September 2022

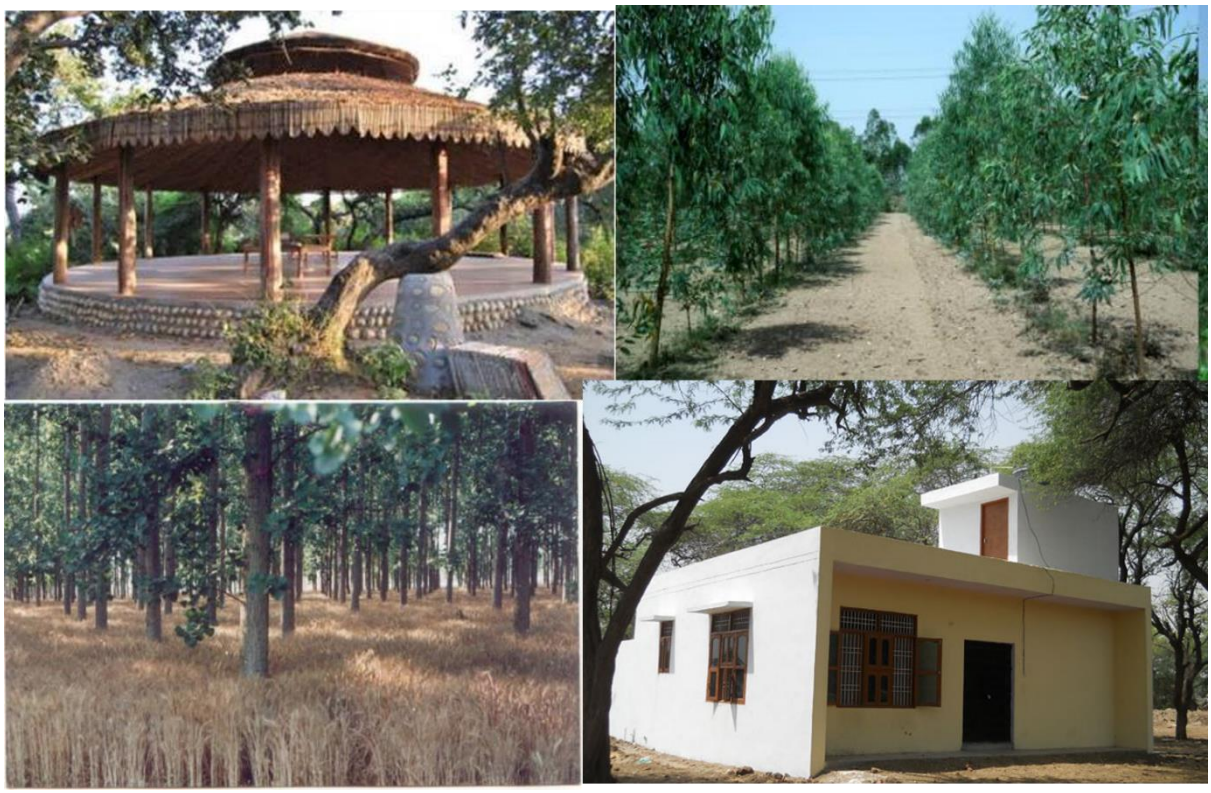
Final Report

Third Party Evaluation of Works undertaken during 2020-21 under Haryana CAMPA

(Comprehensive Report)

Submitted to

The Haryana State Compensatory Afforestation Fund Management and Planning Authority
Chief Executive Officer (CAMPA)
Haryana Forest Department
Government of Haryana



The Energy and Resources Institute

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List of Abbreviations

APO	Annual Plan of Operation
CA(SPR)	Compensatory Afforestation (Small Plants on Ridge)
CA(SP)	Compensatory Afforestation (Small Plants)
CA(TP)	Compensatory Afforestation (Tall Plants)
CA(TCP)	Compensatory Afforestation (Trench cum Pit Method)
CAMPA	Compensatory Afforestation Fund Management and Planning Authority
CWS	Crate Wire Structure
DFO	Divisional Forest Officer
GPS	Global Positioning System
ISFR	India State of Forest Report
KML	Keyhole Markup Language
MB	Measurement Book
MoEF&CC	Ministry of Environment, Forest and Climate Change
NPV	Net Present Value
NPV(ER)	Net Present Value (Ecorestoration)
NPV(TP)	Net Present Value (Tall Plants)
PCCF	Principal Chief Conservator of Forests
RFO	Range Forest Officer
RFA	Recorded Forest Area
RCC	Reinforced cement concrete
RKM	Running Kilometer
SMC	Soil and Mositure Conservation
SoR	Schedule of Rates
TERI	The Energy and Resources Institute
ToF	Trees outside Forests
WL	Wildlife

Chapter: Executive Summary

For the year 2020-21 the CAMPA activities carried out in the state of Haryana were assessed. These were spread over 22 forest divisions falling under 4 Territorial Circles, Research and Seed Division, Publicity and Training Circle and Wildlife Wing of the department.

- In **North Circle**, total of 133 sites have been evaluated. For plantation activities (Compensatory Afforestation and Net Present Value) 82 sites have been covered and for non-plantation activities (Fencing, Building and Soil and Moisture Conservation) 51 sites have been covered.
    - The Circle has **seven plantation models** CA Tall Plants, CA Small Plants, CA Small Plants on Ridge, CA Native Species, NPV Tall Plants, NPV Ridge and NPV Ecorestoration. **The overall survival percentage of plants in this Circle is 76%.**

- In **Central Circle**, a total of 77 sites have been evaluated. For plantation activities (Compensatory Afforestation and Net Present Value) 74 sites have been covered and for non-plantation activities (Building) 3 sites have been covered.
    - The Circle has **three plantation models** CA Tall Plants, NPV Tall Plants and NPV Ridge. **The overall survival percentage of plants in this Circle is 79%.**

- In **West Circle**, a total of 100 sites have been evaluated. For plantation activities (Compensatory Afforestation and Net Present Value) 85 sites have been covered and for non-plantation activities (Fencing and Building) 15 sites have been covered.
    - The Circle has **four plantation models** CA Tall Plants, NPV Tall Plants, NPV Ridge and NPV Ecorestoration. **The overall survival percentage of plants in this Circle is 74%.**

- In **South Circle**, a total of 55 sites have been evaluated. For plantation activities (Compensatory Afforestation and Net Present Value) 47 sites have been covered and for non-plantation activities (Fencing, Building and Soil and Moisture Conservation) 8 sites have been covered.
    - The Circle has **seven plantation models** CA Tall Plants, CA Small Plants, CA Trench cum Pit, NPV Tall Plants, NPV Ridge, NPV Ecorestoration and NPV Native Species. **The overall survival percentage of plants in this Circle is 83%.**

- From the CAMPA evaluation it was found that, 70 species have been planted in the North Circle, 31 species have been planted in the Central Circle, 32 species have been planted in the West Circle and 42 species have been planted in the South Circle.

- For Development Wing activites 22 sites have been evaluated spread all across that state. These are the activities undertaken by the Research, Seed and Training Divisions which have carried out activities like maintenance of research plots, creation of germplasm, construction of underground water storage, construction of Range Office,

mist chamber, etc. Publicity and Training Circle which has carried out activities like workshop cum training camps for various stakeholders, development of publicity material, pamphlets, nukkar natak, exposure and education visit for school children, video documentation etc.

- For Wildlife Wing activities 21 sites have been evaluated spread all across that state. These are the activities undertaken by the Wildlife wing across the state. The activities undertaken by them are for wildlife management and conservation, establishment, expansion and up-gradation of wildlife facilities, purchase of wildlife and rescue equipment, construction of boundary walls, extension of protection center, construction of office, residences for staff, shelter homes, water pond, habitat improvement, etc.

Chapter 1: Introduction

About Haryana

Haryana is situated in the northern part of India and has a geographical area of 44,212 sq km which constitutes 1.34% of the geographical area of the country. The State lies between latitude 27°39'N to 30°55'N and longitude 74°27'E to 77°36'E. Physiographically Haryana falls in the Indo Gangetic plain although some of the areas fall in Shiwalik hills as well. Climate of the State varies from moist subtropical in north bordering Himachal Pradesh to arid in southern part bordering Rajasthan. The State is bordered by Himachal Pradesh and Punjab in the North, Uttarakhand, Uttar Pradesh and Delhi on the East and Rajasthan on the West and South. The average annual rainfall varies from about 200 mm to 1,400 mm and the average annual temperature ranges between 1°C to 45°C. The Yamuna and the Ghaggar are the important rivers of the state. The state has 21 districts, none are classified as tribal or hill districts.

Forest cover of Haryana is 1603.48 sq km of which 3.63% of its geographical area. Forest cover inside recorded forest area (RFA) is 374 sq km and outside recorded forest area is 1229 sq km. As per ISFR 2021, scrub area is 158.93 sq km and tree cover is 1425 sq km. The extent of TOF is 2654 sq km, which is estimated as sum of extent of forest cover outside RFA and tree cover. Growing stock in RFA is 4.31 million cum and in TOF is 19.26 million cum. The total carbon stock of forests in state including TOF patches which are greater than 1 ha is 10.23 million tonnes (37.51 million tonnes of CO2eq). Top five species inside RFA are *Acacia tortolis, Eucalyptus spp., Acacia catechu, Prosopis juliflora and Dalbergia sisso*. Major invasive species in the state are *Lantana camara, Prosopis juliflora, Saccharum spontaneum, Ageratum houstonianum* and *Leucaena leucocephala.* (ISFR 2021). Two National Parks, eight Wildlife Sanctuaries and two Conservation Reserves constitute the Protected Area network of the State covering 0.75% of its geographical area.

As per ISFR 2019, during the period 1st January 2015 to 5th February 2019, a total of 1,529 hectares of forest land was diverted in Haryana for non-forestry purposes under the Forest Conservation Act, 1980 (MoEF & CC, 2019).

CAMPA

The CAMPA Act provides for the establishment of funds under the public accounts of India and the public accounts of each State and crediting thereto the monies received from the user agencies towards compensatory afforestation, additional compensatory afforestation, penal compensatory afforestation, net present value and all other amounts recovered from such agencies under the Forest (Conservation) Act, 1980; constitution of an authority at national level and at each of the State and Union territory Administration for administration of the funds and to utilise the monies so collected for undertaking artificial regeneration (plantations), assisted natural regeneration, protection of forests, forest related infrastructure development, Green India Programme, wildlife protection and other related activities and for matters connected therewith or incidental thereto. (The Compensatory Afforestation Fund Act, 2016)

Compensatory Afforestation Fund Rules, 2018 covers the permissible and non-permissible activities, definitions, procedures, formats, functioning, responsibilities, utilisation of funds and other details for the proper implementation of the Compensatory Afforestation Fund Act and Rules.

Organisation of Report

This report is part of the evaluation of CAMPA activities/works in Haryana for the year 2020-21. This final report is the summarised version of the activities carried out in the 22 forest divisions falling under 4 Territorial Circles, Research and Seed Division, Publicity and Training Circle and Wildlife Wing of the department.

Separate reports are organised as, for Territorial Divisions there are 22 reports. For Central Circle reports have been prepared for five divisions namely, Jhajjar, Karnal, Panipat, Rohtak, Sonipat. For North Circle reports have been prepared for five divisions namely, Ambala, Kaithal, Kurukshetra, Morrni-Pinjore, Yamuna Nagar. For West Circle reports have been prepared for six divisions namely, Bhiwani, Charkhi Dadri, Fatehabad, Hisar, Jind, Sirsa. For South Circle reports have been prepared for six divisions namely, Faridabad, Gurgaon, Mahendergarh, Mewat, Palwal, Rewari.

For the Development Wing one report has been prepared covering all the activities as mentioned in the APO. For the Wildlife Division one report has been prepared covering all the activities as mentioned in the APO.

Chapter 2: Programme implementing agency and the hierarchy

Haryana CAMPA

State Compensatory Afforestation Fund Management and Planning Authority to be known as State-CAMPA, constituted by the State Government as per the directives of the Central Government by Notification No.107/Home/2009 dated 12-08-2009, has become operational mainly for the purpose management of money towards the Compensatory Afforestation (CAs) and Net Present Value (NPV) and any other money recoverable in pursuance of the Hon'ble Supreme Court order in this regards and in compliance of the conditions stipulated by the Central while according approval under FC Act 1980 for non-forestry uses.

The State-CAMPA consists of three tier functional bodies **Governing Body,** the second tier as **Steering Committee** and **t**he third tier as **Executive Committee.**

The Governing Body is chaired by the Chief Minister. It lays down broad policy framework for functioning of State CAMPA and reviews its working from time to time. They shall meet at least once in six months.

The Steering Committee is chaired by the Chief Secretary. It scrutinizes and approves with such amendments as it may deems fit and proper, the annual plan of operations (APO) prepared by the executive committee of State CAMPA and send the same to the executive committee of National Authority for final approval. It monitors progress of utilisation of funds released from the State Fund; review reports on decision taken by executive committee including investment decisions; approve, subject to prior concurrence of the State Government, proposals formulated by the executive committee for creation of posts in the State Authority; approves annual report of the State CAMPA and sends it to the State Government to lay it, each year, in each House of the State Legislature; ensure inter-departmental coordination. They shall meet at least once in every three months.

The Executive Committee is chaired by the Principal Chief Conservator of Forests (HoFF). It shall formulate and submit APO to the steering committee for its concurrence; undertake qualitative and quantitative supervision, monitoring and evaluation of works being implemented from amounts available in the State Fund; invest surplus amounts available in State Fund of such State; maintain books of account and other records; submit reports to steering committee; prepare annual report of the State CAMPA; deploy staff on contractual basis or on deputation to the posts in the State CAMPA; formulate proposals for creation of posts in the State CAMPA; be responsible for delegation of financial or administrative powers; be responsible for other day-to-day working in respect of the State CAMPA; maintain and update public information system on the State CAMPA and present all information on its transaction in the public domain; undertake any other work as may be assigned by the governing body or steering committee or State Government, from time to time. They shall meet at least once in every three months.

Haryana Forest Department

Haryana Forest Department is the implementing agency for CAMPA activities in the state. The state forest department is comprised of 22 forest divisions falling under 4 Territorial Circles, Research and Seed Division, Publicity and Training Circle and Wildlife Wing of the department. **North Circle** has five divisions Ambala, Kaithal, Kurukshetra, Morrni-Pinjore, Yamuna Nagar. **Central Circle** has five divisions Jhajjar, Karnal, Panipat, Rohtak, Sonipat. **West Circle** has six divisions Bhiwani, Charkhi Dadri, Fatehabad, Hisar, Jind, Sirsa. **South Circle** has six divisions Faridabad, Gurgaon, Mahendergarh, Mewat, Palwal, Rewari. The activities and works under Haryana CAMPA are carried out as per the Schedule of Rates (2020-21) which are revised annually. The copy is available as an annexure.

The administrative hierarchy of the division is as follows:

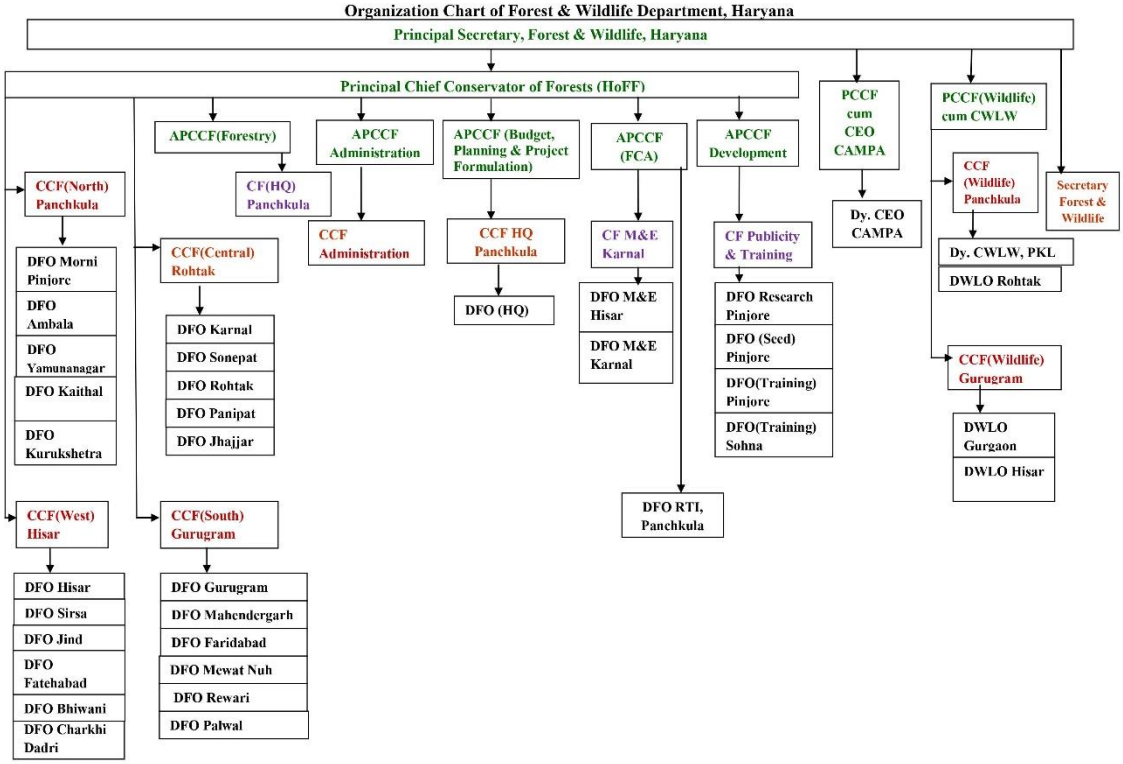
Forest Beat is the basic management unit of Territorial wing having small area and limited forest boundaries. Forest Guards are posted to manage the forest beats. There are 861 Territorial Beats in Haryana.

Forest Block is the next higher unit, consisting of a number of forest beats. The forest blocks are managed by Foresters designated as Block Forest Officers. There are 235 Territorial Blocks in Haryana.

Forest Ranges, the next in hierarchy. Forest Range managed by Forest Rangers or senior Dy. Rangers. Forest Ranger is a very important functionary in the Forest Department having headquarters at Sub-division level. There are 64 Territorial Forest Ranges in Haryana.

Forest Division is the Forest Management Unit at district level. Forest Divisions are managed by Divisional Forest Officers (DFOs). Forest Division consists of a number of Forest Ranges. There are 22 Territorial Forest Divisions in Haryana.

Forest Circle comprised of forest divisions. Forest Circle is managed by Conservator of Forests (CF). There are 4 Territorial Forest Circles to manage 22 Forest (Territorial) Divisions in Haryana.



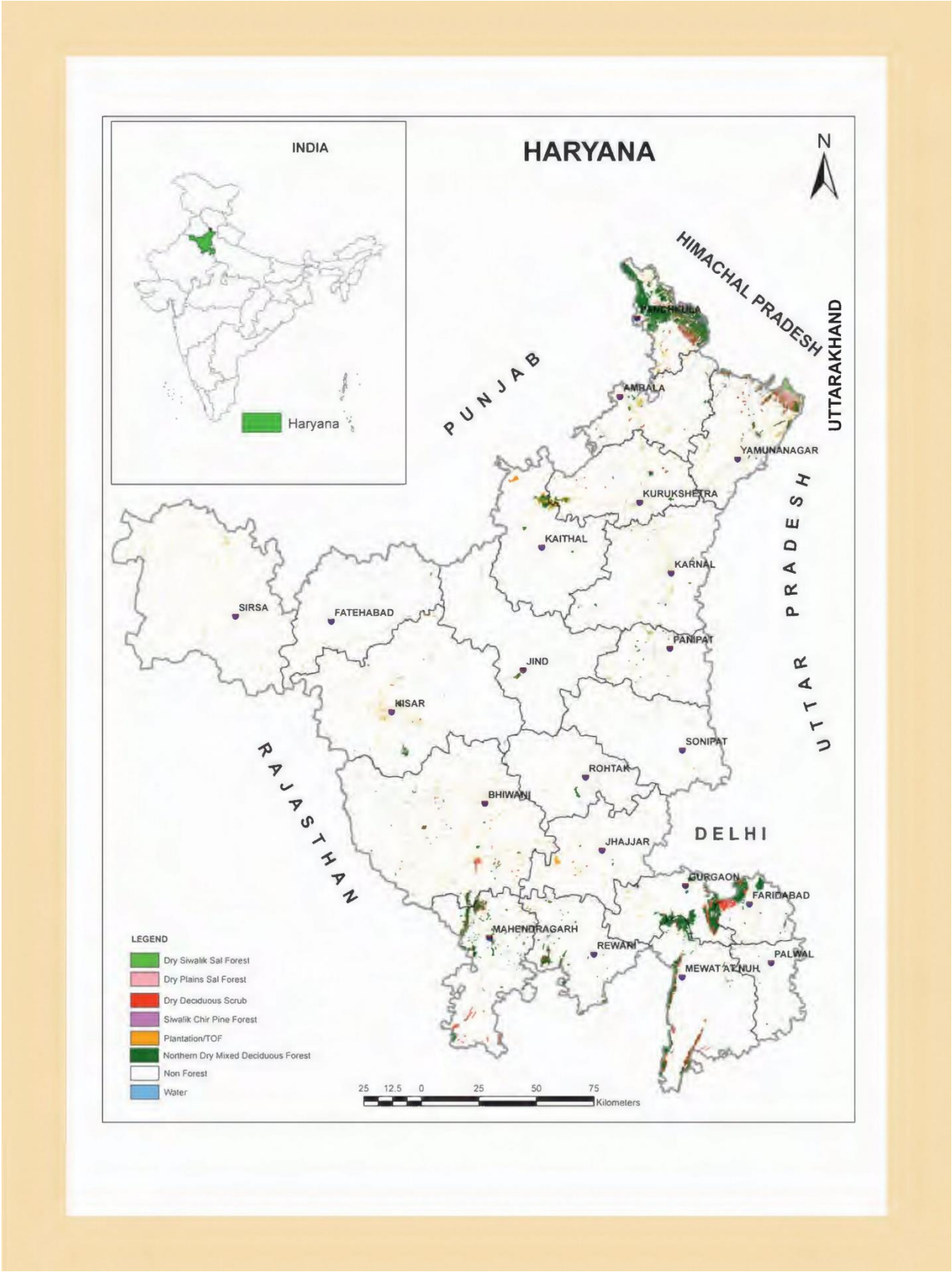


Figure 1 Map of Haryana

Chapter 3: Programme components and description

Compensatory Afforestation fund is used for plantation while money for Net Present Value is used for activities relating to conservation of forests and wildlife, development of infrastructures in these sectors and other related works. Under CAMPA, large-scale activities have been taken up to accelerate preservation of natural forests, management of wildlife, capacity building, research and development, infrastructure development in the sector and other allied works.

Monitoring and evaluation of CAMPA works undertaken as per annual plan of operations (APO) 2020-21. The works under CAMPA has been carried out by 22 forest divisions falling under 4 Territorial Circles, Research and Seed Division, Publicity and Training Circle and Wildlife Wing of the department.

CAMPA activities can be broadly divided into two broad categories, plantation and non-plantation activities.

1. Plantation Activities

Compensatory afforestation (CA) is the conditions stipulated by the Central Government while approving proposals for diversion of forest land for non-forest purposes. It is essential that with all such proposals, a comprehensive scheme for compensatory afforestation is formulated and submitted to the Central Government.

Normally, CA plantations are to be raised on suitable non-forest land, equivalent to the area proposed for diversion, at the cost to be paid by User Agency. Where non-forest land is available but lesser in extent to the forest area being diverted, CA could be carried out over degraded forest twice in extent of the area being diverted or the difference between the forest land being diverted and the available non-forest land, as the case may be.

Revenue lands/zudpi jungle/chhote/bade jhar ka jungle/jungle-jhari land/civil-soyam/orange lands and all other such categories of forest lands not under management and/or administrative control of the State/UT Forest Department, on which the provisions of FC Act, 1980 are applicable, shall be considered for the purpose of CA. Such lands on which CA is proposed shall be provided double in extent to the area proposed for diversion and shall be transferred and mutated in the name of State/UT Forest Department. It shall be notified as Reserve Forest (RF)/Protected Forests (PF) under the Indian Forest Act, 1927 prior to Stage-II approval.

State government prepares CA scheme with 1000 plants per ha for all such non-forest lands. In case it is not possible to raise plantation at the rate of 1000 plants per ha on the selected non-forest land, then the balance plants are planted on degraded forest land as per working plan prescriptions. All forest lands which have crown density below 40 percent should only be treated as degraded forest land for the purpose of CA.

Various types of CA activities are undertaken by the territorial division with diverse plantation models are as below:

1.1 Compensatory Afforestation (CA)

a) CA Tall Plants
b) CA Small Plants
c) CA Small Plants on Ridge

d) CA Trench cum Pit Method
e) CA Native Species

- CA Tall Plant is the plantation model with tall plants (5-6 ft height) and plantation density as 1000 plants per ha.
- CA Small Plant is the plantation model with small plants (1-2 ft height) and plantation density as 1000 plants per ha.
- CA Small Plants on ridge is the plantation model with small plants (1-2 ft height) and plantation density as 1000 plants per ha. These small plants are planted on ridges. Here plants are planted on ridges usually 2x2 m apart with a height of 9-12 m. The basic purpose of this technique is to reclaim wet sites/waterlogged areas or even in sandy/dry areas.
- CA Trench cum Pit Method is the plantation model with tall plants (5-6 ft height) and plantation density as 1000 plants per ha. Trenches are dug next to the pits where plants are planted.
- CA Native Species is the plantation model with tall plants (5-6 ft height) and plantation density as 1000 plants per ha. In this only native species are planted.

1.2 Net Present Value (NPV)

NPV is the quantification of the environmental services provided for the forest area diverted for non-forestry uses, as may be determined by an expert committee appointed by the Central Government from time to time. As per the CAF Act 2016, the monies received towards net present value and penal net present value shall be used for artificial regeneration (plantation), assisted natural regeneration, forest management, forest protection, forest and wildlife related infrastructure development, wildlife protection and management, supply of wood and other forest produce saving devices and other allied activities in the manner as may be prescribed.

NPV component is different from CA component in apportionment as well as on ground implementation. NPV targets are usually aggregated at the state level and then divided among divisions. The various types of NPV activities are undertaken by the territorial division. The various plantation models are:

a) NPV Tall Plants
b) NPV Ridge
c) NPV Eco-Restoration

- NPV Tall Plants is the plantation model with tall plants (5-6 ft height) and plantation density as 250 plants per RKM (Running kilometer).
- NPV Ridge is the plantation model with tall plants (5-6 ft height) and plantation density as 500 plants per RKM. Here plants are planted on ridges usually 2x2 m apart with a height of 9-12 m. The basic purpose of this technique is to reclaim wet sites/waterlogged areas or even in sandy/dry areas.
- NPV Eco-Restoration is the plantation model with small plants (1-2 ft height) and plantation density as 200 plants per ha. In this the plantation is done within a stone wall boundary.
- NPV Native Species is the plantation model with tall plants (5-6 ft height) and plantation density as 500 plants per ha. In this only native species are planted.

2. Non Plantation Activities

2.1 Fencing

One of the plant protection/watch and ward activity is fencing. Currently the two fencing types being used are barbed wire fencing and chain link fencing.

2.2 Building Works

These activities encompass construction of residential and official buildings for forest range officers, frontline staffs, etc. deployed for protection of forest and wildlife.

2.3 Soil and Moisture Conservation

These activities are carried out with an objective to minimize the amount of water lost from soils through evaporation, transpiration or evapotranspiration. Preserving soil moisture is important in areas where rainwater and/or groundwater resources are scarce or decreasing due to various natural reasons or other causes. These also involve construction of engineering structures like ponds, wire crate structures, check dam, reinforced cement concrete structure, etc.

3. Development and Wildlife Wing Activities

Development

These are the activities undertaken by the Research, Seed and Training Divisions which have carried out activities like maintenance of research plots, creation of germplasm, construction of underground water storage, construction of RO, mist chamber, etc. Publicity and Training Circle which has carried out activities like workshop cum training camps for various stakeholders, development of publicity material, pamphlets, nukkar natak, exposure and education visit for school children, video documentation etc.

3.1 Seed Division
3.2 Training Division
3.3 Research Division
3.4 Publicity Division

Wildlife

These are the activities undertaken by the Wildlife wing across the state. The activities undertaken by them are for wildlife management and conservation, establishment, expansion and up-gradation of wildlife facilities, purchase of wildlife and rescue equipment, construction of boundary walls, extension of protection center, construction of office, residences for staff, shelter homes, water pond, habitat improvement, etc.

3.5 Three Wildlife Divisions

4. Purchase of Equipment

This includes purchase and maintenance of equipment or devices for forestry and wildlife purposes, purchase of furniture, office equipment including computers and peripherals, air conditioners, and generator sets, purchase of vehicles or staff cars for officers and heavy vehicles and machines, etc.

Chapter 4: Methodology

TERI has been selected as the agency for third party evaluation of works undertaken during 2020-21 under Haryana Compensatory Afforestation Fund Management Planning Authority (CAMPA) in the State of Haryana-vide online tender ID No. 2021_HRY_176383_1 and letter reference No. 643 dated 01.09.2021.

Terms of Refernce

a) The conservation, development and other related activities are being carried out in all divisions of the state.
b) Different divisions carry out the activities with CAMPA funds.
c) Major activities include plantations under different models; conservation, protection and management of wildlife and its habitat within and outside protected areas, research and tree improvement, soil and water conservation, development of infrastructures, capacity building and other activities carried out under State CAMPA during the year 2020-21.
d) The Monitoring and Evaluation Agency is required to deploy well-qualified team and supporting staff for carrying out assessment of quality of plantations and other activities in a time bound manner.
e) The technical proposal should contain details methodology for monitoring and evaluation within the timeframe.
f) The agency will submit a comprehensive evaluation report of the State CAMPA.

Approach

The approach towards the evaluation of the CAMPA works include quantitative and qualitative methods in a stratified random manner. The quantitative tools utilised are field visits to plantations, recording status and geographical features of the site. The qualitative tools included discussions with the staff and concerned implementing units of the respective forest divisions in Haryana. Along with primary data collection, secondary data from the available documents such as Annual Plan of Operation (APO), Measurement Books (MB), Plantation Journals, KML files, site plans and internal monitoring reports have been used for validation of the primary data. Field visits have been carried out for data collection and noting down the field observations related to the objective of the implemented work and its outcomes. Photographic evidence, comparison of secondary data and actual work have been generated through field visits.

Discussions and semi-structured interviews with Division Forest Officer (DFO), Range Officer (RO), Forest Guard, field staff, labour and local community have been conducted. These helped in understanding the prevailing local conditions, system of doing work, past trends of work, perception and relationship among the different stakeholders involved, procedure followed for implementation of work, impact of activities, issue and challenges.

Sampling

The intensity of sampling as prescribed for carrying out the assessment for each component in each Forest Division has been at least **50% of the total number of the sites in each component** selected randomly so as to cover **at least 50% of the total work in each component is covered and 100% enumeration to be carried out in each selected site.** Sites have been chosen randomly before execution of field data collection.

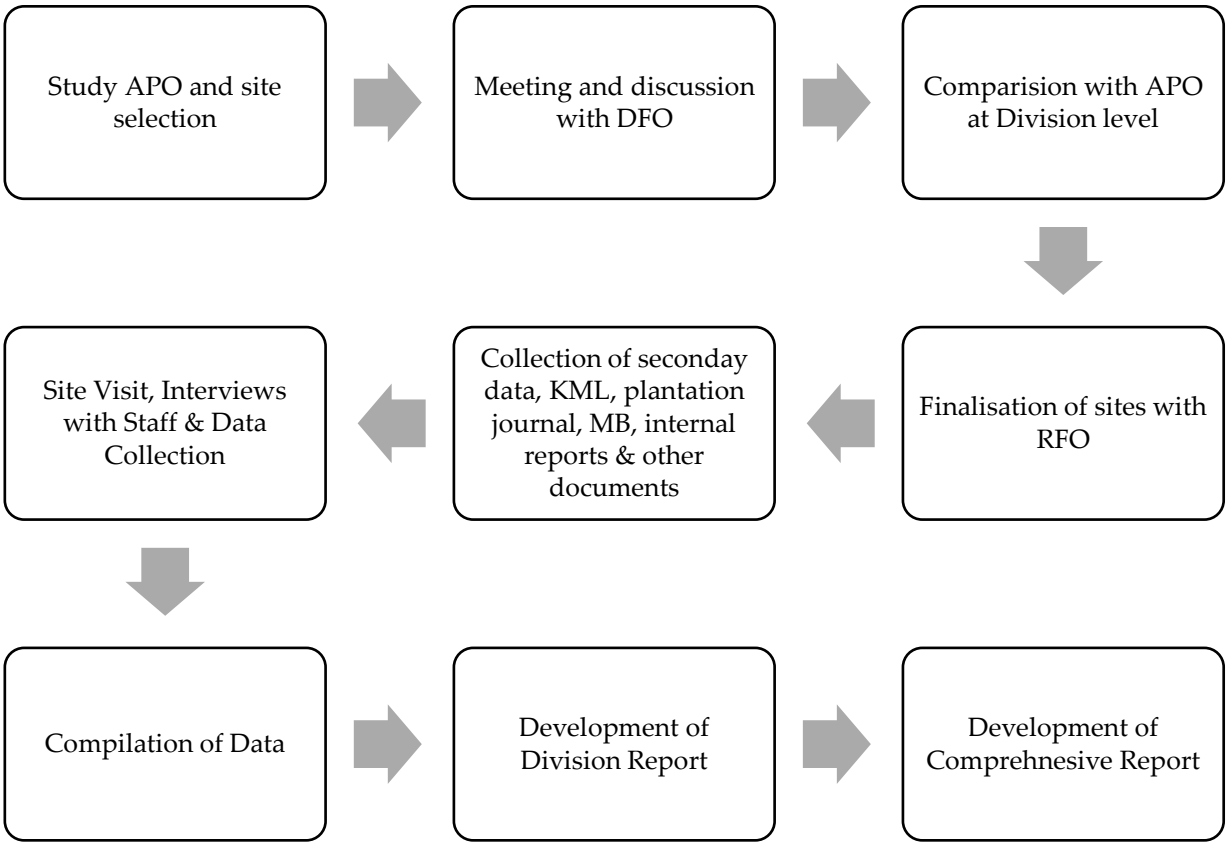
Tools and techniques used

Using the prescribed forms primary data has been collected. Other methods along with their details are provided below:

Table 1. Data collection methods

Method	Explanation	Usage	Indicator	Example
Direct Field observation	Documentation using basic tools like GPS, camera etc. for quantitative listing	Assess the effectiveness of the plantation	Height, survival and area coverage spacing of plantation etc.	Plantation Activities
Direct Field observation	Size in measurement book	Assess effectiveness, variations, etc.	Actual Size in field	Building and Construction Works
Discussions and Semi-Structured Interviews	Interview for opinions and perceptions of the initiative and its impact.	Assess the difficulties and gaps	Activity and division specific questions	DFO, Range Officer, Forest Guard, Field Staff
Verification of information on e-greenwatch	Availability of information on public portal	Triangulation of information	Activity Coordinates, KML files	Plantation, Non-Plantation
Photos/images/ Sketches of sites	Document the process using good resolution photos and outputs,	Assess the extent of the plantation activities	Google earth images, document the evaluation process, stakeholders involved along with the outputs achieved	Plantation Activities, Civil Works

Execution of Work



Grading

The grading of plantation sites has been done based on the following parameters:

1. Physical Target achieved
2. Plant Survival Score
3. Species composition as per APO
4. KML files available
5. Map Prepared
6. Plantation Journal
7. Site on egreenwatch
8. Cash book/Work Register
9. Availability of evidence/ records for plant replacement
10. Weeding and hoeing on site
11. Site suitability for plantation

The grading of non-plantation sites (fencing) has been done based on the following parameters:

1. Activity Status
2. Fencing Status
3. Fencing Effectiveness
4. Site suitability for fencing
5. Serving intended purpose
6. Fencing type
7. Copies of estimate available
8. Measurement Book Filled
9. Site on egreenwatch
10. Deviation from actual site

The grading of non-plantation sites (building) has been done based on the following parameters:

1. Building Status
2. Site Location
3. Serving intended purpose
4. Structurally sound and free of cracks
5. Free of dampness and leakage
6. Overall finish and look
7. Plan Prepared
8. Measurement Book Filled
9. Site on egreenwatch
10. Deviation from actual site
11. Copies of estimate available

The grading of non-plantation sites (SMC) has been done on the basis of the following parameters:

1. Activity Status
2. Fulfilling design specifications
3. Site suitability for SMC
4. Serving intended purpose
5. Copies of estimate available
6. Measurement Book Filled
7. Site on egreenwatch
8. Deviation from actual site

Details about all these grading criteria and their scoring system is available in Annexure 14.

