

Full Title of the Project: Diversion of 0.5368 forest Land in favour of Executive Engineer Provincial Division, PWD (B&R), Narwana for Re- construction of road by providing 4-Lanned C.C pavement on Deoban-Naguran road (SH-11A) in Village Naguran District Jind. (Haryana).

File No. : FP/HR/Road/43851/2020

Date of Proposal: 15-01-2020

CHECK LIST SERIAL NUMBER:- 18

"SCHEME FOR C.A."

Name of the Forest/Reach to be diverted: Diversion of 0.5368 forest Land in favour of Executive Engineer Provincial Division, PWD (B&R), Narwana for Re-construction of road by providing 4-Lanned C.C pavement on Deoban-Naguran road (SH-11A) in Village Naguran District Jind. (Haryana).

Note: Due to non-availability of block forest land for CA in the division in which forest land is proposed to be diverted, the CA scheme has been prepared for restoration of degraded forest land along railway line in Jind Division.

1. Details of degraded forest land/non-forest land: -

District: -Jind

Tehsil: Jind

Forest Division: - Jind

Range: Jind

Block No./Compartment No./Survey No.: -
120 to 125 L&R

H43Q7, area:- DJ Railway Line KM

Details of Area to be afforested : DJ Railway Line KM 120 to 125 Both side in Jind Area.

GPS Reading: The proposed CA area will be between the following co-ordinates:

1. 29°18'56.18"N, 76°18'5.73"E
2. 29°18'58.48"N, 76°18'8.74"E
3. 29°18'23.26"N, 76°18'32.32"E
4. 29°18'24.22"N, 76°18'33.72"E
5. 29°16'44.03"N, 76°19'22.38"E
6. 29°16'44.01"N, 76°19'23.43"E

Description of the Area:

- Whether the site selected for Compensatory Afforestation is a land bank (Yes or No):- **Yes**,
- If the CA site is other than the land bank, reasons are given: **N/A**

In case of Non-Forest area identified for CA, then what is the distance of CA site from adjoining forest boundary: **N/A**

- Soil type: **Sandy to sandy loam**
- Topography:
 - a. Hilly/Undulating/Plain : Plain
 - b. Slope: Steep/Medium/Gentle : Gentle
- Whether the area is bearing any root stock of vegetation: **Rootstock at some places is available; the area has degraded vegetation .**

2. Plantation Model:

Forest Landscape Restoration model – Planting of local indigenous species will be done during monsoon season, and maintained upto 10 years with Catchment area Treatment as Soil & Moisture Conservation.

- Forest landscape restoration (FLR) is the on-going process of regaining ecological functionality and enhancing human well-being across deforested or degraded forest landscapes.
- FLR is more than just planting trees – it is restoring a whole landscape to meet present and future needs.
- It is long-term because it requires a multi-year vision of the ecological functions.

3. Technical details:

Technical details of Compensatory Afforestation Scheme are given below:

a. General details:

Depletion of natural resources to a great extent specially water due to fast development in the region being in the vicinity of National Capital. Cutting of trees for fuel wood, cattle grazing had been main reasons for depletion of natural resources in the past and construction are the main reasons for degradation and depletion of these resources in recent past.

The forests of the landscape have been classified as Northern Tropical Dry Deciduous Forest. The flora of Area comprised of Kikar , Dhak, Neem, Hins, Shisham, Sahtoot, semal etc,

As per commitment made by India under Bonn Challenge, an area of 13 million ha of degraded land will be restored upto 2020 and another 13 million ha by 2030. The Bonn Challenge is *a global effort to bring 150 million hectares of deforested and degraded land into restoration by 2020 and 350 million hectares by 2030.*

The Bonn Challenge is an *implementation vehicle for national priorities* such as water and food security and rural development while simultaneously helping countries contribute to the achievement of international climate change, biodiversity and land degradation commitments. Underlying the Bonn Challenge is the *forest landscape restoration (FLR)* approach, which aims *to restore ecological integrity at the same time as improving human well-being through multifunctional landscapes*.



