

SCHEME FOR COMPENSATORY AFFORESTATION

**OVER AN AREA OF 15.702 Ha OF REVENUE FOREST
LAND IN VILLAGE GUMA**

**IN LIEU OF DIVERSION OF FOREST LANDFOR
WIDENING &STRENGTHENING OF PANIGANDA-
BRAHMUNIGAON-DARINBADI ROAD (MDR-60A) FROM
38/00 KM TO 58/00 KM COMING UNDER R&B DIVISION
BALLIGUDA,TUMUDIBANDHA TAHASILUNDER
KANDHAMAL DIST. BY R&B DIVISION, BALLIGUDA
(WORKS DEPARTMENT, GOVT. OF ODISHA)**

**BALLIGUDA FOREST DIVISION,
BALLIGUDA**

Prepared by:-



Divisional Forest Officer,
Balliguda Forest Division

SUITABILITY CERTIFICATE

Certified that 15.702 Ha. of Parbat Kisam(Mixed Forest)identified in village Guma, of Belghar Forest Range under Tumudibandha Tahasil of Balliguda Forest Division of Kandhamal District is suitable for the purpose of Compensatory Afforestation in Bald hill @1600 plants per Ha. in lieu of diversion forest land over 7.390 Ha. to be diverted for widening & strengthening of Paniganda-Brahmunigaon-Darinbadi Road (MDR-60A) from 38/00 KM to 58/00 KM& coming under R&B DivisionBalliguda, under Works Department, Govt. Odisha.



Divisional Forest Officer,
BalligudaForest Division

SCHEME FOR COMPENSATORY AFFORESTATION IN PARBAT (Mixed Forest) OVER IN AREA OF 15.702 HA. IN VILLAGE GUMA OF BELGHAR FOREST RANGE UNDER TUMUDIBANDHA TAHASIL OF BALLIGUDA FOREST DIVISION OF KANDHAMAL DISTRICT IN LIEU OF DIVERSION OF FOREST LAND FOR WIDENING & STRENGTHENING OF EXISTING PWD ROADS OF R&B DIVISION, BALLIGUDA

1. INTRODUCTION

Construction and expansion of road has become unavoidable keeping in view the increasing scenario of growth of vehicular traffic, urbanization, industrialization etc. It has also become obligatory, unavoidable and bare necessity in the interest of the rural people staying much away from the nearest urban places for their communication to avail basic facilities like health, education and employment. Balliguda is coming under Kandhamal Dist. Of Odisha, which is a backward Dist. & the communication facilities are very poor, also the Ministry of Home Affairs (MHA) Govt. of India has identified the Dist. Kandhamal as under Left Wing Extremist (LWE) Dist.

In the particular case the Public Works Department (PWD), Balliguda R & B Division, Govt. of Odisha intends to construct & maintain the PWD road from Paniganda- Brahmunigaon- Daringbadi (MDR-60A) from 38/00 KM to 58/00KM.

The existing PWD Roads of as stated above under Kandhamal district, Odisha, over the years. The road has been subjected to plying number of vehicles with increasing number of population and it has suffered lot of damage and inadequate to accommodate such voluminous traffic with the existing variable width from 0.5m (footpath) to 4 mtrs to 6mtrs. This has not only resulted damage to the existing road (Kacha at places), but also become accident prone resulting in frequent casualties. Due to heavy public demand by the nearby villagers widening and strengthening of the particular road on war footing basis has become a bare necessity.

1. DESCRIPTION OF EXISTING VEGETATION:-

The Compensatory Afforestation sites identified are being degraded due to podu cultivation by the local tribals. The selected site is bald due to local interference. However the species found in the adjoining area of the selected sites are noticed Sal, Asan, and other allied species of Sal.

2. TOPOGRAPHY & SOIL:-

The site is shown in Topo sheet No.E44F9. The soil type occurring in the area is shallow, somewhat excessively drained, gravelly loamy soils on moderately hill slopes with loamy surface, susceptible to erosion, associated with deep and well drained.

3. CLIMATIC CONDITION:-

The climatic condition of the area favouring growth of dry deciduous forest having average annual rain fall of 1300mm. and maximum temperature is 40⁰ to 42⁰C. The summer season is from March to June, winter from October to March and rainy season is from July to September.

