaining slips can be taken up under comprehensive CAT plan.	Biological interventions are: i) HBL / Palaada, ii) Planting of bio species like kul, Indigafera, Kasmai, Salix and Chaloon etc.	Ha.	3	67500	1.75
(d) Civil Structures								
(e) Drainage line treatment & Land slide control.								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in Lacs.)
(f) Stream Bank stabilizations								
Total Soil & Water Conservation Endeavors								
Payment for Environmental Services			<p>i) The sub-micro water shed is fire prone. It is therefore, recommended that the JFMC's of the micro water shed will be involved in all type of forest protection activities. ii) The villagers located in the sub micro water shed are mostly agriculturalist / horticulturalist and fall 2 to 3 no of poles annually for keeping the dry grass in the open. The people will be given / provided 3 nos of poles of non schedule species, so that people don't fell the poles from the forest from this purpose.</p> <p>ii) Lump sum provision has been kept for this purpose which will be given to the JFMC's, which actively involve themselves in forest protection in the micro water shed. iii) The people located in the sub micro water shed shall be provided 3 no of poles of non scheduled species for the purpose of keeping the dry grasses.</p>	No.	JFMC's and 3 No of poles	Lumpsum	1.30	
Total Payment for Environmental Services								
Infrastructure built up & Forest Protection								
(a) Building for stay of staff, FRHT Hut.								
(b) Forest Road/ 1 Paths								
Total Payment for Infrastructure built up & Forest Protection								
1.30								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in lacs.)
(c) Augmentation of Water Supply.								
(d) Vehicle & Operational Support to HPFD								
(e) Office Equipment								
(f) Silt Monitoring & Purchase of Meteorological Equipment								
(g) Construction & Repair of Boundary Pillars.								
(h) Fire Protection Measures								
(i) Distribution of Non-conventional energy & Fuel Saving devices								
Total Infrastructure built up								0.00
Grand Total								3.05



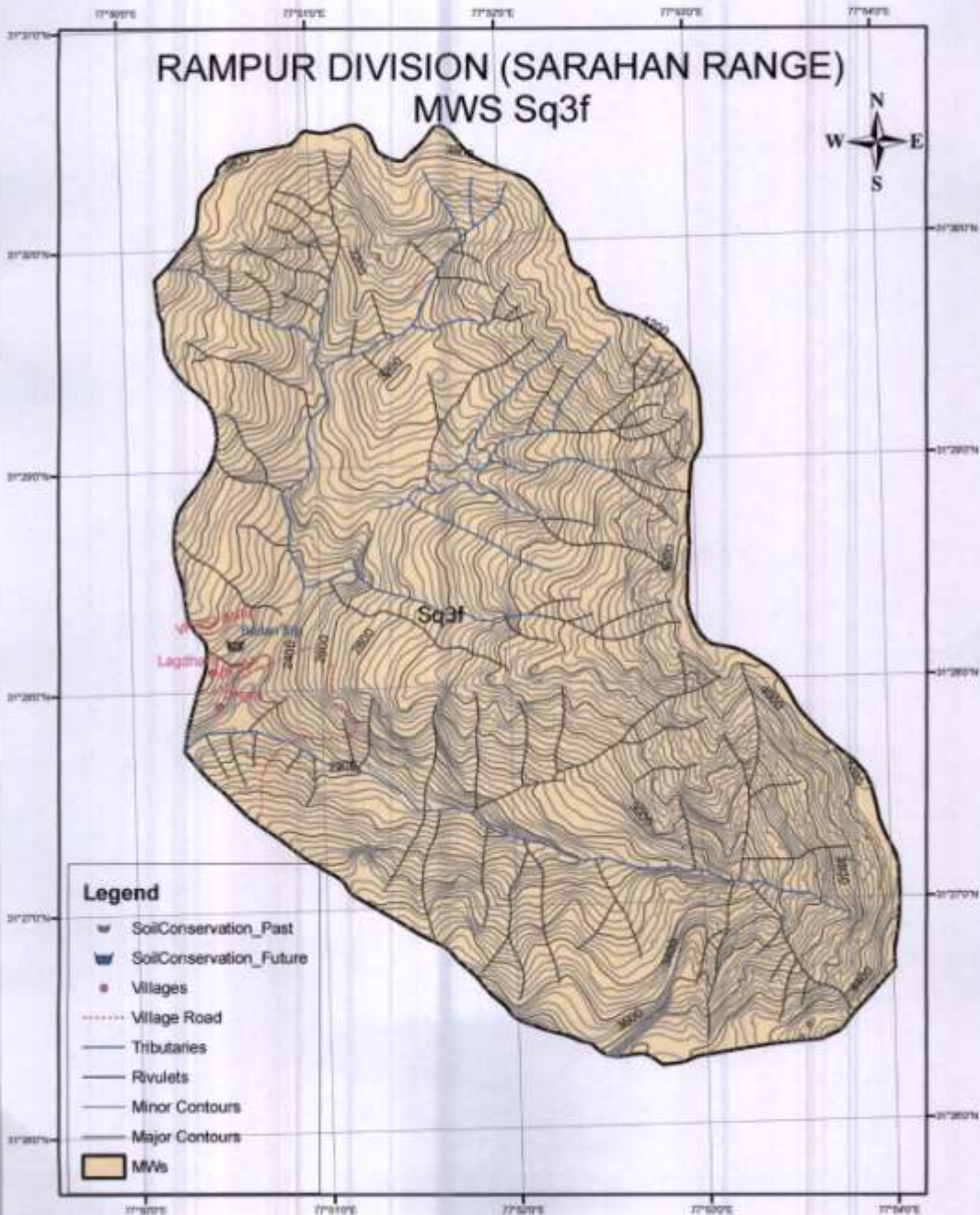
Soil & Water Conservation Endeavors

Badari Slip



Naik Environment Research Institute Ltd

RAMPUR DIVISION (SARAHAN RANGE) MWS Sq3f



MICRO WATERSHED

Sq4a

MANAGEMENT PLAN OF - Soda MWS (UNDER NJHEP)

LOCATION (BOUNDARIES)		GENERAL DESCRIPTION OF MWS				FOREST		PANCHAYAT	
AREA OF MWS	LATITUDE	LONGITUDE	ALTITUDE	SLOPE	SOIL	RANGE	BLOCK	BEAT	
1476	31 29' to 33'	77 46' to 50'	1150 to 3655	30 to 80	Sandy and clay loam	Sarahan	Sarahan	Sarahan	Tayawal, Sarahan, Shahdhar

LAND USE				DEMOGRAPHY				
RF	DPF	UPF	PRIVATE LAND (Agri+Horti)	WASTE LAND	TOTAL	HOUSE HOLD	HUMAN POPULATION	LIVE STOCK POPULATION
(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in Nos.)	(in Nos.)	(in Nos.)
	525.75	290.25	423	137	1476	2146	10728	936

