SCHEME

FOR

COMPENSATORY AFFORESTATION OVER 4 HA OUT OF 4.047 HA OF NON-FOREST LAND IN VILLAGE GUMAGUDA OF NANDAPUR TAHASIL OF DISTRICT KORAPUT

IN LIEU OF
3.003 HA OF RESERVE FOREST APPLIED FOR DIVERSION
IN
IMPROVEMENT OF HATIBARI-GILAGUNTHA ROAD
OF
ROAD & BUILDING DIVISION, KORAPUT.

IN

KORAPUT FOREST DIVISION OF ODISHA.

SUITABILITY CERTIFICATE

Certified that 4 Ha of Non-Forest Govt. revenue land is found to be suitable out of the allotted 4.047 Ha for the purpose of Compensatory Afforestation identified in villages Gumaguda under Nadapur Tahasil of Koraput District, against diversion of 3.003 Ha of Reserve Forest in Hatibari-Gilaguntha Road of Road & Building Division, Koraput.

R&B is a organization under Odisha State Govt., as per Para 3.2((iv) of guideline to Forest (Conservation) Act, 1980, against the diverted Land of 3.003 Ha of Reserve Forest Compensatory arera identified in villages Gumaguda 4 Ha (10 Acre) under Nandapur Tahasil of Koraput District in Balda Forest Range is suitable for compensatory afforestation of Artificial Regeneration (AR) Plantation @1600 Plants/Ha.

Out of the total allotted area of 4.047 Ha, approximately in 0.047 Ha is having with little stoney patches with some crops which is not suitable for plantation purpose. Therefore, in total above stated 4.00 Ha of non-forest Govt revenue land out of 4.047 Ha identified in lieu of diversion of 3.003 Ha of Reserve Forest Land in Hatibari-Gilaguntha Road is found suitable for Compensatory Afforestation.

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1. <u>INTRODUCTION</u>

Road & Building Division, Koraput proposes to construct Hatibari-Gilaguntha Road which is a development linier project. Where R&B has applied over 3.003 Ha of Reserve Forest Land which was undiverted. For the same it is identified 4 Ha of Non-Forest Land for Compensatory Afforestation. So the Compensatory Afforestation scheme is prepared over 4 Ha of Non-Forest Land in lieu of 3.003 Ha of undiverted Reserver Forest Land applied for diversion.

2. LAND INVOLVED

Against diversion of 3.003 Ha of Reserve Forest land in Hatibari-Gilaguntha Road under Nandapur Tahasil of Koraput District under Koraput Forest Division, identified 4 Ha of Non-Forest Land for Compensatory Afforestation in villages Gumaguda 4 Ha under Nandapur Tahasil of Koraput District. This Non-Forest land is in a close proximity to Balda Forest Section of Balda Forest Range. All weather road is existing up to the site. The site is a hillock having good depth of soil on the foot hill and adjoining to Bhimdol RF.

Asst. Conservator of Forest)

Coraput Forest Division

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TABLE- I

SUMMARY OF LAND IDENTIFIED FOR COMPENSATORY AFFORESTATION AGAINST 3.003 HA OF UN-DIVERTED RESERVE FOREST LAND IN HATIBARI-GILAGUNTHA ROAD OF R&B KORAPUT DIVISION

Sl. No.	Land classification in detail Extent of Pattern of Plantation proposed		Remarks	
Non-	Forest Land Identified in vil	lage-		G 't 11 for AD
01	Non-Forest land identified in village Gumaguda of Nandapur Tahasil	4.047	Block Plantation (AR) @ 1600 Plants per Ha.	Suitable for AR Plantation is only 4 Ha
	Total	4.047		

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The Non-Forest land identified in Gumaguda Village are hillocks which possessed good growth of miscellaneous species. However, in the identified areas rock has not so far been exposed and there is good soil deposit with bushes of Mersunga leaf plant (Murraya coinghii), Mango (Mangifera indica), Jackfruit (Artocarpus heterophyllus), Poksungha (Ageratum conijoides), Khakada (Gelonium multiflorum), Asan (Terminalia alata), Naguari (Lantana camara), Begunia (Vitex negundo), Palas (Butea monosperma) etc. This indicates that, the soil is of basic type and the pH is above 7.

