National Forest Inventory Programme of India

Manual for Field data collection of National Forest Inventory

Forest Survey of India
Ministry of Environment, Forest and Climate Change
Kaulagrah Road
Dehradun

Field Instructions
For
Data Collection of National Forest Inventory

Preface

The history of conducting forest inventory in India goes back to eighteen centuries. Assessment of the Forest Resource on a relatively large area basis (catchment basis) using statistically robust approach and aerial photographs began in 1965 when the Pre investment Survey of Forest Resources (PIS) was launched in the country with FAO/ UNDP assistance. The forest inventory was continued in different parts of the country with varying sampling design till 1981 when PISFR was reorganised as Forest Survey of India (FSI). Inventory remained as one of the important activity of FSI even after creation of FSI with a uniform design.

National Forest Inventory (NFI) design was launched by FSI in 2002 to generate national level estimates on growing stock, forest area and other parameters of the forest resources by doing regular inventory in selected sample districts in a cycle of two years. This design was continued till 2016. However, as per the National and International requirement, FSI again modified its sampling design by switching over from districts based design to grids based design. Under the new design, a nationwide uniform grids of 5 Km x 5 Km have been created and in each year inventory of forest and TOF is carried out in systematically selected grids from the total grids across the country.

With this new NFI design, FSI will carry out inventory in 6,000-7,000 plots in forest area and 10,000 plots in TOF areas of the country in a year, which is double the number than the old design. The new design reduces the revisit time from 20 years to 5 years for Forest Inventory and 10 years for TOF inventory. New NFI design will also capture information on some more new parameters such as invasive species and NTFP, additional to fifty traditional qualitative variables like land-use, legal status, terrain, soil, crop and bamboo data, fire and grazing incidences etc.

Field manual is a pre-requisite for any field inventory for its successful execution. The manual describes the standards, codes, methods and definitions of Forest Inventory and TOF field data items. The objective is to describe field procedures that are consistent and uniform across all units. The information obtained through the inventory is used to estimate forest land area, tree volume, mortality, understory composition and other related resources. This information also provides periodic analysis of Forest and TOF resources which are published and available to resource planners, managers and the public.

I take this oppurnity to place on record the efforts made by officers/officials of TFI division. The inputs received from the zonal offices are also thankfully acknowledged. I am sure, this manual will be helpful for planners and data collectors.

Dated: 12th September, 2022 (Anoop Singh)

Place: Dehradun Director General

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Acronyms and Abbreviations

B.T	Bark Thickness
BWF	Bamboo Weight Form
CAMPA	Compensatory Afforestation Fund Management and Planning Authority
CM	Centimetre
CR	Conservation Reserve
CW	Crown Width
DBH	Diameter at Breast Height
DBHOB	Diameter at Breast Height over Bark
DES	Data Entry Section
Dia	Diameter
Div.	Division
ESACP	European Space Agency Copernicus Programme
FAO	Food and Agriculture Organization of United Nation
FD	Forest Division
FI	Forest Inventory
FSI	Forest Survey of India
GIS	Geographical Information System
Govt	Government
GPS	Global Positioning System
Ha	Hectare
HQ	Headquarter
Hrs	Hours
IV Unit	Investigator Unit
IRS	Indian Resource Satellite
IST	India Standard Time
JTA	Junior Technical Assistant
Km	Kilometre
Lat	Latitude
LISS- IV Mx	Linear Imaging Self- Scanning Sensor IV Maximum
Long.	Longitude
LUC	Land Use Class
MRV	Monitoring ,Reporting & Verification
NE	North East
NFI	National Forest Inventory
NFMA	National Forest Monitoring and Assessment
NP	National Park
NRSC	National Remote Sensing Centre
NSSO	National Sample Survey Orgnisation
NTFP	Non Timber Forest Products
NW	North West
OSM	Open Series Map
PEF	Plot Enumeration Form
PF	Protected Forest
Phy. Zone	Physiographic Zone
PIS	Pre Investment Survey
REDD+	Reducing Emissions from Deforestation and Forest Degradation
RF	Reserve Forest

RFA	Recorded Forest Area
SE	South East
SOI	Survey of India
Spp. Code	Species Code
STA	Senior Technical Assistant
STF	Sample Tree Form
SW	South West
TOF	Trees Outside Forest
TOFR	Trees Outside Forest (Rural)
TOFU	Trees Outside Forest (Urban)
UFS	Urban Frame Survey
UN- CBD	United Nation Convention on Biological Diversity
UN- CCD	United Nation Convention to Combat Desertification
UNDP	United Nation Development Programme
UN- FCCC	United Nation Framework Convention on Climate Change
UT	Union Territory
WGS	*World Geodetic System*
WL	Wild Life
WLS	Wild Life Sanctuary
Wt	Weight

Abbreviations used for Measurement

cm	Centimetre
ha	Hectare
hrs	Hours
m	Meter
sq m	Square Meter
wt	Weight
km	Kilometre
mm	millimetre
kg	Kilogram

Glossary

Aspect	The compass direction toward which a slope faces.
Biomass	Forest biomass is organic matter expressed as oven-dry tones 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.
Biotic Influences	Ability of trees to survive in an ecosystem. Living things in the environment such as plants, animals, and bacteria**.**
Blaze	To mark a tree, usually by painting or cutting the bark.
Bole	The trunk of a tree.
Caliper	A tool to measure the diameter of a tree
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.
Canopy Density	Percent area of land covered by the canopy of trees. It is expressed as a decimal coefficient, taking closed canopy as unity.
Carbon Pool	Carbon pools are major components of an ecosystem that can either accumulate or release carbon.
Clinometer	An instrument used to determine the height of a tree
Codominant tree	A tree that extends its crown into the canopy and receives direct sunlight from above but limited sunlight from the sides. One or more sides of a codominant tree are crowded by the crowns of dominant trees
Crop Composition	A silviculturaly growing and tending stands of trees.
Crown Area	It is the area of horizontal projection of a tree crown on the ground.
Cull	A sawtimber sized tree that has no timber value as a result of poor shape or damage from injury, insects or disease
Degraded Forest	Reduction in the capacity of a forest to produce ecosystem services such as carbon storage and wood products as a result of anthropogenic and environmental changes.
Diameter at breast height (dbh)	Standard measurement of a tree's diameter, usually taken at 1.37 meter above the ground.
DominantTrees	Trees that extend above surrounding individuals and capture sunlight from above and around the crown.
Foliage	A leafy part of a tree or plant.
Forest Area	The forest area recorded as a forest in the Government records. It is also referred as “recorded forest area”.
Forest Inventory	The measurement of certain parameters of forest to assess the growing stock and other characteristics of forest.
Fork	A tree defect characterized by the division of a bole or main stem into two or more stem
Girdling	The complete removal of a strip of bark (consisting of cork cambium or "phellogen", phloem, cambium and sometimes going into the xylem) from around the entire circumference of

	either a branch or trunk of a woody plant
Green Wash	The extent of wooded areas generally shown in light green colour on the SOI toposheets.
Growing Stock	The sum (by number or volume) of all the trees growing/living in the forest or a specified part of it.
Hypsometer	Instruments designed to measure the height of trees
Illicit Felling	Any felling of trees done in a State forest, without permission granted by authorized bodies
Intensity of Regeneration	Increasing the planting density by establishing young trees naturally or artificially. The process by which a forest is reseeded and renewed.
Invasive Species	Species that are non-nature to a particular eco-system and whose introduction and spread causes, or likely to cause socio-cultural, economic or environmental harm (including forest eco system) or harm to human health.
Litter	Leaf & woody material of trees having diameter < 5 cm which is not decomposed.
Natural Calamites	A sudden and terrible event in nature (such as a hurricane, tornado, or flood) that usually results in serious damage of forest eco system.
Origin of Stand	An aggregation of trees or other growth occupying a specific area and sufficiently uniform in species composition, size, age, arrangement, and condition as to be distinguished from the forest or other growth on adjoining areas.
Reserved Forests	An area so constituted under the provisions of the Indian Forest Act or other State Forest Acts, having full degree of protection. In reserved forests all all activities are prohibited unless permitted.
Remote sensing	Remote sensing is the acquisition of data, such as forestarea, forest type, canopy cover and height , from sensors on board aircraft or space based platforms.
Size Class	Tree species designated by size classes through their life development
Spatial Resolution	The minimum area on the earth's surface that can be captured by a satellite sensor vas being separate from its surroundings and is represented by a "pixel"
Sustainable Forest Management	The environmentally appropriate, socially beneficial, and economically viable management of forests for present and future generations**.**
Tree Outside Forest (TOF)	Trees growing outside recorded forest areas.
Wild Life Protected Area	Any Protected areas or conservation areas which receive protection because of their recognized natural, ecological or cultural values. Declared under the Wild Life Protection Act-1972.

Chapter- 1

Introduction

The history of conducting forest inventory in India goes back nearly 160 years. Initially, inventories were limited to division/district level for estimating growing stock of harvestable commercial timber for preparation of Working Plan. The similar practice that started in 1860s, is continuing even today with some modifications by the State Forest Departments. However, forest inventory on a relatively large area basis (catchment basis) using a statistically robust approach and aerial photographs began in 1965 when the Government of India launched the Pre-Investment Survey (PIS) of Forest Resources with the assistance of FAO/United Nations Development Programme (UNDP). The project had twin objectives: (1) to assess the availability of raw material for establishment of wood-based industries; and (2) to establish the nucleus of a national forest survey organisation that would provide continuous and reliable information regarding existing and potential resources as well as a broad description of land use. A trained and committed team from India, as well as foreign experts, were involved in designing the forest inventory and data processing. This was also the beginning of an era in which the assessment of the forest resource was linked to the requirement of wood-based industries. Generally, those areas that had not been surveyed in the past, such as the former Bastar district of Madhya Pradesh, East Godawari catchments, Karim Nagar, Khammam of Andhra Pradesh, West and East Chanda of Maharashtra, Koraput in Orissa, and the Himalayan conifers of Himachal, Jammu and Kashmir, Uttar Pradesh (the area that is now Uttarakhand) and Haryana were inventoried. Aerial photographs were used to prepare thematic maps on a 1:50,000 scale.

The inventory of forest resources in selected areas of the country continued even after 1981 when the PIS was reorganised into the Forest Survey of India (FSI), a national organisation that would undertake forest inventory and wood consumption studies of the country on a regular basis. During the PIS period, about 22.8 million ha of the country's forest area were inventoried. After the creation of the FSI, field inventory was continued in different parts of the country with uniform sampling design. The total area inventoried up to the year 2000 was about 69.2 million ha, which includes some areas that were inventoried twice. Thus, more than 80 percent of the forest area of the country was inventoried comprehensively during a period of 35 years. Based on these inventories, FSI published about 140 reports. Since most of these inventories were carried out in different time period, it was not possible to generate national level estimates on growing stock, forest area and other parameters using these inventories. FSI, therefore, designed and launched a new National Forest Inventory in 2002 for generating national level estimates of growing stocks on the basis of selected sample districts across the country.

Beside forests, extensive wealth of trees outside forests (TOF) has emerged as an alternative source of timber, fuel and fodder to local people, and also maintain the ecological balance. For planning, management and utilization of large amount of wood resources outside the conventional forests, inventory/assessment of TOF becomes very important.

Realising the importance of TOF, Forest Survey of India started TOF inventory in 1991 following conventional field methods by employing stratified random sampling. The rural areas of a State, or a group of districts, were considered as the study area. Since this area was fairly large, there was every possibility of heterogeneity of the study variable i.e.

growing stock. TOF being planted along with agricultural crops is likely to be influenced by the agro-ecological variables. The above-mentioned methodology was providing precise estimates but was very time consuming. It was not able to provide National and State level estimate. To remove these constraints, a new methodology based on remote sensing data was developed in 2002 to generate National level estimates of growing stock of TOF. Remote sensing data is used to identify and stratify the TOF resources in rural areas. For urban area, a separate methodology was adopted based on the Urban Frame Survey (UFS) blocks prepared by National Sample Survey Organisation (NSSO) for each urban area as the distribution pattern of trees in urban areas is different.

During the initial stages of the inventory, the estimation of the growing stock was the primary objectives. However, in the recent past, the estimation of forest carbon stock in all the pools (above ground biomass, below ground biomass, deadwood, litter and soil organic carbon) have become essential considering the important role of forest eco-system in mitigating climate change. The National Forest Inventory was followed since 2002, FSI has information on above ground woody biomass of all trees with dbh 10 cm and more. In addition, information on carbon in forest soil (up to 30 cm depth), humus and litter (other than woody branches) is also available with FSI. However, the information on biomass of branches, foliage, flowers, fruits, twigs, barks and roots of measured trees, unmeasured trees below 10 cm dbh, shrubs, herbs, climbers etc, dead wood, litter (branches only) was not available. To capture the biomass of these missing components, FSI conducted a special study in 2008 and developed biomass equations for these missing components of forest biomass.

1.1 Revisiting National Forest Inventory of India

The NFI launched in 2002 was a district based design under which selected districts were inventoried during a cycle of two years to generate the national level estimates of growing stock and other parameters. This design was continued till 2015-16. There were two major limitations of this design. First, the design was not suitable to give precise estimates at the State level. Second, the revisit time of the same districts was 20 years which was fairly long.

In order to overcome the above limitations and also to meet information requirements of sustainable forest management including those under Green India Mission and CAMPA, reporting obligations under the conventions on climate change (UN-FCCC), biodiversity (UN-CBD), combating desertification (UN-CCD), REDD+ and MRV, it was felt that the existing NFI needs to be redesigned. For this purpose, FSI studied the NFI design of many developed countries and also the design of FAO. The common feature found in all these design is 1) all the countries (and FAO) are following systematic sampling for NFI; 2) Nation-wide wall to wall grids are considered; 3) Clusters of plots are considered; 4) Both permanent and temporary plots are being laid out; 5) Use of geomatics, and specially remotely sensed data in inventory; and 7) Provision of repeating the same plot after a relatively shorter fixed time period.

Thus after a lot of discussion and considering, FSI has switched over to grid based design from a district based design since 2016. The new design is based on uniform grids of size 5 km x 5 km and each year selected grids are selected for inventory of forest and TOF across the country. The plot configuration has also been changed from a single square plot to clusters of circular plots. Before launching of the new design, lot of in-house discussion was held at headquarters and also with zonal offices of FSI. A pilot study was conducted in all zonal offices of FSI to ascertain the size of the plot and distance between

central subplot and other sub-plots. Many new parameters such as NTFPs, invasive species, water bodies near sample plots, diseases etc has also been included in the forest inventory.

1.2 Scope and purpose of the manual

This manual has been developed for field data planners and collectors as well as trainers and field inventory supervisors. This manual deals with forest inventory and TOF inventory methodology, description of field forms, data collection etc. It describes the sampling design used for the survey in forest and TOF inventory, layout design of sample plot, organisation of field work, field forms to record different measurements and detailed instructions to fill up the various field forms.

Chapter - 2

Forest Inventory: Sampling design and organisation of field work

2.1 Scope of Forest Inventory

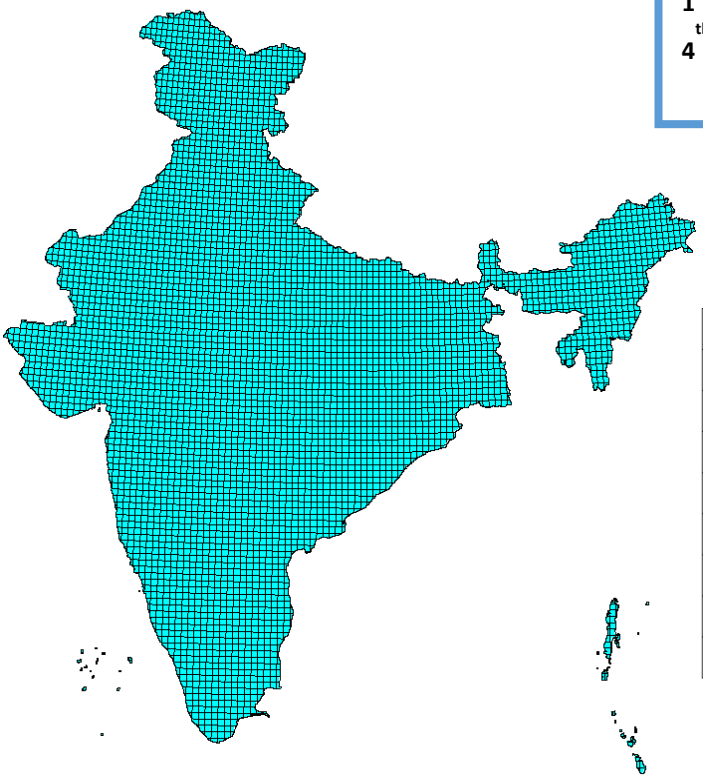
For the purpose of laying out of the sample plots for forest inventory, entire forest area notified under the government records will be taken. The sample points will be generated by FSI headquarters. For identification of forested grids, digital layers of recorded forest area will be taken. In absence of RFA boundaries, green wash layer, which considered as proxy of RFA will be taken. In the SOI topography sheets, area shown by green colour which is generally referred to as green-wash area represents the forested areas at the time of survey carried out to prepare such topographic sheets. It is also indicated on topographic sheets by double dotted line, printed as RF, PF, thick jungle, thick forest etc. (Note: any other area reported as forest area by the local Divisional Forest Officer should be brought to the notice of FSI Headquarters along with the map of area.) GIS will be used for laying out of the sample plots.

2.2 Sampling design for NFI

The sampling design described here is the new sampling design, which is in vogue since 2016. Under the new NFI design, nation-wide uniform grids of size 5 km x 5 km have been taken from the NRSC. A depiction of the same has been given in figure-1. For forest inventory, the revisit time has been fixed as 5 years and for TOF inventory, the revisit time has been fixed as 10 years. Accordingly, for forest inventory, all grids are numbered as 1 to 5 and for TOF inventory, the grids are numbered as 1 to 10. The digital layer of RFA/green wash boundaries has been used for determining the grids for forest inventory. Since generation of State level estimates is one of main objectives of the new sampling design, the optimum sample size has been calculated at State level using past inventory data. The optimum number of sample grids have been identified using the digital layer of forest/greenwash. Grids having specified number will be covered in a single survey year. For forest inventory, the optimum number of grids will be randomly selected for inventory in a particular year. The forest cover map based on satellite-based remote sensing data will be utilised for stratum size calculation.

Within the selected forest grid, a random point will be marked using Geographical Information System (GIS) software. This will form the centre of the sample point around which a sub plot of radius 8 m will be laid out. Other three cluster sub-plot will be laid out as per the design described in the subsequent sections and detailed data will be collected from each sub-plot and recorded in the specified field forms. A schematic diagram of plot design has been given in figure-2.

India map
5 km x 5 km grids



Sampling of grids on 5 yr cycle

1st yr – all 1s 2nd yr- all 3s 3rd yr – all 5s
4th yr – all 2s 5th yr- all 4s 6th yr- all 1s

5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1
2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2
3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3
4	5	1	2	3	4	5	1	2	3	4	5	1	2	3	4
5	1	2	3	4	5	1	2	3	4	5	1	2	3	4	5
1	2	3	4	5	1	2	3	4	5	1	2	3	4	5	1
2	3	4	5	1	2	3	4	5	1	2	3	4	5	1	2
3	4	5	1	2	3	4	5	1	2	3	4	5	1	2	3

Figure-1: Layout of grids

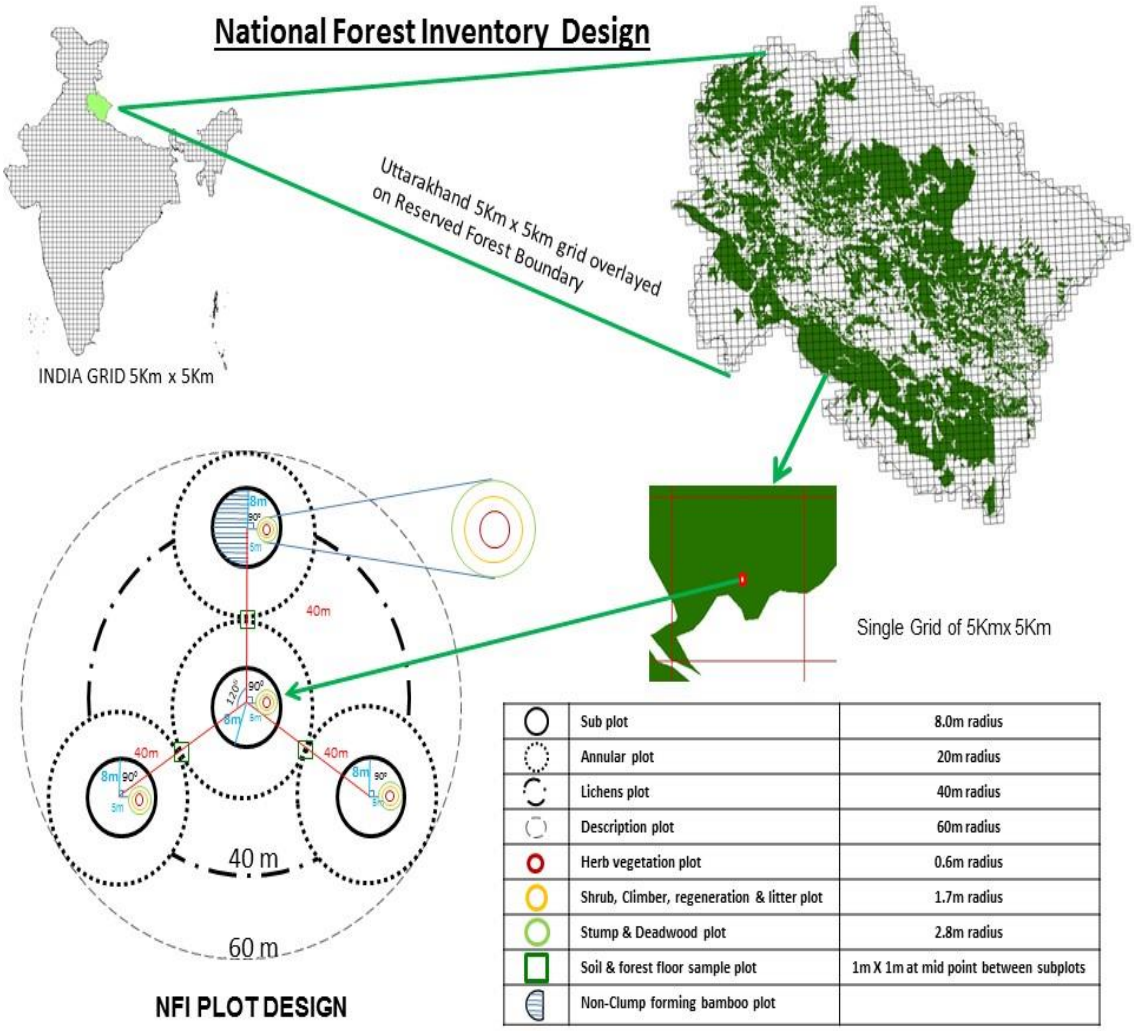


Figure-2: Schematic diagram of sample plot design

2.3 Sampling unit

The cluster of four-circular sub-plots is the sampling unit for enumeration of trees. A circular plot of 60 m radius around the central sub-plot is used for recording data on plot description. The details of different plots are given in the table 1.

Table 1: Detail description of Sub-Plots

Plot	Description
Sub-plot 1 (Central subplot)	Centre of the sample plot
Sub-plot 2	40 meter horizontal distance at azimuths of 360 degree from the centre of subplot 1
Sub-plot 3	40 meter horizontal distance at azimuths of 120 degree from the centre of subplot 1
Sub-plot 4	40 meter horizontal distance at azimuths of 240 degree from the centre of subplot 1
Cicular plot around the plot centre	60 meter radius from the centre of subplot 1
Three concentric micro	Three concentric microplots of 0.6 meter, 1.7 meter and 2.8

plots of different radius	meter laid out at a distance of 5 meter away from the centre of all the subplots at 90 degree towards east direction.
Three square plot at a distance of 20 meter from the centre of sub-plot 1 towards sub-plot 2, 3 and 4	For soil & forest floor, three microplots of 1 X 1 meter at 20 meter distance from the centre of subplot 1 towards sub-plot 2, 3 and 4.

2.4 Sample Size and Precision: The optimum sample size has been determined at State level using past inventories data. The precision of the estimates at national level has been determined as ±5% with 95% confidence limit. The same at State level has been fixed as 10%. Once desired sample size is determined at State level, the requiste forested grids will identify and desired sample points will be laid out randomly.

2.5. Organisational Structure and Responsibilities

The National Forest Inventory (NFI) programme is implemented by FSI through Forest Inventory Division of headquarters and its four zonal offices. The Forest Inventory Division at FSI Headquarters, Dehradun is responsible for preparation of sample designs, generation of methodologies, generation of sample plots for inventory, designing of field forms, preparation of manual, development of data entry and data processing modules. The fieldwork is executed by four zonal offices located in different parts of the country at Shimla, Nagpur, Bengaluru and Kolkata for organising and conducting field inventory of northern, central, southern and eastern parts of the country, respectively.

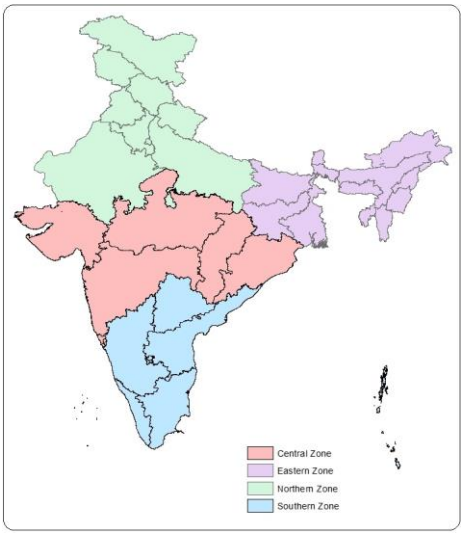


Fig.3: Jurisdiction under different Zones of FSI

The zonal offices are headed by Regional Directors and supported by Senior Deputy Directors/Deputy Directors, Assistant Directors, Senior Technical Assistants (STAs), Junior Technical Assistants (JTAs), Deputy Rangers, Fieldmen and other supporting staff. The responsibilities of officers/officials at zonal offices are broadly given as follows:

S.No.	Designation	Nature of duties
1.	Regional Director	Administrative Head and overall incharge of field work. Sample checking of inventory plots as directed by DG, FSI.
2.	Sr. Deputy Director/ Deputy Director	Supervision and organisation of field work. Liasoning with local forest and district administration, supply of copies of manual, field forms to parties and explaining it to them, supply of stores items to staff, planning of base camps & field camps, control over field accounts, checking and compilation of data and forwarding data to Data Entry Section. Sample checking of inventory plots as directed by DG, FSI.

S.No.	Designation	Nature of duties
3.	Assistant Director	Assist Sr.Dy Director/Dy.Director in execution of field work and checking of the Forest Inventory & TOF Inventory field work done by STA/JTA/Dy. Ranger
4.	Senior Technical Assisstant (STA)	1. Supervision and checking of the field inventory work of Forest & TOF done by JTA/ Dy. Ranger etc. 2. Inventory of Forest & TOF sample points assigned by the Regional Director/Zonal Incharge. 3. Checking of data of Forest & TOF Inventory Field Forms sent by JTA/Dy.Ranger. 4. Any other work assigned by the Regional Director/HQ from time to time.
5.	Field Crew consisting of four persons. 1. Crew leader – STA/JTA; 2. Assisted by – One Dy Ranger /Field man/ FTA; 3. One FTA/Skilled person; and 4. One unskilled person. The composition of the field crew may be changed by the concern Regional Director as per field requirement and availability of manpower.	1. Study of the NFI Manual. 2. Laying out of the sample plot for NFI. 3. Data collection from sample plots for field inventory as per the instructions contained in the NFI Field Manual. 4. Maintenance of account and cash book of field work etc. 5. Checking and supply of data for submission to the Zonal Headquarters. 6. Safe custody of maps / albums and other equipments etc.
6.	Sr./Jr. Draftsman	Marking of sample plots in SOI toposheets and supply of SOI topsheet maps to field parties for NFI survey.

The list of selected sample points (latitude and longitude of centre of plot) for forest inventory will be sent by FSI headquarters. The field works will be executed by the zonal offces of FSI. **The sample points provided by the headquarters under forest inventory should not be changed to TOF (rural) at any circumstances. If the field crew find that the sample plot allotted for forest inventory is falling in any stratum of TOF, the sample point may be discarded and should be brought in the knowledge of headquarters for any further action.**

2.6 General Preparation of Field Work

The Regional Office will distribute the work of inventory to the crews. Once the area to be inventoried is assigned to crews, the crew leaders should select their camping sites in such a manner that maximum number of sample plots can be covered from a camp in the minimum traverse of distance. They should ensure that the day-to-day programme is so chalked out that they are not required to make wasteful journeys. The crew leaders should ensure that their parties are fully equipped with stores, camp and survey equipment, rations, medicines, etc. before commencement of field work. It is also to be ensured that

each party carries optimum required equipment and kit with them in field as well as in camps so that there is no problem of transport of voluminous luggage.

During the fieldwork, some times the field parties need to travel a long distance on foot specally in hilly areas. It is advisable that each crew should take necessary food items along with sufficient water. In addition, first aid box should also be taken by each crew during the field work.

The crew leader should keep good liaison with the local staff of the State Forest Departments. He/she should also see that the tent camps (if established) are properly, neatly and systematically arranged and the staff maintains decorum and proper discipline in the camps. The restricted maps, photographs and confidential documents in the camp should not be passed on or shown to any un-authorised person. Such documents should be kept in personal custody of crew leader. Loss or damage of any such map along with the place of loss should be reported immediately to the Regional Director of the Zone.

2.7. Equipment and Other Materials Required for Each Field Crew

The crew leader should ensure that before proceeding to the field works, all necessary papers, field forms, manual etc may be taken with them. An indicative list of the equipments is given in table 2.

Table 2: List of equipments

S.No.	Equipements and other materials	Number Required	Additional Comments
1.	Silva compass	1	
2.	GPS handset with extra batteries	1	-
3.	Hypsometer/ Haga altimeter for measuring tree height	1	
4.	30-50m (self-rolling) measuring metallic tape or rope/chain, marked at every 1-5 meters)	1	- Metric
5.	Steel scale (6 and 12 inch)	1 each	
6.	Digital Camera + spare memory card + extra batteries + charger	1	
7.	Bark thickness gauge	1	
8.	Coloured flagging tape	Several rolls	Used for marking
9.	Waterproof Bags	2	To protect equipment against water/rain
10.	Callipers	1	Metric
11.	Vernier Calliper	1	
12.	Wedge Prism	1	
13.	Densitometer	1	
14.	Weighing Machine	1	Digital
15.	Axe	1	
16.	Pathal/Khukhri	1	
17.	Plastic bags	As necessary	For soil samples & forest floor
18.	Topographic maps and field maps	As necessary	
19.	Field forms	As necessary	

S.No.	Equipements and other materials	Number Required	Additional Comments
20.	Field manual	As necessary	
21.	Note books	As necessary	
22.	Pens & markers	As necessary	
23.	Hand calculator	1	
24.	Camping equipment & cooking utensils	As necessary	
25.	Food items	As necessary	

2.8 Preparation of Field Forms

The crew leaders must ensure that adequate number of field forms (in case data recorder is not available) are carried in field and each member has understood the field manual properly to have a clear understanding of the works to be done carried out in the field. All doubts regarding field work should be fully cleared before proceeding for the field.

2.9 Preparation of Field Maps and GPS

Only the latest published topographic maps of 1:50,000 scale should be used. However, if the maps are not available on this scale, alternative maps like grey prints, or bromide prints or even 1″ = 1 mile scale maps can be used during survey. Due precaution has to be taken that no area is left un-surveyed for non-availability of maps. The maps can be temporarily borrowed, if required, from the local Forest Department also, if these are not available with any other source.

It is pertinent to mention that the basic 5 km x 5 km grid layer has been borrowed from NRSC, which is made using **Albers Projection and WGS 1984 datum. But the list of sample points which is sent from HQ is under degree minutes second (positioning format) and appropriate Projection and Datum should be used and GPS may accordingly be set. However, if there is any change in Projection & Datum as indicated by headquarter from time to time, then appropriate change in setting of GPS may be incorporated.** The hand held GPS units should be checked and ensured that batteries are new and instrument is working properly. Necessary training for using GPS should also be given to crew members. The latitudes and longitudes of sample plots should be feed in GPS to navigate to the sample plots/point.

2.10 How to Reach the Sample Plot

Hand held GPS should be used to approach the plot centre. The list of sample plots, which are to be tackled by the field crew, are available with them in advance. The crew leader should feed the list of inventory points to his GPS and should use “go to” button to locate the nearest available sample points. Having decided the plot location and grid number to be surveyed, the Crew Leader should find a nearest convenient route so that they can reach the plot with minimum traverse by vehicle or foot. After reaching a nearby location of the plot, the next job would be to navigate/lay the plot and identificaty reference trees from centre point, which will enable locating/checking of the plot at the time of sample checking or revisiting.

2.11 The Reference Point and its Marking

The reference point selected on a map should be such that it is not a temporary structure, which may disappear within a year or two; usually the following features may be considered as reference points.

1. Bench mark
2. Triangulation points
3. Village trijunction points
4. Old bridges and culverts
5. Old temples, mosques and churches
6. Crossing of rail track with roads, rivers, streams
7. Junction of rivers or streams and roads
8. Junction of streams
9. Junction of roads
10. Prominent bends in roads, rivers, streams
11. Old ponds and wells
12. Springs
13. Prominent topographical features in hilly areas such as spurs, knots etc.
14. Mile stone or kilometer stone
15. Boundary pillars (of international, State, district and forest).

As far as possible small nalas less than 6-meter width and 'kachha' roads or foot paths should not be selected for reference point. The crew leaders may select any of the above features, which is most prominent on the map. The location of reference point and its correct description recorded in the form is very important to re-visit the sample plot in future.

After identifying the reference point in the field, a permanent structure or a prominent tree facing the reference point is also identified. The following details are recorded with red paint on the tin plate and fixed on the tree with nails or some other non-insertion way (radium band etc):

1. Grid Code
2. Mapsheet Number
3. Bearing from reference point to the plot centre as obtained from topographic map (for details see Annexure-X)
4. Distance of plot centre from reference point in kilometers as obtained from the topographic map
5. Initials of crew leader
6. Date of survey
7. Distance and bearing from two nearly prominent trees or structures to the reference point.

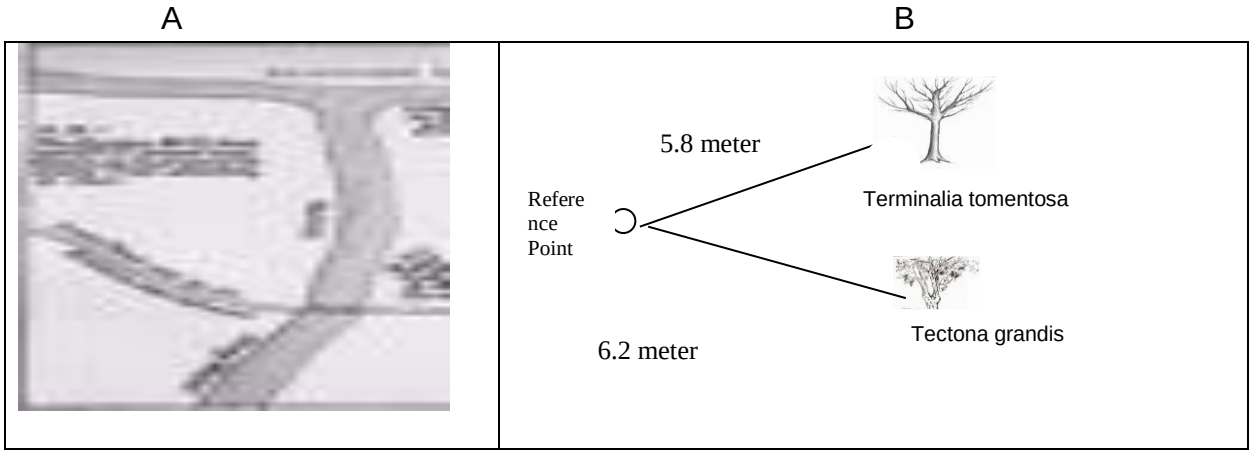
In addition to these, the following recordings will be made on the reverse Plot Approach Form (which will be explained in the next chapter).

A) A free hand diagram of nearly 10 cm x 10 cm size showing the reference point and its surrounding prominent features. This is especially useful for locating the junctions of small nalas, roads, etc. which are adopted as reference points by the crew leaders (see illustration below at figure-3).

B) A rough diagram of nearly 10 cm x 10 cm showing distance and bearing from two nearby prominent trees or structures to the reference point (see illustration below at figure 3).

The names of the trees be given preferably on the diagram.