FLORA

- TREES** KAIL, DEODAR, SPRUCE, SIRIS, AESCULUS, WALNUT, BIRDCERRY, KUNISH, MOHRO, PIERIS OVALIFOLIA, CHIL, ACER, RHODODENDRON, POPULUS, ETC.
- HERBS & SHRUBS** BERBARIS, PRINCEPIJA, ROSA MOSCHATA, RUBUS, DEBREGSSIA, PLECTRANTHUS, DESOONODIUM, VIOLA, GIRARDIANA, POLYGONUM, FRAGERIA, FIRAL, LONICERA, ARUNDINARIA, SPIRAEA, INDIGOFEBA, RUMAX, DEUTIZIA, SALVIA ETC.
- GRASSES** ARUNDO-DONAX, MUNJ GRASS
- MEDICINAL HERBS** BANAFSHA, DIASCORLA, KUTH, DHOOP, KARU ETC.
- ANIMALS** **FAUNA** BLACK BEAR, LEOPARD, MONKEYS & OTHERS SMALL MAMMALS
- BIRDS/PHEASANTS** KALIZ, MONAL, KOKLASH & OTHER BIRDS



MWS :- Sq4a (NJHEP Rampur Division)



Naik Environment Research Institute Ltd

Soil & Water Conservation Endeavors

Chakal Nala



Gharat Nala



Sahadhar Slip



Afforestation
UF Shalabag Area 10 hac



Nalk Environment Research Institute Ltd

Private Waste land Treatment
Unoo



Naik Environment Research Institute Ltd

PAST HISTORY OF MANAGEMENT				
Name of Component	Name of Area	GPS Coordinates	Observation	Remarks
Soil & Moisture conservation	Chalal Nala	31 31'00", 77 47'28"	The nala originates from Jodgi above Sarahan. It is a continuation of Gharat Nala. The slope is gentle to steep. It is perennial nala. Nala has been treated during 2009-10 by constructing check wall 15 nos. check dam 2 nos in crate and during 2010-11 check wall 3 nos. in crate. Some biological interventions are require to be done. The private land situated about the nala also require treatment.	Biological interventions prescribed in govt. and private land are given under future management.
	Charat Nala	31 30'55", 77 47'46"	The nala originates from Jodgi above Sarahan. The slope is gentle to steep. It is perennial nala. Nala has been treated during 2009-10 by constructing check wall 70 nos. check dam 2 nos in crate and during 2010-11 check wall 7 nos. in crate. Some biological interventions including civil works are require to be done.	Biological interventions along with civil structures required are given under future management.
	Sahadhar Slip	31 30'21", 77 45'32"	It originates from Sarahan Kinoo road upto the path above Bathara village. It has been treated during 2009-10 by constructing check wall 32 nos. The small portion above road also require treatment besides biological interventions.	Biological interventions along with civil structures required are given under future management.
Afforestation	UF Shalabag Area 10 ha	31 32'11", 77 47'00"	The area has been closed during 2003-04 under NJHEP CAT Plan and is situated just above NH 22 near Det Jepru. The area has been planted with Chil 6020, Rubinia 2500, Ban 1500, Jakaranda 280, Silver oak 700. The Plantation is established now.	The plantation be protected from all types of forest offences.
Road Side Erosion Control				
Nurseries				
Rural Infrastructure Development Avenue Plantation				
Private Waste land Treatment	Unoo	31 31'45", 77 46'45"	It is situated below Joori on the left bank of Unoo Nala. The land has been treated during 2009-10 & 2010-11 by constructing 32 nos. protection wall in crate. The private owner be exhorted to do biological intervention.	Biological interventions are required as mentions under future management.



FUTURE PLANNING								
Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (In lacs.)
Afforestation Measures								
(a) Normal Afforestation			The proposed area is situated above 55B Camp at Shalebag and above Sarahan Pheasantry. It is open to very open mixed forest of Oak, Walnut, HC nut, Kail, Deodar and Rai. An area about 10 Ha, Kingridhar and Jagdi (5 ha. each) is proposed to be taken under enrichment component so as to restock the area. The proposed area along with GPS co ordinates has been provided by DFO Rampur/ RO Sarahan.	1.)B/wm fencing. 2.)Planting of Decodar from Kot nursery.	Ha	2	38340	0.77
(b) Enrichment	U.F. 6 c (Kingridhar) (2 ha. New)	31 30'30", 77 48'18"						
(c) Energy Plantation								
(d) Measure to handle invasive species.								
Nurseries								
Pasture Reclamation.								
Total Afforestation and Nurseries								
Soil & Water Conservation Endeavors								
(a) Moisture Retentively Operations								
(b) Live Hedges Fencing								
								0.77



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
(c) Vegetative structures	Chakal Naha	31 31'00" , 77 47'28"	The naha originates from Jaldi above Sarahan. It is a continuation of Ghurat Naha. The slope is gentle to steep. It is perennial naha. Naha has been treated during 2009-10 by constructing check wall 15 nos. check dam: 2 nos. in crata and during 2010-11 check wall 3 nos. in crata. Some biological interventions are require to be done. The private land situated about the naha also require treatment.	The civil works carried out during 2009-10 and 2010-11 are to be supplemented with biological interventions like construction of vegetative palisades / HBL.	Ha.	1.5	67500	1.00
	Ghurat Naha	31 30'55" , 77 47'46"	The naha originates from Jaldi above Sarahan. The slope is gentle to steep. It is perennial naha. Naha has been treated during 2009-10 by constructing check wall 70 nos. check dam: 2 nos. in crata and during 2010-11 check wall 7 nos. in crata. Some biological interventions including civil works are require to be done.	a) Dribbling of Kohanor seeds, b) Polarding of Kurish, Chaloon, Wilow etc. c) Construction of crata wate P/walls and check dam. d) Vegetative palisades / HBL etc e) Parnding of Rodents and Aesculus etc.	Ha.	2.5	67500	3.00
(d) Civil Structures	Sahachar Sipo	31 30'21" , 77 49'32"	It originates from Sarahan Kono road upto the path above Bahura village. It has been treated during 2009-10 by constructing check wall 32 nos. The small portion above road also require treatment besides biological interventions.	a) Sprinkling of kcal seeds b) Vegetative palisade / HBL. c) Construction of P walls in crata	Ha.	1.5	67500	2.25
				Cum	115	1307		



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (in lacs.)
(e) Drainage line treatment & Land slide control.								
(f) Stream Bank stabilizations								
Total Soil & Water Conservation Endeavors								
	Unoo	31 31'45", 77 46'45"	It is situated below Jeon on the left bank of Unoo Nala. The land has been treated during 2009-10 & 2010-11 by constructing 32 nos. protection wall in crata. The private owner be exhorted to do biological intervention.	Biological interventions i) Broadcasting of Seeds of Rubinia, Firal ii) Planting of Populus, Paper mulberry Willow & Kurish.	Ha.	1.1	67500	0.60
Payment for Environmental Services	Chakai Nala	31 31'00", 77 47'28"	The nala originates from Jodgi above Sarehan. It is a continuation of Charat Nala. The slope is gentle to steep. It is perennial nala. Nala has been treated during 2009-10 by constructing check wall 15 nos. check dam 2 nos in crata and during 2010-11 check wall 3 nos. in crata. Some biological interventions are require to be done. The private land situated about the nala also require treatment.	The local land owner be exhorted to plant Populus, Rubinia and Kurish. In their field	Ha.	0.3	67500	0.21



