

**Summary of CA Cost for 32 Ha of Compensatory Afforestation in CA land and 31.588 Ha of Dwarf
Plantation for Construction of 400 KV DC Bongaigaon Nangalbibra Transmission Line by diverting
31.588 Ha of Forest Land.**

Proposal No	FP/ML/TRANS/155408/2022
Area Diverted	31.588 Ha
CA Area	32 Ha

Item of Works	Quantity	Unit	Rate per unit	Amount	Remarks
Compensatory Afforestation	32	Ha	₹ 9,04,875	₹ 2,89,56,000	As per the approved CA Norms
Plantation of Dwarf Species	31.588	Ha	₹ 2,28,529	₹ 72,18,774	As per the Statre Plantation Norms
Installation of RCC Boundary Pillars at CA Land	25	Nos	₹ 15,000	₹ 3,75,000	To demarcate the CA Land
Construction of Staff Quarters	2	Nos	₹ 15,00,000	₹ 30,00,000	Permanent station for Staff is required at the CA Land
Jeepable Approach Road	250	Rmt	₹ 2,000	₹ 5,00,000	
		Total		₹ 4,00,49,774	



Divisional Forest Officer
East & North Garo Hills(T) Division
Williamnagar

PLANTATION NORMS FOR UNDERTAKING COMPENSATORY AFFORESTATION SCHEMES

Note: Wage Rate is the notified minimum wage rate for unskilled labour by Labour Department as on the date of payment by User Agency

PRELIMINARY WORKS

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for present year
1	2	3	4
1	Survey and demarcation including fixing of boundary marks at strategic points	2.00	2.00
2	Jungle clearance, burning, land preparation including staking, pit digging, hoeing, etc	24.00	24.00
3	Fencing With 3 strand barbed wire and wooden fencing posts including cost of staples, fixing, fitting, etc, complete	64.00	64.00
4	Cost of collection of seeds	5.00	5.00
5	Construction of camp hut and inspection paths	4.00	4.00
6	Purchase of tools and plants	2.00	2.00
7	Supervisory staff to be engaged on casual basis from amongst the local people	12.00	12.00
8	Raising of polypot nursery for 2 beds per hectare to cover for mortality rate of plants in the plantation site	61.00	61.00
9	Provision for signboards, documentation, upkeep of records and other miscellaneous works	30.00	30.00
	Sub Total in the Preliminary year	204.00	204.00
10	Soil & Moisture conservation measures in the plantation area @ 15%	30.60	30.60
11	Monitoring & Evaluation @ 2%	4.08	4.08
	Sub Total	238.68	238.68
	Adding 15% contingency due to escalation cost and revision of wages rate etc.	35.8	35.8
	Total in the preliminary year	274.48	274.48

CREATION AND 1ST YEAR MAINTENANCE OF PLANTATION

Wage Rate is Rs 1.08 times the present wage rate

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for first year
1	2	3	4
1	Planting of nursery seedlings including carriage from nursery centres to plantation sites and proper ramming after planting etc.	20.00	21.6
2	Cost of manure and bio-fertilizer	40.00	43.2
3	Mulching and 3 times weeding	50.00	54
4	Fire protection during dry and windy season (i) Wages of fire watchers from November of the creation year to April of the following year (ii) Fire line clearance including controlled burning form November in the creation year to April of the following year	10.00 10.00	10.8 10.8
5	2 nd year maintenance of poly pot nursery	3.20	3.456
6	Maintenance of camp hut, signboard, documentation, protection from grazing, upkeep of records and other miscellaneous works	30.00	32.4
7	Supervision cost	12.00	12.96
8	Sub total	175.20	189.22
9	Soil & Moisture conservation measures in the plantation area @ 15% of total cost of 1 st year creation	26.28	28.38
10	Monitoring & Evaluation @ 2%	3.50	3.78
	Sub total	204.98	221.38
	Adding 8.5% being contingency due to escalation cost of materials etc. after ascertaining the rate of interest due to accrue from CA money to be deposited by User Agency.	17.42	18.82
	Total for 1st year creation and maintenance	222.41	240.20

