

-693-

Penal Compensatory afforestation scheme for illegal formation of road at
Chennapuram village of Charla Range, Bhadrachalam division of Bhadrachalam
Kothgudem district,

A. Degraded forest lands (DFL) for PCA:

1. Introduction:

In lieu of diversion of forest land over an extent of 16 Ha violation of Forest land in Charla Range of Bhadrachalam Division for construction of B.T. road from Thippapuram to Chennapuram. In this regard as per the instructions issued PCA scheme is prepared cost of plantation including 10 years maint. shall be levied from the User Agency towards Penal compensatory afforestation.

As per the instructions 32 Ha of Degraded patch is identified for PCA at Uyyalamdugu Beat, Compt.No.72 of Thippapuram section in Charla Range to meet the requirement of planting 1111 plants/ Ha.

THE SCHEME - TREATMENT MODELS AND OPERATIONS PROPOSED:

Plantations: It is proposed to take up compensatory afforestation of **NON TEAK SECONDARY HARDWOOD SPECIES (NTSH)** through Semi-mechanical method, with CPT along the periphery of the DFL CA area.

The above Reforestation work shall be carried out either by involvement of VSS members wherever possible or through Departmental execution.

The operation to be carried out are Survey and demarcation, clearance of existing unwanted growth, uprootal, burning, ploughing, inter-ploughing, scoping of 60 cm cube pits and planting at 3 x 3 m espacement with 10 years of maintenance etc. Watering of plants is provided for raising year.

Administrative Costs (Over Heads): As the work involves lot of record maintenance, book keeping and mobility of the field officers it is required to provide 10% of treatment cost (nursery raising and plantation raising) towards over heads and monitoring of implementation of the Scheme.

PROJECT COST: The total financial out lay of the project is Rs.221.351 lakhs.

Cost of Tall Plants and Maintenance upto Planting is proposed in 2022-23 & 2023-24, Advance operations 2023-24 and raising of plantation starts from 2023-24. The annual requirement of funds have been worked out on the base cost of 2021-22 FSR with 10% annual escalation for the remaining project period up to 2033-34.

S. No	Scheme Proposals	Cost in Lakhs
1	Cost of Tall Plants	15.276
2	Raising of plantations with 10 years of maintenance	187.896
	Total:	201.228
3	Administrative Cost(10%)	20.123
	Total	221.351

Mode of Execution:

Forest Divisional Officer
Bhadrachalam.

PENAL COMPENSATORY AFFORESTATION SCHEME FOR 32 Ha. OF CHARLA RANGE Under SMM FROM THIPPAPURAM TO CHENNAPURAM FOR VIOLATION OF FC ACT IN CHARLA RANGE OF BHADRACHALAM DIVISION.

Sl No	Component	Unit Cost	2021-22			2022-23			2023-24			2024-25			2025-26		
			Phy.	Rate	Fin.	Phy.	Rate	Fin.	Phy.	Rate	Fin.	Phy.	Rate	Fin.	Phy.	Rate	Fin.
			3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
1	Raising of plantations in Degraded Patch 32 Ha.																
	Advance operations for raising NTSH plantation -32 Ha.	0.43397	0	0	0	32	0.4774	15.2759	0	0	0	0	0	0	0	0	0
2	Cost of Tall Plants	0.0003	0	0	0	44440	A/a	13.332	0	0	0	0	0	0	0	0	0
3	Raising of plantation under SMM 32 Ha Including cost of plants	1.1549815	0	0	0	0	0	0	32	1.501476	48.047	0	0	0	0	0	0
4	1st year Maint. of NTSH Plantation	0.3950457							0	0	0	32	0.553064	17.698			
5	2nd year Maint. of NTSH Plantation	0.2671166													32	0.374	11.967
6	3rd year Maint. of NTSH Plantation	0.1158551															
7	4th year Maint. of NTSH Plantation	0.1158551															
8	5th year Maint. of NTSH Plantation	0.1158551															
9	6th year Maint. of NTSH Plantation	0.1158551															
10	7th year Maint. of NTSH Plantation	0.1158551															
11	8th year Maint. of NTSH Plantation	0.1158551															
12	9th year Maint. of NTSH Plantation	0.1158551															
13	10th year Maint. of NTSH Plantation	0.1158551															
						1	4.123	4.123	1	8	8.0000	1	4	4.0000	1	4	4.0000