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
Payment for Environmental Services			<p>i) The sub-micro water shed is fire prone. It is therefore, recommended that the JPMC's of the micro water shed will be involved in all type of forest protection activities. ii) The villagers located in the sub micro water shed are mostly agriculturalist / horticulturalist and fall 2 to 3 no. of poles annually for keeping the dry grass in the open. The people will be given / provided 3 nos of poles of non schedule species, so that people don't fell the poles from the forest from this purpose.</p>	<p>i) Lump sum provision has been kept for this purpose which will be given to the JPMC's, which actively involve themselves in forest protection in the micro water shed. ii) The people located in the sub micro water shed shall be provided 3 no of poles of non scheduled species for the purpose of keeping the dry grasses.</p>	No.	JPMC's and 3 No of Lumpsuam poles		1.30
Total Payment for Environmental Services								
Infrastructure built up & Forest Protection								
(A) Building for stay of staff, FRH/I Hut.	Maintenanc e of Gang Hut, Sarehain ML 2033 mtr	31 30'37", 77 47'21"	It is situated just above Gharat - Kinoo road near PWD rest houses. It has been maintained during past but requires maintenance of three rooms, kitchen.	<p>i). Placing & fixing of flooring tiles in three rooms & kitchen ii) Painting in CGI roofing</p>	No.		1 Lumpsuam	1.00



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
(b) Forest Roads/ Paths	Approach path to Range office	31.30°37', 77°47'21"	The condition of the approach path about 200 mtr down from Gharat - Kinoo road to Range office is not good and requires maintenance.	Maintenance of approach path	No.	1	Lumpsum	1.50
(c) Augmentation of Water Supply.								
(d) Vehicle & Operational Support to HPTD								
(e) Office Equipment								
(f) Silt Monitoring & Purchase of Meteorological Equipment								
(g) Construction & Repair of Boundary Pillars.								
(h) Fire Protection Measures								
(i) Distribution of Non-conventional energy & Fuel Saving devices								
Total Infrastructure built up								2.50
Grand Total								11.83



Soil & Water Conservation Endeavors

Chakal Nala



Gharat Nala



Sahadhar Slip



Unob



Naik Environment Research Institute Ltd

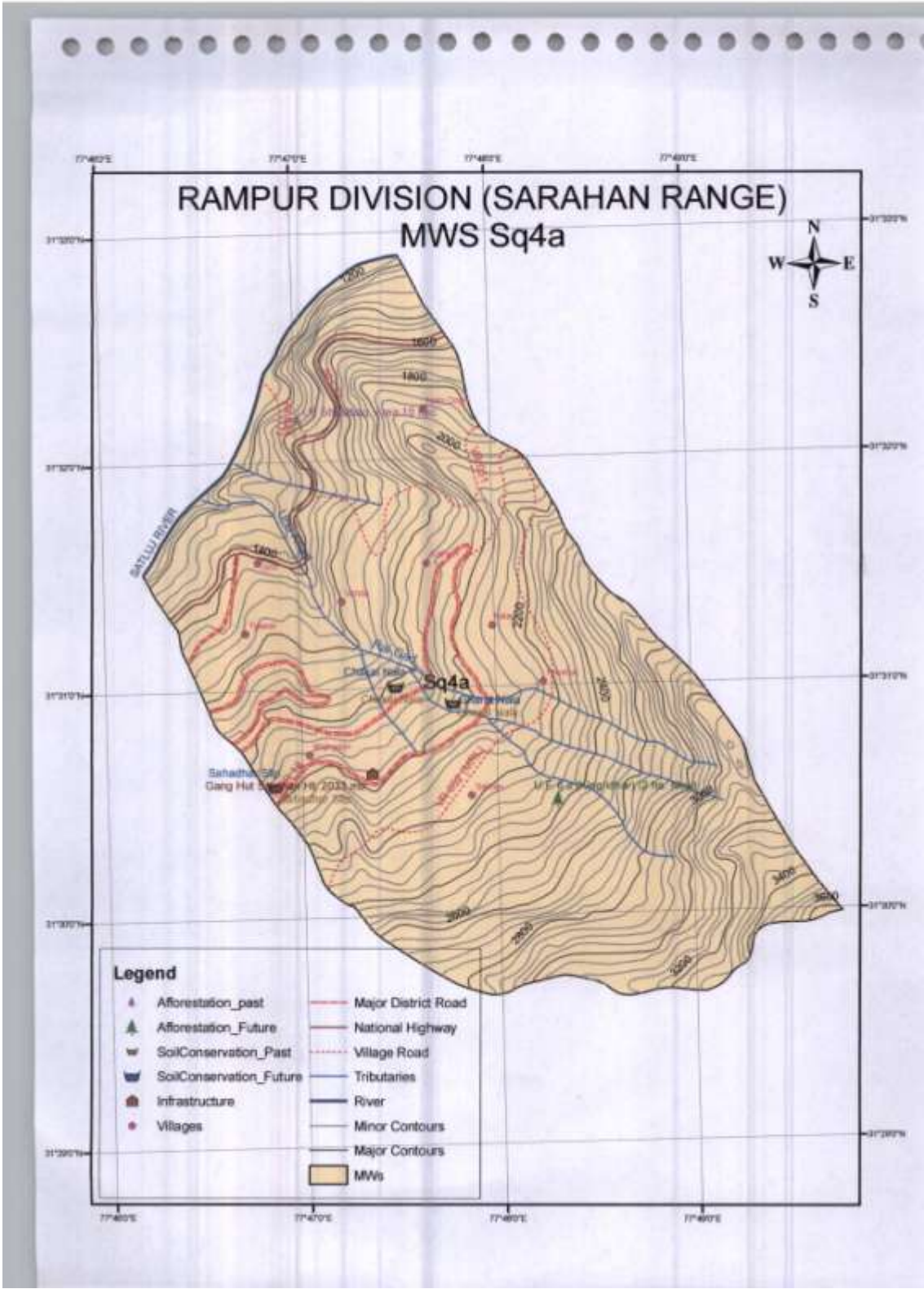
Infrastructure built up & Forest Protection

Maintenance of Gang Hut Serahan Ht. 2033 mtr.



Naik Environment Research Institute Ltd





MICRO WATERSHED

Sq4b

MANAGEMENT PLAN OF - 504b MWS (UNDER NJHEP)									
LOCATION (BOUNDARIES)				GENERAL DESCRIPTION OF MWS					
AREA OF MWS	INTRODUCTION			FOREST			BEAT	PANCHAYAT	
	LATITUDE	LONGITUDE	ALTITUDE	SLOPE	SOIL	RANGE			BLOCK
1688	31 29' to 33'	77 49' to 51'	1170 to 3880	30 to 85	sandy and clay loam	Sarahah	Sarahah	Badhal & Sarahah	Badhal & Sarahah

LAND USE					DEMOGRAPHY			
RF	DPF	UPF	PRIVATE LAND (Agri+Horti)	WASTE LAND	TOTAL	HOUSE HOLD	HUMAN POPULATION	LIVE STOCK POPULATION
(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in HA)	(in Nos.)	(in Nos.)	(in Nos.)
	815	209	283	401	1688	321	1680	362

FLORA

TREES KAIL, DEODAR, FIR, SPRUCE, KHARSU, SIRIS, AESCULUS, WALNUT, BIRDCHEERRY, KUNISH, BAN OAK, MOHRO, PIERIS OVALIFOLIA, CHIL, ACER, SHISHAM, CORYLUS, RHODODENDRON, POPULUS, ETC.