SECOND YEAR MAINTENANCE OF PLANTATION

Wage Rate is 1.17 times the present wage rate

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for second year
1	2	3	4
1	Vacancy filling by one year old seedlings in mortality areas	5.00	5.85
2	Climber cutting and weedings 3 times	45.00	52.65
3	<u>Fire Protection</u>		
	(i) Wages of fire watchers	10.00	11.7
	(ii) Fire line clearance including controlled burning	10.00	11.7
4	Maintenance of camp hut, signboard, inspection paths, fencing, protection from grazing, documentation, upkeep of records and other miscellaneous works	30.00	35.1
5	Supervision cost	12.00	14.04
	Sub total	112.00	131.04
6	Provision for soil & moisture conservation measures in the plantation area @ 15%	16.80	19.66
7	Monitoring & Evaluation @ 2%	2.24	2.62
	Sub total	131.04	153.32
	Adding 8.5% being contingency due to escalation cost of materials etc. after ascertaining the rate of interest due to accrue from CA money to be deposited by User Agency.	11.14	13.03
	Total for 2nd year	142.18	166.35

THIRD YEAR MAINTENANCE OF PLANTATION

Wage Rate is 1.27 times the present wage rate

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for third year
1	2	3	4
1	Vacancy filling wherever necessary	4.00	5.08
2	Climber cutting and weedings 3 times	45.00	57.15
	<u>Fire Protection</u>		
3	(i) Wages of fire watchers	10.00	12.7
	(ii) Fire line clearance including controlled burning	10.00	12.7
4	Maintenance of camp hut, signboard, inspection paths, fencing, protection from grazing, documentation, upkeep of records and other miscellaneous works	30.00	38.1
5	Supervision cost	12.00	15.24
	Sub total	111.00	140.97
6	Provision for soil & moisture conservation measures in the plantation area @ 15%	16.65	21.14
7	Monitoring & Evaluation @ 2%	2.22	2.82
	Sub total	129.9	164.93
	Adding 8.5% being contingency due to escalation cost of materials etc. after ascertaining the rate of interest due to accrue from CA money to be deposited by User Agency.	11.04	14.02
	Total for 3rd year	140.94	178.95

FOURTH YEAR MAINTENANCE OF PLANTATION

Wage Rate is 1.4 times the present wage rate

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for fourth year
1	2	3	4
1	Vacancy filling wherever necessary	2.00	2.8
2	Climber cutting and weedings 3 times	45.00	63
3	<u>Fire Protection</u> (i) Wages of fire watchers (ii) Fire line clearance including controlled burning	10.00 10.00	14 14
4	Maintenance of camp hut, signboard, inspection paths, fencing, protection from grazing, documentation, upkeep of records and other miscellaneous works	30.00	42
5	Supervision cost	12.00	16.8
	Sub total	109.00	152.6
6	Provision for soil & moisture conservation measures in the plantation area @ 15%	16.35	22.9
7	Monitoring & Evaluation @ 2%	2.18	3.05
	Sub total	127.53	178.55
	Adding 8.5% being contingency due to escalation cost of materials etc. after ascertaining the rate of interest due to accrue from CA money to be deposited by User Agency.	10.84	15.17
	Total for 4th year	138.37	193.72

FIFTH YEAR MAINTENANCE OF PLANTATION

Wage Rate is 1.56 times the present wage rate

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for fifth year
1	2	3	4
1	Climber cutting including silvicultural works and two times weedings	30.00	46.8
2	<u>Fire Protection</u>		
	(i) Wages of fire watchers	10.00	15.6
	(ii) Maintenance of Fire line including controlled burning	10.00	15.6
3	Maintenance of camp hut, signboard, inspection paths, fencing, protection from grazing, documentation, upkeep of records and other miscellaneous works	30.00	46.8
4	Supervision cost	12.00	18.72
	Sub total	92.00	143.52
5	Provision for soil & moisture conservation measures in the plantation area @ 15%	13.80	21.53
6	Monitoring & Evaluation @ 2%	1.84	2.87
	Sub total	107.64	167.92
	Adding 8.5% being contingency due to escalation cost of materials etc. after ascertaining the rate of interest due to accrue from CA money to be deposited by User Agency.	9.15	14.27
	Total for 5th year	116.79	182.19