4. OBJECTIVE OF THE SCHEME:-

It is mandatory requirement under the provision of F.C. Act, 1980

- (i) To replenish the loss of forest land to be diverted for non-forestry purpose i.e. widening & Strengthening of existing PWD Roads as proposed
- (ii) To provide better communication facilities to the villagers living in and around the project area.
- (iii) To increase the ground water table through Soil & Moisture Conservation.
- (iv) To increase the bio-diversity for improvement of the local ecology.
- (v) To fulfill the requirement of fuel wood, small timber & income generation facilities to the local inhabitants by planting fruit bearing species.
- (vi) To provide a green clothing to the area by means of artificial regeneration or plantation in-order to reduce soil erosion.

5. ECO-RESTORATION OPERATION

- (I) All high stumps shall be cut with sharp axe to facilitate development of coppice shoot.
- (ii) Coppice with multiple shoots should be singled out by retaining the sound ones.
- (iii) Complete protection against fire, grazing and illicit felling shall be ensured.
- (iv) The area should manage under JFM mode i.e.involving the local VSS members from the inception of this project.
- (v) The indigenous hardy species& fruit bearing species (as detailed below) should be preferred for artificial regeneration. Preference should be given to fruit bearing species.

6. PLANTATION TECHNIQUE:-

The area should be well demarcated before raising plantation by GPS survey. A map should be prepared and followed for execution of the plantation basing on the soil depth. Preferably indigenous species are to be planted coupled with soil and moisture conservation measures. Bamboo plantation should be raised all along the boundary of plantation site not only to act as live wall but to save the plantation from biotic interference particularly grazing by domestic animal visiting forest areas during growing period from the inception to 9th year.

7. CHOICE OF SPECIES

Considering the edaphic and micro climatic conditions of the site, the following species are recommended.

Common Name	Scientific Name
Amba	<i>Mangifera Indica</i>
Amla	<i>Emblicaofficinalis</i>
Jack Fruit	<i>Artocarpus heterophyllus</i>
Chara	<i>Buchnanania lanzan</i>
Bara	<i>Ficusbenghalensis</i>
Jamun	<i>Syzygiumcumini</i>
Barokoli	<i>Zizyphusmaurpia</i>
Cashuw	<i>Anacardium occidentale</i>
Pijula	<i>Psidium guava</i>
Mahula	<i>Madhuca indica</i>

8. **SURVEY & DEMARCATION**

The area should be clearly surveyed by GPS in the field with reference to the map to ascertain the exact area available for plantation. The boundary of the site shall be demarcated by erecting masonry pillars with proper fencing that is barbed wire at project cost. Hence provision has been made in this scheme for demarcation and fencing (Barbed wire) of the Afforestation site.

The land schedule of Parbat (Mixed forest) identified in village Guma are furnished below:-

Name of Mouza / Village	Khata No.	Plot No.	Kissam	Total area in Ha.	Area for compensatory afforestation in Ha.	Remark
Guma	81	30	Parbat(Mixed Forest)	10.880	9.032	Part
	81	31	Parbat(Mixed Forest)	7.600	6.670	Part
Total					15.702 Ha.	

SURVEYED DETAILS OF COMPENSATORY AFFORESTATION SITE

COMPENSATORY AFFORESTATION IN VILLAGE GUMA SHEET NO -01 UNDER TUMUDIBANDHA TAHSIL OF KANDHAMAL DISTRICT IN LIEU OF DIVERSION OF FOREST LAND OVER AN AREA OF 7.390Ha.FOR WIDENNING AND STRENGTHENING OF EXISTING PANIGANDA-BRAHMIGAON-DARINGBADI ODR (FROM 38/000 KM TO 58/000 KM BY R&B DIVISION BALLIGUDA IN KANDHAMALA DISTRICT OF BALLIGUDA FOREST DIVISION.