Chapter 5: Scope of work

The Annual Plan of Operation (APO) covers all details for 22 forest divisions falling under 4 Territorial Circles, Research and Seed Division, Publicity and Training Circle and Wildlife Wing of the department. The APO for 2020-21 has been used to prepare the summary of activities as that have taken place under CAMPA in the state during this period. The detailed APOs are available in the Annexure. Central Circle (Annexure 1), North Circle (Annexure 2), West Circle (Annexure 3), South Circle (Annexure 4), Wildlife Division (Annexure 5) and Development Wing (Annexure 6).

Summary of data in APOs:

Table 2. Summary of APO Compensatory Afforestation

Type	Total quantum	Circles	Division
CA Tall Plants (CATP)	779,277	4	18
CA Small Plants (CASP)	321,890	2	3
CA (Ridge)	25637	1	2
CA (Native)	20000	1	1
CA (TCP)	36140	1	2

Table 3. Summary of APO Net Present Value

Type	Total Quantum	Circles	Division
NPV(TP)	676750	4	22
NPV(Ridge)	172420	4	7
NPV(Ecorestoration)	45000	3	5

Table 4. Summary of APO Fencing

Type	Total No. of sites	Circles	Division
1. Barbed Wire/Barbed Wire with cement/RCC Barbed wire fencing 2. Chain Link Fencing	35	3	10

Table 5. Summary of APO Building Works

Type	Total No. of sites	Circles	Division
Building	20	4	8

Building types include: Forester Quarter, Forest Guard Quarter, Toilets, Range Forest Office, Block Forest Office, Guard Hut, Range Officer Residence, Forest Complex

Table 6. Summary of APO Soil and Moisture Conservation

Type	Total Sites	Circles	Division
	218	2	4

SMC works include different structures like: SDD, Crate Wire Structure, WhS, RCC, Ponds, Check dam, Crate Abutment wall, Wire Crate Spur, C.C. Stud, Dry Stone Check Dam, Earth Filling Guide Work and Stone Peaching and CSMS.

Table 7. Summary of APO Development and Wildlife

Type	Value (lakhs)	Circles	Division
WL	246.37	3	3
Development	369.56	1	2

Chapter 6: Sampling of CAMPA work as per APO

As per the works defined in the APO in the respective circles, field visits have been conducted. The defined sampling methodology has been applied to assess the works at the respective sites in each circle.

Central Circle

In **Central Circle**, a total of 77 sites have been evaluated where 74 sites have been covered for plantation activities (Compensatory Afforestation and Net Present Value) and 3 sites for non-plantation activities (Fencing, Building and Soil and Moisture Conservation). The evalution covered different ranges in the five divisions namely Jhajjar, Karnal, Panipat, Rohtak and Sonipat. This work was completed from November 2021 to December 2021.

The table 8 below shows summary of all plantation activities (Compensatory Afforestation and Net Present Value) carried out in these divisions.

Table 8 Summary of Plantation Activities

Type	Total Quantum	Total number of sites	Sampling Target (50%)	Plants Monitored	Plants survived	Divisions	No. of Sites Evaluate
CA Tall Plants (CATP)	141341	38	70671	72676	55763	3	15
Total CA	**141341**		**70671**	**72676**	**55763**		**15**
NPV (TP)	150000	103	75000	79000	**63178**	5	44
NPV (Ridge)	130060	28	65030	86225	68137	5	15
Total NPV	**280060**	**131**	**140030**	**165225**	**131315**		**59**
Total	**421401**	**169**	**210701**	**237901**	**187078**		**74**

Table 9 Summary of Non-Plantation Activities

Type	Total Sites/ Quantum	Sampling Target (50%)	Sampling Achieved	Divisions	No. of Sites Evaluated
Building Works					
Building	3	2	3	2	3

Lists of plantation and non-plantation sites evaluated in the Central Circle are available in Annexure 7.

North Circle

In **North Circle**, a total of 133 sites have been evaluated where 82 sites have been covered for plantation activities (Compensatory Afforestation and Net Present Value) and 51 sites for non-plantation activities (Fencing, Building and Soil and Moisture Conservation). The evalution covered different ranges in the five divisions namely Ambala, Kaithal, Kurukshetra, Morrni-Pinjore and Yamuna Nagar. This work was completed from November 2021 to December 2021.

The table 10 below shows a summary of all plantation activities (Compensatory Afforestation and Net Present Value) carried out in these divisions.

Table 10 Summary of Plantations Activities

Type	Total Quantum	Totalno. of sites	Sampling Target (50%)	Plants Monitored	Plants survived	Divisons	No. of Sites Evaluated
CA Tall Plants (CATP)	243519	72	121759	126038	94376	5	17
CA Small Plants (CASP)	228890	20	114445	113660	82545	1	9
CA (SP on ridge)	26927	11	13149	14140	12995	2	4
CA (native)	20086	10	10043	10000	8835	1	2
Total CA	**519422**	**113**	**261611**	**263838**	**198751**		**32**
NPV (TP)	168500	94	84250	91135	72551	5	47
NPV (Ridge)	20000	3	10000	10000	8642	1	2
NPV (Ecorestoration)	5000	1	2500	5000	1626	1	1
Total NPV	**193500**	**98**	**96750**	**106135**	**82819**		**50**
Total Plantation	**712922**	**211**	**358361**	**369973**	**281570**		**82**

Table 11 Summary of Non-Plantation Activities

Type	Total Sites/ Quantum	Sampling Target (50%)	Sampling Achieved	Divisions	No. of Sites Evaluate
Fencing					
1. Barbed Wire/Barbed Wire with cement/RCC Barbed wire fencing	16	8	7	5	7
Building Works					
Building Works	5	3	4	1	4
Soil and Moisture Conservation					
SMC	27	14	40	3	40

Lists of plantation and non-plantation sites evaluate in the North Circle are available in Annexure 8.

West Circle

In **West Circle**, a total of 100 sites have been evaluated where 85 sites have been covered for plantation activities (Compensatory Afforestation and Net Present Value) and 15 sites for non-plantation activities (Fencing, Building and Soil and Moisture Conservation). The evalution covered the different ranges in the six divisions namely Bhiwani, Charkhi Dadri, Fatehabad, Hisar, Jind and Sirsa. This work was completed from December 2021 to January 2022.

The table 12 below shows a summary of all plantation activities (Compensatory Afforestation and Net Present Value) carried out in these divisions.

Table 12 Summary of Plantation Activities

Type	Total Quantum	Total number of sites	Sampling Target (50%)	Plants Monitored	Plants survived	Divisions	No. of Sites Evaluated
CA Tall Plants (CATP)	301409	64	150705	153483	123594	5	17
Total CA	**301409**	**64**	**150705**	**153483**	**123594**		**17**
NPV (TP)	258250	147	129125	155500	124702	5	64
NPV (Ridge)	7590	7	3795	3960	3040	1	3
NPV (Ecorestoration)	12000	3	6000	9000	6251	2	1
Total NPV	**277840**	**157**	**138920**	**168460**	**133993**		**68**
Total	**579249**	**221**	**289625**	**321943**	**257587**		**85**

Table 13 Summary of Non-Plantation Activities

Type	Total Sites/ Quantum	Sampling Target (50%)	Sampling Achieved	Divisions	No. of Sites Evaluated
Fencing					
1. Barbed Wire/Barbed Wire with cement/RCC Barbed wire fencing	17	9	6	4	6
2. Chain Link Fencing	1	1	1	1	1
Building Works					
Building	10	5	8	3	8

Lists of plantation and non-plantation sites evaluated in the West Circle are available in Annexure 10.

South Circle

In **South Circle**, a total of 58 sites have been evaluated where 47 sites have been covered for plantation activities (Compensatory Afforestation and Net Present Value) and 11 sites for non-plantation activities (Fencing, Building and Soil and Moisture Conservation). The evalution covered different ranges in the six divisions namely Faridabad, Gurgaon, Palwal, Mahendragarh, Mewat and Rewari. This work was completed from October 2021 to December 2021.

The table 14 below shows a summary of all plantation activities (Compensatory Afforestation and Net Present Value) carried out in these divisions.

Table 14 Summary of Plantation Activities

Type	Total Quantum	Total no. of sites	Sampling Target (50%)	Plants Monitored	Plants survived	Divisions	No. of Sites Evaluated
CA Tall Plants (CATP)	107715	64	53857	84121	64519	5	10
CA Small Plants (CASP)	101000	2	50500	125000	108237	2	2
CA (Trench cum Pit Method)	36140	2	18070	36140	29999	2	2
Total CA	**244855**	**68**	**122427**	**245261**	**202755**		**14**
NPV (TP)	125000	64	62500	75300	63520	6	28
NPV (Ridge)	19390	3	9695	9240	8103	1	1
NPV (Ecorestoration)	28000	4	14000	22750	17468	2	3
NPV (Native)	25000	1	12500	25000	20363	1	1
Total NPV	**197390**	**72**	**98695**	**132290**	**109454**		**33**
Total	**442245**	**140**	**221122**	**377551**	**312209**		**47**

Table 15 Summary of Non-Plantation Activities

Type	Total Sites/ Quantum	Sampling Target (50%)	Sampling Achieved	Divisions	No. of Sites Evaluated
Fencing					
1. Barbed Wire/Barbed Wire with cement/RCC Barbed wire fencing 2. Chain Link Fencing	2	1	1	2	2
Building Works					
Building	4	2	2	2	3
Soil and Moisture Conservation					
SMC	9	4.5	5	2	6

Lists of plantation and non-plantation sites evaluated in the South Circle are available in Annexure 9.

Development and Wildlife Wing

Development and Wildlife Wing Activites are spread across that state.

These activities have been assessed based on the following criteria:

- 50% of value/sites have been assessed.
- 100% assessment of activities of Research, Seed, Training Division, and Publicity and Training Circle (as these are unique activities and not replicating in nature)

Following table 16 details the summary of Development Activities

Table 16 Summary of Development Activities

Type	Total Sites/ Quantum	Sampling Target (50%)	Sampling Achieved	No. of Sites Evaluated
Research Division				
Activities/Works	4	4	4	4
Seed Division				
Activities/Works	7	7	7	7
Training Division				
Activities/Works	5	5	5	5
Publicity and Training Circle				
Activities/Works	6	6	6	6

Lists of sites activities evaluated in the Development Wing are available in Annexure 11.

Following table 17 details the summary of Wildlife Activities

Table 17 Summary of Wildlife Activities

Type	Total Sites/ Quantum	Sampling Target (50%)	Sampling Achieved	No. of Sites Evaluated
Divisional Wildlife Officer, Panchkula				
Activities/Works	3	3	3	3
Divisional Wildlife Officer, Gurugram				
Activities/Works	9	9	9	9
Divisional Wildlife Officer, Hisar				
Activities/Works	6	5	5	9

Lists of sites activities evaluated in the Wildlife Wing are available in Annexure 11.

Chapter 7: Analysis of work completed

Evaluation of CAMPA work has been carried out as per stipulated methodology and ToRs. The plantation and non-plantation activities executed under each division were evaluated. Quantitative and Qualitative analysis of division wise activities are presented as below.

Achievement of Plantation Targets

All 22 (100%) territorial divisions have achievd physical plantation targets.

Maintenance of Plantation Journal

In 11 out of 22 (50%) territorial divisons, plantation journal is not available and not maintained in organized manner. In 7 divisions (32%) plantation journal is partially prepared (*plantation journals were only provided for current sites and previous details were not available; partial information was filled in these current plantation journals*) and in 4 (18%) it is well maintained. This has been the most significant shortcoming across all the divisions. Plantation Journal is an important document for the purpose of record keeping, scheduled activities, periodic maintenance activities and for including records of past historical data. Also, for plantation activities, instead of maintaining the Plantation Journal, Work Register or Cash Book are used as alternate docuements/records to monitor/check progress of work.

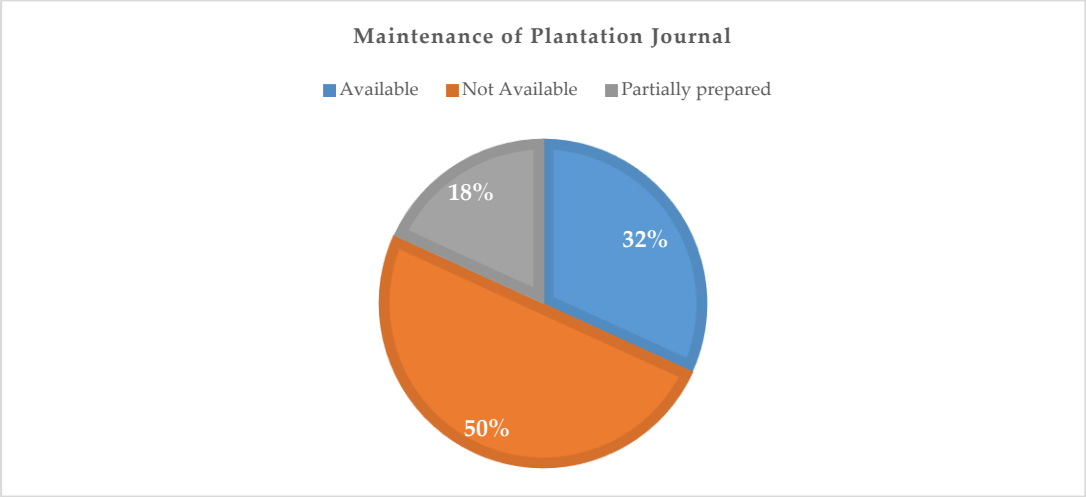


Figure 2 Graph for Maintenance of Plantation Journal in Territorial Divisions

Record Keeping for Replacement Plants

In 20 divisions out of 22 (91%) territorial divisons, no written information/evidence/records are available for maintenance/replacement of plants providing details of species and no. of plants planted.

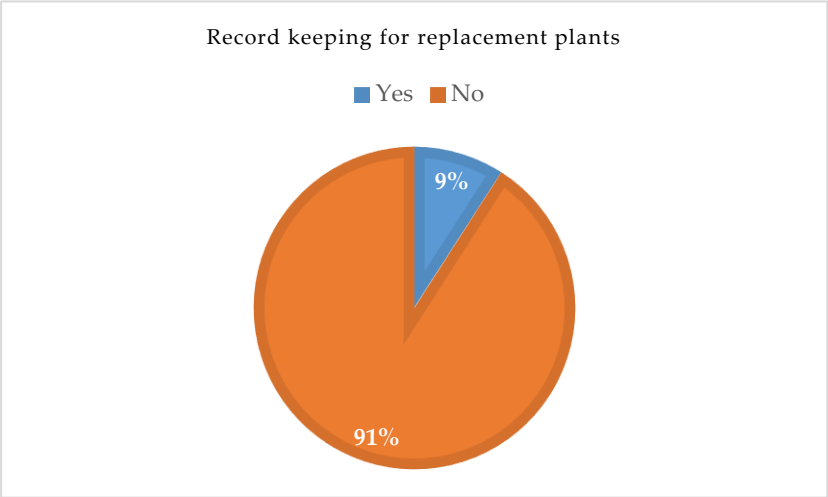


Figure 3 Graph for Record keeping for replacement plants in Territorial Divisions

Maintenance of Measurement Book

In 13 out of 16 (81%) territorial divisons, measurement book is available containing records of building/fencing activity. For 6 divisions, construction, SMC or fencing work has not been carried thus they remain out to this evaluation parameter.

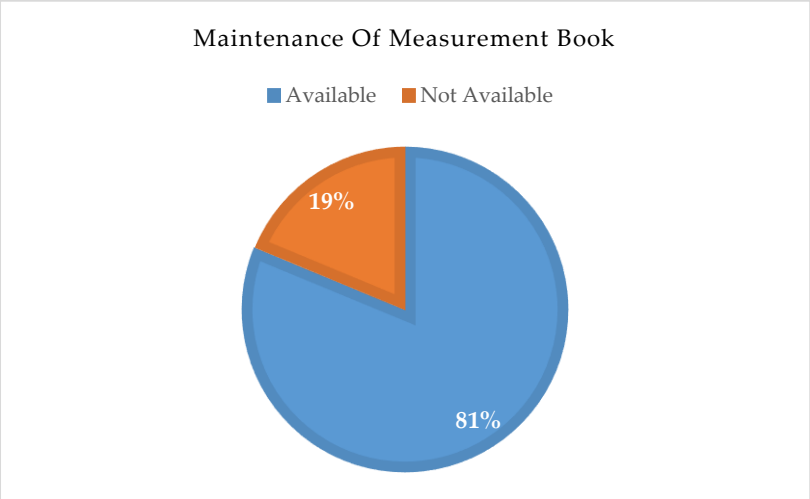


Figure 4 Graph for Maintenance of Measurement Book in Territorial Divisions

Fencing of Plantation Sites

In 13 out of 22 (59%) territorial divisons, fencing is not available at any of the sites. Whereas for 9 divisions (41%), fencing is available for some of the sites. These fencing provisions correspond to the as that mentioned in the APO.

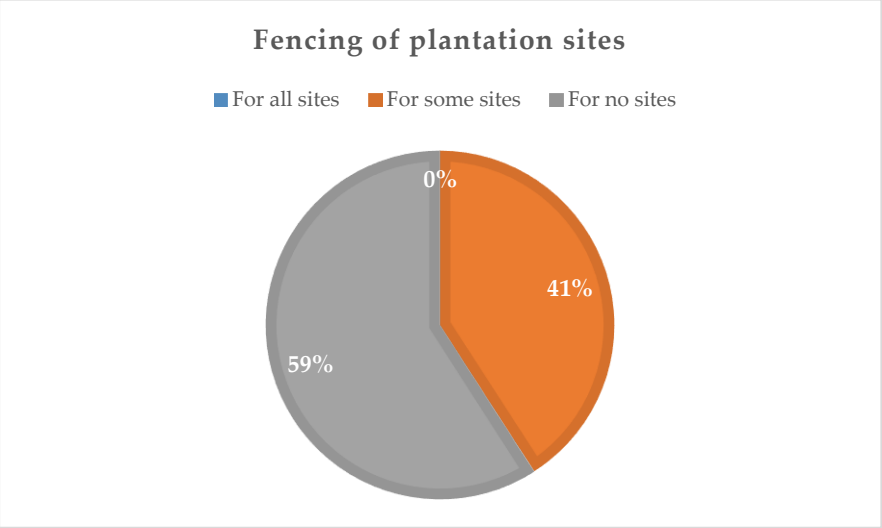


Figure 5 Graph for Fencing of plantation sites in Territorial Divisions

Protection for Young Plants

In 15 out of 22 (68%) territorial divisons, no protection like fencing, tree gaurds, etc. are available for young plants. For 7 (32%) divisions, protection for young plants is partially available (*available at some sites for some plants*) through fencing, tree gaurds, etc. These provisions should be incorporated at the time of development of the site specific proposal.

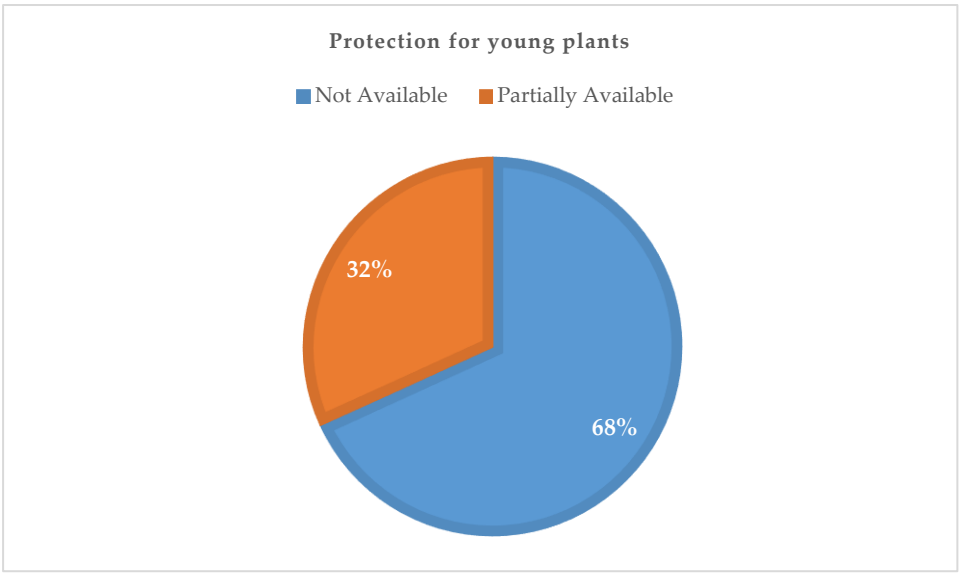


Figure 6 Graph for Protection for young plants in Territorial Divisions

Internal Monitoring

For all divisions there is a mechanism of internal monitoring which takes place periodically. This is performed in two ways, one is inter Range checking which is performed within the division by other ranges it is comprised of. The other is inter Division checking where any of the division checks sites randomly for another division. The Haryana Forest Department also has a special Monitoring and Evaluation division to periodically monitor and evaluate plantation and non-planattion activities carried out by divisions. In 16 out of 22 (73%) territorial divisons, internal monitoring is complete. For 6 (27%) divisions, internal monitoring is incomplete.

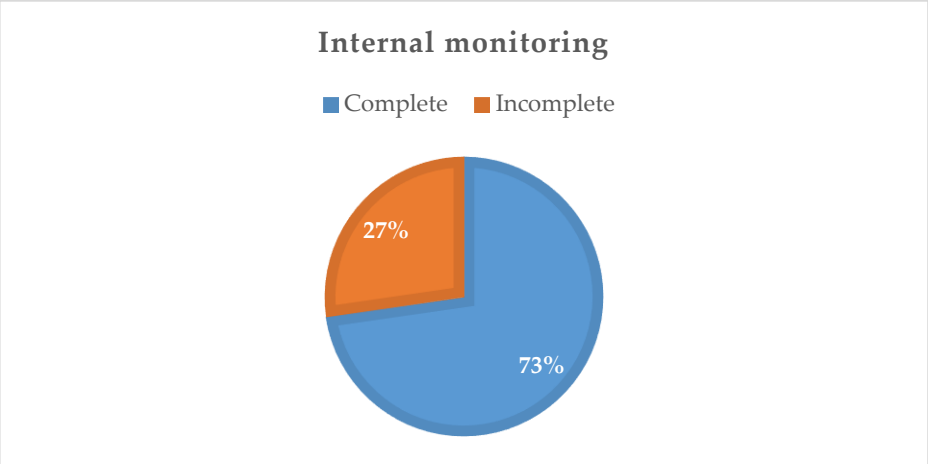


Figure 7 Graph for Internal monitoring in Territorial Divisions

Grazing Pressure from Stray Cattle

Grazing is another common problem visible across the state. The grazing cattle is either from within the state or coming majorly from the neighbouring states. This may be one of the reasons for the state facing such high pressure from grazing. In 20 out of 22 (91%) territorial divisons, there is pressure from grazing due to stray cattle. In 2 (9%) territorial divisons, there is very neglible or no pressure from grazing due to stray cattle.

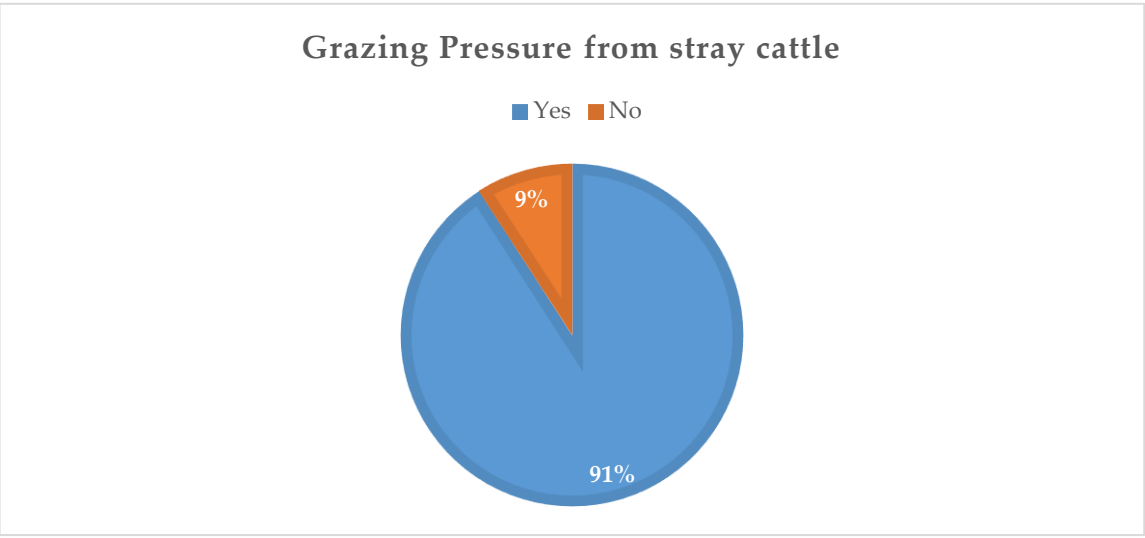


Figure 8 Graph for Grazing Pressure from stray cattle in Territorial Divisions

Labour Availability

Availability of labour for CAMPA activites can be challenging task. There can be several reasons for this. It is difficult to find labour in urban centres and comparitively easy in rural centres. The local wages also vary in urban centres and rural centres. This is because there are other competing and higher paying employment opportunities. Like working as construction labour in Gurugram, Faridabad or in manufacturing units in Rewari and other cities. Labour age, gender, skill may also be contributing factors. Sometimes labour is even managed from other neighbouring states. Even though the work in done via the contractor (outsouring) route this may persist. In 10 out of 22 (45%) territorial divisons, availability of labour is moderately difficult; in 3 (14%) divisions it is very difficult to find labour and in 9 (41%) divisions it is easy to find labour for CAMPA works.

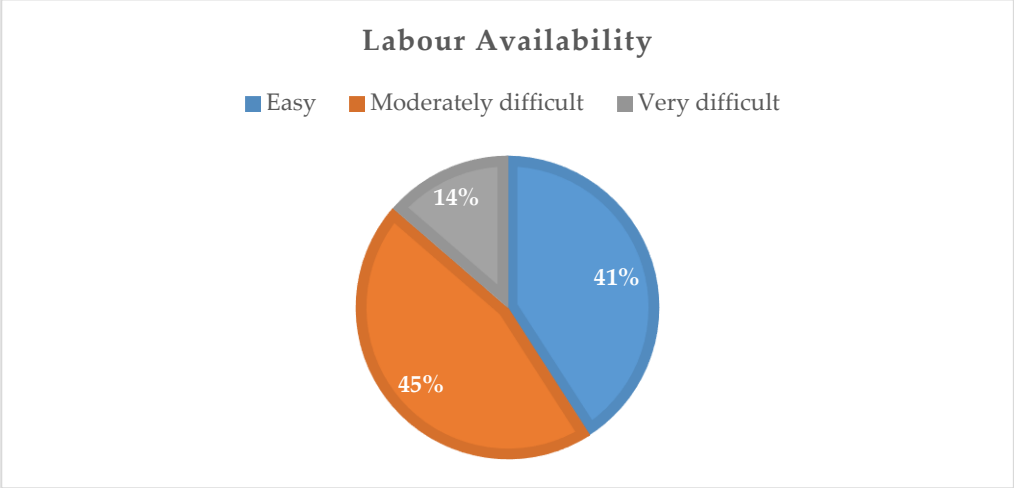


Figure 9 Graph for Labour Availability in Territorial Divisions

Resistance to Termite Treatment

In 15 out of 22 (68%) territorial divisons, there is an issue of resistance towards termite treatment. Often the change done is, using a new brand of the anti-termite chemical. This has damaged the plantations. For 7 divisions (32%) this is not a problem.

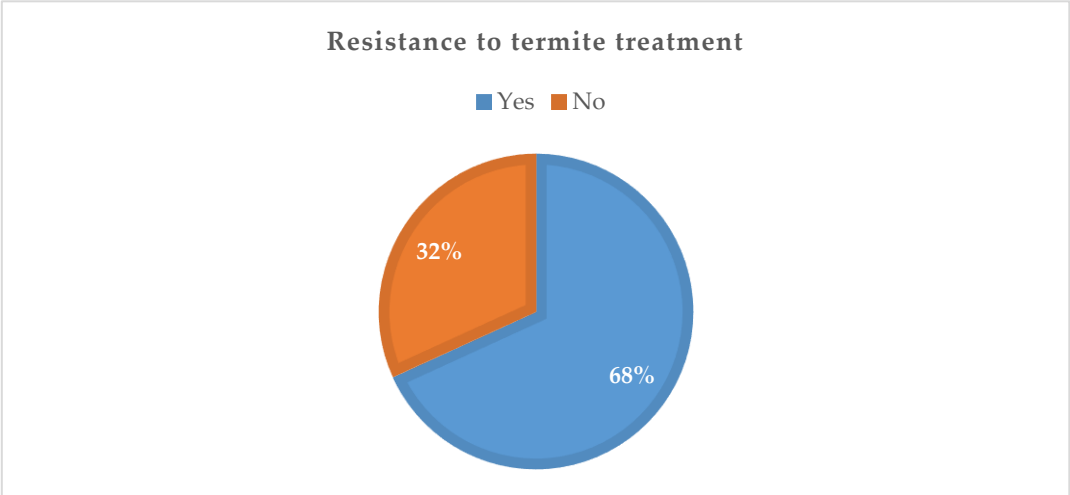


Figure 10 Graph for Resistance to termite treatment in Territorial Divisions

Irrigation Facility

Haryana is a naturally dry region. Watering of plants is thus very crucial for both the surivial and growth of plants. Out of the available irrigaton sources like water tanker, tubewell, canal, water ponds, etc. the most common and preferred source for irrigation is through a water tanker. The challenges faced with irrigation are a smaller number of annual watering due to limitation of SoR. All divisions don't own water tankers or irrigation equipments. They are thus dependent on market for buying/hiring tankers for watering of plants. Often the rate at which tanker is available varies from region to region. Thus, sensitivity of schedule of rate (SoR) is important.

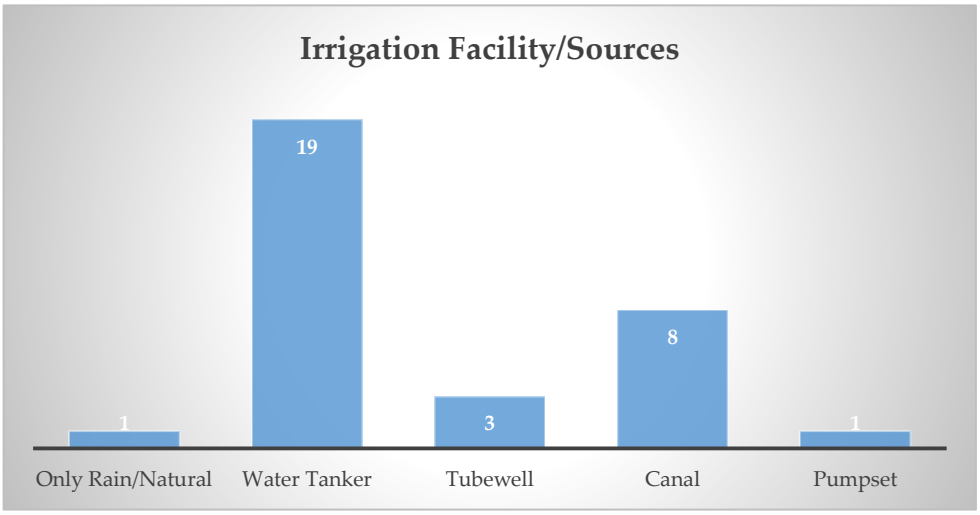


Figure 11 Graph for Irrigation Facility in Territorial Divisions

Use of Revello

As per the department information Revello is an application that is to be used for mapping and GIS works. In 12 out of 22 (55%) territorial divisons, the application is being used by the staff, including the frontline staff. In 6 (27%) divisions the staff is aware about the application but have not used it much yet. In 4 (18%) divisions it has not been used yet.

More trainings, workshop and capacity building are required for increased use of Revello. Trainings should be at all multiple levels (from Deputy Conservator of Forest to Forest Gaurd).

Also, there are technical issues with the application which need to be resolved. These are with respect to using the application in cases of overlap in division/range boundaries and inter-state boundary.

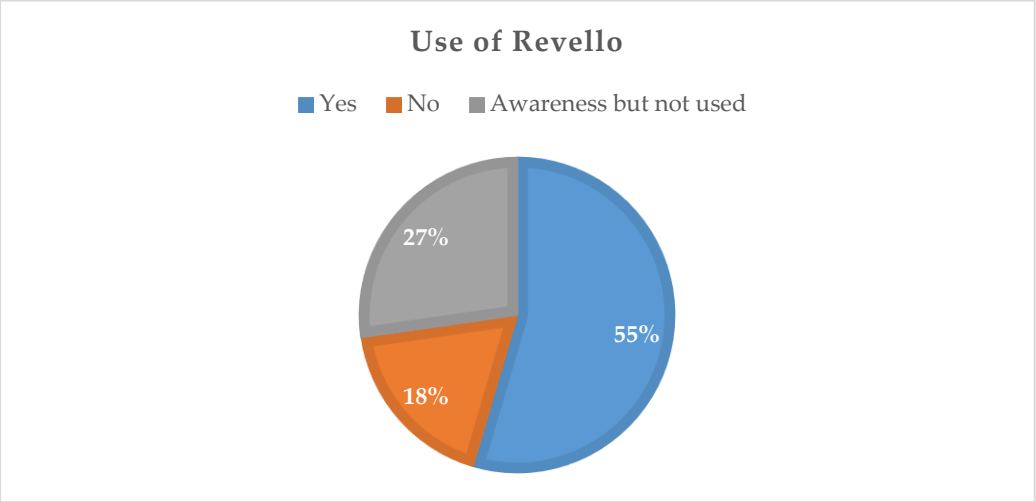


Figure 12 Graph for Use of Revello in Territorial Divisions

SMC Work

The state being naturally dry and hence, for water scarce areas Soil and Moiture Conservation works should be given emphasis while developing APO. Only in 5 out of 22 (23%) territorial divisons, the Soil and Moiture Conservation works have been carried out. In remaining 17 (77%) divisions, SMC works have been not propsoed in the APO.