D:\JCM Section\Documents CA\Hodkewala CA 29.10.2015 of BCR WCA Scheme Hodkewala BOM N 30.10.2015.doc

2026-27			2027-28			2028-29			2029-30			2030-31			2031-32			2032-33			2033-34			Total	
Phy.	Rate	Fin.	Phy.	Rate	Fin.	Phy.	Rate	Fin.	Phy.	Rate	Fin.	Phy.	Rate	Fin.	Phy.	Rate	Fin.	Phy.	Rate	Fin.	Phy.	Rate	Fin.	Phy.	Fin.
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	36	37	38	39	40
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	15.276
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	44440	13.332
0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	32	48.047
																								32	17.698
																								32	11.967
																								32	5.561
32	0.174	5.56104																						32	5.932
			32	0.185	5.932																			32	6.303
						32	0.197	6.30252																32	6.673
									32	0.209	6.6733													32	7.044
												32	0.220	7.043989										32	7.415
															32	0.232	7.41473							32	7.785
																		32	0.243	7.78546				32	48.196
																					32	1.506	48.19571	32	202.2
																								1	20.123

Forest Divisional Officer,
Bhadracliam Division

Unit Cost Estimate for Advance Operation for raising of Plantation under SMM

Sl. No.	FSR Code	Item of work	Qty	Rate in Rs.			Per	Amount	
				As per FSR	Agency allowance 25%	Total			
1	2	3	4	5	6	7	8	9	
	02.03.00	ADVANCE OPERATION (PRE-PLANTING OPERATION) - All advance-operation works of plantations to be raised shall be completed before March. Perambulation of site, preparing site inspection report including type of vegetation and density, approval of site suitability and the category of jungle growth clearance, taking							
	02.08.01	Survey with hand-held GPS (staff to carry out) and demarcation - one manday is allowed for assistance. The surveyed sketch with exact effective area statement will be uploaded in MIS platform by end of December.	1	Ha.	393.21	0.00	393	Ha	393
	02.08.02	Clearing unsalable unwanted jungle growth (leaving all the tree species of good form particularly the hardwood tree species like Teak, Nallamaddi, Yegisa, Narana, Somi, Jirrai, Billudu, Chenangi etc. and NTFP)							
		(b) Very Light Jungle Growth (>10% and upto 20% ground area covered with Jungle growth)	1.00		3284.95	4106.19	4106	Ha	4106
	02.03.03	Uprootal of Stumps (excluding unsuitable patches) to a minimum depth of 45 cm with heavy machinery fitted with 0.90 cum and above capacity bucket, filling the pits caused by uprootal, and levelling. For retrieved encroached area, the approval of Circle Head is required and the approval should indicate clearly the density of stumps or vegetation to be removed through uprootal. The uprootal work can be carried out preferably through tender process.							
		(b) Very Light Jungle growth (>10% and up to 20% ground area covered with Jungle growth)	1.00		11037.51	0.00	0	Ha	11038
	02.08.04	Collection and Removal of Uprooted Stumps of all sizes, other debris etc., to outside the plantation site.							
		(b) Very Light Jungle growth (>10% and up to 20% ground area covered with Jungle growth)	1.00		9657.68	0.00	0	Ha	9658
	02.08.05	Tilling (PERMISSIBLE FOR CA AREA ONLY) the soil to a depth of 45 cm in the effective area (excluding unsuitable patches) with heavy duty machinery fitted with 0.90 cum and above capacity bucket and levelling - ONLY PERMISSIBLE FOR CA AREA and written approval of Circle Head is							
		(b) Very Light Jungle growth (>10% and up to 20% ground area covered with Jungle growth)			13962.8		13963		13963
	02.19.02	Digging of Peripheral Trenches (1 M Depth ; 1m top width, 1.5 M Bottom width) by machine for 1. km 1000 Rmt, (320 X 1.25 = 400)	100		42.40		0		4240
							Sub Total:		43397