SL NO	POINT ID	LONGITUDE	LATITUDE	EASTING	NORTHING
1	1	83°39'25.0585"	19°53'04.3037"	778211.2493	2200898.5
2	2	83°39'31.6073"	19°53'03.4598"	778402.244	2200875.551
3	3	83°39'35.4362"	19°53'02.6376"	778514.0777	2200852.013
4	4	83°39'35.5392"	19°52'59.8364"	778518.4309	2200765.887
5	5	83°39'35.5392"	19°52'56.5889"	778520.0094	2200665.98
6	6	83°39'32.1077"	19°52'56.5889"	778420.1425	2200664.402
7	7	83°39'28.7453"	19°52'56.5889"	778322.294	2200662.857
8	8	83°39'28.7309"	19°52'53.3903"	778323.4263	2200564.452
9	9	83°39'28.7161"	19°52'50.1107"	778324.5873	2200463.551
10	10	83°39'22.8906"	19°52'50.1229"	778155.0363	2200461.244
11	11	83°39'16.7990"	19°52'50.0995"	777977.7719	2200457.732
12	12	83°39'16.9204"	19°52'53.6408"	777979.5862	2200566.73
13	13	83°39'18.3467"	19°52'56.5889"	778019.6649	2200658.082
14	14	83°39'20.2752"	19°53'00.3973"	778073.9392	2200776.132
15	15	83°39'21.3444"	19°53'00.9769"	778104.7703	2200794.446
16	16	83°39'21.6673"	19°53'01.0172"	778114.1495	2200795.837
17	17	83°39'22.7264"	19°53'01.3733"	778144.8042	2200807.281
18	18	83°39'23.8003"	19°53'02.2837"	778175.611	2200835.781
19	19	83°39'24.3598"	19°53'02.8961"	778191.5987	2200854.872
20	20	83°39'24.9620"	19°53'03.0041"	778209.0731	2200858.474

9. PLANTS FOR THE PLANTATION

Tall and promising plants to be utilized for the plantation purpose, in case not available in the Forest Range (Belghar Forest Range) the plants to be purchased outside as deemed fit. The concerned Forest Range officer to decide the species selected for plantation.

9.1. PROTECTION:

The important element of successful plantation is Protection. Watchers are to be engaged on daily wage basis for ten years.

9.2. CONTROL:

The nursery journal, the plantation journal and other records shall be maintained separately in accordance with the provision of “The Orissa Forest Plantation Manual 1977” indicating the physical and financial achievements. Necessary entries with regard to plantation activities undertaken shall be entered in the journals and shall be produced before the inspecting officers. In case of any eventuality like cyclone, thunder storm, hail storm etc. if caused destruction to the plantation, this should also be noted. It is also necessary to note the distribution of rain fall which not only helps in the growth of plants at site but also acts as a guideline for the ensuing years nursery schedule to be formulated.

For protection, measures shall be taken to save the plantation from fire incidence and prevent accidental trespass of cattle, goat etc. to the premises of the nursery. Boundary area will be scrapped to a width of 2 mtr. During February / March the cut materials are to be burnt under strict supervision. The inspection path around 4.00 Ha plot shall have to be laid out and weed growths are to be scrapped.

10. SOIL & WATER CONSERVATION MEASURES:

It is indispensable to take up the soil & moisture conservation work. Small gullies are to be plugged by live plants. As the area will be dried out quickly water conservation measures will be taken by digging staggered trenches. These trenches will be dug along the contour in a continuous manner. The dimensions of the trenches will be 2.5 mtr x 0.5 mtr x 0.5 mtr. and dug out earth will be kept on the lower hill side. It should be 300 nos. in an average per hectares. Staggered trenches are to be aligned 15 mtr. apart along the contour and 7.5 mtr. across the contour. In addition to above, leguminous seeds are to be sown in the inter space between the plants.

11. PEOPLE'S PARTICIPATION

The local communities are to be involved for the protection of the plantation. The V.S.S. is to be formed (if not done earlier) & incentives to be given to the V.S.S. for their active participation in protecting the plantation. Livelihood option and Entry Point Activities are to be taken to improve the socio economic status of the people living around the forest. For effective protection of area watch and ward shall be provided during the project period (from inception to 10th year) and subsequently the plantation will be looked after by the V.S.S.

12. WATCH AND WARD

Watchers (one watcher for every 10 Ha of Plantation) should be engaged round the year for 10 years starting from the day of inception of the plantation.