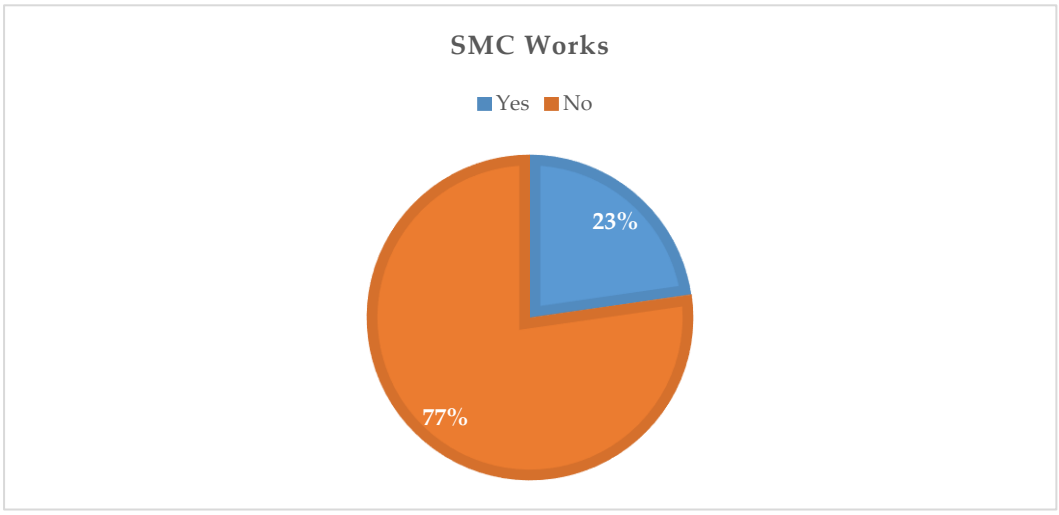


Figure 13 Graph for SMC Work in Territorial Divisions

Critical Comments of Third Party

1. An important observation which impacts implementation of CAMPA activities is the sensitivity of schedule of rates (SoR) and quantity of works. This becomes a constraint/ limitation as natural conditions and terrain are not same in all divisions across the state. Conditions are different in Shivalik terrain (North Circle), Aravalli terrain (South Circle) and plain regions (West and Central Circle). The local factors which vary from division to division are local labour wages, water requirement, sites which require manual work versus machine work, etc. all of these collectively have impact on the outcome of the CAMPA activities. Thus, the need for flexibility in SoR or circle specific SoR.

2. On experimental basis use of Hydrogel (a growth simulator or granules for holding soil moisture in arid areas) has been successful in some divisions. These experiments can be scaled up to enhance water availability for plantations.

3. Information available on e-greenwatch is often not updated (e.g. remote sensing data) or inaccurate (e.g. incorrect geolocations). This defeats the purpose of such dashboard for information compilation.

4. After completion of plantation, at many sites and nurseries polythene bags are dumped in open. This is not a good practice at all. It was also informed that a pilot experiment is being carried out in some divisions for use of jute instead of polythene for carrying and transporting saplings.

5. Activities of the development wing primarily Publicity and Training Circle, Training Division, Research and Seed Division should have dedicated activities with direct linkage towards CAMPA. Presently, the activities are generic in nature in terms of communicating environmental awareness but with not much reference to CAMPA.

6. Every division expects communication of nursery targets on time so as to maintain quality and quantity of plants. But if these are not communicated on time it impacts plant growth of tall plants as they are unable to attain the desired height. The tall plants turn out as either of the three:
    a. Well developed (> 6ft) when prepared in advance in nursery
    b. Adequately developed (5-6ft) when prepared with suitable time in nursery
    c. Poorly developed (3-4 ft) when prepared in short duration in nursery

    So for additional targets needs to be accommodated under small plant category and not under tall plants wherever possible.

7. Plantation sites should have display board/signage with details of site, plantation, purpose, year, area, species, etc. as done under CAMPA.

Circle wise recommendation of species

This section covers circle wise suggestion for species. This is on the basis of field observations during the evaluation, data collected for speices diversity and surivial of speices in the respective areas and also the soil type/condition and also the plantation purpose.

Central and West Circle

Suitable tree species for planting as per plantation area or various soil types:

Area/Soil types	Suitable species
Wasteland	*Shisam (Dalbergia sissoo)*
	Khair (Acacia catechu)
	Ber (Ziziphus mauritiana)
	Neem (Azadirachta indica)
	Arjun (Terminalia arjuna)
	Acacia/Dalmoth (Acacia auriculiformis/Acacia mangium)
	Bakain (Melia azedarach)
	Desi Babul (Acacia nilotica)
	Kat Sagwan (Heterophragma adenophyllu)
	Bel (Aegle marmelos)
Canal/ Road side avenue plantations	*Kachanar (Bauhinia variegate/Bauhinia purpurea)*
	Bottle Brush (Callistemon citrinus)
	Sawani (Lagerstroemie indica)
	Anwala (Emblica officinal)
	Samea (Cassia siamea)
	Kanak Champa (Pterospermum acerifolium)
	Gulmohar (Delonix regia)
	Pipal (Ficus religiosa)
	Bad/Bargad (Ficus benghalensis)
	Desi Mango (Mangifera indica)
	Bahera (Terminalia bellirica)
	Neem (Azadirachta indica)
	Karanj (Pongamia pinata)
	Balm Kheera (Kigelia pinnata)
	Jamun (Syzygium cumini)
	Arjun (Terminalia arjuna)

North Cirlce

Suitable tree species for planting as per plantation area or various soil types:

Area/Soil types	Suitable species
River belt	*Khair (Acacia catechu)*
	Babul (Acacia nilotica)

	Shisam (Dalbergia sissoo)
Canal/ Road side avenue plantations	*Desi Mango (Mangifera indica)*
	Arjun (Terminalia arjuna)
	Ficus species (Barrgad, Pipal, Gular, Pakar)
	Balm Kheera (Kigelia pinnata)
	Kachnar (Bauhinia variegata)
	Neem (Azadirachta indica)
	Jakrenda (Jacaranda mimosifolia)
	Gulmohar (Delonix regia)
	Kadam (Neolamarckia cdamba)
	Sawani (Lagerstroemie indica)
	Kangi (Pongamia pinata)
Forest area/ waste land	*Anwala (Emblica officinal)*
	Bahera (Terminalia bellirica)
	Harra (Terminalia chebula)
	Jamun (Syzygium cumini)
	Papari (Holoptelea integrifolia)
	Kachanar (Bauhinia variegate/Bauhinia purpurea)
	Toon (Toona ciliata)
	Shisam (Dalbergia sissoo)
	Khair (Acacia catechu)
	Kathal (Artocapus heterophyllum)
	Siras (Albizia l spp.)
	Kanak Champa (Pterospermum acerifolium)
	Bans (Bambusa spp.)
Alkali /Water logged area soil/ Ridge plantations	*Fransh (Tamarix aphylla)*
	Arjun (Terminalia arjuna)
	Jamun (Syzygium cumini)
	Kangi (Pongamia pinata)

South Circle

Suitable tree species for planting as per plantation area or various soil types:

Area/Soil types	Suitable species
Aravalli Hill plantation	*Papari (Holoptelea integrifolia)*
	Khair (Acacia catechu)
	Desi Babul (Acacia nilotica)
	Reonj (Acacia leucophloea)
	Neem (Azadirachta indica)
	Jungle Jalebi (Pithecellobium dulce)
	Ber (Ziziphus mauritiana)
	Dak (Butea monosperma)

	Kat Sagwan (Heterophragma adenophyllu)
	Shisam (Dalbergia sissoo)
	Acacia/Dalmoth (Acacia auriculiformis/Acacia mangium)
	Bakain (Melia azedarach)
Canal/ Road side avenue plantations	*Peltoforam (Peltophorum pterocarpum)*
	Kangi (Pongamia pinata)
	Jakrenda (Jacaranda mimosifolia)
	Neem (Azadirachta indica)
	Silver oak (Grevillea robusta)
	Samea (Cassia siamea)
	Balm Kheera (Kigelia pinnata)
	Kakak Champa (Pterospermum acerifolium)
	Arjun (Terminalia arjuna)
	Bottle Brush (Callistemon citrinus)
	Kachnar (Bauhinia variegata)
	Siris (Albizia lebbeck)
Alkali /Water logged area soil/ Ridge plantations	*Fransh (Tamarix aphylla)*
	Arjun (Terminalia arjuna)
	Jamun (Syzygium cumini)
	Kangi (Pongamia pinata)
	Balm Kheera (Kigelia pinnata)

Chapter 8: Summary of findings of evaluation with grading

Central Circle

The central circle has three plantation models CA Tall Plants, NPV Tall Plants and NPV Ridge. The graph below shows the survival of these four models and overall survival at circle level based the on sites evaluated.

Survival percentages of the plantation models:

1. CA Tall Plants model: 77%
2. NPV Ridge model: 77%
3. NPV Tall Plants model: 80%
4. **Overall survival percentage of plants for Central Circle is 79%.**

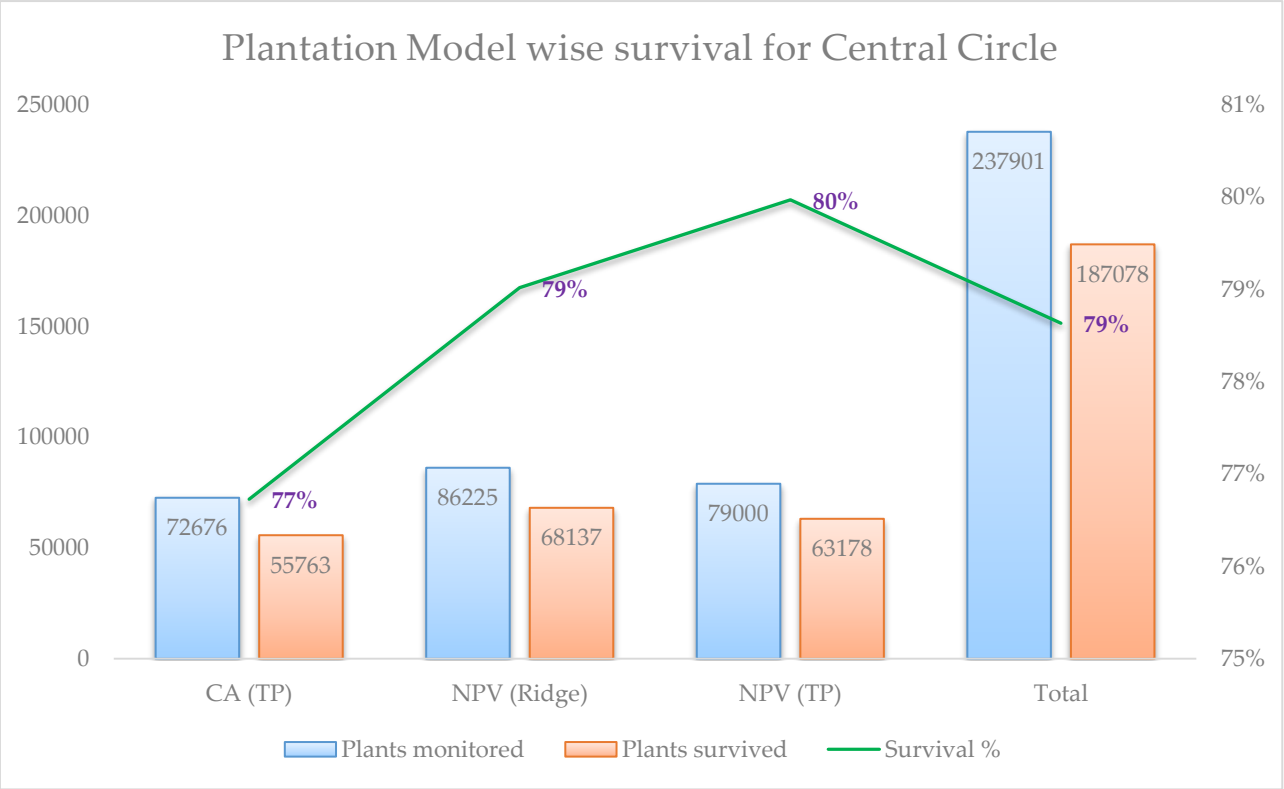


Figure 14 Graph for Plantation Model wise survival for Central Circle

There are total 31 unqiue species planted in the Central Circle. List of species is available in the Annexure 12.

The table 18 below classifies the 74 plantation sites evaluated in Central Circle based on their survival percentage and overall grading of the sites.

Table 18 Classification of Central Circle plantation sites on basis of survival and overall grading

Central Circle			
On basis of Survival %	**No. of Sites**	**On basis of overall Grading**	**No. of Sites**
<70%	0	Average Good	0
70-80%	32	Good	5
80-90%	40	Very Good	69
>90%	2	Excellent	0

The table 19 below classifies the 3 non plantation sites evaluated in Central Circle based on the overall grading of sites.

Table 19 Classification of Central Circle non plantation sites on basis of overall grading

Central Circle				
	Good	Very Good	Excellent	**Total Sites**
Fencing	0	0	0	**0**
Building	1	1	1	**3**
SMC	0	0	0	**3**

North Circle

The north circle has seven plantation models CA Tall Plants, CA Small Plants, CA Small Plants on Ridge, CA Native Species, NPV Tall Plants, NPV Ridge and NPV Ecorestoration. The graph below shows the survival of these seven models and overall survival at circle level based on the sites evaluated.

The graph below shows the survival in these models and overall survival at circle level based on the sites evaluated.

Survival percentages of the plantation models:

1. CA Small Plants model: 73%
2. CA Tall Plants model: 75%
3. CA Native Species model: 88%
4. CA Small Plants on Ridge model: 92%
5. NPV Ecorestoration model: 33%
6. NPV Tall Plants model: 80%
7. NPV Ridge model: 86%
8. **Overall survival percentage of plants for North Circle is 76%**

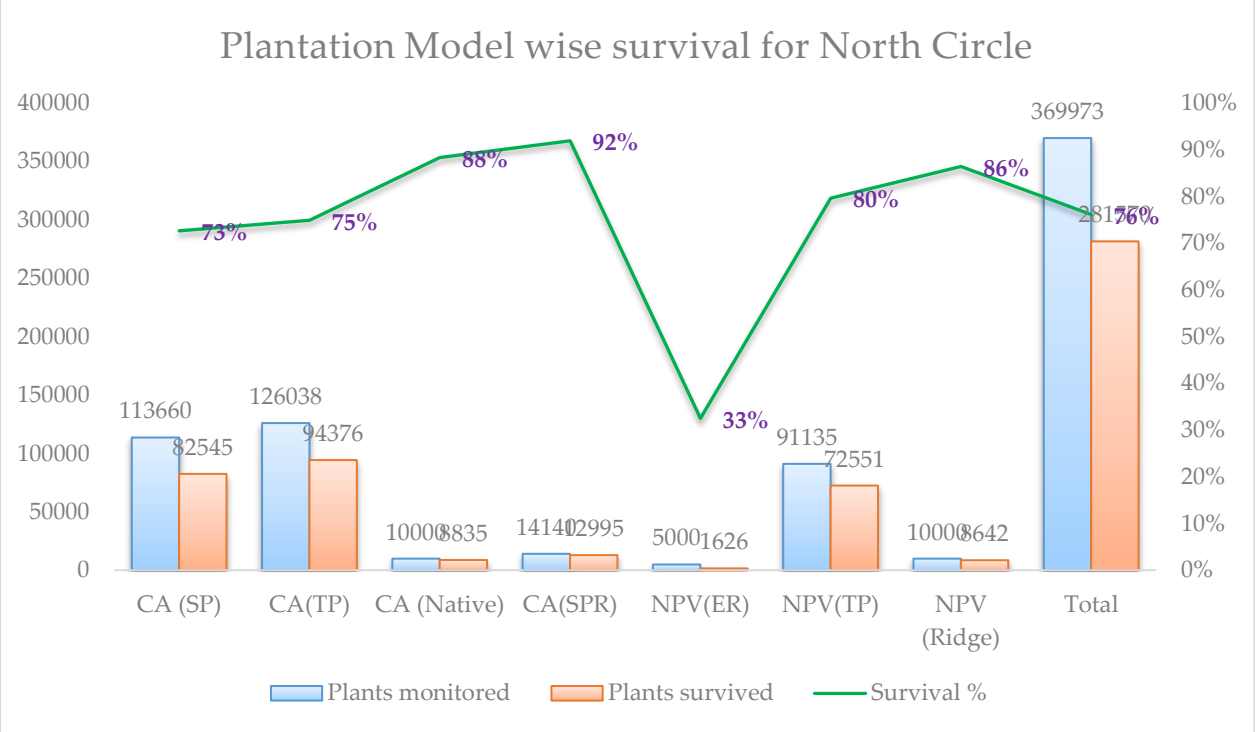


Figure 15 Graph for Plantation Model wise survival for North Circle

There are total 70 unqiue species planted in the North Circle. List of species is available in the Annexure 12.

The table 20 below classifies the 82 plantation sites evaluated in North Circle based on their survival percentage and overall grading of the sites.

Table 20 Classification of North Circle plantation sites on basis of survival and overall grading

North Circle			
On basis of Survival %	**No. of Sites**	**On basis of overall Grading**	**No. of Sites**
<70%	9	Average	0
70-80%	37	Good	37
80-90%	28	Very Good	45
>90%	8	Excellent	0

The table 21 below classifies the 40 non plantation sites evaluated in North Circle based on the overall grading of sites

Table 21 Classification of North Circle non plantation sites on basis of overall grading

North Circle				
	Good	Very Good	Excellent	**Total Sites**
Fencing	6	1	0	**7**
Building	0	3	1	**4**
SMC	0	0	40	**40**

West Circle

The west circle has four plantation models CA Tall Plants, NPV Tall Plants, NPV Ridge and NPV Ecorestoration. The graph below shows the survival of these four models and overall survival at circle level based the on sites evaluated.

Survival percentages of the plantation models:

1. CA Tall Plants model: 81%
2. NPV Ecorestoration model: 69%
3. NPV Ridge model: 77%
4. NPV Tall Plants model: 80%
5. **Overall survival percentage of plants for Central Circle is 74%.**

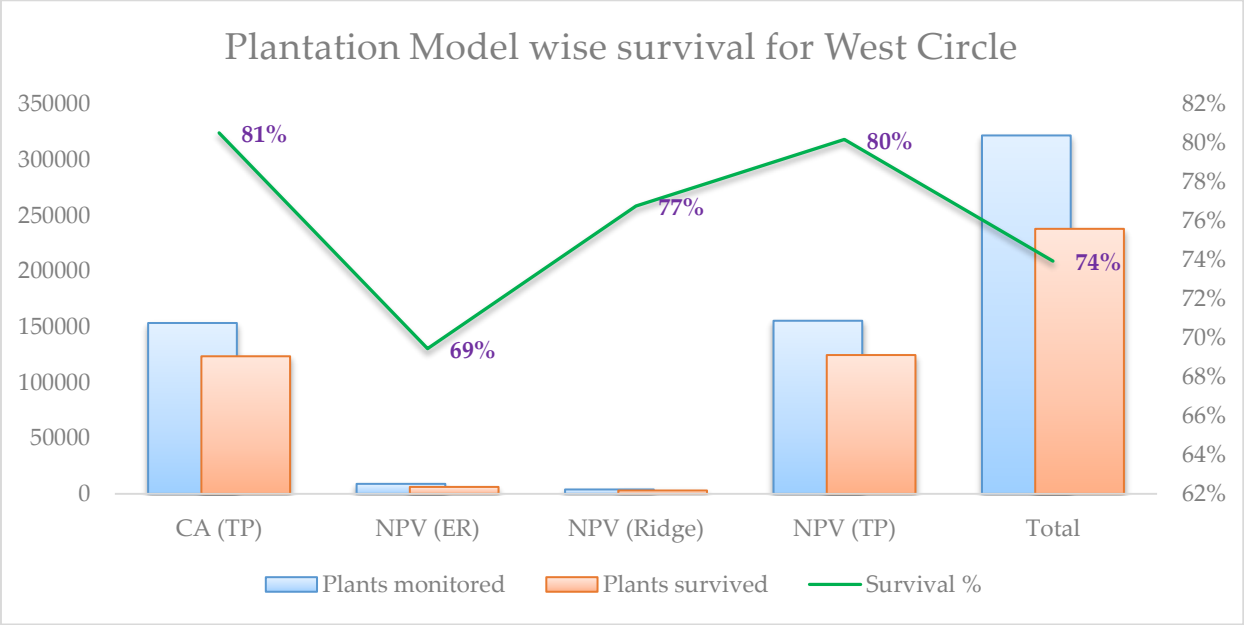


Figure 16 Graph for Plantation Model wise survival for West Circle

There are total 32 unqiue species planted in the West Circle. List of species is available in the Annexure 12.

The table 22 below classifies 85 plantation sites evaluated in West Circle based on their survival percentage and overall grading of the sites.

Table 22 Classification of West Circle plantation sites on basis of survival and overall grading

West Circle			
On basis of Survival %	**No. of Sites**	**On basis of overall Grading**	**No. of Sites**
<70%	2	Average	0
70-80%	44	Good	43
80-90%	38	Very Good	42
>90%	1	Excellent	0

The table 23 below classifies the 15 non plantation sites evaluated in West Circle based on the overall grading of sites

Table 23 Classification of Central Circle non plantation sites on basis of overall grading

West Circle				
	Good	Very Good	Excellent	**Total Sites**
Fencing	2	5	0	**7**
Building	2	3	6	**8**
SMC	0	0	0	**15**

South Circle

The south circle has seven plantation models CA Tall Plants, CA Small Plants, CA Trench cum Pit, NPV Tall Plants, NPV Ridge, NPV Ecorestoration and NPV Native Species. The graph below shows the survival of these seven models and overall survival at circle level based on the sites evaluated.

Survival percentages of the plantation models:

1. CA Tall Plants model: 77%
2. CA Trench cum Pit model: 83%
3. CA Small Plants model: 87%
4. NPV Ecorestoration model: 77%
5. NPV Native Species: 81%
6. NPV Tall Plants model: 84%
7. NPV Ridge model: 88%
8. **Overall survival percentage of plants for South Circle is 83%**

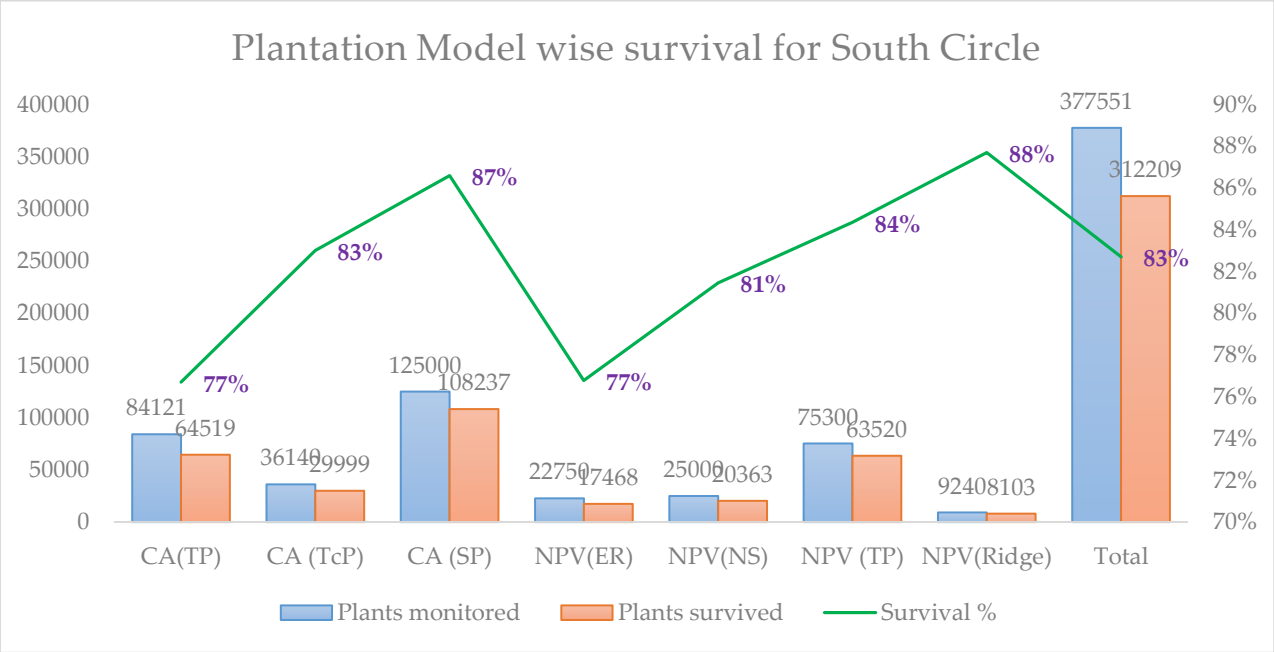


Figure 17 Graph for Plantation Model wise survival for South Circle

There are total 42 unqiue species planted in the South Circle. List of species is available in the Annexure 12.

The table 24 below classify the 47 plantation sites evaluated in South Circle based on their survival percentage and overall grading of the sites.

Table 24 Classification of South Circle plantation sites on basis of survival and overall grading

South Circle			
On basis of Survival %	**No. of Sites**	**On basis of overall Grading**	**No. of Sites**
<70%	3	Average	1
70-80%	12	Good	12
80-90%	24	Very Good	34
>90%	8	Excellent	0

The table 25 below classifies the 11 non plantation sites evaluated in South Circle based on the overall grading of sites

Table 25 Classification of South Circle non plantation sites on basis of overall grading

	South Circle				
	Average	Good	Very Good	Excellent	**Total Sites**
Fencing	1	1	0	0	**2**
Building	0	1	1	1	**3**
SMC	0	2	0	4	**6**

Annexures

1. APOs
2. Sites Evaluated
3. Circle wise list of species
4. Evaluation Formats Used
5. Grading Criteria
6. Schedule of Rates
7. Evidence from divisions

Annexure 1: APO Central Circle

SrNo		1	2	3	4	5	6	7	8	9	10	11	12	13	
Circle Name		**Central Circle Rohtak**													
Division Name		Jhajjar(Central Rohtak)			Karnal			Panipat		Rohtak		Sonipat			
Range Name		Bahadurgarh	Jhajjar	Matanhail	Asandh	Indri	Karnal	Panipat	Samalkha	Meham	Rohtak	Gohana	Rai	Sonipat	
CA	CA Tall Plants (CATP)						87127	45565						8930	**141622**
	Sites						48	6						1	**55**
	Area						87.127	45.565						8.93	**141.622**
	CA Small Plants (CASP)														
	CA (ridge)														
	CA (trench)														
	CA (native)														
	Sites														
	Area														
NPV	**Tall Plants**	3500	2500	6500	20000	17500	25000	12500	12500	17000	8000	12750	8250	3000	**149000**

SrNo		1	2	3	4	5	6	7	8	9	10	11	12	13	
	Sites	2	2	5	13	2	10	7	10	16	8	14	9	5	**103**
	Running Km	14	10	26	80	70	100	50	50	68	32	55	33	12	**600**
	Ridge Sites	2	2	2	2	1	1	5				4	2	3	**24**
	Plants	3800	5970	21000	15000	10000	20000	25000				8500	8000	8500	**125770**
	Running Km	9.3	15	10.5	30	20	40	50				17	17	16	**224.8**
	Eco Restoration														
	Plants														
	Area (ha)														
	Small plant sites														
	Plants														
	Area (ha)														
Building		1		1			1								**3**
Amount (lac)		1000000		1267920			1197000								**3464920**
SMC	**SMC sites**														
	Amount (lac)														
Fencing	**Barbded Wire**														

SrNo		1	2	3	4	5	6	7	8	9	10	11	12	13	
	Running Km														
	Area														
	Chain Linking														
	Running Km														
Development and Wildlife (value)	Wildlife														
	Development														
Area (ha)															0

Annexure 2: APO North Circle

SrNo		14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
Circle Name		**North Circle Panchkula**																			
Division Name		Ambala			Kaithal			Kurukshetra		Morrni-Pinjore						Yamuna Nagar					
Range Name		Ambala	Narain-garh	Saha	Kaithal	Pundri	Saras-wati	Pehowa	Thane-sar	Bhoj 14	Kalka	Morni	Panch-kula	Pinjore	Raipur Rani	Jaga-dhari	Kalesar	Kalsia	Chhach-hrauli	Sadh-aura	
CA	CA Tall Plants (CATP)	148966			18709				6503				10000		35000	9344			4170	5000	**237692**
	Sites	13			19				21				1		14	3			1	1	**73**
	Area	148.96			18.71				6.503				10		35	0.174			4.17	5	**228.517**
	CA Small Plants (CASP)										1390		37500		190000						**228890**
	CA (ridge)								2637			23000									**25637**
	CA (trench)																				
	CA (native)				20000																**20000**
	Sites				10				3		6	8	2		17						**46**
	Area				40.172				2.637		1.34	23	37.5		190						**294.649**

SrNo		14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
NPV	**Tall Plants**	10000	7500	7500	8750	7500	13750	27500	37500		1250	5000	11250	7500		7500	10000		6000		**168500**
	Plants	5	5	5	7	7	7	20	17		1	1	3	4		6	3		3		**94**
	Running Km	40	30	30	35	30	55	110	150		5	20	45	30		30	40		30		**680**
	Ridge Sites						3														**3**
	Plants						20000														**20000**
	Running Km						40														**40**
	Eco Restoration											1									**1**
	Plants											5000									**5000**
	Area (ha)											10									**10**
	Small plant sites				4				3		6		2	8	18						**41**
	Plants				20000				2637		1390		37500	23000	190000						**274527**
	Area (ha)				40.172				2.637		1.34		37.5	23	190						**294.649**
Building																1	2		1	1	**5**
Amount (lac)																1744440	Under Progress		Under Progress	Under Progress	**1744440**
SMC	**SMC sites**	3									4	1			2	9	85		91	14	**209**

SrNo		14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	
	Amount (lac)	683000									1222876	232308			1300312	1529452	7094743		4340296	14411690	**30814677**
Fencing	**Barbded Wire**		5		1		5		2				2							1	**16**
	Running Km		28		25		12		12				20								**97**
	Area																			5	**5**
	Chain Linking																				
	Running Km																				
Development and Wildlife (value)	**Wildlife**																				
	Development																				
Area (ha)																					**0**

Annexure 3: APO West Circle

SrNo		49	50	51		52	53	54	55	56	57	58	59	60	**61**	**62**	**63**	**64**	**65**	**66**	
Circle Name		West Circle Hissar																			
Division Name		Bhiwani(West Circle Hissar)					Charkhi Dadri		Fatehabad		Hisar			Jind			Sirsa				
Range Name		Bhiwani	Lohara	Siwani	Kairu	Tosham	Badhra	Ch Dadri	Fateha-bad	Tohana	Adampur	Hansi	Hisar	Jind	Nar-wana	Safidon	Dab-wali	Kala-nwali	Rania	Sirsa	
CA	CA Tall Plants (CATP)	18120							97800				106361	31667						47470	**301418**
	Sites	24							27				19	29						5	**104**
	Area	18.113							97.8				106.361	31.67						47.47	**301.414**
	CA Small Plants (CASP)																				
	CA (ridge)																				
	CA (trench)																				
	CA (native)																				
	Sites																				
	Area																				

SrNo		49	50	51		52	53	54	55	56	57	58	59	60	**61**	**62**	**63**	**64**	**65**	**66**	
NPV	**Tall Plants**	21500	8750	11750		22150	12500		53750	21250	7500	8750	8750	18750	19250	18250		6250	12500	6250	**257900**
	Plants	12	5	6		6	7		39	7	10	6	4	14	7	18		2	1	3	**147**
	Running Km	88	35	47		90	50		215	85	30	35	35	75	77	73		25	50	25	**1035**
	Ridge Sites														2	5					**7**
	Plants														2640	4620					**7260**
	Running Km														9	14					**23**
	Eco Restoration					5	3														**8**
	Plants						12000														**12000**
	Area (ha)					100	60														**160**
	Small plant sites																				
	Plants																				
	Area (ha)																				
Building							1	2				1	1				1	1	3		**10**
Amount (lac)							1379435	1576549				1145086	196169				2310346	2233830	3142981		**11984396**
SMC	**SMC sites**																				
	Amount (lac)																				

SrNo		49	50	51		52	53	54	55	56	57	58	59	60	**61**	**62**	**63**	**64**	**65**	**66**	
Fencing	**Barbded Wire**		1	1	1						1	3	1	3			5			1	**17**
	Running Km		15	10	9						18	88	4	13			47.47			4	**208.47**
	Area																				
	Chain Linking					1															**1**
	Running Km					1															**1**
Development and Wildlife (value)	**Wildlife**																				
	Development																				
Area (ha)																					**0**

Annexure 4: APO South Circle

SrNo		32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
Circle Name		**South Circle Gurgaon**																	
Division Name		**Faridabad**		**Gurgaon**			**Mahendergarh**				**Mewat**			**Palwal**		**Rewari**			
Range Name		Ballabh-garh	Faridabad	Gurgaon	Haily-mandi	Sohna	Herbal Park Range	Mahender-garh	Naggal Chaudhary	Narnaul	Firoz-pur	Nuh	Punh-ana	Hodal	Palwal	Bawal	Nahar	Rewari	
CA	CA Tall Plants (CATP)		2278	50936				1835				29438						23228	**107715**
	Sites		1	30				4				12						17	**64**
	Area		2.28	35.02				1.835				29.2821						23.23	**91.6471**
	CA Small Plants (CASP)		88000									5000							**93000**
	CA (ridge)																		
	CA (trench)							31140			5000								**36140**
	CA (native)																		
	Sites		1					1			1	1							**4**
	Area		120					31.14			10	5							**166.14**
NPV	**Tall Plants**	3750	8750	15000	10000			13250	5000	6750	7500	7500	10000	6250	6250	12500	5000	7500	**125000**

SrNo		32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
	Plants	2	1	9	5			5	2	5	2	1	2	5	6	10	3	4	**62**
	Running Km	15	35	60	40			53	20	27	30	30	40	25	25	50	20	30	**500**
	Ridge Sites													1	2				**3**
	Plants													8500	10890				**19390**
	Running Km													17	33				**50**
	Eco Restoration								1		1	1	1						**4**
	Plants								12000		6000	6000	4000						**28000**
	Area (ha)								60		30	30	20						**140**
	Small plant sites		1					1				1	1						**4**
	Plants		88000					31140				5000	5000						**129140**
	Area (ha)		120					31.14				10	5						**166.14**
Building					1					1									**2**
Amount (lac)					1183186					1200000									**2383186**
SMC	**SMC sites**			2		5					1	1							**9**
	Amount (lac)			1075400		2912499					2646000	2006905							**8640804**

SrNo		32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
Fencing	**Barbded Wire**				1						1								**2**
	Running Km				2						15								**17**
	Area																		
	Chain Linking																		
	Running Km																		
Development and Wildlife (value)	**Wildlife**																		
	Development																		
Area (ha)																			**0**

Annexure 5: APO Wildlife Division

Conservation and Management of Protected Areas APO for the year 2020-21		
S. No.	**Name of Activities**	**Amount (Rs)**
A	**Divisional Wildlife Officer, Panchkula:**	
1	Purchase of Camera trapes 20 No. at Kalesar National Park and W.L.S	4.92
2	Purchase of Rescue Vehicles with modification 10 No. for Panchkula, Rohtak, Gurugram and Hisar	8.24
3	Wildlife Census Activities	39.10
	Total (A)	**52.26**
B	**Divisional Wildlife Officer, Gurugram**	
1	Construction of Boundary Wall (600 mtr. At WLS Nahar-Part-11)	18.76
2	Extension of Protection Centre (23 Acre to 40 ace=17 acre) to provide proper space to the black bucks om WLS Nahar	12.91
3	Construction of IWL Office at Mahendergarh and Faridabad (instead of Nuh)	59.56
4	Construction of IWL Residence at Mahendergarh	14.02
5	Construction of Guard Hut at WLS Nahar and Gurugram Forest Complex (instead of Rewari)	20.77
6	Procurement of Rescue Equipment for Rescue Team	2.35
7	Procurement of Rescue vehicle with modification 2 No.	15.18
	Total (B)	**143.55**
D	**Divisional Wildlife Officer, Hisar:**	
1	Preparation of Earthen Mound-1 No. to provide better breeding opportunity for turties in Community Reserve Kajalheri, Fatehabad	2.71
2	Construction of sub-inspector wildlife office at Chinkara Breeding Centre Kairu, Bhiwani	2.87
3	Construction of Residence for Inspector Wildlife, Jind	9.98
4	Construction of shelter Home in Partition at Deer Park, Hisar	10.84
5	Setting up of Solar System at Deer Park, Hisar	4.09
6	Construction of Water Pond 12 No.	20.07
	Total (C)	**50.56**
	Grand Total (A+B+C)	**246.37**

Annexure 6: APO Development Wing

Annual Plan of Operation of Development Wing for the year 2020-21		
S. No.	**Name of activity**	**Amount (in lakh)**
	A. Research Division, Pinjore	
1	Maintenance of Research Plots CSO of Superior Clones of *Dalbergia Sisso* 3 Ha. (2019-20)	4.56
2	Creation of germplasm for *Syzygium cumini (*Jamun*), Emblica officinalis (*Aanwla*)* and *Psidium guajava (*Amrood) (Approved in RAG)	4.22
3	Purchasing of Mahindra Bolero 2 No. for Research Range Pinjore and Hisar	14.83
4	Construction of Underground Water storage Tank in Bithmara research plot	17.62
	Sub-Total	**41.23**
	B. Seed Division, Pinjore	
1	Purchase of High-tech Machines for Processing and Extraction of Seeds	2.09
2	Purchase of Bolero vehicles (2 Nos.)	14.99
3	Construction of RO, Mist Chamber Range Office Building at Seonthi	29.70
4	Establishment of 10 Mist Chamber including Hardening Chamber, Seonthi @25/- lacs each	174.13
5	Maintenance of 9 Acre Eucalyptus CMA raised during 2019-20 in CAMPA Scheme @ 119258/- per acre	13.00
6	Establishment of 10 Acre Eucalyptus CMA in 2020-21	19.90
7	Installation of Tubewell at Manakpur Nursery (2019-20)	3.92
	Sub-Total	**257.73**
	G. Total (Research Circle)	**298.96**
	C. Training Division, Pinjore	
1	District Level review meeting of SHGs (1day) 5 No.	0.38
2	Training of Trainers (3 days) 2 No.	0.25
3	Repair of Stage of Auditorium	0.96
4	Auditorium Floor replacement	1.90
5	Auditorium wall repair	0.29
	Sub-Total	**3.78**
	D. Publicity and Training Circle, Ambala	
1	District level workshop cum training camps of Farmers/Villagers/Panchayats/ School Children/SHGs	12.50
2	Publicity material: Sound systems, Electronics, Venyle Board, Banner, Poster, Sticker, Pamphlets & other material.	9.98
3	Nukkar Natak during Van Chetna Yatra : 5 in each 22 district	0.36
4	Making of Video Spot of Six episode of one minute duration / docudrama (total 6 minute)	1.68
6	Nature exposure and education visit for school children / Nehru Yuva Kender	40.80
7	Making of DVD	1.50
	Sub-Total	**66.82**
	G. Total	**369.56**

Annexure 7: Sites Evaluated in Central Circle

Plantation Sites:

The table below shows all plantation activities evaluated (Compensatory Afforestation and Net Present Value) in the Central Circle covering five divisions.