SIXTH YEAR MAINTENANCE OF PLANTATION

Wage Rate is 1.74 times the present wage rate

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for sixth year
1	2	3	4
1	Climber cutting including silvicultural works	20.00	34.8
2	(i) Wages of fire watchers	10.00	17.4
	(ii) Maintenance of fireline including controlled burning etc.	10.00	17.4
3	Maintenance of camp hut, signboard, inspection paths, fencing, protection from grazing, documentation, upkeep of records and other miscellaneous works	30.00	52.2
4	Supervision cost	12.00	20.88
	Sub total	82.00	142.68
5	Provision for soil & moisture conservation measures in the plantation area @ 15%	12.30	21.4
6	Monitoring & Evaluation @ 2%	1.64	2.85
	Sub total	95.94	166.93
	Adding 8.5% being contingency due to escalation cost of materials etc. after ascertaining the rate of interest due to accrue from CA money to be deposited by User Agency.	8.15	14.18
	Total for 6th year	104.09	181.11

SEVENTH YEAR MAINTENANCE OF PLANTATION

Wage Rate is 1.97 times the present wage rate

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for seventh year
1	2	3	4
1	Climber cutting including silvicultural works	16.00	31.52
2	(i) Wages of fire watchers (ii) Maintenance of fireline including controlled burning etc.	10.00 10.00	19.7 19.7
3	Maintenance of camp hut, signboard, inspection paths, fencing, protection from grazing, documentation, upkeep of records and other miscellaneous works	30.00	59.1
4	Supervision cost	12.00	23.64
	Sub total	78.00	153.66
5	Provision for soil & moisture conservation measures in the plantation area @ 15%	11.70	23.05
6	Monitoring & Evaluation @ 2%	1.56	3.07
	Sub total	91.26	179.78
	Adding 8.5% being contingency due to escalation cost of materials etc. after ascertaining the rate of interest due to accrue from CA money to be deposited by User Agency.	7.76	15.29
	Total in 7th year	99.02	195.07

EIGHT YEAR MAINTENANCE OF PLANTATION

Wage Rate is 2.25 times the present wage rate

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for eight year
1	2	3	4
1	Climber cutting including silvicultural works	16.00	36
2	(i) Wages of fire watchers	10.00	22.5
	(ii) Maintenance of fireline including controlled burning etc.	10.00	22.5
3	Maintenance of camp hut, signboard, inspection paths, fencing, protection from grazing, documentation, upkeep of records and other miscellaneous works	30.00	67.5
4	Supervision cost	12.00	27
	Sub total	78.00	175.5
5	Provision for soil & moisture conservation measures in the plantation area @ 15%	11.70	26.32
6	Monitoring & Evaluation @ 2%	1.56	3.51
	Sub total	91.26	205.33
	Adding 8.5% being contingency due to escalation cost of materials etc. after ascertaining the rate of interest due to accrue from CA money to be deposited by User Agency.	7.76	17.46
	Total in 8th year	99.02	222.8

NINTH YEAR MAINTENANCE OF PLANTATION

Wage Rate is 2.58 times the present wage rate

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for ninth year
1	2	3	4
1	Climber cutting including silvicultural works	12.00	30.96
2	(i) Wages of fire watchers (ii) Maintenance of fireline including controlled burning etc.	10.00 10.00	25.8 25.8
3	Maintenance of camp hut, signboard, inspection paths, fencing, protection from grazing, documentation, upkeep of records and other miscellaneous works	30.00	77.4
4	Supervision cost	12.00	30.96
	Sub total	74.00	190.92
5	Provision for soil & moisture conservation measures in the plantation area @ 15%	11.10	28.64
6	Monitoring & Evaluation @ 2%	1.48	3.82
	Sub total	86.6	223.38
	Adding 8.5% being contingency due to escalation cost of materials etc. after ascertaining the rate of interest due to accrue from CA money to be deposited by User Agency.	7.36	18.99
	Total in 9th year	93.96	242.37