13. FUNDING AGENCY

Executive Engineer, R&B Division, Balliguda under Works Department, Govt. of Odisha will pay the cost of Afforestation in one lot for 44.473 ha. on receipt of Demand Notice from D.F.O., Balliguda Division. However, the Executive Engineer will furnish an undertaking to pay any additional amount in case the Wage Rate is escalated between the date of recommendation of this proposal and issue of Stage-II approval issued by MoEF for diversion of forest land.

14. EXECUTING AGENCY

Divisional Forest Officer, Balliguda Forest Division.

15. MONITORING AND EVALUATION

Divisional Forest Officer, Balliguda Forest Division shall monitor and evaluate the scheme periodically.

16. FINANCIAL OUTLAY OF THE SCHEME

The total financial outlay of the scheme including Barbed Wire fencing, vegetative fencing and SMC activities is **Rs.1,01,44,664.00** (Rupees One Crore One Lakh Forty Four Thousand Six Hundred Sixty Four) Only.



Divisional Forest Officer,
Balliguda Forest Division.

ANNEXURE-(E)

COST NORM FOR BALD HILL PLANTATION @ 1600 PLANTS PER HECTARE						
Labour cost @ Rs 311.00 per manday						
Sl. No.	Item of work	Preferable period of execution	Manday	Labour cost @ Rs 311/- per day	Material cost per hectare in Rs	Total cost per hectare in Rs.
Preparatory operation (0th Year)						
1.	Survey and demarcation	June	2	622	0	622
2.	Fencing	June-Sept	19	5909	4280	10189
	i.For an average of 126 meters/ha @ Rs. 80.86/- per meter for bamboo twigs and bamboo thorn fencing (L:M=40:60)	June-Sept	11	3421	3647.5	7068.5
	ii.To be strengthened by planting of bamboo and other seedlings in two rows. Bamboo to be planted at 2 meters spacing in staggered manner on the two rows, and the rest of the species to be planted at ½ meter spacing along the two rows, the rows being 2m apart. Thus 500 plant (125 bamboo and 375 others) to be planted in two rows to cover 126 m of periphery/Ha by the vegetative fence. (Bamboo seedlings @ Rs. 13.58 per seedling X 125 = Rs. 1697.5, Agave seedling @ Rs.5.20 per seedling X 375 = Rs. 1950)					
3.	Pitting (1600 pits per ha.)- each pit 45cm ³	Nov-Dec	128	39808	0	39808

4.	Soil and water conservation measures (a) Staggered trench along the contour @ 300 per ha (2.5mx0.5mx0.5m), digging of percolation pits @ 600 per ha in lieu of staggered trenches, gully plugging and Drainage line treatment, half moon trench on the uphill side of each planting pit (100 MD for staggered trench/percolation pits and 30 MD for gully plugging, drainage line treatment and half moon trench)	Sept-Nov	130	40430	0	40430
	(b) Site clearance-8 MD. Alignment and staking of contour lines on ground, planting pits, contour trenches/percolation pits and check dam sites etc.-2 MD	July-Aug	10	3110	0	3110
5.	Raising of seedlings in poly bags (minimum 60 cm high) @ Rs 13.58 per seedling (Rs 9.44 in 0 th year + Rs. 4.14) Part (1760 saplings to be raised for one hectare)	October-March	44	13684	2939	16623
	Total 0th year		344	106984	10866.5	117850.5
6.	Monitoring & Supervision charge 5% of the total cost					5892.525

	GRAND TOTAL		344	106984	10866.5	123743.025
Planting Operation (1st Year)						
1.	Cost of sapling (balance) from April-June/July @ Rs 4.14 per seedling for 1760 seedlings	April-June	21.5	6686.5	593	7279.5
2.	Freshening of pits-64 MD, filling with fertile soil and farm yard manure (FYM)-24 MD, application of insecticide and planting of 60 cm tall saplings including carriage of plants-21MD	June-July	109	33899	0	33899
3.	Cost of fertile soil 0.25 cft @ Rs 8 per cft/ FYM 0.25 cft @ Rs 15 per cft per pit		0	0	9200	9200
4.	Sowing of seeds on dug out earth of trench	June	6	1866	200	2066
5.	Carriage-6 MD. Planting including casualty replacement-6 MD, fertilizer application-5 MD, 1 st weeding-7 MD, 2 nd weeding-5 MD, soil working-7 MD.	July-August	36	11196	0	11196
6.	Cost of fertilizer and insecticide (Granular insecticide @ 5gms/plant @ Rs 80/- per kg = Rs 640.00, NPK 100 gms/plant in two doses @ Rs 24 per kg = Rs 3840.00		0	0	4480	4480