S. No.	Name of Site	Activity	Plants	Division	Range	Date
1	Majra Link Road	NPV(TP)	500	Sonipat	Rai	11.11.2021
2	Sisana Minor	NPV(TP)	750	Sonipat	Rai	11.11.2021
3	Jhinjholi Drain	NPV (Ridge)	3000	Sonipat	Rai	11.11.2021
4	Dahisara Bundh	NPV(TP)	1000	Sonipat	Rai	12.11.2021
5	1-L Minor	NPV(TP)	2000	Sonipat	Rai	12.11.2021
6	1-L Minor (Jakhauli)	NPV(TP)	750	Sonipat	Rai	12.11.2021
7	CLC RD 190-205	CA(TP)	2500	Sonipat	Sonipat	12.11.2021
9	CLC RD 144-160	CA(TP)	3425	Sonipat	Sonipat	13.11.2021
10	Jaji Mohana Road	NPV(TP)	1000	Sonipat	Sonipat	13.11.2021
11	Juan Distributory	NPV(TP)	250	Sonipat	Sonipat	13.11.2021
12	Kakroi Baiyanpur Road	NPV(TP)	500	Sonipat	Sonipat	13.11.2021
13	Narayana Minor RD 0-9 L&R	NPV (Ridge)	3500	Sonipat	Sonipat	13.11.2021
14	Sheikpura Minor RD 0-6 L&R	NPV (Ridge)	3000	Sonipat	Sonipat	13.11.2021
15	Gohana Julana Road (Ahulana)	NPV(TP)	1250	Sonipat	Gohana	14.11.2021
16	Gohana Julana Road (Rindhana)	NPV(TP)	1500	Sonipat	Gohana	14.11.2021
17	Gamri Ramgarh Road	NPV(TP)	1000	Sonipat	Gohana	14.11.2021
18	Khanpur Bajana Road	NPV(TP)	1000	Sonipat	Gohana	14.11.2021
19	Baroda Kailpa Road	NPV(TP)	1250	Sonipat	Gohana	14.11.2021
20	Banwasa to Kahlipa Road	NPV(TP)	750	Sonipat	Gohana	14.11.2021
21	Jasrana Minor	NPV (Ridge)	2250	Sonipat	Gohana	14.11.2021
22	Rithal Distributory	NPV (Ridge)	1750	Sonipat	Gohana	14.11.2021
23	Panipat to Bhandari Road	NPV(TP)	2500	Panipat	Panipat	17.11.2021
24	Madlauda Minor RD 0 to 20 L/R	CA(TP)	2135	Panipat	Panipat	17.11.2021
25	Drain No.2 Bajida Distributary Pull	NPV(Ridge)	2500	Panipat	Panipat	17.11.2021

S. No.	Name of Site	Activity	Plants	Division	Range	Date
26	Hansi Branch RD 30 to 40 L/R	NPV(TP)	10000	Panipat	Panipat	17.11.2021
27	Naultha Minor	NPV(TP)	1000	Panipat	Panipat	18.11.2021
28	Ahulana Minor RD 7 to 28 L&R	NPV(TP)	2500	Panipat	Panipat	18.11.2021
29	Jattal Drain	CA(TP)	1000	Panipat	Panipat	18.11.2021
30	Old Badshai	CA(TP)	2500	Panipat	Panipat	18.11.2021
31	Bapoli to Dadola Road	NPV(TP)	1000	Panipat	Samalkha	19.11.2021
32	Bapoli to Nimbri Road	NPV(TP)	2000	Panipat	Bapoli	19.11.2021
33	Beholi to Passina Road	NPV(TP)	2000	Panipat	Samalkha	19.11.2021
34	Drain No. 2 RD 80 to 202 (Village Babail to Village Khojkipur)	CA(TP)	7800	Panipat	Samalkha	19.11.2021
35	Drain No. 2 RD 80 to 105	NPV(Ridge)	2600	Panipat	Samalkha	19.11.2021
36	Drain No. 2 L&R Side RD 80-105	CA(TP)	5500	Panipat	Samalkha	19.11.2021
37	Mandi to Titana Road	NPV(TP)	500	Panipat	Samalkha	20.11.2021
38	Drain No. 2 RD 150 to 187	CA(TP)	9750	Panipat	Panipat	20.11.2021
39	Bapoli Drain 2; 125 to 135	CA(TP)	1550	Panipat	Samalkha	20.11.2021
40	Samalkha Distributory/ Samalkha Minor	NPV(TP)	500	Panipat	Samalkha	20.11.2021
41	Samalkha to Narayana Road	NPV(TP)	1000	Panipat	Samalkha	19.11.2021
42	Madana Chhochhi Barhana Road	NPV (Ridge)	3000	Jhajjar	Jhajjar	05.12.2021
43	Dubaldhan Minor	NPV(TP)	1250	Jhajjar	Jhajjar	05.12.2021
44	Jahangirpur Minor	NPV(TP)	1250	Jhajjar	Jhajjar	05.12.2021
45	Jhanswa to Jharli Road km 0 to 4 L&R	NPV(TP)	1500	Jhajjar	Matanhail	06.12.2021
46	Sajhajpur Village	NPV(Ridge)	17000	Jhajjhar	Matanhail	06.12.2021
47	Dhansa Minor RD5 To 25 L/R	NPV(TP)	2750	Jhajjar	B_garh	07.12.2021
48	Ismaila Distibutory RD-6 to Tail L/R	NPV (Ridge)	1650	Jhajjar	B_garh	07.12.2021
49	Delhi Branch R/Side	NPV (Ridge)	20000	Karnal	Karnal	24.11.2021

S. No.	Name of Site	Activity	Plants	Division	Range	Date
50	Kunjpura-2-Sarfabad Majra Road L/R	NPV(TP)	1000	Karnal	Karnal	25.11.2021
51	Indri Escape L/R	NPV(TP)	12500	Karnal	Indri	25.11.2021
52	RF Bassi	NPV (Ridge)	6000	Karnal	Assandh	26.11.2021
53	Salwan to Risalwa Road	NPV(TP)	1250	Karnal	Assandh	26.11.2021
54	RF Bassi	CA(TP)	12380	Karnal	Assandh	26.11.2021
55	Indri Drain Karnal, Assandh Road to WJC	CA(TP)	13550	Karnal	Assandh	27.11.2021
56	Karnal to Hansi Road	NPV(TP)	2000	Karnal	Assandh	27.11.2021
57	Padha to Alawla Road	NPV(TP)	1250	Karnal	Assandh	27.11.2021
58	Asandh to Salwan Road	NPV(TP)	3000	Karnal	Assandh	27.11.2021
59	Sarasa Branch 18-20 RD	NPV (Ridge)	10000	Karnal	Indri	28.11.2021
60	Indre Escape (Rasulpur Pul to Ganjograhi pul)	NPV(TP)	10000	Karnal	Karnal	29.11.2021
61	Tail Minor	CA(TP)	3000	Karnal	Assandh	30.11.2021
62	WJC & Refinery Channel	CA(TP)	7436	Karnal	Karnal	30.11.2021
63	Munak Subminor	CA(TP)	2000	Karnal	Karnal	30.11.2021
64	Gudha-Begumpur-Dadlana Minor	CA(TP)	2500	Karnal	Karnal	30.11.2021
65	Shambhali to Ramana Road L&R	NPV(TP)	2000	Karnal	Karnal	01.12.2021
66	Bharo Bhaini to Sukhpura Road L&R Side	NPV(TP)	750	Rohtak	Meham	01.12.2021
67	Sisar to Bhaini Maharajpur Via Bharo Bhaini L&R Side	NPV(TP)	750	Rohtak	Meham	01.12.2021
68	Behlba to Sisar L&R Side	NPV(TP)	2000	Rohtak	Meham	01.12.2021
69	Madina to Nidana Road L&R Side	NPV(TP)	1000	Rohtak	Meham	01.12.2021
70	Nidana to Bahu Road L&R side	NPV(TP)	750	Rohtak	Meham	01.12.2021
71	BSB Canal L/side	NPV(TP)	2500	Rohtak	Meham	01.12.2021
72	BSB Canal R/Side	NPV (Ridge)	1980	Rohtak	Meham	01.12.2021

S. No.	Name of Site	Activity	Plants	Division	Range	Date
73	Shimli to Bhambheva Road	NPV(TP)	750	Rohtak	Rohtak	02.12.2021
74	Rohtak South Bypass to Old Sugar Mill Road	NPV(TP)	1250	Rohtak	Rohtak	02.12.2021
75	DJ Railway line near Sampla Station	NPV(TP)	2500	Rohtak	Rohtak	02.12.2021
76	Rohtak to Delhi Railway Line	NPV (Ridge)	495	Rohtak	Rohtak	02.12.2021

Non Plantation Sites:

The table below shows all non-plantation activities (Fencing, Building and Soil & Moisture Conservation) evaluated in the Central Circle covering five divisions of Jhajjar, Karnal, Panipat, Rohtak and Sonipat.

S. No.	Name of Site	Division	Range	Date Evaluated
Building Works				
1	Munak Nursery	Karnal	Karnal	24.11.2021
2	HSIID Sec-16	Jhajjhar	B_garh	06.12.2021
3	Forester Quarter	Jhajjhar	Matanhail	07.12.2021

Annexure 8: Sites Evaluated in North Circle

Plantation Sites:

The table below shows all plantation activities evaluated (Compensatory Afforestation and Net Present Value) in the Central Circle covering five divisions.

S. No.	Name of Site	Activity	Plants	Division	Range	Date
1	Chhapper Adhoya Road km 7 to 9 L/Side	CA (TP)	60	Yamuna Nagar	Jagadhri	14.11.2021
2	Ibrahimpur PFC-1	NPV (TP)	2500	Yamuna Nagar	Chhachhrauli	14.11.2021
3	Chhachhrauli RFC II	NPV (TP)	2500	Yamuna Nagar	Chhachhrauli	15.11.2021
4	WJC Road 128 to 138 R/Side	NPV(TP)	1450	Yamuna Nagar	Jagadhri	17.11.2021
5	Chaitang Drain (Bapouli Bridge to SK Road Bridge)	NPV(TP)	2500	Yamuna Nagar	Jagadhri	17.11.2021
6	Sugh PF	CA (TP)	64	Yamuna Nagar	Jagadhri	17.11.2021
7	GT Road km 181-190 L&R	NPV(TP)	5000	Kurukshetra	Thanesar	18.11.2021
8	Sharifgarh to Kharidwa Road km 0-8 L&R	NPV(TP)	1250	Kurukshetra	Thanesar	18.11.2021
9	Barara Road km 0.2 & 2.5 to 5R/Side	CA(TP)	2500	Kurukshetra	Thanesar	19.11.2021
10	Barara Road km 1-3 (L-Side)	CA (SP ridge)	2640	Kurukshetra	Thanesar	19.11.2021
11	Fire Line Sonti RF	NPV(TP)	3500	Kurukshetra	Thanesar	19.11.2021
12	Mukarpur, Bodla, Charpura Road	NPV(TP)	1500	Kurukshetra	Thanesar	19.11.2021
13	GT Road Km 171-181 L&R	NPV(TP)	3750	Kurukshetra	Thanesar	19.11.2021
14	WJC RD 152-159 R/Side, Old Service Road+ WJC RD 145-155 L/Side	NPV(TP)	4000	Kurukshetra	Thanesar	20.11.2021
15	Malikpur-Kanthala-Bachki Road km 0-7 (L&R)	NPV(TP)	1250	Kurukshetra	Pehowa	20.11.2021
16	Sarsa Minor RD 0 TO Tail L&R	NPV(TP)	1500	Kurukshetra	Pehowa	22.11.2021
17	Thana- Mangna-Helwa Road km 0-6 (L&R)	NPV(TP)	1500	Kurukshetra	Pehowa	22.11.2021

S. No.	Name of Site	Activity	Plants	Division	Range	Date
18	Mangna- Dhulgarh Road Km 0.1.8 (L&R)	NPV(TP)	750	Kurukshetra	Pehowa	22.11.2021
19	Begpur-Rasulpur-Madanpur Road km 0-5 (L&R)	NPV(TP)	1500	Kurukshetra	Pehowa	22.11.2021
20	Garhi Singha to Sarsa Road km 0-2 (L&R)	NPV(TP)	500	Kurukshetra	Pehowa	22.11.2021
21	Bachki-Mandi-Surajgarh Road km 0-12 (L&R)	NPV(TP)	2500	Kurukshetra	Pehowa	23.11.2021
22	Tikari-Jurasi Road km 0.5 L&R	NPV(TP)	1000	Kurukshetra	Pehowa	23.11.2021
23	Tyukar Minor RD 5 to 30 (L&R) (Bodha to tail)	NPV(TP)	3250	Kurukshetra	Pehowa	23.11.2021
24	Adhoya-Rudki Road Km 0-5 (L&R)	NPV(TP)	1000	Kurukshetra	Pehowa	23.11.2021
25	R.F. Rewar Rect No. 71,72	NPV(Ridge)	5000	Kaithal	Saraswati	25.11.2021
26	Urlana Minor RD 24-40 (L&R)	NPV(TP)	2500	Kaithal	Saraswati	25.11.2021
27	RF Kakyor Rect No-19	NPV(Ridge)	5000	Kaithal	Saraswati	25.11.2021
28	R.F. Machhrehri Rect No. 16.17	CA(native)	5000	Kaithal	Saraswati	26.11.2021
29	R.F. Papsar Rect. No. 12,13,21,22,	CA(native)	5000	Kaithal	Saraswati	26.11.2021
30	Sultania Daserpur Road Km 0-2.5 L&R	NPV(TP)	1250	Kaithal	Saraswati	26.11.2021
31	Hansi Butana RD 35-37 L&R	NPV(TP)	2500	Kaithal	Saraswati	26.11.2021
32	Bhagal Balbhera Road Km 0-4 L&R	NPV(TP)	1500	Kaithal	Saraswati	26.11.2021
33	Keorak Minor RD	CA(TP)	1000	Kaithal	Kaithal	27.11.2021
34	Batta Minor RD 3-6 L/Side	NPV(TP)	500	Kaithal	Kaithal	27.11.2021
35	Shimla to Singwal Road 0-5 (L&R)	NPV(TP)	1500	Kaithal	Kaithal	27.11.2021
36	Kolekhan, Dhundwa to Gurusar Road KM 0-6 L&R	NPV(TP)	1500	Kaithal	Kaithal	27.11.2021
37	Sirsa Branch RD 226-228 L/Side	NPV(TP)	500	Kaithal	Kaithal	27.11.2021

S. No.	Name of Site	Activity	Plants	Division	Range	Date
38	RF Siwan Rectangle 361.362.401.402	CA(TP)	12914	Kaithal	Kaithal	29.11.2021
40	Khanori Minor RD Baba Ladana Road to tail L/Side	NPV(TP)	1500	Kaithal	Kaithal	29.11.2021
41	Dhand Pundri Road K.M. 6-10 L&R	NPV (TP)	1400	Kaithal	Pundri	29.11.2021
42	Ambala Hisar Road (Bye Pass Kaithal) km 84.1-88.5 (L&R)	NPV (TP)	700	Kaithal	Pundri	29.11.2021
43	Bhana Songal Road km 0-5 (L&R)	NPV (TP)	1000	Kaithal	Pundri	29.11.2021
44	Manakpur, NH-65 (New NH-152) , Km. 0-0.800 L/R Side & Km. 2-3.500 L/R Side & 3.500 to 4.500 R/Side	NPV (TP)	2500	Ambala	Ambala	30.11.2021
45	Balana, NH-65 (New NH-152) , Km. 10.400-13.400 L/R Side	NPV (TP)	1250	Ambala	Ambala	01.12.2021
46	Balana, NH-65 (New NH-152) , Km. 13.400-22.800 L/R Side	NPV (TP)	1250	Ambala	Ambala	01.12.2021
47	Naggal, NH-65 (New NH-152) , Km. 22.800-25.800 L/R Side	NPV (TP)	1250	Ambala	Ambala	01.12.2021
48	Barara, S. S Road Km 47-50 L/R Side Ugala-Buhawa Road Km 0-tail, 41-50	NPV (TP)	2000	Ambala	Saha	02.12.2021
49	Barara, Adhoya Chhapar Road L&R Side	NPV (TP)	1000	Ambala	Saha	02.12.2021
50	Dhanora, S.S Road Km, 20-33	NPV (TP)	2000	Ambala	Saha	02.12.2021
51	Kathe Majra Sec 4&5	CA (TP)	25500	Ambala	Naraingarh	03.12.2021 & 04.12.2021
52	Kathe Majra Sec 4&5	CA (TP)	12000	Ambala	Naraingarh	04.12.2021 & 05.12.2021

S. No.	Name of Site	Activity	Plants	Division	Range	Date
53	Kathe Majra Sec 4&5	CA (SP ridge)	4500	Ambala	Naraingarh	04.12.2021 & 05.12.2021
54	Jharshella PF	CA (SP ridge)	4000	Ambala	Naraingarh	05.12.2021 & 06.12.2021
55	Jharshella P.F Sec 4&5	CA (TP)	25000	Ambala	Naraingarh	06.12.2021
56	Kherki Manakpur Sec 4&5	CA (TP)	3000	Ambala	Naraingarh	07.12.2021
57	NH 344 KM 137 to 139 L&R	NPV(TP)	1250	Ambala	Naraingarh	07.12.2021
58	Hamidpur RF	CA (TP)	15000	Ambala	Naraingarh	08.12.2021
59	RF C-51 Bhoj Riapura	CA (TP)	2000	Morni Pinjore	Raipur Rani	11.12.2021
60	RF C-51 Bhoj Riapura	CA (SP)	10000	Morni Pinjore	Raipur Rani	11.12.2021
61	RF C-27 Bhoj Riapura	CA (TP)	2000	Morni Pinjore	Raipur Rani	13.12.2021
62	RF C-27 Bhoj Riapura	CA (SP)	10000	Morni Pinjore	Raipur Rani	13.12.2021
63	RF C-42 Bhoj Riapura	CA (TP)	2000	Morni Pinjore	Raipur Rani	13.12.2021
64	RF C-42 Bhoj Riapura	CA (SP)	10000	Morni Pinjore	Raipur Rani	13.12.2021
65	RF C-5 Bhoj Riapura	CA (SP)	20000	Morni Pinjore	Raipur Rani	14.12.2021
66	RF C-5 Bhoj Riapura	CA (TP)	2000	Morni Pinjore	Raipur Rani	14.12.2021
67	RF C-56 Plasra	CA (TP)	1000	Morni Pinjore	Raipur Rani	15.12.2021
68	RF C-56 Plasra	CA (SP)	20000	Morni Pinjore	Raipur Rani	15.12.2021
69	RF C-161 Dabsu	CA (TP)	3000	Morni Pinjore	Raipur Rani	16.12.2021
70	RF C-161 Dabsu	CA (SP)	20000	Morni Pinjore	Raipur Rani	16.12.2021
71	RF C-58 Plasra	CA (TP)	7000	Morni Pinjore	Raipur Rani	17.12.2021
72	RF C-58 Plasra	CA (SP)	5000	Morni Pinjore	Raipur Rani	17.12.2021
73	Thandog to Himachal Bondary 0-8 KM	NPV(TP)	5000	Morni Pinjore	Morni	19.12.2021
74	C-215	NPV (ecorestoration)	5000	Morni Pinjore	Morni	19.12.2021
75	Toran Bhawana Road to Bagharani	NPV(TP)	1250	Morni Pinjore	Pinjore	21.12.2021
76	NH-7 (PKL to Barwala) KM	NPV(TP)	5125	Morni Pinjore	Panchkula	21.12.2021
77	R-71 C-7	CA (SP)	1390	Morni Pinjore	Kalka	22.12.2021
78	Kona Tanda Link Road	NPV(TP)	1250	Morni Pinjore	Kalka	22.12.2021
79	RF C-81 Balauti	CA (TP)	10000	Morni Pinjore	Panchkula	24.12.2021
80	RF C-81 Balauti	CA (SP)	20000	Morni Pinjore	Panchkula	24.12.2021

Non-Plantation Sites

The table below shows all non-plantation activities (Fencing, Building and Soil & Moisture Conservation) evaluated in the North Circle covering five divisions.

S. No.	Name of Site	Division	Range	Date
Fencing				
1	Jharshella PF Sec 4&5	Ambala	Naraingarh	07.11.2021
2	Mankpur P.F	Ambala	Naraingarh	08.11.2021
3	Tibri R.F.	Yamuna Nagar	Sadhaura	13.11.2021
4	Shahabad Barara Road km 0-2	Kurukshetra	Thanesar	19.11.2021
5	Hansi Butana RD 35-37 L&R	Kaithal	Saraswati	26.11.2021
6	RF Siwan Rectangle No. 361.362.401.402	Kaithal	Kaithal	28.11.2021
7	Kathe Majra Sec 4&5	Ambala	Naraingarh	05.12.2021
8	NH-7 Panchkula to Barwala road KM 15-22	Morni Pinjore	Panchkula	23.12.2021
Building Works				
1	S.B Pur	Yamuna Nagar	Sadhaura	12.11.2021
2	Forester Quarter at Chhachrauli	Yamuna Nagar	Chachhrauli	15 .11.2021
3	Range Forest Office Complex Jagadhri	Yamuna Nagar	Jagadhri	17.11.2021
Soil & Moisture Conservation				
1	Dhanoura Sec 4&5 (Sunderiwala nala)	Yamuna Nagar	Sadhaura	13.11.2021
2	Rampur Gainda RF (Kans walla khala)	Yamuna Nagar	Sadhaura	13.11.2021
3	Dhanoura Sec 4&5	Yamuna Nagar	Sadhaura	13.11.2021
4	Cement Concrete Stud	Yamuna Nagar	Sadhaura	13 .11.2021
5	Chicken Main Khol P.F	Yamuna Nagar	Chhachhrauli	14.11.2021
6	Main Khol RF	Yamuna Nagar	Chhachhrauli	14.11.2021
7	Main Khal (Yusae Dera)	Yamuna Nagar	Chhachhrauli	14.11.2021
8	Chicken Main Khol P.F	Yamuna Nagar	Chhachhrauli	14.11.2021
9	Chicken main Khol PF	Yamuna Nagar	Chhachhrauli	14.11.2021
10	Soom Nadi Ganouli RF	Yamuna Nagar	Chhachhrauli	14.11.2021
11	Chorghati Main Khali chicken P.F	Yamuna Nagar	Chhachhrauli	15.11.2021
12	Chandsot Dunga Khala (Part) II	Yamuna Nagar	Chachhrauli	15.11.2021
13	Bir Tapu RF. Yamuna River	Yamuna Nagar	Jagadhri	16.11.2021

S. No.	Name of Site	Division	Range	Date
14	Kathe Majra SEC 4&5 area	Ambala	Naraingarh	03.12.2021
15	Ujjali Nadi	Ambala	Naraingarh	04.12.2021
16	Jharshella PF Sec 4&5	Ambala	Naraingarh	06.12.2021
17	Markanda Area PF area	Ambala	Naraingarh	07.12.2021
18	Markanda River (Jharshella)	Ambala	Naraingarh	07.12.2021
19	Kadhai Wala Khala	Morni Pinjore	Raipur Rani	14.12.2021
20	R-71 C-11 Toran wala Choe	Morni Pinjore	Kalka	14.12.2021
21	No2 Kathi Mohmal Choe	Morni Pinjore	Morni	20.12.2021
22	Toran Wala Choe CSMS	Morni Pinjore	Kalka	22.12.2021
23	Kathi Mehmal Choe (CSMS)	Morni Pinjore	Morni	22.12.2021
24	Kathi Mehmal Choe CWS	Morni Pinjore	Kalka	22.12.2021
25	R-71C-11 Devi wala Choe	Morni Pinjore	Kalka	24.12.2021
26	Toran Wala Choe CSMS WCS	Morni Pinjore	Kalka	24.12.2021

Annexure 9: Sites Evaluated in West Circle

Plantation Sites:

The table below shows all plantation activities evaluated (Compensatory Afforestation and Net Present Value) in the West Circle covering all six divisions.

S. No.	Name of Site	Activity	Plants	Division	Range	Date
1	Barwala Distributory	NPV(TP)	1250	Hisar	Hisar	15.12.2021
2	Sarsod Distributory	NPV(TP)	1000	Hisar	Hisar	15.12.2021
3	Surbura Minor	NPV(TP)	3000	Hisar	Hisar	15.12.2021
4	Chikenwas to Thaska Road	NPV(TP)	1200	Hisar	Adampur	16.12.2021
5	Choudhariwali to Ber Road	NPV(TP)	800	Hisar	Adampur	16.12.2021
6	Choudhariwali to Jhansal Road	NPV(TP)	800	Hisar	Adampur	16.12.2021
7	Hisar Major 275-301	CA(TP)	27000	Hisar	Adampur	16.12.2021
8	Nangthala - Shayamsukh KM 0 -4 L/R	NPV(TP)	1500	Hisar	Adampur	16.12.2021
9	Hisar Major Dist 0-32	CA(TP)	13500	Hisar	Hansi	17.12.2021
10	Hisar Major Dist 32-74	CA(TP)	13500	Hisar	Hansi	17.12.2021
11	Jind Bhiwani Road	NPV(TP)	1500	Hisar	Hansi	17.12.2021
12	Sultanpur Kanwari Road	NPV(TP)	2000	Hisar	Hansi	18.12.2021
13	Bapora-Devsar-Malwas Road Km 0-5 L&R	NPV(TP)	2500	Bhiwani	Bhiwani	21.12.2021
14	Bapora-Dinod-Bajina Road Km 0-8 L/R	NPV(TP)	2750	Bhiwani	Bhiwani	21.12.2021
15	Dadri-Bhiwani Road Km 16-27 L/R	NPV(TP)	2500	Bhiwani	Bhiwani	21.12.2021
16	Khark - Sai Rewari Road Km 0-5 L/R	NPV(TP)	2000	Bhiwani	Bhiwani	21.12.2021
17	Jitwanbas - Dhani Mahu Road Km 0 to 6 L&R	NPV(TP)	1500	Bhiwani	Bhiwani	22.12.2021
18	Kairu Sungarpur Road Km 0-8	CA(TP)	890	Bhiwani	Bhiwani	22.12.2021
19	Simli Dhani Mahu Road Km 0-6	NPV(TP)	1500	Bhiwani	Bhiwani	22.12.2021
20	Nangal-Sehar Road 0-4 KM	NPV(TP)	2500	Bhiwani	Loharu	22.12.2021

S. No.	Name of Site	Activity	Plants	Division	Range	Date
21	Bisalwas-Nandha Road 0-4 KM	NPV(TP)	1250	Bhiwani	Loharu	23.12.2021
22	Jhumpa Distributory Rd 35-70 L&R	CA(TP)	8450	Bhiwani	Loharu	23.12.2021
23	Loharu - Hazampur Road 0-4 Km	NPV(TP)	1250	Bhiwani	Loharu	23.12.2021
24	Siwani- Singhani Road Km 25-28 L&R	NPV(TP)	1250	Bhiwani	Tosham	24.12.2021
25	Tosham Siwani Road KM 5-16 L/R	NPV(TP)	6250	Bhiwani	Tosham	24.12.2021
26	Gawar Minor RD 0-12 L&R Side	NPV(TP)	1000	Bhiwani	Siwani	25.12.2021
27	Gurera to Lilas KM 0 to 6 L&R Side	NPV(TP)	2500	Bhiwani	Siwani	26.12.2021
28	NH-52 to Dhani Silewali Road KM 0-6 L&R	NPV(TP)	1000	Bhiwani	Siwani	26.12.2021
29	Siwani Minor RD 30 to 67 L&R Side	NPV(TP)	1250	Bhiwani	Siwani	26.12.2021
30	Bibipur to Phokher Kheri	NPV(TP)	1500	Jind	Jind	29.12.2021
31	Ghimana to Kinana Road	NPV(TP)	1000	Jind	Jind	29.12.2021
32	Kinana to Shamlo Khurd	NPV(TP)	1500	Jind	Jind	29.12.2021
33	Railway Line 93-104	CA(TP)	9000	Jind	Jind	29.12.2021
34	Jind New Bypass (Khokhari pul to Safidon road Pul)	NPV(TP)	2500	Jind	Jind	30.12.2021
35	Jind New Beypass (Safidon Road Pul to Gohana road Pul)	NPV(TP)	2500	Jind	Jind	30.12.2021
36	Uchana to Alipura Vaya: Lodhar-Kalyat Road Km. 8-14 L/R	CA(TP)	2500	Jind	Narwana	30.12.2021
37	D.L Road 264-269	NPV(TP)	3500	Jind	Narwana	30.12.2021
38	D.L Road 238-245	NPV(TP)	5250	Jind	Narwana	31.12.2021
39	D.L Road 246-253	NPV(TP)	4750	Jind	Narwana	31.12.2021
40	D.L Road 256-258	NPV(Ridge)	1650	Jind	Narwana	31.12.2021
41	Ashand to Panipat Road Km 33-33 1/2	CA(TP)	1788	Jind	Safidon	01.01.2022
42	Dhatrath to Khunga Road KM 0-3	NPV(TP)	1150	Jind	Safidon	01.01.2022
43	Jind No. 1 Mainor 25 to 45	NPV(TP)	750	Jind	Safidon	01.01.2022
44	Khanda Mainor RD 0 to 12	NPV(TP)	750	Jind	Safidon	01.01.2022

S. No.	Name of Site	Activity	Plants	Division	Range	Date
45	Paju Mainor RD 0 to 12	NPV(TP)	500	Jind	Safidon	01.01.2022
46	Rampura Notoad Mainor RD 0 to Hanis Branch	NPV(Ridge)	1320	Jind	Safidon	01.01.2022
47	Dhatrath to Mandi Road KM 0-3	NPV(TP)	1500	Jind	Safidon	01.01.2022
48	Bagru to Mal Siwanmal Road Km. 0-4 L&R	CA(TP)	1190	Jind	Safidon	02.01.2022
49	Budha Khera Sakh Mainor RD Bhadurgarh Shamshan Ghat to Tail	NPV(Ridge)	990	Jind	Safidon	02.01.2022
50	Gangoli to Bhartanas Road Km 0-5 L&R	CA(TP)	870	Jind	Safidon	02.01.2022
51	Hatt to Rojla Road KM0-3L&R	CA(TP)	540	Jind	Safidon	02.01.2022
52	Singhana Radd Mainor RD 0 to 14	NPV(TP)	750	Jind	Safidon	02.01.2022
53	Singhana to Muana Road KM 0-4	NPV(TP)	750	Jind	Safidon	02.01.2022
54	Badalgarh Distributory RD 30 to 70 L/R	NPV(TP)	1750	Fatehabad	Fatehabad	05.01.2022
55	Breta Drain 0-10	NPV(TP)	2500	Fatehabad	Fatehabad	05.01.2022
56	Breta Drain RD 10 to 28 L/R	NPV(TP)	2250	Fatehabad	Fatehabad	05.01.2022
57	BMB Canal 110-134	NPV(TP)	3500	Fatehabad	Fatehabad	06.01.2022
58	BMB Canal 135-167	NPV(TP)	3500	Fatehabad	Fatehabad	06.01.2022
59	Jandwala to Malhar Road	NPV(TP)	1500	Fatehabad	Fatehabad	06.01.2022
60	Ratia Hans Rattankhera Tams Road	NPV(TP)	1000	Fatehabad	Fatehabad	06.01.2022
61	Ratia to Alikam Road	NPV(TP)	1350	Fatehabad	Fatehabad	06.01.2022
62	Ratia to Fatehabad Road	NPV(TP)	500	Fatehabad	Fatehabad	06.01.2022
63	Badopal to MP Rohi Road	NPV(TP)	1250	Fatehabad	Fatehabad	07.01.2022
64	Fatehabad Branch	NPV(TP)	2750	Fatehabad	Fatehabad	07.01.2022
65	Jhalnia to MP Roi Road	NPV(TP)	1650	Fatehabad	Fatehabad	07.01.2022
66	Kharkheri to Bhattu Road	NPV(TP)	2250	Fatehabad	Fatehabad	07.01.2022

S. No.	Name of Site	Activity	Plants	Division	Range	Date
67	Ratangarh to Pilchiyan 0-8	NPV(TP)	1250	Fatehabad	Fatehabad	07.01.2022
68	Ratangarh to Pilchiyan 8-16	NPV(TP)	1750	Fatehabad	Fatehabad	07.01.2022
69	Sirsa Major Distributory	CA(TP)	3005	Fatehabad	Fatehabad	07.01.2022
70	Delhi Bathinda Railway line Km 190 to 199 L/R	CA(TP)	31750	Fatehabad	Tohana	08.01.2022
71	Jakhal Hisar Railway Line km 20.9 to 22 & Yard L/R	CA(TP)	7500	Fatehabad	Tohana	08.01.2022
72	Jakhal Hisar Railway line km 22 to 30 L/R	CA(TP)	16000	Fatehabad	Tohana	08.01.2022
73	Bhuna to Tohana Road 0-4	NPV(TP)	1250	Fatehabad	Tohana	09.01.2022
74	Bhuna to Tohana Road 4-11	NPV(TP)	1250	Fatehabad	Tohana	09.01.2022
75	Chandrawal Minor	NPV(TP)	5000	Fatehabad	Tohana	09.01.2022
76	Fatehabad to Bhuna Road	NPV(TP)	3000	Fatehabad	Tohana	09.01.2022
77	Kusumbhi Minor RD. 50-70 L&R & Rangoi Nala RD. R.B.Line to Banmadori Nehar	NPV(TP)	9000	Sirsa	Sirsa	11.01.2022
78	Old Right Ghanghar Bandh	NPV(TP)	12500	Sirsa	Rania	12.01.2022
79	Ranga Minor	NPV(TP)	3250	Sirsa	Kalanwali	13.01.2022
80	BMB (Bhakhra Main Branch) RD 325-356 L/R	CA(TP)	17000	Sirsa	Dabawali	14.01.2022
81	BMB (Bhakhra Main Branch) RD 356-397 L/R	CA(TP)	15000	Sirsa	Dabawali	14.01.2022
82	Dadri Loharu Road 16-20	NPV(TP)	1000	Charkhi Dadri	Badhra	16.01.2022
83	Dadri Loharu Road 20-32	NPV(TP)	3750	Charkhi Dadri	Badhra	16.01.2022
84	Jui Satnali Road	NPV(TP)	2000	Charkhi Dadri	Badhra	16.01.2022
85	Atela Village Arawali Hill	NPV (ecorestoration)	9000	Charkhi Dadri	Badhra	16.01.2022

Non Plantation Sites:

The table below shows all non-plantation activities (Fencing, Building and Soil & Moisture Conservation) evaluated in the West Circle covering four divisions.