For example, in sketch 'A' shown below, the tri-junction of the road has been taken as reference point. In sketch 'B', two prominent trees with their names and distance from reference point has been shown.



Sub-plot 1

Figure 4

(Note: In the present format of recording information in PDA device, the recording of permanent reference point/structures is disabled. However, data recording of two reference trees from plot centre (sub-plot 1) will be made in PAF).

2.12 Ranging to Sample Plot Centre

At the reference point, the bearing of the compass is set towards the centre of the sub-plot 1 of sample plot. The crew leader then moves towards the centre and measures the horizontal distance as provided by the topographic sheet. For the ease in further checking, the trees along the bearing line be given small blazes at breast height.

2.13 Field Plot Measurements and Observations

After reaching the plot centre, some qualitative information is to be recorded occularly within a radius of **60 m** from the plot centre, i.e. centre of Subplot-1 without actually laying out the plot. The information collected is land use, legal status, crop composition, soil, grazing, fire etc. It is advisable that the PDF should be filled at the last as by the time inventory work is completed in all the sub-plots, field crew has a fairly good idea about different parameters which are to be recorded in the PDF.

2.13.1 Layout of Sample Plot in the Field

On the basis of pilot study conducted in four districts, one in each FSI Zone, it is concluded that a cluster of four circular subplots of eight-meter radius in a fixed pattern will be considered as sample plot. The centre of sub-plot 1 will be the plot centre. Sub-plot 2, 3 and 4 are located at 40-meter horizontal at azimuths of 360º, 120º and 240º from the

center of sub-plot 1 respectively. Enumeration will be done in all the sub-plots. The additional data on sample tree form will be collected from sub-plot 2 only. However, if there are no trees found in the sub-plot 2, the information is to be collected from sub-plot 3, if not in sub-plot 3 then from sub-plot 4 and if not in sub-plot 4 then sub-plot 1 only.

The plot centre is reached after covering desired distance and bearing from the reference point/tree. **Shifting of plot centre of forest inventory is not permitted in under any circumstances**. After reaching the plot centre, put a stout peg of approximately 10 cm diameter and 1.5-meter height, blaze it at the top and fix it firmly on the ground facing the blazed surface towards the direction from which sample point was approached. Write the sample point reference number and the date on the blazed tree surface. Marking of the tree should be done in such a way that tree is not damaged. Select two nearby prominent trees preferably at right angles from the peg for permanent referencing of the sample point. The following details are recorded with red paint on the tin/aluminium plate and fixed on the tree with nails or some other non-insertion way (radium band etc.) on the tree. Marking of the tree should be done in such a way that tree is least damaged.

1. Grid code
2. Mapsheet Number
3. Initials of crew leader with date
4. Distance and bearing from two nearby prominent trees or structures to the plot centre of Subplot-1. These details are also recorded on Plot Approach Form.

After reaching the plot centre, i.e. the centre of sub-plot 1, Azimuth at 360^0, 120^0 and 240^0 at a distance of 40 meters from the centre of sub-plot 1, centre of sub-plot 2, 3 and 4, respectively, will be fixed. All these centres of sub-plot should be marked by thin poles or bamboos of 5 cm dia and 1.5 meter in height. A red colour cloth may be tied at the top end of these poles for clear visibility from different spots in the plot.

In case of centre of sub-plot 1 is inaccesible or falling in water bodies, efforts should be made by the crew leader to locate the centres of other three subplots approximately using the GPS, the distances and back bearings of the centres of the sub-plots 2, 3 and 4 each at 40 metres and 180^0, 300^0 and 60^0 respectively from the centre of the sub-plot 1.

2.13.2 Layout of other attached Microplots

2.13.2.1 Micro Plot for Soil and Forest Floor: Within a sample plot, three microplots of 1 m x 1 m will be laid out at 20-meter distance from the centre of sub-plot 1 in the direction of centre of sub-plot 2, 3 and 4 for collecting data on soil and forest floor.

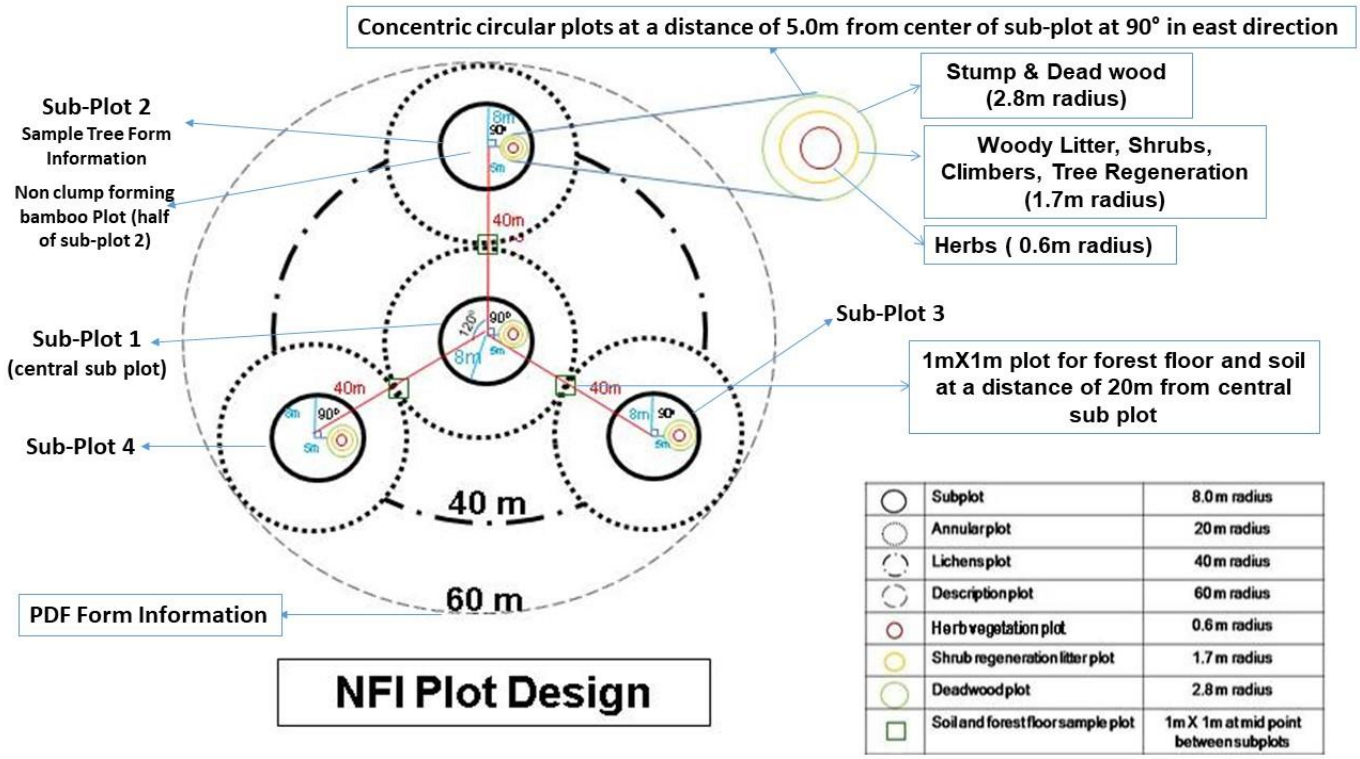


Figure 5: National Forest Inventory Sample Plot Design

However, soil data will be collected from any two plots. To lay out these plots, 0.71-meter distance is marked in NE, SE, SW and NW directions and then these points are joined to form the plot.

2.13.2.2 Micro Plot for NTFPs- Herb (0.6 m radius); Shrub, Climber, Litter & Regeneration (1.7 m radius); and Stump and Dead Wood (2.8 m radius). Within sub-plots 1, 2, 3 and 4, three concentric microplots of 0.6 meter, 1.7 meter and 2.8 meter will be laid out at a distance of 5 meter from the center of all the sub-plot at 90^{o} towards east direction respectively to collect the data on NTFP (herbs, shrubs, climbers), woody litter, regeneration; and stump and dead wood respectively.

2.14 Data Collection

After demarcating the plot and satisfying that it is correctly oriented, the crew leader shall collect the data in prescribed forms. Instructions for filling different forms are given in the next chapter. He shall be personally responsible for data to be collected as per the instruction given in the manual. He shall assign duties to other crew members as per choice (considering efficiency of every member of the team).

The following precautions should be taken while collecting data.

1. The data should be collected accurately with the help of the members of the crew and should be recorded neatly in good hand writing in the proper field forms by the crew leader himself, in the field.
2. The code numbers should be neatly and correctly recorded in legible manner.

3. Over-writing of codes should be avoided. Wherever any mistake is committed in writing, the first entry should be cancelled and a corrected entry should be written duly attested by crew leaders.
   The digits should be written as: 1, 2, 3, 4, 5, 6, 7, 8, 9, 0

4. Filling of Forms in Hindi, Urdu or regional languages should not be adopted without approval from the Head of the Office.

5. The data will be collected and recorded in the following field forms:

Field Form No.	Field Forms	Form Code
1.	Plot Approach Form	01
2.	Plot Description Form	02
3.	Plot Enumeration Form *(combined with STF for data collection in PDA)*	03
4.	Sample Tree Form	04
5.	Bamboo Clump Analysis Form	05
6.	Bamboo Enumeration and Analysis Form (Non-Clump Forming)	06
7.	Bamboo Weight Form	07
8.	NTFPs (Herbs, Shrubs and Climbers) and Regeneration Form	08
9.	Soil and Forest Floor Carbon Form and Soil and Forest Floor Sample Card	09
10.	Stump, Dead Wood and Woody Litter Form	10
11.	Herbs, Shrubs and Climbers Biomass Form	11

6. Detailed instructions for filling up of these forms are given in the following chapter.
7. If complete data of a subplot does not get accommodated in one sheet, a second sheet as a continuation sheet should be used and it should carefully have tagged with the main form after filling all columns and clearly writing words ‘continuation sheet’ on the second and onwards pages.
8. Before leaving the plot, ensure that no instruments or stores are left in the field.
9. Ensure that the sample plot is left as clean as it was before entering it.
10. Ensure that all members who have assisted in recording the information sign and write their names on the form.
11. Ensure that all information is recorded/written and measured in field itself and nothing is taken to camp for compliance. Before leaving a sample plot, it should be ensured that all jobs of recording, filling forms, muster rolls etc. are completed in all respects.

2.15 Quality Assurance

The role of the quality assurance is to ensure that all resource inventory data are collected scientificly and accurately as per the instruction given in the manual. Further the performance of individual crew members will be checked. It also helpful in revealing inadequacies in the instructions and in the training programme. For checking of the field data, checking crews headed by Dy. Director/ Asstt. Director/ STA are formed in every zone for 10% checking of fieldwork of each crew to maintain and improve the quality of field data collection.

2.16 Personal conduct and Safety

Field crew members, as representative of the FSI, are expected to be at courteousy and diplomatically in all their contacts with public and other agancies. Field crews are expected to project their professional image. Field staff working in the field are subject to many safety hazard. These can be minimized by considering the following.

1. Wear protective clothing provided: long sleves shirts, hats, long pants and boots can protect from cuts avrasions and biting insects.
2. Every crew should have a first aid kit with essential basic medicines.
3. Each crew must have edequate water and eatables.

For forest inventory local forest staff should be consulted before going for the field work.

Chapter - 3

Forest Inventory: Instructions for recording data in different field forms

3.1 Plot Approach Form (Field Form No. 1)

This form will give details, such as mode of travel by vehicle etc. up to the reference point. The bearing from the reference point and the distance from the reference point to the nearest subplot -1 centre will be recorded in degrees and in meters respectively. This form will also indicate the time of starting from camp and arrival at the reference point, time of arrival at the plot(s), time of leaving the sample plot(s) and time of returning to camp. All the timings will be written in hours. For example, 4.30 P.M. will be written as 1630 hrs.

The Crew Leader must fill up the proper identification of the sample plot (like State, Division etc.) by correct codes from the manual for each item. The distances shall be recorded as per specified unit against the item. Descriptive information is to be given in the space provided for the item. Extra sheets may be used (wherever the space given is not sufficient) with proper identification on the sheet.

The different works done by the individual members of crew should also be indicated against the items in the Plot Approach Form. While filling this form, the crew leader should bear in mind that all information in this form is recorded in such a manner that it will help in relocating the plot during checking and re-inventory.

Coding instructions are as under: -

Coding Instructions

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td>1.</td><td>Job No.
(Col.1(3))</td><td>Three digit code will be filled in by Data Entry Section (DES) of respective zone for record keeping</td></tr>
<tr><td>2.</td><td>FSI Zone Code
(Col.2(1))</td><td>Name of the zone will be coded as under:
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>1</td><td>Northern Zone</td></tr>
<tr><td>2</td><td>Central Zone</td></tr>
<tr><td>3</td><td>Southern Zone</td></tr>
<tr><td>4</td><td>Eastern Zone</td></tr>
</table></td></tr>
<tr><td>3.</td><td>Physiographic Zone Code
(Col. 3(2))</td><td>Record name of the physiographic zone in two digits as under: NEED NOT TO BE FILLED
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>01</td><td>Western Himalayas</td></tr>
<tr><td>02</td><td>Easterm Himalayas</td></tr>
<tr><td>03</td><td>North East Ranges</td></tr>
<tr><td>04</td><td>Northern Plains</td></tr>
<tr><td>05</td><td>Eastern Plains</td></tr>
<tr><td>06</td><td>Western Plains</td></tr>
<tr><td>07</td><td>Central Highlands</td></tr>
</table></td></tr>
</table>

		08 North Deccan 09 East Deccan 10 South Deccan 11 Western Ghats 12 Eastern Ghats 13 West Coast 14 East Coast
4.	State Code (Col. 4(2))	Record two-digit States code as given in Annexure II.
5.	Forest Division Code (Col. 5(2))	Record two-digit code for Forest Divisions as given in Annexure III.
6.	District Code (Col. 6(2))	Record two-digit districts code as given in Annexure III.
7.	Mapsheet Number. (Col. 7(6))	Record six-digit code for denoting a mapsheet as given in the Annexure IV.
8.	Grid Code (Col. 8(6))	Record six-digit code as per the list given by headquarters.
9.	Name of Camp/District (Col. 9)	Self explanatory.
10.	Time (hrs.) at which left the camp/ move to next plot (IST) (Col. 10 (4))	Record time in hours (For example 08.30 hrs is written as 0830.)
11.	Distance Covered by Vehicle (km) (Col. 11 (3))	Self explanatory. Ex: 10 km should be written as 010
12.	Time Taken in Journey by Vehicle (Col. 12 (4))	Record time in hours
13.	Location of the Place(Latitude) (Col. 13 (8))	Record Latitude of the place upto where journey is performed by vehicle.
14	Location of the Place (Longitude) (Col. 14 (8))	Record Longitude of the place upto where journey is perform by vehicle
15.	Time(hrs.) at Which Started on Foot to plot centre (Col. 15 (4))	Record time in hours.
16.	Distance Covered on Foot upto the plot centre (Col. 16 (4))	Record the distance upto the Plot Center in Km upto two decimal place. (Ex 5.5 km should be written as 0550)
17.	Time (hrs.) of arrival at the Plot (Col. 17 (4))	Record time in hours
18.	Time (hrs) of Departure from the Plot (Col. 18 (4))	Record time in hours
19.	Time (hrs.) at which Returned to the Camp/	Record time in hours

	move to the next plot (Col. 19 (4))			
20.	Compassing/Navigation done by	Record name of the person who has carried out this work		
21.	Plot Laid Out by (Col. 21))	Record name of the person who has carried out this work		
22.	Tree Enumeration Done by (Col. 22))	Record name of the person who has carried out this work		
23.	Height measurement taken by (Col. 23))	Record name of the person who has carried out this work		
24.	Bark Thickness (B.T.) and other measurements taken by (Col. 24))	Record name of the person who has carried out this work		
25.	Bamboo enumeration done by (Col. 25))	Record name of the person who has carried out this work		
26.	Bamboo weight taken by (Col. 26))	Record name of the person who has carried out this work		
27	Herbs/Shrubs/climbers/Regeneration data collected by (Col. 27))	Record name of the person who has carried out this work		
28.	Soil / Forest floor data collected by (Col. 28))	Record name of the person who has carried out this work		
29.	Details of the reference (in case of plot status 1 and 5)			
Reference Tree 29	Species Code (Col. 30 (4))	Species Name (Col. 31)	Distance from reference Tree to Plot Centre (in meters up to two decimal places) (Col. 32 (4))	Bearing from reference Tree to Plot Centre (in degree) (Col. 33 (3))
1.				
2.				
30.	Latitude and Longitude of the place upto where the crew approached (This item is to be filled up only if the status of sample plot is 2/3 /4)	Latitude (Col. 34 (8) Longitude (Col. 35 (8)		
36.	Crew Leader (Name) (Col. 36))	Record name of the crew leader.		
37.	Remarks (upto 50 words)	Remark, if any, may be recorded here upto 50 words		

3.2 Plot Description Form (Field Form No.2)

These form describes completely the sample plot through various qualitative parameters like land use, legal status, topography, slope, aspect, soil, regeneration, fire, grazing, etc. This form will be filled up for every sample plot laid out on ground. An area of about **1.13 hectare** i.e. **60 m radius around the centre of the subplot-1** will be considered for filling up this form without actually demarcating it on the ground.
Note: This form should be filled at the end of entire enumeration in all the subplots and other field forms.

Coding instructions are as under:-

Coding Instructions

<table>
<tr><th>S. No.</th><th>Item</th><th>Description</th></tr>
<tr><td>1.</td><td>Job No.
(Col. 1(3))</td><td>Three digit code will be filled in by Data Entry Section (DES) of respective zone for record keeping</td></tr>
<tr><td>2.</td><td>Survey Code
(Col. 2(1))</td><td>Record the survey code for forest inventory as ‘1’</td></tr>
<tr><td>3.</td><td>Form Code
(Col. 3(2))</td><td>Two-digit code will be filled in by the DES for PDFas ‘02’.</td></tr>
<tr><td>4.</td><td>FSI Zone
(Col. 4(1))</td><td>Record name of the FSI zone code as under:
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>1</td><td>Northern Zone</td></tr>
<tr><td>2</td><td>Central Zone</td></tr>
<tr><td>3</td><td>Southern Zone</td></tr>
<tr><td>4</td><td>Eastern Zone</td></tr>
</table></td></tr>
<tr><td>5.</td><td>Physiographic Zone
(Col. 5(2))

NEED NOT TO BE FILLED</td><td>Record name of the physiographic zone code in two digits as under: NEED NOT TO BE FILLED
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>01</td><td>Western Himalayas</td></tr>
<tr><td>02</td><td>Easterm Himalayas</td></tr>
<tr><td>03</td><td>North East Ranges</td></tr>
<tr><td>04</td><td>Northern Plains</td></tr>
<tr><td>05</td><td>Eastern Plains</td></tr>
<tr><td>06</td><td>Western Plains</td></tr>
<tr><td>07</td><td>Central Highlands</td></tr>
<tr><td>08</td><td>North Deccan</td></tr>
<tr><td>09</td><td>East Deccan</td></tr>
<tr><td>10</td><td>South Deccan</td></tr>
<tr><td>11</td><td>Western Ghats</td></tr>
<tr><td>12</td><td>Eastern Ghats</td></tr>
<tr><td>13</td><td>West Coast</td></tr>
<tr><td>14</td><td>East Coast</td></tr>
</table></td></tr>
<tr><td>6.</td><td>State
(Col. 6(2))</td><td>Record two-digit State code as given in the Annexure II</td></tr>
<tr><td>7.</td><td>District
(Col. 7(2))</td><td>Record two-digit district code as given in the Annexure III</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th colspan="3">Description</th></tr>
<tr><td>8.</td><td>Forest Division (Col. 8(2))</td><td colspan="3">Record two-digit forest division code as given in the Annexure III.</td></tr>
<tr><td>9.</td><td>Mapsheet Number. (Col. 9(6))</td><td colspan="3">Record six-digit code as given in the Annexure IV.</td></tr>
<tr><td>10.</td><td>Grid Code (Col. 10(6))</td><td colspan="3">Record six-digit code as per the list given by headquarters.</td></tr>
<tr><td>11.</td><td>Latitude (Col. 11(8))</td><td colspan="3">Record the latitude as per the list given by headquarters.</td></tr>
<tr><td>12.</td><td>Longitude (Col. 12(8))</td><td colspan="3">Record the longitude as per the list given by headquarters.</td></tr>
<tr><td>13.</td><td>Legal Status (Col. 13(1))</td><td colspan="3">Record one-digit code as under. The information regarding legal status will be filled up with reference to information on the map and/or by making enquiries with local forest officers.</td></tr>
<tr><td></td><td></td><td>Code</td><td>Item</td><td>Description</td></tr>
<tr><td></td><td></td><td>1.</td><td>Reserved Forest</td><td>An area so constituted under provisions of Indian Forest Act 1927 and/or State Forest Acts, having full degree of protection. In reserved forest all activities are prohibited unless permitted.</td></tr>
<tr><td></td><td></td><td>2.</td><td>Protected Forest</td><td>An area notified under the provisions of Indian Forest Act 1927 and/or other State Forest Acts, having limited degree of protection. In protected forests all activities are permitted unless prohibited.</td></tr>
<tr><td></td><td></td><td>3.</td><td>Unclassed</td><td>Areas, which are not classified as reserved or protected forests but which are Govt. lands. They may be property of any Govt. department.</td></tr>
<tr><td></td><td></td><td>~~4.~~</td><td>National Park</td><td>Areas which have been declared as National park by a legislation will be kept under this class No need to fill up this item as it is covered under the column “15 Wild Life Protected Area”.</td></tr>
<tr><td></td><td></td><td>5.</td><td>Private Forest lands</td><td>Private forest lands and agricultural tree lands owned by private individuals, communities or corporations will come under this category.</td></tr>
<tr><td></td><td></td><td>6.</td><td>Private land with trees owned by Govt.</td><td>This will include lands owned by individuals on which tree growth including bamboos belong to Govt.</td></tr>
<tr><td></td><td></td><td>7.</td><td>Undetermined</td><td>Any forest land which cannot be</td></tr>
</table>

S. No.	Item	Description		
				classed under any of the above categories will be classified here.
14.	Land use (Col. 14(2))	Record two-digit code to denote various land use classes as given under. The crew leader should remember that this is a very important observation on which entire data processing and estimation of potentiality of the catchment etc. are based.		
		Code	**Item**	**Description**
		01	Closed forest	All lands with a forest cover of trees (including bamboo) with canopy density 70% and above (canopy density is defined as the relative completeness of canopy expressed as percentage taking closed canopy as 100. Standing in a plot or in area around it, observe the tree growth and assess the percentage of the space covered).
		02	Dense forest	All lands with a forest cover of trees with canopy density 40-69%.
		03	Open forest	All lands with a forest cover of trees with Canopy density 10-39%.
		04	Scrub	Inferior growth, chiefly small or stunted trees present with canopy density less than 10%.
		05	Bamboo brakes	No need to fill up this land use class. This will be taken care of by bamboo density and crop composition. If crop composition code is 12, 22 or 23 and bamboo density code is 1 or 2, then land use code will be recorded as 01. With the same crop composition codes and bamboo density code with 3 or 4, the land use code will be recorded as 02. Similarly for the bamboo density codes 5 or 6, the land use code will be 03.
		06	Shifting cultivation	Areas under current as well as last year's shifting cultivation will come under this class. The agricultural crop may be standing or may have been harvested.
		07	Young crop including plantations of forestry species	Young crop of forestry species including plantations having diameter 2 cm to 9 cm at breast height. This code also includes all young regeneration of forestry species either natural or of artificial

S. No.	Item	Description		
				origin, with average stems below 2 cm diameter at breast height covering an area of more than 0.5 ha. This will also include unestablished regeneration.
		08	Trees in line	This will include trees planted along canal banks, road sides, railway lines, wind brakes and shelter belts planted under various Social Forestry Schemes.
		09	Forest roads etc.	This class will include areas under forest roads, depots, colonies, nurseries, and such other forest land used in connection with forest administration.
		10	Govt. grass lands	This will include areas under natural or planted grass lands pastures (including Alpine pastures) etc., which are owned by Government.
		11	Barren lands	This will include areas with exposed surfaces like rock sheets, sand dunes, swamps and areas without any vegetation.
		12	Agricultural land without trees in surround	All lands under cultivation including fallow lands will come under this category. These lands will not have any tree growth along bunds or in their vicinity of 60 m radius.
		13	Agricultural land with trees in surround	This will include all lands under cultivation including fallow lands, which are covered with trees along bunds and in their surround within 60 m radius.
		14	Non forestry plantations	All lands with tree planted primarily for purposes other than forestry such as cashew, coffee, tea gardens, rubber, private grass lands etc.
		15	Habitation	This will include villages, city sites, industrial area, grave yards, grounds, houses, colonies etc.
		16	Water bodies	Land under lakes, water courses etc.
		00	Not reported	
14 (a)	Density for Land use	01	Closed canopy	All lands with a forest cover of trees (including bamboo) with canopy

<table>
<tr><th>S. No.</th><th>Item</th><th colspan="3">Description</th></tr>
<tr><td></td><td>class 07 and 14 (Col. 14(a) (2))</td><td></td><td></td><td>density 70% and above (canopy density is defined as the relative completeness of Canopy expressed as percentage taking closed canopy as 100. Standing in a plot or in area around it, observe the tree growth and assess the percentage of the space covered).</td></tr>
<tr><td></td><td></td><td>02</td><td>Dense canopy</td><td>All lands with a forest cover of trees with canopy density 40-69%</td></tr>
<tr><td></td><td></td><td>03</td><td>Open canopy</td><td>All lands with a forest cover of trees with canopy density 10-39%.</td></tr>
<tr><td></td><td></td><td>04</td><td>Scrub</td><td>Inferior tree growth chiefly of small or stunted trees with canopy density less than 10%.</td></tr>
<tr><td></td><td></td><td>00</td><td>Not applicable</td><td></td></tr>
<tr><td>15</td><td>Wild life protected area (Col.15 (1))</td><td colspan="3">Record wild life protected area as per the following table. The list of conservative/community reserves is given in Annexure-XI.
<table><tr><th>Code</th><th>Description</th></tr><tr><td>1</td><td>National Park</td></tr><tr><td>2</td><td>Wild life sanctuary</td></tr><tr><td>3</td><td>Conservation reserve</td></tr><tr><td>4</td><td>Community reserve</td></tr><tr><td>5</td><td>Not applicable</td></tr><tr><td>6</td><td>Tiger Reserve</td></tr></table></td></tr>
<tr><td>16</td><td>General topography of the plot (Col. 16(1))</td><td colspan="3">General topography of the area around the centre of the plot (i.e. of the area comprising of the plot of 60 m radius depending upon the location of the plot) will be determined with the help of 1:50,000 or 1: 63,360 toposheets. This observation on map will be confirmed by field observation also.
<table><tr><th>Code</th><th>Item</th><th>Slope (Degree)</th><th>% Slope</th></tr><tr><td>1</td><td>Flat</td><td>$\leq 3^0$</td><td>< 6</td></tr><tr><td>2</td><td>Gently rolling</td><td>$4^0 – 15^0$</td><td>7 – 27</td></tr><tr><td>3</td><td>Hilly</td><td>$16^0 – 40^0$</td><td>29 – 84</td></tr><tr><td>4</td><td>Very Hilly</td><td>41^0- 64^0</td><td>87 – 205</td></tr><tr><td>5</td><td>Steep Hilly</td><td>65^0 +</td><td>214 +</td></tr><tr><td>0</td><td>Not reported</td><td></td><td></td></tr></table></td></tr>
<tr><td>17</td><td>Slope (Col.17(3))</td><td colspan="3">Determine the average slope of the hill face by standing at the plot centre and looking both ways up and down. Put the actual figures in percentage. If the instrument used reads slope in degrees, same should be converted to percentage slope as per Annexure V. These codes should be filled up</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td></td><td>according to the General Topography codes i.e. 1, 2, 3, 4 and 5 with upto 3^0, 4^0-15^0, 16^0-40^0, 41^0-64^0 and 65^0+ respectively.</td></tr>
<tr><td>18</td><td>Position on slope
(Col. 18(1))</td><td>The position of a plot will be examined on 1:50,000 or 1: 63,360 scale toposheets and its position with reference to hill slope and general topography on which it is located will be classified as under:
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>1</td><td>Ridge top</td></tr>
<tr><td>2</td><td>Upper one third</td></tr>
<tr><td>3</td><td>Middle</td></tr>
<tr><td>4</td><td>Lower one third</td></tr>
<tr><td>5</td><td>Valley bottom</td></tr>
<tr><td>6</td><td>Flat land</td></tr>
<tr><td>7</td><td>Plateau</td></tr>
<tr><td>8</td><td>Shallow ravine (depth of ravine < 5 meters)</td></tr>
<tr><td>9</td><td>Deep ravine (depth of ravine > 5 meters)</td></tr>
<tr><td>0</td><td>Not reported</td></tr>
</table></td></tr>
<tr><td>19</td><td>Altitude
(Col.19(4))</td><td>The altitude of plot will be examined on 1:50,000 or 1:63,360 scale toposheet or GPS and record the altitude in meters in four digits e.g. 550 meters shall be recorded as 0550.</td></tr>
<tr><td>20</td><td>Aspect
(Col.20(1))</td><td>Aspect refers to the direction of the slope. Record aspect in one of the following classes:
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>1</td><td>Northern</td></tr>
<tr><td>2</td><td>North-eastern</td></tr>
<tr><td>3</td><td>Eastern</td></tr>
<tr><td>4</td><td>South-eastern</td></tr>
<tr><td>5</td><td>Southern</td></tr>
<tr><td>6</td><td>South-western</td></tr>
<tr><td>7</td><td>Western</td></tr>
<tr><td>8</td><td>North-western</td></tr>
<tr><td>9</td><td>No aspect</td></tr>
<tr><td>0</td><td>Not reported</td></tr>
</table></td></tr>
<tr><td>21</td><td>Rockiness
(Col.21(1))</td><td>Rockiness refers to the degree of presence of rock covering the land surface in 60 m radius around the centre of the sub plot-1. Small pieces of broken stones, boulders and</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td></td><td>pebbles will not constitute ‘rock’. Record various classes codes as under :
<table>
<tr><th>Code</th><th>Item</th><th>Description</th></tr>
<tr><td>1</td><td>High</td><td>When more than 80% area is covered by rock</td></tr>
<tr><td>2</td><td>High medium</td><td>When more than 50% to 80% area is covered by rock</td></tr>
<tr><td>3</td><td>Low</td><td>When less than 30% area is covered by rock</td></tr>
<tr><td>4</td><td>No rock</td><td>Rock absent and entire land surface is available for tree growth</td></tr>
<tr><td>5</td><td>Low medium</td><td>When more than 30% to 50% area is covered by rock</td></tr>
<tr><td>0</td><td>Not reported</td><td></td></tr>
</table></td></tr>
<tr><td></td><td>Soil data
(Col. 22-28)</td><td>Soil information will be collected for plots belonging to such areas which are treated as ‘Forest. The information on soil, humus, soil colour, soil consistency, soil texture, coarse fragments and soil depth will be recorded by examining the soil samples collected from soil data of Field Form 9.</td></tr>
<tr><td>22</td><td>Humus
(Col.22(1))</td><td>Humus is the decomposed organic matter (leaves, twigs, branches etc.) which has become a part of the upper most soil layer. It should be clearly distinguished from the un-decomposed leaf litter.

The litter should, therefore, be removed from soil surface before making any measurement. Record presence of humus in one of the following classes:
<table>
<tr><th>Code</th><th>Item</th><th>Description</th></tr>
<tr><td>1</td><td>Shallow</td><td>When the humus is less than 5 cm. thick</td></tr>
<tr><td>2</td><td>Medium</td><td>When the thickness of humus layer is from 5 cm to under 10 cm.</td></tr>
<tr><td>3</td><td>Deep</td><td>When the thickness of humus layer is 10 cm and more</td></tr>
<tr><td>4</td><td>No humus</td><td>When the humus layer is absent.</td></tr>
<tr><td>0</td><td>Not reported</td><td></td></tr>
</table></td></tr>
<tr><td>23</td><td>Soil Colour
(Col. 23(1))</td><td>Record the colour of the upper horizon of the soil below the humus layer as per the item given under:
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>1</td><td>Black</td></tr>
<tr><td>2</td><td>Brown</td></tr>
<tr><td>3</td><td>Red</td></tr>
<tr><td>4</td><td>Other</td></tr>
<tr><td>5</td><td>No soil</td></tr>
<tr><td>0</td><td>Not reported</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th colspan="3">Description</th></tr>
<tr><td rowspan="8">24</td><td rowspan="8">Soil consistency (Col. 24(1))</td><td colspan="3">Soil consistency comprises the nature of soil material that is expressed by the degree and kind of cohesion or resistance to deformation or rupture. To evaluate consistency, select and attempt to crush in the hand a small soil mass that appears slightly moist and assign code as follows :</td></tr>
<tr><td>Code</td><td>Item</td><td>Description</td></tr>
<tr><td>1</td><td>Friable</td><td>Soil which is loose and which crumbles very easily with a slight pressure of fingers and content is high in this type. Digging is very easy in this type of soil.</td></tr>
<tr><td>2</td><td>Slightly compact</td><td>Soil which sticks together as a lump when taken in hand. Digging a pit in this type of soil is very easy with a pick-axe and is comparatively easier than in a compact soil. Such a soil can be scraped easily with the toe of shoe.</td></tr>
<tr><td>3</td><td>Compact</td><td>Soil which is difficult to dig. Clay content is high in this type and the soil is hard due to soil particles sticking compactly.</td></tr>
<tr><td>4</td><td>Cemented</td><td>Soil in which digging is practically impossible due to soil particles cemented together.</td></tr>
<tr><td>5</td><td>No Soil</td><td>-</td></tr>
<tr><td>0</td><td>Not reported</td><td></td></tr>
<tr><td rowspan="9">25</td><td rowspan="9">Soil texture (Col.25(1))</td><td colspan="3">Texture of soil refers to relative occurrence of clay, silt and sand particles. Examine the texture of the soil in the region of the pit where the humus and the mineral soil are mixed by feeling with the hand and classify it in one of the following categories and record the code number:</td></tr>
<tr><td>Code</td><td>Item</td><td>Description</td></tr>
<tr><td>1</td><td>Clayey</td><td>Soil contains mostly clay particles</td></tr>
<tr><td>2</td><td>Clayey loam</td><td>Soil having higher percentage of clay particles but also having some sand and silt.</td></tr>
<tr><td>3</td><td>Loam</td><td>Soil having mostly silt and with some clay.</td></tr>
<tr><td>4</td><td>Sandy loam</td><td>Soil in which sand particles are pre-dominant but also contains silt.</td></tr>
<tr><td>5</td><td>Sandy</td><td>Soil having mostly sand particles.</td></tr>
<tr><td>6</td><td>No soil</td><td>-</td></tr>
<tr><td>0</td><td>Not reported</td><td></td></tr>
<tr><td>26</td><td>Coarse-Fragments</td><td colspan="3">Record coarse fragments like gravel, boulders, loose stones present in the soil mass (or top surface of the soil) as per</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th colspan="3">Description</th></tr>
<tr><td></td><td>(Col.26(1))</td><td colspan="3">code given below:</td></tr>
<tr><td></td><td></td><td>Code</td><td>Item</td><td>Description</td></tr>
<tr><td></td><td></td><td>1</td><td>Loose stones</td><td>Stones more than 25 cm dia. present.</td></tr>
<tr><td></td><td></td><td>2</td><td>Bouldery</td><td>Broken stones of diameter varying from 8 - 25 cm present.</td></tr>
<tr><td></td><td></td><td>3</td><td>Gravely</td><td>Stoney fragments less than 8 cm dia. present</td></tr>
<tr><td></td><td></td><td>4</td><td>No coarse fragments</td><td>Gravel/stones absent</td></tr>
<tr><td></td><td></td><td>0</td><td>Not reported</td><td></td></tr>
<tr><td></td><td></td><td colspan="3">Note: - The presence of coarse fragments will be recorded only when more than 50 % of 60 m radius plot is covered with such fragments. Otherwise code number 4 will be given.</td></tr>
<tr><td>27</td><td>Soil Depth (Col. 27(1))</td><td colspan="3">Depth of soil will be estimated from the soil sample plots and guessing the remaining depth. The guess will be based on all available information, i.e. exposed soil profiles on nala banks, road cutting, etc. and on luxuriant growth of vegetation. Record the depth as per the code given as under:</td></tr>
<tr><td></td><td></td><td>Code</td><td>Item</td><td>Description</td></tr>
<tr><td></td><td></td><td>1</td><td>No soil</td><td></td></tr>
<tr><td></td><td></td><td>2</td><td>Very shallow</td><td>Soil depth less than 15 cm.</td></tr>
<tr><td></td><td></td><td>3</td><td>Shallow</td><td>Soil depth 15 cm and more but less than 30 cm.</td></tr>
<tr><td></td><td></td><td>4</td><td>Medium</td><td>Soil depth 30 cm and more but less than 90 cm.</td></tr>
<tr><td></td><td></td><td>5</td><td>Deep</td><td>Soil depth 90 cm and more.</td></tr>
<tr><td></td><td></td><td>0</td><td>Not reported</td><td></td></tr>
<tr><td>28</td><td>Soil Erosion (Col.28(1))</td><td colspan="3">Erosion means the wearing away of the earth’s surface by the forces of water and wind. Record the extent of soil erosion as per the code given under:</td></tr>
<tr><td></td><td></td><td>Code</td><td>Item</td><td>Description</td></tr>
<tr><td></td><td></td><td>1</td><td>Heavy</td><td>Areas which have deep gullies, ravines, land slips etc.</td></tr>
<tr><td></td><td></td><td>2</td><td>Moderate</td><td>Where mild gullies and rills are formed on the top surface of the soil.</td></tr>
<tr><td></td><td></td><td>3</td><td>Mild</td><td>Slight erosion where only surface erosion has taken place.</td></tr>
<tr><td></td><td></td><td>4</td><td>No erosion</td><td>-</td></tr>
<tr><td></td><td></td><td>0</td><td>Not reported</td><td></td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th>Description</th></tr>
<tr><td>29</td><td>Origin of stand (Col.29(1))</td><td>Record origin of forest stand as classified under:
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>1</td><td>Natural forest of seed origin</td></tr>
<tr><td>2</td><td>Natural forest of coppice origin</td></tr>
<tr><td>3</td><td>Man-made forest – A forest crop raised artificially either by sowing or by planting.</td></tr>
<tr><td>4</td><td>Not applicable</td></tr>
<tr><td>0</td><td>Not reported</td></tr>
</table></td></tr>
<tr><td>30</td><td>Crop composition (Col.30(2))</td><td>This will be distinguished only when the land use is identified by Codes 01 to 07 and 14. Crop composition of the plot as also that of its 60 m radius around the centre of the sub plot-1 will be distinguished as per two digit codes given in Annexure VI. In case of lands use 06, the crop composition will be taken as available from the nearest periphery.</td></tr>
<tr><td>31</td><td>Canopy layer or storey (Col.31(1))</td><td>This will be distinguished only when the land use is identified by Codes 01 to 07. Canopy layer is defined as a horizontal stratum in a plant community, each layer being called a storey. Record the canopy layer as follows:
<table>
<tr><th>Code</th><th>Item</th><th>Description</th></tr>
<tr><td>1</td><td>No storey</td><td>Crop is absent or found young and canopy formation has not taken place.</td></tr>
<tr><td>2</td><td>One storeyed forest</td><td>A small height variation may exist even in one storeyed forest.</td></tr>
<tr><td>3</td><td>Two storeyed forest</td><td>Variation in canopy layers distinguishable into upper and lower storeys.</td></tr>
<tr><td>4</td><td>Three or more storeyed forest</td><td>The variation in height is very large and in most cases, it is not possible to group the trees in canopies.</td></tr>
<tr><td>5</td><td>Not applicable</td><td></td></tr>
<tr><td>0</td><td>Not reported</td><td></td></tr>
</table></td></tr>
<tr><td>32</td><td>Top height (Col.32(2))</td><td>The average height will be arrived at by measuring the height of top 5 trees occurring in the plot or its surround of 1.13 ha area i.e. 60 m radius from centre of subplot-1. The instrument used to measure height is hypsometer, Haga Altimeter etc. For inaccessible plots ‘00’ code should be filled up.