7.	Repair and maintenance of bamboo fence including material cost	Aug-Oct	15	4665	2540	7205
8.	Maintenance of Soil and Moisture Conservation measures (20% of cost)	October-December	26	8086	0	8086
9.	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	30	9330	0	9330
10.	Fire tracing and control, display board construction, painting/writing, other miscellaneous cost	Jan-Feb	10	3110	360	3470
	Total (1st year)		253.5	78838.5	17373	96211.5
	Monitoring & Supervision charge 5% of the total cost					4810.575
	GRAND TOTAL		253.5	78838.5	17373	101022.075
Maintenance Operation (2nd Year)						
1.	Casualty replacement-6 MD including seedling cost @ Rs 13.58 per seedling and its transportation	June-July	10	3110	1988.8	5098.8
2.	Soil working-7 MD, 1 st weeding-6 MD, 2 nd weeding-6 MD and fertilizer application-4 MD	August-October	23	7153	0	7153

3.	Cost of fertilizer @ 50 gms NPK per plant @ Rs 24/- per kg for 1600 plants = Rs 1920.00. Insecticide @ 5 gm per plant for 160 nos of plants @ Rs 80 per kg = Rs 64.00		0	0	1984	1984
4.	Repair and maintenance of bamboo fence including material cost	August-October	15	4665	2540	7205
5.	Maintenance of Soil and Moisture Conservation measures (20% of cost)	August-October	26	8086	0	8086
6.	Fire tracing and control, and other miscellaneous cost	Feb-March	10	3110	0	3110
7.	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	30	9330	0	9330
	Total (2nd year)		114	35454	6512.8	41966.8
8.	Monitoring & Supervision charge 5% of the total cost					2098.34
	GRAND TOTAL			35454	6512.8	44065.14
Maintenance Operation (3rd Year)						
1	Repair and maintenance of fence- 15 MD/(in case of barbed wire fencing Rs. 9000/- for repair), SMC measures (Renovation)- 26 MD and Maintenance of Plantation-14 MD as per requirement	April-March	55	17105	500	17605

2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5598	0	5598
	Total 3rd Year		73	22703	500	23203
3	Monitoring & Supervision charge 5% of the total cost					1160.15
	GRAND TOTAL		73	22703	500	24363.15
Maintenance Operation (4th Year)						
1	Repair and maintenance of fence-13 MD/ no maintenance in case of barbed wire fencing, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	48	14928	500	15428
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5598	0	5598
	Total 4th Year		66	20526	500	21026
3	Monitoring & Supervision charge 5% of the total cost					1051.3
	GRAND TOTAL		66	20526	500	22077.3
Maintenance Operation (5th Year)						
1	Repair and maintenance of fence-13 MD/ no maintenance in case of barbed wire fencing, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	48	14928	500	15428

2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5598	0	5598
	Total 5th Year		66	20526	500	21026
3	Monitoring & Supervision charge 5% of the total cost					1051.3
	GRAND TOTAL		66	20526	500	22077.3
Maintenance Operation (6th Year)						
1	Repair and maintenance of fence-13 MD/ no maintenance in case of barbed wire fencing, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	48	14928	500	15428
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5598	0	5598
	Total 6th Year		66	20526	500	21026
3	Monitoring & Supervision charge 5% of the total cost					1051.3
	GRAND TOTAL		66	20526	500	22077.3
Maintenance Operation (7th Year)						
1	Repair and maintenance of fence-13 MD/ no maintenance in case of barbed wire fencing, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	48	14928	500	15428