S. No.	Name of Site	Division	Range	Date Evaluated
Fencing				
1	Hisar Major Distry Butry RD 118-150	Hisar	Hisar	16.12.2021
2	Hisar Major Disty. RD 32 to 74 L/R Side	Hisar	Narnaund	17.12.2021
3	Hisar Major Disty. RD 275-301 L&R	Hisar	Adampur	17.12.2021
4	Siwani Singhani Rd Km 36-42 L&R	Bhiwani	Loharu	22.12.2021
5	Hisar Miran Rd Km 30-37 L&R	Bhiwani	Siwani	25.12.2021
6	Jind New Beypass (Safidon Road Pul to Gohana road Pul)	Jind	Jind	29.12.2021
7	DJ Railway line km 93/2 to 104/21 L&R	Jind	Jind	30.12.2021
8	BMB (Bhakhra Main Branch) RD 325-356	Sirsa	Dabwali	14.01.2022
9	BMB (Bhakhra Main Branch) RD 356-397	Sirsa	Dabwali	14.01.2022
Building Works				
1	Toilet, Forest Complex Hisar	Hisar	Hisar	15.12.2021
2	Forester Quarter, Hisar Major Pali Nursery	Hisar	Hansi	18.12.2021
3	Range Forest Office, Daulatpur Khera Nty (Canal Colony)	Sirsa	Kalanwali	13.01.2022
4	Block Forest Office, Range Complex, Rania	Sirsa	Rania	12.01.2022
5	Range Officer Residence, Forest Complex Charkhi Dadri	Charkhi Dadri	Charkhi Dadri	16.01.2022
6	Forester Quarter, Forest Complex Charkhi Dadri	Charkhi Dadri	Charkhi Dadri	17.01.2022
7	Range Office Badhra, Forest Complex Badhra	Charkhi Dadri	Badhra	17.01.2022

Annexure 10: Sites Evaluated in South Circle

Plantation Sites:

The table below shows all plantation activities evaluated (Compensatory Afforestation and Net Present Value) in the South Circle covering all six divisions.

S. No.	Name of Site	Activity	No. of Plants	Division	Range	Date Evaluated
1	Manesar Sec 4&5	CA(TP)	12546	Gurugram	Gurugram	25.10.2021 & 26.10.2021
2	Sikhohpur Sec.4&5	NPV(TP)	4000	Gurugram	Gurugram	26.10.2021
3	Ghata Sec.4&5	CA(TP)	10000	Gurugram	Gurugram	27.10.2021
4	Gurugram Jharsa Bundh 0-10 RD	NPV(TP)	1000	Gurugram	Gurugram	27.10.2021
5	Naurangpur Sec.4&5	NPV(TP)	2500	Gurugram	Gurugram	28.10.2021
6	RF Sarbasirpur	CA(TP)	13840	Gurugram	Hailymandi	29.10.2021
7	Salawas Link Channel	NPV(TP)	1000	Gurugram	Hailymandi	29.10.2021
8	Faridpur Minor	NPV(TP)	1375	Gurugram	Hailymandi	29.10.2021
9	Mandpura Sub Minor	NPV(TP)	3000	Gurugram	Hailymandi	29.10.2021
10	RF Rajpura Alipur	CA(TP)	2278	Faridabad	Faridabad	09.11.2021
11	Badhkal Section 4&5	CA(SP)	88000	Faridabad	Faridabad	10.11.2021
12	Yamuna Protection Bandh	NPV(TP)	8750	Faridabad	Faridabad	11.11.2021
13	Sultanpur RF	NPV(Ridge)	9240	Palwal	Palwal	17.11.2021
14	Rampur Khor Distributary, RD 75-85 L&R	NPV (TP)	750	Palwal	Palwal	18.11.2021
15	Palwal-Nuh Road, Palwal Link Drain, Km 29-30 L&R	NPV (TP)	250	Palwal	Palwal	18.11.2021
16	Katesra-Mandkol Road, Km 0-1 & Km 4-6 L&R	NPV (TP)	750	Palwal	Palwal	18.11.2021
17	Mohna-Gopikhera Palwal Road, Km 0-6 L&R	NPV (TP)	1250	Palwal	Palwal	18.11.2021

S. No.	Name of Site	Activity	No. of Plants	Division	Range	Date Evaluated
18	Hodal Dakora	NPV (TP)	2000	Palwal	Hodal	19.11.2021
19	GMD RD 27-30	NPV (TP)	1250	Palwal	Hodal	19.11.2021
20	Hasanpur Unclassed Forest	NPV(Ridge)	8500	Palwal	Hodal	19.11.2021
21	RF Salimabad	NPV (TP)	7500	Mahendragarh	Mahendragarh	24.11.2021
22	Bhandor Unchi	NPV (TP)	2500	Mahendragarh	Mahendragarh	24.11.2021
23	Thana Section 4&5	CA(TP)	1676	Mahendragarh	Narnaul	25.11.2021
24	Golwa	NPV (Ecorestoration)	12000	Mahendragarh	N. Choudhary	25.11.2021
25	Dholera to Sareli Road	NPV (TP)	1250	Mahendragarh	N. Choudhary	25.11.2021
26	Nehru Nagar App. Road & Navalpur Distributory & Khanpur App. Road	NPV (TP)	1500	Mahendragarh	Narnaul	26.11.2021
27	Panchnota Sec 4&5	CA (Trench cum Pit Method)	31140	Mahendragarh	N. Choudhary	26.11.2021
28	Nehrugarh Mode to Shyamnagar km 3 to 6 L&R	NPV (TP)	1250	Rewari	Nahar	01.12.2021
29	Lula Ahir to Tumna RD Km 0 to 3 L&R	NPV (TP)	1250	Rewari	Nahar	01.12.2021
30	Nikhri Distributory. Km 0-3	CA(TP)	110	Rewari	Rewari	02.12.2021
31	Nikhri Bhatsana Jarthal NRP bypaass Road	NPV (TP)	3500	Rewari	Rewari	02.12.2021
32	Kakoria NH-71 Ghurkawas Nayagaon	NPV (TP)	2500	Rewari	Rewari	02.12.2021
33	Pali	CA(TP)	21720	Rewari	Rewari	02.12.2021
34	Nangal Sahbajpur-Bidawas Rd. Km 0-2 L&R	NPV (TP)	950	Rewari	Bawal	03.12.2021
35	JLN Canal Km 42-44 L&R	NPV (TP)	2375	Rewari	Bawal	03.12.2021
36	Jarthal Dudha Majri Road	NPV (TP)	500	Rewari	Bawal	03.12.2021

S. No.	Name of Site	Activity	No. of Plants	Division	Range	Date Evaluated
37	Jarthal Basai Road Km 0-3.5 L&R	NPV (TP)	1000	Rewari	Bawal	03.12.2021
38	Nangal Mubarikpur Sec 4&5	CA(SP)	5000	Nuh (Mewat)	Firozpur Jhirka	06.12.2021
39	Mahu	CA(TP)	7951	Nuh (Mewat)	Firozpur Jhirka	07.12.2021
40	Sikrawa Gurgaon Canal	NPV(TP)	5000	Nuh (Mewat)	Punhana	07.12.2021
41	Tigaon Aravali	NPV (Ecorestoration)	4000	Nuh (Mewat)	Punhana	07.12.2021
42	Sehsola Arawali	NPV (native species)	25000	Nuh (Mewat)	Nuh	08.12.2021
43	Palla Sec 4&5	CA(Trench cum Pit)	5000	Nuh (Mewat)	Nuh	08.12.2021
44	Palla Sec 4&5	CA(TP)	10000	Nuh (Mewat)	Nuh	08.12.2021
45	Palla Sec 4&5	NPV (Ecorestoration)	6000	Nuh (Mewat)	Nuh	08.12.2021
46	Ujina Diversion Drain	NPV (TP)	7500	Nuh (Mewat)	Nuh	08.12.2021

Non Plantation Sites:

The table below shows all non-plantation activities (Fencing, Building and Soil & Moisture Conservation) evaluated in the South Circle covering four divisions.

S. No.	Name of Site	Division	Range	Date Evaluated
Fencing				
1	Sarbasirpur RF	Gurugram	Hailymandi	29.10.2021
2	Mahu Section 4 & 5	Nuh (Mewat)	Firozpur Jhirka	07.12.2021
Building Works				
1	Forest Quarter, Hailymandi Range Office	Gurugram	Hailymandi	29.10.2021
2	Forest Quarter, Forest Complex, Narnaul	Mahendragarh	Narnaul	26.11.2021
Soil & Moisture Conservation				
1	Sarbasirpur RF	Gurugram	Hailymandi	28.10.2021
2	Rojka Gujjar Surya Mandir Wala Johar	Gurugram	Sohna	30.10.2021

S. No.	Name of Site	Division	Range	Date Evaluated
3	Rojka Kankar Wala Johar	Gurugram	Sohna	30.10.2021
4	Mandawar Johar	Gurugram	Sohna	30.10.2021
5	Nangal Mubarikpur	Mewat (Nuh)	Firozpur Jhirka	06.12.2021
6	Palla	Mewat (Nuh)	Nuh	08.12.2021

Annexure 11: Sites Evaluated in Development and Wildlife Wing

Development and Wildlife Activities

Conservation and Management of Protected Areas			
S. No.	**Name of Activities**	**Actual Status of Work**	**Date of Visit/ Verification**
	A Divisional Wildlife Officer, Panchkula		
1	Purchase of Camera trapes 20 No. at Kalesar National Park and WLS		07.02.2022
2	Purchase of Rescue Vehicles with modification 10 No. for Panchkula, Rohtak, Gurugram and Hisar		07.02.2022
3	Wildlife Census Activities		07.02.2022
	B Divisional Wildlife Officer, Gurugram		
4	Construction of Guard Hut at Gurugram Forest Complex	Interior Finishing work ongoing	27.10.2021
5	Procurement of Rescue vehicle with modification 2 No.	Present at DWO office, Gurugram	27.10.2021
6	Procurement of Rescue Equipment for Rescue Team	Present at Sultanpur National Park	28.10.2021
7	Construction of IWL Office at Mahendragarh	Complete but not in use	24.11.2021
8	Construction of IWL Residence at Mahendragarh	Complete but and in use	25.11.2021
9	Construction of Boundary Wall (600 m at WLS Nahar-Part-II)	Complete	01.12.2021
10	Extension of Protection Centre (23 Acre to 40 acre=17 acre) to provide proper space to the black bucks in WLS Nahar	Complete	01.12.2021
11	Construction of Guard Hut at WLS Nahar	Complete but and in use	01.12.2021
12	Construction of IWL Office at Faridabad	Complete, roof work going on, not in use as office (being used a residence)	03.02.2022
	C Divisional Wildlife Officer, Hisar		
13	Construction of shelter Home in Partition at Deer Park, Hisar	Complete	18.12.2021
14	Construction of sub-inspector wildlife office at Chinkara Breeding Centre Kairu, Bhiwani	Under Construction	27.12.2021
15	Construction of Residence for Inspector Wildlife, Jind	Complete	03.01.2022
16	Preparation of Earthen Mound-1 No. to provide better breeding opportunity for turties in Community Reserve Kajalheri, Fatehabad	Complete	07.01.2022

	Conservation and Management of Protected Areas		
17	Construction of Water Pond 12 No.	10 Ponds	Hissar (Village Kajlia): 18.12.2021
18			Hissar (Village Malapur): 18.12.2021
19			Bhiwani: 27.12.2021
20			Jind (Village Bir Baraban): 03.01.2022
			Sirsa (Village Chakjalu): 14.01.2022
21	Setting up of Solar System at Deer Park, Hisar	NA	NA

List of Development Activities Evaluated

Activities of Development Wing				
S. No.	**Name of activity**	**Location**	**Actual Status of Work**	**Date of Visit/ Verification**
	A. Research Division, Pinjore			
1	Mtn. of Research Plots (CSO of Superior Clones of *Dalbergia Sisso* 3 Ha. (2019-20)	Pinjore	Complete	08.02.2022
2	Creation of germplasm for *Syzygium (Jamun), Emblica officinalis (Aanwla) & Psidium guajava (Amrood).* (Approved in RAG)	Pinjore	Complete	08.02.2022
3	Purchasing of Mahindra Bolero 2 No. for Research Range Pinjore and Hisar	Pinjore	Complete	08.02.2022
4	Construction of Underground Water storage Tank in Bithmara Research plot	Hisar	Complete	08.02.2022
	B. Seed Division, Pinjore			
5	Purchase of High-tech Machines for Processing & Extraction of Seeds	Pinjore	Complete	08.02.2022
6	Purchase of Bolero vehicles (2 Nos.)	Pinjore	Complete	08.02.2022
7	Construction of RO, Mist Chamber Range Office Building at Seonthi	Kurukshetra	Complete	29.01.2022
8	Establishment of 10 Nos. Mist Chamber including Hardening Chamber at Seonthi @25/- lacs each	Kurukshetra	Complete	29.01.2022
9	Maintenance of 9 Acre Eucalyptus CMA raised during 2019-20 in CAMPA Scheme @ 119258/- per acre	Kurukshetra	Complete	29.01.2022
10	Establishment of 10 Acre Eucalyptus CMA in 2020-21	Kurukshetra	9 Acre	29.01.2022
11	Installation of Tubewell at Manakpur Nursery (2019-20)	Yamuna Nagar	Complete	30.01.2022
	C. Training Division, Pinjore			
12	District Level review meeting of SHGs (1day) 5 No.	Pinjore	Complete	08.02.2022
13	Training of Trainers (3 days) 2 No.	Pinjore	Complete	08.02.2022
14	Repair of Stage of Auditorium	Pinjore	Complete	08.02.2022
15	Auditorium Floor replacement	Pinjore	Complete	08.02.2022
16	Auditorium wall repair	Pinjore	Complete	08.02.2022

Activities of Development Wing				
D. Publicity and Training Circle, Ambala				
17	District Level workshop cum training camps of Farmers/Villagers/ Panchayats/School Children/ SHGs	Panchkula	Evidence collected	09.02.2022
18	Publicity material: Sound systems, Electronics, Vinyl Board, Banner, Poster, Sticker, Pamphlets & other material	Panchkula	Evidence collected	09.02.2022
19	Nukkar Natak during Van Chetna Yatra : 5 in each 22 districts	Panchkula	Evidence collected	09.02.2022
20	Making of Video Spot of Six episode of one minute duration / docudrama (total 6 minute)	Panchkula	Evidence collected	09.02.2022
21	Nature exposure and education visit for school children / Nehru Yuva Kender	Panchkula	Evidence collected	09.02.2022
22	Making of DVD	Panchkula		09.02.2022

Annexure 12: Circle wise List of Species

List of 31 species planted in Central Circle

Species	Plants monitored	Plants survived	Average Height (cm)
Amaltas (Cassia fistula)	1645	1206	191.97
Arjun (Terminalia arjuna)	16050	13335	193.86
Badh (Ficus benghalensis)	15	11	150
Bakain (Melia azedarach)	3100	2540	284
Balam khira (Kigelia pinnata)	4550	4137	170.83
Beri (Ziziphus mauritiana)	300	270	220
Bottle Brush (Callistemon citrinus)	450	311	105
Cassia Samria	10	88	170.68
Chukrasia (Chukrasia tabularis)	500	330	195
Dalmoth (Vigna aconitifolia)	600	477	213.33
Eucalyptus spp	81800	64382	347.62
Guava (Psidium guajava)		81	130
Gullar (Ficus glomerata)	650	655	138.75
Gumhar (Gmelina arborea)	1750	1205	176.67
Imli (Tamarindus indica)	1500	1210	170
J.Jalebi (Pithecellobium dulce)	200	166	252.5
Jamoa (Syzygium jambos)	4650	3767	176.88
Jamun (Syzygium cumini)	3460	2949	155.06
Kachnar (Bauhinia variegata)	1850	1500	202.17
Kadam (Mitragyna parvifolia)		24	205
Kat Sangwan (Heterophragma adenophyllum)	1700	1382	141.25
Kikar (Acacia nilotica)	400	296	195.5
Lasoora (Cordia dichotoma)	400	321	162.5
Neem (Azadirachta indica)	3300	2899	187.25
P.Papri (Holoptelea integrifolia)	28986	22830	166.55
Pilkhan (Ficus rumphii)	100	131	160
Pipal (Ficus religiosa)	15	53	115
Shisham (Dalbergia sissoo)	73170	59364	215.36
Silver Oak (Grevillea robusta)	600	470	190
Siris (Albizia lebbeck)	200	182	160
Toon (Toona ciliata)	600	480	60
Total	**237901**	**187078**	

List of 70 species planted in North Circle

Species	Plants monitored	Plants survived	Average Height (cm)
Aloe vera	500	0	0
Alstonia (Alstonia Scholaris)	150	210	105
Amaltas (Cassia fistula)	1106	830	104
Amla (Emblica officinalis)	37385	29364	105
Arjun (Terminalia arjuna)	39714	32230	185
Badh (Ficus benghalensis)	210	115	143
Bahera (Terminalia bellirica)	14505	11198	115
Balam kheera (Kigelia pinnata)	2101	2120	153
Bans (Dendrocalamus strictus)	11200	6584	73
Belpatra (Aegle marmelos)	1330	846	75
Bottle Brush (Callistemon citrinus)	1274	1493	198
Chir (Pinus logifolia)	1100	471	45
Chukrasia (Chukrasia tabularis)	1730	172	165
Dhak (Butea monosperma)	155	124	109
Eucalyptus spp	11500	10628	332
Flosrejni (Lagerstroemia speciosa)	730	674	
Frash (Taxarix aphyla)	9850	8517	160
Giloe (Tinospora cordifolia)	500	2	80
Gulabi Toon (Cedar sps)	431	347	100
Gullar (Ficus glomerata)	2424	1552	152
Gumhar (Gmelia arborea)	400	251	96
Haldu (Haldina cordifolia)	825	795	225
Harar (Terminalia chebula)	3595	1560	81
Harsingar (Nyctanthes arbor)	2900	2022	50
Imli (Tamarindus indica)	7105	5326	98
Inder Jau (Holarrhena pubescens)	4531	3309	75
Jamoa (Syzygium jambos)	10559	5286	145
Jamoa (Syzygium jambos) + *Jamun (Syzgium cumini)*	2635	1836	179
Jamun (Syzgium cumini)	22956	15014	147
Jamunea (Prunnus cornuta)	100	98	97
Jihgan (Lannea frandis)	200	146	61
Kachnar (Bauhinia variegata)	4084	3423	167
Kadam (Mitragyna parvifolia)	2371	2340	202
Kala Banss (Barleria prionitis)	250	211	76
Kanak champa (Pterospermum acerifolium)	1230	1189	166
Kanji (Millettia pinnata)		192	181
Kat Sangwan (Heterophragma adenophyllum)	430	42	120
Kathal (Artocapus heterophyllum)	60	0	0
Khair (Acacia catechu)	11365	7334	66
Kikar (Acacia nilotica)	500	435	58
Kusum (Schleichera oieosa)	216	183	114

Species	Plants monitored	Plants survived	Average Height (cm)
Lagostomia (Lagerstroemia speciosa)	1432	343	110
Lahsun Bel (Allium tuberosum)	300	2	32
Lasoora (Cordia dichotoma)	2591	860	120
Mahua (Madhuca longifolia)	140	31	96
Malasary (Coleum amboimicus)	146	98	82
Mango (Mangifera indica)	460	155	137
Mausalry (Mimusops elengi)	250	0	0
Moghni (Coccinia grandis)	366	238	98
Neem (Azadirachta indica)	4007	3114	158
P.Papri (Holoptelea integrifolia)	22225	18898	114
Pathar chatta (Kalnchoe pinnata)	200	35	10
Pilkhan (Ficus rumphii)	3779	2864	85
Pipal (Ficus religiosa)	315	103	165
Putran jiwa (Putranjiva roxburghii)	110	92	50
Ritha (Sapindus mukorossi)	250	112	88
Safed bansa (Adatoda vasica)	700	567	77
Safed toon (Sedar sps)	183	104	98
Saijan (Moringa oelifera)		23	55
Sambhalu (Vitex negandu)	2270	1764	69
Satawari (Asparagus racemosa)	300	105	25
Semal (Bombax ceiba)	100	85	180
Shahtoot (Morus alba)	600	584	362
Shisham (Dalbergia sissoo)	100625	81894	215
Silver Oak (Grevillea robusta)	2464	1167	199
Siris (Albizia lebbeck)	929	783	168
Tat- bhadanga (Oroxylum indicum)	4230	3086	98
Teak (Tectona grandis)	5100	5066	74
Toon (Toona ciliata)	1240	886	88
Tulsi (Ocimum tenuiflorum)	200	136	42
Total	**369973**	**281660**	

List of 32 species planted in West Circle

Species	Plants monitored	Plants survived	Average Height (cm)
Amaltas (Cassia fistula)	500	402	60
Arjun (Terminalia arjuna)	79086	65323	160
Badam Papri (Pongamia pinnata)	2325	1763	130
Badh (Ficus benghalensis)	262	105	96
Bahera (Terminalia bellirica)	1343	997	102
Bakain (Melia azedarach)	16479	12807	221
Balam khira (Kigelia pinnata)	1319	1137	178
Belpatra (Aegle marmelos)	900	650	98
Bottle Brush (Callistemon citrinus)		30	60
Guava (Psidium guajava)	60	42	100
Gullar (Ficus glomerata)	118	62	103
Imli (Tamarindus indica)	300	191	80
J.Jalebi (Pithecellobium dulce)	350	265	210
Jaal (Salvadora persica)	60	35	120
Jamoa (Syzygium jambos)	1563	1262	108
Jamun (Syzygium cumini)	25104	19755	124
Jandi (Prosopis cineraria)	390	232	103
Kachnar (Bauhinia variegata)	650	390	177
Kadam (Mitragyna parvifolia)	130	90	143
Khair (Acacia catechu)	200	134	40
Lasoora (Cordia dichotoma)	7695	5929	161
Mango (Magnifera indica)	75	45	103
Neem (Azadirachta indica)	28836	22922	174
P.Papri (Holoptelea integrifolia)	52975	43106	167
Pilkhan (Ficus rumphii)	760	584	85
Pipal (Ficus religiosa)	360	201	198
Reonja (Vachellia leucophloea)	4200	3011	45
Shahtoot (Morus alba)	5833	4108	219
Shisham (Dalbergia sissoo)	81332	65867	191
Siris (Albizia lebbeck)	3093	2347	202
Suhanyhna	100	62	190
Tunt (Morus nigara)	125	98	200
Misc	5150	3969	78
Total	**321943**	**238054**	

List of 42 species planted in South Circle

Species	Plants monitored	Plants survived	Average Height (cm)
Alstonia (Alstonia Scholaris)	100	245	116
Amaltas (Cassia fistula)	36	201	168
Amla (Emblica officinalis)		1	98
Arjun (Terminalia arjuna)	3623	771	171
B.Papri (Pongamia pinnata)	45	28	125
Badh (Ficus benghalensis)	41	268	160
Bahera (Terminalia bellirica)		3	172
Bakain (Melia azedarach)	3237	3011	205
Balam kheera (Kigelia pinnata)	1654	3809	174
Bans (Dendrocalamus strictus)	5000	357	71
Belpatra (Aegle marmelos)	100	51	134
Beri (Ziziphus mauritiana)	18731	14182	102
Bottle Brush (Callistemon citrinus)	400	9	197
Chukrasia (Chukrasia tabularis)	250	345	148
Custard Apple (Annona reticulata)	40	178	102
Dalmoth (Vigna aconitifolia)	180	0	0
Dhak (Butea monosperma)	200	554	147
Eucalyptus spp	3500	3092	209
Gullar (Ficus glomerata)	2636	255	220
Gulmohar (Delonix regia)	200	20	227
Imli (Tamarindus indica)	2263	1710	146
Israeli Babool (Acacia tortilis)	1275	3448	107
J.Jalebi (Pithecellobium dulce)	15700	12220	106
Jamun (Syzgium cumini)	2976	1029	151
Kachnar (Bauhinia variegata)	1670	43	212
Kadam (Mitragyna parvifolia)	100	46	138
Kanak champa (Pterospermum acerifolium)	100	69	262
Kat Sangwan (Heterophragma adenophyllum)	10	23	298
Khair (Acacia catechu)	35306	25612	74
Kikar (Acacia nilotica)	22482	19703	153
Lasoora (Cordia dichotoma)	3718	2478	146
Neem (Azadirachta indica)	29956	22491	185
P.Papri (Holoptelea integrifolia)	123748	95895	156
Pilkhan (Ficus rumphii)	9285	2367	147
Pipal (Ficus religiosa)	835	319	175
Ronjh (Acacia leucophloea)	42625	35274	77
Saijan (Moringa oelifera)		7	105
Semal (Bombax ceiba)		4	195
Shahtoot (Morus alba)		6	148
Shisham (Dalbergia sissoo)	21280	16448	
Silver Oak (Grevillea robusta)	600	1	98
Siris (Albizia lebbeck)	6211	2867	196

Species	Plants monitored	Plants survived	Average Height (cm)
Misc	450	0	-
Rep	300	213	-
Rep P.Papri and Shisham	250	174	-
Rep Papri and Neem	1500	1047	-
ANR	22000	22000	-
Total	**377551**	**312209**	

Annexure 13: Evaluation Formats Used

Plantation Format

a) Name of plantation site				
b) Division		**c) Forest Range**		
d) Forest Block		**e) Forest Beat**		
f) Compartment No./ Km./ RD		**g) Legal status of site**		
h) Location/GPS Coordinates	**Latitude (N)**			
	Longitude (E)			
i) Name of Component		**j) Year of Plantation**		
k) Numbers of plants planted per unit		**l) Plantation map prepared**	Yes	No
m) Area of Plantation recorded in Ha, or in other unit		**n) Actual area using GPS**		
o) Whether site selection for treatment was good?		Yes	No	

1. S. No.	**2. Species**	**3. Spacing (m)**	**4. Targets**		**5. Condition of plants**		**6. Avg. height of live plants (in cm.)**
			4.1 Physical Target (no).	**4.2 Plants planted (no)**	**5.1 Live Plants (no)**	**5.2 Dead Plants (no)**	

7. Maintenance of assets created

7.1 S. No.	**7.2 Assets**	**7.3 Status**	
		7.3.1 Well maintained	**7.3.2 Not maintained**

8. Name of Evaluator		**9. Designation of Evaluator**	
10. Date of Evaluation			

Q1. Comments on the internal monitoring:

a) What kind of reporting mechanism is put in place? Whether reports are periodically/regularly submitted?

b) Internal monitoring comments.

Q2. Whether the work site registered online at http://egreenwatch.nic.in/?

□ Yes □ No

Q3. Maintenance of records

a) Nursery journal □ Yes □ No

b) Plantation journal □ Yes □ No

c) Measurement books □ Yes □ No

Q4. Programme constraints & Limitations (for department)

a) Constraints / limitation / funds flow

b) Suggestion for management

Q5. What were the constraints /limitations faced by the project authority based on evaluator?

Q6. Suggestions for improvement

a) Whether there is any scope of improving the project output?

b) Whether the project authorities have felt any need of improving upon any particular activity on methodology?

c) Whether the people of the project area feel any need to improve any particular aspects of the project?

d) Whether the project should be continued on the same lines or some modifications are necessary

e) Any other relevant recommendation

Civil Works Format

a) Name of activity site								
b) Division				**c) Forest Range**				
d) Forest Block				**e) Forest Beat**				
f) Compartment No./ Km./ RD				**g) Legal status of site**				
h) Location/GPS Coordinates	**Latitude (N)**							
	Longitude (E)							
i) Name of Component				**j) Year of Activity**				
k) Area of Activity recorded in Ha, or in other unit				**l) Actual area using GPS of activity taken**				
m) Activity plan prepared	Yes		No		NA			
o) Whether site selection for treatment was good?	Yes				No			
1. S. No	**2. Building ID**	**3. Building Type**	**4. Evaluations (Tick)**	**4.1 Site Location**	**4.2 Serving intended purpose**	**4.3 Structurally sound and free of cracks**	**4.4 Free of dampness and leakage**	**4.5 Overall finish and look**
			Good					
			Fair					
			Poor					
			Good					
			Fair					
			Poor					

5. Maintenance of assets created

5.1 S. No.	**5.2 Assets**	**5.3 Status**	
		5.3.1 Well maintained	**5.3.2 Not maintained**

6. Name of Evaluator		**7. Designation of Evaluator**	
8. Date of Evaluation			

Q1. Comments on the internal monitoring:

a) What kind of reporting mechanism is put in place? Whether reports are periodically/regularly submitted?

b) Internal monitoring comments.

Q2. Whether the work site registered online at http://egreenwatch.nic.in/?

□ Yes □ No

Q3. Maintenance of records

a) Measurement books □ Yes □ No

Q4. Programme constraints & Limitations (for department)

a) Constraints / limitation / funds flow

b) Suggestion for management

Q5. What were the constraints /limitations faced by the project authority based on evaluator?

Q6. Suggestions for improvement

a) Whether there is any scope of improving the project output?

b) Whether the project authorities have felt any need of improving upon any particular activity on methodology?

c) Whether the people of the project area feel any need to improve any particular aspects of the project?

d) Whether the project should be continued on the same lines or some modifications are necessary

e) Any other relevant recommendation

SMC Format

a) Name of activity site									
b) Division				**c) Forest Range**					
d) Forest Block				**e) Forest Beat**					
f) Compartment No./ Km./ RD				**g) Legal status of site**					
h) Location/GPS Coordinates	**Latitude (N)**								
	Longitude (E)								
i) Name of Component				**j) Year of Activity**					
h) Area of Activity recorded in Ha, or in other unit				**i) Actual area using GPS of activity taken**					
j) Activity plan prepared	Yes	No	NA						
k) Whether site selection for treatment was good?	Yes		No						
1. S. N	**2. DRSM/ Crate/WHS No.**	**3. Size in Measurement Book**				**4. Actual Size**				**5. % Variation (+/-)**
		3.1 L	**3.2 W**	**3.3 D**	**3.4 Contain**	**4.1 L**	**4.2 W**	**4.3 D**	**4.4 Contain**	
6. Maintenance of assets created										
6.1 S. No.		**6.2 Assets**				**6.3 Status**				
						6.3.1 Well maintained		**6.3.2 Not maintained**		
7. Name of Evaluator						**8. Designation of Evaluator**				
9. Date of Evaluation										

Q1. Comments on the internal monitoring:

a) What kind of reporting mechanism is put in place? Whether reports are periodically/regularly submitted?

b) Internal monitoring comments.

Q2. Whether the work site registered online at http://egreenwatch.nic.in/?

□ Yes □ No

Q3. Maintenance of records

a) Measurement books □ Yes □ No

Q4. Programme constraints & Limitations (for department)

a) Constraints / limitation / funds flow

b) Suggestion for management

Q5. What were the constraints /limitations faced by the project authority based on evaluator?

Q6. Suggestions for improvement

a) Whether there is any scope of improving the project output?

b) Whether the project authorities have felt any need of improving upon any particular activity on methodology?

c) Whether the people of the project area feel any need to improve any particular aspects of the project?

d) Whether the project should be continued on the same lines or some modifications are necessary

e) Any other relevant recommendation

Fencing Format

a) Name of activity site										
b) Division				**c) Forest Range**						
d) Forest Block				**e) Forest Beat**						
f) Compartment No./ Km./ RD				**g) Legal status of site**						
h) Location/GPS Coordinates	**Latitude (N)**									
	Longitude (E)									
i) Name of Component				**j) Year of Activity**						
k) Activity map prepared	Yes	No	NA							
VE: Very effective; ME: Moderately effective; NE: not effective										
A. Barbed wire Fence										
1. S. No.	**2. Barbed wire Fence Id / No.**	**3. Length in Measurement Book**	**4. Actual Length in field**	**5. % Variation (+/-)**	**6. Present status**		**7. Effectiveness**			
					6.1 Intact	**6.2 Worn Out**	**7.1 VE**	**7.2 ME**	**7.3 NE**	
B. Chain Link Fence										
8. S. No.	**9. Chain Link Fence Id / No.**	**10. Measurement Book**		**11. Actual Length in field**		**12. % Variation (+/-)**	**13. Present status**		**14. Effectiveness**		
		10.1 Length	**10.2 Height**	**11.1 Length**	**11.2 Height**		**13.1 Intact**	**13.2 Worn Out**	**14.1 VE**	**14.2 ME**	**14.3 NE**
15. Maintenance of assets created											
15.1 S. No.		**15.2 Assets**		**15.3 Status**							
				15.3.1 Well maintained		**15.3.2 Not maintained**					

16. Name of Evaluator		**17. Designation of Evaluator**	
18. Date of Evaluation			

Q1. Comments on the internal monitoring:

a) What kind of reporting mechanism is put in place? Whether reports are periodically/regularly submitted?

b) Internal monitoring comments.

Q2. Whether the work site registered online at http://egreenwatch.nic.in/?