Site Conditions



b. Climatic and edaphic conditions:

The climatic conditions are also most harsh in the and the annual average rainfall in the region is 450-550 mm only. The site conditions are extremely degraded. So, to ensure survival of plantations raised under CA scheme should be site specific and it should not be generalized. It also not possible to do therefore, site specific species plantation with advance trench work and seeding of local species and closure of the area with chain link fencing may give better results.

c. Past system of management:

Proposed Area for CA is PF along the DJ Railway Line in Jind District . Area along DJ Railway Line is Declared PF vide Notification No. S.O. 176/C.A. 16/27/S.29/74 dated 11-10-1974 The main objective of the project was to restore the vegetation cover and thereby, improve water conservation and increase the supply of fuel, fodder, small-sized timber, fruits and other forest products used by the local people.

d. Survey & Demarcation and Closure of the area:

Area will be closed with chain link fencing with two meter height after proper demarcation for this fencing amount Rs/- 18 Lakhs are required.

e. Species Selection:

Since the site proposed for CA is a Plain Area, so, indigenous species belonging to semi arid regions will be given priority. The tentative check list of species for proposed CA is given below keeping in mind the safety of Railway track .

Tree species: As per specification of Railway/

1st row :- (five meter away from Railway Track) - Bogain Valia, Ticoma, Chhoti

Gulmohar, Chandni, lagestromea, kaner, caronda etc.

2nd row :- (9 meter away from Railway Track) - Kachnar, Sahtoot, Dhak, Beri Amla,

3rd row :- (13 meter away from Railway Track) - Shisham, Kikar, Neem, Jamun, Jamova, Belpather, Lasora. Hollopholia etc.

4th row :- (17 meter away from Railway Track) -Imli, Ficus spp., Arjun, Siras, Semal etc..

d. Plantation Method:

Pit plantation on the availability of space will be carried out with Local species in whole area in order to restore the forest closed with chain link fencing. Mix plantation of indigenous species will be done considering the site requirement for a particular species. The maintenance period will be ten (10) years considering the slow growth of Local species. 1000 plants will be planted in 1 ha.

The cost of CA for one hectare and maintenance for ten years is enclosed as **Annexure-II.**

The existing wage rate for un-skilled labour in Haryana is Rs. 360/- per day during the year 2019-20. Since the proposed Compensatory Afforestation will be carried out in the years to come (say start year will be 2021-22, as Steering Committee Meeting for 2020-21 has already been held and agenda has been approved), so, the cost estimation has been done considering 10% enhanced wage rate every year starting from the year 2021-2022 as per details given under to avoid any kind of funds hardship in future:

Sr. No.	Year	Base Wage Rate (Rs.)	Enhanced Wage Rate @ 10% (Rs.)
	2019-20	360/-	360+36=396 say=400/-
	2020-21	400/-	400+40= 440/-
1.	2021-22	440/-	440+44= 484/-
2.	2022-23	484/-	484 +48= 532/-
3.	2023-24	532/-	532+53=585/-
4.	2024-25	585/-	585+59=644/-
5.	2025-26	644/-	644+64=708/-
6.	2026-27	708/-	708+71=779/-
7.	2027-28	779/-	779 +78= 857/-
8.	2028-29	857/-	857+86= 943/-
9.	2029-30	943/-	943+94=1037/-
10.	2030-31	1037/-	

The detailed cost norms and year wise schedule of works proposed under the scheme is enclosed as **Annexure-II**.

e. Soil and Moisture Conservation Works:

Soil and moisture conservation works will be carried out in plantation area. Proposed cost will be as per norms of 30% of cost of CA.

f. Protection and silvicultural operations:

There is lot of biotic pressure on the site. Cutting of trees (even the indigenous trees), grazing of cattle is in practice at site and these are the main reasons for degradation of area. Therefore, one mali-cum-protection watcher will be engaged for every two and half hectare (2500 plants) of area during first five years and after five years, one mali on every 5 ha for protection in the area. The employment will be given local people living in Vicinity of area.



g. Wildlife habitat management:

Haryana are bestowed with very rich diversity of wildlife. The mammalian species include the jackal, jungle cat, fox, , Monkey and Nilgai are found, smaller mammals include the Civet, Mongoose, Indian hare, Indian crested porcupine, Gerbils, Squirrels etc. are also found in this Area. In reptiles snakes many type lizards, chameleons are also found in this area, but due to degradation and bifurcation of habitat, their population is decreasing and there is need of particular attention on habitat improvement activities. Proposed CA Area is suitable habitat for wildlife. Blue Bull, Jackals, Rabbits, Hares, Monkeys, many kinds of reptiles and terrestrial birds also found in the proposed area.

h. Fire Protection

Fire cause major damage in plantation specially during stubble burning by farmers in their adjoining field, this type of fire occurs mainly April after wheat crop and in October after paddy crop :-

To Protect the plantation from fire ploughing with harrow/Rotavator is Proposed. Minimum twice in a year to make plantation area free from burning material.

