

Full Title of the Project: Diversion of 0.16 hac. of Forest Land for Construction of 6 lane access controlled Highway from Junction Jaitpur-Pusta Road to junction Sec-62/65 road on Faridabad-Ballabgarh Bypass of NH-148NA applied by NHAI, under Forest Division & Distt. Gurugram.

File No. : FP/HR/ROAD/44420/2020

Date of Proposal: -----

REVISED CHECK LIST SERIAL NUMBER: - 18
“SCHEME FOR COMPENSATORY AFFORESTATION

Detail scheme for Compensatory Afforestation in lieu of proposal for diversion of **0.16 Hec.** of forest land **Construction of 6 lane access controlled Highway from Junction Jaitpur-Pusta Road to junction Sec-62/65 road on Faridabad-Ballabgarh Bypass of NH-148NA applied by NHAI, Under Forest Division and Distt. Gurugram..**

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

District: - Gurugram	Tehsil: Gurugram
Forest Division: - Gurugram	Range: Sohna
Block/Compt/Survey No.:-	Damdama Section 4&5 of PLPA 1900
Area to be afforested:	320 Plants and 20 Addl. Plants will be planted.

GPS Reading:

N 28°18'33.71" E 077°7'34.30" N 28°18'32.34" E 077°7' 34.97" N 28°18'35.40" E
077°7'40.35" N 28°18'36.00" E 77°7'37.87"

2. Description of the Area:

- **Whether the site selected for Compensatory Afforestation is a land bank (Yes or No):** No, land bank for CA will be created in areas notified under Sec 4 & 5 of PLPA 1900, because these areas have been considered as forests by Hon'ble Supreme Court and protection and restoration of these degraded areas now is the responsibility of the Department. The ownership of land is with Gram Panchayats.
- **If the CA site is other than the land bank, reasons are given:** There is no land bank in District Gurugram. Plantation will be carried out in degraded forest area closed under Sec 4 & 5 of PLPA 1900 and areas covered under Aravalli Project Plantation. These areas have been considered as forest for the purpose of Forest Conservation Act as per orders of Hon'ble Supreme Court. A Land Bank will be created on degraded areas of Aravallis in Gurugram Forest Division.
- **In case of Non-Forest area identified for CA, then what is the distance of CA site from adjoining forest boundary:** There is continuous patch of Aravallis in nearby villages which are also forest as per orders of Hon'ble Supreme Court and degraded forest land will be restored by carrying out Forest Landscape Restoration activities under CA for future FCA proposal also. The Compensatory Afforestation will be carried out on degraded forest area of Aravalli Hills in Gurugram Division which is covered under Sec 4 & 5 of PLPA. Aravalli Plantation and Damdama of Tehsil Sohna and the land has been considered as forest for the purposes of FCA by Hon'ble Supreme Court.
- **Soil type:** Mostly Loamy soil with houe boulders & sand stone on Aravalli Hill and sandy loam to sandy in foothills.
- **Topography:**

a.	Hilly/Undulating/Plain	:Hilly
b.	Slope: Steep/Medium/Gentle	: Gentle slope.

- **Whether the area is bearing any root stock of vegetation:** Rootstock at some places is available; the area has degraded vegetation of Aravallis and bushes of Prosopis juliflora & dhok.

3. Plantation Model:-

Trench cum pit method :- Pits of 45cm x 45cm along with trench of size 2m x 0.45m x 0.45m will be dug over the whole area plants of 3 feet height of 20x30 cum size P.Bags will be planted during raining season. Trench will be on the upper side of pit on contours. Saplings of Ronj khairi, Holoptelia, Dhok, Bar, Pipal, Neem, Pilkhan, etc will be planted with escapement 4m x 5m in staggered manner in contours so as to conserve all the water flowing out there.

a. **Climate and edaphic conditions:**

The climatic conditions are also most harsh in the Aravalli region and the annual average rainfall in the region is 400-500 mm only. The site conditions are extremely degraded with shallow depth of soil and prone to soil erosion. So, to ensure survival of plantations raised under CA, it is prescribed that the plantation scheme should be site specific and it should not be generalized. It is also not possible to do watering in the hills, therefore, site specific species plantation with advance trench work and seeding of Aravalli species and closure of the area may give better results than any other method.

b. **Survey & Demarcation and Closure of the area:**

There is lot of biotic pressure in the area and the land near habitations is under encroachment. Therefore, protection of the area will be upmost requirement. The proposed area is closed under Sec 4 & 5 of PLPA 1900 and also covered under Aravalli Project will be demarcated after DGPS survey. Barbed wire fencing will be erected along boundary of the area under plantation.

The existing wage rate for un-skilled labour in District Gurugram is Rs. 347.08/- per day during the year 2019-20. Since the proposed Compensatory Afforestation will be carried out in the year 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. The cost of CA for 1000 plants per hac. (planting to be done in 2 hac. physical area) The detailed cost norms and year wise schedule of works proposed under the scheme is closed as **Annexure-II**.