The land schedule of non-forest land identified in Village Sisaput & Talageruput is furnished below:-

Name of Mouza / Village	NII AIA NO PIOT NO KISSAM ARAA IN		Area for compensatory afforestation in Acres	Remark		
Gumaguda	76	01	Pahada	11.700	10.000	Nandapur Tahasil
TOTAL					10.00 Ac. or 4.044 Ha.	Suitable 4 Ha only

SURVEY & DEMARCATION

The area has been surveyed with reference to the revenue map to ascertain the exact area available for plantation by using G.P.S. system and to be demarcated by erecting RCC pillars of 4ft height. The pillars are to be white washed and GPS readings (i.e. latitude, longitude etc) with pillar numbers has to be written on each pillar by the User Agency. The GPS readings of the area are furnished below:-

SL.	POINT ID	MAP ID	EASTING	NORTHING	LONGITUDE	LATITUDE
1	PO-1Q	PO.1	678653.923	2033804.749	E82° 41'28.06316"	N18° 23'12.23536"
2	PO-3	PO.2	678724.712	2033930.093	E82° 41'30.51447"	N18° 23'16.29053 "
3	PO-4	PO.3	678731.720	2033948.997	E82° 41'30.75923"	N18° 23'16.90324"
4	PO-5	PO.4	678722.038	2033989.395	E82° 41'30.44222"	N18° 23'18.22006"
5	PO-6	PO.5	678770.426	2034018.104	E82° 41'32.09973"	N18° 23'19.13909"
6	PO-7	PO.6	678809.431	2034037.589	E82° 41'33.43473"	N18° 23'19.76102"
7	PO-8	PO.7	678878.572	2034070.074	E82° 41'35.80045"	N18° 23'20.79656"
	PO-9	PO.8	678883.332	2033904.217	E82° 41'35.90992"	N18° 23'15.40088"
9	PO-9	PO.9	678885.512	2033803.685	E82° 41'35.95225"	N18° 23'12.13055"

The plantation area to be indicated by sign boards at corners or at point of intersection with roads, inspection paths and boundary lines. The sign boards should contain the name of the plantation site, area, year of planting, planting module, No. of seedlings planted & other details, if necessary.

VEGETATION DENSITY- The density of the crop of the above selected CA area of Block (AR) Plantation site is 0.05.

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DESCRIPTION OF EXISTING VEGETATION

The area is covered with unwanted obnoxious weeds like Eupatorium and Lantana along with some pole crops in scattered manner. No prominent economic species are available within the proposed site. However, saplings and bushy growth of Mersunga leaf plant (Murraya coinghii), Mango (Mangifera indica), Jackfruit (Artocarpus heterophyllus), Poksungha (Ageratum conijoides), Khakada (Gelonium multiflorum), Asan (Terminalia alata), Naguari (Lantana camara), Begunia (Vitex negundo), Palas (Butea monosperma) etc are found in the area. Besides, some bushes of & Bhuin-neem (Andrographics paniculata), Kurei (Hollarhena anti-dysenterica), Kendu (Dyospyrus melanoxylon), and Bhuin Khajur (Phonix aqualis) etc are also noticed in some patches. The growth of the weeds and bushes are too much congested.

TOPOGRAPHY & SOIL

The site is shown in Village sheet (Cadastral map) of Gumaguda over 4.047 Ha. The soil type occurring in the middle slope of the hill over the above sites having low soil depth where Block (AR) plantation has been proposed.

CLIMATIC CONDITION

The climatic condition of the area favouring growth of dry deciduous forest having average annual rain fall of 75 - 100 cm. and maximum temperature 40°C. The summer season is from March to June, winter from November and February and rainy season is from July to September.

OBJECTIVE OF THE SCHEME -

In due consideration to the requirements under the provision of Forest (Conservation) Act, 1980, the objective of the scheme are as follows:-

- (i) To replenish the loss of forest land to be diverted for non-forestry purpose.
- (ii) To generate employment to the villagers living around the identified 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 of the local inhabitants.
- (vi) To provide a green clothing to the area by means of artificial regeneration or plantation in-order to reduce soil erosion.

Pattern of plantation

The pattern of plantation shall be as under:-

"Block Plantation" @1600 Plants/Ha over 4 Ha.

PLANTATION TECHNIQUE

The area should be well demarcated before raising plantation by G.P.S. survey and fixing of Boundary pillar (where missing) with engraving thereon the co-ordinates and distance to next pillar. As far as possible weeds will be removed especially during flowering time in-order-to prevent fruiting and dispersal of seeds. Preferably indigenous species are to be planted in the area coupled with soil and moisture conservation measures.

PLANTING & POST-PLANTING:

RAISING OF NURSERY

18 Month old Seedlings required for this plantation shall be raised in the Permanent Central nursery of the Balda Range or in the suitable sites near the selected CA sites of this Range where the perennial source of water is available. 10% extra seedlings shall be raised to compensate and mitigate the eventuality of seedling casualty in the nursery. Standard nursery practices shall be followed for raising of seedlings in polythene bags. Permanent gaps need to be assessed well in advance by planting sandal species where plantation can be done.