4. **Details of funds to be deposited for Compensatory Afforestation, Add. CA and associated components:**

S.No	Description	Qty.	Rate (Rs.)	Total Amount (Rs.)
1.	Compensatory Afforestation Charges			
	Compensatory Afforestation and maintenance of 10 years for 5.578 ha	1.074 ha	1532158.00	1645538.00
2.	Add. Compensatory Afforestation Charges			
	Addl. Compensatory Afforestation and maintenance of 10 years for 0.54 ha	0 ha	1532158.00	0.00
	Total of CA & Addl. CA	1.074 ha		1645538.00
3.	Survey & Demarcation		100000	100000.00
4.	Chain Link Fencing	3	900000	2700000.00
5.	Cost of machinery like tractors (1 nos.), trolley (1 nos.) and Trolley (01 nos.).	0	204315.00	0.00
6.	Soil & Moisture Conservation works @ 30% of cost of CA & Addl.CA	1.074	459648.05	493662.00
7.	Supervisory/Overhead/miscellaneous charges@ 10% of CA & Addl CA	1.074	153216.00	164553.984
8.	Exigency charges 3 %	0		0
9.	Felling Charges			0
	Grand Total			5103754

The per ha cost will be Rs. **1532158.00** for creation and maintenance for 10 years. The per plant cost will be Rs. **1532.00**.

5. **Proposed Monitoring Mechanism:**

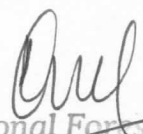
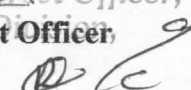
At Division and Circle level, DFO and Conservator will keep proper monitoring on the sites. Forest Department is also having its Monitoring & Evaluation (M&E) Wing for monitoring the success of plantations. Conservator, FCA- cum- Nodal Officer, Panchkula and the officers of Northern Regional Office of MoEF are the top agencies which will also be reviewing the success of plantations besides other senior officers of Forest Department. The cost of monitoring, evaluation and third party monitoring and evaluation will be met from the supervisory charges.

6. Detail of amount to be deposited under CAMPA Fund:

S. No	Description	Rate (Rs.)	Qty.	Total Amount (Rs.)
A.	Compensatory Afforestation Charges, Additional CA & Associated items as mentioned in Para 5	1532158	0	5103755.00
B.	Net Present Value (NPV): Net Present Value of Forest Land to be diverted: 0.5368 ha.	Rs. 8.87 lacs/ha	0.5368 ha	476141.00
C	Penalty for violation as provision B (i) of MoEFCC Letter No. 11-42/2014-FC dt. with interest. Period of violation from 0 18-09-2019 to 18-02-2020 (No. of days= 240)	Actual NPV+ Interest @ 12% per annum (2418277)	2.684	
D	Taken as 20 % of Item no. C			4,83,655.00
E	Cost of felling and damage to plantation - Felling charges No. of Trees = 0; Volume = 0 m ³	Rs. 1200/- per m ³	0	0
	Grand Total			60,63,551.00

7. Justification for Cost of Site Specific Scheme:

The cost of CA and Addl. CA and other components under normal schemes prepared in the forest divisions is annexed as **Annexure-III**. The total cost of normal CA and other components, NPV and felling charges is coming out to be **Rs. 60,63,551.00/-** whereas the cost of site specific CA with watering components and inclusion of components like is coming out to be **Rs. 60,63,551.00/-**. The provisions of wage rate enhancement were not there in normal CA scheme. The per hectare cost CA and associated forestry activities is coming out to be **Rs.1532158** i.e. **Rs. 1532** per plant (creation, maintenance for ten years, SMC works etc. as per para 5.


 Divisional Forest Officer,
 Jind Forest Division
 Jind Jind. 