Note: - In a young crop with scattered mother trees the top height of the young trees should be recorded. Ignore the mother trees while estimating the height.</td></tr>
<tr><td>33</td><td>Size class (Col.33(1))</td><td>Depending on the use to which the tree crop of a stand can be put, following classes will be distinguished.
<table>
<tr><th>Code</th><th>Item</th><th>Description</th></tr>
<tr><td>1</td><td>Regeneration</td><td>Tree crop below 10 cm diameter pre-dominating.</td></tr>
<tr><td>2</td><td>Pole crop</td><td>Tree crop between 10-20 cm diameter pre-dominating.</td></tr>
</table></td></tr>
</table>

S. No.	Item	Description		
		3	Small timber	Tree crop between 20 to under 30 cm diameter pre-dominating.
		4	Big timber	Tree crop with diameter 30 cm and over pre-dominating.
		5	Mixed size class	Tree crop with no marked domination of any size class.
		6	Not applicable	
		0	Not reported	
34	Intensity of Regeneration (Col. 34(1))	The number of seedlings, including coppice, in all the four plots of regeneration will be added and record code as follows:		
		Code	**Item**	**Description**
		1	Adequate	18 or more seedlings
		2	Inadequate	Less than 18 seedlings
		3	Absent	No seedlings
		4	Not applicable	
		0	Not reported	
		Note:- Only tree species with diameter less than 10 cm are to be taken for intensity of regeneration.		
35	Species under regeneration (Col.35(4))	Record the species code, which is most common amongst regeneration here in four digits from Annexure VII		
36	Injuries to crop due to girdling (Col.36(1))	Record injuries to crop due to girdling, illicit felling and lopping etc. of trees as judged by ocular estimation in one of the following categories :		
		Code	**Item**	**Description**
		0	Not reported	This code should be filled up in case of plot is inaccessible.
		1	Heavy	More than 25% of the area/crop is affected.
		2	Moderate	5 – 25% of the area/crop is affected.
		3	Occasional	Less than 5% of the area/crop is affected.
		4	No Injuries	Self explanatory
		5	Not applicable	Self explanatory
37	Injuries to crop due to illicit felling (Col.37(1))	**Code**	**Item**	**Description**
		0	Not reported	This code should be filled up in case of plot is inaccessible.
		1	Heavy	More than 25% of the area/crop is affected.
		2	Moderate	5% – 25% of the area/crop is affected.
		3	Occasional	Less than 5% of the area/crop is affected.
		4	No Injuries	Self explanatory
		5	Not applicable	Self explanatory
38	Lopping for fodder etc.	**Code**	**Item**	**Description**
		0	Not reported	This code should be filled up in

S. No.	Item	Description		
	(Col.38(1))			case of plot is inaccessible.
		1	Heavy	More than 25% of the area/crop is affected.
		2	Moderate	5 – 25% of the area/crop is affected.
		3	Occasional	Less than 5% of the area/crop is affected.
		4	No lopping	Area/ crop is not affected by lopping.
		5	Not applicable	Self explanatory
39	Fire incidence (Col.39(1))	Judge the fire incidence occularly and classify it in one of the following codes:		
		Code	**Item**	**Description**
		1	Heavy	Where more than 50% of the tree crop and any extent of ground vegetation is affected by fire.
		2	Moderate	Where 10 - 50% of the tree crop and any extent of ground vegetation is affected by fire.
		3	Mild	Where less than 10% of the tree crop or/ and any extent of ground vegetation is affected by fire.
		4	No fire	Self explanatory
		0	Not reported	Self explanatory
40	Grazing incidence (Col.40(1))	Depending upon the intensity of the grazing classify it in one of the following categories:		
		Code	**Item**	**Description**
		1	Heavy grazing	Where more than 50% of the area/crop is affected by grazing.
		2	Moderate grazing	Where 10% - 50% of the area/crop is affected by grazing.
		3	Light grazing	Where less than 10% of the area/crop is affected by grazing.
		4	No grazing	Self explanatory
		0	Not reported	
41	Presence of under growth vegetation (Col.41(1))	Have a look on the ground cover over an area of about 60 m radius around the centre of the sub plot-1 and classify the plot on the basis of under growth vegetations i.e. *the lowest stratum of woody and other vegetation above the ground cover* vegetation other than grass in one of the following categories:		
		Code	**Item**	**Description**
		0	Not reported	This code should be filled up in case of plot is inaccessible.
		1	Very dense	When more than 50% of the surface is covered by under growth vegetation.
		2	Dense	Where 25% - 50% of the surface is covered by under growth

<table>
<tr><th>S. No.</th><th>Item</th><th colspan="3">Description</th></tr>
<tr><td></td><td></td><td></td><td></td><td>vegetation.</td></tr>
<tr><td></td><td></td><td>3</td><td>Moderate</td><td>Where 10-25% of the surface covered by under growth vegetation.</td></tr>
<tr><td></td><td></td><td>4</td><td>Scanty</td><td>Where less than 10% of the surface is covered by under growth vegetation.</td></tr>
<tr><td></td><td></td><td>5</td><td>Absent</td><td>No under growth vegetation.</td></tr>
<tr><td></td><td></td><td>6</td><td>Not applicable</td><td></td></tr>
<tr><td>42</td><td>Presence of grass (Col.42(1))</td><td colspan="3">Have a look on the ground cover over an area of about 60 m radius around the centre of the sub plot-1 and classify the plot in one of the following categories:</td></tr>
<tr><td></td><td></td><td>Code</td><td>Item</td><td>Description</td></tr>
<tr><td></td><td></td><td>0</td><td>Not reported</td><td>This code should be filled up in case of plot is inaccessible.</td></tr>
<tr><td></td><td></td><td>1</td><td>Very dense</td><td>Where more than 50% of the surface is covered by grass.</td></tr>
<tr><td></td><td></td><td>2</td><td>Dense</td><td>Where 25-50% of the surface is covered by grass.</td></tr>
<tr><td></td><td></td><td>3</td><td>Moderate</td><td>Where 10-25% of the surface is covered by grass.</td></tr>
<tr><td></td><td></td><td>4</td><td>Scanty</td><td>Where less than 10% of the surface is covered by grass</td></tr>
<tr><td></td><td></td><td>5</td><td>Absent</td><td>No grass</td></tr>
<tr><td>43</td><td>Presence of most occurring invasive species (Col.43(2))</td><td colspan="3">Record the code of the most occurring invasive species as given in Annexure-X. For identification of invasive species, a separate album of 45 major invasive species has been prepared. The term invasive species has been defined by FAO as ‘Species that are non-native to a particular eco-system and whose introduction and spread causes, or is likely to cause, socio-cultural, economic or environmental harm (including forest ecosystem) or harm to human health’.</td></tr>
<tr><td>44</td><td>Presence of second most occurring invasive species (Col.44(2))</td><td colspan="3">Record the code of the second most occurring invasive species as given in the Annexure-X. For identification of invasive species, a separate album of 45 major invasive species has been prepared.</td></tr>
<tr><td>45</td><td>Extent of most occurring invasive species (Col.45(1))</td><td colspan="3">Record extent of most occurring invasive species as follows:</td></tr>
<tr><td></td><td></td><td>Code</td><td>Item</td><td>Description</td></tr>
<tr><td></td><td></td><td>0</td><td>Not reported</td><td>This code should be filled up in case of plot is inaccessible.</td></tr>
<tr><td></td><td></td><td>1</td><td>Very dense</td><td>Where more than 50% of the surface is covered by dominant species.</td></tr>
<tr><td></td><td></td><td>2</td><td>Dense</td><td>Where 25-50% of the surface is covered by dominant species.</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th colspan="4">Description</th></tr>
<tr><td></td><td></td><td>3</td><td>Moderate</td><td colspan="2">Where 10-25% of the surface is covered by dominant species.</td></tr>
<tr><td></td><td></td><td>4</td><td>Scanty</td><td colspan="2">Where less than 10% of the surface is covered by dominant species</td></tr>
<tr><td></td><td></td><td>5</td><td>Absent</td><td colspan="2">No invasive species</td></tr>
<tr><td></td><td></td><td>6</td><td>Not applicable</td><td colspan="2"></td></tr>
<tr><td>46</td><td>Extent of second most occurring invasive species (Col.46(1))</td><td colspan="4">Record extent of second most occurring invasive species as follows:</td></tr>
<tr><td></td><td></td><td>Code</td><td>Item</td><td colspan="2">Description</td></tr>
<tr><td></td><td></td><td>0</td><td>Not reported</td><td colspan="2">This code should be filled up in case of plot is inaccessible.</td></tr>
<tr><td></td><td></td><td>1</td><td>Very dense</td><td colspan="2">Where more than 50% of the surface is covered by second dominant invasive species.</td></tr>
<tr><td></td><td></td><td>2</td><td>Dense</td><td colspan="2">Where 25-50% of the surface is covered by second dominant invasive species.</td></tr>
<tr><td></td><td></td><td>3</td><td>Moderate</td><td colspan="2">Where 10-25% of the surface is covered by second dominant invasive species.</td></tr>
<tr><td></td><td></td><td>4</td><td>Scanty</td><td colspan="2">Where less than 10% of the surface is covered by second dominant invasive species</td></tr>
<tr><td></td><td></td><td>5</td><td>Absent</td><td colspan="2">No invasive species</td></tr>
<tr><td></td><td></td><td>6</td><td>Not applicable</td><td colspan="2"></td></tr>
<tr><td>47</td><td>Occurrence of Bamboo (Col.47-50))

(a) Bamboo density (Col.47(1))</td><td colspan="4">Record the occurrence of bamboo from the following item taking into consideration an area of 60 m radius around the centre of the subplot-1.
Record the density of the bamboo clumps of all species using following code numbers:</td></tr>
<tr><td></td><td></td><td rowspan="2">Code</td><td rowspan="2">Item</td><td colspan="2">Description</td></tr>
<tr><td></td><td></td><td>Clump forming</td><td>Non-clump Forming</td></tr>
<tr><td></td><td></td><td>0</td><td>Not reported</td><td colspan="2">This code should be filled up in case of plot is inaccessible.</td></tr>
<tr><td></td><td></td><td>1</td><td>Pure Bamboo</td><td>200 or more clumps/ha</td><td>More than 12,000 culms/ha</td></tr>
<tr><td></td><td></td><td>2</td><td>Very dense</td><td>151-200 clumps/ha.</td><td>9,001-12,000 culms/ha</td></tr>
<tr><td></td><td></td><td>3</td><td>Dense</td><td>101-150 clumps/ha.</td><td>6,001-9,000 culms/ha</td></tr>
<tr><td></td><td></td><td>4</td><td>Moderately dense</td><td>51-100 clumps/ha.</td><td>3,001-6,000 culms/ha</td></tr>
<tr><td></td><td></td><td>5</td><td>Scattered</td><td>21-50 clumps/ha.</td><td>1,201-3,000 culms/ha</td></tr>
<tr><td></td><td></td><td>6</td><td>Sparse</td><td>1-20 clumps/ha.</td><td>1-1,200 culms/ha</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th colspan="3">Description</th></tr>
<tr><td></td><td></td><td>7</td><td colspan="2">Bamboo present but clumps completely hacked by people.</td></tr>
<tr><td></td><td></td><td>8</td><td>No bamboo</td><td>Bamboo totally absent.</td></tr>
<tr><td></td><td></td><td>9</td><td>Regeneration crop</td><td>Clump formation has not yet taken place.</td></tr>
<tr><td></td><td></td><td colspan="3">Note:- 1. Bamboo clump means an aggregate of culms issuing from the same rhizome system (A clump would normally have more than one culms). A clump will be distinguished as an independent clump where its periphery is easily discernible from adjacent clumps irrespective of its distance from others. However, when such distinction is not possible two clumps within half meter distance will be recorded as one.
2. In case of non-clump forming the height of a culm for density code 1 to 6 should be more than 2 m and DBH more than 1 cm.</td></tr>
<tr><td>48</td><td>(b) Bamboo quality (Col.48(1))</td><td colspan="3">For determining the bamboo production capacity of a site, bamboo areas will be classified into bamboo-site quality classes. For this purpose, the average of measurments of tallest culms occurring in 60 m radius around the centre of the sub plot-1 will provide the data. Following codes will denote the bamboo quality classes.</td></tr>
<tr><td></td><td></td><td>Code</td><td>Item</td><td>Description</td></tr>
<tr><td></td><td></td><td>0</td><td>Not reported</td><td>This code should be filled up in case of plot is inaccessible.</td></tr>
<tr><td></td><td></td><td>1</td><td>I</td><td>Average culm height 9 metres or more for Dendrocalamus strictus and 14 metres or more for Bambusa arundinacea.</td></tr>
<tr><td></td><td></td><td>2</td><td>II</td><td>Average culm height 6 metres or more but less than 9 metres for Dendrocalamus strictus and 10 metres or more but less than 14 metres for Bambusa arundinacea.</td></tr>
<tr><td></td><td></td><td>3</td><td>III</td><td>Average culm height of 2 metres or more but less than 6 metres for Dendrocalamus strictus and 2 metres or more but less than 10 metres for Bambusa arundinacea.</td></tr>
<tr><td></td><td></td><td>4</td><td>IV</td><td>Regeneration crop</td></tr>
<tr><td></td><td></td><td>5</td><td></td><td>Not applicable</td></tr>
<tr><td></td><td></td><td colspan="3">Note: The quality of other species will be decided on the lines of Dendrocalamus strcitus.</td></tr>
<tr><td>49</td><td>(c) Bamboo Flowering (Col.49(1))</td><td colspan="3">Record the extent of flowering as follows:</td></tr>
<tr><td></td><td></td><td>Code</td><td>Item</td><td>Description</td></tr>
<tr><td></td><td></td><td>0</td><td>Not reported</td><td>This code should be filled up in case of plot is inaccessible.</td></tr>
<tr><td></td><td></td><td>1</td><td>Sporadic</td><td>When less than 10% of the clumps</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th colspan="3">Description</th></tr>
<tr><td></td><td></td><td></td><td></td><td>(culms in case of non-clump forming) have flowered.</td></tr>
<tr><td></td><td></td><td>2</td><td>Gregarious</td><td>When large scale flowering has taken place.</td></tr>
<tr><td></td><td></td><td>3</td><td>No flowering</td><td>-</td></tr>
<tr><td></td><td></td><td>4</td><td>Not Applicable</td><td>-</td></tr>
<tr><td>50</td><td>(d) Bamboo regeneration (Col.50(1))</td><td colspan="3">Such bamboo areas, where clump formation has not yet taken place or which are under natural or artificial regeneration of bamboos. These will be classified as follows:
<table>
<tr><th>Code</th><th>Item</th><th>Description</th></tr>
<tr><td>0</td><td>Not reported</td><td>This code should be filled up in case of plot is inaccessible.</td></tr>
<tr><td>1</td><td>Dense</td><td>When more than 40% of the area is covered by regeneration crop.</td></tr>
<tr><td>2</td><td>Medium</td><td>When 10-40% of the area is covered by regeneration crop.</td></tr>
<tr><td>3</td><td>Scattered</td><td>When less than 10% of the area is covered by regeneration crop.</td></tr>
<tr><td>4</td><td>Absent</td><td></td></tr>
<tr><td>5</td><td>Not Applicable</td><td></td></tr>
</table></td></tr>
<tr><td>51</td><td>Plantation potential (Col.51(1))</td><td colspan="3">All those forests where the crown density is 40% or more, plantation potential is not of any significance and hence the code pertaining to ‘Not applicable’ is to be written. In all other cases the land class to which the sample plot belongs will be studied and it will be observed whether it is an available potential land for raising plantation or not. While determining the potentiality of the land, give due consideration to aspect, soil depth, drainage, crop in the surrounding area, and other biotic and climatic factors. The maximum permissible slope up to which plantation can be raised will be 40^0 and minimum soil depth should be 15 cm. The column should be filled for land use code 03 to 07 only. ***For inaccessible plot ‘0’ code should be filled up.***
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>0</td><td>Not reported</td></tr>
<tr><td>1</td><td>Plantable (This code should filled up If more than 50% area is found suitable for plantation)</td></tr>
<tr><td>2</td><td>Un-plantable</td></tr>
<tr><td>3</td><td>Not applicable</td></tr>
<tr><td>4</td><td>Partially plantable(This code shpuld filled up when 10% to 50% area is found suitable for plantation)</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th>Description</th></tr>
<tr><td>52</td><td>Distance from road to plot (Col.52(1))</td><td>
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>0</td><td>Not reported</td></tr>
<tr><td>1</td><td>Distance less than 1 km</td></tr>
<tr><td>2</td><td>Distance 1 to less than 3 km</td></tr>
<tr><td>3</td><td>Distance 3 to less than 5 km</td></tr>
<tr><td>4</td><td>Distance 5 to less than 7 km</td></tr>
<tr><td>5</td><td>Distance 7 to less than 10 km</td></tr>
<tr><td>6</td><td>Distance 10 to less than 15 km</td></tr>
<tr><td>7</td><td>Not applicable (if distance is more than 15 km)</td></tr>
</table>
</td></tr>
<tr><td>53</td><td>Type of water bodies in the vicinity of plot (Col. 53(1))</td><td>
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>0</td><td>Not reported</td></tr>
<tr><td>1</td><td>Perennial river</td></tr>
<tr><td>2</td><td>Seasonal river</td></tr>
<tr><td>3</td><td>Perennial stream</td></tr>
<tr><td>4</td><td>Seasonal stream</td></tr>
<tr><td>5</td><td>Lake</td></tr>
<tr><td>6</td><td>Pond</td></tr>
<tr><td>7</td><td>Others (please specify in ‘remarks’ column)</td></tr>
<tr><td>8</td><td>Not available</td></tr>
</table>
If more than one type is available in consideration zone, then the one which occupies more area should be reported.
</td></tr>
<tr><td>54</td><td>Distance from River/Stream to plot from the periphery of the 60 m plot (Col. 54(1))</td><td>
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>0</td><td>Not reported</td></tr>
<tr><td>1</td><td>Distance less than 50 m from periphery of outer sub plot</td></tr>
<tr><td>2</td><td>Distance 50 to less than 70 m from periphery of outer sub plot</td></tr>
<tr><td>3</td><td>Distance 70 to less than 100 m from periphery of outer sub plot</td></tr>
<tr><td>4</td><td>Distance 100 to less than 125 m from periphery of outer sub plot</td></tr>
<tr><td>5</td><td>Not applicable (if distance is more than 125 m) from periphery of outer sub plot)</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th>Description</th></tr>
<tr><td>55</td><td>Plot status
(Col. 55(1))</td><td>
<table>
<tr><th>Code</th><th>Item</th></tr>
<tr><td>1</td><td>Sample plot visited and all data collected.</td></tr>
<tr><td>2</td><td>Sample plot visited, described but could not be enumerated due to steep slopes or other obstructions.</td></tr>
<tr><td>3</td><td>Sample plot could not be approached but vicinity visited and plot described.</td></tr>
<tr><td>4</td><td>Sample plot could not be seen even from a distance or could be seen but vicinity could not be visited (inaccessible plots).</td></tr>
<tr><td>5</td><td>Sample plot visited and data could not be collected at least from one sub-plot.</td></tr>
</table>
</td></tr>
<tr><td></td><td colspan="2">Note: The term ‘vicinity’ for this purpose means the area near the sample plot in the same crop composition in which the point falls. It must be ensured that the data of the crop composition recorded from the place approached is the same (in the PDF) as it would have been had the sample plot been actually approached. This would be possible only when the crew leader can see the site where the sample plot actually lies and he is convinced that the type of forest in which he is standing extends to the sample plot. If the crew leader cannot see the site, he cannot be sure of the type in which the sample plot falls and in this case the sample plot should be ‘inaccessible’.

In case of plot status 3, all the information in PDF will be filled up as far as possible. In case of plot status 4, if possible crop composition will be filled up.</td></tr>
<tr><td>56-57</td><td>Degraded forests
(Col.56-57)
a. Biotic influences
(Col.56(1))</td><td>This will be judged on the basis of following factors:
Grazing, browsing, fire, pollarding, illicit cutting and lopping.
<table>
<tr><th>Code</th><th>Item</th><th>Description</th></tr>
<tr><td>0</td><td>Not reported</td><td>This code should be filled up in case of plot is inaccessible</td></tr>
<tr><td>1</td><td>Heavily degraded</td><td>50 % and above</td></tr>
<tr><td>2</td><td>Moderately degraded</td><td>10 % and above and less than 50 %</td></tr>
<tr><td>3</td><td>Mildly degraded</td><td>1% and above and less than 10 %</td></tr>
<tr><td>4</td><td>Not degraded.</td><td></td></tr>
<tr><td>5</td><td>Not applicable</td><td></td></tr>
</table>
Natural calamaties will be judged on the basis of following factors: Such as land slides, glaciers, flood, rain fall, natural mortality, due to pathological and physiological</td></tr>
</table>

<table>
<tr><th>S. No.</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td>b. Natural calamities (Col.57(1))</td><td>features.
<table>
<tr><th>Code</th><th>Item</th><th>Description</th></tr>
<tr><td>0</td><td>Not reported</td><td>This code should be filled up in case of plot is inaccessible</td></tr>
<tr><td>1</td><td>Heavily degraded</td><td>50 % and above</td></tr>
<tr><td>2</td><td>Moderately degraded</td><td>10 % and above and less than 50 %</td></tr>
<tr><td>3</td><td>Mildly degraded</td><td>1% and above and less than 10 %</td></tr>
<tr><td>4</td><td>Not degraded.</td><td></td></tr>
<tr><td>5</td><td>Not applicable</td><td></td></tr>
</table></td></tr>
<tr><td>58</td><td>Date of survey</td><td>DD/MM/YYYY</td></tr>
<tr><td>59</td><td>Basel Area (Col. 59(8))</td><td>Basal area will be measured using Wedge prism (at factor 1.5, Unit of measurement in sq. m. and recorded in 8 digits (upto 5 decimal places).</td></tr>
<tr><td>60</td><td>Canopy Density (Col. 60(2))</td><td>Canopy density will be arrived at by measuring the canopy density occurring in the plot of 1.13 ha area (i.e. 60 m radius from centre of sub-plot 1), to be measured using densitometer. The average crop density of the plot is to be filled as per the following codes:
<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td>01</td><td>0.1</td></tr>
<tr><td>02</td><td>0.2</td></tr>
<tr><td>03</td><td>0.3</td></tr>
<tr><td>04</td><td>0.4</td></tr>
<tr><td>05</td><td>0.5</td></tr>
<tr><td>06</td><td>0.6</td></tr>
<tr><td>07</td><td>0.7</td></tr>
<tr><td>08</td><td>0.8</td></tr>
<tr><td>09</td><td>0.9</td></tr>
<tr><td>10</td><td>1.0</td></tr>
</table></td></tr>
</table>

Note: - (i) If land use code is either 11 or 16, then Field Forms 8 and 9 are not to be filled up. In all other land use classes, if possible Field Forms 8 and 9 are to be filled up.

3.3 Plot Enumeration and Sample Tree Form (Field Form No. 3 & 4)

The field form no 3 & 4 i.e. PEF and STF has been merged together. The description of column for PEF and STF is given here as under:

Plot Enumeration Form (PEF): In this form data of trees and bamboo clumps will be recorded from all sub-plots of 8 m radius. Trees of diameter below 10 cm at breast height over bark (dbhob) are not to be enumerated.

Plot Enumeration Form for each subplot of 8 m radius will be maintained separately. If a subplot contains large number of trees/bamboo clumps which cannot be accommodated in one single form/sheet, additional forms/ sheets in continuation may be used and in that case the total of all trees/bamboo clumps in the plot will be given in each page.

For border line trees/bamboo clumps, if more than 50 % of stem/bamboo clump falls within the circumference of the sub-plot of 8 m radius, such tree/bamboo clump will be enumerated.

Enumeration of trees/bamboo will commence clock-wise from north. All bamboo clumps occurring in a subplot will be serially numbered by an appropriate marker and a separate series of numbers will be used for each bamboo species. Similarly, trees will be numbered separately and simultaneously.

For each enumerated tree/bamboo clump, a number of parameters are to be recorded. These parameters are diameter at breast height, crown width, status of tree (dead/live), cause of death in case of mortality, rotten/missing cull, total length, uncompacted length, compacted length, incidence of insect, incidence of disease and decay class.

The coding instructions for filling up of the Plot Enumeration Form are as under: -

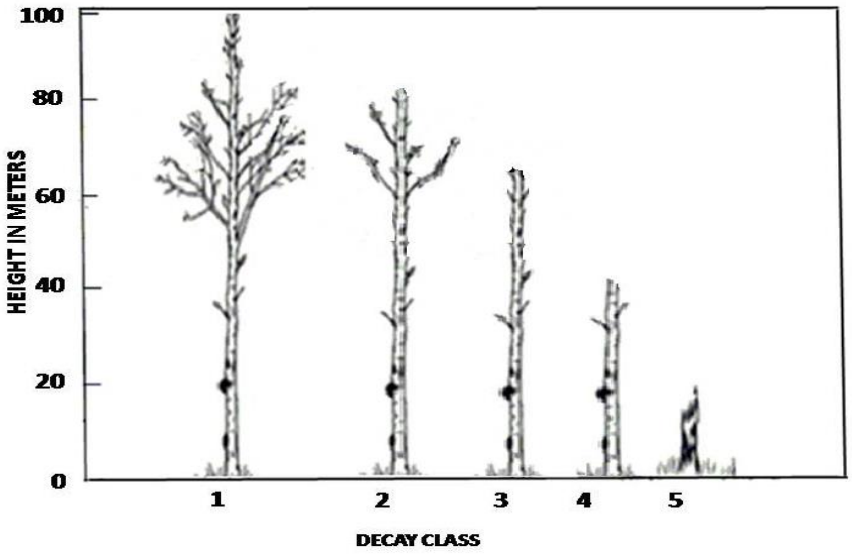
Coding Instructions

S.No.	Item	Description
1.	Job No. (Col.1(3))	Three-digit code will be filled in by Data Entry Section (DES) of respective zones for record purpose.
2.	Form Code (Col. 2(2))	Two digit code will be filled in by DES for PEF as '03'.
3.	Mapsheet No. (Col. 3(6))	Record six-digit code as given in Annexure IV
4.	Grid code (Col. 4(6))	Record six-digit code as per the list given by headquarters.
5.	Subplot No. (Col. 5(1))	Record number of subplot.
6.	Slope (%) (Col. 6(3))	Determine the average slope of the hill face by standing at the centre of subplot and looking both ways up and down. Put the actual figures in percentage. If the instrument used reads slope in degrees, same should be converted to percentage slope as per Annexure V.
	Subplot	Record status of sub plot as follows.

S.No.	Item	Description		
7.	status (Col. 7(1))	**Code**	**Description**	
		1	Subplot visited and all data collected.	
		2	Subplot visited/vicinity visited, but enumeration could not be done due to steep slopes or other obstructions.	
		3	Subplot falls outside forest area.	
		4	Subplot visited but no tree/bamboo present	
7(a)	Land use class for subplot (Col. 7(a)(2))	Two-digit code has been assigned to denote various land use classes in Sub-plots. Record landuse class as per the following codes.		
		Code	**Item**	**Description**
		01	Closed forest	Lands with a forest cover of trees (including bamboo) with canopy density 70% and above (canopy density is defined as the relative completeness of canopy expressed as percentage taking closed canopy as 100. Standing in a Sub-plot, observe the tree growth and assess the percentage of the space covered).
		02	Dense forest	Lands with a forest cover of trees with canopy density 40-69% in a Sub-plot.
		03	Open forest	Lands with a forest cover of trees with Canopy density 10-39% in a Sub-plot.
		04	Scrub	Inferior growth, chiefly small or stunted trees present with canopy density less than 10% in a Sub-plot.
		05	Bamboo brakes	No need to fill up this land use class.
		06	Shifting cultivation	Areas under current as well as last year's shifting cultivation will come under this class. The agricultural crop may be standing or may have been harveste in a Sub-plot.
		07	Young crop including plantations of forestry species	Young crop of forestry species including plantations having diameter 2 cm to 9 cm at breast height. This code also includes all young regeneration of forestry species either natural or of artificial origin, with average stems below 2 cm diameter at breast height covering an area of more than 0.5 ha. This will also include unestablished regeneration in a Sub-plot.
		08	Trees in line	This will include trees planted along canal banks, road sides, railway lines, wind brakes and shelter belts planted under various Social Forestry Schemes in a Sub-plot.

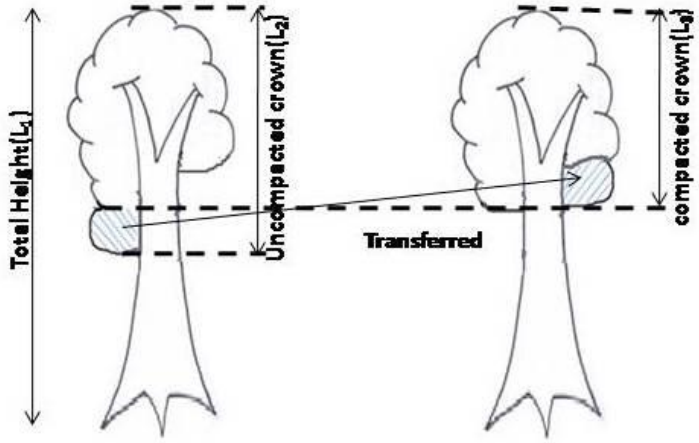
S.No.	Item	Description		
		09	Forest roads etc.	This class will include areas under forest roads, depots, colonies, nurseries, and such other forest land used in connection with forest administration in a Sub-plot.
		10	Govt. grass lands	This will include areas under natural or planted grass lands pastures (including Alpine pastures) etc., which are owned by Government in a Sub-plot.
		11	Barren lands	This will include areas with exposed surfaces like rock sheets, sand dunes, swamps and areas without any vegetation.
		12	Agricultural land without trees in surround	Lands under cultivation including fallow lands will come under this category.
		13	Agricultural land with trees in surround	This will include all lands under cultivation including fallow lands, which are covered with trees along bunds and in their surround within 8 m radius.
		14	Non forestry plantations	Lands with tree growth planted primarily for purposes other than forestry such as cashew, coffee, tea gardens, rubber, private grass lands etc. in a Sub-plot.
		15	Habitation	This will include villages, city sites, industrial area, grave yards, grounds, houses, colonies etc.in a Sub-plot.
		16	Water bodies	Land under lakes, water courses etc. in a Sub-plot.
7(b)	Sub Plot Selected for STF	Yes/ No (Select Yes for any one of the Sub-plot)		
8.	Serial No	Subplot wise tree serial number from 1 onwards.		
8.1.	Species name	Record local or botanical name of the species.		
9.	Species code (Col. 9(4))	Record species code in four-digit as given in Annexure VII.		
10.	Diameter (Col. 10(3))	Record the diameter in cm at breast height over bark in three digits for trees (1.37 m from ground level measuring on uphill side of the tree) of 10 cm and above. For bamboo clumps, the diameter will be measured at its base (at a height of 30 cm) with the help of a tape and to be recorded here in three digits. Note: Caution may be taken while recording data of big trees and large bamboo clumps. In such cases if girth is measured, it should be converted into diameter and the same be recorded here in three digits.		
11.	Status of	Record the status of each enumerated standing tree/bamboo		

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td>standing tree/ bamboo clump (alive/dead) (Col. 11(1))</td><td>clump whether it is alive or dead.
<table><tr><th>Code</th><th>Item</th></tr><tr><td>1</td><td>Tree/ bamboo clump is alive</td></tr><tr><td>2</td><td>Tree/ bamboo clump is dead</td></tr><tr><td>3</td><td>Not applicable</td></tr></table></td></tr>
<tr><td>12.</td><td>Cause of death (Col. 12(1))</td><td>Record cause of death for all trees/bamboo clump found dead in the sub-plot as per the description given below:
<table><tr><th>Code</th><th>Item</th></tr><tr><td>0</td><td>Not applicable</td></tr><tr><td>1</td><td>Insect</td></tr><tr><td>2</td><td>Disease</td></tr><tr><td>3</td><td>Fire</td></tr><tr><td>4</td><td>Animal</td></tr><tr><td>5</td><td>Weather</td></tr><tr><td>6</td><td>Vegetation (suppression/competition/vines, etc.)</td></tr><tr><td>7</td><td>Unauthorised human interference</td></tr><tr><td>8</td><td>Silvicultural/land cleaning activity</td></tr><tr><td>9</td><td>Others</td></tr></table></td></tr>
<tr><td>13.</td><td>Rotten/ missing cull (Col. 13(1))</td><td>In each enumerated tree, observe the rotten and missing wood volume. Record % of such loss in the wood volume that will be assessed with respect to sound tree as per the percentage class given below-:
<table><tr><th>Code</th><th>Percentage class</th></tr><tr><td>0</td><td>0 - 10 (for sound tree)</td></tr><tr><td>1</td><td>11 - 30</td></tr><tr><td>2</td><td>31 - 50</td></tr><tr><td>3</td><td>51 - 70</td></tr><tr><td>4</td><td>70 +</td></tr><tr><td>5</td><td>Not applicable</td></tr></table></td></tr>
<tr><td>14.</td><td>Decay class (Col. 14(1)) Illustrative figures are also given below the code</td><td>Record the decay class only for dead standing trees as per the description given follows:
<table><tr><th>Code</th><th>Description</th></tr><tr><td>1</td><td>Main bole with top, branches present, full bark and no wood decay.</td></tr><tr><td>2</td><td>Main bole with top broken, branches upto 25%, without full bark and wood decay upto 25%.</td></tr><tr><td>3</td><td>Main bole with top broken, branches up to 5%, without full bark and wood decay of 25-50%.</td></tr><tr><td>4</td><td>Main bole with top broken, no branches, without full bark and wood decay of 50-75%.</td></tr><tr><td>5</td><td>Very small stump, no branches, bark less than 20% and wood decay is more than 75%.</td></tr><tr><td>6</td><td>Not applicable</td></tr></table></td></tr>
</table>

S.No.	Item	Description
		Note: All dead stumps of less than 1.37 m height will not be enumerated here. Such stumps will be accounted for in the dead wood plot.
		