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Species like Terminalia alata, Azadirachta indica and Pongamia glabra and other site suitable species will be preferred to be planted on the sites.

ALIGNMENT AND STACKING

Alignment, stacking and pitting will be taken up in the month of January-February, Pits of size 45 cm X 45 cm X 45 cm will be dug maintaining a spacing of 2.5 mt.

PLANTING TECHNIQUE

The area proposed to be taken up as per Block (AR) Plantation Norm over 4 Ha @ 1600 nos. of seedlings per ha. at a spacing of 2.5 mtr x 2.5 mtr with a pit size of 45 cm x 45 cm x 45 cm. The effective area of the plantation shall be calculated basing on the actual number of pits and actual number of seedlings used in the plantation in order to avoid any future complicacy and that must be recorded on the Plantation Journal and shown in the map, too. In the sign board actual number of seedling planted must be displayed. This plantation will be taken up on AR norm.

The Schedule of operation for preparation of site, pre-planting, planting, post-planting are prescribed herewith.

	OPERATIONS	PERIOD OF COMPLETION
i.	Advance preparation of site.	End of October
ii.	Alignment & Digging of pits	End of February
iii.	Stacking	End of February
iv.	Pre sprouted poly potted stump planting.	1st week of July
v.	Casualty replacement	End of July
vi.	1st soil working, weeding, manuring	End of August
vii.	Soil & water conservation measuring	End of September
viii.	2 nd soil working, weeding	During October
ix.	Fire line tracing	During December
X	Watch & Ward	July to March

Post Planting operation in 2nd year.

Casualty replacement, 1st weeding soil a. working & manuring.

End of July

Fire line tracing b.

During December

Watch & Ward c.

Throughout the year

In 3rd year.

Wedding, soil working and application of manure a. Fireline tracing b.

End of July December

Watch & Ward C.

Throughout the year

In 4th year to 10th Year

End of December Fire line tracing Pruning & Singling September

b. Watch & Ward C.

Throughout the year

NURSERY:

a.

A good nursery is the pre-requisite for a successful plantation. All care should be taken to raise healthy and sound seedlings of required sizes before they are put to plantation site. Planting of six month seedling of above species shall be taken up. Nursery Programme must be planned out as per the "Guide-lines" in the plantation manual so that a good stock of healthy Seedling can be raised, 10% extra seedling be raised to cover the shortfall due to casualty in the nursery stage.

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- B) The temporary nursery should be raised near the plantation site as far as practicable basing on the site suitability.
- C) Proper treatment of seeds should be done as per the Plantation manual.
- D) Shifting of potted seedlings is recommended not only to develop resistance for isolation but not to allow the roots striking into the ground soil.

Choice of Species

Artocarpus hetrophylla, Bombax ceiba (Simili), Cassia fistula (Sunari), Dendrocalamus strictus. (Baunsha), Gmelina arborea (Gambhari), Mangifera indica (Aamba), Phyllanthus emblica (Anla), Pongamia pinnata (karanja), Samania saman (bada Chakunda), Syzygium cumini (Jamun), Tamarindus indica (Tentuli), Terminalia tomentosa (Asan), Ziziphus mauritiana (Bara koli), Bauhinia vahlii (Siali), Simaruba glauca (Simaruba), Tectona grandish (Saguan), Acacia auniciloformin, Acacia Magnum, Silver Oak etc.

PLANTING

The seedlings will be planted in dug out pits of 45 cm³ maintaining a spacing of 2.5 mt between the pits i.e. @ 1600 seedlings per hectare. Plantation should be taken up after first regular shower of monsoon and should ideally be completed by end of July. Basal dose of fertilizer should be applied as per the guideline and Antitermite and insecticide should be also applied per pit while planting. Casualty replacement whenever required during the planting year and in the subsequent years upto 2nd year should be undertaken for which the seedlings shall be raised and kept in stock at site as well as in the Central Nursery.

WEEDING, SOIL WORKING AND MANURING

For establishment and better growth of the planted seedlings, weeding, soil working and manuring are necessary. It is prescribed to carry out one weeding, one soil working and manuring during the first year along with soil moisture conservation in the form of staggered trenches. One weeding, one soil working and application of fertilizer in second year of plantation Weeding and manuring for the first and second year shall be carried out during August- September along the contour. Application of vermin compost shall be given preference. First weeding shall be carried out after the first pair of leaf of the planted species have come up preferably in August. The detailed cost estimate of various operations to be taken up in AR plantation has been furnished below. Fire line should be drawn in order to avoid damage to the plants during fire season (February to June).