Total : 2021-22	43397
Escalation 10%	4340
Total: 2022-23.	47737
Escalation 10%	4774
Total: 2023-24.	52511
Escalation 10%	5251
Total: 2024-25.	57762
Escalation 10%	5776
Total: 2025-26.	63538
Escalation 10%	6354
Total: 2026-27.	69892
Escalation 10%	6989
Total: 2027-28.	76881
Escalation 10%	7688
Total: 2028-28.	84569
Escalation 10%	8457
Total: 2029-30.	93026
Escalation 10%	9303
Total: 2030-31.	102329
Escalation 10%	10233
Total: 2031-32.	112562

Forest Divisional Officer,
Bhadraclatam

[Signature]
01/04/2022

Unit Cost Estimate for Raising of Plantation under SMM

Sl. No.	FSR Code	Item of work	Qty	Rate in Rs.			Per	Amount
				Asper FSR	Agency allowance @ 25%	Total		
1	2	3	4	5	6	7	8	9
	02.09.00	PLANTING OPERATIONS DURING RAISING YEAR						
1	02.09.01	Removing congestion of root suckers and other uprooted material hindering the effective ploughing	1 Ha	1119.37	279.84	1399.21	1 Ha	1399
2	02.09.03	Deep Ploughing the effective (excluding unsuitable patches) plantation area across the slope to a depth of 30 cm with Heavy-duty Tractor of 55 HP and above with Firm Mould Board (FMB) plough. FOR UN TILLED AREA ONLY						
		(a) Ordinary soils like gravel and morum	0.50 Ha	3744.62	0.00	3744.62	1 Ha	1872
		(b) Hard soils like gravel and morum	0.50 Ha	5620.89	0.00	5620.89	1 Ha	2810
3	02.09.04	Alignment & Stacking including demarcation of base line						
		(c) 3X3 m espacement = 1111 planting points	1111 No.	93.82	23.46	117.28	100 No.	1303
4	02.09.05	i) Cost of preparation of stakes (0.45 m length) and transportation to site	1111 No.	59.81	0.00	59.81	100 No.	664
		ii) Cost of preparation of stakes (2.0 m length) and transportation to site (subject to condition that the seedling height is 1.5m to 2.0m height) which includes cost of stake, coalter application at the bottom of the stake (30 cm), transportation, fixing and tying.	1111 No.	1260.00	0.00	1260.00	100 No.	13999
5	02.09.06	Digging of Pits in Ploughed Areas in June - July by adopting 50% of original rate of digging of pits of ordinary soil						
		b) 45 cm3 pits	1111 No.	11.19	2.80	13.99	1 No.	15540
6	02.09.07	(a) Transportation of Planting Stock (including loading and unloading) up to a distance of 5 km						
		(d) 23 X 28 cm (9"X11") bag plants	1111 No.	268.03	0.00	268.03	100 No.	2978
7	02.09.08	(d) 23 X 28 cm (9"X11") bag plants For the distance of 15 Kms. i.e. 9.42 x 15=Rs. 94.20 / 100 Nos. per Km.	1111 No.	94.20	0.00	94.20	100 No.	1047
8	02.09.10	Internal transportation to planting points on head loads						
		(d) 23 X 28 cm (9"X11") bag plants	1111 No.	173.09	43.27	216.35	100 No.	2404
9	02.09.11	Fortification of seedling with insecticide and treating pits with SSP						
		(a) Application of 50 gm of SSP per pit (1 day before planting) for root growth and early establishment of plant after planting. ii) Similarly, the bag plants to be planted will be dipped inside Chloropyrphos solution (5ml Chloropyrphos in 1 lit water) either at nursery site before transport or at plantation site before planting	1111 No.	41.23	10.31	51.54	100 No.	573
		(b) Cost of SSP, Chloridine dust or Chloropyrphos (50 gm. X 11110 = 55500 Grms. /1000 = 560 Kgs. / 45 Kgs. = 12.44 or 13 bags x Rs. 500/- = Rs. 6500/-	1111 No.	13	0.00	500.00	1 No.	6500
10	02.09.12	Planting in various size pits						
		b) Planting in 45 cm3 Pit	1111 No.	459.36	114.84	574.20	100 No.	6379
	02.09.14	Watering (one time) immediately after planting if the planting takes place on a non-rainy days and during dry spell						
		a) One critical watering after planting if planting takes place on non-rainy days with the prior written permission of DFO / FDO.	1111 No.	278.11	69.53	347.64	100 No.	3862
11	02.09.16	Cost of DAP @ 25 gm / planting point. (25 gm. X 11110 = 277750 Grms. /1000 = 277.75 Kgs. / 45 Kgs. = 6.172 or 7 bags x Rs. 1300/- = Rs. 9100/-	1111 No.	A/a	0.00	0.00	1 No.	9100
12	02.09.17	Application of fertilizer in August (30 days after planting) by making 3 holes of 10 cm depth with crow bar holes at a distance of 10 cm away from plant and putting fertilizers and closing. Ensure that the soil is really wet at the time of DAP application.	1111 No.	41.23	10.31	51.54	100 No.	573