ANNEXURE-II**Cost Estimation Cost Norms for Site Specific Compensatory Afforestation Scheme****First Year: Per hectare cost at wage rate of 440/- per day during 2021-22:**

Sr. No.	Particulars of work	Unit	Qty.	Unit Rate (Rs.)	Amount (Rs.)
1	clearance of musquet/ others unwanted bushes	Ha.	1	LS	20000
2	3 times plowing with rotavator	ha	1	2075.59	6226.77
3	Dak bailing and alignment	Ha.	3	301.26	903.78
4	Digging of pits 1000 x 60 cm x 60 cm x 60	M ₃	216	352	76032
5	Average cost of raising of plants in Nry. in 30x45 cm bags (1000 + 20% extra)	No.	1200	95	114000
6	Loading and unloading of plants in Tractor/Cart	No.	1200	2.55	3060
7	Carriage of plants	No.	1200	21.32	25584
8	Planting of seedling including 10% replacement	No.	1100	17.23	18953
9	Irrigation 12 time	No.	12000	6.62	79440
10	Purchase of water	No.			9600
11	first weeding hoeing	No.	1000	8.8	8800
12	Subsequent weeding hoeing 11 time	no.	11000	6.62	72820
13	Cost of fertilizers, manures, insecticides and neem cake as proposed	No.	1000	20	20000
14	Mali-cum-Protection watcher: One person for every 2.50 ha will be employed to look after	Days	10.4	440	4576
15	Seed sowing	No.	1000	25	25000
16	Cost of training & Pruning equipments			LS	5000
17	Misc. expenditure			LS	5000
	Total				494996
	Contractor Profit 10%				49500
	EPF @13% on 50% of Total amount considering as labour component				32175
	ESI @3.25% on 50% of Total amount considering as labour component				928
	Grand Total				577598

2nd year expenditure at wage rate of Rs. 484/- per day (Replacement @ 20 per cent)

1	3 times plowing with rotavator	ha	1	2283.1 5	6849.45
2	Raising of plants in Nry.	No.	240	104.5	25080
3	Re-opening of pits 200x 0.60 x 0.60 x 0.60 m	M ₃	43.2	387.2	16727.04
4	Loading and unloading of plants	No.	240	2.55	612
5	Carriage of plants	No.	240	21.32	5116.8
6	Planting of Plants	No.	240	13.59	3261.6
7	Irrigation 10 time	No.	10000	7.28	72800
8	Purchase of water	No.			8000
9	first weeding hoeing	No.	1000	9.68	9680
10	Subsequent weeding hoeing 9 time	no.	9000	7.28	65520
11	Seed sowing	Nos.	1000	30	30000
12	Miscellaneous expenditure for purchase of fertilizer, pesticides, foliage Nutrients Baskets & Tins etc. (LS)	No.	1000	10	10000
13	Mali-cum-Protection watcher: One person for every 2.50 ha will be employed to look after	Days	10.4	484	5033.6
14	Cost of cleaning and Pruning fo plants			LS	5000
15	Misc. expenditure				5000
	Total				268680
	Contractor Profit 10%				26868
	EPF @13% on 50% of Total amount considering as labour component				17464
	ESI @3.25% on 50% of Total amount considering as labour component				504
	Grand Total				313517

3rd year expenditure at the wage rate of Rs. 532/- per day (Replacement @ 10 percent)

1	3 times plowing with rotavator	ha	1	2511.4 7	7534.41
2	Raising of plants in Nry.	No.	120	115	13800
3	Re-opening of pits 100x 0.60 x 0.60 x 0.60 m	M ₃	21.6	430.92	9308
4	Loading and unloading of plants	No.	120	2.55	306
5	Carriage of plants	No.	120	21.32	2558.4
6	Planting of Plants	No.	120	13.59	1630.8
7	Irrigation 8 time	No.	8000	8.01	64080
8	Purchase of water	No.			6400