SOIL MOISTURE CONSERVATION (SMC):

Soil Moisture Conservation structures like LBCD, Staggered Trenches and the works required as per the sites should be taken up during execution of SMC works on the sites.

POINTS OF IMPORTANCE:

While taking up plantation, the following vital points shall be taken up for consideration:

- All care should be taken to raise healthy seedlings and 10% extra of the required stock has to be raised for causality replacement. Pitting shall be invariably done during January-February, when the soil is moist by fall of dew. The sites being the hilly slopes, pits shall be dug along the contours and alternate liens should be staggered. Planting shall be done at the onset of monsoon.
- Basal dose applied as per the prescribed guideline provided in the prevailing norm during planting time. Casualty replacement, weeding and soil working, application of fertilizer and insecticides shall be taken up as per the provisions made in the cost- norm at the proper time. Engaging requisite watchers as per norm is mandatory.

All out efforts be taken to keep the plantation free from grazing, fire and other biotic interference.

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PROTECTION:

The important element of successful plantation is Protection. Watchers are to be engaged on daily wage basis for ten years but they should assigned with specific work and their involvement in protecting the plantation should be ensured. It is suggested not to engage a particular person for the entire ten years but considering the work efficiency the person, if not found suitable should be changed. Since the plantation site is close to Balda Forest Section, enough care should be taken to engage efficient worker for protection as there is every possibility of damage by grazing. Therefore, in the planting design non browsable species like Simaruba should be planted in three four rows to-wards periphery of the plantation at the foot hill before Agave Plantation.

FENCING:

To protect the plantation from grazing and other biotic interference, it will be provided with Angle Iron & Chain link wire mesh fencing along the periphery in Selected CA site. The cost estimate for above fencing proposal has been provided.

CONTROL MEASURES:

- 1) 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
- 2) 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 shall have to be laid out and weed growths are to be scrapped.
- 3) Since most of the areas are hilly and undulating, So SMC measure like half-moon trenches on down-hill side of plants should be constructed. In the slopes, staggered trenches of 2 Mtr x 50 Cm x 50 Cm should be dug in between the planting line along the contours, and the excavated earth be piled on the downhill side to form a bund. The staggered contour trenches will act as place of deposit of eroded soil and will check soil erosion. It will retard the velocity of run-off and will be helpful in feeding ground water to the plants planted below it.

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Funding Agency

: Road & Building Division, Koraput.

Proposed Monitoring Mechanism

The Scheme shall be executed by the Divisional Forest Officer, Koraput Forest Division with his staff and all

prescribed records are to be maintained.

Total Cost of the Project

Total Cost of the project is Rs. 52,22,184/- (Rupees Fifty Two Lakh Twenty Two Thousand One Hundred Eighty Four) only as detailed which shall be payable by the user agency as per the advice of DFO, Koraput

Forest Division.

Forest Range Officer
Battled Forest Range

Asst. Conservator of Forests

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Koraput Forest Division

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Divisional Forest Officer
Divisional Forest Officer
Koraput Forest Division

3	3rd YEAR N	AINTENANCE	Ē			
	Mo Khata/ any other fertilizer	Sep / Oct	0	-	4,486.00	4,486.00
4	Weeding, Manuring & Soil working (1 mt. diametre around the plants)	Sep / Oct	20	6,520.00		6,520.00
5	Fireline tracing (2m wide fire line over 400m long) including maintenance of inspection path	Feb/Mar	3	978.00	-	978.00
6	Watch & Ward including watering as per requirement	Apr/Mar	18	5,868.00		5,868.00
7	Maintenance of Temporary Labour Shed, Drinking water facility and First-Aid kit				1,000.00	1,000.00
	TOTAL		41	13,366.00	1,000.00	14,366.00
		MAINTENANC	E			
1	Fireline Tracing (2m wide fir line over 400 m long) including maintenance of inspection path	Feb/Mar	3	978.00		978.00
2	Watch & Ward	Apr - Mar	18	5,868.00		5,868.00
	TOTAL		21	6,846.00	-	6,846.00
		MAINTENANC	E			
1	Fireline Tracing (2m wide fir line over 400 m long)	Feb/Mar	3	978.00		978.00
2	Watch & Ward	Apr - Mar	18	5,868.00		5,868.00
	TOTAL		21	6,846.00	-	6,846.00
	6th YEAR I	MAINTENANC	E			070.00
1	Fireline Tracing (2m wide fir line over 400 m long)	Feb/Mar	3	978.00		978.00
2	Pruning of branches, singling out of multiple shoots	Jan/Mar	5	1,630.00		5 959 00
3	Watch & Ward	Apr - Mar	18	5,868.00		5,868.00 6,846.00
	TOTAL		26	8,476.00	-	6,846.00
16	7th YEAR	MAINTENANC				978.00
1	Fireline Tracing (2m wide fir line over 400 m long)	Feb/Mar	3	978.00		5,868.00
2	Watch & Ward	Apr - Mar	18	5,868.00		6,846.00
	TOTAL		21	6,846.00		0,01010
		MAINTENANO		978.00		978.00
1	Fireline Tracing (2m wide fir line over 400 m long)	Feb/Mar	3	5,868.00		5,868.00
2	Watch & Ward	Apr - Mar	18	6,846.00	-	6,846.00
	TOTAL			0,840.00		
		MAINTENANO	3	978.00		978.00
1		Feb/Mar Apr - Mar	18	5,868.00		5,868.00
2	Watch & Ward TOTAL		21		-	6,846.00
		MAINTENAN		5,5.5.5		
		Feb/Mar	3	978.00	. 103	978.00
1		Apr - Mar	18	5,868.00		5,868.00
1	Watch & Ward TOTA		21		-	6,846.00