2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5598	0	5598
	Total 7th Year		66	20526	500	21026
3	Monitoring & Supervision charge 5% of the total cost					1051.3
	GRAND TOTAL		66	20526	500	22077.3
Maintenance Operation (8th Year)						
1	Repair and maintenance of fence-13 MD/ no maintenance in case of barbed wire fencing, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	48	14928	500	15428
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5598	0	5598
	Total 8th Year		66	20526	500	21026
3	Monitoring & Supervision charge 5% of the total cost					1051.3
	GRAND TOTAL		66	20526	500	22077.3
Maintenance Operation (9th Year)						
1	Repair and maintenance of fence-13 MD/ no maintenance in case of barbed wire fencing, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	48	14928	500	15428

2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5598	0	5598
	Total 9th Year		66	20526	500	21026
3	Monitoring & Supervision charge 5% of the total cost					1051.3
	GRAND TOTAL		66	20526	500	22077.3
Maintenance Operation (10th Year)						
1	Repair and maintenance of fence-13 MD/ no maintenance in case of barbed wire fencing, SMC measures-21 MD and maintenance of plantation-14 MD	April-March	48	14928	500	15428
2	Closure to grazing, fire and other biotic interference by engaging watch & ward	April-March	18	5598	0	5598
	Total 10th Year		66	20526	500	21026
3	Monitoring & Supervision charge 5% of the total cost					1051.3
	GRAND TOTAL		66	20526	500	22077.3

ABSTRACT

Sl.No.	Year	No. Person Day	Labour cost @ Rs 311/- per day	Material cost (Rs)	Monitoring & Supervision charge 5% of the total cost	Total (Rs.)
1	0 th year	344	106984	10866.5	5892.525	123743.025
2	1 st year	253.5	78838.5	17373	4810.575	101022.075
3	2 nd year	114	35454	6512.8	2098.34	44065.14
4	3 rd year	73	22703	500	1160.15	24363.15
5	4 th year	66	20526	500	1051.3	22077.3
6	5 th year	66	20526	500	1051.3	22077.3
7	6 th year	66	20526	500	1051.3	22077.3
8	7 th year	66	20526	500	1051.3	22077.3
9	8 th year	66	20526	500	1051.3	22077.3
10	9 th year	66	20526	500	1051.3	22077.3
11	10 th year	66	20526	500	1051.3	22077.3
TOTAL		1246.5	387661.5	38752.3	21320.69	447734.49

Cost Per Ha Plantation Cost = Rs.4,47,734.49

Cost for 15.702 Ha

=Rs.70,30,326.961

Or,

Rs.70,30,327.00

(Rupees Seventy Lakh Thirty Thousand ThreeHundred Twenty Seven Only)



Divisional Forest Officer,
Balliguda Forest Division

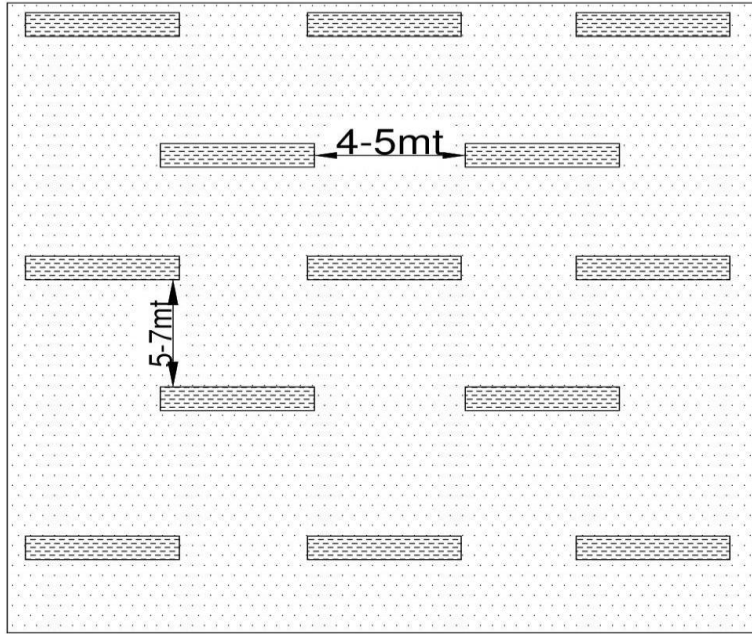
SCHEME FOR SITE SPECIFIC SOIL MOISTURE CONSERVATION ACTIVITIES TO BE UNDERTAKEN IN COMPENSATORY AFFORESTATION AREA OVER 44.473 HA OF REVENUE FOREST LAND IDENTIFIED IN VILLAGES GUMA UNDERTUMUDIBANDHA TAHASIL, DISTRICT-KANDHAMAL.