HERBS & SHRUBS BERBARIS, PRINSCPIA, ROSA MOSCHATA, RUBUS, DEBREGSSIA, PLECTRANTHUS, DESDOMODIUM, VIOLA, GIRARDIANA, VIBURNUM, POLYGONUM, FRAGERIA, FIRAL, LONICERA, ARUNDINARIA, SPIRAEA, INDIGOFEA, RUMAX, DEUTIZIA, SALVIA ETC.

GRASSES ARUNDO-DONAX, MUJU GRASS

MEDICINAL HERBS BANAFSHA, DIASCORIA ETC.

FAUNA

ANIMALS BLACK BEAR, LEOPARD, MONKEYS & OTHERS SMALL MAMMALS

BIRDS/PHEASANTS KALIZ, MONAL, KOKLASH & OTHER BIRDS



MWS :- Sq4b (NJHEP Rampur Division)



Naik Environment Research Institute Ltd

PAST HISTORY OF MANAGEMENT				
Name of Component	Name of Area	GPS Coordinates	Observation	Remarks
Soil & Moisture conservation	Shahi Dabar (Badhal nala)	31 33'01", 77 49'29"	It is situated near Badhal nursery and the nala originates from old HT road. The nala is steep and perennial. The nala has been treated during past in by constructing check dam. The nala is full of vegetation Chil, Kunish, Debrengissia, Kui etc. Few structure has damaged.	No treatment required.
Afforestation	Det Badhal Area 5 ha.	31 33'17", 77 49'30"	It is an established plantation of Chil, Silver oak, Rubinia etc which is situated just above NH-22 near Badhal. The area has been closed during 2005-06 and planted with Chil 2000, Silver oak 1000, Rubinia 500, Ban 500, Drake 500, Ritha 400, Daroo 600.	The plantation be protected from all types of forest offences.
Road Side Erosion Control	UF Nani Area 7 ha.	31 32'30", 77 47'26"	The plantation area is situated just above NH-22 near Badhal. The area has been closed during 2005-06 under NJHEP CAT Plan and planted with Silver oak 3000, Chil 2000, Rubinia 700, Jakarinda 240, Drake 310, Ritha 1200, Daroo 250. It is an established plantation of Chil, Silver oak, Rubinia etc.	The plantation be protected from all types of forest offences.
Nurseries				
Rural Infrastructure Development				
Avenue Plantation				



Soil & Water Conservation Endeavors

Shahi Dabar (Badhal nala)



Afforestation

Det Badhal Area 5 ha



UF Nani Area 7 ha



Nalk Environment Research Institute Ltd

FUTURE PLANNING								
Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
Afforestation Measures								
(a) Normal Afforestation	UF-Suru (5 Ha, 2009-10)		The area has been closed under rehabilitation of degraded forest during 2009-10. The area is fenced with barbed wire fencing. Slope is moderate to steep. The area is situated near to Suru village. The detail of plantation along with GPS co ordinates has been provided by DFO Rampur/ RQ Sarahañ.	Fence require repair and the area be protected from all types of biotic interferences. And the area be maintained as per availability of funds.	Ha. (maint. 3rd year)	5	1320	0.066
					Ha. (maint. 4th year)		650	0.0325
					Ha. (maint. 5th year)		650	0.0325
(b) Enrichment	UF 6a (5 Ha, New)		The proposed area is situated above and below NH-22 near Badhal village. It is open to very open chill Forest. An area about 5 Ha. is proposed to be taken under enrichment component so as to restock the area. The proposed area along with GPS co ordinates has been provided by DFO Rampur/ RQ Sarahañ.	1) 18/wire fencing. 2) Planting of chill from Badhal nursery.	Ha	5	28784	1.4352
(c) Energy Plantation								
(d) Measure to handle invasive species.								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (In lacs.)
Nurseries	Badhal Area 0.30 Hac. Hc. 1615 mtr	31 33'07", 77 49'27"	Nursery is situated just above RH-22 near Badhal. Aspect is north west. Irrigation through Alkaphine pipe from storage tank above and then to nursery. One no of vermicompost pit is available which has been put to use. The storage tank has been constructed during 2009-10 under RHEP CAT Plan. The following stock exist in the nursery : Chil 17240, Ritha 3993, Daroo 5126, Rubinia 3,860, Kairah 2098, Behul 564, Drake 3468, Ban 1176, Sins 4198, Kirnaunt Dekh 408, Ramban 310	i) Extension of nursery (one to two plots) ii) Construction of stores iii) Vermicompost pits iv) Raising of bio species like Bekhal, Rubur, Zentrioxylum, Rokk, Kasmal, Debnegissia etc	Ha.	1	Lumpsum	2.00
Pasture Reclamation								
Total Afforestation and Nurseries								3.57
Soil & Water Conservation Endeavors								
(a) Moisture Retentively Operations								
(b) Live Hedge Fencing								
(c) Vegetative structures								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
(d) Civil Structures	Bastour slip	31 32'38", 77 41'02"	The slip is situated below adit road near Badhal & about 200 mtr down NH-1) road and erosion through river Satuj link road to adit. The slip is full of vegetation like Debrengissia, Euphonymus, Plectranthus & phiral etc.	Broadcasting of seeds of (Fral, Rubina, Kul etc. I) Tree wall in cratz below the slip. II) Vegetative Pallisade/HBL. iv) Protection wall in cratas.	Ha.	2.2	67500	3.50
(e) Drainage line treatment & Land slide control.					Cum	191	1307	
(f) Stream Bank stabilizations								
Total Soil & Water Conservation Endeavors								3.50



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Approx)	Rate	Approximate Financial Outlay (In lacs.)
Payment for Environmental Services			<p>i) The sub-micro water shed is fire prone. It is therefore, recommended that the JPMC's of the micro water shed will be involved in all type of forest protection activities. ii) The villagers located in the sub micro water shed are mostly agriculturalist / horticulturalist and fell 2 to 3 no of poles annually for keeping the dry grass in the open. The people will be given / provided 3 nos of poles of non schedule species, so that people don't fell the poles from the forest from this purpose.</p>	<p>i) Lump sum provision has been kept for this purpose which will be given to the JPMC's, which actively involve themselves in forest protection in the micro water shed. ii) The people located in the sub micro water shed shall be provided 3 no of poles of non scheduled species for the purpose of keeping the dry grasses.</p>		JPMC's and 3 No of poles	Lumpsum	1.28
Total Payment for Environmental Services								
1.28								
Infrastructure built up & Forest Protection								
(a) Building for stay of staff, FRH/1 Hul.								
(b) Forest Roads/ 1 Paths								
(c) Augmentation of Water Supply.								