□ Yes □ No

Q3. Maintenance of records

a) Measurement books □ Yes □ No

Q4. Programme constraints & Limitations (for department)

a) Constraints / limitation / funds flow

b) Suggestion for management

Q5. What were the constraints /limitations faced by the project authority based on evaluator?

Q6. Suggestions for improvement

a) Whether there is any scope of improving the project output?

b) Whether the project authorities have felt any need of improving upon any particular activity on methodology?

c) Whether the people of the project area feel any need to improve any particular aspects of the project?

d) Whether the project should be continued on the same lines or some modifications are necessary

e) Any other relevant recommendation

Annexure 14: Details of Grading Criteria

1. For Plantation Activities (for CA and NPV)

	Component	Status	Score (new)
	Plantation Activities (for CA & NPV)		
1	Physical Target achieved	Y	1
2	Plant Survival Score	86%	8
3	Species composition as per APO	Equal	2
4	KML files available	Y	1
5	Map Prepared	N	0
6	Plantation Journal	Y	1
7	Site on egreenwatch	Y	1
8	Cash book/Work Register	Y	1
9	Availability of evidences/ records for plant replacement	N	0
10	Weeding & Hoeing on site*	N	1
11	Site suitability for plantation	Y	1
	Total		17

	Plant Survival	Score
	> 90%	10
	89.99-80%	8
	79.99-70%	6
	69.99-60%	4
	Below 60%	2
	Species composition as per APO	**Score**
	Equal no. as in APO/ Increased no. of species	2
	50% of species as in APO	1
	Less than 50% species in APO	0

- Max Score: 21
- Each Yes/No will be marked as 1/0 as applicable to question
- Other criteria are listed in table

	Overall Score	Rating
	21	Excellent
	16-20	V Good
	11-15	Good
	10	Average
	9 and Below	Poor

2. For Non-Plantation Activity (Building)

	Component	Status	Score	Remarks
1	Building Status	Complete and in Use	3	
2	Site Location	G	3	
3	Serving intended purpose	G	3	
4	Structurally sound and free of cracks	G	3	
5	Free of dampness and leakage	G	3	
6	Overall finish and look	G	3	
7	Plan Prepared	Y	1	
8	Measurement Book Filled	Y	1	
9	Site on egreenwatch	Y	1	
10	Deviation from actual site	N	1	
11	Copies of estimate available	Y	1	
	Total		23	

Activity Status

	Building Status	**Score**
	Complete and in Use	3
	Complete and Not in Use	2
	Incomplete	1
	Work not started	0
	Good	3
	Fair	2
	Poor	1

- Max Score: 23
- Each Yes/No will be marked as 1/0 as applicable to question
- Each Good/Fair/Poor will be marked as 3/2/1 as applicable to question
- Other criteria are listed in table

	Overall Score	**Rating**
	23	Excellent
	22-19	V Good
	18-14	Good
	13-10	Average
	9 and below	Poor

3. For Non-Plantation Activity (Fencing)

	Component		Score	Remarks
1	Activity Status	Incomplete	1	
2	Fencing Status	Intact	1	
3	Fencing Effectiveness	ME	1	
4	Site suitability for fencing	Y	1	
5	Serving intended purpose	Y	1	
6	Fencing type	Fencing in Parts	1	
7	Copies of estimate available	Y	1	
8	Measurement Book Filled	N	1	
9	Site on egreenwatch	Y	1	
10	Deviation from actual site	N	1	
	Total		10	

Activity Status

	Building Status	**Score**
	Complete	2
	Incomplete	1
	Work not started	0
	Intact	1
	Worn Out	0
	VE: Very effective	2
	ME: Moderately effective	1
	NE: not effective	0
	Continuous Fencing	2
	Fencing in Parts	1

- Max Score: 13
- Each Yes/No will be marked as 1/0 as applicable to question
- Other criteria are listed in table

	Overall Score	**Rating**
	13	Excellent
	12-11	V Good
	10-9	Good
	8-7	Average
	6 and below	Poor

4. For Non-Plantation Activity (SMC)

	Component		Score	Remarks
1	Activity Status	Incomplete	1	
2	Fulfilling design specifications	Fully	2	
3	Site suitability for SMC	Y	1	
4	Serving intended purpose	Y	1	
5	Copies of estimate available	Y	1	
6	Measurement Book Filled	N	0	
7	Site on egreenwatch	Y	1	
8	Deviation from actual site	N	1	
	Total		8	

Activity Status

	Building Status	**Score**
	Complete	2
	Incomplete	1
	Work not started	0
	Fulfilling design specifications	
	Completely/Fully Meeting	2
	Partially Meeting	1
	Complete deviation	0

- Max Score: 10
- Each Yes/No will be marked as 1/0 as applicable to question
- Other criteria are listed in table

	Overall Score	**Rating**
	10	Excellent
	9-8	V Good
	7-6	Good
	5	Average
	4 and below	Poor

Annexure 15: Carbon Stock Assessment

Carbon stored in forest ecosystem is classified in five pools as given by Intergovernmental Panel on Climate Change's (IPCC) Good Practice Guidance or Land Use, Land-Use Change and Forestry (GPG-LULUCF)[1]. Major eligible carbon pools from the forest areas are Above Ground Biomass (AGB), Below Ground Biomass (BGB), Dead wood (DW), Litter (L) and Soil Organic Carbon (SOC).

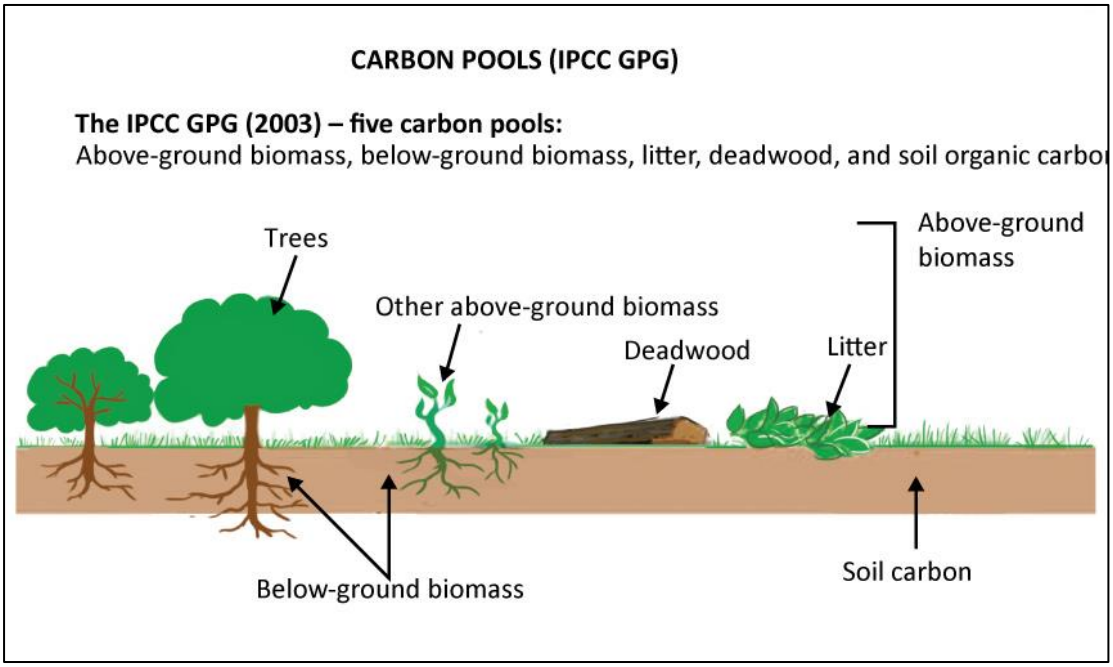


Figure: Five Pools of Carbon Source: IPCC GPG, 2006

All these five carbon pools are not necessarily required in every project. AGB and BGB are the living biomass of trees. AGB mainly includes biomass of tree bole and branches, BGB includes biomass from roots of the tree, DW includes biomass from fallen twigs and branches, leaf litter includes non-living biomass including the semi decomposed leaf material and fine roots and SOC includes the carbon present in the soil of each pilot project site. Field measurement data will be collected based on an appropriate sampling strategy and statistical sampling design. A combination of systematic and stratified random sampling is adopted for data collection in project sites (FSI, 2011).

[1] https://www.ipcc-nggip.iges.or.jp/public/gpglulucf/gpglulucf.html

Different Pools of Carbon (Source: Source: ISFR, 2017)

S. No.		Pools	Description
1	Living biomass	Above Ground Biomass (AGB)	All living biomass above the soil including stem, stump, branches, bark, seeds and foliage
		Below Ground Biomass (BGB)	All living biomass of live roots. Roots which are less than 2 mm in diameter are generally excluded as they often cannot be distinguished from litter or soil organic matter
2	Dead Organic Matter	Dead wood	All non-living woody biomass not contained in the litter. They might be standing or lying on the ground. Dead wood also includes dead roots and stumps larger than or equal to 10 cm in diameter.
		Litter	All non-living biomass with a diameter less than 5 cm (FSI), lying dead and present in various states of decomposition above the organic soil.
3	Soil	Soil organic matter (SOM)	Includes organic carbon in mineral and organic soils to a depth of 30 cm (FSI) and applied uniformly throughout the area.

Process of carbon assessment

The steps involved in the process of assessing carbon stock are:

- **Delineation of project Boundary:** In order to facilitate accurate measuring, monitoring, accounting and verification, a spatial boundary of the selected area needs to be clearly defined. These boundaries can be the permanent boundary markers like; rivers or creeks, mountain ridges etc. The various tools available for identifying and delineating the project boundaries are remote sensing. For example, satellite images from optical or radar sensor systems; aerial photographs; Global Positioning System (GPS); topographic maps; and land records. If the high resolution satellite images are not available, GPS Tracking is the most accurate and efficient alternative method for boundary delineation although the process is time consuming.
- **Stratification, Mapping and Sampling Design:** For the purpose of stratification of the project area, collection of basic information such as land use, land cover, data on vegetation and data on topography is collected and a base map is prepared. Base map gives the details of the project area by indicating the different land use categories and it is mostly built with the help of high resolution satellite imagery. A preliminary visit is organised within the study area in order to improve the accuracy and precision of

the representation. The various strata and sub-strata are identified with the help of expert knowledge from the local foresters. The project area can be stratified into approximately homogenous units on the basis of various parameters like-Forest type, Dominant tree species, stocking density of the trees, Age of trees, Aspect and position of the hill slopes, altitude, physical boundary, Site quality etc. Sampling is important in order to measure only a small sample fraction of the total population because it is difficult to measure every tree within a forest.

- **Pilot Inventory:** In order to estimate the variance of the carbon stock in each forest stratum and to provide a basis for calculating the number of permanent sample plots, a preliminary inventory needs to be completed. It is generally done by laying down 10 to 15 square/ circular plots randomly in each forest block within the project boundary.
- **Identification of Carbon pools:** The relevant five pools of carbon viz. above ground biomass, below ground biomass, litter, dead wood and soil organic carbon are to be identified to carry out the process of carbon assessment.
- **Field measurements in the permanent plots:** Field measurement and data collection needs to be done for all eligible pools of carbon in the permanent sample plots.
- **Data Analysis:** After data collection for all the eligible carbon pools is complete, data analysis is performed.
- **Capacity building:** Training and capacity building of the forest frontline staff for carbon assessment, field data collection and general awareness on carbon, forest management, etc.

Stratification

Stratification gains precision by dividing a heterogeneous population into relatively homogeneous sub-population based on certain stratification variables. Once the project area has been delineated, it is essential to collect basic information on features such as land use and land cover as well as data on the vegetation and topography. Data for the project area (e.g., watershed area) can be geo-referenced and traced onto a base map. A base map specifies the details of the project area by indicating the different land-use categories (forest, water bodies, open land, agricultural land, and so forth) and is developed with high-resolution satellite images preferably. Strata are areas distinctly different from each other in forest types, density, and species; and as such they will have different amounts of carbon stored. To make strata as homogeneous as possible, a forest within the project area is divided into different layers or blocks. Remote-sensing software (like ERDAS Imagine) is used for land-cover classification and forest stratification. A preliminary field visit is organized within the entire study area to improve the accuracy and precision of the representation. Strata and sub-strata are identified using the expert knowledge of local foresters. The entire project area can be stratified into approximately homogeneous units on the basis of the following parameters.

- **Forest types -**Tropical forest, tropical evergreen forest, subtropical deciduous hill forest, temperate forest etc. are regarded as forest types.
- **Dominant tree species -**Sites containing dominant tree species are regarded as one stratum types.
- **Stocking density of trees -**Within a dominant type, sites are separated further if they differ substantially in stocking density. Remote-sensing analysis is used to identify forest areas which differ in tree density. 'Sparse' and 'dense' can, for example, be major types of forests.

- **Age of trees -** Sites with distinct age classes are stratified further, as carbon sequestration differs markedly with the age of the stand.
- **Aspect and position of hill slopes -** Within a dominant forest type, sites differing in aspect and position on a hill slope are stratified further because the rate of carbon sequestration varies in relation to these factors. For example, a stand on the south aspect would have far greater productivity than one on the north aspect.
- **Altitude -** Forest blocks are selected within altitudinal ranges from above mean sea level as vegetation types differ according to altitudinal variation. It is sensible to design elevation strata that represent forests within a 300-500 m range in altitude.
- **Physical boundary -** The boundary of the forest block is determined on the basis of easily visualized boundaries (i.e., rivers, roads, ridges, etc.).
- **Site quality -** Site quality tells us how much timber a forest can potentially produce. The productivity of forest land is defined in terms of the maximum amount of volume that the land can produce over a given amount of time. Site quality is measured as an index related to this timber productivity.

Since, carbon stored in the vegetation largely depends upon canopy density and forest type, these two are majorly considered as stratification variables. Stratification based on canopy cover is presented in the images shown below.

Stratification based on Canopy cover

S. No.	Forest crown cover	Strata
1.	1 – 10 %	Open Shrub Forest
2.	11 – 40 %	Degraded Forest
3.	41 – 70 %	Moderately Dense Forest
4.	71 – 100 %	Very Dense Forest

Shape and size of sample plots

The shape and size of the sample plots is a trade-off between accuracy, precision, time, and cost for measurement. In general, sample plots should be either permanent or temporary. Permanent sample plots are statistically more efficient in estimating changes in forest carbon stocks. Similarly, sample plots can either be of a fixed size or nested, this means that they comprise smaller sub-units for various carbon pools. Nested plots are generally more practical and efficient in estimating forest biomass. Thus, in the present carbon inventory study, permanent nested sample plots are laid out. The required number of the permanent sample plots with appropriate sizes and shapes is carried out at the start of the project. Forest carbon measurement can be carried out in both square and circular plots. Nevertheless, circular samples are recommended for the areas which are hilly and inaccessible. Square plot each of 31.62 m x 31.62 m size is laid in each site as shown below.

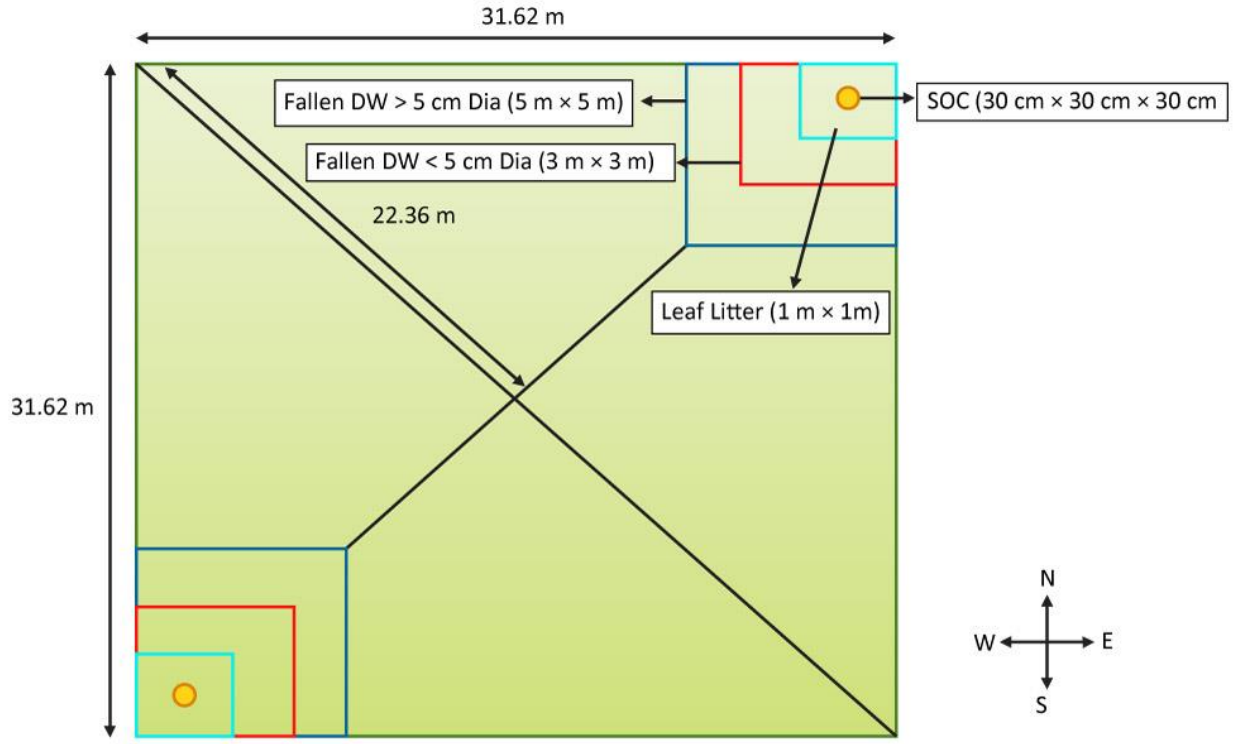


Figure Permanent Square Plot as per FSI

Sample plot allocation

Estimating number of sample plots

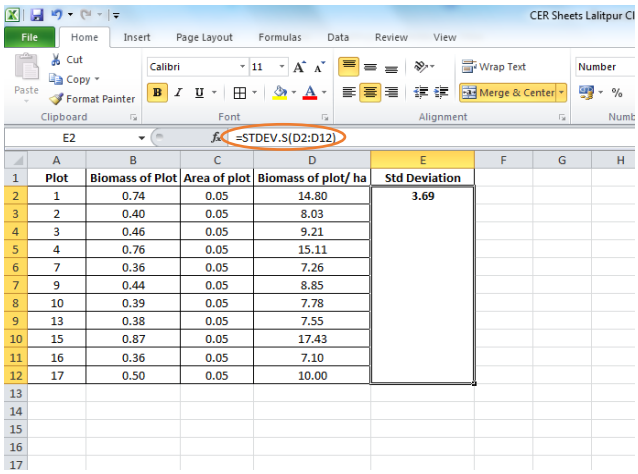
To measure each and every tree within the each selected site is not only time consuming, but also impractical and not feasible. Pearson *et al.,* in 2005 has developed a statistical tool through which one can estimate the required number of sample plots to be laid in the project site that are statistically significant. Thus, through this statistical tool, measuring only a fraction of trees from the total project area can provide true values of biomass of the entire project area. The number of estimated sample plots to be laid out in the selected site depends upon various factors such as size and number of stratums, basic carbon density and its standard deviation in the selected project area. In all the selected pilot sites, estimated number of sampled plots to be laid out at each pilot site is calculated using the statistical equation mentioned below (Step V). The methodology for estimating the number of sample plots to be laid out at each pilot project site that are statistically significant is as follows:

Step I. Identify the desired precision level.

(± 10% of the mean at the 95% confidence interval is frequently used)

Step II. Identify the area or preliminary data.

(10-15 plots per stratum will suffice for variance analysis)



	A	B	C	D	E	F	G	H
1	Plot	Biomass of Plot	Area of plot	Biomass of plot/ ha	Std Deviation			
2	1	0.74	0.05	14.80	3.69			
3	2	0.40	0.05	8.03				
4	3	0.46	0.05	9.21				
5	4	0.76	0.05	15.11				
6	7	0.36	0.05	7.26				
7	9	0.44	0.05	8.85				
8	10	0.39	0.05	7.78				
9	13	0.38	0.05	7.55				
10	15	0.87	0.05	17.43				
11	16	0.36	0.05	7.10				
12	17	0.50	0.05	10.00				
13								
14								
15								
16								
17								

Figure Calculation of Standard deviation

Step III. Estimate carbon stock per tree, per plot, per ha and mean carbon stock/ha.

Step IV. Calculate standard deviation of carbon (tC/ha) of all plots.

Step V. Calculate the number of plots using the following statistical equation:

$$n = \frac{N * t_{VAL}^{\ 2} * \left(\sum_i w_i * s_i \right)^2}{N * E^2 + t_{VAL}^{\ 2} * \sum_i w_i * s_i^{\ 2}}$$

Where;

n = Number of sample plots required for estimation of biomass stocks within the project boundary; dimensionless

N = Total number of possible sample plots within the project boundary (i.e. the sampling space or the population); dimensionless

E = Desired level of precision

t_{VAL} = Two-sided Student's t-value, at infinite degrees of freedom, for the required confidence level; dimensionless

w_i = Relative weight of the area of stratum i (i.e. the area of the stratum i divided by the project area); dimensionless

s = Estimated standard deviation of biomass or volume (t d.m. ha-1) in stratum i (when it is not available, instead 50% of the estimated volume, biomass, etc. IPCC, Good Practice Guidelines, 2003).

i = 1, 2, 3, biomass stock estimation for strata i within the project boundary.

In lieu of calculating the statistically significant number of sample plots in the project site, a preliminary data collection and physical measurement of vegetation is carried out.

Laying out of Permanent sample plots

Stratified Random sampling is adopted to lay out the sample plots. One of the methods adopted for randomisation is the *rice grain method*. Grains of rice are spread randomly on the Toposheet of the plot and wherever the grains fell, that area is taken as the centre of the sample plot. The plots are square and of the size 31.62 m x 31.62 m, if the grains fall outside the map, the exercise is repeated. The point of grain is centre point taken for square sample plot. The post-stratification map is created with the help of GIS after the first monitoring to concentrate on the possible changes of the project boundary.

Photo Laying out of permanent sample plots

Center points of all plots must be marked permanently in the field using marks such as concrete pillars, metal rods, pipes, or stone poles. No matter what object is used for marking the centre, there is always a risk that it needs to be moved or removed. Therefore, the distances and bearing between the center and at least 3-4 permanent reference points (stones or trees) is recorded.

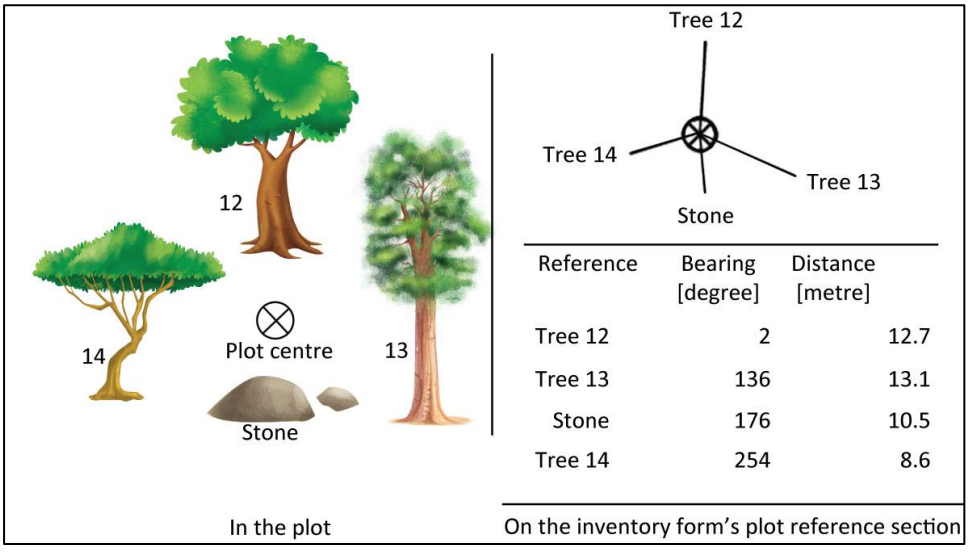


Figure Referencing Centre of Plot

Measurement of Above Ground Biomass

Measurement of tree diameter or girth and Height: Biomass of trees is estimated by following non-destructive method. The DBH (at 1.37m) and height of individual trees greater than or equal to 10 cm DBH are measured in each permanent square plot of 1000 m^2 plot using diameter tape, altimeter and linear tape. The measurement of trees is started from the edge, moving inwards, and marking each tree to prevent accidentally counting it twice. Highly sensitive equipment such as Vertex IV and Transponder can also be used to measure tree height directly. Each tree is recorded individually, together with its species' name if identification is possible. Trees on the border must be included if > 50% of their basal area falls within the plot and excluded if < 50% of their basal area falls outside the plot. Trees overhanging into the plot are excluded, but trees with their trunks inside the sampling plot and branches outside are included. For trees of an unusual shape, a standard forestry practice should be adopted (Karky and Banskota 2007; MacDicken 1997) before all sampling operations are carried out and applied to all plots. Diameter at breast height (DBH) is the basic measurement standard for trees. This measurement is recorded for all trees. (Note that, for stems with irregularities, measurement is carried out according to the principles illustrated) For stems that fork from the ground, each individual stem is measured separately to indicate that they are part of the same tree. However, they are numbered by adding a letter suffix. Care should be taken to ensure that the diameter tape is put around the stem exactly at the indicated point of measurement.

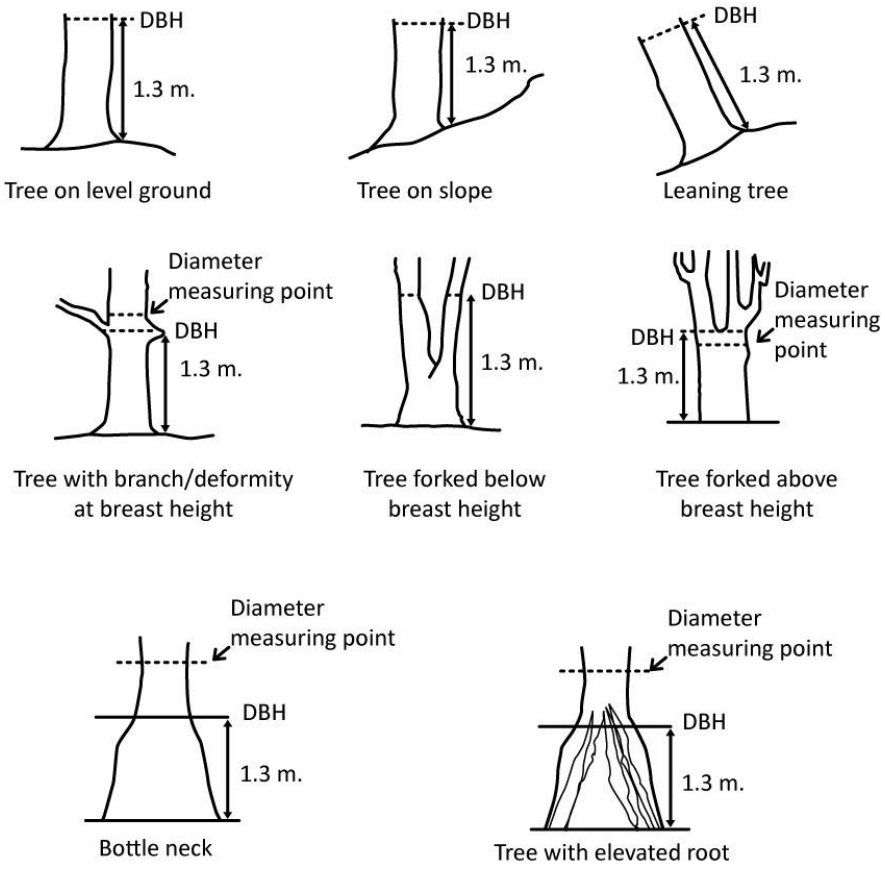


Figure Measurement of Tree DBH in different situations

Measurement of Tree Height

Measuring Tree Height using Stick

- The height of a tree can be measured by using the stick method. In this method, it is required to walk away from the tree until the base and top branches can easily be seen.
- The stick must be vertically held at arms' length (straight elbow) over the view of the tree so that the markings on the stick that correspond with the branch tip and the base of the tree can be determined. The distance between these marks is proportional to the height of the tree. It is important that there is no movement of the head and body while reading the heights on the stick.
- The distance between the feet and the base of the tree and the distance at which the stick was from the eyes while taking the measurements will have to be determined.
- One can use a measuring stick (tape measure) to determine the distance between the eyes and the hand that held the stick. Alternatively, while holding the stick, one may also let a companion measure that distance.
- The distance to the tree can be measured with a tape measure. The three measurements mentioned below need to be recorded:
    - The height of the tree on the measuring stick
    - The distance between the eyes and the stick
    - The distance from the base of the tree.

While making notes and calculations, it is important to record the units of measurement.

The following relationship may be used to calculate the height of the trees.

Tree height = Distance to the tree × [the height of the tree on the stick] ÷ [distance between the eyes and the stick]

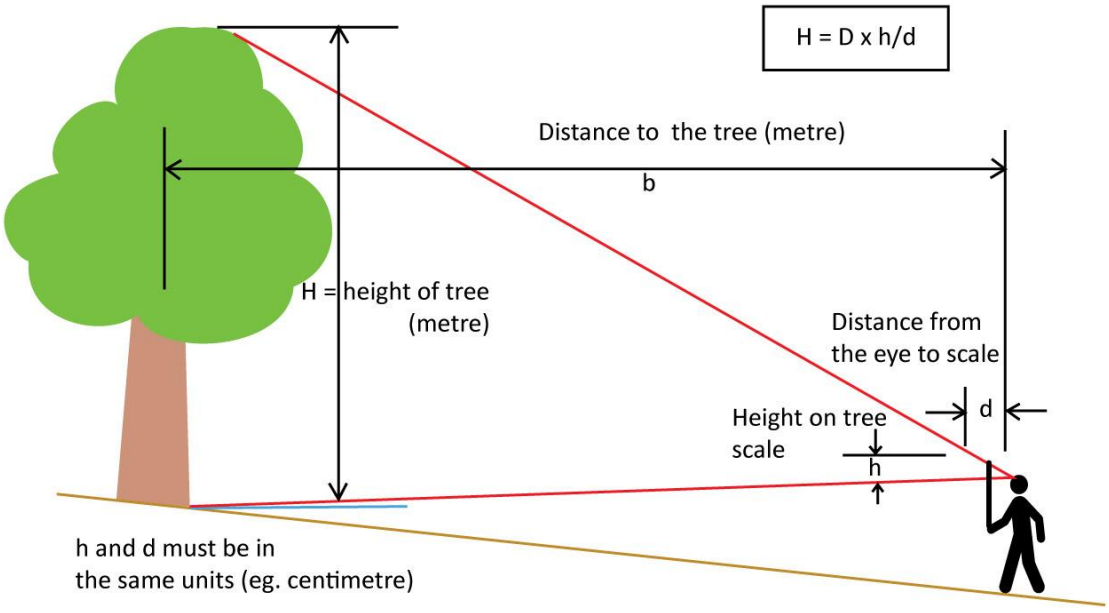


Figure Measurement of tree height using stick method

Measuring Tree Height using Altimeter

The height of a tree can also be measured by using Altimeter.

Each tree is recorded individually, together with its species name if the identification is possible. Trees on the border must be included if > 50% of their basal area (BA) falls within the plot and excluded if >50% of their falls outside the plot. Trees hanging the plot are excluded; however, trees with their trunks inside the sampling plot and branches outside are included. For trees of an unusual shape, a standard forestry practice should be adopted (Karky and Banskota 2007; MacDicken 1997) before all sampling operations are applied to all plots. The DBH is the basic measurement standard for trees. This measurement is recorded for all trees. (Note: For stems with irregularities, measurement is carried out according to the principles illustrated in Figure 5.4) For stems that fork from the ground, each individual stem is measured separately to indicate that they are part of the same tree. However, they are numbered by adding a letter suffix. Care should be taken to ensure that the diameter tape is put around the stem exactly at the indicated point of measurement.

1. Measuring tree height on reasonably level ground

To measure the height of tree, move back far enough so the tree-top can be viewed through the altimeter, and read the per cent scale. Next the distance of the tree from where the reading is taken is measured with a measurement tape. The height of the tree is calculated as mentioned below:

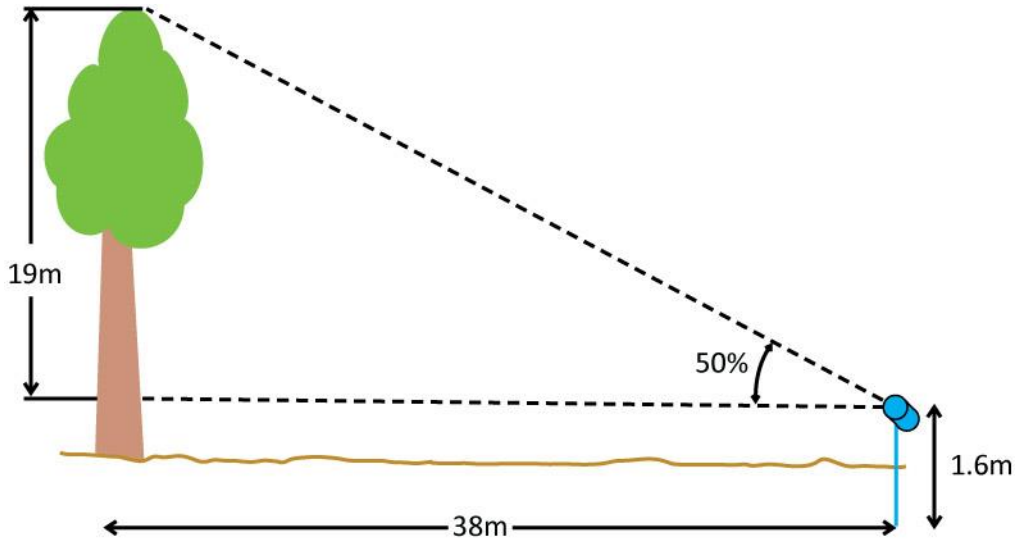


Figure Using altimeter on a reasonably level ground

Tree height = (50/ 100) ×38 meters. To this, we add height of eye from the ground

2. Measuring tree height on sloping ground

On sloping ground, two readings need to be taken with the Altimeter. One reading is taken at the tree top and second reading is taken at the base of trunk.

(a) When the base of the trunk is below eye level, the per cent values are added. The distance of the tree is then measured with a measurement tape. The height of the tree is calculated as mentioned below:

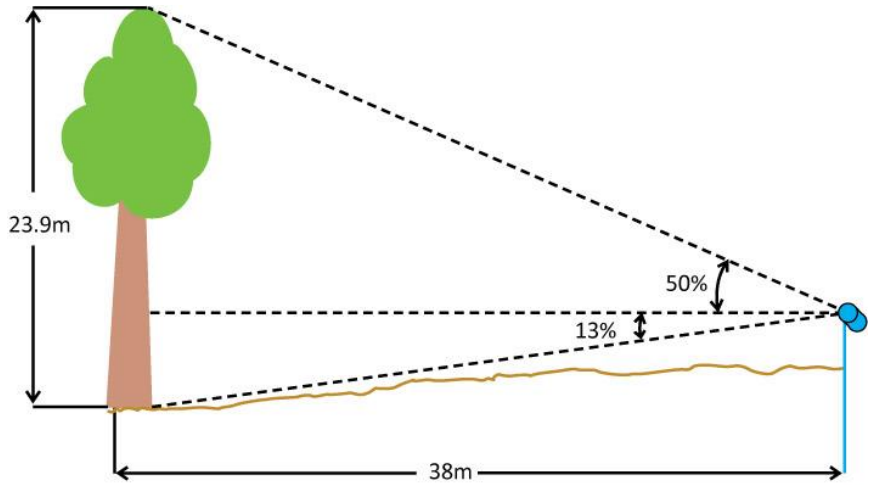


Figure Using altimeter on a sloping ground when the base of the trunk is below eye level

Tree height = (50+13)/ 100 × 38 meters.