15.	Crown width (a) CW1 (Col. 15(2)) (b) CW2 (Col. 16(2))	Crown width of the tree and spread of bamboo clump will be measured to the nearest meter, first towards plot centre (CW1) and second should be perpendicular (CW2) to the center. **(Note: Record crown width of trees from subplot 2. If there are no trees found in subplot 2, the information is to be collected from subplot 3, if not in subplot 3 then from subplot 4 and if not in the subplot 4 then from subplot 1 only. This is applicable only for serial no. 15-26.)**
17.	Total tree height (Col. 17 -19)	Record total height in nearest meters. This information will be used to arrive at compacted crown ratio of the tree. (Annexure-XIII)
18.	Tree height (L_1) (Col. 17(2)) (Illustrative figures are given below)	Record tree height (i.e. L_1) of the tree in nearest meters. Tree height of trees will be recorded in subplot 2. If there are no trees found in subplot 2, the information is to be collected from subplot 3, if not in subplot 3 then from subplot 4, and if not in the subplot 4 then from subplot 1 only.
19.	Uncompacted crown length (L_2) (Col. 18(2))	Record uncompacted crown length of trees in subplot 2. If there are no trees found in subplot 2, the information is to be collected from subplot 3, if not in subplot 3 then from subplot 4, and if not in the subplot 4, then from subplot 1 only. Uncompacted crown length (L_2) of the tree is to be recorded in nearest meters in two digits. Uncompacted height of crown is defined *as* tree bole length supporting green, live, healthy foliage, where openings in the crown are not visually adjusted. Some tree crowns are lopsided or exhibit openings or gaps within the live crown. While measuring *uncompacted crown length*, those openings in the crown are <u>not</u> visually adjusted by visually transferring lower

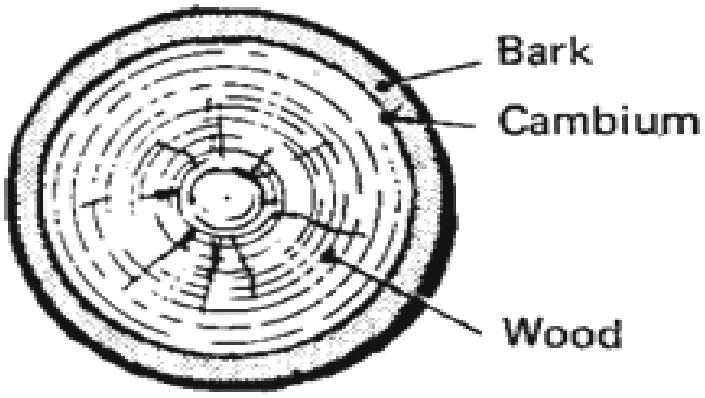
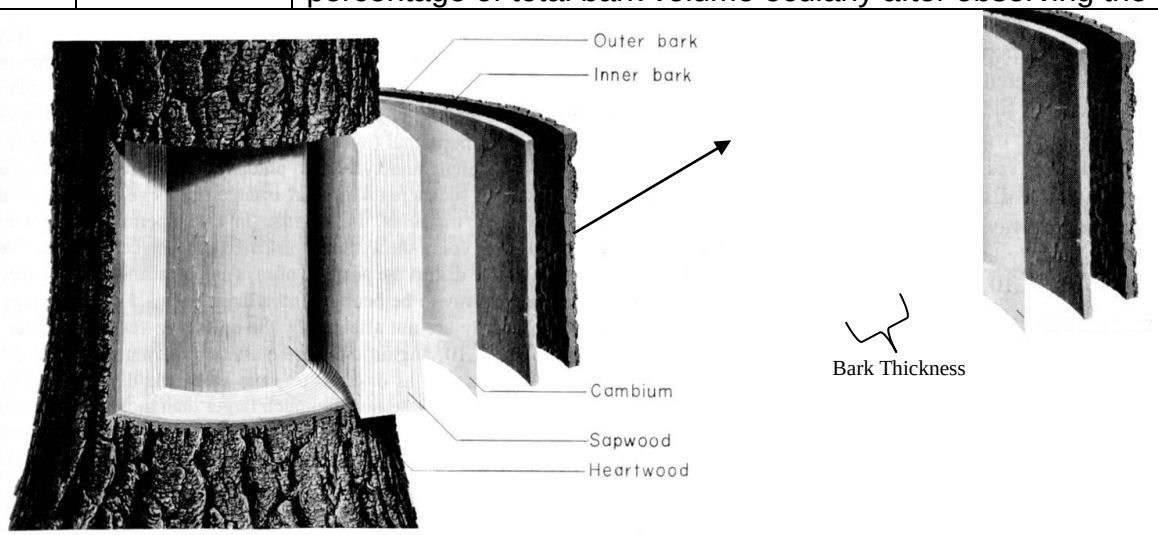
<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td></td><td>branches to fill in the gaps/holes after ocularly observing the tree crown.

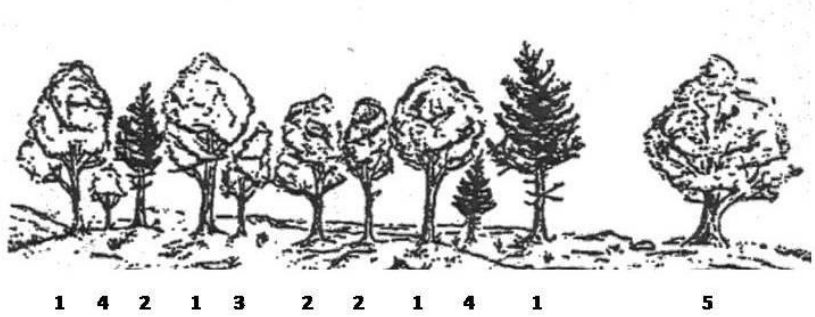
Uncompacted crown length is always greater than or equal to compacted crown length.</td></tr>
<tr><td rowspan="2">20.</td><td rowspan="2">Compacted crown length (L_3)
(Col. 19(2))</td><td>Record compacted crown length of trees in subplot 2. If there are no trees found in subplot 2, the information is to be collected from subplot 3, if not in subplot 3 then from subplot 4, and if not in subplot 4 then from subplot 1 only.

Compacted crown length (L_3) of the tree is to be recorded in nearest meters in two digits which is defined as tree bole length supporting healthy, live foliage, where openings in the crown are visually adjusted. When measuring compacted crown length, openings in the crown or lopsided crowns are adjusted by visually transferring lower branches to fill in the openings. (Illustrative figures are given below)</td></tr>
<tr><td> 
</td></tr>
<tr><td>21.</td><td>Incidence of insects
(Col. 20(1))</td><td>Record incidence of insects of trees in subplot 2. If there are no trees found in subplot 2, the information is to be collected from subplot 3, if not in subplot 3 then from subplot 4 and if not in subplot 4 then from subplot 1 only.

The incidence of insects is to be observed in each of the enumerated tree and observation is to be recorded as per following description:
<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td>0</td><td>No insect incidence (upto 10%)</td></tr>
<tr><td>1</td><td>Defoliator/skeletonizer with mild attack (where 11- 20% of tree is affected).</td></tr>
<tr><td>2</td><td>Defoliator/skeletonizer with moderate attack (where 21-30% of tree is affected).</td></tr>
<tr><td>3</td><td>Defoliator/skeletonizer with severe attack (where more than 30% of tree is affected).</td></tr>
<tr><td>4</td><td>Borer with mild attack (where 11-20% of tree is affected).</td></tr>
<tr><td>5</td><td>Borer with moderate attack (where 21-30% of tree is</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>S.No.</th><th>Item</th><th colspan="2">Description</th></tr>
<tr><td></td><td></td><td></td><td>affected).</td></tr>
<tr><td></td><td></td><td>6</td><td>Borer with severe attack (where more than 30% of tree is affected).</td></tr>
<tr><td></td><td></td><td>7</td><td>Other insects (sap suckers, termite etc.) with mild attack (where 11-20% of tree is affected).</td></tr>
<tr><td></td><td></td><td>8</td><td>Other insects (sap suckers, termite, etc.) with moderate attack (where 21-30% of tree is affected).</td></tr>
<tr><td></td><td></td><td>9</td><td>Other insects (sap suckers, termite etc.) with severe attack (where more than 30% of tree is affected).</td></tr>
<tr><td>22.</td><td>Incidence of disease (Col. 21(1))</td><td colspan="2">Record incidence of disease of trees in subplot 2. If there are no trees found in subplot 2, the information is to be collected from sub-plot 3, if not in subplot 3 then from subplot 4 and if not in the subplot 4 then from sub-plot 1 only.
The incidence of disease is to be observed in each of the enumerated tree and observation is to be recorded as per following description:</td></tr>
<tr><td></td><td></td><td>Code</td><td>Description</td></tr>
<tr><td></td><td></td><td>0</td><td>No Disease</td></tr>
<tr><td></td><td></td><td>1</td><td>Wilt: Diseases that affect the vascular system of plants. Attacks by fungi, bacteria, and nematodes can cause rapid killing of plants, large tree branches or even entire trees.
The drying out, drooping and withering of the leaves of a plant dueto inadequate water supply, excessive transpirati on, or vascular disease.</td></tr>
<tr><td></td><td></td><td>2</td><td>Canker: A destructive fungal disease of apple and other trees that results in damage to the bark. It may cause extensive damage to trees when they kill all of the bark in a particular area, thus girdling a branch or main stem.</td></tr>
<tr><td></td><td></td><td>3</td><td>Rust: A disease that causes plants to develop reddish-brown spots.</td></tr>
<tr><td></td><td></td><td>4</td><td>Root rot:
Any of several plant diseases caused by oomycetes (also known as water molds) or fungi and characterzed by rotting of the roots and often by yellowing or wilting of the leaves</td></tr>
<tr><td></td><td></td><td>5</td><td>Heart rot: In trees, heart rot is a fungal disease that causes the decay of wood at the center of the trunk and branches. Fungi enter the tree through wounds in the bark and decay the heartwood.</td></tr>
<tr><td></td><td></td><td>6</td><td>Dwarf mistletoes: A massed dense clump of branches specially with live foliage and swellings on the tree stem or branches.</td></tr>
<tr><td></td><td></td><td>7</td><td>Parasites: Tress affected by parasites such as Cuscata reflexa and Loranthus</td></tr>
</table>

S.No.	Item	Description
23.	D.B.T. (Col. 22(2))	Bark thickness refers to the amount of bark around a tree from the outside surface to the ***cambium layer***. Bark thickness is most often measured using a **bark thickness gauge**. This tool penetrates the bark until the wood interface is reached. In case, if bark thickness gauge is not available the bark is to be removed using knife upto ***cambium layer***. Double bark thickness (DBT) will be measured (with 6″ steel scale) towards plot centre and opposite to this at breast height, add these two readings and record to the nearest bark thickness in mm. in two digits. 
24.	Bark Void % (Col. 23(2))	Bark void is the lack of smoothness on the top surface of the bark i.e., the gaps in the bark. Record the magnitude of such gaps as a percentage of total bark volume ocularly after observing the bole.  Bark void % is to be measured in respect of bark thickness. Bark thickness comprises of outer and inner bark. In the picture, it appears that bark void is only less 10%.
25.	Clear bole height (Col 24 (2))	Record the height from tree base to the first main live branch (approximately 5 cm dia and above) on the main stem in meter in two digits.
26.	Dominance (Col. 25(1))	Classify the sample tree in one of the following dominance classes and record the code accordingly (Illustrative figures are also given below the code). The dominance of a tree will be classified on the basis of tree crown receiving sun light from above and from sides.

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><th>Code</th><th>Item</th><th>Description</th></tr>
<tr><td>1</td><td>Predominant</td><td>The trees with crown extending above the general level of crown and receiving full light from above and partly from the sides. These trees are taller than the average trees in the stand and their crowns are well developed and may be crowded on the sides.</td></tr>
<tr><td>2</td><td>Co-dominant</td><td>Trees with crown at the general level of crown canopy and receiving full light from above but little direct sunlight from the sides.</td></tr>
<tr><td>3</td><td>Dominated</td><td>Trees that are shorter than predominant but their crown extend in to the canopy of predominant and codominant trees. They receive little direct light from above and no sunlight from sides.</td></tr>
<tr><td>4</td><td>Suppressed</td><td>Trees with crown entirely below the general level of crown canopy that receive no direct sun light either from above or sides.</td></tr>
<tr><td>5</td><td>Solitary</td><td>Trees with crown that receive full light from above and all sides.</td></tr>
<tr><td>6</td><td>Abnormal & damaged tree</td><td></td></tr>
<tr><td>7</td><td>Dead Tree</td><td></td></tr>
<tr><td>8</td><td>Not applicable</td><td></td></tr>
</table>


</td></tr>
<tr><td>27.</td><td>Total number of bamboo clumps (Col. 26(3))</td><td>Record total number of bamboo clumps occurring in the sub-plot in three digits.</td></tr>
<tr><td>28.</td><td>Total number of trees. (Col. 27(3))</td><td>Record total number of trees occurring in the sub-plot in three digits.</td></tr>
</table>

Note: - The Field Form No. 3 will be filled for every Sub-plot which is laid on the ground.
The diameter of trees will be measured at a height of 1.37 meters from ground level (i.e. at breast height) measuring on uphill side of the tree and will be recorded to the nearest centimeter. The axis of the callipers (i.e. the long arm of the callipers) will always be kept pointed towards centre of the plot while taking diameter of trees. If there is flare at the breast height of a tree, in that case, the diameter would be taken immediately above or below the flare whichever is nearer to breast height. In case of buttressed and large sized trees, diameter may be measured by tape or taking girth and converting it to diameter by multiplying with 7/22 or 0.318 factor.
In case there is forking of a tree below its breast height, diameter of each forked stem will be measured at breast height (above forking) and recorded separately, as if for two trees. The description how to measure diameter in different situations is given with illustrative figures (Annexure-XII).

The diameter of bamboo clump will be measured at its base (**at a height of 30 cm**.) with the help of a tape.

Important Note: Seral No. 15 to 26 will be filled up only for any one of the sub-plot, which is seleted for Sample Tree Form information.

3.4 Bamboo Clump Analysis Form (Field Form No. 5)

The information regarding total number of bamboo clumps and their respective diameters occurring in each sub-plot has already been recorded in the Plot Enumeration Form.

In this form, data of each individual culm, occurring in certain selected clumps in each sub-plot is to be recorded. The clumps bearing serial no.1, 5, 9, 13, 17 etc. (i.e. first clump and every fourth clump thereafter) will be selected of each series (i.e. for each species occurring in the sub-plot).

For carrying out this analysis, it would first of all be determined whether a culm is green sound, green damaged, dry and dry damaged; these are then further classified as current years' culms, one to two-year-old culms and over two years old culms. In case of dry and decayed culms (both sound as well as damaged), however, the age classification is not necessary. The culms, other than the current year's and decayed culms, both green and dry, are further grouped under different diameter classes i.e. 1 cm to under 2 cm, 2 cm to under 5 cm, 5 cm to under 8 cm and 8 cm and above.

Note: A culm is defined as a bamboo which has dbh 1 cm and above and height 2 meter and above. Bamboos measuring less than these measurements, if occurring in the clumps (to be analysed) would be ignored from analysis. A culm can easily be assigned to the primary status of green-sound, green damaged, dry-sound, dry-damaged or decayed class by simply observing it. A damaged culm would be the one which has been lopped, grazed or browsed in such a manner that it is top broken. Further classification into current year's culms, one to two years old culms and over two years old culms would also be made on the basis of earlier field experience. The recording would initially be done following the dash dot method, under appropriate columns.
All culms occurring in the clump selected for analysis would be enumerated and each enumerated culm would be recorded by 'dot-dash' method (***dots represents counts from 1 to 4, lines 5 to 8, and diagonal lines 9 and 10***) under its appropriate class. The total number of culms found under each class would ultimately be recorded in two digits.

Coding Instructions

S. No.	Item	Description
1	Job No. (Col. 1(3))	Three-digit code will be filled in by Data Entry Section (DES) of respective zones for record purpose.
2	Form Code (Col. 2(2))	Two digit will be filled in by DES for BEF as code '05'.
3	Mapsheet No. (Col. 3(6))	Record six-digit code as given in Annexure IV.
4	Grid Code (Col. 4(6))	Record six-digit code as per the list supplied by headquarters.
5.	Species name (Col. 5)	Record species name for bamboo species as given in Annexure VII.
6.	Species code (Col. 6(4))	Record four-digit code for bamboo species as given in Annexure VII
7.	Subplot number and Clump Serial No. (Col. 7(3))	Record the subplot number of sample plot first, in one digit followed by clump serial number in two digits. For example, if subplot numbr is 1 and clump serial no is 12, the code recorded will be 112. This will be recorded in three digit code.

<table>
<tr><th>S. No.</th><th colspan="2">Item</th><th>Description</th></tr>
<tr><td>8.</td><td colspan="2">Clump diameter (cm)
(Col. 8(3))</td><td>Record the clump diameter of the clump from Plot Enumeration Form in centimetre in three digits.</td></tr>
<tr><td rowspan="5">9.</td><td colspan="2" rowspan="5">Clumps size class (Col. 9(1))</td><td>Record rne-digit code as follows:</td></tr>
<tr><td>
<table>
<tr><th>Code</th><th>Item</th><th><u>Description</u></th></tr>
<tr><td>1</td><td>Small</td><td>All Clumps less than 1 metre average diameter.</td></tr>
<tr><td>2</td><td>Medium</td><td>Clumps of average diameter between 1 metre to less than 2 metre.</td></tr>
<tr><td>3</td><td>Large</td><td>Clumps of average diameter 2 metre and over.</td></tr>
</table>
</td></tr>
<tr><td>10 - 18</td><td colspan="2">Green Sound Culms
(Col. 10 – 18)</td><td>All green sound culms in the selected clump will be enumerated and recorded according to diameter class wise in the given colmns. A green sound culm would be the one which has not been lopped, grazed or browsed in such a manner that it is top broken</td></tr>
<tr><td>10.</td><td colspan="2">Current year’s (Col.10(2))</td><td>The current year’s green sound culms will be recorded.</td></tr>
<tr><td>11.</td><td rowspan="4">One to two years old</td><td>1<2 cm (Col. 11(2))</td><td>Record the green sound culms of 1< 2 cm diameter of a selected clump.</td></tr>
<tr><td>12.</td><td>2<5 cm (Col. 12(2))</td><td>Record the green sound culms of 2< 5cm diameter of a selected clump.</td></tr>
<tr><td>13.</td><td>5<8 cm (Col. 13(2))</td><td>Record the green sound culms of 5< 8 cm diameter of a selected clump.</td></tr>
<tr><td>14.</td><td>8+ cm (Col. 14(2))</td><td>Record the green sound culms of 8+ cm diameter of a selected clump.</td></tr>
<tr><td>15.</td><td rowspan="4">Over two years old</td><td>1<2 cm (Col. 15(2))</td><td>Record the green sound culms of 1< 2 cm diameter of a selected clump.</td></tr>
<tr><td>16.</td><td>2<5 cm (Col. 16(2))</td><td>Record the green sound culms of 2<5 cm diameter of a selected clump.</td></tr>
<tr><td>17.</td><td>5<8 cm (Col. 17(2))</td><td>Record the green sound culms of 5< 8 cm diameter of a selected clump.</td></tr>
<tr><td>18.</td><td>8+ cm (Col. 18(2))</td><td>Record the green sound culms of 8+ cm diameter of a selected clump.</td></tr>
<tr><td>19-27</td><td colspan="2">Green Damaged Culms (Col. 19-27)</td><td>Enumarate and record all green damaged culms in the selected clump according to diameter class. A damaged culm would be the one which has been lopped, grazed or browsed in such a manner that it is top broken</td></tr>
<tr><td>19</td><td colspan="2">Current year’s</td><td>Count and record the current year’s damaged culms.</td></tr>
</table>

S. No.	Item		Description
	(Col.19(2))		
20	One to two years old	1<2 cm (Col. 20(2))	Count and record he green damaged culms of 1< 2 cm diameter of a selected clump.
21		2<5 cm (Col. 21(2))	Count and record the green damaged culms of 2< 5cm diameter of a selected clump.
22		5<8 cm (Col. 22(2))	Count and record the green damaged culms of 5< 8 cm diameter of a selected clump.
23		8+ cm (Col. 23(2))	Count and record the green damaged culms of 8+ cm diameter of a selected clump.
24	Over two years old	1<2 cm (Col. 24(2))	Count and record the green damaged culms of 1< 2 cm diameter of a selectedclump.
25		2<5 cm (Col. 25(2))	Count and record the green damaged culms of 2< 5cm diameter of a selected clump.
26		5<8 cm (Col. 26(2))	Count and record the green damaged culms of 5< 8 cm diameter of a selected clump.
27		8+ cm (Col. 27(2)	Count and record the green damaged culms of 8+ cm diameter of a selected clump.
	(Col.(28-31))		Count and record all dry sound culms in the selected clump. Dry culms will not be analysed by age. These will be analysed only in four diameter classes.
28	Dry Sound Culms	1<2 cm (Col.28(2))	Count and record the dry sound culms of 1< 2 cm diameter of a selected clump.
29		2<5 cm (Col. 29(2))	Count and record the dry sound culms of 2< 5cm diameter of a selected clump.
30		5<8 cm (Col. 30(2))	Count and record the dry sound culms of 5< 8 cm diameter of a selected clump.
31		8+ cm (Col. 31(2))	Count and record the dry sound culms of 8+ cm diameter of a selected clump.
	(Col.(32-35))		Count and record the dry damaged culms in the clump according to dia meter class. Dry damaged culms will not be analysed by age. These will be analysed only in four diameter classes viz
32	Dry Damaged Culms	1<2 cm (Col. 32(2))	Count and record the dry damaged culms of 1< 2 cm diameter of a selected clump.
33		2<5 cm (Col. 33(2))	Count and record the dry damaged culms of 2< 5cm diameter of a selected.

<table>
<tr><th>S. No.</th><th colspan="2">Item</th><th>Description</th></tr>
<tr><td>34</td><td rowspan="2"></td><td>5<8 cm (Col. 34(2))</td><td>Count and record the dry damaged culms of 5< 8 cm diameter of a selected.</td></tr>
<tr><td>35</td><td>8+ cm (Col. 35(2))</td><td>Count and record the dry damaged culms of 8+ cm diameter of a selected clump.</td></tr>
<tr><td>36</td><td colspan="2">Decayed Culms (Col.36(2)</td><td>Enumerate and record all decayed culms in the clump according to dia meter class. The number of burnt and rotten bamboos over 2 meter in length having no utility will be recorded under this category</td></tr>
<tr><td>37</td><td colspan="2">Total number of Culms (Col. 37(3))</td><td>Recod the total number of culms of each clump.</td></tr>
<tr><td>38-39.</td><td colspan="2">Average culm height (Col. 38(3) – 39(3))</td><td>Record the average of the height of four culms felled for Bamboo Weight Data Collection Form (Field Form No.7) in decimeter.
i) Upto 1 cm top diameter of the culm and recorded in Col. 38 in three-digit code.
ii) Upto 2 cm top diameter of culm and recorded in Col. 39 in three-digit code.</td></tr>
<tr><td>40.</td><td colspan="2">Bamboo quality (Col. 40(1))</td><td>For determining the bamboo production capacity of site, bamboo areas will be classified into bamboo site quality classes. For this purpose, the average height measurements of tallest culms occurring in the plot will provide the data. It may be collected for the following species of bamboos.

i) Dendrocalamus strictus
ii) Bambusa arundinacea
iii) Melocanna bambusoides
<table>
<tr><th>Code</th><th>Quality class</th><th>Description</th></tr>
<tr><td>1</td><td>I</td><td>Average culm height 9 metre or more for Dendrocalamus strictus and 14 metre or more for Bambusa arundinacea.</td></tr>
<tr><td>2</td><td>II</td><td>Average culm height 6 metre or more but less than 9 metre for Dendrocalamus strictus and 10 metre or more but less than 14 metre for Bambusa arundinacea.</td></tr>
<tr><td>3</td><td>III</td><td>Average culm height 2 metre or more but less than 6 metre for Dendrocalamus strictus and 2 metre and more but less than 10 metre for Bambusa arundinacea.</td></tr>
</table></td></tr>
</table>

Note: The quality of other species of bamboo will be decided on the lines of *Dendrocalamus strictus*.

3.6 Bamboo Enumeration and Analysis Form (Non-Clump Forming) (Field Form No. 6):

In this form information is collected for non-clump forming bamboos occurring in the sample subplot 2 i.e. western half of the subplot 2. For the purpose of counting the culms, the subplot 2 will be dissected by taking bearing of 360^0 from the centre of subplot. A rope will be put on this bearing upto the point where this bearing crosses the subplot circumference in North and South direction.

All culms falling in western half of north subplot will be counted and categorised in the following classes: -

i) Green Sound
ii) Green Damaged
iii) Dry Sound
iv) Dry Damaged
v) Decayed

These will be further classified as current year's culms, one to two years old culms, over two years old culms. In case of dry (both sound as well as damaged) and decayed culms, the age classification is not necessary.

The culm, other than the current years and decayed culm, both green and dry are further grouped under diameter at breast height classes, 1 cm to under 2 cm, 2 cm to under 5 cm, 5 cm to under 8 and 8 cm and over.

Note:- A culm is defined as a bamboo which has dbh 1 cm and over and height 2 meter and above. Bamboos measuring less than these measurement, if occurring in the sub-plot would be ignored from analysis. A culm can easily be assigned to the primary status of green-sound, green damaged, dry-sound, dry-damaged or decayed class by simply observing it. A damaged culm would be the one which has been lopped, grazed or browsed in such a manner that it is top broken. Further classification into current year's culms, one to two years old culms and over two years old culms would also be made on the basis of earlier field experience. The recording would be done following the dash dot method, under appropriate columns.

Coding Instructions

S.No.	Item	Description
1	Job No. (Col. 1(3))	Three-digit code will be filled in by Data Entry Section (DES) of respective zones for record purpose
2	Form Code (Col. 2(2))	Two-digit code will be filled in by DES for BEF (Non-clump Forming) as '06'
3	Mapsheet No. (Col. 3(6))	Record six-digit code as given in Annexure IV.
4	Grid Code (Col. 4(6))	Record six-digit code as per the list supplied by headquarters.
5.	Species name (Col. 5)	Record species name as given in Annexure VII for bamboo species.
6.	Species Code (Col. 6(4))	Record four-digit code for bamboo species as given in Annexure VII
7-15	Green Sound Culms (Col. 7 – 15)	Enumerate and record all green sound culms in the selected clump according to diameter class

S.No.	Item		Description
7	Current Year (Col.7(3))		Count and record the number of current year's green sound culms.
8	One to two years old	1<2 cm (Col. 8(3))	Count and record the green sound culms of 1< 2 cm diameter.
9		2<5 cm (Col. 9(3))	Count and record the green sound culms of 2< 5cm diameter.
10		5<8 cm (Col. 10(3))	Count and record the green sound culms of 5< 8 cm diameter.
11		8+ cm (Col. 11(3))	Count and record the green sound culms of 8+ cm diameter.
12	Over two years old	1<2 cm (Col. 12(3))	Count and record the green sound culms of 1< 2 cm diameter.
13		2<5 cm (Col. 13(3))	Count and record the green sound culms of 2< 5cm diameter.
14		5<8 cm (Col. 14(3))	Count and record the green sound culms of 5< 8 cm diameter.
15		8+ cm (Col. 15(3))	Count and record the green sound culms of 8+ cm diameter.
16-24	Green Damaged Culms (Col. 16-24)		Enumerate and record all green damaged culms according to diameter class. A damaged culm would be the one which has been lopped, grazed or browsed in such a manner that it is top broken.
16	Current Year (Col.16(3))		Count and record the current year's green damaged culms.
17	One to two years old	1<2 cm (Col. 17(3))	Count and record the green damaged culms of 1< 2 cm diameter.
18		2<5 cm (Col. 18(3))	Count and record the green damaged culms of 2< 5cm diameter.
19		5<8 cm (Col. 19(3))	Count and record the green damaged culms of 5< 8 cm diameter.
20		8+ cm (Col. 20(3))	Count and record the green damaged culms of 8+ cm diameter.
21	Over two years old	1<2 cm (Col. 21(3))	Count and record the green damaged culms of 1< 2 cm diameter.
22		2<5 cm (Col. 22(3))	Count and record the green damaged culms of 2< 5cm diameter.
23		5<8 cm (Col. 23(3))	Count and record the green damaged culms of 5< 8 cm diameter.
24		8+ cm (Col. 24(3))	Count and record the green damaged culms of 8+ cm diameter.

S.No.	Item		Description
	Column No. 25-28		Enumerate and record all dry sound culms will be according to diameter class. Dry culms will not be analysed by age. These will be analysed only in four diameter classes
25	Dry Sound Culms	1<2 cm (Col. 25(2))	Count and record the dry sound culms of 1< 2 cm diameter.
26		2<5 cm (Col. 26(2))	Count and record the dry sound culms of 2< 5cm diameter.
27		5<8 cm (Col. 27(2))	Count and record the dry sound culms of 5< 8 cm diameter.
28		8+ cm (Col. 28(2))	Count and record the dry sound culms of 8+ cm diameter.
	Column No. 29-32		Enumerate and record all dry damaged culms will be according to dia meter class wise. Dry damaged culms will not be analysed by age. These will be analysed only in four diameter classes.
29	Dry Damaged Culms	1<2 cm (Col. 29(2))	Count and record the dry damaged culms of 1< 2 cm diameter.
30		2<5 cm (Col. 30(2))	Count and record the dry damaged culms of 2< 5cm diameter.
31		5<8 cm (Col. 31(2))	Count and record the dry damaged culms of 5< 8 cm diameter.
32		8+ cm (Col. 32(2))	Count and record the dry damaged culms of 1< 2 cm diameter.
33	Decayed Culms (Col.33(3)		Record the number of burnt and rotten bamboo culms over 2 metres in length having no utility under this category
34	Average Culm Height (in dcm) (Col.34(3))		Record the average culm of the heights of four culms felled for bamboo weight data collection for each diameter class measured in **decimeters** in 3 digits.
35	Total no. of Culms (Col.35(4)		Record the total number of culms here in four digits.
36	Sub-plot No. (Col.36(1))		Record the sub-plot number of the sample plot in one-digit code.

3.7 Bamboo Weight Form (Field Form No. 7):

For determining correlation between green and dry weights of utilizable bamboo culm length, data will be collected in this form. This form will, however, be filled up for plots, in which bamboo has actually been found in an area of 60 m radius from the centre of subplot 1. One mature bamboo culm from each culm diameter class ***1 cm to 2 cm, 2 cm to under 5 cm, 5 cm to under 8 cm, and 8 cm and over****,* will be selected for felling from the first clump enumerated in the plot. If, however, the required type of necessary number of culms of any diameter classes is/are not available in the first clump, the shortfall will be made good from the clump next in the serial order of enumeration. But, if the necessary numbers of suitable culms are not available from any other clump of the plot, the required number of culms will be obtained from the area in the immediate vicinity of the plot.

Mature culm for this purpose would mean, the one which has put on more than two years of growth. Also the data will be collected for each bamboo species occurring in the plot separately e.g. if two species occur in the plot then data for first species will be noted as sample 1 and other species as sample 2. The selected bamboo culms of each diameter class for obtaining the weight data will be felled at a height of 25 cm. above ground level. The total length of each felled bamboo culm including stump height will be measured upto the tip and recorded in Col. 9(3), 14(3),19(3) and 24 (3) of field form. The top ends of each felled bamboo culm from a point where the diameter is just 1 cm. will then be chopped off. The length of the culm so left will be the utilizable length of the bamboo culm. The utilizable length of each culm will be measured and recorded in the appropriate column of the field form (Col. 10(3), 15(3) & 20(3) and 25 (3)) and Col. 11(3), 16(3), 21(3) and 26 (3) will be used for utilizable length upto 2 cm.

Green weight of the utilizable culms of each diameter class will thus be taken to the nearest 5 gm with the help of weighing balance and recorded in the appropriate columns (Col.12(5), 17(5), 22(5) and 27 (5) in grams.

Now, three 30 cm long pieces, obtained one each from the top, middle and bottom portions of the utilizable culm from each diameter class will be cut out and their green weight would be recorded in the appropriate columns (Col.28(4), 29(4), 30(4) and 31 (4) in grams.

The 30 cm long pieces of each diameter class would thus be tied with a bamboo strip of the same species. Before the pieces are tied in a bundle, their diameter class, species code, grid no. and the mapsheet code would be noted down on each piece for subsequent identification. The date of collection of sample is to be recorded on the bamboo sample pieces for easy reference of duration for calculation of dry weight correlation. The samples should be sent to the base camp. The base camp incharge will arrange to record the dry weight of these samples after every 30 days till 90 days or till weight of pieces remains constant.

Coding Instructions

S.No.	Item	Description
1	Job No. (Col. 1(3))	Three-digit code will be filled in by Data Entry Section (DES) of respective zones for record purpose
2	Form Code (Col. 2(2))	Two-digit code will be filled in by DES for BWF as ‘07’.
3	Mapsheet No.	Record six-digit code as given in Annexure IV denoting the mapsheet.

S.No.	Item	Description
	(Col. 3(6))	
4	Grid Code (Col. 4(6))	Record six digit code as per the list supplied by the headquarters.
5.	Species name (Col.5	Record species name as given in Annexure VII
6.	Species code (Col. 6(4))	Record species code as given in Annexure VIII
6.	Sample No. (Col.7(1))	Self explanatory
7.	Green weight data (Col.8(2)-27(5))	i) Record culm diameter at breast height, measured in cm for diameter classes 1 cm to 2 cm, 2 cm to 5 cm, 5 cm to 8 cm, and 8 cm and over in two digits against each sample in Col.8(2), 13(2) &18(2) and 23 (2). ii) Record the total length of the felled bamboo culm obtained by adding the stump height to the length measured upto the top in decimeters in three digits in Col.9(3), 14(3),19(3) and 24 (3) as the case may be. iii) Record utilizable length of felled bamboo culms measured in decimeters as follows: - a) Upto 1 cm. top diameter of the culm in three digits in Col. 10(3), 15(3), 20(3) and 25(3) as the case may be. b) Upto 2 cm. top diameter of the culm in three digits in Col. 11(3), 16(3), 21(3) and 26 (3) as the case may be. iv) Record green weight (in gm) of utilizable culm length upto 1 cm. top diameter to the nearest 5 gm in five digits in Col. 12(5), 17(5), 22(5) and 27 (5) as the case may be.
8.	Green weight of sub-sample for correlation with dry weight (Col. 28(4)-314))	i) Record green weight (in grams) of all the three 30 cm. pieces obtained from the top, middle and basal parts of utilizable culm of each species to the nearest 5 gm in 4 digits in Col. 28(4), 29(4), 30(4) and 31(4), as the case may be. ii) Record air dry weight (after 90 days or when the air dry weight of samples become constant) of the corresponding three pieces of each diameter class to the nearest 5 gms in a separate register.

3.8 NTFPs (Herbs, Shrubs and Climbers) and Regeneration Form (Field Form No. 8):

In this form, data is to be collected for selected NTFP resource species (herein after mentioned as NTFPs), which have been identified by respective State Forest Departments. The list of such NTFPs species have been given to zonal offices of FSI for preparation of an album for identifying un-common NTFPs species of herbs, shrubs and climbers. The album will be prepared state-wise for ease of fieldwork.

Here data on herbs, shrubs and climbers NTFPs species as per the given state-wise list with the help of album are to be collected. Besides NTFPs species, the data on regeneration of trees is also to be collected. The data is to be collected on NTFPs species and regeneration from all the subplots. Two concentric circular microplots of size 0.6 m and 1.7 meter radius at a distance of 5.0 meter from centre of subplots 1, 2, 3 and 4 at 90^0 in east direction are to be taken for collection of data on NTFPs species (herbs, shrubs and climbers) and tree regeneration. The size of such microplot and data to be collected are given as follows:

Herbs: Circular microplot of 0.6 meter radius.
Shrubs, Climbers and Tree Regeneration: Circular microplot of 1.7 meter radius.
Data in this form is to be recorded in all the visited sub-plots irrespective of their land use class (except Barren Lands and Water Bodies).