Name of Component	Name of Area	GPS Coordinates	Observation	Treatment Prescribed	Unit	Physical (Appx)	Rate	Approximate Financial Outlay (in lacs.)
(d) Vehicle & Operational Support to HPFD								
(e) Office Equipment								
(f) Silt Monitoring & Purchase of Meteorological Equipment								
(g) Construction & Repair of Boundary Pillars.								
(h) Fire Protection Measures								
(i) Distribution of Non-conventional energy & Fuel Saving devices								
Total Infrastructure built up								
Grand Total								0.00
								8.35



Soil & Water Conservation Endeavors

Bestour slip



Nalk Environment Research Institute Ltd

Nurseries

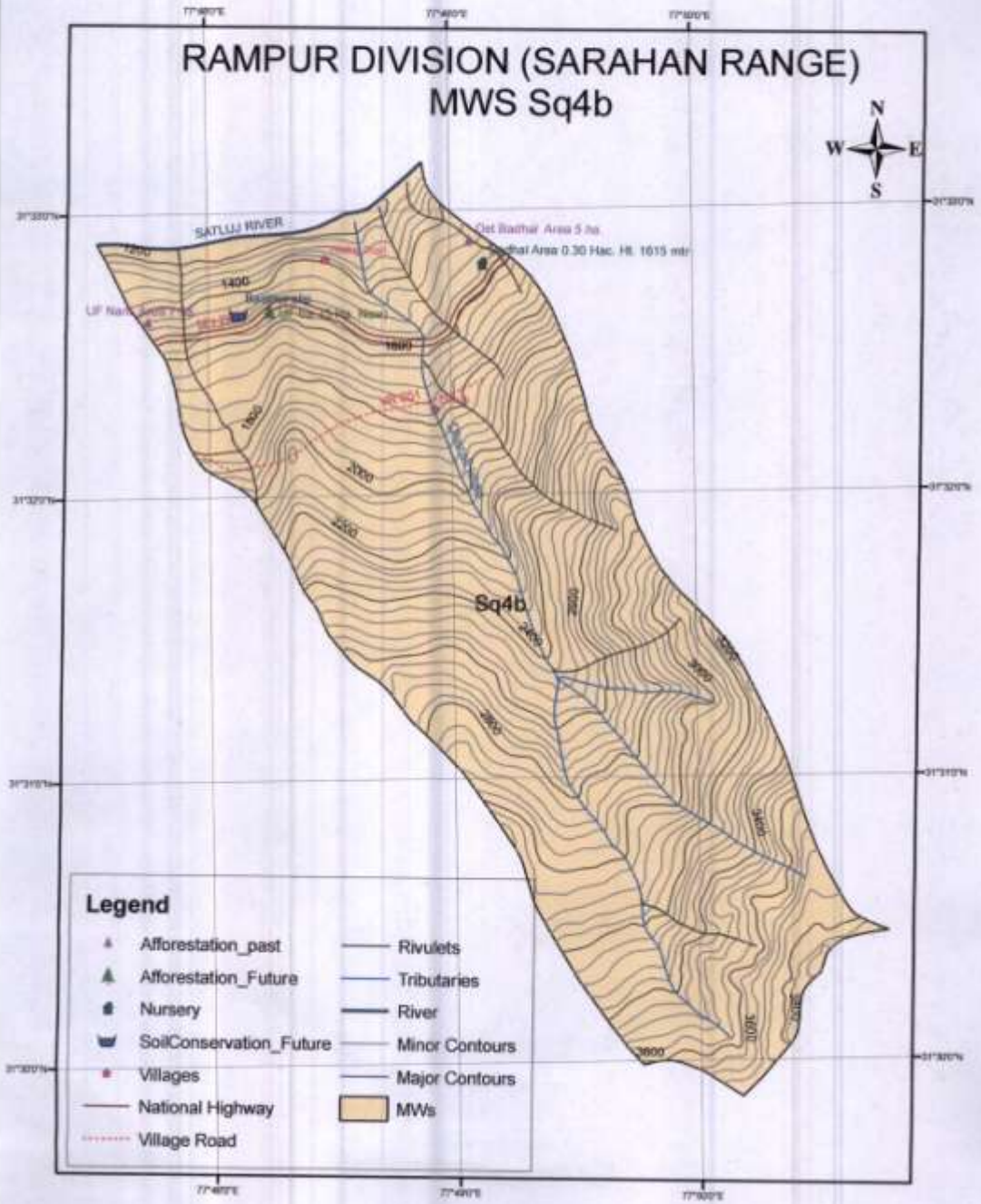
Sq4b

Badhal Area 0.30 Hac. Ht. 1615 mtr



Naik Environment Research Institute Ltd

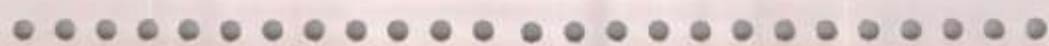
RAMPUR DIVISION (SARAHAN RANGE) MWS Sq4b



Legend

- | | |
|---------------------------|------------------|
| ▲ Afforestation_past | — Rivulets |
| ▲ Afforestation_Future | — Tributaries |
| ● Nursery | — River |
| ⚡ SoilConservation_Future | — Minor Contours |
| ★ Villages | — Major Contours |
| — National Highway | ■ MWs |
| ⋯ Village Road | |

ANNEXURE



ANNEXURE - 1
GUIDELINES FROM H.P. FOREST DEPARTMENT FOR WRITING CAT PLANS.

1. **AFFORESTATION MEASURES:-**

- A. Normal afforestation (3 strand barbed wire fencing with creosoted wooden fence posts & two layers of live-hedge plants to reinforce fencing, 1100 plants per ha of which at least 20% would be trees of medicinal value and 10% of fruit species, maintenance for 3 years)
- B. Enrichment planting (in degraded forest areas to improve stocking, 600 plants per notional ha. and protection of thorny bushes/twigs for individual plants, no maintenance)
- C. Energy plantations (around habitations in small patches, 5 strand barbed wire fencing with creosoted wooden fence posts & two layers of live-hedge to reinforce fencing, 5000 plants per ha of fuel and fodder value, no maintenance)
- D. Measures to handle invasive species—(e.g. lantana eradication and planting with tall plants (1100 Nos. Per ha / bamboo (500 Nos./ ha); maintenance once in 3rd year)

2. **SOIL AND WATER CONSERVATION ENDEAVORS:-**

- A. Moisture retentivity operations—contour trenching, bio-engineering species planting
- B. Live hedge fencing
- C. Vegetative structures—fascines, brush-wood check dams, bamboo crib etc. wherever applicable
- D. Civil structures—masonry crate-wire check dams, masonry dams (dry stone & cement concrete), check/ protection walls
- E. Drainage line treatment & Landslide control, with site specific estimates, using interventions mentioned at A-D above.
- F. Stream bank stabilization—protection walls, spurs etc. with live hedge support

♦ 50% of all funds under soil & water conservation measures prescribed would be spent on bio-engineering and 50% of the funds earmarked for bio-engineering techniques, would in turn be spent on raising quality plants of the suitable bio-engineering species in nurseries.

3. **NURSERIES:-**

Normal plants @ Rs. 3.50 per plant, bio-engineering plants @ Rs. 2/50- per plant, medicinal plants @ Rs. /- per plant. Provide for relevant increases for Chilgoza, Fir/Spruce plants.

4. **PASTURE RECLAMATION:-**

Rotational closures with fencing (live hedge fencing), sodding with local grasses, measures to reclaim the rabiasture regime etc.