The **Revenue Forestland identified in Guma village** for Compensatory Afforestation purpose are being degraded due to podu cultivation by the local tribals. The selected site is bald due to local interference. However the species found in the adjoining area of the selected sites are noticed Sal (*Shorea robusta*), Asan (*Terminalia alata*), and other allied species of Sal.

Soil and moisture conservation activities are essentially required to be dovetailed to plantation activities in order to improve water availability in the proposed site. In order to achieve the objective and implement the program efficiently a well planned strategy is essential. The natural slope of the forest land selected for compensatory afforestation varies from 0° to 30° being the foothill. The area selected is the catchment where the precipitation touches the ground and subsequently drained through the drainage line. So this becomes the focus area of the soil moisture conservation program. The intervention suggested below is aimed at capturing the rain water to enhance the retention period and to increase the quantum of infiltration.

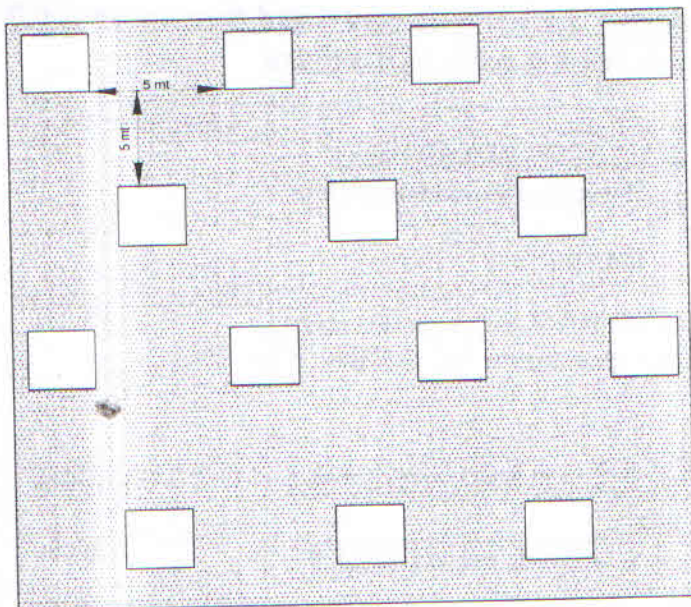
Forest floor treatment:

- **Staggered Trenches**- the staggered trenches are primarily aim to break the runoff which otherwise will form reels and gullies. Such reels when conversed will form gullies. Continuous gullies when joined together will form a ditch. Therefore it is aimed at excavating 300 Nos. of staggered trenches per Ha. Each such trench will be 2.5 m (length) X 0.5 m (width) x 0.5m (depth). These trenches will conserve rain water of this region and facilitates its percolation. Therefore while aligning such trenches adequate care should be taken so that gullies are not formed by the water flowing downhill from the wedges of trench.



Picturesque diagram of staggered trenches

- Cost of staggered trench per Ha. 60 man days @ Rs. 311/- (Rs.18,660 X 15.702 Ha = **Rs.2,92,999.32 or Rs. 2,92,999.00**)
- **Percolation pit-** the percolation pit of dimension 1.0m³ shall be excavated preferably within the slope of 0° – 15°. Such pits will also store the runoff and conserve the same. Ultimately the rain water will percolate into the forest area and charge the ground area. Once the ground water recharge, it will continue to meet the water requirement of lateral roots of the trees for their capillary system. In 1 Ha area 200 Nos. of percolation pit need to be excavated to store runoff for enhanced percolation.