Definitions of herbs & shrubs are given as under:

Herbs: Herb is a plant with no persistent stem (non-woody) above ground and usually not exceeding 1 meter in height.

Shrubs: A woody perennial plant differing from a perennial herb in its persistent and woody stem and less definite form a tree in its low starature and its habit of branching from the base and usually not exceeding 3 meter in height.

Note:

1. The same plot will be revisited after 5 years. While revisiting, it would be ensured that time and season should be same for comparability.
2. Care may be taken that young regeneration of the tree species is not included in the categories of herbs and shrubs.
3. For tree regeneration data, all trees with dbh 10 cm and above are to be ignored.
4. **Collar diameter**: Diameter at the position of a plant which marks the transition between stump and root. The instrument usd to measure the collar diameter is **Vernier Calliper**.
5. *For NTFP tree species, information will be curled out from Sub-plot where 10 cm dbh or more measured and from tree regeneration portion of this field (Field Form No 8).*

Coding instructions for filling up NTFPs (Herbs, Shrubs and Climbers) and tree Regeneration form are as under:

Coding Instructions

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td>1.</td><td>Job No.
(Col. 1(3))</td><td>Three-digit code will be filled in by Data Entry Section (DES) of respective zones for record purpose.</td></tr>
<tr><td>2.</td><td>Form Code
(Col. 2(2))</td><td>Two-digit code 08 will be filled in by DES for NTFPs (Herbs, Shrubs and Climbers) and tree Regeneration Form.</td></tr>
<tr><td>3.</td><td>State Code
(Col. 3 (2))</td><td>Record two digit State codes as given in Annexure-II.</td></tr>
<tr><td>4.</td><td>Mapsheet No.
(Col. 4(6))</td><td>Record six-digit mapsheet code for denoting the mapsheet as given in Annexure IV.</td></tr>
<tr><td>5.</td><td>Grid Code
(Col. 5(6))</td><td>Record six-digit code as per the list supplied by headquarters.</td></tr>
<tr><td>6.</td><td>Latitude
(Col. 6(8))</td><td>Record the latitude as per the list given by headquarters.</td></tr>
<tr><td>7.</td><td>Longitude
(Col. 7(8))</td><td>Record the longitude as per the list given by headquarters.</td></tr>
<tr><td>8.</td><td>Subplot no.
(Col. 8(1))</td><td>Record the number of surveyed sub-plot.</td></tr>
<tr><td>9.</td><td>NTFPs Species name, code and habit
(Col. 9 & 10(3) and 11(1))</td><td>Record the species name, code and its habit i.e. herbs/ shrubs/ climber, as the case may be, for each sub-plot as given in Annexure-VIII. The habit (Herbs/Shrubs/ Climbers) is to be recorded in one-digit code as given below: -
<table>
<tr><th>Code</th><th>Category of habit</th></tr>
<tr><td>1</td><td>Herbs</td></tr>
<tr><td>2</td><td>Shurbs</td></tr>
<tr><td>3</td><td>Climbers</td></tr>
<tr><td>0</td><td>Not applicable</td></tr>
</table></td></tr>
<tr><td>10.</td><td>No. of plants
(Col. 12(3)-15(3))</td><td>Record no. of plants of herbs, shrubs and climbers in following collar diameter classes:
(i) 0-2 herbs in mm/shrubs & climbers in cm (Col.12(3))
(ii) 2-5 herbs in mm/shrubs & climbers in cm (Col. 13(3))
(iii) 5-8 herbs in mm/shrubs & climbers in cm (Col. 14(3))
(iv) 8 herbs in mm/shrubs & climbers in cm and above (Col. 15(3))</td></tr>
<tr><td>11.</td><td>Tree regeneration data
(Col. 16-18(1))</td><td>(a) Record species name and code (Col.16 & 17(4)): in four-digit from Annexure VII
(b) Diameter at breast height (Col. 18(1)): DBH is to be taken in cm for all tree plants having dbh ≥ 5 cm and less than 10 cm. For these plants category of regeneration will not be filled up.</td></tr>
<tr><td>12.</td><td>Status of tree regeneration
(Col. 19(1))</td><td>Record the status of each regeneration tree whether alive or dead as per the description given below:
<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td>1</td><td>Tree (Plant) is alive</td></tr>
<tr><td>2</td><td>Tree (Plant) is dead</td></tr>
<tr><td>3</td><td>Not applicable</td></tr>
</table></td></tr>
<tr><td>13.</td><td>No. of plants
(Col. 20(2)-22(2))</td><td>Record no. of plants in category of regeneration given below for all tree plants having dbh less than 5 cm. in two digits each:</td></tr>
</table>

S.No.	Item	Description		
		Code	**Category of regeneration**	**Description**
		1	Established (Col. 20(2))	Plants having height more than 2 meter
		2	Un-established (Col. 21(2))	Plants which have height less than 2 meter and are more than one year old (It will include whippy and sub-whippy plants).
		3	Recruit (Col. 22(2))	Very small plants having 2-4 leaves but are current years seedling **Note:**- ***In Sub-plot, If recruit are found more than 100, they should be restricted to 99 only***.

Note: In case if a particular sub-plot could not be laid out, the same should be mentioned in the corresponding form.

3.9 Soil and Forest Floor Carbon Form (Field Form No. 9):

In this form Soil data is to be collected from any two microplots laid out at a distance of 20 meter from center of subplot 1, while forest floor data is to be recorded from three microplots at a distance of 20 meter from center of subplot 1 in the direction of center of all ***three subplots***. This data is to be collected from all the visited plots irrespective of their land use class (except Forest Roads, Barren Lands and Water Body).

a. Collection of Forest Floor (Litter & Humus) Data

At each microplot of size of 1 m x 1 m for forest floor (litter & humus), data of ***fresh and partially undecomposed leaves and twigs*** and in addition ***fully decomposed leaves, twigs and branches*** are collected and its weight is recorded in grams in field form. Then the forest floor (litter & humus) collected from all the three microplots will be mixed thoroughly and a sample of **50 gm** will be taken from it. These samples will be kept in separate transparent polythene bags, which will be properly labeled. A sample card bearing Sample No. and details of the subplot should be kept in the bag. If the samples are wet, then care should be taken that the label should not be spoiled. Sample card should bear the following particulars:

1. Mapsheet No.
2. Grid code
3. Latitude of central subplot
4. Longitude of central suplot
5. Sample No.
6. Date of collection

Signature ……

Name & Designation of Crew Leader……

This sample bag should be tied up with a rubberband and deposited at the zonal headquarter at regular intervals.

b. Collection of Soil Data

Soil data should also be collected from **any two plots** described above. The area from which the soil sample is to be taken should be cleared of vegetation with the help of bill hook or axe. Then with the help of crowbar/spade, dig a pit of 30cm x 30cm x 30cm in each microplot and collect the soil sample of 50 gms after mixing throroughly. In case of gravel stone, the proportion of soil and gravel should be ocularly estimated and noted in the form, which is annexed to this manual. The soil so collected from the **two microplots** shall be mixed thoroughly and a sample of 50 gm will be kept as described above.

Note: - If it is not possible to collect soil data from above two microplots due to rockiness or otherwise, then soil samples should be taken from anywhere nearby.

Coding Instructions

S.No.	Item	Description
1	Job No. (Col. 1(3))	Three-digit code will be filled in by Data Entry Section (DES) of respective zones for record purpose.
2	Form Code (Col. 2(2))	Two-digit code 09 will be filled in by DES for Soil & Forest Floor Carbon Form.
3	Mapsheet No. (Col. 3(6))	Record six-digit code for denoting the mapsheeta as given in Annexure IV.

S.No.	Item	Description
4	Grid Code (Col. 4(6))	Record six-digit code as per the list given by headquarters.
5.	Latitude (Col. 5(8))	Record eight digit code as per the list supplied by headquarters.
6.	Longitude (Col. 6(8))	Record eight-digit code as per the list supplied by headquarters.
7.	Proportion of gravel (in per cent) (Col. 7(3))	Self explanatory.
8.	Proportion of soil (in per cent) (Col. 8(3))	Self explanatory.
9.	Forest Floor Sample No. (Col. 9(4))	Self explanatory
10.	Soil Sample No. (Col. 10(4))	Self explanatory
	Note: For item nos. 9 and 10 above, first digit for zone code next two digit for Crew code and fourth digit for forest floor and soil as given below: **Code** **Item** 1 Forest floor sample 2 Soil sample For example, if zone code is 1, crew code is 02 and sample taken for forest floor sample No. 1 will be coded as 1021.	
11.	Weight of forest floor (Col. 11 to 13(5))	Record weight of forest floor in grams. **For example, if the weight of forest floor is 5.50 kg, it should be recorded as 05500 in field form.** a. Plot 1 (Col. 11(5)) b. Plot 2 (Col. 12 (5)) c. Plot 3 (Col. 13(5))
12.	Weight of soil (Col. 14(4))	Record weight of soil in grams in 4 digits.

Note: Soil weight will be taken by processing the ‘soil density sampling core’ inside the earth after digging 7 cm soil from the surface in any one of the sample plots.

3.10. Stump, Dead Wood and Woody Litter Form (Field Form No. 10):

In this form, data is to be recorded for all the visited subplots irrespective of their land use class (except Barren Lands & Water Body).

The data regarding stump, dead wood and woody litter is to be collected from two concentric circular microplots of **radius 2.8 meter and 1.7 meter at a distance of 5.0 meter from center of subplot at 90^0 in east direction.**

Definition of stump, dead wood and woody litter is given as under:

Stump: The base of a tree and its roots left in the ground after felling.

Dead Wood: Woody material of tree having diameter more than 5 cm, which is not part of a live tree, lying on the ground.

Litter: Woody material of tree having diameter less than 5 cm, which is not decomposed.

Coding instructions are as under: -

S. No.	Item	Description
1	Job No. (Col 1. (3))	Three-digit code will be filled in by Data Entry Section (DES) of respective zone for record keeping.
2	Form Code (Col 2. (2))	Two-digit code 10 will be filled in by the DES.
3	Mapsheet Number. (Col 3.(6))	Record six-digit code for denoting a mapsheet as given in Annexure IV.
4	Grid Code (Col 4. (6))	Record six digit code as per the list given by headquarters.
5	Latitude (Col 5. (8))	Record eight-digit code as per the list given by headquarters.
6	Longitude (Col 6. (8))	Record eight-digit code as per the list given by headquarters.
7	Subplot number (Col 7. (1))	Record number of surveyed sub-plot.
8	Stump information (Col.(8) to (11))	Record stump information of trees in 2.8 meter radious plot in as per details given below:
9	Species code (Col 8(4)	Record the species code in four digis.
10	Status of stump (Col. 9(1))	Record the status of stump as given below: **Code** **Item** 1 Dead 2 Alive
11	Diameter (cm) (Col. 10(3))	Record diameter of stump in cm in three digits

<table>
<tr><th>S. No.</th><th>Item</th><th>Description</th></tr>
<tr><td>12</td><td>Height (cm) (Col.11(3))</td><td>Record height of the stump in cm. in three digits.</td></tr>
<tr><td>13</td><td>Dead Wood Information (Col. 12 (4) to 14 (3))</td><td>In the dead wood plot (2.8 m radius), in case large dead wood tree, record the species code and dbh of such trees under Col. 12(4) & 13(3) respectively. In case dead wood lying on the ground, record the dia at the centre of the log in Col 13(3) and its length in Col 14(3). The centre dia should be >5cm.
Remark 1: For standing dead trees, Species code and DBH (cm) are to be recorded in respective columns. For dead trees lying on the ground, Species code, diameter at the middle of the dead tree lying inside the plot and its length are to be recorded in respective columns. It is further clarified that in case of standing dead trees, length column should be left blank.
Remark 2: Another case may also arise where major portion of the dead tree is lying outside and only top branches with diameter less than 10 cm are lying inside the plot. In such case, how the dbh (diameter at breast height) is to be measured?
Clarification: Here the diameter and length of all the dead wood having diameter greater or equal to 5 cm are to be recorded in respective columns. No need to record the species code. Here it is to be noted that if there are many such dead woods available in the plot, all are to be measured and recorded and if necessary additional sheets are to be used to record the information.</td></tr>
<tr><td>14</td><td>Sub-plot number (Col. 15(1))</td><td>Sub-plot number is to be recorded</td></tr>
<tr><td>15</td><td>Weight of woody litter (Col 16. (4))</td><td>Collect all the woody litter (only branches of less than 5 cm dia which is not decomposed) found in 1.7 m radius circular microplot and record its weight (in kg up to two decimal places, no need to put the decimal point). For example, if the weight of woody litter is 05.30 kg, it should be written as 0530 in the field form.</td></tr>
<tr><td>16</td><td>Presence of Dead Wood (Col. 17 (1))</td><td>Have a look on the ground cover area of 1.13 ha. i.e. 60-meter radius from the centre of subplot 1 and classify the plot in one of the following cqategories
<table>
<tr><th>Code</th><th>Item</th><th>Description</th></tr>
<tr><td>1</td><td>Sporadic</td><td>When dead wood is found in 5-<10 % area of 1.13 ha.</td></tr>
<tr><td>2</td><td>Medium</td><td>When dead wood is found in 10-<50 % area of 1.13 ha.</td></tr>
<tr><td>3</td><td>Gregarious</td><td>When dead wood is found in more than 50 % area of 1.13 ha.</td></tr>
<tr><td>4</td><td>Absent</td><td>When dead wood is found less than 5% area of 1.13 ha. plot</td></tr>
</table>
</td></tr>
</table>

3.11 Shrubs, Climbers and Herbs Biomass Form (Field Form No. 11)

In this form, data is to be collected for all the visited subplots irrespective of their land use class (except Barren Lands & Water Bodies).

Here data on Herbs, Shrubs and Climbers is to be collected from all the visited subplots. Two concentric circular microplots of size 0.6 meter and 1.7 meter radius at a distance of 5.0 m from centre of subplot at 90^0 in east direction are to be taken for collection of data on Shrubs, Climbers and Herbs. For Herbs, green weight (in grams) and for Shrubs & Climbers, weight of green woody part and non woody part (in kg. upto two decimal place) after uprooting all the plants will be recorded under appropriate columns. The name of the species of Shrubs, Climbers and Herbs is also to be recorded under the column species name.

The size of plot and data to be collected are given as follows:

Herbs: Circular microplot of size 0.6 meter radius.
Shrubs & Climbers: Circular microplot of size 1.7 meter radius.

Definitions of Herbs & Shrubs is given here as under:

Herbs: Herb is a plant with no persistent stem (non-woody) above ground and usually not exceeding I meter in height.

.

Shrubs: A woody perennial plant differing from a perennial herb in its persistent and woody stem and less definite form a tree in its low starature and its habit of branching from the base and usually not exceeding 3 meter in height.

Climbers: Climbers plants are plants which grows and climb up in trees and onother tall objects. Many of them are vines whose stems are twin round trees and branches

Coding instructions for filling up Herbs, Shrubs and Climbers form are given here as under:

Coding Instructions

S.No.	Item	Description
1.	Job No. (Col. 1(3))	Three-digit code will be filled in by Data Entry Section (DES) of respective zones for record purpose.
2.	Form Code (Col. 2(2))	Two-digit code i.e.11 will be filled in by DES for Herbs, Shrubs and Climbers
3.	State Code (Col. 3 (2))	Record two digit codes as given in Annexure-II.
4.	Mapsheet Number. (Col. 4(6))	Record six-digit code for denoting the mapsheet. Example of coding pattern is given in Annexure IV.
5.	Grid Code (Col. 5(6))	Record six-digit code as per the list supplied by headquarters.
6.	Latitude	Record the latitude as per the list given by

S.No.	Item	Description
	(Col. 6(8))	headquarters.
7.	Longitude (Col. 7(8))	Record the longitude as per the list given by headquarters.
8.	Subplot number (Col. 8(1))	Record the number of surveyed sub-plot.
9. To 13	Species name, Green weight & Dry weight %age (Col. 9 & 10(4) and 11(2)) for woody part and 12 (4) and 13(2) for non woody part	**For Shrubs**: Record the species name, green weight and its dry weight %age for woody and non woody part in the respective columns. Record the weight in kg upto two decimal places and %age in two places.
14 to 18.	Species name, Green weight & Dry weight %age (Col. 14 & 15(4) and 16 (2)) for woody part and 17 (4) and 18(2) for non woody part	**For Climbers**: Record the species name, green weight and its dry weight %age for woody and non woody part in the respective columns. Record the weight in kg upto two decimal places and %age in two places.
19 to 21	Species name, Green weight & Dry weight in %age (Col. 19) ,20 (4) and 21 (2)	**For Herbs**: Record the species name , its green weight and dry weight %age in the respective columns
22	Remarks	Record the remark, if any.

Note: In case if a particular sub-plot could not be laid out, the same should be mentioned in the corresponding form.

Chapter- 4

TOF (Rural) Inventory

4.1 Sample design

The rural TOF area includes all areas outside the traditional/notified Reserved and Protected Forests but excludes notified urban areas. For any survey, sampling frame is required. Sampling frame for rural areas is prepared by headquarters with the help of remote sensing and GIS techniques.

The sampling frame for rural TOF has been obtained from the nation-wide uniform grid of 5 km x 5 km as explained earlier. The frame of rural TOF excludes all grids, which have been identified for forest inventory and urban TOF inventory. The inventory cycle for TOF is taken as 10 years. Thus, all grids in the frame are numbered from 1 to 10. Within the selected grids for a particular year, two-phase sampling design is used. In the first phase, grids are stratified into block, linear and scattered stratum using high resolution remote sensing satellite data. In the second phase, one random sample point will be laid out in each grid. Generally, in a grid there will be one sample point. The list of selected grids and plot centre with latitude and longitude will be provided by the headquarters to zonal offices. The methodology used for stratification of tree resources of the grid into block, linear and scattered is described as follows:

As indicated in Chapter 2 that a nation-wide uniform grid of 5 km x 5 km has been considered for NFI. Method for identifying grid for forest inventory has already been discussed in the same Chapter. The cycle of forest inventory is 5 years i.e. same grid will be inventoried again in the sixth year for forest inventory. All other grids are considered for TOF inventory. The cycle of TOF inventory for present NFI has been decided to be 10 years**.** As is already known, TOF inventory has two parts 1) Rural, and 2) Urban. Different methodologies have been adopted using the same framework of 5km x 5km grids for TOF (R) and TOF (U) inventory. All the area grids are numbered from 1 to 10 for TOF inventory as well. For list of all urban towns and cities, census 2011 data have been used which has name and area. The latitude and longitude of centroid of all such towns have been arrived at using BHUVAN and GOOGLE earth portal. Using the latitude and longitude of centroid and area of the towns, a buffer zone of appropriate radius has been created. At state level, this layer of buffer area has been considerd as a proxy of digital urban area of that state. In a GIS framework, this urban layer is overlaid on the 5km x 5km grid layer. All such grids intersecting the urban buffer layer have been considered as urban grid for TOF Urban inventory. All urban grids which are numbered ‘one’ will be considered for 1st year TOF (Urban) inventory. Within the selected urban grid, in GIS framework, a random point will be selected within the urban part of the grid. This point will fall within a UFS block of that town. That block has to be inventoried for that year. If that random point falls outside the urban area of that town/city then the closest UFS block to that point has to be selected for TOF (Urban) inventory. Remaining grids are considered for TOF (Rural) inventory.

Within the selected grid, two phase sampling design is used. In the first phase, the selected grid areas (excluding forest and urban area) are stratified into block, linear and scattered stratum using high resolution remote sensing satellite data. Generally, in a grid

there will be one sample point. The list of selected grids and plot centres, with latitude and longitude, will be provided by the Headquarters. The methodology used for stratification of tree resources of the grid into block, linear and scattered is described as follows:

LISS-IV Mx multi-spectral data of IRS P6 or other appropriate data are acquired from National Remote Sensing Centre (NRSC), Hyderabad for the selected grids. Thereafter, the LISS-IV image is geometrically rectified with the help of Survey of India toposheets on 1: 50,000 scale. Since mapping of TOF areas is the objective, the boundary of forest area is digitized and masked out. The image is then classified into settlements, water bodies, tree cover, agriculture and other land covers. This classification enables the interpreter to distinguish between tree cover and other classes. The classified image is visually analysed for editing and refinement. Since the minimum mappable area is 0.1 ha, pixels are clumped and cluster of pixels having area less than 0.1 ha are eliminated. After editing of the classified image, the final classified map is generated having three classes in TOF areas, namely: Block, Linear and Scattered. From the classified TOF map, area under each category (stratum) is calculated. In addition, areas which do not support tree vegetation, like rivers and water bodies, riverbeds, snow covered mountains, etc. which is termed as Un-Culturable Non Forest Area are also calculated. The schematic chart of methodology of TOF using remote sensing is depicted in the following Figure.

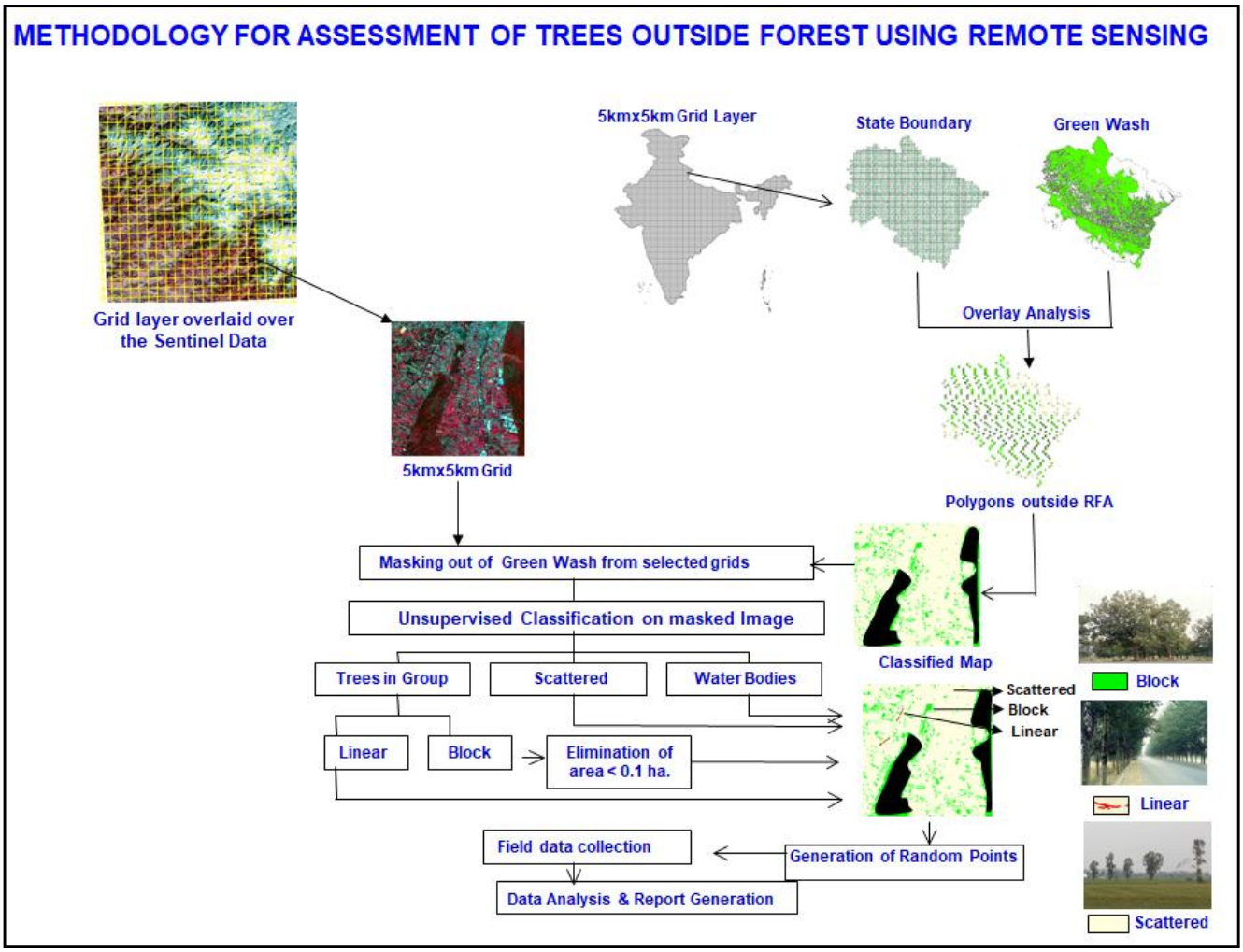


Figure 6: Schematic Chart of Methodology of TOF

The optimum size of the plot for each stratum has been determined by FSI by conducting a pilot study in the past. The optimum plot size for Block and Linear strata is 0.1 ha and 10m ×125m strip, respectively. In case of scattered stratum, **as the new design is grid based, instead of district as being used earlier, the scattered plots will be identified as hilly or non-hilly on the basis of altitude of a particular plot and same will be mentioned against each plot**. The optimum size of sample plot has been fixed as 3.0 ha for non-hilly area and 0.5 ha for hilly area.

Sample points are randomly generated within each grid for selected stratum and the data on pre-decided variables like dbh, crown diameter, species name and category of plantation, etc. are collected on designed formats. The complete enumeration of all the trees of **5 cm and above dbh** will be carried out in the prescribed formats. Data processing will be carried out using data processing module developed for this purpose by FSI.

4.2 Preparation of field work

The general preparedness, preparation of field forms, field maps, GPS and how to reach the sample points are the same as in the case of forest inventory and have been described earlier.

After reaching the center of sample plot with the help of hand held GPS, the next job would be to lay out the plot of given size. It is to be kept in mind that plot center of block, linear and scattered stratum have been arrived at after classifying the remotely sensed data (LISS –IV Mx), it may actually fall 40-50 m away from the actual point on the ground. If the desired stratum is not located exactly by using GPS, then the same stratum may be located within the above-mentioned limit and plot of desired size may be laid out. The complete plot should be within indicated stratum.

NOTE: - Having reached the sample plot for block stratum if it comes to notice that plot centre is falling within recorded forest area and the boundary of recorded forest area is at more than 300 m, then instead of TOF–Block sample point it should be treated as forest inventory sample point. Accordingly, forest inventory plot should be laid out at that sample point and it may be communicated to zonal office as well as Dehradun (HQ).

4.3 Layout of plots in the field

4.3.1 Lay out of plot in block stratum

After reaching the plot centre fix the NE at 45^0, SE at 135^0, SW at 225^0 & NW at 315^0 corners of the plot by measuring 22.36 m. horizontal distance (i.e. half of the diagonal) by steel tape in all four directions. These four corners should be marked by thin poles or bamboos of 5 cm dia. and 1.5 meter in height. A red colour cloth may be tied at the top end of these corner posts for getting clear visibility from different spots in the plot. Check the dimensions of the plot i.e. all sides should measure 31.62 m horizontal distance.

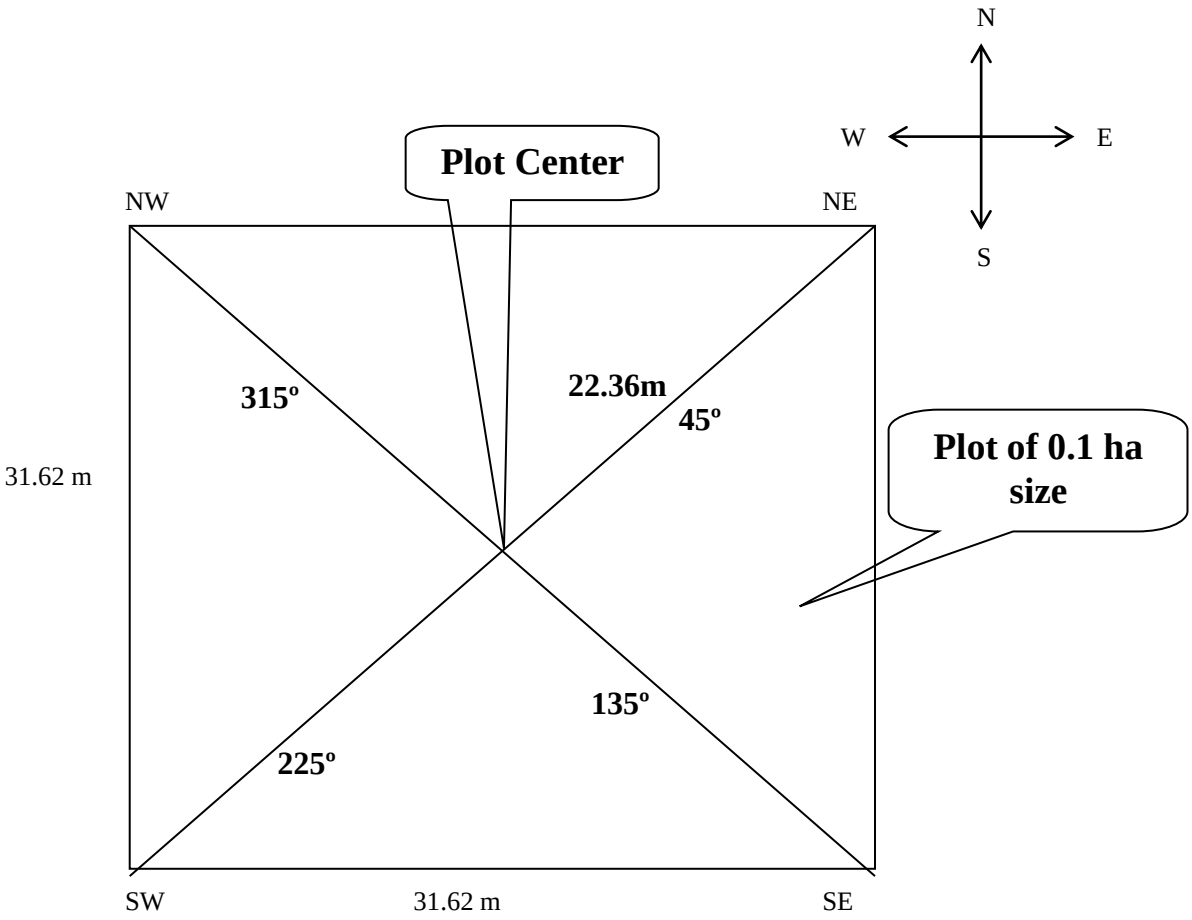


Figure 7: Square Plot Design of size 0.1 ha for Block Stratum

4.3.2 Layout of the plot in linear stratum

After reaching the centre of the plot at given lat. & long. as per sample list, the plot centre is to be fixed keeping 62.5 m on both sides. Accordingly, plot along the linear strip is to be laid out and width of 10 m will be taken with the help of chain/measuring tape from the starting canopy of the strip of trees. If any side is less than 62.5 m then plot centre is to be adjusted in such a manner that each side of the adjusted plot is 62.5 m respectively, as shown in the figure below. The actual lat. & long. of the midpoint of the length (adjusted plot centre) of laid out sample plot recorded in the TOFR-2 at appropriate place.

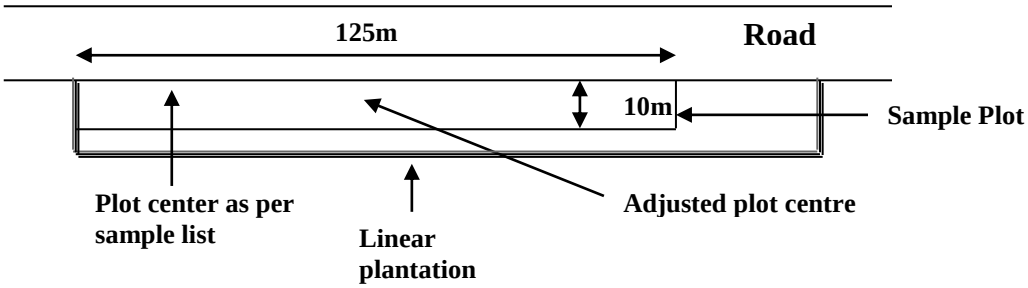


Figure 8: Linear Plot Design of size 10 m X 125 m for Linear Stratum

4.3.3 Layout of the plot in scattered stratum

Grids having altitude less than 500: A square plot of 3.0 ha will be laid out in scattered stratum. For this, after reaching the plot centre with the help of lat. & long., a square plot of 3.0 ha will be laid out. After fixing the plot centre, fix the NE at 45^0, SE at 135^0, SW at 225^0 and NW at 315^0 corners of the plot by measuring 122.47 m horizontal distance, i.e. half of the diagonal by steel tape in all four directions. These four corners should be marked by thin poles or bamboos of 5 cm dia. and 1.5 m height. If possible, ranging rods can also be used as corner posts. A red colour cloth may be tied at the top end of these corner posts for getting clear visibility from different spots in the plot. **In case the 3.0 ha square plot includes part of block and/or linear stratum, then plot centre should be adjusted suitably to exclude the undesired stratum.**

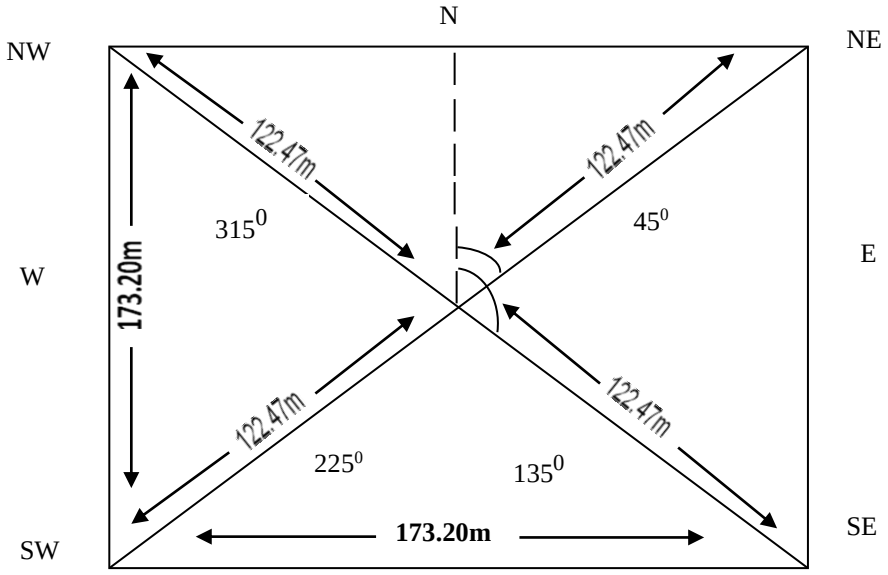


Figure 8: Square Plot Design of size 3.0 ha for Scatterted Stratum (Non-Hilly)

Check the dimensions of the plot i.e. all sides should measure 173.20 meter horizontal distance.

Grids having altitude more than 500 m: A square plot of 0.5 ha will be laid out in scattered stratum. For this, after reaching the plot center from the north, fix the NE at 45^0, SE at 135^0, SW at 225^0 and NW at 315^0 corner of the plot measure 50 meter horizontal

distance (i.e. half the diagonal) by steel tape in all the four directions and plot will be laid out as it was done in case of block stratum.

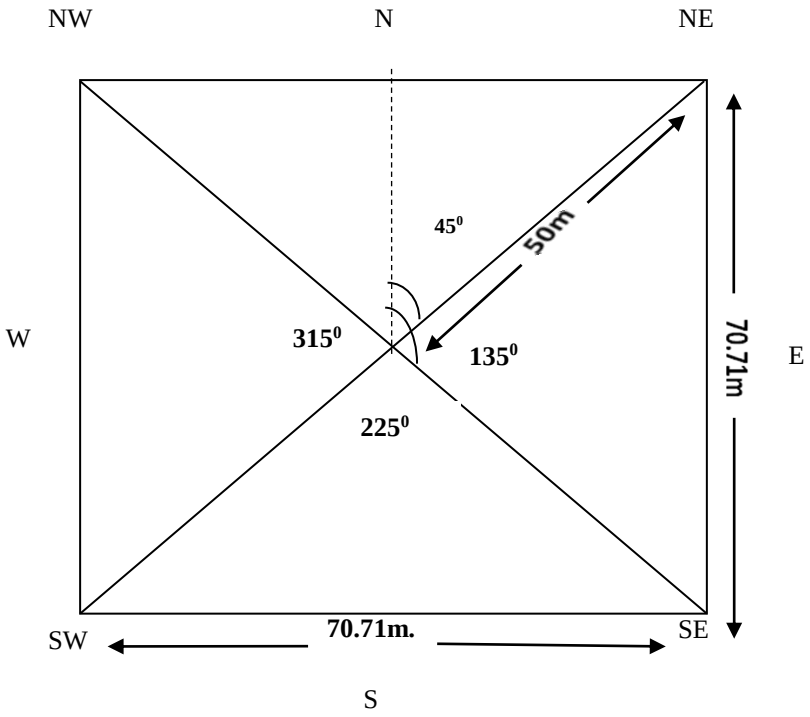


Figure 9: Square Plot Design of size 0.5 ha for Scatterted Stratum (Hilly)

Check the dimension of the plot i.e. all sides of the plot should measure 70.71 meter horizontal distance.