5. **PAYMENTS FOR ENVIRONMENTAL SERVICES:-**

Provision be made for conducting catchment specific study to identify routes and activities to be undertaken under PES in the early years and then keep provision for implementation of these identified activities (after approval by the HFFD) in the later years of the Annual phasing of activities under the CAT Plan.

6. **RESEARCH (including experimental plots; seed banks), TRAINING AND CAPACITY BUILD-UP, PUBLICITY AND AWARENESS, DOCUMENTATION:-**

- a) Understanding perceptions of benefits accruing from the catchment area (water quality, biodiversity, or otherwise) from different stakeholders (service providers, hydroelectric facilities, and downstream consumers) and how this differs among socioeconomic groups; b) Highlighting economic efficiency through a mix of qualitative and quantitative methods to assess demand; costs of status quo catchment area management; initial opportunity cost of land-use change and potential for asset-building alternatives on foregone land, and intervening costs

Praveen

ANNEXURE 4

(associated with institutions, Sanitation Monitoring, technical support necessary etc.); c) Empirically analyse the impacts of applying different fairness criteria and their impacts on transaction efficiency, why they may be justified considering the context, and how they may change over time.

7. INFRASTRUCTURE BUILD-UP & FOREST PROTECTION:-

- a) Buildings for stay of staff, FRHs/inspection huts,
- b) Forest roads/inspection paths,
- c) Augmentation of water supply,
- d) Vehicle and operational support to HPFD (replacement vehicles and their maintenance/repair)
- e) Office equipment-- purchase and repair (computers with accessories/printers, photocopiers etc—hardware and software) and furniture, digitalised cameras, GPS.
- f) Silt monitoring and purchase of basic meteorological equipment, procurement of related data
- g) Construction and repair of boundary pillars
- h) Fire protection measures
- i) Distribution of Non-conventional Energy and Fuel Saving Devices in catchment area on a cost-sharing basis, such as, LPG, Tandoors, Pressure cookers and Solar devices.

8. WILDLIFE MEASURES:-

In CAT Plans involving Protected Areas, the financial outlay of the CAT Plan for Wildlife activities, be apportioned to the percentage extent of Protected Area in the catchment and the activity plan be got vetted from the Chief Wildlife Warden/ Pr.CCF (WL), H.P, before incorporation in the CAT Plan. However, in catchments having no Protected Area, recommendations for wildlife management and reduction of human-animal conflicts in the area, may be included in due consultation with the Chief Wildlife Warden/ Pr.CCF (WL), H.P would be sought.

9. MONITORING AND EVALUATION:-

Provision for 3rd party monitoring of the CAT Plan works, silt monitoring, impact studies. All works under the CAT Plan be Geo-referenced for ease/ authenticity of location & future monitoring. M & E studies including impact evaluation studies should be scheduled for the later years of the CAT Plan implementation calendar.

** The basis for calculating financial outlays for all of the above activities, the prevailing HPFD schedule of rates for the works and the daily wage rate of the year of writing of the CAT Plan.*

The percentage allocation of total CAT Plan outlay is broadly stipulated as under:

Item	%
1. Afforestation, Maintenance, Pastures & Nurseries*	20%
2. Soil and water conservation measures*	25%
3. PES including study and its implementation	10%
4. Research, Capacity build-up, publicity	5%
5. Institutional charges/Departmental charges	7%
6. Monitoring & Evaluation	3%
7. Wildlife related interventions	5%
8. Infrastructural build-up	15%
9. Contingencies	10%
Total	100%

**In CAT plans involving Protected Areas, these funds (S.no. 1 & 2) be re-allocated for Wild life activities, keeping in view specific requirements of the area.*

[Handwritten signature]

No. Ft. CAMPA/2010/EAT Plans/General
H.P. Forest Department

Dated Shimla the 22 AUG 2011

To: Addl. Dy. CCF (CAT&ES), H.P. Taland Shimla-1. To: 1. Pr. CCF (Wild Life) H.P. Taland, Shimla-1
2. Addl. CCF (T) H.P.

Re: Recommendations/suggestions to improve the execution of CAMPA works.

Kindly refer to office order No. FFE-6-F121-72/2004-11(CAMPA) 15.5.2011 issued by Adst. Chief Secretary (Forests) to the Govt. of H.P. vide which the teams led by CCFs were constituted for spot inspections and verification of field works carried out during 2010-11 under CAMPA. The recommendations/suggestions that have emerged from the touring reports of the CCFs are enclosed herewith for your guidance and implementation in carrying CAMPA works.



Addl. Dy. CCF (CAT&ES), H.P. Taland Shimla-1

Handwritten notes:
1st May
Copy to ALO DFOS for info
E by S.
Dated/
for info
CF Rampur

Annexure B-1

RECOMMENDATIONS/ SUGGESTIONS TO IMPROVE CAMPA WORKS EXECUTION (BASED ON MONITORING REPORT OF CCF'S SUBMITTED AFTER INSPECTION OF WORKS IN DIFFERENT CIRCLES, DURING MAY, 2011)

Nine teams, comprising two members each, led by CCFs, were constituted vide ACS(Forests) to the Govt. of HP, office order No FFE-S-F(2)-72/2004-PL (CAMPA) dated 9.5.2011 for spot inspection and verification of field works carried out during 2010-11 under CAMPA. Following suggestions/ recommendations have emerged from the reports, submitted by the officers after the field inspections of different circles.

A) SUGGESTIONS received FOR PLANTATIONS:-

- 1) Natural Regeneration with live hedge closure instead of increased concentration on artificial regeneration is a better strategy for future afforestation programs, especially in areas having harsh conditions, degraded soil and refractory terrain.
- 2) Tree planting in high altitude grassy blanks should be disallowed as it is not ecologically advisable.
- 3) The subject of protection against grazing needs to be debated at length within the Department. Some out of the box new ideas like rotational grazing, user groups, propagating native grasses are required to achieve success in the pasture improvement program. Payments for environmental services experimentation could also be tried.
- 4) The present norm to provide 3 year maintenance for plantations needs to be examined, especially for high altitude areas where slow growth in trees is seen. The 5 year maintenance as of old could continue here.
- 5) The CAT plans should be site specific and must be prepared after exhaustive land survey. Target mode of afforestation in terms of hectare and civil structures in numbers must stop. Bio-engineering methodology, moisture retentivity work and protection of planted areas especially from grazing are a priority.
- 6) A detailed Plantation Policy should be prepared in the HP Forest Department to prevent the degradation of old plantation in the absence of adequate maintenance period & funds. The present plantation policy needs to be dramatically changed. Moisture retentivity through bio-engineering (natives) species planting, contour trenching and other soil and water conservation measures be tried in the first two years--protection should be the focus in the first 2 years through live hedge fencing. Plantations should only be done only in the third year with tall plants (around 700 numbers per hectare, with 2-3 year old nursery plants). DFOs/CFs need to be made personally responsible for all the species to be raised in their permanent nurseries--No stock of Fir/Spruce available for planting is not a healthy sign!
- 7) The aim under plantation strategy should be to establish/nourish afforestation areas we take up (even if it takes as much as 30 years to maintain and establish) and not be guided by mere annual plantation targets. No plantation should be opened up until it has established itself completely particularly with regard to biotic pressure. There should be a mechanism in the HPFD to write off failed areas--many areas fail for no fault of the field staff.
- 8) The budget for plantations under compensatory afforestation may be diverted to other circles/divisions where the areas (land bank) are available for plantations, in consultation with MoEF, especially since there is a dearth of available areas in some Divisions/Circles. *HP*

may be allowed by the Conservator stating specific reasons in writing; otherwise, prioritizing permanent nurseries is in order.