Sl. No.	FSR Code No.	Item of work	Qty		Rate in Rs.			Per		Amount
					Asper FSR	Agency allowance @ 25%	Total			
13	02.09.15	Replacement of Casualties: 20% during Raising Year. (In case of Eucalyptus: 10% during raising and no casualty replacement for further maintenance). The casualty replacement should be done in 3 stages at an interval of 15 days immediately after planting during raising year.								
	02.09.07	Transportation of Planting Stock (up to 5 km) (d) 23 X 28 cm (9"X11") bag plants.	278	No.	268.03	0.00	268.03	100	No.	745
14	02.09.08	b) Transportation of Planting Stock (including loading and unloading) more than 5 km distance and upto 25 km distance								
		(d) 23 X 28 cm (9"X11") bag plants For the distance of 15 Kms. i.e. $9.42 \times 15 = \text{Rs. } 94.20 / 100$ Nos. per Km.	278	No.	94.20	0.00	94.20	100	No.	262
15	02.09.10	Internal transportation to planting points on head loads								
		(c) 20 X 30 cm (9"X11") bag plants	278	No.	173.08	43.27	216.35	100	No.	601
16	02.09.06	Digging of Pits	278	No.	5.60	1.40	6.99	1	No.	1944
17	02.09.12	b) Planting in 45 cm ³ Pit	278	No.	437.48	109.37	546.85	100	No.	1520
18	02.09.16	Cost of DAP @ 25 gm / planting point. (25 gm. X 2222 = 55550 Grms. / 1000 = 55.55 Kgs. / 45 Kgs. = 1.5 or 2 bags x Rs. 1300/- = Rs. 2600/-)	278	No.	2.00	0.00	1300.00	1	No.	2600
	02.09.17	Application of fertilizer in August (30 days after planting) by making 3 holes of 10 cm depth with crow bar holes at a distance of 10 cm away from plant and putting fertilizers and closing. Ensure that the soil is really wet at the time of DAP application.	278	No.	41.02	0.00	41.02	100	No.	114
19	02.09.18	Weeding and saucer formation to a radius of 0.5 mts around the plant immediately after planting (i.e) during June.	1111	No.	131.20	32.80	164.00	100	No.	1822
20	02.09.19	Circular weeding cum Deep Soil working to a radius of 0.5m and to a depth of 15 cm (to be done by pick-axe only) without damaging the plant. (during Nov - Dec)	1111	No.	689.06	172.27	861.33	100	No.	9569
21	02.09.20	Inter-ploughing (during November) the effective (excluding unsuitable patches) plantation area across the slope to a depth of 30 cm with Heavy-duty Tractor of 55 HP and above with Firm Mould Board (FMB) plough								
		(a) Ordinary soil	0.50	Ha	2553.54	0.00	2553.54	1	Ha	1277
		(b) Hard gravelly soil	0.50	Ha	3502.95	0.00	3502.95	1	Ha	1751
22	02.09.21	Pruning of lower branch initials of Timber and NTFP species by sickature upto 1/3 rd height (to be done during October)	1111	No.	130.43	32.61	163.04	100	No.	1811
23	02.09.22	Uprootal of Mahaveera (<i>Hypsis suaveolens</i>) weed with prior written approval of Circle Head and taking photograph before and after uprootal. The weed removal shall be completed before September-end at any cost before inter-ploughing.	1	Ha	3833.45	958.36	4791.81	1	Ha	4792
24	02.09.23	Enumeration of row-wise survival and average growth twice in raising year - Number of plants planted and Number surviving (to be undertaken during May & Dec.) and entered in Plantation Journal. Minimum stocking of 90% and average minimum height of 1.5 m at the end of raising year.								
25	02.09.24	Contingencies provision for Raising of plantations:								
		i) Fixing of Plantation Boards and Corner Stones	1	No.	A/a					1500
		ii) Contingencies and Miscellaneous (with in 5% of the estimate cost subject to ceiling of Rs. 5,000/-)	99813		5%					4991