Divisional Forest Offices
Koraput Forest Division

Conservator of Foresty Coraput Forest Division

YEAR WISE ABSTRACT OF COST NORM (SHOWING SEEDLING COST SEPARATELY)

SI. NO.	Year	No. perso n day	Labour Cost @ 326/- per day (Rs.)	/- per Cost learning, Documentation		Total Cost	
1	2	3	4	5	6	8	
1	Oth Year	82	26732	3500	1512	31744	
2	1st Year	105	34230	23360		60470	
3	2nd Year	45	14670	6566	1062	22298	
4	3rd Year	41	13366	1000	718	15084	
5	4th Year	21	6846	0	342	7188	
6	5th Year	21	6846	0 342		7188	
7			424	8900			
8	3 7th Year 21 6846			. 0	342	7188	
9	8th Year	21	6846	0	342	7188	
10	9th Year	21	6846	0	342	7188	
11	10 Year	21	6846	0	342	7188	
	Total:	425	138550	34426	8649	181625	
1920	Nos. @ Rs. 5	52.18 Pais	e per seedling a	nd Transpor	160 Nos for 2 nd Year = tation Cost @ Rs.6/- Per = Rs. 1,11,706/-	111706	
	Grand Total:						

Forest Range Officer

910 Santiguage Officer

MALDA RANGE

Asst. Conservator of Forests

Sec. Conservator of Forests

Coraput Forest Division

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Divisional Forest Officer

Divisional Forest Division

Koraput Forest Division

TOTAL PROJECT COST

Model of Plantation	Extent Area in Ha	Cost Norm in Rs.	Total Cost in Rs.
AR Plantation In Gumaguda over 4.044 Ha. i.e. CA @1600 Plants/Ha+ Wire Mesh Fencing+ DP+ SMC	4 На	13,05,546/-	52,22,184
Grand Total	4 Ha		52,22,184

(Rupees Fifty Two Lakh Twenty Two Thousand One Hundred Eight Four) only.

910 Forest Range Officer Balda Forest Range Forest Range Officer DALDA RANGE

Asst. Conservator of Forests Koraput Forest Division Coraput Forest Division KORAPUT

Divisional Forest Officer Koraput Forest Division Divisional Forest Offic , Koraput Forest Division

LET) FOR COMPENSATORY AFFORESTION SCHEMES PREST LAND FOR THE FY 2022-23	Total CA Grand Total	Area in Cost		4 52,22,184	Fotal 52,22,184	
AFFOREST 122-23		per Ha		13,05,546	Grand Total	
ATORY IE FY 20		SMC		37,415		
OMPENS. D FOR TH	Fencing	Iron Angle with Chain Link		4,40,299		
TET) FOR COMPENSATORY AFFO PREST LAND FOR THE FY 2022-23	Watering	Diesel Pumpset with mannual		5,02,209		
(FINANCIAL OUT) ON DEGRADED FI		Core Plantation	CA (AR) 1600	3,25,623		
READY RECKONER (FINANCIAL OUT) ON DEGRADED FI	DY RECKONER (FINA ON DI	CA-Code	CA 1600+WATERING+FENCING	CA1600 + DP+ WM+ SMC		
REA		SI No	CA 160	1		

Voraput Forest Division

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Divisional Forest Office Koraput Forest Division