(b) When the base of the trunk is above eye level, the trunk base per cent is subtracted from the tree-top per cent. The distance of the tree is then measured with a measurement tape. The height of the tree is calculated as mentioned below:

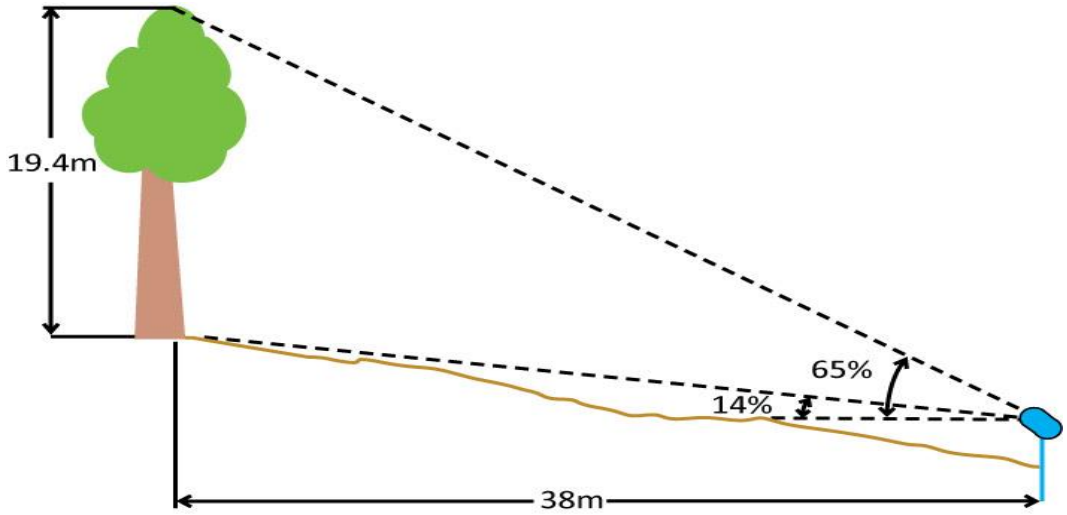


Figure Using altimetre on a sloping ground when the base of the trunk is above eye level

Tree height = (65-14)/ 100 × 38 meters

Analysis of Above Ground Biomass

The selection of the appropriate allometric equation is a crucial step in estimating aboveground tree biomass (AGB). An allometric equation is a statistical relationship between key characteristic dimension(s) of trees that are fairly easy to measure, such as DBH or height, and other properties that are more difficult to assess, such as above-ground biomass. Allometric equations are established in a purely empirical way on the basis of exact measurements from a relatively large sample of typical trees. They permit an estimate of quantities that are difficult or costly to measure on the basis of a single (or at most a few) measurement. Allometric equations for biomass usually include information on trunk diameter at breast height DBH (in cm), total tree height H (in m), and wood-specific gravity (in g/cm^3).

Above Ground Biomass (AGB) = Volume × Wood Density (WD) × Biomass Expansion Factor (BEF)

BEF value

- Open Forest – 1.14
- Moderately dense forest – 2.5
- Dense Forest – 3.4

After taking the sum of all the individual weights (in kg) of a sampling plot and dividing it by the area of a sampling plot (1000 m^2), the biomass stock density is attained in kg m^{-2}. This value can be converted to tha^{-1} by multiplying it by 10. Since the pilot areas are part of the

tropical and sub-tropical region, the biomass stock density of a sampling plot will be converted to carbon stock densities after multiplication with the IPCC (2006) default carbon fraction of 0.47.

Estimation of Below Ground Biomass

It is the most difficult pool to measure and generally not measured in forest inventory. However, it can be estimated by using IPCC default value of 0.27 in most of the cases which is basically a relationship between root (BGB) and Shoot (AGB) also known as root to shoot ratio. Good Practice Guidelines of IPCC provide ratios for six major global forest types. FSI has selectively used these defaults to estimate BGB.

Analysis of Below Ground Biomass

One of the most common descriptors of the relationship between root (below-ground) and shoot (above-ground) biomass is the root-to-shoot ratio, which has become the standard method for estimating root biomass from the more easily measured shoot biomass. Belowground biomass estimation is much more difficult and time consuming than estimating aboveground biomass. Measurements of root biomass are indeed highly uncertain, and the lack of empirical values for this type of biomass has for decades been a major weakness in ecosystem models (Geider *et al*. 2001). To simplify the process for estimating below-ground biomass, it is recommended to estimate below-ground biomass as 27% of above-ground tree biomass.

BGB = AGB × 0.27 (IPCC Default value)

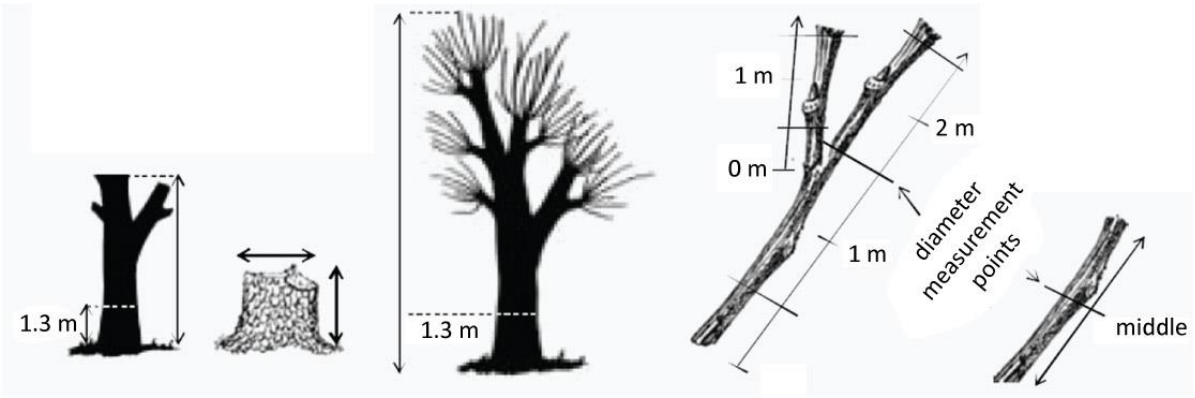
Where:

BGB = Below Ground Biomass and

AGB = Above Ground Biomass

Measurement of Dead wood

Dead wood is less abundant than live trees. Two square sub plots of 5m × 5m each are laid out at Northeast and Southwest corners of the main plot where standing dead trees, fallen stems, and fallen branches with diameter ≥5 cm is measured. Within the 5m × 5m plot, a sub square sub plot of 3m × 3m is laid at both the corners to measure fallen deadwood (diameter ≤5 cm). All the dead wood within the plot is collected and fresh weight is recorded in the prescribed format. The collected samples are brought to the laboratory to determine moisture content, from which total dry mass is then calculated.



Measurement of standing and fallen wood and stumps

Analysis of Dead Wood

Deadwood biomass is estimated from the dry weight as obtained from the laboratory. Dry biomass weight is calculated from the plot separately, and then calculating on per ha basis. The amount of biomass per unit area is given as mentioned in the equation given below. Multiplying the biomass by 0.47, we can get the carbon stock present in deadwood.

$$DW = w_{fresh}/A \times w_{dry} / w_{fresh} \times 1/1000$$

Where,

DW= biomass of deadwood

W_{fresh} = weight of fresh field sample

A = Size of the area

W_{dry} = Weight of oven dry sample

Measurement of Leaf litter

Leaf litter includes non-living biomass with a diameter less than a minimum diameter chosen by the country (for FSI 5 cm), lying dead, in various states of decomposition above the mineral or organic soil. Two square sub plots of 1 square meter in size are established at the northeast and south west corner of the main plot (as shown in Figure 4.1). All the litter (dead leaves, twigs, and so forth) within the 1 m^2 sub plots are collected and their fresh weight is noted. The collected samples are brought to the laboratory to determine moisture content, from which total dry mass is then calculated.

Analysis of Leaf litter

To determine the biomass of leaf litter, herbs, and grass (LL), samples are taken from the field within a small area of 1 m^2. Fresh samples are weighed in the field and a well-mixed sub-sample is then placed in a marked bag. The sample is taken to the laboratory and oven dried until constant weight to determine water content. For the forest floor (herbs, grass, and litter), the amount of biomass per unit area is given by:

$$LL = w_{fresh}/A \times w_{dry}/w_{fresh} \times 1/1000$$

Where,

LL = biomass of leaf litter

W_{fresh} = weight of fresh field sample

A = Size of the area

W_{dry} = Weight of oven dry sample

Measurement of Soil Organic Carbon

Soil organic carbon is determined through samples collected from the default depth as prescribed by FSI, 2017. For collecting data on soil carbon, two plots of size 1mx1m are laid out within the main plot. At the centre of these two sub plots, a pit of 30cmx30cmx30cm is dug and composite sample of soil of 200gm is kept for organic carbon analysis. All samples are placed into zipped pouches which are labelled appropriately. Samples of soil are analysed from the standard soil labs and used for calculation.

Analysis of Soil Organic Carbon

Soil samples are collected at 0-30 cm depth. Samples of exactly 200gm are taken and transferred to pre-weighed sampling bags. Subsequently, samples are transported to the laboratory and oven dried (70^0 C) until constant weight to determine water content. Samples collected are composted and well-mixed per sampling plot and then prepared for carbon measurement by removing stones and plant residue > 2mm as well as by grinding. The carbon stock density of soil organic carbon is calculated as (Pearson *et. al* 2007):

$$SOC = r_b \times d \times \%C$$

Where,

SOC = soil organic carbon stock per unit area (t/ha)

r_b = soil bulk density (g/cm^3) – Default value is 1.2

d = total depth at which sample is taken (cm)

%C = carbon concentration

Total Carbon Stock Density

The carbon stock density is calculated by summing the carbon stock densities of the individual carbon pools of that stratum using the following formula. It should be noted that any individual carbon pool of the given formula can be ignored if it does not contribute significantly to the total carbon stock.

$$\mathbf{C = C_{AGB} + C_{BGB} + C_{LL} + C_{DW} + SOC}$$

Where

C = carbon stock density

C(AGB) = carbon in Above Ground Biomass

C(BGB) = carbon in Below Ground Biomass

C(LL) = carbon in leaf litter

C(DW) = carbon in deadwood

SOC = soil organic carbon

The total carbon stock is then converted to tons of CO_2 equivalent by multiplying it by 44/12, or 3.67 (Pearson *et al*. 2007)

Annexure 16: Glossary: Carbon Stock Assessment

Above Ground Biomass

The AGB carbon pool consists of all living vegetation above the soil, inclusive of stems, stumps, branches, bark, seeds and foliage

Below-ground tree biomass

The BGB carbon pool consists of the biomass contained within live roots

Biomass

Forest biomass is organic matter expressed as oven-dry tonnes per unit area: It can be referred to as biomass density when expressed as mass per unit area. Approximately 50% of dry forest biomass is carbon.

Canopy

The cover of branches and foliage formed by the crowns of trees.

Canopy cover

The percentage of the ground covered by a vertical projection of the outermost perimeter of the natural spread of the foliage of plants.

Carbon Pool

Carbon pools are major components of and ecosystem that can either accumulate or release carbon.

Confidence interval

A measure of the spread of data. The confidence interval gives a range of values in which there is a percentage probability (usually 95%) of the true mean occurring. Calculated by multiplying the standard error by the appropriate t-value.

Dead Organic Matter

The DOM carbon pool contains all non-living woody biomass and can be divided into wood (fallen trees, roots and stumps with diameter over 10cm) and litter (greater than2 mm and less than 10cm diameter) components.

Dense Forest

All lands with a forest cover having canopy density of 40 percent and above.

False Color Composite

The image generated by projecting any three spectral bands of the satellite data on the red, green and blue channels and does not show features in true colours.

Forests

All land with a canopy cover of greater than 10-30% (dependent upon national definition of forest). Can include natural forest, plantation, forested wetland and mangrove.

Forest Area

The area recorded as a forest in the Government records. It is also referred to as “Recorded forest area”.

Forest Cover

All lands, more than one hectare in area, with a tree canopy density of more than 10 per cent irrespective of ownership and legal status. Such lands may not necessarily be a recorded forest area. It also includes orchard, bamboo and palm.

Geographic Information System (GIS)

A computer based system for capturing, storing, manipulating, analysing and displaying data, which are spatially referenced to the earth.

Growing Stock

The sum (by number or volume) of all the trees growing/living in the forest or a specified part of it.

Land Cover

Broad land use classes interpreted from satellite data. It includes very dense forest, moderately dense forest, open forest, scrub and non-forest.

Leakage

The loss of carbon outside the boundaries of the project as a result of project activities.

Litter

Woody material of trees having diameter <5cm which is not decomposed.

Moderately Dense Forest

All lands with forest cover having a canopy density between 40 to 70 percent.

Non Forest Land

Land without forest cover

Open Forest

Lands with forest cover having a canopy density between 10 to 40 percent.

Sequestration

The process of increasing the carbon stock in an ecosystem.

Soil Organic Matter

The SOM carbon pool is divided into mineral and organic soil carbon and contains biomass less than 2 mm diameter

Stratification

Stratification is the division of the area into more homogenous units of carbon density. The purpose of stratification is to increase the accuracy and precision of accounting by reducing field data variability.

Thematic Maps

Maps, generally on 150,000 scale, showing forest types, major species composition, crown density and other land uses prepared by interpretation of aerial photographs and verified by ground truthing.

Tree

A large woody perennial plant having a single well defined stem (bole or trunk) and a more or less definite crown. It also includes bamboos, palms, fruit trees, etc. and excludes non-perennial non-woody species like banana and tall shrubs or climbers. For the purpose of assessing growing stock and tree cover, only those trees having diameter at breast height (DBH) of 10 cm or more is measured.

Trees Outside Forests (TOF)

Trees growing outside recorded forest areas

Very Dense Forest

Lands with forest cover having a canopy density of 70 per cent and above.

प्रधान मुख्य वन संरक्षक, हरियाणा, पंचकूला
वन विभाग हरियाणा

कार्यालयः सी-18, वन भवन, सैक्टर-6, पंचकूला, दूरभाष:0172-2573451 E-mail id:cfplg@yahoo.com

क्रमांकः- 232 एफएमपी दिनांकः- 11-06-2021

सेवा में

1 प्रधान मुख्य वन संरक्षक-कम-मुख्य कार्यकारी अधिकारी, स्टेट कैम्पा (एथॉरिटी) पंचकूला।
2 सर्व मुख्य वन संरक्षक, क्षेत्रीय, हरियाणा।
3 उप वन संरक्षक, इन्चार्ज वन संरक्षक प्रचार एवं प्रशिक्षण पंचकूला।

विषय : वर्ष 2021-22 के दौरान पौधारोपण हेतू कॉस्ट नार्मज़ बारे।

सन्दर्भः इस कार्यालय का पत्र क्र0 बजट/133 दिनांक 30.04.2020 के सन्दर्भ में

उपरोक्त विषय के सम्बन्ध में अवगत करवाया जाता है कि Compensatory Afforestation से सम्बन्धित मॉडल एवं Net Present Value Scheme के Alkali मॉडल के लिए कॉस्ट नार्मज़ श्रम विभाग द्वारा दिनांक 01.07.2020 से निर्धारित न्यूनतम वेतन 363.77/-रू0 के आधार पर तैयार किए गए हैं जिसमें EPF, ESI & Contractor profit भी शामिल किया गया है। इसके अतिरिक्त तैयार किए गए कॉस्ट नार्मज़ में raising of plants in nry. की कॉस्ट भी शामिल है। तैयार किए गए (Compensatory Afforestation and NPV Scheme) से सम्बन्धित components wise cost norms की प्रतियां संलग्न भेजते हुए आपको निर्देश दिए जाते हैं कि इन कॉस्ट नार्मज़ के अनुसार ही करवाये जाने वाले पौधारोपण पर खर्चा किया जाए तथा पौधारोपण की सुरक्षा सुनिश्चित की जाये।

EPF, ESI के लिये प्रस्तावित बजट/फंड को केवल EPF & ESI के लिए ही बुक किया जायेगा तथा किसी भी स्थिति में यह बजट/ राशि किसी अन्य खर्च के लिए प्रयोग में नहीं ली जा सकती है। इसका विशेष ध्यान रखें, अन्यथा Financial irregularity के लिए जिम्मेवारी निर्धारित की जायेगी ।

इसके अतिरिक्त यदि कॉस्ट नामर्ज़ में किसी प्रकार के संशोधन की आवश्यकता है तो उसकी टिप्पणी सहित प्रस्ताव भेजा जाए ।

आदेशों की दृढ़ता से पालना की जाये ।

VSNarwal-10.6.2021
प्रधान मुख्य वन संरक्षक(वन बल प्रमुख),
हरियाणा, पंचकूला ।

पृ0 कमांकः-233-57 दिनांकः- 11-06-2021
एक प्रति निम्नलिखित को सूचनार्थ एवं आवश्यक कार्यवाही हेतू प्रेषित है :-

1 अतिरिक्त प्रधान मुख्य वन संरक्षक, वानिकी, हरियाणा पंचकूला ।
2 अतिरिक्त प्रधान मुख्य वन संरक्षक, विकास, हरियाणा पंचकूला ।
3 सर्व व0म0अ0, क्षेत्रीय ।
4 व0म0अ0, बीज संग्रह एवं अनुसंधान मण्डल, पिंजौर ।

VSNarwal-10.6.2021
प्रधान मुख्य वन संरक्षक(वन बल प्रमुख),
हरियाणा, पंचकूला

Cost Statement of Plantation of Tall Plants under Compensatory Afforestation during the year 2021-22 at a wage rate of Rs. 363.77/- per day

No. of Plants = 1000, spacing =4m x 4m, physical area per 1000 plants=1.6 Ha.

Sr. No.	Item of Work	Unit	Qty.	Rate / Unit	Amount (Rs.)
1st year Plantation (2021-22)					
1	Jungle clearance	Ha	1.6	5456.55	8730.48
2	Raising of plants in nursery (30cmx45cm) :1000+20% extra	Nos	1200	92.49	110988.00
3	Dag bailing and alignment	RKM	3	254.63	840.28
4	Digging of pits1000x0.6mx0.6mx0.6m	M^3	216	154.60	33393.60
5	Loading and unloading of plants in tractor/cart	Nos	1100	2.74	3014.00
6	Carriage of plants by Tractor/ Trolley	Nos	1100	22.85	25135.00
7	Carriage of plants from pit to pit	Nos	L/s		2500.00
8	Planting of Plants including 10% replacement	Nos	1100	14.56	16016.00
9	Application of fertilizer (one time DAP+One time urea)	Nos	2000	0.72	1440.00
10	Irrigation five times	Nos	5000	5.47	27350.00
11	First weeding and hoeing	Nos	1000	7.26	7260.00
12	Subsequent weeding and hoeing two times	Nos	2000	5.47	10940.00
13	New long fencing	Mtr.	100	16.12	1612.00
14	Chhapa binding around plants	No.	1000	16.14	16140.00
15	Miscellaneous expenditure	LS			2000.00
16	Cost of wages of protection watcher (one protection watcher for six months for plantation area of 10 Ha.)	LS			6547.00
	Sub-Total				**273906.36**
	Added EPF @ 13%				
	Added ESI @ 3.25%				
	of wages component 50% of total				**22254.89**
	Added Contractor profit @ 7% of total				**19173.45**
	Total				**315334.70**
2nd year maintenance					
1	Jungle clearance	Ha.	0.5	5456.55	2728.28
2	Raising of plants in nursery	No.	240	92.49	22197.60
3	Re-opening of pits 200x (0.6cmx0.6cmx0.6cm)	M^3	43.2	72.75	3142.80
4	Loading & unloading of plants	No.	220	2.73	600.60
5	Carriage of plants	No.	220	22.85	5027.00
6	Carriage of plants Pit to Pit	No.	L/s		1000.00
7	Planting of plants	No.	220	14.56	3203.20
8	Irrigation three times	No.	3000	5.47	16410.00
9	Chhapa binding around plants	No.	500	16.14	8070.00
10	Weeding and hoeing once	No.	1000	5.47	5470.00
11	Miscellaneous expenditure	LS			1086.00
12	Cost of wages of protection watcher				6547.00
	Sub-Total				**75482.48**
	Added EPF @ 13%				
	Added ESI @ 3.25%				
	of wages component 50% of total				**6132.95**
	Added Contractor profit @ 7% of total				**5283.77**
	Total				**86899.20**
3rd Year Maintenance (2019-20)					
1	Jungle clearance	Ha.	0.5	5456.55	2728.28
2	Raising of Plants in nursery	No.	120	92.49	11098.80
3	Re-opening of pits 100x0.6mx0.6mx0.6m	M^3	21.6	72.75	1571.40
4	Loading and unloading of plants	No.	110	2.73	300.30
5	Carriage of plants	No.	110	22.85	2513.50
6	Carriage of plants Pit to Pit	No.	L/s		500.00
7	Planting of plants	No.	100	14.56	1456.00
8	Irrigation two times	No.	2000	4.56	9120.00
9	Chhapa binding around plants	No.	300	16.14	4842.00
10	Weeding and hoeing once	No.	1000	5.47	5470.00
11	Miscellaneous expenditure	LS			840.00
12	Cost of wages of protection watcher				6547.00
	Sub-Total				**46987.28**
	Added EPF @ 13%				
	Added ESI @ 3.25%				
	of wages component 50% of total				**3817.72**
	Added Contractor profit @ 7% of total				**3289.11**
	Total				**54094.**

10/6/2021

4rth Year Maintenance (2018-19)		Ha.	0.5	1713.42	**856.71**
1	Jungle Clearance	LS		0.00	**3526.00**
2	Cleaning, pruning and spacing				**4343.00**
3	Miscellaneous Expenditure				**8725.71**
	Sub-Total				
	Added EPF @ 13%				**708.96**
	Added ESI @ 3.25%				**610.80**
	of wages component 50% of total				**10045.47**
	Added Contractor profit @ 7% of total				
	Total				
5th Year Maintenance (2017-18)		Ha.	0.5	1713.42	**856.71**
1	Harrowing in plantation	LS		0.00	**3526.00**
2	Cleaning, pruning and spacing				**4343.00**
3	Miscellaneous Expenditure				**8725.71**
	Sub-Total				
	Added EPF @ 13%				**708.96**
	Added ESI @ 3.25%				**610.80**
	of wages component 50% of total				**10045.47**
	Added Contractor profit @ 7% of total				
	Total				
6th Year Maintenance (2016-17)		Ha.	0.5	1713.42	**856.71**
1	Harrowing in plantation	LS		0.00	**3526.00**
2	Cleaning, pruning and spacing				**4343.00**
3	Miscellaneous Expenditure				**8725.71**
	Sub-Total				
	Added EPF @ 13%				**708.96**
	Added ESI @ 3.25%				**610.80**
	of wages component 50% of total				**10045.47**
	Added Contractor profit @ 7% of total				
	Total				

ABSTRACT OF COST NORMS

	YEAR OF PLANTATION	Cost (in Rs.)	Cost per plant	
	FIRST YEAR PLANTATION	315334.70	315.33	
	SECOND YEAR MAINTENANCE	86899.20	86.90	
	THIRD YEAR MAINTENANCE	54094.10	54.09	
	FOURTH YEAR MAINTENANCE	10045.47	10.05	
	FIFTH YEAR MAINTENANCE	10045.47	10.05	
	SIXTH YEAR MAINTENANCE	10045.47	10.05	
	TOTAL	**486464.42**	**486.46**	

VAtanwar - 10.6.2021

Principal Chief Conservator of Forests
Haryana, Panchkula

Date

Expt. No.

Reach Name – Panchnota Sec 4+5
Target — 62.28 Hac
YEAR — 2020-21
Scheme — C.A Arravali Enrich.
Spacing — 5X4 m
No. of Plant — 31140 No.
Size/Type of Plant — 15X22 + 20X30 cm
Species — (i) P.papri – 3620 No.
(ii) Beri — 12491 No.
(iii) Rora — 7030 No.
(iv) Kheri — 656 No.
(v) Neem — 2181 No.
(vi) Shisham — 1200 No.
(vii) Imli — 1700 No.
(viii) A.T — 2055 No.
(ix) Gunan — 200 No.
Total 31140 No.

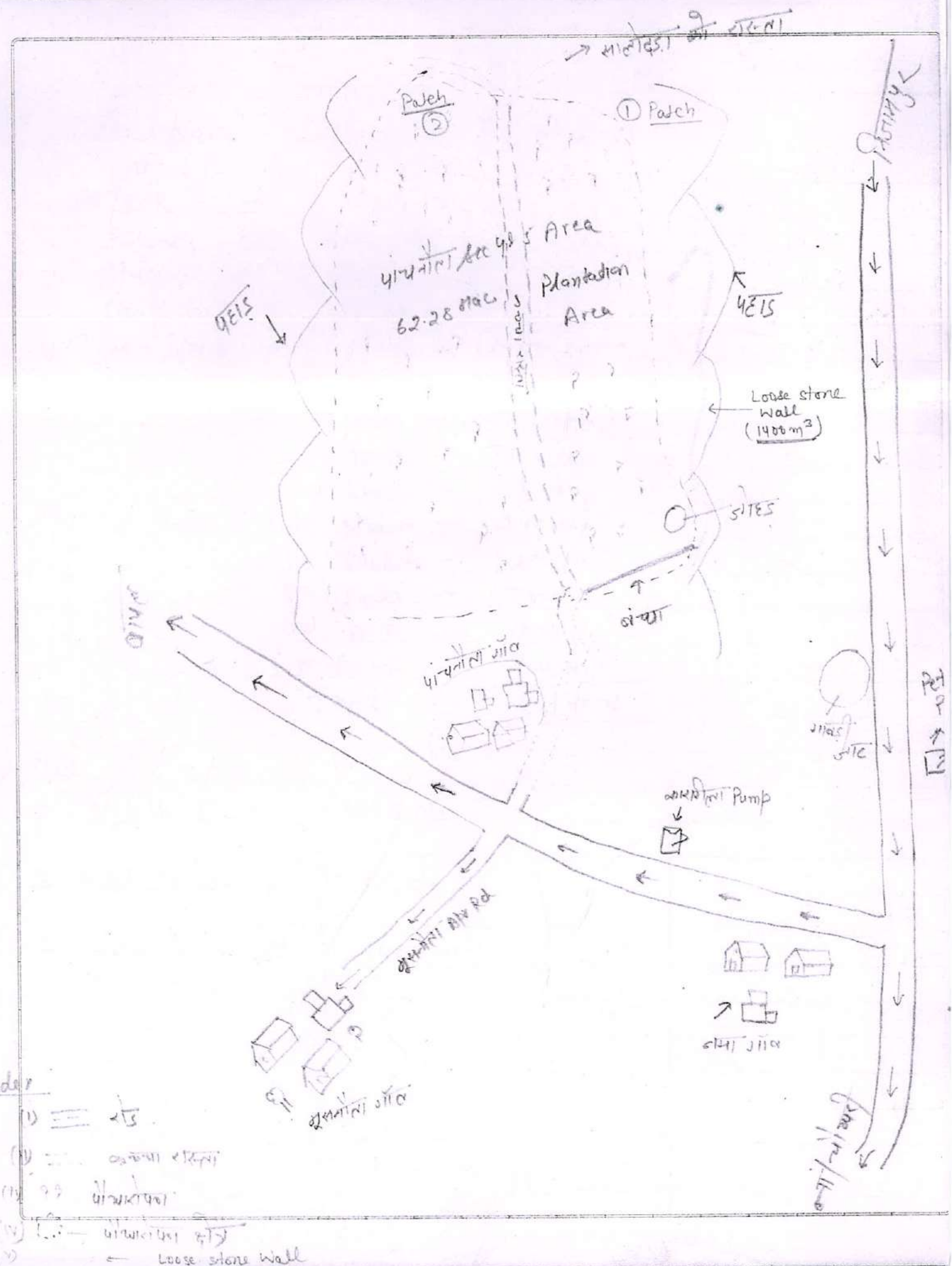
No of

A Patch No. 01 :- 23865 No.

B Patch No - 02 :- 7275 No.

C Loose Stone Wall :- 1400 m^3

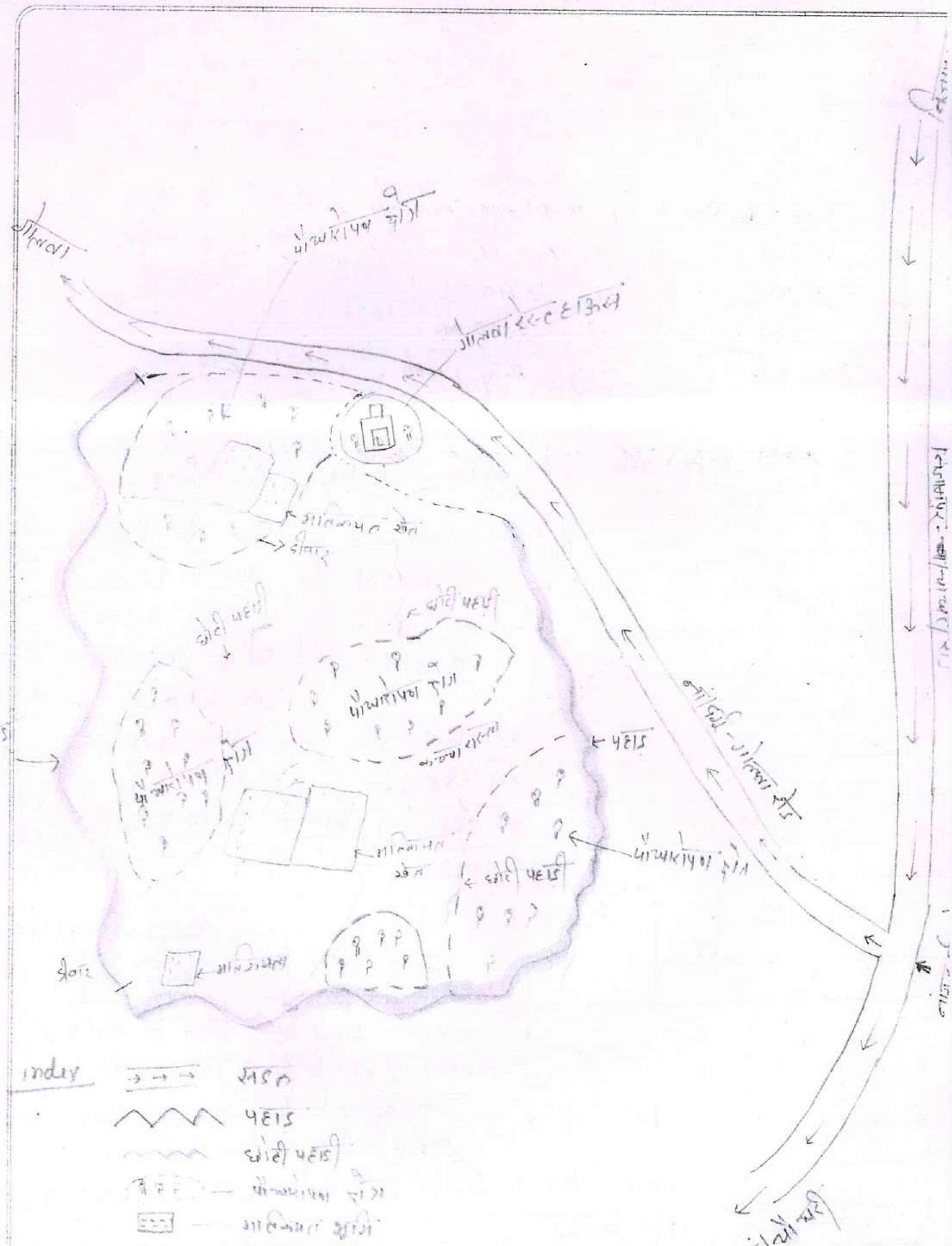
Teacher's Signature :


Patch ②
① Patch
62.28 hac
Plantation Area
पहाड़
पहाड़
Loose stone Wall (1400 m³)
Pump
Index
Loose stone Wall

Name of Reach -> Wolwa sec 4&5
Name of scheme -> ECo. Rest
Target -> 60 Ha.
year -> 2020-21
Total plant -> 12000 No.
Species -> Rong -> 7650, Khari -> 2830, बेरी -> 1020
pa. papari -> 300, Dhak -> 200
Note -> 6100 mtr Loose Stone wall (48.8 Ha)

patch
टंकी के पास -> 850 No.
(1) तीबारा के पास -> 850 No.
(2.) सफेद डूंगरी -> 3500 No.
(3) लम्बरदार के घर के पिछे -> 2970 No.
(4) व गुर्जर प्लाट
दोखेड़ा कालज तक -> 2925 No.
(5) दीवार के पास -> 485 No.
(6) रेस्ट हाउस के पास -> 420 No.
(7)
12000 No.

protection wall
(1) पहाड़ Wolwa -> 980 mtr
(2) छोटी पहाड़ी -> 1020 mtr
(3) रास्ते के साथ -> 442 mtr
(4) रामहेत लम्बरदार दफ्तर के पास -> 110 mtr
(5) Rest house कि पिछे से रामहेत तक
व Rest house के आगे से शुरुआत तक -> 2900 Mtr
(6.) रोड के साथ से फौजी के घर के पिछे -> 648 mtr
6100 Mtr


index
सड़क
पहाड़
छोटी पहाड़ी
पौधारोपण क्षेत्र
मालिकाना भूमि
कच्चा रास्ता

PLANTATION JOURNAL

Name of Division		Mohindergarh
Name of Range		Mohindergarh
Name of Block		Mohinder-Garh
Name of Beat		Salimabad.
Name of Reach		R.F Salimabad.
Total Area of the Land		33 R.K.M
Total Target Achieved		33 R.K.M
Month/Year of Plantation		July & August 2020
Name of Scheme		NPV TP
Species Planted		major species; Chandan, Neem, Bakain, Siris, Pilkhan, Imli, Jamun, Dalmeth, P. Papri, Shisham, Kachnar, Amaltas,
Situation and Boundary with Longitude and Latitude		Location R.F Salimabad, Behind Gaushal vatika. Longitude N. 28° 16' 43.578" Latitude E 76° 12' 51.99"
Configration	1. Elevation	911 Ft.
	2. Aspect	Gap - Plantation
	3. Slope	Tibbe, Plain
	4. Drainge	well drained.
Soil Type		Sandy.
Stocking	1. Tree	Jand, Khairi, AT, Beri,
	2. Shrub	Bharut, cholai
	3. Grasses	Dub, Grass etc.
Water Level		500 feet
Erosion Intensity		May be erosion due to heavy Flood.
General		Risk of grazzing, Due to wild Animal & Domestic animal, Need of Protection trench around boundry & P. watcher

Beat Incharge BFO RFO DFO

हर घर हरियाली
हरियाणा की खुशहाली

PLANTATION JOURNAL — Mohindergah Range

कहते हैं सब वेद पुराण
बिना वृक्ष के नहीं कल्याण

R.F Salimabad NPVTP 2020-21, 33 R.K.M

July 2020:- उपरोक्त साईट पर व० पं० व ठेकेदार के साथ में लेकर अर्थवर्क करवाया गया।