For hilly and non-hilly plots (as the new design is grid based), the plots will be identified as hilly and non-hilly on the basis of altitude of a particular plot and same will be provided by the HQ to zonal offices.

4.4 Data Collection

After laying out the plot, the enumeration work will be started. **Enumeration of trees will commence from Northwest corner of the plot and will proceed in clockwise direction (i.e. north to east).** The enumerated trees should be suitably marked to avoid duplication/omission of trees. Diameter at breast height (dbh) will be measured for all trees having diameter ≥ 5 cm. with the help of calliper, keeping axis of the calliper towards the plot centre.

After laying out of the plot and ensuring that it is correctly formed. The Crew Leader shall collect the data. He shall also assign duties to other crew members. The duties to the members of the crew are not specified. They are to be decided by the Crew Leader considering the efficiency of every member of the team.

The following precautions should be taken while collecting data.

1. The data should be collected accurately with the help of the members of Crew and should be recorded neatly in a good hand writing in the proper field forms by the crew leader, in the field.

2. The code numbers should be neatly and correctly recorded in legible manner.

3. Over writing of codes should be avoided. Wherever any mistake is committed in writing, the entry should be cancelled and a corrected entry should be written duly attested by Crew Leaders.

   The digits should be written as under
   1, 2, 3, 4, 5, 6, 7, 8, 9, 0

4. Filling of Forms in Hindi, Urdu or regional languages should not be adopted without approval from the Head of the Office.

5. The data will be collected and recorded in the following field forms. The Crew Leaders should see that adequate number of blank forms is carried in the field.

   1. TOFR –1 Plot Approach Form
   2. TOFR – 2 Plot Enumeration Form

6. Detailed instructions for filling up of these forms are given in Chapter-V.

7. If complete data of a plot does not get accommodated in one sheet a second sheet as a continuation sheet would be used and the additional sheet would be carefully tagged with the main form after filling all columns and clearly writing words ‘continuation sheet’ on the second and onwards pages.

8. Before leaving the plot see that no instruments or stores are forgotten.

9. See that all members who have assisted in recording the information sign and write their names on the form.

10. Please see that all information is recorded/written and measured in field itself and nothing is taken to camp for compliance. Once a plot is left it should be presumed that all jobs of recording, filling forms, muster rolls etc. are completed in all respects.

Chapter - 5
TOF Rural Inventory: Instructions for recording data in different field forms

5.1 TOFR -1: Plot Approach Form

This form will give details, such as mode of travel upto the reference point and conspicuous features observed during the journey on vehicles. This form will also indicate the starting time from camp and arrival at the reference point, time of arrival at the plot(s), time of leaving the plot(s) and time of returning to camp. All timings will be written as 07.30 hrs for 7.30 A.M. (4.30 P.M. will be written as 16.30 hrs).

The Crew Leader must fill up the proper identification of the plot (like State, District etc.) by using correct codes from the manual against each item. The distances shall be recorded in meters as specified against the item. Descriptive information is to be given in the space provided for the item. Extra sheets may be used (wherever the given space is not sufficient) with proper identification on the sheet.

The different works done by the individual members of crew should also be indicated against the items in the Plot Approach Form.

The Plot Approach Forms are to be kept in the Zonal Office only as a record and will be used as and when required.

While filling this form the Crew Leaders should keep in mind that all information in this form is recorded in such a manner that it will help in relocating the plot during checking.

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td>1.</td><td>Job No. (Col.1(3))</td><td>Three-digit code will be filled in by Data Entry Section (DES) of respective zone for record keeping</td></tr>
<tr><td>2.</td><td>Survey Code (Col.2(1))</td><td>The survey code for TOF Rural inventory will be recorded as ‘2’</td></tr>
<tr><td>3.</td><td>Form Code (Col.3(1))</td><td>Record one-digit code 1 for TOFR-1</td></tr>
<tr><td>4.</td><td>FSI Zone (Col.4(1))</td><td>Record one-digit code as given in Annexure-II</td></tr>
<tr><td>5.</td><td>Phy. Zone (Col.5(2))</td><td>Record two-digit code (Need not to be filled)</td></tr>
<tr><td>6.</td><td>State Code (Col. 6(2))</td><td>Record two-digit district code as given in Annexure II.</td></tr>
<tr><td>7.</td><td>District Code (Col.7(2))</td><td>Record two-digit district code as given in Annexure III.</td></tr>
<tr><td>8.</td><td>Stratum Code (Col.8(1))</td><td>Record stratum code as under:
<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td>1</td><td>Block</td></tr>
<tr><td>2</td><td>Linear</td></tr>
<tr><td>3</td><td>Scattered</td></tr>
</table></td></tr>
<tr><td>9.</td><td>Grid Code (Col.9(6))</td><td>Record six digit code as per the list given by headquarters.</td></tr>
</table>

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td>10.</td><td>Mapsheet No. (Col.10(6))</td><td>Record six-digit code as given in Annexure IV.</td></tr>
<tr><td>11.</td><td>Latitude (Col. 11(8))</td><td>Record the latitude as per the list given by headquarters.</td></tr>
<tr><td>12.</td><td>Longitude (Col.12(8))</td><td>Record the longitude as per the list given by headquarters.</td></tr>
<tr><td>13.</td><td>Plot Hilly or Non Hilly (Col.13(1))</td><td>Record whether plot hilly or non-hilly as per list supplied by the HQ. The code is given below:<table><tr><th>Code</th><th>Description</th></tr><tr><td>1</td><td>Hilly</td></tr><tr><td>2</td><td>Non Hilly</td></tr></table></td></tr>
<tr><td>14.</td><td>Name of the Camp/District</td><td>Self explanatory</td></tr>
<tr><td>15.</td><td>Time (hrs.) at which left the camp/time (hrs.) at which move to the next plot</td><td>Record time in hours</td></tr>
<tr><td>16.</td><td>Distance covered by vehicle (km)</td><td>Self explanatory</td></tr>
<tr><td>17.</td><td>Time taken in journey by vehicle</td><td>Record time in hours</td></tr>
<tr><td>18.</td><td>Time at which started on foot to the plot centre</td><td>Record time in hours</td></tr>
<tr><td>19.</td><td>Distance covered on foot upto plot centre.</td><td>Record distance in km upto two decimal place.</td></tr>
<tr><td>20.</td><td>Time of arrival at the Plot</td><td>Record time in hours</td></tr>
<tr><td>21.</td><td>Plot destination mark (Village Name)</td><td>Record name of village or any other permanent feature where the plot falls</td></tr>
<tr><td>22.</td><td>Time of departure from the Plot</td><td>Record time in hours</td></tr>
<tr><td>23.</td><td>Time at which returned to camp</td><td>Record time in hours</td></tr>
<tr><td>24.</td><td>Navigation done by</td><td>Record name of the person who has carried out this work.</td></tr>
<tr><td>25.</td><td>Plot laid out by</td><td>Record name of the person who has carried out this work.</td></tr>
<tr><td>26.</td><td>Enumeration done by</td><td>Record name of the person who has carried out this work.</td></tr>
<tr><td>27.</td><td>Remarks</td><td>Record remark, if any, upto 50 words</td></tr>
</table>

5.2 TOFR –2: Plot Enumeration Form Rural

In this form, data of trees and bamboo clumps will be recorded. **Trees having utility less than 70 % are not to be enumerated.**

Plot Enumeration Form for each plot will be maintained separately. If a plot contains a large number of trees/bamboo clumps wherein all the data cannot be accommodated in one single form sheet, then additional form sheets in continuation may be used and in that case the total of all trees/bamboo clumps in the plot will be given in each page.

Trees, the stems of which touch the **North and West border** lines of the plot (called border-line trees) will be treated as '**in trees'** and enumerated. However, trees the stems of which touch the **East and South border** lines of the plot will be treated as '**out trees'** and will not be enumerated. 'In' and 'out' bamboo would be similarly decided and treated.

Enumeration of trees/bamboo will commence from the NW corner in North quadrant of the plot and will proceed in clockwise direction. All bamboo clumps occurring in a plot will be serially numbered by a jet-writer pen and a separate series of numbers will be used for bamboo species. Similarly, trees will be numbered separately and simultaneously.

The coding instructions for filling up of the Plot Enumeration Form Rural are as under:

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td>1.</td><td>Job No. (Col.1(3))</td><td>Three-digit code will be filled in by Data Entry Section (DES) of respective zone for record keeping.</td></tr>
<tr><td>2.</td><td>Survey Code (Col.2(1))</td><td>Record survey code as “2”.</td></tr>
<tr><td>3.</td><td>Form Code (Col.3(1))</td><td>Record one-digit form code as “2”.</td></tr>
<tr><td>4.</td><td>FSI Zone (Col.4(1))</td><td>Record one-digit code in as given in Annexure-II.</td></tr>
<tr><td>5.</td><td>Phy. Zone (Col.5(2)</td><td>Record two digit codes.
(No need to be filled)</td></tr>
<tr><td>6.</td><td>State Code (Col. 6(2))</td><td>Record two-digit States code as given in Annexure II.</td></tr>
<tr><td>7.</td><td>District Code (Col.7(2))</td><td>Record two-digit district code as given in Annexure III.</td></tr>
<tr><td>8.</td><td>Stratum Code (Col.8(1))</td><td>Record one digit stratum code as under:
<table>
<tr><th>Code</th><th>Stratum</th></tr>
<tr><td>1</td><td>Block</td></tr>
<tr><td>2</td><td>Linear</td></tr>
<tr><td>3</td><td>Scattered</td></tr>
</table></td></tr>
<tr><td>9.</td><td>Grid Code. (Col.9(6))</td><td>Record six digit grid code as given by the headquarters.</td></tr>
<tr><td>10.</td><td>Plot Status (Col. 10(1))</td><td>Record plot status in one digit as under:
<table>
<tr><th>Code</th><th>Status</th></tr>
<tr><td>1</td><td>Trees available</td></tr>
<tr><td>2</td><td>Plot falls in urban area/habitation</td></tr>
<tr><td>3</td><td>Marshy/water logged area with grasses and/or bushes</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td></td><td>
<table>
<tr><td>4</td><td>Young plantation/nurseries and not having trees of 5 cm and above dbh</td></tr>
<tr><td>5</td><td>Agriculture land</td></tr>
<tr><td>6</td><td>Agriculture land having plantation in last 5 years</td></tr>
<tr><td>7</td><td>Others (specify)</td></tr>
<tr><td>8</td><td>Plot falls in recorded forest area</td></tr>
</table>
</td></tr>
<tr><td></td><td colspan="2">Note: If plot status code is 2 or 8, enumeration will not be done in the plot</td></tr>
<tr><td>11.</td><td>Plot Ownership (Col.11(1))</td><td>Record plot ownership in one digit as under:
<table>
<tr><th>Code</th><th>Status</th></tr>
<tr><td>1</td><td>Private individual</td></tr>
<tr><td>2</td><td>Private others</td></tr>
<tr><td>3</td><td>Forest Department</td></tr>
<tr><td>4</td><td>Other Government Department</td></tr>
<tr><td>5</td><td>Panchayat Land</td></tr>
<tr><td>6</td><td>Institutions (Govt.)</td></tr>
<tr><td>7</td><td>Others (specify)</td></tr>
</table>
</td></tr>
<tr><td>12.</td><td>Latitude (Col.12(8))</td><td>Record eight digits, latitude of the sample plot as per the list provided by the headquarters in degrees, minutes and seconds upto two decimal point.</td></tr>
<tr><td>13.</td><td>Longitude (Col.13(8))</td><td>Record eight digits, longitude of the sample plot as per the list provided by the headquarters in degrees, minutes and seconds upto two decimal point.</td></tr>
<tr><td>14.</td><td>Category of plot (Col.14(1))</td><td>Record category of plot in one digit as under:
<table>
<tr><th>Code</th><th>Status</th></tr>
<tr><td>1</td><td>Hilly, irrigated and within 5 km of forests</td></tr>
<tr><td>2</td><td>Plain, irrigated and within 5 km of forests</td></tr>
<tr><td>3</td><td>Hilly, irrigated and >5 km from forests</td></tr>
<tr><td>4</td><td>Plain, irrigated and >5 km from forest</td></tr>
<tr><td>5</td><td>Hilly, unirrigated and within 5 km of forests</td></tr>
<tr><td>6</td><td>Plain, unirrigated and within 5 km of forests</td></tr>
<tr><td>7</td><td>Hilly, unirrigated and >5 km from forests</td></tr>
<tr><td>8</td><td>Plain, unirrigated and >5 km from forests</td></tr>
</table>
</td></tr>
<tr><td>15.</td><td>Sl.No. & Species Name</td><td>Record local or Botanical name of the species.</td></tr>
<tr><td>16.</td><td>Species code (Col.15(4))</td><td>Record four digit code as in Annexure-VII</td></tr>
<tr><td>17.</td><td>dbh (cm) (Col.16(3))</td><td>Record the diameter in cm at breast height over bark in three digits. The diameter of all the trees having dia. ≥ 5 cm and above falling in the plot will be measured at a height of 1.37 m from ground level (i.e. at breast height) measuring on up hill side of the tree and will be recorded to the nearest centimeter. The axis of the callipers (i.e. the long arm of the callipers) will always be kept pointed towards the centre of the plot while taking diameter measurement of trees. If there is flare at the breast height of a tree, in that case, the diameter measurement would be taken immediately above or below the flare whichever is nearer to breast height. In case of butteressed and large sized trees diameter may be</td></tr>
</table>

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td></td><td>measured by tape or taking girth and converting it to diameter by multiplying with 7/22 or 0.318 factor.
In case there is forking of a tree below its breast height, diameter of each forked stem (provided diameter of each forked stem >5 cm) will be measured at breast height (above forking) and recorded separately, as if for two trees.
Dead trees, if not rotten and provided 70% of their wood is utilizable, will also be enumerated.
The diameter of a bamboo clump will be measured at its base (at a height of 30 cm) with the help of a tape.</td></tr>
<tr><td>18.</td><td>No. of culms (Col. 17(3))</td><td>In case of bamboo species (in Item 16 above) record number of culms in that clump. In case of non-clump forming bamboo 1/8th area of north-west quadrants of the plot will be enumerated.</td></tr>
<tr><td>19.</td><td>Crown width (Col.18(3))</td><td>Record crown width of the tree and spread of bamboo clumps in meters upto one decimal. The measuring tape will always be aligned to the center of the plot while taking crown width of tree.</td></tr>
<tr><td>20.</td><td>Category of trees/ bamboo (Col.19(11))</td><td>Record category of trees/ bamboo coded as under:
<table>
<tr><th>Code</th><th>Status</th></tr>
<tr><td>1</td><td>Farm forestry: Trees along the farm bunds and in small patches up to 0.1 ha in area</td></tr>
<tr><td>2</td><td>Village Woodlots: Naturally growing trees/planted trees on community land etc</td></tr>
<tr><td>3</td><td>Block plantations: Patches covering an area of more than 0.1 ha and not falling in any of the above</td></tr>
<tr><td>4</td><td>Road side plantations: Planted/ natural trees growing along roadside.</td></tr>
<tr><td>5</td><td>Ponds side plantation: Planted/natural trees growing around water ponds.</td></tr>
<tr><td>6</td><td>Railway lines side plantation:
Planted/natural trees growing along railway lines</td></tr>
<tr><td>7</td><td>Canals side plantation: Planted/natural trees growing along canal side.</td></tr>
<tr><td>8</td><td>Homestead: Trees appearing in the house premises and not covered in above first three categories</td></tr>
<tr><td>9</td><td>Others: Trees not falling in any of the above categories</td></tr>
</table></td></tr>
<tr><td>21.</td><td>Bamboo Quality Col.20(1))</td><td>Record bamboo quality as per the instructions given in PDF for forest inventory.</td></tr>
<tr><td>22.</td><td>Shifted Latitude (Col.21(8))</td><td>Record eight digits, actual latitude of the sample plot as per the reading of GPS in degrees, minutes and seconds upto two decimal point.</td></tr>
<tr><td>23.</td><td>Shifted Longitude</td><td>Record eight digits, actual longitude of the sample plot as per the reading of GPS in degrees, minutes and seconds</td></tr>
</table>

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td></td><td>(Col.22(8))</td><td>upto two decimal point.</td></tr>
<tr><td>24</td><td>Status of Tree
(Col 23(1)</td><td>Record the status of each enumerated standing tree whether it is alive or dead:
<table><tr><th>Code</th><th>Item</th></tr><tr><td>1</td><td>Tree is alive</td></tr><tr><td>2</td><td>Tree is dead</td></tr><tr><td>3</td><td>Not applicable</td></tr></table></td></tr>
<tr><td>25</td><td>Plot Type
(Col 25(1)</td><td>Record type of the plot in one digit
<table><tr><th>Code</th><th>Item</th></tr><tr><td>1</td><td>Hilly</td></tr><tr><td>2</td><td>Non Hilly</td></tr></table></td></tr>
</table>

Chapter - 6

TOF (Urban) Inventory

6.1 Sample Design

The study area for this survey is considered as urban centers as defined by office of Registrar General of India. Sampling frame for urban areas has been prepared by National Sample Survey Organisation (NSSO) (under the Ministry of Statistics and Programme Implementation, Government of India). This organization conducts surveys by the name of 'Urban Frame Survey' (UFS). They divide all urban centers of a district in blocks called 'UFS blocks'. These blocks are having well defined boundaries, and are formed on the basis of 600-800 population or 120-160 households; they cover the whole area within the geographical boundary of a town including vacant lands.

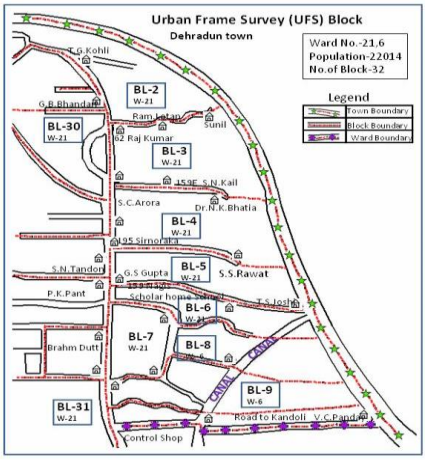


Figure 10: UFS Block

To identify the urban grids from the frame of the 5 km x 5km grids excluding grids marked for forest inventory, the list of urban towns and cities as per Census 2011 has been used. The centriod of all such towns/cities has been determined with the help of BHUVAN and GOOGLE earth. The area of all such towns/cities is also known from the census data. Using area of urban towns/cities, a buffer area has been created around the centeriod of all towns/cities. A random point has been laid out in the buffer area for urban inventory. The list of urban grids along with latitudes and longitudes to be inventoried in a particular year will be given to zonal offices for field work. The zonal offices will identify the UFS block corresponding to selected sample point from NSSO. For this purpose, they may take toposheets or screen prints of Google/Bhuvan imagery of the selected sample point, which may be helpful in identification of UFS block. The inventory is to be done in the selected block and all trees above 5 cm diameter are to be recorded in the designated field forms.

6.2 Preparation of field work

The general preparedness, preparation of field forms, maps, GPS etc. will be same as described earlier.

6.3 Data Collection

After reaching the sample block, the Crew Leader should identify the boundaries of the block given in the UFS map. For this purpose, maps and local authority should be consulted. The crew leader should ensure that it is correctly identified. The Crew Leader shall collect the data, and shall be personally responsible for the same. He shall also assign duties to other crew members. The duties to the members of the team are not specified. They are to be decided by the Crew Leader considering the efficiency of every member of the crew.

To begin with the collection of data, it is necessary to select the starting point in the north-west corner of the block. This reference point should be a prominent permanent feature of the block. The details of location of starting/reference point and its description should be recorded in the “UFS BLOCK APPROACH FORM (TOFU-1)”.

After fixing the starting point, the enumeration work begins. Enumeration of trees will commence from North-West corner of the block and will proceed in clockwise direction (i.e. north to east). The enumerated trees should be suitably marked to avoid duplication/omission of trees. Diameter at breast height (dbh) will be measured for all trees having diameter $\geq$5 cm with the help of the calliper, keeping the head of the calliper towards the starting point/reference point. Urban people are sceptical about providing information about number of trees in their homesteads. Therefore, it is necessary that the objectives of this exercise be thoroughly explained to them. During the survey, it may happen that the house owner is not available or house is locked and field party does not have access to enumerate trees. In such cases, the required information about number of trees and species are to be noted by enquiry from neighbours or from local/ knowledgeable person.

The following precautions should be taken while collecting data:

1. The data should be collected accurately with the help of the members of Crew and should be recorded neatly in good hand writing in the proper field forms by the crew leader, in the field.

2. The code numbers should be neatly and correctly recorded in legible manner.

3. Over writing of codes should be avoided. Wherever any mistake is committed in writing, the entry should be cancelled and a corrected entry should be written duly attested by Crew Leaders.

   The digits should be written as under:
   1, 2, 3, 4, 5, 6, 7, 8, 9, 0

4. Filling of Forms in Hindi, Urdu or regional languages should not be adopted without approval from the Head of the Office.

5. The data will be collected and recorded in the following field forms. The Crew Leaders should see that adequate number of blank forms are carried in the field.

   1. UFS Block Approach Form (TOFU –1)
   2. UFS Block Trees Enumeration Form (TOFU –2)

6. Detailed instructions for filling up of these forms are given in Chapter-VII.

7. If complete data of a plot does not get accommodated in one sheet, a second sheet as a continuation sheet would be used and the additional sheet would be carefully tagged with the main form after filling all columns and clearly writing words ‘continuation sheet’ on the second and onwards pages.

8. When leaving the block, ensure that no instruments or stores are left behind.

9. Ensure that all members who have assisted in recording the information sign and write their names on the form.

10. Please ensure that all information is recorded/written and measured in field itself and nothing is taken to camp for compliance. Once a block is left it, it is presumed that all jobs of recording, filling forms, muster rolls etc. are completed in all respects.

Chapter - 7

TOF Urban Inventory: Instructions for recording data in different field forms

7.1 TOFU -1: UFS Block Approach Form

This form will give details such as mode of travel upto the reference point and conspicuous features observed during the journey by vehicle. This form will also indicate the starting time from camp and arrival time of at the reference point, time of arrival at the block(s), time of leaving the block(s) and time of returning to camp. All the timings will be written as 0730 hrs. For 7:30 A.M. (4.30 P.M. will be written as 1630 hrs).

The Crew Leader must fill up the proper identification of the block (like State, District etc.) by using correct codes from the manual against each item. All the timings shall be coded in four digits as explained above. The distances shall be coded in meters as specified against the item. Descriptive information is to be given in the space provided for the item. Extra sheets may be used (wherever the given space is not sufficient) with proper identification on the sheet.

The different works done by the individual members of Crew should also be indicated against the items in the UFS block Approach Form.

The Block Approach Forms are to be kept in the zonal office only as a record and will be used as and when required.

While filling this form the Crew Leaders should keep in mind that all information in this form is recorded in such a manner that it will help in relocating the block during checking or re-inventory.

Coding instructions for filling the form

S.No.	Item	Description
1.	Job No. (Col.1(3))	Three-digit code will be filled in by Data Entry Section (DES) of respective zone for record keeping
2	Survey Code (Col.2(1))	Record survey code as “3”
3	Form code (Col.3(1))	Record one-digit form code as “1”
4	FSI Zone (Col.4(1))	Record one-digit code as given in Annexure-II
5	Phy. Zone (Col.5(2))	Record two-digit code (**No need to fill up this code**)
6	State code (Col.6(2))	Record two-digit States code as given in Annexure II.
7.	District code (Col.7(2))	Record two-digit district code as given in Annexure III.
8.	Town name	Record name of the town in this column.

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td>9.</td><td>Town class code (Col.8(1))</td><td>Record town class code as under
<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td>1</td><td>Towns having population of one lakh and above</td></tr>
<tr><td>2</td><td>Towns having population between 50,000 to 99,999</td></tr>
<tr><td>3</td><td>Towns having population between 20,000 to 49,999</td></tr>
<tr><td>4</td><td>Towns having population between 10,000 to 19,999</td></tr>
<tr><td>5</td><td>Towns having population less than 10,000</td></tr>
</table></td></tr>
<tr><td>10.</td><td>IV Unit No. & UFS block No. (Col.9 & 10 (3) & (2))</td><td>Record in five digits. UFS block number along with Investigator unit (IV unit) as per sample list/map. The three digits represent IV unit number and two digits represent UFS block number.</td></tr>
<tr><td>11.</td><td>Mapsheet Number. (Col.11(6))</td><td>Record six-digit mapsheet code in Annexure-IV.</td></tr>
<tr><td>12.</td><td>Grid Code. (Col.12(6))</td><td>Record six digit grid code as headquarters.</td></tr>
<tr><td>13.</td><td>Name of the Camp/ district</td><td>Self explanatory</td></tr>
<tr><td>14.</td><td>Time (hrs.) at which left the camp to grid(plot)/ move to next grid(plot)</td><td>Record the time in hours</td></tr>
<tr><td>15.</td><td>Distance covered by vehicle (km)</td><td>Self explanatory</td></tr>
<tr><td>16.</td><td>Time taken for journey by vehicle</td><td>Record the time in hours</td></tr>
<tr><td>17.</td><td>Time of arrival at the UFS block</td><td>Record the time in hours</td></tr>
<tr><td>18.</td><td>Block destination mark (Name of the area)</td><td>Record name of area is written where the UFS block falls</td></tr>
<tr><td>19.</td><td>Time of departure from the UFS block</td><td>Record the time in hours</td></tr>
<tr><td>20.</td><td>Time at which returned to camp/ move to the next grid(plot)</td><td>Record the time in hours</td></tr>
<tr><td>21.</td><td>Conspicuous feature selected as the starting point for the survey</td><td>This starting point should be a prominent permanent feature of the block viz. temple, school, etc.</td></tr>
<tr><td>22.</td><td>Description of the starting point and approach to this point</td><td>Record description of starting point and its approach.</td></tr>
<tr><td>23.</td><td>Verifications of the UFS block boundaries done by.</td><td>Record naeme of the person who has carried out this work.</td></tr>
<tr><td>24.</td><td>UFS block Tree enumeration done by</td><td>Record name of the person who has carried out this work.</td></tr>
<tr><td>25.</td><td>Area of UFS block measured by</td><td>Record name of the person who has carried out this work.</td></tr>
</table>

S.No.	Item	Description
26.	Remarks	Record remark, if any, upto 50 words
27	Map of UFS attached	Tick Y/N

7.2 TOFU -2: UFS Block Tree Enumeration Form

Instructions for filling the form

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td>1.</td><td>Job No. (Col.1(3))</td><td>Three-digit code will be filled in by Data Entry Section (DES) of respective zone for record keeping</td></tr>
<tr><td>2</td><td>Survey Code (Col.2(1))</td><td>Record survey code as “3”</td></tr>
<tr><td>3</td><td>Form Code (Col.3(1))</td><td>Record one-digit form code as “2”</td></tr>
<tr><td>4</td><td>FSI Zone (Col.4(1))</td><td>Record one-digit FSI zone code as given in Annexure-II</td></tr>
<tr><td>5</td><td>Phy. Zone (Col.5(2))</td><td>Need not be filled up.</td></tr>
<tr><td>6</td><td>State code (Col.6(2))</td><td>Record two-digit States code as given in Annexure II.</td></tr>
<tr><td>7.</td><td>District code (Col.7(2))</td><td>Record two-digit district code as given in Annexure III.</td></tr>
<tr><td>8.</td><td>Town name</td><td>Record name of the town written in this column.</td></tr>
<tr><td>9.</td><td>Town code (Col.8(6))</td><td>Record six-digit town code as per the list prepared from Census Data 2011.</td></tr>
<tr><td>10.</td><td>Town class code (Col.9(1))</td><td>Record town class code as under
<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td>1</td><td>Towns having population of one lakh and above</td></tr>
<tr><td>2</td><td>Towns having population between 50,000 to 99,999</td></tr>
<tr><td>3</td><td>Towns having population between 20,000 to 49,999</td></tr>
<tr><td>4</td><td>Towns having population between 10,000 to 19,999</td></tr>
<tr><td>5</td><td>Towns having population less than 10,000</td></tr>
</table></td></tr>
<tr><td>11.</td><td>IV Unit No. & UFS Block No.(Col.10 & 11 (3) & (2))</td><td>Record in five digits. UFS Block number along with Investigator unit (IV unit) as per sample list/map. The three digits represent IV unit number and two digits represent UFS Block.</td></tr>
<tr><td>12.</td><td>UFS Block area (ha) (Col.12(5))</td><td>Record the area of selected UFS block taken with the help of GPS and polygons are to be send to the Head Quarter for further analysis.
The geographical area of the sample block in five digits upto two decimal ha may be given with the help of GPS. In absence of GPS it should be given after measuring length and width of the block.</td></tr>
<tr><td>13.</td><td>Category of UFS Block (Col.13(1))</td><td>Record UFS block category coded as under:
<table>
<tr><th>Code</th><th>Description</th></tr>
<tr><td>1</td><td>Slum area: A slum area refers to an agglomeration of densely inhabited, poorly built and/or dilapidated structures, predominantly made of kutcha or semi-kutcha building materials, often irregularly or asymmetrically constructed in unhygienic surroundings on a patch of land. The principal features of a slum area, in other words, will include</td></tr>
</table></td></tr>
</table>

<table>
<tr><th>S.No.</th><th>Item</th><th colspan="2">Description</th></tr>
<tr><td></td><td></td><td></td><td>(i) overcrowding; (ii) haphazard growth of structures; (iii) improper roads and narrow lanes with poor accessibility; (iv) inadequate power, sanitation and drainage facilities; (v) improper ventilation and inadequate area for living; (vi) inadequate arrangements for water supply; and, (vii) general unhygienic conditions. Sometimes, a particular area is declared to be a slum area by the appropriate authority.</td></tr>
<tr><td></td><td></td><td>2</td><td>Residential area: The area used predominantly for residential purposes will be termed as residential area.</td></tr>
<tr><td></td><td></td><td>3</td><td>Bazaar area: The area consisting primarily of markets/shops will be termed as Bazaar area.</td></tr>
<tr><td></td><td></td><td>4</td><td>Restricted/prohibited area: Area occupied by Army, Air Force, Navy & Police Forces etc., is declared as restricted/prohibited area by the Government. These areas consist of both population and other areas. These areas under the control of military or local police have restrictions for public from the point of view of internal security. (Urban Frame Survey is to be carried out in such Restricted Areas also by taking necessary permission from the Competent Authority)</td></tr>
<tr><td></td><td></td><td>5</td><td>Factory/Industrial area: The area where factories are mostly located in a town will be treated as a factory area.</td></tr>
<tr><td></td><td></td><td>6</td><td>Other Residential area: Whenever it is not possible to distinguish an area into falling in any one of the above mentioned types (it may happen that the area is a combination of two or more types of areas mentioned above), it may be treated as 'Other Residential Area'</td></tr>
<tr><td>14.</td><td>Latitude (Col.14(8))</td><td colspan="2">Record eight digits, latitude of the sample plot in degrees, minutes and seconds upto two decimal point.</td></tr>
<tr><td>15.</td><td>Longitude (Col.15(8))</td><td colspan="2">Record eight digits, longitude of the sample plot in degrees, minutes and seconds upto two decimal point.</td></tr>
<tr><td>16.</td><td>Mapsheet No. (Col.16(6))</td><td colspan="2">Record six-digit mapsheet code as given in Annexure-IV.</td></tr>
<tr><td>17.</td><td>Grid Code. (Col.17(6))</td><td colspan="2">Record six digit grid code as given by headquarters.</td></tr>
<tr><td>18.</td><td>Sl. No and Species Name (Col. 18 & 19)</td><td colspan="2">Record sl. No. and local/ botanical name of the species.</td></tr>
<tr><td>19.</td><td>Species Code (Col. 20(4))</td><td colspan="2">Record four digit code as given in Annexure-VII</td></tr>
</table>

<table>
<tr><th>S.No.</th><th>Item</th><th>Description</th></tr>
<tr><td>20.</td><td>DBH (cm) (Col.21(3))</td><td>Record the diameter of all trees having dia. ≥ 5 cm and above measured at breast height over bark and to the nearest centimetre. If there is flare at the breast height of a tree, the diameter measurement will be taken immediately above or below the flare. In case of buttressed and large sized trees, taking girth and converting it to diameter by multiplying with 7/22 or 0.318 factors may be carried out.

In case there is forking of a tree below its breast height, diameter of each forked stem will be measured at breast height (above forking) and recorded separately, as if for two or more trees.

The axis of the calliper (i.e. the long arm of the calliper) will always be kept pointed to the starting point of the block while taking dbh of tree.
Bamboo data should also be collected in Urban area. Only bamboo species name and clump dia. will be taken.</td></tr>
<tr><td>21.</td><td>Crown width (Col.22(3))</td><td>Record crown width of the tree and spread of bamboo clump in meter up to one decimal. The measuring tape will always be aligned to the starting point of the block while taking crown width of tree.</td></tr>
<tr><td>22.</td><td>Category of plantation (trees/bamboo) (Col. 23(1))</td><td>Record categories of planation as under:
<table>
<tr><th>Code</th><th>Category of plantation (trees/bamboo)</th></tr>
<tr><td>1</td><td>Farm forestry: Trees along the farm bunds and in small patches up to 0.1 ha in area.</td></tr>
<tr><td>2</td><td>Woodlots: Naturally growing trees/planted trees on community land such as parks/gardens/ institutional plantation etc.</td></tr>
<tr><td>3</td><td>Block plantations: Patches covering an area of more than 0.1 ha and not falling in any of the above.</td></tr>
<tr><td>4</td><td>Road side plantations: Planted/natural trees growing along roadside.</td></tr>
<tr><td>5</td><td>Ponds side plantation: Planted/natural trees growing along water ponds.</td></tr>
<tr><td>6</td><td>Railway lines side plantation: Planted/ natural trees growing along the railway lines.</td></tr>
<tr><td>7</td><td>Canals side plantation: Planted/natural trees growing along the canals.</td></tr>
<tr><td>8</td><td>Homestead: Trees appearing in the house premises and not covered in above first three categories.</td></tr>
<tr><td>9</td><td>Others: Trees not falling in any of the above categories.</td></tr>
</table></td></tr>
<tr><td>23.</td><td>Area (ha.) (Col.24(4))</td><td>Record area of block plantations in four digits upto two decimal place. (Patches only).</td></tr>
</table>

S.No.	Item	Description
24.	Bamboo Quality (Col.25(1))	Record bamboo quality as per the instructions given in PDF for forest inventory.
25.	Shifted Latitude (Col.26(8))	Record eight digits, actual latitude of the sample plot as per the reading of GPS in degrees, minutes and seconds upto two decimal point.
26.	Shifted Longitude (Col.27(8))	Record eight digits, actual longitude of the sample plot as per the reading of GPS in degrees, minutes and seconds upto two decimal point.