To be done by the staff
(plantation-in-charge) with the
help of Plantation Watcher

Sl. No.	FSR Code No.	Item of work	Qty		Rate in Rs.			Per	Amount
					As per FSR	Agency allowance @ 25%	Total		
26	02.09.25	Cost of Protection: (a) For fenced area: One Casual labour is allowed for the plantation more than 10.00 ha but less than 30.00 ha. in extent and two Casual labourers are allowed for more than 30.00 ha.	2	No.	10 Months		9194.85		9195
							Grand Total		115498

Total : 2021-22	115498
Escalation 10%	11550
Total: 2022-23.	127048
Escalation 10%	12705
Total: 2023-24.	139753
Escalation 10%	13975
Total: 2024-25.	153728
Escalation 10%	15373
Total: 2025-26.	169101
Escalation 10%	16910
Total: 2026-27.	186011
Escalation 10%	18601
Total: 2027-28.	204612
Escalation 10%	20461
Total: 2028-28.	225073
Escalation 10%	22507
Total: 2029-30.	247580
Escalation 10%	24758
Total: 2030-31.	272338
Escalation 10%	27234
Total: 2031-32.	299572

Bahar
Forest Divisional Officer,
Bhadracliam

74
01/04/2022

•

Sl. No.	FSR Code No.	Item of work	Qty	Rate in Rs.			Per	Amount
				Asper FSR	Agency allowance 25%	Total		
13	02.10.09	(b) For unfenced area: One Casual labour is allowed for plantation more than 10.00 ha but less than 20.00 ha and one more Casual labour is permitted for multiples of 20.00 ha.	2	Months		9654.59		11586
						Grand Total		39505

Total : 2021-22 39505
 Escalation 10% 3950
 Total: 2022-23. 43455
 Escalation 10% 4345
 Total: 2023-24. 47800
 Escalation 10% 4780
 Total: 2024-25. 52580
 Escalation 10% 5258
 Total: 2025-26. 57838
 Escalation 10% 5784
 Total: 2026-27. 63622
 Escalation 10% 6362
 Total: 2027-28. 69984
 Escalation 10% 6998
 Total: 2028-29. 76982
 Escalation 10% 7698
 Total: 2029-30. 84680
 Escalation 10% 8468
 Total: 2030-31. 93148
 Escalation 10% 9315
 Total: 2031-32. 102463