D) GENERAL SUGGESTIONS-

- 1) Any meaningful benefit from a CAT Plan treatment gets diluted with other projects coming up uphill very close. CAT plan works are rendered useless, because of muck disposal involved in road/project construction activity.
- 2) It would be appropriate to use CAT Plan funds for those activities of the Forest Department (such as boundary demarcation and consolidation, survey of bio-diversity, wild life conservation, protection infrastructure etc) for which normal state and central funds are generally inadequate/not available. The recasting of CAT plans should address incorporating activities (that were not addressed earlier) that were not being done earlier.
- 3) An independent officer of the rank of ACF for CAT Plan works is mandatory in each division for proper execution and monitoring of the soil and water conservation works. The officer posted may also be provided an independent vehicle with technical field staff—surveyors/draftsman etc. for proper technical estimation/scrutiny/vigil over the works. The territorial staff is already overly burdened. A CCF be made accountable to a circle and made responsible for monitoring of CAMPA works, WP write-up and other important assignments. There are many ACFs now available (22 direct officers)—these are an invaluable resource for CAT plan write-up, WP write-up etc. At present this pool is used only to conduct enquiries and other non-important work which the DFO is reluctant to do.
- 4) The quality of works still improve considerably if younger staff (with less than 40 years of age) is posted in tough/rough terrain—Kinnair Forest Division & other remote areas. Some Ranges in Kinnair Forest Division e.g. Malling, Pooch & Bhawanagar Ranges should be reorganized/merged with other Ranges keeping in view the quantum of work & forestry activities and the surplus staff from this merger should be posted in CAT Plan areas of the Kinnair division for their proper utilization. We could only try and impress as a transfer policy.
- 5) Many of the misgivings/misinformation about the CAT plan works shall be dispelled through regular monitoring of the works by the officers in the direction office. By placing a CCF incharge of a circle for monitoring and providing right impetus for WP, lot of progress in field work would emerge. The Direction Office should delegate authority of Cfs to concerned CCF.
- 6) The sanctions for procurement of P-bags, rate contract items like interlink chain, barbed wire etc need to be conveyed in advance so that the targets are achieve on time. With delegation available to the DFOs as of now, delays would reduce.

Amendment C
70

Office of HP State Compensatory Afforestation Fund Management and Planning Authority
(H.P.State CAMPA), Forest Headquarters, Talland, Shimla- 171 001.

No. Fl. CAMPA/79/2011/Norms/

Dated Shimla-1, the

From: Chairperson, Executive Committee,
HP State CAMPA -cum- Pr. CCF HP.

To: Pr. CCF W.L. H.P.
All CCF H.P. (T & W)

Subject: Maintenance of Plantation under CAT Plans and Compensatory Afforestation.

Memo: A meeting was held under the Chairpersonship of ACS (Forests) to GoHP on 4th January, 2012 and it was decided that since many of the areas which are taken up for plantations under CAT Plans and Compensatory Afforestation are refractory/ difficult; maintenance of plantation in such areas for three years is not sufficient and therefore, maintenance of plantation in such areas should be done for 5 years. Quality plants will continue to be raised in nurseries to ensure better survival:

It is, therefore, requested to take further action accordingly.



Chairperson, Executive Committee,
HP State CAMPA -cum-
Pr. CCF HP.

Encl - No 7554-58
Copy is forwarded to all DFOs
for in hand & further necessary action.
Copy to Accountant cum Liaison
Officer for in hand & further info.

Jpl
Jef. Rangra
23/1/12

Per Hac. cost Model for Afforestation (Normal)					
S. No				Non Tribal	Tribal
1	Survey and demarcation of plantation and area I/C marking of seditions, path preparation of map.	1 hac	75.05	75.05	93.81
2	Cutting and preparation of wooden posts 1.8 mtr and 8 to 10 CM dia I/C debarking and fashioning the top 15 cm in conical shape	60 Nos	949.9	569.94	712.43
3	Carriage of fence posts upto 2 mtr long and 8 to 10 cm dia over distance 0.5 KM	60 Nos	499.95 per % per KM	149.99	187.48
4	Charing and coaltaring of the ends of the posts 45cm bottom and 15 cm conical taring	60 Nos.	204.90 per % per no.	122.94	153.68
5	Preparation and digging of holes 20-30 cm dia & 45 cm deep	60 Nos	665.1 per %	399.06	498.83
6	Fixing of wooden posts I/C strutting	60 Nos	510.45 per %	306.27	382.84
7	Carriage of barbed wire bundles up hill over an overage distance of 1 km	0.90 qtls.	125.10 per qtl per Km.	112.59	140.74
8	Stretching and fixing of barbed wire with U-staple in each strand	540 Rmt.	3.45 per Rmt.	1863.00	2328.75
9	Interlacing of live-hedge plants to reinforce fencing of barbed wire obtained from planting side	160 Rmt.	9.75 per Rmt	1560.00	1950.00
10	Preparation of inspection path 60 cm wide	150 Rmt.	7.95 per Rmt	1192.50	1490.63
12	Layout of pits/patches	1 ha.	124.90 per hac.	124.90	156.13
13	Digging of pits (30x30x30) cm	600 No.	350 per %	2100.00	2625.00
14	Digging of pits (45x45x45) cm (20% medicinal & 10% fruit species)	500 No.	699.9 per %	3499.50	4374.38
15	Filling of pits (30x30x30) cm	600 No.	139.95 per %	839.70	1049.63
16	Filling of pits (45x45x45) cm	500 No.	200.50 per %	1002.50	1253.13
17	Carriage of Plants in P/bags from Nursery site over an average distance of 1 Km.	1100 No.	133.25 per % per Km.	1465.75	1832.19
18	Planting of entire Plants I/C ramming raised in P/bages	1100 No.	160.05 per %	1760.55	2200.69
			Sub-Total:-	17144.24	21430.29
	Add 9.09% increase			1558.41	1948.01
19	Cost of B/Wire/U-nail			4600.00	4600.00
20	Nursery Cost of P/bags raised Plants	1100 No.	3.80 per plant	4180.00	4785.00
		Tribal /Plant	4.35		
			G.Total	27482.65	32763.31
			Or Say	27400.00	32700.00

Maintenance

I year Maintenance (30% Mortality)			4140	5040
II year Maintenance (20% Mortality)			2700	3120
III year Maintenance (15% Mortality)			1320	1740
I V year Maintenance (10% Mortality)			650	870
V year Maintenance (10% Mortality)			650	870
		Sub Total maintenance	9460	11640
		G Total	36860	44340