August 2020:- अगस्त महीने में प्लान्टेशन का कार्य पूरा करवाया गया, Plantation में साथ-2 DAP खाद व पानी भी डलवाया गया। पौधे निम्नलिखित प्रजाति के है। नीम, बकायन, पा० पापड़ी, सीरस, शहतूत, कचनार, अमलतास, शीशम, साल मोह, काईजोटिया, पिलखन, तुन्दन, इमली, जामुन, गुलर, पीपल इत्यादि। एक प्रोटेक्शन वाचर भी पौधारोपण क्षेत्र में छोड़ा गया।

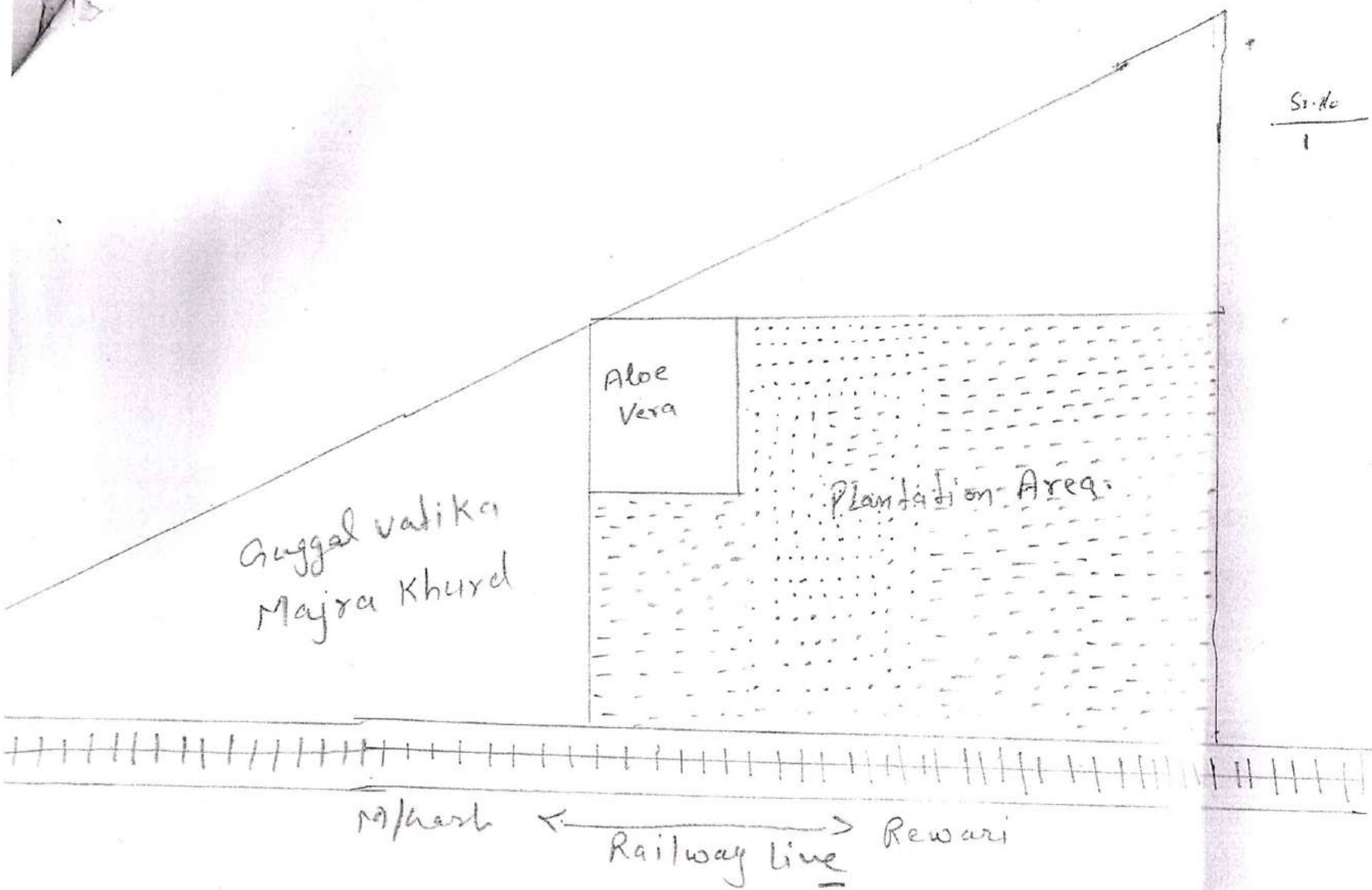
September 2020:- सितम्बर महीने में सभी पौधों में पानी डलवाया गया व नलाई-गुडाई का कार्य करवाया गया। एक P. watcher भी पौधारोपण क्षेत्र में छोड़ा गया।

Oct. 2020:- अक्टूबर महीने में सभी पौधों में पानी डलवाया व नलाई गुडाई का कार्य करवाया गया तथा एक प्रोटेक्शन वाचर को भी छोड़ा गया।

Nov. 2020:- Nov. 2020 में सभी पौधों में पानी डलवाया गया व नलाई गुडाई के सारे कार्य करवाए गये तथा एक P. watcher भी रखा गया।

Beat Incharge BFO RFO DFO

Plantation map of [illegible] (8?5- Plants)



Sr. No	Species	Total No. of Plants
1	Neem	
	Siris	2132
	Bakain	1200
	Imli	431
	Shisham	272
	Gundan	248
	Dalmoth.	180
	P. Papri	
	Pilkhan	193
	Jamun	75
	Kigelia	100
	Kachnar	70
	Amaltas	36
	Pipal –	6

R.F Salimabad 55 RKM 2020-21

NPVTP

हर घर हरियाली
हरियाणा की खुशहाली

PLANTATION JOURNAL Mohindergah Range

कहते हैं सब वेद पुराण
बिना वृक्ष के नहीं कल्याण

Dec-2020:- Dec 2020 में सभी पौधों में टैंकर व ट्यूबवैल से पानी डलवाया गया तथा निलाई गुडाई का कार्य करवाया गया साथ ही नीम के पौधों हेतु कान्हा (फूंस) खरीदे गये तथा नीम के सभी पौधों की कवरिंग करवाई गई। व एक P-watcher छोड़ा गया।

Jan 2021:- Jan. 2021 में सभी पौधों में पानी डलवाया गया व नीम के पौधों को Cover करके सभी पौधों की निलाई-गुडाई करवाई गई साथ ही एक P-watcher भी छोड़ा गया।

Feb 2021:- Feb 2021 में ~~सभी~~ नीम के पौधों की Uncovering करवाई गई उसके बाद सभी पौधों में पानी डलवाया गया व पौधों के आस पास क्षेत्र से झाड़ियां हटवाई गई व Sir roundsticks से पौधों को कवर किया व निलाई गुडाई के साथ एक प्रोटेक्शन वाचर को भी छोड़ा गया।

Beat Incharge BFO RFO DFO

JIND FOREST DIVISION, JIND

PLANTATION JOURNAL

Name of Site : BAGRU TO MAL SIWANA KM 0 TO 4 L&R/SIDE

BEAT : HATT

Scheme : CA TP **Year : 2020 21**

Area : 1.19 H.a (1190 Plants)

2020-21

Forest Range, Safidon

FOREST DIVISION, JIND

INDEX

Forest Guard Forester Forest Range Officer

Performa No.-1

Detail of FCA Proposals

Sr. No.	Project No.	Date/Year of sanction	Description of Project	Area diverted	No. of Plants Planted
1	9HRB170/2017 CHA	13-07-2018	Diversion of 0.3105 hect. Of forest land for Construction of 132 KV D/C Line from 220 KV S/Stn Jind to 132 KV S/Stn, Sec-9, Jind crossing various strips of protected Forest Land under Forest Division, Jind	Bhagru to Malsiwana Road Km 0-4 L+R/side	1190

Performa No.-2(A)

Detail of Project against which Plantation (CA) has been done

(where Plantation is done at one site against more than one proposal)

Sr. No.	Proposal No.	Area Diverted	Name of Site/Reach	Plants Planted	Remarks
1	2	3	4	5	6
			Bagru to Mal Siwan Road KM 0-4	1190	
Total				1190	

Performa No.-2(B)

Detail of Projects against which Plantation (CA) has been done

(where Plantation is done at more than one site against one proposal)

Sr. No.	Proposal No.	Area Diverted	Sr. No.	Name of Site of Plantation	No. of Plants Planted	Remarks
1	2	3	4	5	6	7
1.				Bagru to Mal Siwan Road KM 0-4	1190	Journal for ..... Part.
2						
3.						
4.						
5.						

Performa No.-3

Description of Plantation Site

1.	Name of the Forest/ Site:-	BAGRU TO MAL SIWANA KM 0 TO 4 L&R/SIDE
2.	Type of the Forest:-	P.F.
3.	Range Name:-	SAFIDON
4.	Block Name:-	SAFIDON I
5.	Beat Name:-	HATT
6.	Target achieved:-	1.19 HECT (1190 Plants)
7.	Status of Area:-	Strip Forest (Road, Rail, Canal, Drain etc.
8.	Average Rainfall:-	590 mm
9.	Minimum Temperature:-	5^0C
10.	Maximum Temperature:-	47^0C
11.	Soil:-	Sandy Loam
12.	Drainage:-	Medium
13.	Irrigation:-	Artificial
14.	Description of Existing Growing Stock:-	SHISHAM, NEEM SISHAM, ARJUN, PAPRI, NEEM
15.	Limiting Factor:-	1. Mostly Plantations are in Single Line, Generally fencing is not possible. 2. Temperature variation is very high. Too low in winter and very high in summer. 3. Acute shortage of field staff.

Forest Guard **Forester** **Forest Range Officer**

Performa No.- 4

Geo Coordinates of Plantation Site

START	END
29°17'34.57"N 76°36'90.69"E	29°15'38.00"N 76°35'03.00"E

Forest Guard **Forester** **Forest Range Officer**

PHOTOGRAPH OF SITE/ STRIP BEFORE PLANTATION

YEAR 2020-21

Name of Site/Reach : BAGRU TO MAL SIWANA KM 0 TO 4 L&R/SIDE

Target: 1.19 HECT (1190 Plants)

Year of Plantation: 2020-21

Forest Guard **Forester** **Forest Range Officer**

PHOTOGRAPH OF SITE/STRIP DURING PLANTATION

YEAR 2020-21

Name of Site/Reach : BAGRU TO MAL SIWANA KM 0 TO 4 L&R/SIDE

Target: 1.19 HECT (1190 Plants)

Year of Plantation: 2020-21

Forest Guard **Forester** **Forest Range Officer**

PHOTOGRAPH OF SITE/STRIP AFTER PLANTATION

YEAR 2020-21

Name of Site/Reach : BAGRU TO MAL SIWANA KM 0 TO 4 L&R/SIDE

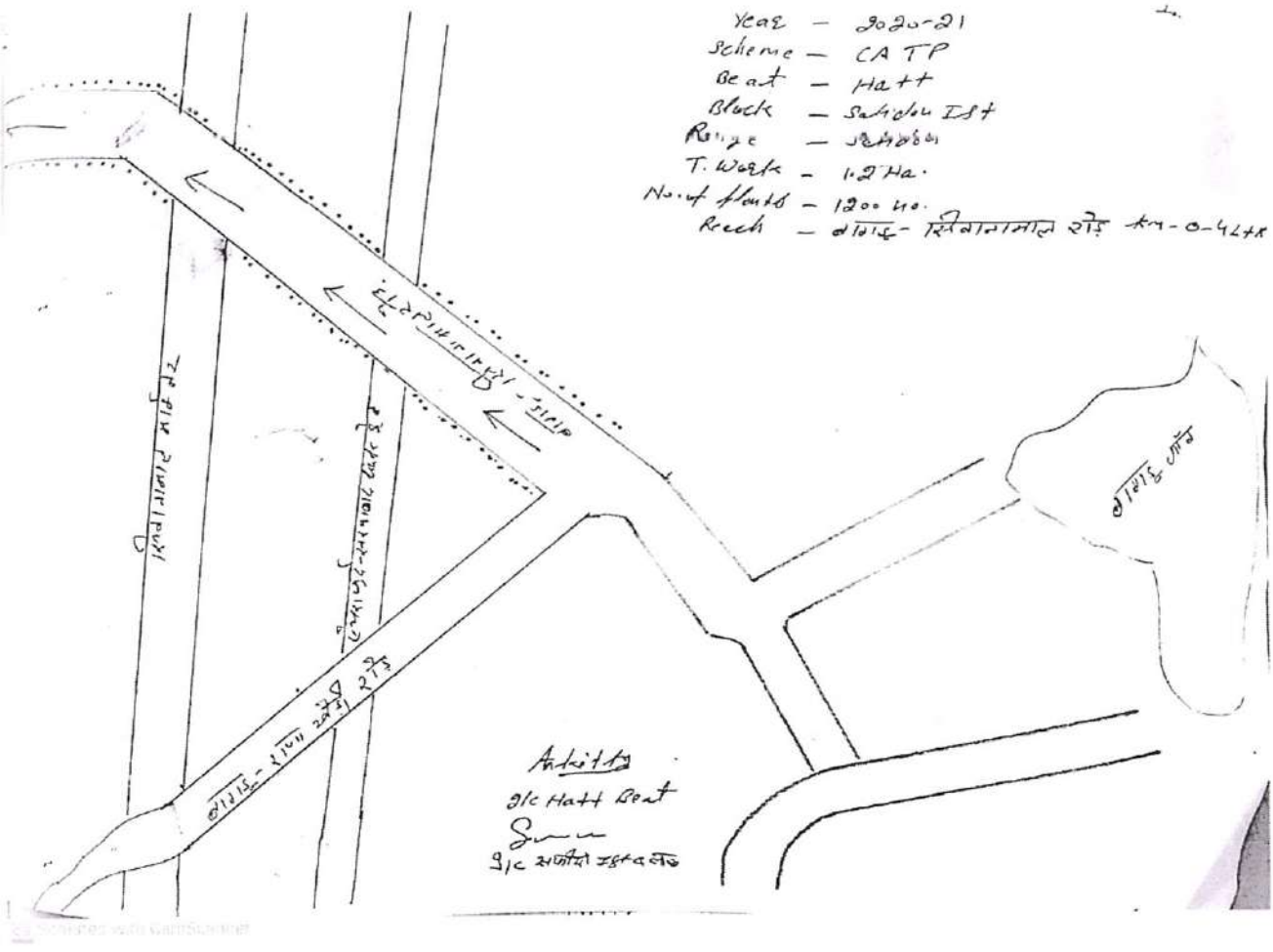
Target: 1.19 HECT (1190 Plants)

Year of Plantation: 2020-21

Forest Guard **Forester** **Forest Range Officer**

Map of Site

Name of Strip :- **BAGRU TO MAL SIWANA KM 0 TO 4 L&R/SIDE**



Forest Guard **Forester** **Forest Range Officer**

Map of Site/KML File

Name of Strip :- **BAGRU TO MAL SIWANA KM 0 TO 4 L&R/SIDE**

Forest Guard **Forester** **Forest Range Officer**

Performa No.-5

FOREST DIVISION, JIND

Description of Plantation

Name of Site : **BAGRU TO MAL SIWANA KM 0 TO 4 L&R/SIDE**

Area: **1.19 HECT (1190 Plants)**

Species Planted

Sr. No.	Name of Species	No. of Plants
1	Shisham	320
2	Papri	700
3	Arjun	170
	Total	**1190**

Sr. No.	Segment/Comp No./ Km/ RD	No. of Plants	Remarks
1	0 to 4 KM L/S	550	
2	0 to 4 KM R/S	640	

Forest Guard **Forester** **Forest Range Officer**

Performa No.-6

SEGMENTWISE PLANTATION DETAIL

Name of Site/Reach :- **BAGRU TO MAL SIWANA KM 0 TO 4 L&R/SIDE**

Year of Plantation :- **2020-21**

Sr. No. of Patch/Segment	RD/Km			Total Plants
	From	To	L/R	
1	0	1	L/side	135
2	1	2	L/side	140
3	2	3	L/side	137
4	3	4	L/side	138
5	0	1	R/side	160
6	1	2	R/side	165
7	2	3	R/side	155
8	3	4	R/side	160
Total Plants				**1190**

Forest Guard **Forester** **Forest Range Officer**

Performa No.-7

Comments of Senior Officer/Visiting Teams

Sr. No.	Date of Inspection	Designation	Comments

Performa No.-8

Detail of Damage of Plantation

(if any)

(Natural or Manmade)

Sr. No.	Type of damage	Total damage	FOR No. (if any)	Remarks
1	2	3	4	5

RANGE FOREST OFFICER
KALSIA FOREST RANGE
CHHACHHRAULI

ABSTRACT

Detail Work Done Dry Stone Check Dam Under Campa Scheme Kalsia Range Chhachhrauli

Block-Darpur **Site-Chiken PF Khol Beat** **Year-2020-21** **Beat-Chiken**

Sr. No.	Site	Check Dem	Main Wall				R.Wing Wall				L.Wing Wall				Apran				Back Filling				Total Vol
			Av.L	B	H	Vol	L	Av.B	H	Vol	L	Av.B	H	Vol	L	B	H	Vol.	L	B	H	Vol.	
1	Chor Ghati Khali No.1	15	0	0	0	22.45	0	0	0	2.35	0	0	0	3.56	0	0	0	3	0	0	0	30.88	62.24
2	Chor Ghati Khali No.2	3	0	0	0	4.25	0	0	0	0.251	0	0	0	0.348	0	0	0	0.6	0	0	0	6.25	11.70
3	Chor Ghati Khali No.3	4	0	0	0	6.05	0	0	0	0.541	0	0	0	0.628	0	0	0	0.8	0	0	0	10.25	18.27
4	Chor Ghati Khali No.4	2	0	0	0	4.5	0	0	0	0.13	0	0	0	0.582	0	0	0	0.4	0	0	0	12.5	18.11
5	Chor Ghati Khali No.5	6	0	0	0	8.2	0	0	0	0.33	0	0	0	0.796	0	0	0	1.2	0	0	0	10.5	23.03
6	Chor Ghati Khali No.6	5	0	0	0	10.15	0	0	0	0.774	0	0	0	1.151	0	0	0	1	0	0	0	22.63	35.70
7	Chor Ghati Khali No.7	6	0	0	0	10.25	0	0	0	1.221	0	0	0	1.325	0	0	0	1.2	0	0	0	20	34.00
8	Chor Ghati Khali No.8	7	0	0	0	12.5	0	0	0	0.87	0	0	0	1.501	0	0	0	1.4	0	0	0	20.88	37.15
9	Chor Ghati Khali No.12	6	0	0	0	7.5	0	0	0	0.674	0	0	0	0.593	0	0	0	1.2	0	0	0	11.5	21.47
10	Chor Ghati Khali No.13	8	0	0	0	13.35	0	0	0	1.186	0	0	0	1.185	0	0	0	1.6	0	0	0	17.28	34.60
11	Chicken Ghati Khali No.1	6	0	0	0	9.25	0	0	0	0.926	0	0	0	0.982	0	0	0	1.2	0	0	0	15.63	27.98
12	Sukhi Khala Khali No.1	4	0	0	0	5.5	0	0	0	0.412	0	0	0	0.262	0	0	0	0.8	0	0	0	11.25	18.24
13	Sukhi Khala Khali No.2	2	0	0	0	2.5	0	0	0	0.136	0	0	0	0.215	0	0	0	0.4	0	0	0	4.125	7.38
14	Sukhi Khala Khali No 5	3	0	0	0	4.75	0	0	0	0.33	0	0	0	0.39	0	0	0	0.6	0	0	0	8.625	14.70
15	Sukhi Khala Khali No.11 (Ugli wall)	3	0	0	0	4.5	0	0	0	0.33	0	0	0	0.45	0	0	0	0.6	0	0	0	9	14.88
16	Sukhi Khala Khali No.12	7	0	0	0	10.25	0	0	0	0.92	0	0	0	0.71	0	0	0	1.2	0	0	0	20.75	33.83
		103	0	0	0	136	0	0	0	13.38	0	0	0	14.7	0	0	0	17.2	0	0	0	232	413.2557
																						Or Say	412.8

श्रीमान जी,

तस्दीक किया जाता है कि उक्त मृ–संरक्षण कार्य वर्ष 2020–21 के दौरान कैम्पा स्कीम के तहत डारपुर ब्लॉक की चिकन बीट की चिकन PF खोल में करवाया गया है। यह कार्य संविदाकार The Maherbaan Co-Op L&C Ltd. द्वारा टैण्डर नं0–130812 के द्वारा किया गया है। उक्त दर्शाई गये कार्यो लम्बाई, चौडाई,ऊँचाई, मौका पर पूर्ण रूप से मौका पर ठीक पाये गये है।

वन खण्ड अधिकारी

वन क्षेत्रिक अधिकारी
R.F.O. Kalsia

R.F.O. Kalsia

Contractor

The Maherbaan Co-Op L&C Ltd.

DETAILED ESTIMATE FOR THE CONSTRUCTION OF WIRE CRATE STRUCTURE NO-1. PROPOSED IN MATOLIYAWALI MAIN KHALI -III, IN KALESAR BEAT R.F. AREA UNDER CAMPA SCHEME IN FOREST LAND AREA BY RANGE FOREST OFFICER (T), KALESAR FOREST RANGE, KALESAR OF YAMUNA NAGAR FOREST DIVISION DURING THE YEAR 2020-21 AS PER DETAIL GIVEN BELOW:-

Sr.No	P.W.D. Item No.	Description of work.	No.	Measurement Length	Breath	Height/Depth	Quantity	Unit
1	6.6	Earth work in excavation in foundation trenches etc in all kind of soil.						
		a) Below Nala Bed level.						
		i) Main Wall	1	12.00	4.00	0.70	33.60	Cum
		ii) Apron	1	10.00	2.25	0.70	15.75	Cum
		b) Side bank of Nala above bed level.	2	1.00	1/2(3.00+1.50)	2.25	10.13	Cum
						Total Earth work.	59.48	Cum
2	23.29	Weaving wire netting for wire crates, including binding sides and partition to make crate 15cm x 15cm mesh.						
		i) 1[st] Step in foundation						
		a) Side of crate.	1	2 {(12.00 X 4.00	)+(12.00 X 0.70	)+(4.00 X 0.70)}	118.40	Sqm
		ii) 2nd Step in super structure.						
		a) Sides of crate	1	(12.00 X 3.00	)+2{(12.00 X 0.50	)+(3.00 X 0.50)}	51.00	Sqm
		iii) 3rd Step in super structure.						
		a) Sides of crate	1	(13.00 X 2.50	)+2{(13.00 X 0.50	)+(2.50 X 0.50)}	48.00	Sqm
		v) 4th Step in super structure.						
		a) Sides of crate	1	(13.00 X 2.00	)+2{(13.00 X 0.50	)+(2.00 X 0.50)}	41.00	Sqm
		vii) Top Step in super structure.						
		a) Left Side of Crates	1	(3.00 X 1.50	)+2{(3.00 X 0.75	)+(1.50 X 0.75)}	11.25	Sqm
		b) Right Side of Crates	1	(3.00 X 1.50	)+2{(3.00 X 0.75	)+(1.50 X 0.75)}	11.25	Sqm
		viii) Apron	1	2 {(10.00 X 2.25	)+(10.00 X 0.70	)+(2.25 X 0.70)}	62.15	Sqm
		ix) Side Wall of Apron(2.75+3.25)1/2 = 3.00	1	2 {(3.00 X 1.00	)+(3.00 X 1.00	)+(1.00 X 1.00)}	14.00	Sqm
						Total weaving of wire netting works:-	357.05	Sqm

3	23.32	Filling stones or spalls into crates and hand packing							
		i) 1st step in foundation	1	12.00	4.00	0.70	=	33.60	Cum
		ii) 2nd step in super str.	1	12.00	3.00	0.50	=	18.00	Cum
		iii) 3rd step in super str.	1	13.00	2.50	0.50	=	16.25	Cum
		iv) 4th step in super str.	1	13.00	2.00	0.50	=	13.00	Cum
		v) Top step in super str.							
		a. Left Side	1	3.00	1.50	0.75	=	3.38	Cum
		b. Right Side	1	3.00	1.50	0.75	=	3.38	Cum
		vii) Apron	1	10.00	2.25	0.70	=	15.75	Cum
		ix) Side Wall of Apron(2.75+3.25)1/2 = 3.00	2	3.00	1.00	1.00	=	6.00	Cum
						Total filling of stone into crates:-	=	109.35	Cum
4	23.33	Tipping of Wire Crate Including Equipment.			Same Volume as per Item No-3 i.e.		=	109.35	Cum
5	5.3(a)	Carrige of material (Stone & G.I.Wire) from road side stacking site to work site By Donkey, load upto 1 quintal and distance upto 10 Km excluding donkey man							
		i) Stone or Spalls	1	109.35 Cum	X	18 Qtl	=	1968.30 Qtl Or say	1968.3 Load
		ii) 4mm G.I.Wire for wire netting	1	824.79 Kg	/	100 Kg	=	8.25 Qtl Or say	8.25 Load
						Total Donkey load for carrige of material	=	1976.5	Load
						U			
6	5.3(b)	Requirment of donkey man(1 man for 6 donkeys)		1976.55 D.Load			=	329.42 Or say	329.42 D.Man

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LABOUR CHARGES

Sr. No.	P.W.D. Item No.	Description of Work	Unit	Quantity	Rate	Premium	Amount
1	6.6	Earth work in excavation in foundation and trenches etc.	Cum	59.48	1108.10/- 100 Cum	425%	3459.97
2	23.29	Weaving of Wire Netting	Cum	357.05	3.50/-Cum	450%	6873.21
3	23.32	Filling of Stone in wire crates.	Cum	109.35	15.35/-Cum	450%	9231.87
4	23.33	Tipping of wire crates.	cum	109.35	11.10/-Cum	450%	6675.82
5	5.3(a)	Carrige of material (Stone & G.I.Wire) from road side stacking site to work site By Donkey, load upto 1 quintal and distance upto 10 Km excluding donkey man	Donkey Load	1976.00	8/-Each	200%	47424.00
6	5.3(b)	Requirment of donkey man(1 man for 6 donkeys)	Donkey Man	329.00	20.52/-Cum	200%	20253.24
						Total Labour Charges:-	93918.12
						13% E.P.F.on item No. 2 to 4.	2961.52
						3.25% E.S.I.on item No. 2 to 4.	740.38
						Total Labour Charges:-	97620.01

MATERIAL AND ABSTRACT OF COST.

Sr.No.	Name of Material	Quantity	Rate	G.S.T.	G.S.T. Amount	Total Amount
1	4mm Dia G.I.Wire	824.79 Kg	69.75/-Kg	18%	10355.18	57528.79
2	Stone	109.35 Cum	953/- P/Cum	5%	5210.53	104210.55
				Total Material Cost:-	15565.71	161739.34
					Add G.S.T. Charges:-	15565.71
					Add Labour Charges:-	97620.01
					Total	274925.06
					Contigency Charges 1.0%	2749.25
					Total	277674.31
					Or Say:-	277670

checked by me.

Technically approved for ₹ 277670/- only,
(Rs. Two Lacs Seventy Seven thousand six hundred & Seventy only.) Subject to availability of funds under CAMPA scheme and administrative/financial approval of competent authority under rules.

Dy. Conservator Forests
Yamuna Nagar Forest Division
Yamuna Nagar (Hr.)

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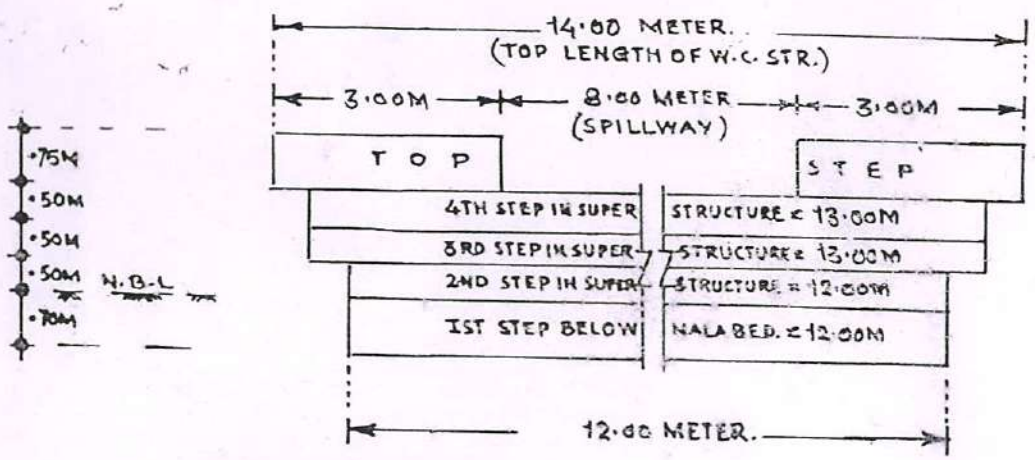
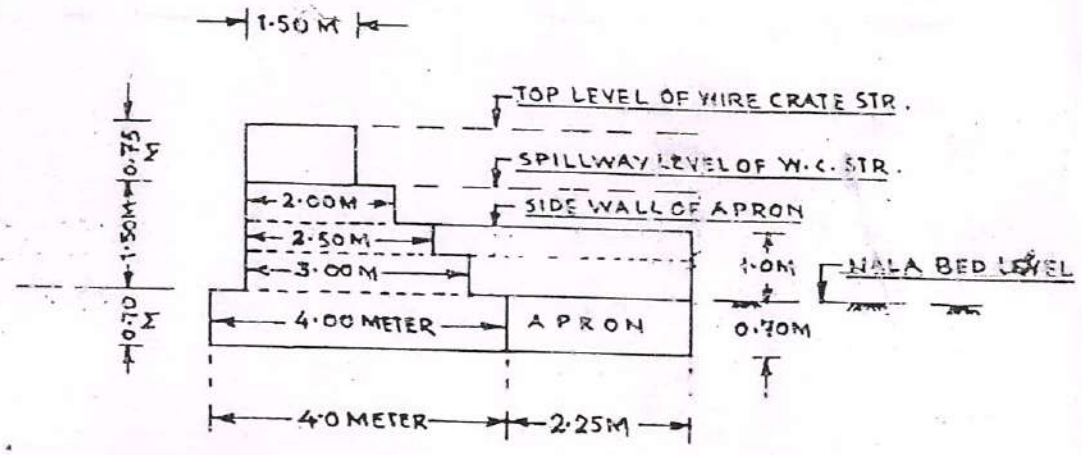
वन परिक्षेत्र कलेसर

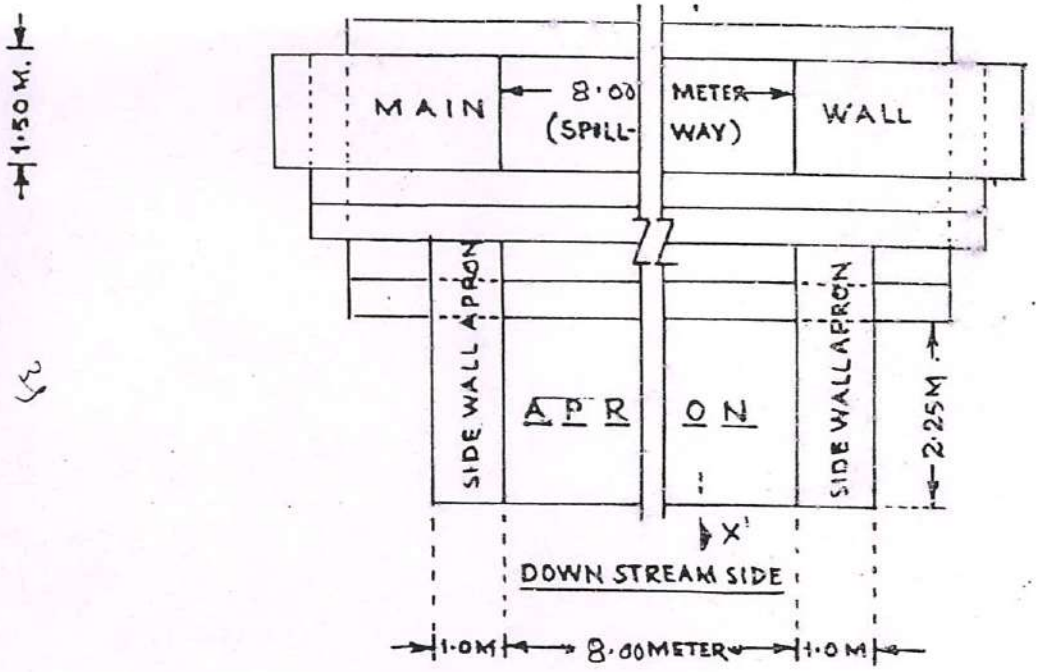


L-SECTION OF WIRE CRATE STRUCTURE



X- SECTION OF WIRE CRATE STRUCTURE AT X-X'

WIRE CRATE STRUCTURE NO.-



PLAN OF WIRE CRATE STRUCTURE

L-section, X-section and Plan for construction of wire crate Structure No.1. Proposed in MATOLIYAWALI MAIN KHALI -III, KALESAR BEAT R.F. Area Under Campa Scheme by Range Forest Officer(T) Kalesr forest Range, Kalesar of Yamuna Nagar Forest Division During the year 2020-21

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वन परिक्षेत्र कलेसर

Dy. Conservator Forests
Yamuna Nagar Forest Division
Yamuna Nagar (Hr.)

Forwarding

From:-

Conservator of Forests,
Publicity & Training,,
Panchkula.

To: Nodal Officer & APCCF (FC)
O/o Principal Chief Conservator of Forests.
Haryana, Panchkula.

No. 95 / Dated 8-4-21

Sub:- Actual for the month of 03/2021.

****

On the subject cited above the Actual for the month of 03/2021 in respect of State Campa of C.F. Publicity & Training, Panchkula are sent here with for necessary action.

Detail

Campa : 391038-00

Encl.—as above

Conservator of Forests,
Publicity & Training,
Panchkula.

Actual for the month of CAPMA 03/2021 of CF, P&E, Panchkula

Sub Head	Original Budget Allotment	Expentiure upto preivous month	Current	Total
Campa	100.7 Lakh	6290358	391038	6681396
TOTAL	100.7 Lakh	6290358	391038	6681396

Conservator of Forests
Pubiicity & Training,
Panchkula.

Utilization Certificate of CAMPA scheme for the year 2021-22 (upto 31-03-2021)

Amount	
Received Amount – 100.70 Lakh	Certified that a sum of Rs. 100.70/- has been sanctioned under the said scheme Rs. 6681396/- utilized upto 31-03-2021 for the purpose for which it was sanctioned.

Conservator of Forests,
Publicity & Training,
Panchkula

Actual in respect of Haryana State CAMPA

Name of Division:-

Month:-

Sr. No.	1 Component	2 Budget Provision (In lakh)	3 Funds released upto pervious month	4 Funds released During the Current month	5 Total funds released 2+3	6 Expenditure upto previous month	7 Expenditure upto Current month	8 Total Expenditure	9 Physical Target Fixed	10 Physical Target Achieved
1.	District level workshop cum training camps of Farmers/Village Panchayat/School Children etc.(25 No.)	12.50	1586000	3450000		1249846	0	1249846	25	25
2.	Publicity material/Banners/Posters	10.00				998036	0	998036		
3	Nukkar Natak during Van Chetna Yatra: 5 in each 22 district	18.70				36000	0	36000	110	2
4.	Making of Video spot of six episode of one minute duration/docudrama (total 6)	8.00				167890	0	167890		
5.	Nature exposure and education visit for school children	50.00				3688601	391038	4079639	100	100
6.	Making of DVD	1.50				149985	0	149985		
	Total	100.70	1586000	3450000	-	6290358	391038	6681396		

Conservator of Forests.
Publicity & Education
Panchkula.