ANNEXURES

ANNEXURE - I

Sloping distance of slopes corresponding to the horizontal distance

Distance in meters

Slope degree	1	2	3	4	5	6	7	8	9	10	20	30	40	50
0	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	20.00	30.00	40.00	50.00
1	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.00	10.00	20.00	30.01	40.01	50.01
2	1.00	2.00	3.00	4.00	5.00	6.00	7.00	8.00	9.01	10.01	20.01	30.02	40.02	50.06
3	1.00	2.00	3.00	4.01	5.01	6.01	7.01	8.01	9.01	10.01	20.03	30.04	40.06	50.07
4	1.00	2.00	3.01	4.02	5.01	6.01	7.01	8.02	9.02	10.02	20.04	30.05	40.10	50.12
5	1.00	2.01	3.01	4.02	5.02	6.02	7.03	8.03	9.03	10.04	20.08	30.11	40.15	50.19
6	1.01	2.01	3.02	4.02	5.03	6.03	7.04	8.04	9.05	10.06	20.11	30.12	40.22	50.28
7	1.01	2.02	3.02	4.04	5.04	6.05	7.05	8.06	9.07	10.08	20.15	30.23	40.30	50.38
8	1.01	2.02	3.03	4.04	5.05	6.06	7.07	8.08	9.09	10.10	20.20	30.29	40.40	50.50
9	1.01	2.02	3.04	4.05	5.06	6.07	7.09	8.10	9.11	10.12	20.25	30.37	40.50	50.62
10	1.02	2.03	3.05	4.06	5.08	6.09	7.11	8.12	9.14	10.15	20.31	30.46	40.62	50.77
11	1.02	2.04	3.06	4.07	5.09	6.11	7.13	8.15	9.17	10.19	20.37	30.56	40.75	50.94
12	1.02	2.04	3.07	4.09	5.11	6.13	7.16	8.18	9.20	10.22	20.45	30.67	40.85	51.11
13	1.03	2.05	3.08	4.10	5.13	6.16	7.18	8.21	9.24	10.26	20.52	30.79	41.05	51.31
14	1.03	2.06	3.09	4.12	5.15	6.18	7.21	8.24	9.27	10.31	20.61	30.92	41.22	51.33
15	1.04	2.07	3.11	4.14	5.18	6.21	7.25	8.28	9.32	10.35	20.71	31.06	41.44	51.77
16	1.04	2.08	3.12	4.16	5.20	6.24	7.28	8.32	9.36	10.40	20.80	31.21	41.61	52.01
17	1.05	2.09	3.14	4.18	5.23	6.27	7.32	8.36	9.41	10.46	20.91	31.37	41.82	52.28
18	1.05	2.10	3.15	4.21	5.26	6.31	7.36	8.41	9.46	10.51	21.03	31.54	42.06	52.57
19	1.06	2.12	3.17	4.23	5.29	6.35	7.40	8.46	9.52	10.58	21.15	31.73	42.30	52.88
20	1.06	2.13	3..19	4.26	5.32	6.38	7.45	8.51	9.58	10.64	21.28	31.92	42.56	53.20

ANNEXURE - I

Continuation Sheet

Distance in meters

Slope degree	60	70	80	22.36	31.62	38.73	44.72	54.77	63.24
0	60.00	70.00	80.00	22.36	31.62	38.73	44.72	54.77	63.24
1	60.01	70.01	80.02	22.36	31.62	38.74	44.73	54.78	63.25
2	60.04	70.04	80.05	22.37	31.64	38.76	44.75	54.80	63.28
3	60.08	70.10	80.10	22.39	31.66	38.78	44.78	54.84	63.33
4	60.14	70.17	80.19	22.41	31.70	38.82	44.83	54.90	63.39
5	60.23	70.27	80.30	22.44	31.74	38.88	44.89	54.98	63.48
6	60.33	70.39	80.44	22.48	31.79	38.94	44.97	55.07	63.59
7	60.45	70.53	80.60	22.53	31.86	39.02	45.05	55.18	63.71
8	60.59	70.69	80.78	22.58	31.93	39.10	45.16	55.31	63.86
9	60.74	70.87	80.99	22.64	32.01	39.21	45.27	55.45	64.02
10	60.92	71.08	81.23	22.70	32.11	39.32	45.41	55.61	64.21
11	61.12	71.31	81.50	22.78	32.21	39.45	45.56	55.79	64.42
12	61.34	71.56	81.78	22.86	32.33	39.59	45.72	55.99	64.65
13	61.57	71.83	82.10	22.95	32.35	39.74	45.89	56.20	64.90
14	61.84	72.14	82.45	23.04	32.59	39.91	46.09	56.45	65.17
15	62.12	72.47	82.82	23.15	32.74	40.09	46.30	56.70	65.47
16	62.41	72.81	83.22	23.26	32.89	40.28	46.52	56.97	65.78
17	62.74	73.19	83.65	23.38	33.06	40.49	46.76	57.27	66.12
18	63.08	73.60	84.11	23.51	33.25	40.72	47.02	57.58	66.49
19	63.36	74.03	84.61	23.65	33.44	40.96	47.30	57.92	66.88
20	63.85	74.49	85.13	23.79	33.65	41.20	47.50	58.28	67.29

ANNEXURE - I

Continuation Sheet

Slope degree	1	2	3	4	5	6	7	8	9	10	20	30	40	50
21	1.07	2.14	3.21	4.28	5.36	6.43	7.50	8.57	9.64	10.71	21.42	32.13	42.84	53.55
22	1.08	2.16	3.24	4.31	5.39	6.47	7.55	8.63	9.71	10.78	21.57	32.35	43.14	53.92
23	1.09	2.17	3.26	4.35	5.43	6.52	7.60	8.69	9.78	10.86	21.73	32.59	43.45	54.31
24	1.09	2.19	3.28	4.38	5.47	6.57	7.66	8.76	9.85	10.95	21.89	32.84	43.78	54.73
25	1.10	2.21	3.31	4.41	5.52	6.62	7.72	8.83	9.93	11.03	22.70	33.10	44.13	55.16
26	1.11	2.22	3.34	4.45	5.56	6.68	7.79	8.90	10.01	11.12	22.25	33.37	44.50	55.62
27	1.12	2.24	3.37	4.49	5.61	6.73	7.86	8.98	10.10	11.22	22.45	33.67	44.89	65.11
28	1.13	2.27	3.40	4.53	5.66	6.80	7.93	9.06	10.19	11.33	22.65	33.98	45.30	56.63
29	1.14	2.29	3.43	4.57	5.72	6.86	8.00	9.15	10.29	11.43	22.87	34.30	45.73	57.16
30	1.16	2.31	3.46	4.62	5.77	6.93	8.08	9.24	10.39	11.55	23.09	34.64	46.80	57.73
31	1.17	2.33	3.50	4.67	5.83	7.00	8.17	9.33	10.50	11.66	23.33	34.99	46.66	58.32
32	1.18	2.35	3.53	4.71	5.89	7.07	8.25	9.43	10.61	11.79	23.58	35.37	47.16	58.96
33	1.19	2.38	3.58	4.77	5.96	7.15	8.35	9.54	10.73	11.92	23.85	35.77	47.69	59.61
34	1.21	2.41	3.62	4.82	6.03	7.24	8.44	9.65	10.86	12.06	24.12	36.19	48.25	60.31
35	1.22	2.44	3.66	4.88	6.10	7.32	8.55	9.77	10.99	12.21	24.41	36.62	48.83	61.03
36	1.24	2.47	3.71	4.94	6.18	7.42	8.65	9.85	11.12	12.36	24.72	37.08	49.44	61.80
37	1.25	2.50	3.76	5.01	6.26	7.51	8.76	10.02	11.27	12.52	25.04	37.56	50.08	62.60
38	1.27	2.54	3.81	5.08	6.34	7.61	8.88	10.15	11.42	12.69	25.38	38.07	50.76	63.45
39	1.29	2.57	3.86	5.15	6.43	7.72	9.01	10.29	11.58	12.87	25.74	38.16	51.47	64.34
40	1.31	2.61	3.92	5.22	6.53	7.83	9.14	10.44	11.75	13.05	26.10	39.16	52.22	65.27
41	1.32	2.65	3.97	5.30	6.62	7.95	9.27	10.60	11.82	13.25	26.50	39.75	53.00	66.25
42	1.35	2.69	4.04	5.38	6.73	8.07	9.42	10.77	12.11	13.46	26.91	40.37	53.83	67.28
43	1.37	2.73	4.10	5.47	6.84	8.20	9.57	10.94	12.30	13.67	27.34	41.02	54.69	68.36
44	1.39	2.78	4.17	5.56	6.95	8.34	9.73	11.12	12.51	13.90	27.80	41.71	55.61	69.51
45	1.41	2.83	4.24	5.66	7.07	8.49	9.90	11.31	12.73	14.14	28.28	42.43	56.57	70.71

ANNEXURE - I

Continuation Sheet

Slope degree	60	70	80	22.36	31.62	38.73	44.72	54.77	63.24
21	64.27	74.98	85.69	23.95	33.87	41.48	47.90	58.66	67.74
22	64.71	75.49	86.28	24.12	34.10	41.77	48.23	59.07	68.20
23	65.18	76.04	86.90	24.29	34.35	42.07	48.58	59.50	68.70
24	65.58	76.62	87.57	24.48	34.61	42.39	48.95	59.95	69.22
25	66.20	77.23	88.26	24.67	34.89	42.73	49.34	60.43	69.77
26	66.75	77.87	89.00	24.88	35.18	43.08	49.75	60.93	70.35
27	67.34	78.66	89.78	25.09	35.49	43.47	50.19	61.47	70.97
28	67.96	79.28	90.61	25.32	35.81	43.86	50.65	62.03	71.62
29	68.60	80.03	91.46	25.56	36.15	44.28	51.13	62.62	72.30
30	69.28	80.83	92.38	25.82	36.51	44.70	51.64	63.24	73.02
31	69.99	81.65	93.32	26.08	36.88	45.18	52.16	63.99	73.77
32	70.75	82.54	94.33	26.37	37.29	45.67	52.73	64.58	74.57
33	71.54	83.46	95.38	26.66	37.70	46.18	53.32	65.30	75.40
34	72.37	84.43	96.50	26.97	38.14	46.74	53.94	66.06	76.20
35	73.24	85.45	97.66	27.29	38.60	47.28	54.59	68.86	77.20
36	74.16	86.52	98.88	27.64	39.08	47.87	55.27	66.70	78.18
37	75.13	87.65	100.17	28.00	39.59	48.49	55.99	68.58	79.18
38	76.14	88.13	101.52	28.37	40.13	49.15	56.75	69.50	80.25
39	77.31	90.08	102.94	28.77	40.69	49.84	57.55	70.48	81.38
40	78.32	91.38	104.43	29.19	41.28	50.56	58.38	71.50	82.55
41	79.50	92.75	106.00	29.63	41.90	51.32	50.25	72.57	93.79
42	80.74	94.20	107.66	30.09	42.55	52.12	60.18	73.70	85.10
43	82.03	95.70	109.38	30.57	43.23	52.95	61.14	74.88	86.40
44	83.41	97.31	111.22	31.08	43.96	53.84	62.17	76.14	87.92
45	84.85	98.99	113.14	31.62	44.72	54.77	63.24	77.46	89.43

ANNEXURE – I

Continuation Sheet

Slope degree	1	2	3	4	5	6	7	8	9	10	20	30	40	50
46	1.44	2.88	4.32	5.76	7.20	8.64	10.08	11.52	12.96	14.40	28.79	43.19	57.58	71.98
47	1.47	2.93	4.40	5.87	7.33	8.80	10.26	11.73	13.20	14.66	29.33	43.99	58.65	73.31
48	1.49	2.99	4.48	5.98	7.47	8.97	10.46	11.96	13.45	14.94	29.89	44.83	59.78	74.72
49	1.52	3.05	4.57	6.10	7.62	9.15	10.67	12.19	13.72	15.24	30.49	45.73	60.97	76.21
50	1.56	3.11	4.67	6.22	7.78	9.33	10.89	12.45	14.00	15.56	31.11	46.67	62.23	77.79
51	1.58	3.18	4.77	6.36	7.95	9.53	11.12	12.71	14.30	15.89	31.78	47.67	63.56	79.45
52	1.62	3.25	4.87	6.50	8.12	9.75	11.37	12.99	14.62	16.24	32.49	48.73	64.97	81.21
53	1.66	3.32	4.98	6.65	8.31	9.97	11.63	13.29	14.95	16.62	33.23	49.85	66.47	83.08
54	1.70	3.40	5.10	6.81	8.51	10.21	11.91	13.61	15.31	17.01	34.03	51.04	68.05	85.07
55	1.74	3.49	5.25	6.97	8.72	10.46	12.20	13.95	15.69	17.45	34.87	52.30	69.74	87.17
56	1.79	3.58	5.36	7.15	8.94	10.73	12.52	14.31	16.09	17.88	35.77	53.65	71.53	89.41
57	1.84	3.67	5.51	7.34	9.18	11.02	12.85	14.69	16.52	18.36	36.72	55.08	73.44	91.80
58	1.89	3.77	5.66	7.55	9.44	11.32	13.21	15.10	16.98	18.87	37.74	56.61	75.48	94.35
59	1.94	3.88	5.82	7.77	9.71	11.65	13.59	15.53	17.47	19.42	38.83	58.25	77.66	97.08
60	2.00	4.00	6.00	8.00	10.00	12.00	14.00	16.00	18.00	20.00	40.00	60.00	80.00	100.00
61	2.06	4.13	6.19	8.25	10.31	12.38	14.44	16.50	18.56	20.63	41.25	61.88	82.51	103.13
62	2.13	4.26	6.39	8.52	10.65	12.78	14.91	17.04	19.17	21.30	42.60	63.90	85.20	106.50
63	2.20	4.41	6.61	8.81	11.01	13.22	15.42	17.62	19.82	22.03	44.05	66.08	88.11	110.13
64	2.28	4.56	6.84	9.12	11.41	13.69	15.97	18.25	20.53	22.81	45.62	68.44	91.25	114.06
65	2.37	4.73	7.10	9.46	11.83	14.20	16.56	18.93	21.30	23.66	47.32	70.99	94.65	118.31
66	2.46	4.92	7.38	9.83	12.29	14.75	17.21	19.67	22.13	24.59	49.17	73.76	98.34	122.93
67	2.56	5.12	7.68	10.24	12.80	15.36	17.92	20.47	23.03	25.59	51.19	76.78	102.37	127.97
68	2.67	5.34	8.01	10.68	13.35	16.02	18.69	21.36	24.03	26.69	53.39	80.08	106.78	133.47
69	2.79	5.58	8.37	11.16	13.95	16.74	19.53	22.32	25.11	27.90	55.81	83.71	111.62	139.52
70	2.92	5.85	8.77	11.70	14.62	17.54	20.47	23.39	26.31	29.24	58.48	87.71	116.95	146.19

ANNEXURE - I

Continuation sheet

Slope degree	60	70	80	22.36	31.62	38.73	44.72	54.77	63.24
46	86.37	100.77	115.16	32.19	45.52	55.75	64.38	78.84	91.04
47	87.98	102.64	117.30	32.79	46.36	56.79	65.57	80.31	92.73
48	89.67	104.61	119.56	33.42	47.26	57.88	66.83	81.85	94.51
49	91.46	106.70	121.94	34.08	48.20	59.03	68.16	83.48	96.39
50	93.34	108.90	124.46	34.79	49.19	60.25	69.57	85.21	98.38
51	95.34	111.25	127.12	35.53	50.24	61.54	71.06	87.03	100.49
52	97.46	113.70	129.94	36.32	51.36	62.91	72.64	88.96	102.72
53	99.70	116.31	132.93	37.15	52.54	64.36	74.31	91.01	105.08
54	102.08	119.09	136.10	38.04	53.80	65.89	76.08	93.18	107.59
55	104.61	122.04	139.48	38.98	55.13	67.52	77.97	95.49	110.26
56	107.30	125.18	143.06	39.99	56.55	69.26	79.97	97.94	113.09
57	110.16	128.53	146.89	41.05	58.06	71.11	82.11	100.56	116.11
58	113.22	132.10	150.97	42.20	59.67	73.09	84.39	103.36	119.34
59	116.50	135.91	155.33	43.41	61.39	75.20	86.83	106.34	122.79
60	120.00	140.00	160.00	44.72	63.24	77.46	89.44	109.54	126.48
61	123.76	144.39	165.01	46.12	65.22	79.89	92.24	112.97	130.44
62	127.80	149.10	170.40	47.63	67.35	82.50	95.26	116.66	134.70
63	132.16	154.19	176.22	49.25	69.65	85.31	98.50	120.64	139.30
64	136.87	159.68	182.49	51.01	72.13	88.35	102.01	124.94	144.26
65	141.97	165.63	189.30	52.91	74.82	91.64	105.82	129.60	149.64
66	147.52	172.10	196.69	54.97	77.74	95.22	109.95	134.66	155.48
67	153.56	179.15	204.74	57.23	80.93	99.12	114.45	140.17	161.85
68	160.17	186.86	213.56	59.69	84.41	103.39	119.38	146.21	168.82
69	167.43	195.33	223.23	62.39	88.23	108.07	124.79	152.83	176.47
70	175.43	204.67	233.90	65.38	92.45	113.24	130.75	160.14	184.90

ANNEXURE - II

Code of different States and Union Territories in each zone

FSI Zone	Code No.	State/U.T.
Northern Zone Code - 1	01	Jammu & Kashmir (U. T.)
	02	Himachal Pradesh
	03	Punjab
	04	Chandigarh (U.T.)
	05	Uttarakhand
	06	Haryana
	07	Delhi
	08	Rajasthan
	09	Uttar Pradesh
	37	Ladakh (U. T.)
Central Zone Code - 2	21	Odisha
	22	Chhattisgarh
	23	Madhya Pradesh
	24	Gujarat
	25	Daman & Diu (U.T.)
	26	Dadra & Nagar Haveli (U.T.)
	27	Maharashtra
	30	Goa
Southern Zone Code - 3	28	Andhra Pradesh
	29	Karnataka
	31	Lakshadweep (U.T.)
	32	Kerala
	33	Tamil Nadu
	34	Pondicherry (U.T.)
	35	Andaman & Nicobar Islands (U.T.)
	36	Telangana
Eastern Zone Code - 4	10	Bihar
	11	Sikkim
	12	Arunachal Pradesh
	13	Nagaland
	14	Manipur
	15	Mizoram
	16	Tripura
	17	Meghalaya
	18	Assam
	19	West Bengal
	20	Jharkhand

ANNEXURE - III

Code of districts and forest divisions in each State

Code	Name of State/UT	Code	Name of District	Physiographic Zone Code	Code	Name of Division
01	**JAMMU & KASHMIR**	01	Kupwara	01	01	Baramula
		02	Baramula	01	02	Langate
		03	Srinagar	01	03	Zangali
		04	Badgam	01	04	Karalpora
		05	Pulwama	01	05	Bijbehare
		06	Anantnag	01	06	Khanabal
		07	Leh (Ladakh)	01	07	Shopian
		08	Kargil	01	08	Ganderbal
		09	Doda	01	09	Chittarnar (Bandipura Forest Division Chttarnar)
		10	Udhampur	01	10	Budgam
		11	Punch	01	11	Batote
		12	Rajauri	01	12	Ramban
		13	Jammu	01	13	Doda
		14	Kathua	01	14	Bhaderwah
		15	Bandipore	01	15	Kishtwar
		16	Ganderbal	01	16	Marwah
		17	Kishtwar	01	17	Reasi
		18	Kulagam	01	18	Rajouri
		19	Ramban	01	19	Poonch
		20	Reasi	01	20	Nowshena
		21	Samba	01	21	Mahore
		22	Shupiyan	01	22	Jammu
		23	Mirpur		23	Kathua
					24	Udhampur
					25	Billawar
					26	Ram Nagar
					27	Urban Forest Division, Srinagar
					28	Tangmarg
					29	
					30	Basoli Forest Division
					31	Sambha Forest Division
					32	Anantnag Forest Division
					33	Awntipora Forest Division
					34	Jhellum Valley Forest Division
					35	Kamraj Forest Division
					36	Lidder Forest Division
					37	Sindyh Forest Division
					38	Kulgam Forest Division
02	**HIMACHAL PRADESH**	01	Chamba	01	01	Bilaspur
		02	Kangra	01	02	Bharmour
		03	Lahul & spiti	01	03	Chamba
		04	Kullu	01	04	Churah
		05	Mandi	01	05	Dalhousie
		06	Hamirpur	01	06	Pagi
		07	Una	01	07	Hamirpur
		08	Bilaspur	01	08	Dharmashala
		09	Solan	01	09	Dehra

Code	Name of State/UT	Code	Name of District	Physiographic Zone Code	Code	Name of Division
		10	Sirmaur	01	10	Nurpur
		11	Shimla	01	11	Palampur
		12	Kinnaur	01	12	Kulllu
					13	Seraj
					14	Parvati
					15	Kotgarh
					16	Rampur
					17	Lahaul
					18	Spiti
					19	Mandi
					20	Nachan
					21	Karsog
					22	Joginder Nagar
					23	Suket
					24	Chopal
					25	Jubbal
					26	Rohru
					27	Shimla
					28	Theog
					29	Nahan
					30	Paonta
					31	Rajgarh
					32	Renuka
					33	Kunihar
					34	Nalagarh
					35	Solan
					36	Una
					37	Nichan
					38	Pooh
					39	Kinnaur
					40	Upper Ravi
					41	Kaza
					42	Sundergarh
					43	City FD Shimla
					44	Great Himalayan National Park
					45	Shimla Wildlife Division
					46	Anni Forest Division
					47	Saloni Forest Division
					48	Pangi Forest Division
					49	Chamba Wild Life
					50	Hamirpur Wild Life Divsion
03	**PUNJAB**	01	Gurdaspur	04, 35% in 01	01	Amritsar
		02	Amritsar	04	02	Jalandhar
		03	Kapurthala	04	03	Gurdaspur
		04	Jalandhar	04	04	Ludhiana
		05	Hosiarpur	04, 20% in 01	05	Firozpur
		06	Nawanshahr	04	06	Patiala
		07	Rupnagar	04, 40% in 01	07	Sangrur
		08	Fatehgarh Sahib	04	08	Faridkot
		09	Ludhiana	04	09	Bhatinda
		10	Moga	04	10	Mansa
		11	Firozpur	04	11	Fatehgarh Sahib
		12	Muktsar	04	12	Ropar

Code	Name of State/UT	Code	Name of District	Physiographic Zone Code	Code	Name of Division
		13	Faridkot	04	13	Hoshiarpur
		14	Bhatinda	04	14	Garhshankar
		15	Mansa	04	15	Dasuya
		16	Sangrur	04	16	Mohali
		17	Patiala	04	17	Pathankot
		18	Barnala	04	18	Patiyala Wild Lif Division
		19	Sahibzada Ajit Singh Nagar (Mohali)	04		
		20	Tarn Taran	04		
04	**CHANDIGARH**	01	Chandigarh	04	01	Chandigarh
05	**UTTARAKHAND**	01	Uttarkashi	01	01	Almora (East)
		02	Chamoli	01	02	Almora (West)
		03	Rudraprayag	01	03	Pithoragarh Forest Division
		04	Tehri Garhwal	01	04	Pithoragarh (South)
		05	Dehradun	01	05	Nainital
		06	Garhwal	01	06	Haldwani
		07	Pithoragarh	01	07	Haldwani (Tarai East)
		08	Bageshwar	01	08	Haldwani (Tarai Central)
		09	Almora	01	09	Haldwani (Tarai West)
		10	Champawat	01	10	Ram Nagar
		11	Nainital	01	11	Lansdowne
		12	Udhamsingh Nagar	04	12	Dehradun
		13	Hardwar	04	13	Kalsi
					14	Hardwar
					15	Tons
					16	Mussoorie
					17	Chakrata
					18	Upper Yamuna
					19	Narendra Nagar
					20	Tehri
					21	Uttarkashi
					22	Tehri Dam-I
					23	Tehri Dam-II
					24	Garhwal
					25	Badrinath
					26	Karna Prayag
					27	Ram Nagar (Tiger Reserve)
					28	Kalagarh (Tiger Reserve)
					29	Champawat
					30	Civil Soyam
					31	Rajaji NP (Haridwar)
					32	Bageshwar
					33	Gangotri National Park
					34	Govind Pashu Vihar National Park
					35	Nanda Devi National Park
					36	Corbett Tiger Reserve
					37	Upper Ganga Forest Division
					38	Rudraprayag Forest Division
					39	Kedarnath Wild Life Division,Gopeshwar
					40	CCF Environment,Haldwani
					41	CF Environment Dehradun

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					42	Pithoragarh Forest Division
06	**HARYANA**	01	Panchkula	04	01	Morni Pinjore
		02	Ambala	04	02	Ambala
		03	Yamunanagar	04	03	Yamuna Nagar
		04	Kurukshetra	04	04	Krukshetra
		05	Kaithal	04	05	Kaithal
		06	Karnal	04	06	Karnal
		07	Panipat	04	07	Sonipat
		08	Sonipat	04	08	Gurgaon
		09	Jind	04	09	Mohindergarh
		10	Fatehabad	04	10	Rohtak
		11	Sirsa	04	11	Faridabad
		12	Hisar	04	12	Bhiwani
		13	Bhiwani	04	13	Hissar
		14	Rohtak	04	14	Jind
		15	Jhajjar	04	15	Sirsa
		16	Mahendragarh	04, 15% in 07	16	Panipat
		17	Rewari	04	17	Jhajjar
		18	Gurgaon	04	18	Fatehabad
		19	Faridabad	04	19	Rewari
		20	Mewat		20	Palwal
		21	Palwal		21	Mewat
07	**DELHI**	01	North West	04	01	Central
		02	North	04	02	West
		03	North East	04	03	South
		04	East	04		
		05	New Delhi	04		
		06	Central	04		
		07	West	04		
		08	South West	04		
		09	South	04		
08	**RAJASTHAN**	01	Ganganagar	06	01	Ajmer
		02	Hanumangarh	06	02	Barmer
		03	Bikaner	06	03	Bharatpur
		04	Churu	06	04	Bikaner
		05	Jhunjhunun	06, 45% in 07	05	Chhatargarh
		06	Alwar	07	06	Bundi
		07	Bharatpur	07	07	Chittorgarh
		08	Dhaulpur	07	08	Pratapgarh
		09	Karauli	07	09	Jodhpur
		10	Sawai Madhopur	07	10	Churu
		11	Dausa	07	11	Hanunangarh
		12	Jaipur	07	12	Dungarpur
		13	Sikar	07, 48% in 06	13	Ganganagar
		14	Nagaur	06, 20% in 07	14	Jaipur (East)
		15	Jodhpur	06	15	Jaipur (West)
		16	Jaisalmer	06	16	Alwar
		17	Barmer	06	17	Jaisalmer
		18	Jalor	06	18	Jalore
		19	Sirohi	06, 48% in 07	19	Jhalawar
		20	Pali	06, 15% in 07	20	Jhunjhunu
		21	Ajmer	07	21	Kota
		22	Tonk	07	22	Nagaur

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		23	Bundi	07	23	Pali
		24	Bhilwara	07	24	Rajsamand
		25	Rajsamand	07	25	Swai Madhopur
		26	Udaipur	07	26	Karauli
		27	Dungarpur	07	27	Sikar
		28	Banswara	07	28	Sirohi
		29	Chittaurgarh	07	29	Banswara
		30	Kota	07	30	Tonk
		31	Baran	07	31	Udaipur (North)
		32	Jhalawar	07	32	Udaipur (South)
		33	Pratapgarh	07	33	Bharatpur
					34	Udaipur
					35	Suratgarh
					36	Baran (West)
					37	Baran (East)
					38	Mount Abu
					39	Sariska (TP)
					40	Jaipur (Central)
					41	Dausa
					42	Dholpur
					43	Bhilwara
					44	Kumbalgarh (Pali)
					45	Udaipur Central
					46	Sajjangarh WL Sanctury
					47	Phulwari WL Sanctury
					48	Jaismand WL Sanctury
					49	Sita Mata WL Sanctury
					50	Darrah WL Sanctuary
					51	Ranthambore Tiger Reserve
					52	Jodhpur WL Division
					53	Jaipur Division
					54	Jaipur Forest Division
					55	Jaipur North Division
					56	Jaipur Wild Life Division
					57	Baran Division
					58	Keoladea National Park
					59	National Chambal Ghariyal Wildlife Sanctuary
					60	Kailadevi Wild Life Sanctuary
09	**UTTAR PRADESH**	01	Saharanpur	04	01	Meerut
		02	Muzaffarnagar	04	02	Bulandshaher
		03	Bijnor	04	03	Ghaziabad
		04	Moradabad	04	04	Gautam Budh Nagar
		05	Rampur	04	05	Muzaffar Nagar
		06	Jyotiba Phule Nagar	04	06	Saharanpur
		07	Meerut	04	07	Moradabad
		08	Baghpat	04	08	Jyotiba Phule Nagar
		09	Ghaziabad	04	09	Rampur
		10	Gautam Budh Nagar	04	10	Bijnor
		11	Bulandshahar	04	11	Agra
		12	Aligarh	04	12	Ferozabad
		13	Hathras	04	13	Mathura
		14	Mathura	04	14	Hathras

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		15	Agra	04, 15% in 07	15	Mainpuri
		16	Firozabad	04	16	Aligarh
		17	Etah	04	17	Etah
		18	Mainpuri	04	18	Baraily
		19	Budaun	04	19	Budaun
		20	Bareilly	04	20	Shahjahanpur
		21	Pilibhit	04	21	Piliphit
		22	Shahjahanpur	04	22	Allahabad
		23	Khiri	04	23	Kaushambi
		24	Sitapur	04	24	Fatehpur
		25	Hardoi	04	25	Pratapgarh
		26	Unnao	04	26	Gorakhpur
		27	Lucknow	04	27	Kushi Nagar
		28	Rao Bareli	04	28	Deoria
		29	Farrukhabad	04	29	Basti
		30	Kannauj	04	30	Siddharth nagar
		31	Etawah	04	31	Ajamgarh
		32	Auraiya	04	32	Mau
		33	Kanpur Dehat	04	33	Balia
		34	Kanpur Nagar	04	34	Varanasi
		35	Jalaun	07	35	Gazipur
		36	Jhansi	07	36	Jaunpur
		37	Lalitpur	07	37	Mirzapur
		38	Hamirpur	07	38	Bhadohi
		39	Mahoba	07	39	Sonbhadra
		40	Banda	07	40	Avadh
		41	Chitrakoot	07	41	Rae Bareli
		42	Fatehpur	04	42	Hardoi
		43	Pratapgarh	04	43	Unnao
		44	Kaushambi	04	44	Sitapur
		45	Allahabad	04, 40% in 07	45	Khiri North
		46	Barabanki	04	46	Khiri South
		47	Faizabad	04	47	Kanpur
		48	Ambedkar Nagar	04	48	Etawah
		49	Sultanpur	04	49	Farrukabad
		50	Bahraich	04	50	Faizabad
		51	Shrawasti	04	51	Ambedkar Nagar
		52	Balrampur	04	52	Sultanpur
		53	Gonda	04	53	Barabanki
		54	Siddarthnagar	04	54	Bahraich
		55	Basti	04	55	Gonda
		56	Sant kabir Nagar	04	56	Shravasti
		57	Mahrajganj	04	57	Jhansi
		58	Gorakpur	07	58	Urai
		59	Kushinagar	04	59	Lalitpur
		60	Deoria	04	60	Hamirpur
		61	Azamgarh	04	61	Mahoba
		62	Mau	04	62	Banda
		63	Ballia	04	63	Chitrakoot
		64	Jaunpur	04	64	Shiwalik
		65	Ghazipur	04	65	Rankoot
		66	Chandauli	04, 45% in 07	66	Obera
		67	Varanasi	04	67	Kishanpur N P

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		68	Sant Ravidas Nagar	04	68	Chambal National Park
		69	Mirzapur	07	69	Dudhwa Tiger Reserve
		70	Sonbhadra	04	70	Sohagibarwa WL Division
		71	Kanshiram Nagar	04	71	Kanpur Dehat FD Mati
				04	72	Amethi forest division
				04	73	Kaimur WL Division Mirzapur
				07	74	CF Training Kanpur
				04	75	Amethi
				04	76	Auriya
				04	77	Balrampur
					78	Chandauli
					79	Kashi WL Division
					80	Katarniaghat Wild Life Division
					81	Ramnagar Wild Life
10	**BIHAR**	01	Pashchim Champaran	05	01	Sasaram
		02	Purba Champaran	05	02	Kaimur(Bhabhua) Forest Division
		03	Sheohar	05	03	Ara
		04	Sitamarhi	05	04	Patna
		05	Madhubani	05	05	Nalanda
		06	Supaul	05	06	Gaya
		07	Araria	05	07	Nawada
		08	Kishanganj	05	08	Munger
		09	Purnia	05	09	Banka
		10	Katihar	05	10	Jamui
		11	Madhepura	05	11	Muzaffarpur
		12	Saharsa	05	12	Darbhanga
		13	Darbhanga	05	13	Chhapra
		14	Muzaffarpur	05	14	Sewan
		15	Gopalganj	05	15	Purnia
		16	Siwan	05	16	Katihar
		17	Saran	05	17	Begusarai
		18	Vaishali	05	18	Saharsa
		19	Samastipur	05	19	Shahabad
		20	Begusarai	05	20	Purnia Extn.
		21	Khagaria	05	21	Lakhisarai
		22	Bhagalpur	05		
		23	Banka	05, 30% in 09	23	Bettiah
		24	Munger	05, 20% in 09	24	Bettiah-1
		25	Lakhisarai	05, 15% in 09	25	Bettiah-2
		26	Sheikhpura	05	26	Central Circle Wildlife Sanctuary ,Kaimur
		27	Nalanda	05	27	Ramnagar Forest Division
		28	Patna	05	28	Aurangabad Forest Division
		29	Bhojpur	05	29	Valmiki Tiger Reserve (VTR) Ramnagar
		30	Buxar	05	30	VTR-1, Ramnagar
		31	Kaimur (Bhabua)	07, 40% in 05	31	VTR-2, Ramnagar
		32	Rohtas	05	32	VTR-1, Valmikinagar
		33	Jehanabad	05	33	Rohtas Forest Division
		34	Aurangabad	05		
		35	Gaya	05, 20% in 09		
		36	Nawada	05		

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		37	Jamui	09, 20% in 05		
		38	Arwal			
11	**SIKKIM**	01	North	02	01	North
		02	West	02	02	West
		03	South	02	03	South
		04	East	02	04	East
12	**ARUNACHALPRADESH**	01	Tawang	02	01	Bomdila
		02	West Kameng	02	02	Shergaon
		03	East Kameng	02	03	Khellong
		04	Papum Pare	02	04	Seppa
		05	Lower Subansiri	02	05	Banderdewa
		06	Upper Subansiri	02	06	Sagalee
		07	West Siang	02	07	Hapoli
		08	East Siang	02	08	Daporijo
		09	Upper Siang	02	09	Along
		10	Dibang Valley	02	10	Pasighat
		11	Lohit	03	11	Yingkiong
		12	Changlang	03	12	Debang
		13	Tirap	03	13	Lohit
		14	Kurung Kum	02	14	Namsai
		15	Anjaw	02	15	Deomali
		16	Lower Dibang Valley	02	16	Khonsa
					17	Nampong
					18	Rowing
					19	Anini
					20	Pakai WF Division
					21	Tawang
					22	Kurungkuney
					23	Anjaw
					24	Joyrampur
					25	Namdafa Tiger Reserve
					26	Koloriong
					27	Hawai
13	**NAGALAND**	01	Mon	03	01	Kohima
		02	Tuensang	03	02	Peren
		03	Mokokchung	03	03	Wokha
		04	Zunheboto	03	04	Phek
		05	Wokha	03	05	Mokokchung
		06	Dimapur	03	06	Tuensang
		07	Kohima	03	07	Mon
		08	Phek	03	08	Zunheboto
		09	Kiphire	03	09	Dimapur
		10	Longleng	03	10	Longleng
		11	Peren	03		
14	**MANIPUR**	01	Senapati	03	01	Porompat
		02	Tamenglong	03	02	Thoubal
		03	Churachandpur	03	03	Bishnupur
		04	Bishnupur	03	04	Ukhrul
		05	Thoubal	03	05	Kangpokpi
		06	Imphal West	03	06	Cepur
		07	Imphal East	03	07	Tamenglong
		08	Ukhrul	03	08	Lamphelpat

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		09	Chandel	03	09	Chandel
					10	Central division(Imphal West)
					11	Tegnopal
					12	Imphal East Forest Division
					13	Senapati
15	**MIZORAM**	01	Mamit	03	01	Aizwal
		02	Kolasib	03	02	Darlawn
		03	Aizwal	03	03	Champhai
		04	Champhai	03	04	Kolasib
		05	Serchhip	03	05	Kawr Thal
		06	Lunglai	03	06	Mamit
		07	Lawngtlai	03	07	Thenzawl
		08	Saiha	03	08	Lunglai
				03	09	Vanlaiphai (North)
					10	T Labung
					11	Chhimtuipui
					12	Saiha
16	**TRIPURA**	01	West Tripura	03	01	Agartala
		02	Soluth Tripura	03	02	Teliamura
		03	Dhalai	03	03	Ambassa
		04	North Tripura	03	04	Manu
					05	Kailasahgr
					06	Kanchanpjur
					07	Udaipur
					08	Bagafa
					09	Jatanbari
					10	Gumti Forest Division
					11	Sepahijala
					12	Belonia
					13	Unakoti
					14	Dharma Nagar
					15	Khowai
					16	Sabroom
					17	Trishna Wildlife
					18	Sonamura
					19	Gomuti Wild Life FD
					20	Amarpur
					21	Gandachara
17	**MEGHALAYA**	01	West Garo Hills	03	01	Shillong
		02	East Garo Hills	03	02	Jowar
		03	South Garo Hills	03	03	Tura
		04	West Khasi Hills	03	04	Ribhoi Forest Division
		05	Ri Bhoi	03	05	Nongstone Forest Division
		06	East Khasi Hills	03	06	East Khasi Hill
		07	Jaintia Hills	03	07	East garo Hill
				03	08	North Garo Hill
				03	09	South Garo Hill
					10	West Khasi Hills
					11	William Nagar
					12	West Garo Hills
					13	South & South West Garo Hills