Picturesque diagram of Percolation pit

- Cost of percolation pit-1 Ha – 200 nos. 64 man days @ 311.00 = Rs.19,904.00
- Cost for 15.702 Ha = $15.702 \times \text{Rs.}19,904.00 = \text{Rs.}3,12,532.608$ or Rs. 3,12,533.00

Sl No.	SMC Measure	Cost (in Rs)
1	Staggered Trenches(2.5mt x 0.5 mt x 0.5mt)	2,92,999.00
2	Percolation pits(1.0mt x1.0mt x1.0mt)	3,12,533.00
	Total	6,05,532.00

(Rupees Six Lakhs Five Thousand Five Hundred Thirty Two) Only.

Divisional Forest Officer,
Balliguda Forest Division

Detail Estimate for Barbed Wire fencing with 6 strands and two cross for 3 mtr span and 6.5 ft height with RCC pillars

Sl.No.	Description of item	Amount in Rs.
1	Earthwork in Excavation of foundation in stoney earth within initial lead and lift including rough dressing and levelling the excavated earth etc. all completed 34X1.5ftX1.5ftX1.5ft = 114.75cft 3.24cum @ Rs.134/-per cum.	477.40
2	Cement concrete (1:4:8) in foundation and plinth using 4 cm size cbhg metal including watering etc complete & jamming the R.C.C. Pillar. 34 X 1.5ft X 1.5ft X 1.5ft = 114.75cft (-)34 X0.5ft X 0.5ft X 1ft = 8.05cft Total = 106.25cft	12,476.20
3	Cost of 34 nos. Pre cast RCC Pillar of size 6'6X 0.5"X0.5" @ Rs.385/- each as per market price = 31 nos.X385/-	11,935.00
4	Transportation of RCC pillars from market to worksite over a lead of 5km including loading and unloading	1,100.00
5	Cost of barbed wire including transportation charges to the site as per local market rate. 8X 100mtr =800mtr @ .2kg/mtr Or 160kg @ Rs. 88/- per kg	14,080.00
6	Labour for fixing of barbed wire fencing by means of staples and staining hooks, tying with 9 gauge wire and including cost of staples, hooks etc complete @ 1.20MD/mt i.e. 120md per 100mtr @ 308.00 per Manday	36,960.00
	Sub Total	77,028.60
	Escalation @ 20%	15,405.72
	Total	92,434.32
	Labour cess @ 1%	924.34
	Grand total for 100mtr	93,358.66
	For 1mtr	933.59 or 934.00
	For 1000 mt or 1 Km	9,34,000.00

In the wage rate of Rs. 308.00/- = Rs. 9,34,000.00

So, at the wage rate of Rs. 311/- = Rs.9,43,098.00

Fencing provision made in compensatory Afforestation sites with financial outlay selected in different villages.

Sl.No	Name of the villages	Fensing provision made in meter	Cost per meter Rs.	Total Rs.
1	Guma	850	943.098	8,01,633.30
	Grand Total			8,01,633.30 or, 8,01,633.00
	Rupees Eight lakh One Thousand Six Hundred Thirty Three only			


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FINANCIAL OUTLAY OF THE SCHEME		
SL NO	DESCRIPTION	AMOUNT (Rs.)
1	Cost of Block Plantation	70,30,327.00
2	Cost of SMS Activities	6,05,532.00
3	1. One Bore well with summer sieve motor for nursery & one RCC water tank (7m x 4m x 2m) = 1,50,000.00 Proposed for existing Nursery wear to the plantation site	1,50,000.00
	Sub Total	77,85,859.00
	Escalation (20%)	15,57,171.80
	Total	93,43,030.80
4	Cost of Barbed wire fencing with 20 % Escalation	8,01,633.00
	Grand Total	1,01,44,663.80
		or,
		1,01,44,664.00
Rupees One Crore One Lakh Forty Four Thousand Six Hundred Sixty Four Only		

N.B.

1. The above amount shall be payable by Executive Engineer R&B Division Balliguda Under Works Department Govt of Odisha as per the demand notice to be issued by D.F.O. Balliguda Forest Division and after receiving due approval from Addl.PCCF (F.D & N.O F.C Act) O/o PCCF Odisha.

2. The user agency (R&B Division Balliguda) will procure the infrastructure items as mention in item no 3 and supply/establish to Balliguda Forest Division.



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