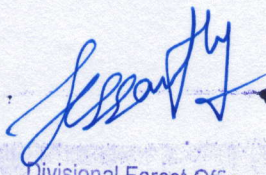
TENTH YEAR MAINTENANCE OF PLANTATION

Wage Rate is 3.0 times the present wage rate

Sl. No.	Item of works	Mandays per hectare	Mandays per hectare considering annual increase in wage rate for tenth year
1	2	3	4
1	Climber cutting including silvicultural works	10.00	30
2	(i) Wages of fire watchers	10.00	30
	(ii) Maintenance of fireline including controlled burning etc.	10.00	30
3	Maintenance of camp hut, signboard, inspection paths, fencing, protection from grazing, documentation, upkeep of records and other miscellaneous works	30.00	90
4	Supervision cost	12.00	36
5	Misc. expenditure e.g. salvaging of fencing materials from the plantation centre wherever fencing is no longer necessary	6.00	18
	Sub total	78.00	234
6	Provision for soil & moisture conservation measures in the plantation area @ 15%	11.70	35.1
7	Monitoring & Evaluation @ 2%	1.56	4.68
	Sub total	91.3	273.8
	Adding 8.5% being contingency due to escalation cost of materials etc. after ascertaining the rate of interest due to accrue from CA money to be deposited by User Agency.	7.76	23.27
	Total in 10th year	99.06	297.07

COST ABSTRACT FOR COMPENSATORY AFFORESTATION SCHEMES

Sl. No.	Year	Mandays	Mandays per hectare considering annual increase in wage rate	Illustration Amount when wage rate is Rs. 381/-
1	Preliminary year	274.48	274.48	₹ 1,04,577
2	First year creation & maintenance	222.41	240.2	₹ 91,516
3	Second year maintenance	142.18	166.35	₹ 63,379
4	Third year maintenance	140.94	178.95	₹ 68,180
5	Fourth year maintenance	138.37	193.72	₹ 73,807
6	Fifth year maintenance	116.79	182.19	₹ 69,414
7	Sixth year maintenance	104.09	181.11	₹ 69,003
8	Seventh year maintenance	99.02	195.07	₹ 74,322
9	Eight year maintenance	99.02	222.8	₹ 84,887
10	Ninth year maintenance	93.96	242.37	₹ 92,343
11	Tenth year maintenance	99.06	297.07	₹ 1,13,184
	Grand total per hectare	1530.32	2375 (Rounded off)	₹ 9,04,875


Divisional Forest Officer,
East & North Garo Hills (T) Division
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**Plantation Cost Summary for 31.588 Ha of Dwarf Plantation for the 400
KV DC Nongalbibra Bongaigaon Transmission Line**

Wage Rate	₹ 381	Rs
Area of Plantation	1	Ha
Polypot Nursery	1	Beds
Nakedroot Nursery	2	Beds

Plantation				
S.No.	Year	Man days	Plantation - 1Ha	Cost (with 10 % increase per year)
1	Preliminary Year	113	₹ 43,053	₹ 47,359
2	First Year - Creation	81	₹ 30,861	₹ 37,342
3	Scnd Year - Maintainance	69	₹ 26,289	₹ 34,991
4	Third Year	58	₹ 22,098	₹ 32,354
5	Fourth Year	35	₹ 13,335	₹ 21,477
6	Fifth year	44	₹ 16,764	₹ 29,699

Polypot Nursery Bed				
S.No.	Year	Mandays	Polypot - 1 Beds	Cost (with 10 % increase per year)
1	First Year	30.5	₹ 11,621	₹ 12,783
2	Second Year	1.6	₹ 610	₹ 738

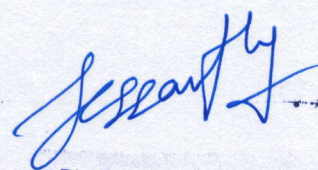
Nakedroot Nursery Bed				
S.No.	Year	Mandays	Nakedroot - 2 Beds	Cost (with 10 % increase per year)
1	First Year	₹ 12	₹ 9,373	₹ 10,310
2	Second Year	₹ 2	₹ 1,219	₹ 1,476