Bahmy
 Forest Divisional Officer,
 Bhadrachalam

01/04/2022

Unit Cost Estimate for 2nd Year maint. of Plantation under SMM

Sl. No.	FSR Code No.	Item of work	Qty	Rate in Rs.			Per	Amount
				Asper FSR	Agency allowance 25%	Total		
1	2	3	4	5	6	7	8	9
	02.11.00	2nd YEAR MAINTENANCE						
1	02.11.01	Broadcasting of Stylosanthes hamata seeds in the inter-planting rows of the plantations raised under semi-mechanical plantations by ploughing with a tractor-mounted cultivator after receipt of good rains in the month of June-July in place of existing provision of inter-ploughing in the month of September given for the 1st and 2nd year MAINTENANCE years of semi-mechanical plantations						
		(b) Inter ploughing using tractors with cultivator in 1st year maintenance and old plantations	1	Ha	2195.83	548.96	2744.79	Ha 2745
2	02.11.02	Circular weeding cum Deep Soil working to a radius of 0.5m and to a depth of 15 cm (to be done by pick-axe only) without damaging the plant. (during Nov - Dec)(b) For hard gravelly soil	1111	No.	689.06	172.27	861.33	100 No. 9569
3	02.11.03	Pruning of lower branch initials of Timber and NTFP species by sciculture upto 1/3 rd height during October.	1111	No.	130.48	32.62	163.10	100 No. 1812
	02.11.04	Enumeration of row-wise survival and average growth twice a year - Number of plants planted and Number surviving (to be undertaken during May & Dec.) and entered in Plantation Journal. Minimum stocking of 90% and average minimum height of 2.5 m at the end of raising year		To be done by the staff (plantation-in-charge) with the help of Plantation Watcher				
4	02.11.05	Contingencies provision for maintenance of plantations:						
		i) Maintenance of Plantation Boards and Corner Stones						500
		ii) Contingencies and Miscellaneous (with in 3% of the estimate cost subject to ceiling of Rs. 3,000/-)	14126					500
6	02.11.06	(b) For unfenced area; One Casual labour is allowed for plantation more than 10.00 ha but less than 20.00 ha and one more Casual labour is permitted for multiples of 20.00 ha.	2	Months		9654.59		11586
						Grand Total		26712

Total : 2021-22	26712
Escalation 10%	2671
Total: 2022-23.	29383
Escalation 10%	2938
Total: 2023-24.	32321
Escalation 10%	3232
Total: 2024-25.	35553
Escalation 10%	3555
Total: 2025-26.	39108
Escalation 10%	3911
Total: 2026-27.	43019
Escalation 10%	4302
Total: 2027-28.	47321
Escalation 10%	4732
Total: 2028-28.	52053
Escalation 10%	5205
Total: 2029-30.	57258
Escalation 10%	5726
Total: 2030-31.	62984
Escalation 10%	6298
Total: 2031-32.	69282

Forest Divisional Officer,
Bhadra Chaleam
01/04/2022

Unit Cost Estimate for 3rd to 10th Year maint. of Plantation under SMM

Sl. No.	FSR Code No.	Item of work	Qty	Rate in Rs.			Per	Amount
				Asper FSR	Agency allowance 25%	Total		
1	2	3	4	5	6	7	8	9
	02.11.00	3rd YEAR MAINTENANCE						
1	02.11.06	(b) For unfenced area: One Casual labour is allowed for plantation more than 10.00 ha but less than 20.00 ha and one more Casual labour is permitted for multiples of 20.00 ha.	2	Months		9654.59		11586
						Grand Total		11586

Total : 2021-22	11586
Escalation 10%	1159
Total: 2022-23.	12745
Escalation 10%	1274
Total: 2023-24.	14019
Escalation 10%	1402
Total: 2024-25.	15421
Escalation 10%	1542
Total: 2025-26.	16963
Escalation 10%	1696
Total: 2026-27.	18659
Escalation 10%	1866
Total: 2027-28.	20525
Escalation 10%	2052
Total: 2028-28.	22577
Escalation 10%	2258
Total: 2029-30.	24835
Escalation 10%	2483
Total: 2030-31.	27318
Escalation 10%	2732
Total: 2031-32.	30050
Escalation 10%	3005
Total: 2032-33.	33055

Bedam
Forest Divisional Officer,
Shadrachalam
01/04/2022