9	first weeding hoeing	No.	1000	10.65	10650
10	Subsequent weeding hoeing 8 time	no.	8000	8.01	64080
11	Miscellaneous expenditure for purchase of fertilizer, pesticides, foliage Nutrients Baskets & Tins etc. (LS)	No.	1000	10	10000
12	Mali-cum-Protection watcher: One person for every 2.50 ha will be employed to look after	Days	10.4	532	5532.8
13	Cost of cleaning & Pruning			LS	8000
14	Misc. expenditure				5000
	Total				208880
	Contractor Profit 10%				-20888
	EPF @13% on 50% of Total amount considering as labour component				13577
	ESI @3.25% on 50% of Total amount considering as labour component				392
	Grand Total				243737

4th year expenditure at the wage rate of Rs. 585/- per day

1	2 times plowing with rotavator	ha	1	2762.6 2	5525.24
2	Irrigation 4 time	No.	4000	8.81	35240
3	Purchase of water	No.			3200
4	first weeding hoeing	No.	1000	11.7	11700
5	Subsequent weeding hoeing 2 time	no.	2000	8.81	17620
6	Miscellaneous expenditure for purchase of fertilizer, pesticides, foliage Nutrients Baskets & Tins etc. (LS)	No.	1000	10	10000
7	Mali-cum-Protection watcher: One person for every 2.50 ha will be employed to look after	Days	10.4	585	6084
8	Cost of cleaning & Pruning			LS	8000
9	Misc. expenditure				5000
	Total				102369
	Contractor Profit 10%				10237
	EPF @13% on 50% of Total amount considering as labour component				6654
	ESI @3.25% on 50% of Total amount considering as labour component				192
	Grand Total				119452

5th year expenditure at the wage rate of Rs. 644/- per day

1	2 times plowing with rotavator	ha	1	3037.9 1	6075.82
2	Irrigation 2 time	No.	2000	9.69	19380
3	Purchase of water	No.			1600
4	first weeding hoeing	No.	1000	12.88	12880
5	Subsequent weeding hoeing 1 time	no.	1000	9.69	9690
6	Miscellaneous expenditure for purchase of fertilizer, pesticides, foliage Nutrients Baskets & Tins etc. (LS)	No.	1000	10	10000
7	Mali-cum-Protection watcher: One person for every 2.50 ha will be employed to look after	Days	10.4	644	6697.6
8	Cost of cleaning & Pruning			LS	8000
9	Misc. expenditure				5000
	Total				79323
	Contractor Profit 10%				7932
	EPF @13% on 50% of Total amount considering as labour component				5156
	ESI @3.25% on 50% of Total amount considering as labour component				149
	Grand Total				92561

6th year expenditure at the wage rate of Rs. 708/- per day

1	2 times plowing with rotavator	ha	1	3339.8 2	6679.64
2	Mali-cum-Protection watcher: One person for every 5 ha will be employed to look after	Days	10.4	708	3681.6
3	first weeding hoeing	No.	1000	14.17	14170
4	Subsequent weeding hoeing 1 time	no.	1000	10.66	10660
5	Cost of pruning of plants				10000
6	Misc. expenditure				10000
	Total				55191
	Contractor Profit 10%				5519
	EPF @13% on 50% of Total amount considering as labour component				3587
	ESI @3.25% on 50% of Total amount considering as labour component				103
	Grand Total				64401

7th year expenditure at the wage rate of Rs. 708/- per day

1	2 times plowing with rotavator	ha	1	3673.8	7347.6
2	Mali-cum-Protection watcher: One person for every 5 ha will be employed to look after	Days	10.4	779	4050.88
3	First weeding hoeing 1 time	no.	1000	15.59	15590
4	Pruning of Plants				5000
5	Misc. expenditure				5000
	Total				36988
	Contractor Profit 10%				3699
	EPF @13% on 50% of Total amount considering as labour component				2404
	ESI @3.25% on 50% of Total amount considering as labour component				69
	Grand Total				43161

8th year expenditure at the wage rate of Rs. 857/- per day

1	2 times plowing with rotavator	ha	1	4041.18	8082.36
2	Mali-cum-Protection watcher: One person for every 5 ha will be employed to look after	Days	10.4	857	4456.4
3	Pruning of Plants				5000
4	Misc. expenditure				5000
	Total				22539
	Contractor Profit 10%				2254
	EPF @13% on 50% of Total amount considering as labour component				1465
	ESI @3.25% on 50% of Total amount considering as labour component				42
	Grand Total				26300