Plantation/ Nursery Cost for Dwarf Species per Ha

₹ 2,28,529

Total Plantation/ Nursery Cost for Dwarf Species - 31.588 Ha

₹ 72,18,774


 Divisional Forest Officer,
 East & North Garo Hills (T) Division
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Detailed Estimate for Establishment of Dwarf Plantation		
Area	1	Minimum Wage
	Ha	₹ 381.00
S. No.	Work	Man Days
	Preliminary Work	
1	Survey and demarcation including fixing of boundary marks at strategic points.	2
2	Jungle clearance, burning, land preparation including hoeing, staking, pit digging, hoeing etc.	24
3	Goat Proof Fencing with 3 strand barbed wire and wooden fencing posts including cost of staples, fixing, fitting etc.	64
4	Cost of Collection of Seeds	5
5	Construction of camp huts and inspection paths	4
6	Purchase of Tools	2
7	Supervisory Staff to be engaged on casual basis from amongst the local people	12
	Total Cost in the Preliminary Year	113
	First Year of Plantation	
1	Planting of nursery seedlings including carriage from nursery centres to plantation sites and proper ramming after planting	16
2	3 weedings	45
3	Fire protection during dry and windy season	
	(i) Wages of fire watchers from November of the creation year to April of the following year	10
	(ii) Fire line clearance internal and external fireline including controlled burning	10
	Total Cost in the First Year	81
	Second Year of Plantation	
1	3 weedings	45
2	Fire Protection	
	(i) Wages of fire watchers	10
	(ii) Fireline clearance including controlled burning	10
3	Vacancy filling in mortality areas	4
	Total Cost in the Second Year	69

	Third Year of Plantation	
1	2 weedings	30
2	Fire Protection	
	(i) Wages of fire watchers	10
	(ii) Fireline clearance including controlled burning	10
3	Vacancy filling in mortality areas	4
4	Misc Cost - Repair of Fencin, maintainance of paths etc	4
	Total Cost in the Third Year	58
	Fourth Year of Plantation	
1	1 weedings	15
2	Wages of fire watchers	10
4	Fireline clearance	10
	Total Cost in the Fourth Year	35
	Fifth Year of Plantation	
1	1 weedings	15
2	Wages of fire watchers	10
3	Fireline clearance and controlled burning	10
4	Cost of singling out operation (silviculture cleaning or decongesting of plantation for providing appropriate spacing from plant to plant	6
5	Misc Cost	3
	Total Cost in the Fifth year	44

Detailed Estimate for Establishment of <u>Temporary Polypot Nursery</u> for Compensatory Afforestation outside Reserve Forest Area	
Min Wages	₹ 381
No of Beds	1
First Year	
Preparation of standard-sized beds (13m x 1.3x 0.30m) for placing the polythene bags.	1.5
Cost of polythene bags (22.5cm x 15mm) in the one bed 4 kgs are required.	7.2
Filling up of manure-mixed earth in polybags including pounding after filling.	9
Fencing all around the Nursery site with goat proof fencing net and wooden posts, erecting, fixing, fitting, etc. complete	1
Cowdung including transportation.	0.6
Seeds	1.4
Sowing including hoeing, mulching etc.	1
Pricking and transplanting of seedlings from germination beds to polybags.	2
Construction of shades for protection of seedlings from frost during winter and direct sunlight in warm areas.	3
Weeding 4 Times	2.6
Watering	1
Miscellaneous cost e.g. Fungicides tools & plants, making of inspection path, fertilizers, chemicals, lime pesticides/insecticides, growth hormones, etc.	0.2
Total (1st Year)	30.5
Second Year	
Weeding 3 Times	1.3
Watering	0.3
Total(2nd Year)	1.6

Detailed Estimate for Establishment of <u>Temporary Naked Root Nursery</u> for Compensatory Afforestation outside Reserve Forest Area	
Min Wages	₹ 381.00
No of Beds	1
First Year	
Preparation of standard-sized beds	1.5
Collection of Seeds	2
Fencing all around the Nursery site with goat proof fencing net and wooden posts, erecting, fixing, fitting, etc. complete	1
Cowdung including transportation.	0.6
Seed Treatment	0.3
Sowing including hoeing, mulching etc.	0.1
Weeding 4 Times	2.6
Construction of shades with bamboo structure and thatch	
a. Cost of Material	1
b. Labour Cost	2
Watering of Nursery Beds	1
Miscellaneous cost e.g. Fungicides tools & plants, making of inspection path, fertilizers, chemicals, lime pesticides/insecticides, growth hormones, etc.	0.2
Total (1st Year)	12.3
Second Year	
Weeding 2 Times	1.3
Watering	0.3
Total(2nd Year)	1.6