Per Hac. Cost Model for Enrichment Planting Deodar and Fir								
S. No	Particulars	Qty	Unit	Rate	unit	Non Tribal	Tribal	
1	Survey and demarcation of plantation and area I/C marking of seditions, path preparation of map.	1	Hac	75.05	Hac	75.05	93.81	
2	Cutting and preparation of wooden posts 1.8 mtr and 8 to 10 CM dia I/C debarking and fashioning the top 15 cm in conical shape	60	Nos	949.90	Per %	569.94	712.43	
3	Carriage of fence posts upto 2 mtr long and 8 to 10 cm dia over distance 0.5 KM	60	Nos	499.95	per % per KM	149.99	187.48	
4	Charing and coaltering of the ends of the posts 45cm bottom and 15 cm conical taring	60	Nos	204.90	per % per no.	122.94	153.68	
5	Preparation and digging of holes 20-30 cm dia & 45 cm deep	60	Nos	665.10	per %	399.06	498.83	
6	Fixing of wooden posts I/C strutting	60	Nos	510.45	per %	306.27	382.84	
7	Carriage of barbed wire bundles up hill over an overage distance of 1 km	0.9	qtls	125.10	per qtl per Km	112.59	140.74	
8	Stretching and fixing of barbed wire with U-staple in each strand	540	Rmt	3.45	per Rmt	1863.00	2328.75	
9	Interlacing of thorny bushes with barbed wire obtained from planting side	160	Rmt	3.00	per Rmt	480.00	600.00	
10	Preparation of inspection path 60 cm wide	150	Rmt	7.5	Rmt	1125.00	1406.25	
11	Layout of pits/patches	1	Hac	124.9	Hac	124.90	156.13	
12	Digging of pits (45x45x45) cm	800	No	699.9	Per %	5599.20	6999.00	
13	Filling of pits (45x45x45) cm	800	No	200.5	Per %	1604.00	2005.00	
14	Carriage of Plants in P/bags from Nursery site over an average distance of 1 Km.	800	No	133.25	Per %/Km	1066.00	1332.50	
15	Planting of entire Plants I/C ramming raised in P/bages	800	No	160.05	Per %	1280.40	1600.50	
16				Sub Total		14878.34	18597.92	
17	Add Increase 9.09%					1352.44	1690.55	
18	Nursery Cost of P/bags raised Plants	800	No NT	5.55	Per plant	4440.00	5560.00	
19			Tribal	6.95		4300.00	4300.00	
20	cost of B wire and other material							
				G.Total		24970.78	30148.47	
				Or Say		24900.00	30100.00	
	Maintenance:-							
	I year Maintenance (30% Mortality)					4760.00	5950.00	
	II year Maintenance (20% Mortality)					3170.00	3960.00	
	III year Maintenance (15% Mortality)					2410.00	3010.00	
	IV year Maintenance (10% Mortality)					1550.00	1935.00	
	V year Maintenance (10% Mortality)					1550.00	1935.00	
				Sub Total maintenance		13440	16790	
				G Total		38340.00	46890.00	

Per Hac. Cost Model for Enrichment Planting Normal							
S. No	Particulars	Qty	Unit	Rate	unit	Non Tribal	Tribal
1	Survey and demarcation of plantation and area I/C marking of seditions, path preparation of map.	1	Hac	75.05	Hac	75.05	93.81
2	Cutting and preparation of wooden posts 1.8 mtr and 8 to 10 CM dia I/C debarking and fashioning the top 15 cm in conical shape	60	Nos	949.90	Per %	569.94	712.43
3	Carriage of fence posts upto 2 mtr long and 8 to 10 cm dia over distance 0.5 KM	60	Nos	499.95	per % per KM	149.99	187.48
4	Charing and coaltering of the ends of the posts 45cm bottom and 15 cm conical taring	60	Nos	204.90	per % per no.	122.94	153.68
5	Preparation and digging of holes 20-30 cm dia & 45 cm deep	60	Nos	665.10	per %	399.06	498.83
6	Fixing of wooden posts I/C strutting	60	Nos	510.45	per %	306.27	382.84
7	Carriage of barbed wire bundles up hill over an overage distance of 1 km	0.9	qtls	125.10	per qtl per Km.	112.59	140.74
8	Streching and fixing of barbed wire with U-stapple in each strand	540	Rmt	3.45	per Rmt	1863.00	2328.75
9	Interlacing of thorny bushes with barbed wire obtained from planting side	160	Rmt	3.00	per Rmt	480.00	600.00
10	Preparation of inspection path 60 cm wide	150	Rmt	7.5	Rmt	1125.00	1406.25
11	Layout of pits/patches	1	Hac	124.9	Hac	124.90	156.13
12	Digging of pits (30x30x30) cm	400	No	350	Per %	1400.00	1750.00
13	Digging of pits (45x45x45) cm	400	No	699.9	Per %	2799.60	3499.50
14	Filling of pits (30x30x30) cm	400	No	139.95	Per %	559.80	699.75
15	Filling of pits (45x45x45) cm	400	No	200.5	Per %	802.00	1002.50
16	Carriage of Plants in P/bags from Nursery site over an average distance of 1 Km.	800	No	133.25	Per %/Km	1066.00	1332.50
17	Planting of entire Plants I/C ramming raised in P/bages	800	No	160.05	Per %	1280.40	1600.50
				Sub Total		13236.54	16545.67
18	Add Increase 9.09%					1203.20	1504.00
19	Nursery Cost of P/bags raised Plants	800	No NT	3.8	Per plant	3040.00	3480.00
			Tribal	4.35			
						4300.00	4300.00
20	cost of B wire and other material				G.Total	21779.74	25829.67
					Or Say	21700.00	25700.00
Maintenance:-							
	I year Maintenance (30% Mortality)					3228	3996
	II year Maintenance (20% Mortality)					2092	2424
	III year Maintenance (15% Mortality)					864	1218
	I Year Maintenance (10% Mortality)					450	600
	V year Maintenance (10% Mortality)					450	600
				G Total		28784	34538

Per M3 Notional Cost norms for Civil Works				
Sr.No.	Partuculars of works	Volume M3	Non-Tribal Amount	Tribal Amount
1	Check Wall in Creat Wire 2 Mt	3.52	3600	4500
2	Check Wall in Creat Wire 3 Mt	5.28	5800	7500
3	Check Wall in Creat Wire 5 Mt	8.8	9200	11500
4	Check Wall in Creat Wire 7 Mt	12.32	13350	16700
5	Protection Wall in Creat Wire 10 Mt	31.24	32900	41125
	Sub Total	61.16	64850	81325
	Cost per M3		1060	1325
5	Check Dam 2 Mtrs Creat Wire Mts Length	9.3	7850	9800
6	Check Dam 2 .5 Mts Creat Wire Length	11.17	18900	23600
	Sub Total	20.47	26750	33400
	Cost per M3		1307	1633
8	Diversion Drain Per 100 Mtrs		27100	33800

Per ha Notional Cost norms for Bio-Engineering Species			
Sr.No.	Particulars of works	Non-Tribal Amount	Tribal Amount
1	Broadcasting of Bio Seed I/C Collection cost Etc	3100	3900
2	Planting of Bio Species	63100	79000
3	Brush Layering	78400	98000
4	Polarding/ Watling	75000	93750
5	Palisade	107100	133800
6	Fascines	78250	97800
	Grand Total	404950	506250
	Average Cost	67492	84375
	Or say	67500	84400

APPENDIX