9th year expenditure at the wage rate of Rs. 943/- per day

1	2 times plowing with rotavator	ha	1	4445.3	8890.6
2	Mali-cum-Protection watcher: One person for every 5 ha will be employed to look after	Days	10.4	943	4903.6
3	Pruning of Plants				5000
4	Misc. expenditure				5000
	Total				23794
	Contractor Profit 10%				2379
	EPF @13% on 50% of Total amount considering as labour component				1547

	ESI @3.25% on 50% of Total amount considering as labour component				45
	Grand Total				27765

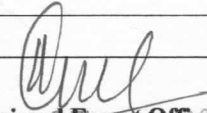
10th year expenditure at the wage rate of Rs. 1037/- per day

1	1 times plowing with rotavator	ha	1	4889.83	4889.83
2	Mali-cum-Protection watcher: One person for every 5 ha will be employed to look after	Days	10.4	1037	5392.4
3	Cost of Cleaning pruning				5000
4	Misc. expenditure				5000
	Total				20282
	Contractor Profit 10%				2028
	EPF @13% on 50% of Total amount considering as labour component				1318
	ESI @3.25% on 50% of Total amount considering as labour component				38
	Grand Total				23667


 Divisional Forest Officer
 Divisional Forest Officer,
 Jind Division
 JIND

Annexure-III**Cost Estimation as per normal cost norms for Compensatory Afforestation**

Sr. No.	Description	Total Area	Rate	Total Amount (Rs.)
A	Net Present Value of Forest Land to be diverted	0.5368	887000	476141.00
AI	Penalty for violation as provision B (i) of MoEFCC Letter No. 11-42/2017-FC dt 29-01-2018 with interest. Period of violation from 18-09-2019 to 15-05-2020 (No. of days= 240) Be taken 20 % as Govt. Project	Actual NPV+ Interest @ 12% per annum ()	(476141.6 X 5=2418277)	483655.00
B	Compensatory Afforestation Charges	No. of Plants	Rate of Per Plants	
1	1st Year Plantation	1074	577.6	620342.40
2	2nd Year Plantation	1074	313.52	336720.48
3	3rd Year Plantation	1074	243.74	261776.76
4	4th Year Plantation	1074	119.45	128289.30
5	5th Year Plantation	1074	92.56	99409.44
6	6th Year Plantation	1074	64.4	69165.60
7	7th Year Plantation	1074	43.16	46353.84
8	8th Year Plantation	1074	26.3	28246.20
9	9th Year Plantation	1074	27.76	29814.24
10	10th Year Plantation	1074	23.67	25421.58
B	Total Charges of (B Above)			1645540
C	Additional CA			
1	1st Year Plantation	0	577.6	0
2	2nd Year Plantation	0	313.52	0
3	3rd Year Plantation	0	243.74	0
4	4th Year Plantation	0	119.45	0
5	5th Year Plantation	0	92.56	0
6	6th Year Plantation	0	64.4	0
7	7th Year Plantation	0	43.16	0
8	8th Year Plantation	0	26.3	0
9	9th Year Plantation	0	27.76	0
10	10th Year Plantation	0	23.67	0
	Total Charges of (C Above)			0
D	Chain Link Fencing Charge	3	900000	2700000
E	Survey and Demarcation		100000	100000
F	Supervisory/Overhead/Miscellaneous Charges		10% On the total CA Charges	164553.984
G	Soil & Moisture Conservation Charges		30% of Total CA	493662.00
H	Felling Charges Volume=	0	Rs.1200/- per m3	0
I	Total A to H			6063552.00
J	Exigency Charges 3% of the Column(H)			0
K	Cost of machinery like tractors (1 nos.), trolley (1 nos.) and Trolley (01 nos.).	0		0
	TOTAL (A+B+C++D+E+F+G+H+I+J+K)			6063551.00


 Divisional Forest Officer,
 Jind Forest Division,
 Jind

Total cost of CA for 10 years:

Year	Amount (Rs.)
1 st Year	577598
2 nd Year	313517
3 rd Year	243737
4 th Year	119452
5 th Year	92561
6 th Year	64401
7 th Year	43161
8 th Year	26300
9 th Year	27765
10 th Year	23667
Total	1532158

Amul
Divisional Forest Officer
Jind Forest Division
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