4. Schedule of Plantation Programme:-

Detail of year wise break-up of requirements of funds is as under:-

The Plantation is calculated at **4m X 5m spacing** as at the wages rate of Rs.347.08/- per day as under with 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	Cost norm per plant
1	1 st Year Plantation	422.49/- Per Plant
2	2 nd Year Maintenance	141.43/- Per Plant
3	3 rd Year Maintenance	81.16/- Per Plant
4	4 th Year Maintenance	89.10/- Per Plant
5	5 th Year Maintenance	97.83/- Per Plant
6	6 th Year Maintenance	107.44/- Per Plant
7	7 th Year Maintenance	118.00/- Per Plant
8	8 th Year Maintenance	129.62/- Per Plant
9	9 th Year Maintenance	142.41/- Per Plant
10	10 th Year Maintenance	156.47/- Per Plant
	Total Cost.	1485.95/-

Area to be diverted: **0.16 Hec.**

Area to be planted (One/two/ten times the diverted area) = **320 plants and 20 Addl. plants will be planted**

No. of trees to be felled= **28**

No. of Plants to be damaged=**10**

Number of Plants to be planted (@ 1000 Plant per Hec.) = **320 plants and 20 Addl. plants will be planted**

Sr. No.	Description	Total Area	Rate	Total Amount (Rs.)
A	Net Present Value of Forest Land to be diverted	0.16	Rs. 8.87 Lacs/Ha.	141920.00
	Compensatory Afforestation Charges	No. of Plants		
1	1st Year Plantation	320	422.49/- Per Plant	135196.80
2	2nd Year Plantation	320	141.43/- Per Plant	45257.60
3	3rd Year Plantation	320	81.16/- Per Plant	25971.20
4	4th Year Plantation	320	89.10/- Per Plant	28512.00
5	5th Year Plantation	320	97.83/- Per Plant	31305.60
6	6th Year Plantation	320	107.44/- Per Plant	34380.80
7	7th Year Plantation	320	118.00/- Per Plant	37760.00
8	8th Year Plantation	320	129.62/- Per Plant	41478.40
9	9th Year Plantation	320	142.41/- Per Plant	45571.20
10	10th Year Plantation	320	156.47/- Per Plant	50070.40
B	Total Charges of (B Above)			475504.00
	Additional Compensatory Afforestation			
1	1st Year Plantation	20	422.49/- Per Plant	8449.80
2	2nd Year Plantation	20	141.43/- Per Plant	2828.60
3	3rd Year Plantation	20	81.16/- Per Plant	1623.20
4	4th Year Plantation	20	89.10/- Per Plant	1782.00
5	5th Year Plantation	20	97.83/- Per Plant	1956.60
6	6th Year Plantation	20	107.44/- Per Plant	2148.80
7	7th Year Plantation	20	118.00/- Per Plant	2360.00
8	8th Year Plantation	20	129.62/- Per Plant	2592.40
9	9th Year Plantation	20	142.41/- Per Plant	2848.20
10	10th Year Plantation	20	156.47/- Per Plant	3129.40
C	Total Charges of (B Above)			29719.00
D	No barbed wire charges will be charged as loose stone wall has been included in cost norms.	0	Rs. 200000/- Per RKM	0.00
E	Supervisory/Overhead/Miscellaneous Charges		10% On the total CA Charges	50522.30
F	Soil & Moisture Vonservation Charges		30% of Total CA	151566.90
G	Felling Charges Volume=	50.59	Rs.1200/- per m3	60708.00
H	Exigency Charges 3% of the Total Cost of (A+B+C+D+E+F+G)			27298.21
	TOTAL (A+B+C+D+E+F+G+H)			937238.41

5. Technical details:

a. General details:

Aravallis hills are the one of the oldest mountain range on earth and are the prominent landforms shaping the west-Indian climate and biodiversity. Aravallis with its lush green forests used to act as green barrier and acted as an effective shield against desertification. The forests of Aravalli range in Haryana are now the most degraded forests in India, most of the indigenous plant species have

disappeared. The rapid deforestation and developmental activities are destroying the unique landscape that requires immediate conservation attention. These vulnerable areas used to be biologically rich and supported several unique elements of flora and fauna.

b. Spacing:

Pits of 45cm x 45cm along with trench of size 2m x 0.45m x 0.45m will be dug over the whole area plants of 3 feet height of 20x30 cum size P.Bags will be planted during rainy season.

c. Species:

Since the site proposed for CA is a hilly track of Aravalli region/foot hills, so indigenous species belonging to Aravalli region/arid regions will be given priority. Pahari papri, Jamun, Neem, Pilkhan, etc will be planted.

d. Plantation Method:

Scattered Contour Trench plantation or pit plantation on the availability of space on hilly terrain will be carried out with Aravalli species in whole area in order to restore the whole area closed with boundary wall.

e. Soil and Moisture Conservation Works:

Soil and moisture conservation works will be carried out along with plantation on pattern of Catchment Area Treatment. Contour trenching will be done to check soil erosion and conserve the run off. Check dam/vegetative barriers will be created in the nalas and valleys. Proposed cost will be as per norms of 30% of cost of CA.

f. Protection and silvicultural operations:

There is lot of pressure on the site. Cutting of trees (even the indigenous trees). grazing of cattle, goats and sheep 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 year and after five year, one mali on every 5 ha. for protection and silvicultural operations in the area. The employment will be given to local people of the villages and the payments will be ensured through Biodiversity Management Committees or Village Forest management Committees to these protection watchers.

g. 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.

6. Justification for the Cost of Site Specific Scheme:

There is great need to protect the fragile ecosystem of Aravallis in National Capital Region for the environmental sustainability of the region. 320 plants and 20 addl. plants will be planted no extra machinery charges are included.

Date.....
Place :- Gurugram

Divisional Forests Officer
Gurugram