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					14	East & North Garo Hills
					15	Baghmara
					16	East & West Garo Hills
18	**ASSAM**	01	Kokrajhar	05	01	Kamrup (East)
		02	Dhubri	05	02	Kamrup (West)
		03	Goalpara	05	03	Kamrup (North)
		04	Bangaigaon	05	04	Goalpara
		05	Barpeta	05	05	Darrang (East)
		06	Kamrup	05	06	Darrang (West)
		07	Nalbari	05	07	Lakhimpur
		08	Darrang	05	08	Nagaon
		09	Marigaon	05	09	Nagaon (South)
		10	Nagaon	05, 40% in 03	10	Aie-Valley
		11	Sonitpur	05	11	Kachugaon
		12	Lakhimpur	05	12	Haltugaon
		13	Dhemaji	05	13	Dhubri
		14	Tinsukia	05, 30% in 03	14	Dibrugarh
		15	Dibrugarh	05	15	Golaghat
		16	Sibsagar	05	16	Sibsagar
		17	Jorhat	05	17	Digboi
		18	Golaghat	05, 40% in 03	18	Doom Dooma
		19	Karbi Anglong	05, 45% in 03	19	Silchar
		20	North Cachar Hills	03	20	Karimganj
		21	Cachar	03	21	N.C. Hills
		22	Karimganj	03	22	K.A. (East)
		23	Hailakandi	03	23	K.A. (West)
		24	Baksa		24	Hamren
		25	Chirang		25	Bakhimpur
		26	Kamrup		26	Haltugaon
		27	Udalguri		27	West Assam
					28	Eastern Assam
					29	Dhansari
					30	Dimahaso(west)
					31	Hailakandi
					32	Half Long-West
					33	Tinsukhia W.L
					34	Parbotjhora
					35	Kachugaon
					36	Half Long-East
					37	Jorhat
					38	Chirang
					39	Sonitpur East
					40	Dhemaji
					41	Diphu East
					42	DiphuWest
					43	Mushalpur
					44	West Karbi Anglong
					45	Dimahato East FD
					46	Sonitpur West
					47	Tejpur FD
					48	Mangladai FD
					49	Baksa FD

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					50	Manas Tiger Reserve FD
					51	Manas N.P. Division
					52	Kaziranga Wild Life
					53	Kokrajhar Wild Life Divsion
19	**WEST BENGAL**	01	Darjiling	01, 30% in 05	01	Bankura (North)
		02	Jalpaiguri	05	02	Bankura (South)
		03	Koch Bihar	05	03	Birbhum
		04	Uttar Dinajpur	05	04	Bardwan
		05	Dakshin Dinajpur	05	05	Cooch Bihar – Wildlife - III
		06	Maldah	05	06	Baikunthapur
		07	Murshidabad	05	07	Darjiling
		08	Birbhum	05	08	Kurseong
		09	Barddhaman	05	09	Buxa (East)
		10	Nadia	05	10	Buxa (West)
		11	North 24 Parganas	05	11	Jalpaiguri
		12	Hugli	05	12	Dinajpur (West)
		13	Bankura	05	13	Midnapore (East)
		14	Puruliya	05	14	Midnapore (West)
		15	Medinipur	05	15	Nadia Murshidabad
		16	Haora	05	16	24 Pargana (North)
		17	Culcutta	05	17	24 Pargana(South)
		18	South 24 Parganas	05	18	Purulia
		19	Purba Medinipur	05	19	Central Forest Div.
				05	20	Bishnupur
					21	Wild life – II
					22	Kansabati soil conservation division I
					23	Kansabati soil conservation division II
					24	Malda
					25	Kharagpur Social Forest
					26	Jaldapara Wildlife Division
					27	South Kongsabati Forest Division
					28	North Kongsabati Forest Division
					29	Jhargram Forest Division
					30	Kalimpong Forest Division
					31	Panchet Forest Division
					32	Rupnarayan Forest Division
					33	Darjeeling Wildlife Division
					34	Gourumara Wild life
					35	Sunderban Tiger Reserve
20	**JHARKHAND**	01	Garhwa	09	01	Garhwa (North)
		02	Palamu	09	02	Garhwa (South)
		03	Chatra	09	03	Chhatra (North)
		04	Hazaribagh	09	04	Chhatra (South)
		05	Kodarma	09	05	Hazaribagh (East)
		06	Giridih	09	06	Hazaribagh (West)
		07	Deoghar	09	07	Koderma
		08	Godda	09	08	Giridih
		09	Sahibganj	09	09	Deoghar

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		10	Pakaur	09	10	Shaibganj
		11	Dumka (Santhal Pargana)	09	11	Dumka
		12	Dhanbad	09	12	Dhanbad
		13	Bokaro	09	13	Ranchi (East)
		14	Ranchi	09	14	Ranchi (West)
		15	Lohardaga	09	15	Gumla
		16	Gumla	09	16	Khunti
		17	Pashchimi singhbhum	09	17	Kolhan
		18	Purbi Singhbhum	09	18	Porahat
		19	Jamtara	09	19	Chaibasa (South)
		20	Khunti	09	20	Chaibasa (North)
		21	Latehar		21	Dalbhum
		22	Ramgarh		22	Latehar
		23	Saraikela-Kharsawan		23	Daltanganj (North)
		24	Simdega		24	Daltanganj (South)
					25	Godda FD
					26	Pakur FD
					27	Lohardaga FD
					28	Bokaro
					29	Kolebira
					30	Palamu Tiger Reserve (South)
					31	Palamu Tiger Reserve (North)
					32	Medninagar
					33	Sarikele
					34	Dalma Wild Life Sanctuary
					35	Jamtara
					36	Jamshedpur
					37	Hazaribagh Wild Life
					38	Girdih East
					39	Girdih West
					40	Chatra Wild Life Divsion
					41	Palkot Wild Life Forest Division
21	**ODISHA**	01	Bargarh	09	01	Angul
		02	Jharsuguda	09	02	Athamallik
		03	Sambalpur	09	03	Deogarh
		04	Debagarh	09	04	Baripada
		05	Sundargarh	09	05	Sambalpur
		06	Kendujhar	09	06	Khariar
		07	Mayurbhanj	09, 35% in 14	07	Jeypore
		08	Baleshwar	14, 20% in 09	08	Bolangir
		09	Bhadrak	14	09	Boudh
		10	Kndrapara	14	10	Athagarh
		11	Jagatsinghapur	14	11	Puri
		12	Cuttack	14, 30% in 09	12	Bamra
		13	Jajapur	14, 35% in 09	13	Dhenkanal
		14	Dhenkanal	09	14	Parla Khemundi
		15	Anugul	09	15	Ghumsur (North)
		16	Nauagarh	12	16	Ghumsur (South)

Code	Name of State/UT	Code	Name of District	Physiographic Zone Code	Code	Name of Division
		17	Khordha	14, 20% in 12	17	Kalahandi
		18	Puri	14	18	Phulbani
		19	Ganjam	12, 45% in 14	19	Balliguda
		20	Gajapati	12	20	Keonjhar
		21	Kandhamal	12	21	Nowrangour
		22	Baudh	12	22	Rayagadha
		23	Sonapur	09	23	Karanjia
		24	Balangir	09	24	Nayagarh
		25	Nuapada	09	25	Raira Khel
		26	Kalahandi	09, 30% in 12	26	Sundargarh
		27	Rayagada	12	27	Bonai
		28	Nabarangapur	09	28	Nuaoada
		29	Koraput	12, 15% in 09	29	Khurda
		30	Malkangiri	12	30	Koraput FD
					31	Anandapur FD
					32	Balasore WildLife FD
					33	Bargarh FD
					34	Jharsuguda FD
					35	Rai Rangpur FD
					36	Rourkela FD
					37	Satkosia Wildlife FD
					38	Katak FD
					39	Barhampur FD
					40	Mahanadi Wildlife Division
					41	Ganjam FD
					42	Sobaranpur FD
					43	Keondjhar Wild Life FD
					44	Mangrove FD , Rajnagar
					45	Malkangiri
					46	Rairangpur
					47	Simlipal Tiger Reserve
					48	Sonabera Wild Life
					49	Hirakud Wild Life FD
					50	Kalahandi North
					51	Kalahandi South
					52	Nabarangapur
					53	Chandaka Wild Life
					54	Gajapati Forest Division
					55	Kandhamal Forest Division
					56	Jajpur Forest Division
22	**CHHATTISGARH**	01	Koria	09	01	Kawardha
		02	Surguja	09	02	Rajnandgaon
		03	Jashpur	09	03	Khairagarh
		04	Raigarh	09	04	Durg
		05	Korba	09	05	Raipur
		06	Janjgir-Champa	09	06	Raipur East
		07	Bilaspur	09	07	Udanti
		08	Kabirdham (Kawardha)	09	08	Mahasumand
		09	Rajnandgaon	09	09	Damtari
		10	Durg	09	10	Kanker
		11	Raipur	09	11	Bhanupratappur East

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		12	Mahasamund	09	12	Bhanupratappur West
		13	Dhamtari	09	13	Narayanpur
		14	Kanker	09	14	Kondagaon North
		15	Baster	09	15	Kondagaon South
		16	Dantewara	09	16	Baster
		17	Bijapur		17	Dantewada
		18	Narayanpur		18	Vijaypur
		19	Balrampur		19	Sukuma
		20	Surajpur		20	Bilaspur
		21	Mungeli		21	Janjgir (Champa)
		22	Bemetara		22	Korba
		23	Balod		23	Katghora
		24	Gariyaband		24	Raigarh
		25	Balodabazar-Bhatapara		25	Dharamhjaigarh
		26	Kondagaon		26	Jashpur
		27	Sukma		27	Sarguja North
					28	Sarguja East
					29	Sarguja South
					30	Korea
					31	Manandragarh
					32	Marwahi
					33	Sarguja
					34	Balrampur
					35	Surajpur
					36	Guru Ghasidas National Park
					37	Bilaspur
					38	Mungeli
					39	Balod
					40	Gariyaband
					41	Balodabazar
					42	Kanger Vally NP
					43	Bijapur Indrawati NP
23	**MADHYA PRADESH**	01	Sheopur	07	01	Balaghat North
		02	Morena	07	02	Balaghat South
		03	Bhind	07	03	Betul North
		04	Gwalior	07	04	Betul South
		05	Datia	07	05	Betul West
		06	Shivpuri	07	06	Bhopal
		07	Guna	07	07	Sehore
		08	Tikamgarh	07	08	Abdullahganj
		09	Chhatarpur	07	09	Raisen
		10	Panna	07	10	Rajgarh
		11	Sagar	07	11	Vidisha
		12	Damoh	07	12	Chhindwara East
		13	Satna	07	13	Chhindwara West
		14	Rewa	07	14	Chhindwara South
		15	Umaria	09, 25% in 08	15	Gwalior
		16	Shahdol	09, 30% in 08	16	Datia
		17	Sidhi	09	17	Bhind
		18	Neemuch	07	18	Morena
		19	Mandsaur	07	19	Sheopur Kala
		20	Ratlam	07	20	Hoshangabad

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		21	Ujjain	07	21	Harda
		22	Shajapur	07	22	Indore
		23	Dewas	07	23	Dhar
		24	Jhabua	07, 25% in 08	24	Jhabua
		25	Dhar	07, 15% in 08	25	Jabalpur
		26	Indore	07	26	Katani
		27	West Nimar (Khandwa)	08, 30% in 07	27	Mandla East
		28	Barwani	08	28	Mandla West
		29	East Nimar (Khargone)	08	29	Dindori
		30	Rajgarh	07	30	Khandwa (Nimar East)
		31	Vidisha	07	31	Burhanpur
		32	Bhopal	07	32	Khargone (Nimar Wset)
		33	Sehore	07	33	Badwaha
		34	Raisen	07	34	Badwain
		35	Betul	08	35	Sendhwa
		36	Harda	08	36	Rewa
		37	Hoshangabad	08	37	Satna
		38	Katni	09, 20% in 07	38	Sidhi East
		39	Jabalpur	07, 40% in 08	39	Sidhi West
		40	Narsimhapur	07, 45% in 08	40	Sagar North
		41	Dindori	08	41	Sagar South
		42	Mandla	08	42	Damoh
		43	Chhindwara	08	43	Shahdol North
		44	Seoni	08	44	Shahdol South
		45	Balaghat	08	45	Umria
		46	Alirajpur		46	Seoni North
		47	Anuppur		47	Seoni South
		48	Ashoknagar		48	Narsinghpur
		49	Burhanpur		49	Shivpuri
		50	Singrauli		50	Guna
					51	Chhatarpur
					52	Tikamgarh
					53	Panua North
					54	Panua South
					55	Ujjain
					56	Mansour
					57	Neemuch
					58	Ratlam
					59	Sajapur
					60	Dewas
					61	Ashoknagar FD,Ashoknagar
24	**GUJARAT**	01	Kachchh	06	01	Bhavnagar
		02	Banas kantha	06, 40% in 13	02	Banas Kantha
		03	Patan	13, 45% in 06	03	Rajpipla (West)
		04	Mahesana	13	04	Baria
		05	Sabar kantha	13, 35% in 07	05	Dangs (North)
		06	Gandhinagar	13	06	Dangs (South)
		07	Ahmadabad	13, 25% in 06	07	Gandhinagar
		08	Surendranagar	06	08	Jamnagar
		09	Rajkot	06	09	Junagarh
		10	Jamnagar	06	10	Kachchh (East)

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		11	Porbandar	06	11	Kachchh (West)
		12	Junagadh	06	12	Vyara
		13	Amreli	06	13	Godhra
		14	Bhavnagar	06	14	Saherkantha
		15	Anand	13	15	Saharkantha (South)
		16	Kheda	13	16	Surendranagar
		17	Panch Mahals	13	17	Chotaudepur
		18	Dohad	13	18	Valsad (North)
		19	Vadodara	13, 20% in 08	19	Valsad (South)
		20	Narmada	08	20	Rajpipla East
		21	Bharuch	13	21	Porbandar
		22	Surat	13, 20% in 11& 10% in 08	22	Social Forestry Division , Ahmedabad
		23	The Dangs	11	23	Social Forestry Division,Amreli
		24	Navsari	13, 20% in 11	24	Social Forestry Division,Anand
		25	Valsad	11, 30% in 13	25	Social Forestry Division Banaskantha,Palanpur
		26	Tapi		26	Social Forestry Division Bharuch
		27	Devbhumi Dwarka		27	Sub Division Bharuch
		28	Gir Somnath		28	Social Forestry Division Bhavnagar
		29	Aravali		29	Social Forestry Division Dhanod
		30	Botad		30	Social Forestry Division,Devgadhbaria
		31	Mahisagar		31	Social Forestry Division,Jamnagar
		32	Morbi		32	Social Forestry Division Junagarh
					33	Social Forestry Division,Bhuj
					34	Bannai Div.,Bhuj
					35	Social Forestry Division,Nadiad
					36	Social Forestry Division,Mehsana
					37	Social Forestry Division,Narmada,Rajpipla
					38	Social Forestry Division,Navsari
					39	Social Forestry Division,Godhra
					40	Territorial Division,Patan
					41	Social Forestry Division,Rajkot
					42	Rajkot Division,Rajkot
					43	Social Forestry Division,Sabarkantha,Himmatnagar
					44	Territorial Div,Surat
					45	Social Forestry Division,Surat
					46	Social Forestry Division,Surendranagar
					47	Social Forestry Division,Vadodara
					48	Social Forestry Division,Valsad
					49	Devbhumi Dwarka FD,Khambhaliya
					50	Gir Somnath Forest Div.,Veravali
					51	Aravali FD,Modasa
					52	Botad FD,Botad
					53	Mahisagar Forest Division Lunawada
					54	Morbi FD,Morbi
					55	Banni Grassland Reserve,Bhuj

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25	**DAMAN & DIU**	01	Diu	06		
		02	Daman	13		
26	**DADRA & NAGAR HAVELI**	01	Dadra & Nagar Haveli	11	01	Silvasa
27	**MAHARASHTRA**	01	Nandurbar	08, 20% in 11	01	Thane
		02	Dhule	08, 20% in 11	02	Dahanu
		03	Jalgaon	08	03	Shahapur
		04	Buldana	08	04	Jawhar
		05	Akola	08	05	Alibagh
		06	Washim	08	06	Roha
		07	Amaravati	08	07	Nasik (East)
		08	Wardha	08	08	Nasik (West)
		09	Nagpur	08	09	Ahmadnagar
		10	Bhandara	08	10	Dhule (North)
		11	Gondiya	08	11	Dhule (West)
		12	Gadchiroli	08	12	Mewasi
		13	Chandrapur	08	13	Jalgaon
		14	Yavatmal	08	14	Yawal
		15	Nanded	08	15	Pune
		16	Hingoli	08	16	Junnar
		17	Parbhani	08	17	Bhor
		18	Jalna	08	18	Solapur
		19	Aurangabad	08	19	Kolhapur
		20	Nashik	08, 40% in 11	20	Satara
		21	Thane	13, 40% in 11	21	Savantwadi
		22	Mumbai (Suburban)	13	22	Sangli (Subdiv)
		23	Mumbai	13	23	Chiplun (Subdiv)
		24	Raigarh	13, 40% in 11	24	Aurangabad
		25	Pune	08, 30% in 11	25	Nanded
		26	Ahmadnagar	08	26	Parbhani
		27	Bid	08	27	Beed (Sub Div)
		28	Latur	08	28	Osmanabad
		29	Osamanabad	08	29	Melghat (East)
		30	Solapur	08	30	Melghat (West)
		31	Satara	08, 30% in 11	31	Amravati
		32	Ratnagiri	13, 35% in 11	32	Budhana
		33	Sindhudurg	13, 40% in 11	33	Yavatmal
		34	Kolhapur	08, 45% in 11	34	Pusad
		35	Sangli	08, 15% in 11	35	Pandhar Kawada
					36	Akola
					37	Nagpur
					38	Wardha
					39	Bhandara
					40	Gondia
					41	Chandrapur
					42	Brahampuri
					43	Gadchiroli
					44	Wadsa
					45	Allapalli
					46	Bhamragad
					47	Sironcha
					48	Chanda (Central)
					49	Kolaba

Code	Name of State/UT	Code	Name of District	Physiographic Zone Code	Code	Name of Division
					50	Koyna
					51	Bhor
28	**ANDHRA PRADESH**	01	Srikakulam	14, 30% in 12	01	Adilabad
		02	Vizianagaram	14, 45% in 12	02	Bellampally
		03	Visakhapatnam	12, 25% in 14	03	Nirmal
		04	East Godavari	14, 40% in 12	04	Kaghaznagar
		05	West Godavari	14, 30% in 12	05	Mancherial
		06	Krishna	14, 35% in 12	06	JannaramWL Management Division
		07	Guntur	14, 35% in 12	07	Anantpur
		08	Prakasam	14, 45% in 12	08	Chittoor (East)
		09	Nellore	14, 15% in 12	09	Chittoor (West)
		10	Cuddapah	12	10	Guntur
		11	Kurnool	12, 45% in 10	11	Giddalur
		12	Anantapur	10, 20% in 12	12	Nellore
		13	Chittoor	12	13	Markapur
					14	Kurnool
					15	Cudappa
					16	Produttur
					17	Nandyal
					18	Rajampet
					19	Atmakur
					20	Khammam
					21	Kothagudem
					22	Paloucha
					23	Bhadrachalam (North)
					24	Bhadrachalam (South)
					25	Nizamabad
					26	Kamareddy
					27	Medak
					28	Vishakapattanam
					29	Paderu
					30	Vizianagaram
					31	Srikakulam
					32	Narsipatnam
					33	Hydradad
					34	Nalgonda
					35	Mahbubnagar
					36	Achampet
					37	Kakinada
					38	Eluru
					39	Vijaywada
					40	Warangal (North)
					41	Warangal (South)
					42	Karim Nagar (East)
					43	Karim Nagar (West)
					44	Rajamundri WLFD
					45	Ongole Social FD
					46	Karimnagar Social FD
					47	Srikakulam Social FD
					48	Tirupathi Wildlife Manangement Division
					49	Tirumala Tirupathi Devasthanam

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						Forests (TDD Forests)
					50	Eluru wildlife Manangement Division
					51	Sullurupeta Wildlife Manangement Division
					52	Chittoor wild life TPT FD
					53	Chittoor TTD Forest Division
					54	Koundinya Wildlife Sanctuary
					55	WLM Nagarjunsagar
29	**KARNATAKA**	01	Belgaum	10	01	Bangalore (Urban)
		02	Bagalkot	10	02	Bangalore (Rural)
		03	Bijapur	10	03	Bhagalkot
		04	Gulbarga	10	04	Bellary
		05	Bidar	10	05	Belgaum
		06	Raichur	10	06	Bhadravati
		07	Koppal	10	07	Bidar
		08	Gadag	10	08	Chickmaglur
		09	Dharwad	10	09	Chitradurga
		10	Uttara Kannada	11, 30% in 10, 15% in 13	10	Dharwad
		11	Haveri	10	11	Gadag
		12	Bellary	10	12	Gokak
		13	Chitradurga	10	13	Gulbanga
		14	Davanagere	10	14	Hassan
		15	Shimoga	10, 25% in 11	15	Haliyal
		16	Udupi	13, 30% in 11	16	Honnavar
		17	Chikmagalur	10, 25% in 11	17	Karwar
		18	Tumkur	10	18	Kolar
		19	Kolar	10, 25% in 12	19	Kollegal
		20	Bangalore	10	20	Koppa
		21	Bangalore (Rural)	10	21	Kundapur
		22	Mandya	10	22	Mandya
		23	Hassan	10	23	Mangalore
		24	Dakshina Kannada	13, 25% in 11	24	Madikeri
		25	Kodagu	11, 35% in 10	25	Mysore
		26	Mysore	10	26	Raichur
		27	Chamarajanagar	10, 40% in 12	27	Sagar
		28	Chikkaballapura		28	Shimoga
		29	Ramanagara		29	Sirsi
		30	Yadgir		30	Tumkur
					31	Yellapur
					32	Virajpet
					33	Hunsar
					34	Davnagere
					35	Koppal
					36	Haveri
					37	Bijapur
					38	Shimoga Social FD
					39	Shimoga WL Division
					40	Bellary Social FD
					41	Mysore Social FD
					42	Mysore WL Division
					43	Hunsur WL Division

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					44	Ramanagara Forest Division
					45	Chikkaballapur Forest Division
					46	Bannerghatta National Park
					47	Bandipura Tiger National park
					48	Nagarhole Tiger Reserve/Nagarhole National Park
					49	Anshi Dhandeli Tiger Reserve/Kali Tiger Reserve
					50	Ranibennur Blackbuck Sanctuary
					51	Shettihalli Wildlife Sanctuary
					52	Cauvery Wildlife Sanctuary
					53	Male Mahadeshwara Wildlife Sanctuary
					54	Biligiri Ranga Temple Tiger Reserve
					55	Bhadra WLS/Tiger Reserve
					56	Kudremukh National Park
					57	Daroji WLS/Sloth Bear Sanctuary
					58	Pushpagiri WLS
					59	Yedgir
					60	Mookambika WLS
					61	Madikeri Wild life
					62	Dandeli WL
					63	Jogimatti Wildlife Sanctuary
					64	Rangayyadurga Four Hored Antelope Wildlife Sanctuary
					65	Gudekote Sloth Bear Sanctuary
					66	Chincholi Wildlife Sanctuary
					67	Brahmagiri Wildlife Sanctuary
					68	Sharavanthy WLS
30	**GOA**	01	North Goa	13	01	North Goa
		02	South Goa	13	02	South Goa
31	**LAKSHADWEEP**	01	Lakshadweep	13	01	Kavarathi
32	**KERALA**	01	Kasaragod	13, 25% in 11	01	Thiruvananthpuram
		02	Kannur	13	02	Punalur
		03	Wayanad	11	03	Thenmala
		04	Kozhikode	13	04	Achencoil
		05	Malappuram	13	05	Konni
		06	Palakkad	13, 20 in 11	06	Ranni
		07	Thrissur	13	07	Kottayam
		08	Ernakulam	13, 30% in 11	08	Munnar
		09	Idukki	11	09	Mankulam
		10	Kottayam	13, 15% in 11	10	Kothamangalam
		11	Alappuzha	13	11	Malayattoor
		12	Pathanamthitta	13, 40% in 11	12	Trissur
		13	Kollam	13, 20% in 11	13	Chalakkudy
		14	Thiruvananthapuram	13	14	Vazhachal
					15	Palakkadu
					16	Nenmara
					17	Mannar Kkadu
					18	Nilambar (North)
					19	Nilambar (South)

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					20	Kozhikkode
					21	Wayanad (North)
					22	Wayanad (South)
					23	Kannur
					24	Kasargode
					25	25 Periyar (T.P) East
					26	Wayanad WLS
					27	Palakkad Social FD
					28	Kozhikode Social FD
					29	Kozhikode Timber Sales Division
					30	Marayoor Sandal Division
					31	Munnar WL Division
					32	Idukki WL Division
					33	Chimoney WL Sanctuary Division
					34	Peechi – Vazhani WL Division
					35	Field Director Project Tiger-Dy.Dir.(East)
					36	Field Director Project Tiger-Dy.Dir.(West)
					37	Field Director Project Tiger-Wildlife warden Idukki
					38	Field Director Project Tiger-Wildlife warden Munnar
					39	Marayar Sandal Division
					40	Munnar Territorial Division
					41	Timber Sales Division Thiruvanthapuram
					42	Timber Sales Division Punalur
					43	Thiruvanthapuram WL Division
					44	Perambalur TSD
					45	Silent Valley National Park
					46	Aralam WL
					47	Parambikulam
					48	Wayanad/Sulthab Bathery WL Division
					49	Periyar (T.P.) West FD
					50	Shendurney Wildlife Sanctuary
					51	Mathikettan Shola National Park
33	**TAMILNADU**	01	Tiruvallur	14	01	Chengalpattu
		02	Chennai	14	02	Vellore
		03	Kanchipuram	14	03	Tirupathur
		04	Vellore	12, 40% in 14	04	Tiruvannamalai
		05	Dharmapuri	12	05	Dharmapuri
		06	Triuvannamalai	14, 20% in 12	06	Hosur
		07	Villupuram	14	07	Harur
		08	Salem	12, 15% in 14	08	Villupuram
		09	Namakkal	12	09	Kallakurichi
		10	Erode	12	10	Salem
		11	Nilgiris	11	11	Attur
		12	Coimbatore	12, 15% in 11	12	Erode
		13	Dindigul	12	13	Sathyamangalam
		14	Karur	14, 42% in 12	14	Dindigul
		15	Triuchirappalli	14, 40% in 12	15	Kodaikanal

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		16	Perambalur	14	16	Madurai
		17	Ariyalur	14	17	Theni
		18	Cuddalore	14	18	Tiruchy
		19	Nagapattinam	14	19	Thanjavur
		20	Triuvarur	14	20	Tirunelveli
		21	Thanjavur	14	21	Kanyakumari
		22	Pudukkottai	14	22	Coimbatore
		23	Sivaganga	14	23	Nilgiris North
		24	Madurai	14, 30% in 12	24	Nilgiris South
		25	Theni	12, 35% in 11	25	Gudalur
		26	Virudunagar	14	26	Sivaganga
		27	Ramanathapuram	14	27	Udalur
		28	Thoothukkudi	14	28	Cuddalore
		29	Tirunelveli	14, 20% in 11	29	SrivilliputhurWL Division
		30	Kanniyakumari	14, 30% in 11	30	Nangapattinam(WL)
		31	Krishnagiri		31	Pallachi(WL)
		32	Tiruppur		32	Kalakad – Mundanthurai Tiger Reserve (KMTR) - Ambasamudram
					33	KMTR – Kalakkadu
					34	Tirunelveli Social Forestry Division
					35	Salem Social Forestry (Interface) Division
					36	Mudumalai Tiger Reserve
					37	Perambalur
					38	Pudukottai
					39	Kalakkadu Mundanthurai WL Division
					40	Ramanathapuram FD
					41	Hasnur Forest Division
					42	Thoothukodi FD
					43	Anthiyur FD (Erode Distt.)
					44	Thiruvannamalai North FD
					45	Thiruvannamalai South FD
					46	Krishnagiri FD
					47	Namakkal
					48	Viruthachalam
					49	Thirukoyilur
					50	Tiruvallur
					51	Karur Forest Division
					52	Anamalai Tiger Reserve
					53	Karur Division (to be check 51)
					54	Ariyalur
					55	Chennai
					56	Thiruvarur
					57	WL ATR Tiruppur
					58	WL, Megamalai
					59	WL, MTR Masinagudi
					60	WL, MTR Ooty
					61	WL, STR Hassanpur
					62	WL, STR Sathy
34	**PONDICHERRY**	01	Yanam	14	01	Pondicherry
		02	Pondicherry	14		
		03	Mahe	13		

Code	Name of State/UT	Code	Name of District	Physiographic Zone Code	Code	Name of Division
		04	Karaikal	14		
35	**A & N ISLANDS**	01	Andamans	14	01	Wimberly Ganj (SA)
		02	Nicobars	14	02	Baratang(or Raratang)
		03	South Andaman		03	Rangat (MA)
					04	Mayabandar
					05	Diglipur
					06	Hutbay (LA)
					07	Campbell bay (Nicobar)
					08	North Andaman
					09	South Andaman Forest Division
36	**TELANGANA**	01	Adilabad	10	01	Adilabad
		02	Nizamabad	10	02	Bellampally
		03	Karimnagar	10	03	Nirmal
		04	Medak	10	04	Kaghaznagar
		05	Hyderabad	10	05	Mancherial
		06	Rangareddi	10	06	JannaramWL Management Division
		07	Mahbubnagar	10, 20% in 12	07	Anantpur
		08	Nalgonda	10, 30% in 12	08	Chittoor (East)
		09	Warangal	10	09	Chittoor (West)
		10	Khammam	10, 20% in 12	10	Guntur
					11	Giddalur
					12	Nellore
					13	Markapur
					14	Kurnool
					15	Cudappa
					16	Produttur
					17	Nandyal
					18	Rajampet
					19	Atmakur
					20	Khammam
					21	Kothagudem
					22	Paloucha
					23	Bhadrachalam (North)
					24	Bhadrachalam (South)
					25	Nizamabad
					26	Kamareddy
					27	Medak
					28	Vishakapattanam
					29	Paderu
					30	Vizianagaram
					31	Srikakulam
					32	Narsipatnam
					33	Hydradad
					34	Nalgonda
					35	Mahbubnagar
					36	Achampet
					37	Kakinada
					38	Eluru
					39	Vijaywada
					40	Warangal (North)
					41	Warangal (South)
					42	Karim Nagar (East)

Code	Name of State/UT	Code	Name of District	Physiographic Zone Code	Code	Name of Division
					43	Karim Nagar (West)
					44	Rajamundri WLFD
					45	Ongole Social FD
					46	Karimnagar Social FD
					47	Srikakulam Social FD
					48	Hyderabad WL Division
					49	Amarabad Tiger Reserve
					50	Kawal Tiger Reserve
					51	Wild Life Management Warangal
					52	Siddipeth Forest Division
					53	Amangal
					54	Amrabad
					55	Armoor
					56	Asifabad
					57	Banswada
					58	Bhupalpally
					59	Chennur
					60	Eturunagaram WLM
					61	FG-Warangal
					62	FSD Amrabad
					63	FSD Nizamabad
					64	FSP Hyderabad
					65	FUO-Hyderabad
					66	Gadwal
					67	Ichoda
					68	IT WING
					69	Jagitial
					70	Jangoan
					71	Karimnagar
					72	Khanapur
					73	Kinnerasani (WLM)
					74	Mahabubabad
					75	Mahadevpur
					76	Manuguru
					77	Medchal
					78	Mulugu
					79	Nagarjuna Sagar(WLM)
					80	Peddapalli
					81	Sangareddy
					82	Sathupally
					83	Shamshabad
					84	Siricilla
					85	SS Hyderabad
					86	Suryapet
					87	Tadwai
					88	TS Academy
					89	Utnoor FDPT
					90	Venkatapuram
					91	Vikarabad
					92	Wanaparthy
					93	Warangal(R)
					94	Warangal(U)
					95	WL Gudur

Code	Name of State/UT	Code	Name of District	Physiographic Zone Code	Code	Name of Division
					96	WLM Nagarjunasagar
					97	Yadadri Bhuvanagiri
					98	Yellandu
37	Laddakh	01	Leh (old code 07)	01	01	Leh (old code 29)
		02	Kargil (old code 08)	01		

Annexure – IV

Code for Mapsheets

The procedure to be adopted for coding the map sheet number (six digits) will be as explained hereinafter. Every map sheet 1:50,000 is given a number on top of the sheet. The first two digits of this sheet number are the Index Number the alphabet is the 'Degree Sheet Number' and the last remaining digit is the 1:50,000 SHEET NUMBER. When recording the map sheet code the first two number of the map sheet will be written as they appear on the map. The alphabet of the Degree Sheet number will have two digits and will be coded. The codes for the alphabets are given below (there are sixteen such alphabets). The last remaining number will be recorded in two digits.

Map Sheet No.	Code
A	01
B	02
C	03
D	04
E	05
F	06
G	07
H	08
I	09
J	10
K	11
L	12
M	13
N	14
O	15
P	16

Example : The map sheet No. 73 I/9 will be coded as '730909' and map sheet No. 43 K/16 as '431116'

Annexure-V

Table showing slope percentage

Angle of slope in degrees	Slope percentage	Angle of slope in degrees	Slope percentage
1	002	43	093
2	003	44	096
3	005	45	100
4	007	46	103
5	009	47	107
6	010	48	111
7	012	49	115
8	014	50	119
9	016	51	123
10	018	52	127
11	019	53	133
12	021	54	138
13	023	55	142
14	025	56	148
15	027	57	154
16	029	58	160
17	030	59	166
18	032	60	173
19	034	61	180
20	036	62	188
21	038	63	196
22	040	64	205
23	042	65	214
24	044	66	225
25	046	67	236
26	049	68	248
27	051	69	261
28	053	70	275
29	055	71	290
30	058	72	308
31	060	73	327
32	062	74	349
33	065	75	373
34	067	76	401
35	070	77	433
36	072	78	470
37	075	79	514
38	078	80	567
39	081	81	631
40	084	82	712
41	087	83	814
42	090	84	951

Annexure-VI

Code of different crop composition (Forest Type)

Code	Crop composition (Forest type)	Description
00	Not Reported	
01	Fir	When Fir is predominant* species and constitutes more than 25%
02	Spruce	Where Spruce is predominant species and constitutes more than 25%
03	Fir-Spruce	Where Fir & Spruce both taken together are predominant species and constitute more than 25%
04	Blue-pine (Kail)	Where Blue pine is predominant species and constitutes more than 25%
05	Deodar	Where Deodar is predominant species and constitutes more than 25%
06	Chir-pine	Where Chir-pine is predominant species and constitutes more than 25%
07	Mixed conifers	Where no single species is predominant and all conifers taken together constitute more than 50%
08	Oak-Rhododendrom Forest	Where Oak and Rhododendrom constitute 50% of the crop with at least 15% of minimum of each
09	Up-land hardwoods	Broad leaved species constitute more than 50% in the Upper/chir zone above 1,500 m altitude
10	Teak	Where teak is predominant species and constitutes more than 50%
11	Sal	Where Sal is predominant species and constitutes more than 50%
12	Bamboo forest	Where bamboo is predominant and constitutes more than 50%
13	Mangrove	Mangrove forests
14	Garjan forest (Dipterocarpus turbinatus)	Where Garjan is predominant species and constitutes more than 50% in the top canopy
15	Garjan with Miscellaneous	Where Garjan constitutes at least 25% alongwith misc. species
16	Khasi pine	Where Khasi pine is predominant species and constitutes more than 25%
17	Khair forest	Where Khair trees are predominant and constitutes more than 25%
18	Salai forest	Where Salai is predominant species and constitute more than 25%
19	Alpine scrub	Alpine scrub

Code	Crop composition (Forest type)	Description
20	Teak with Misc.	Occurance of teak over 25% and less than 50%
21	Sal with Misc.	Occurance of Sal over 25% and less than 50%
22	Mixed Bamboo	Bamboo predominant and not less than 25%
23	Teak mixed with Bamboo	Teak and Bamboo together constitute over 50% with each constituting at least 15%
24	Salai with Misc.	Salai 20-50%
25	Anogeissus pendula (Kardhai)	Where Anogeissus is predominant species and forms more than 25% of the crop
26	Teak mixed with Sal	Together they constitute more than 50% with at least 15% of each
27	Conifers mixed with hardwoods	Where the conifers constitute at least 50% and no single species is predominant
28	Khair and Shisham	Both constituting over 50% with at least 15% of each
29	Oaks	Where Oak/Kharsu Oak/Ban Oak individually or together constitute more than 50% of the crop
30	Low Land Hardwood	Where low land hard woods i.e. miscellaneous broad leaved species constitute more than 50% of the crop (At altitudes below 1,500 m)
31	Miscellaneous forest	Forest which could not be classified in any of the above classes
32	Eucalyptus	Where Eucalyptus is predominant species and constitute more than 50% of the crop
33	Eucalyptus with Miscellaneous	Occurrence of Eucalyptus over 25% and less than 50% of the crop
34	Orchards	This code should be filled up for non-forestry plantations etc.
35		
36		
37		
38		
39		
40		

* Predominant: occurrence – at least 25% and more than any other species.

Annexure-VII

List of Tree Species & their Codes

Note: 1. The plants which are identified upto Genera only but species is not identifiable should be put under group species of that Genera if code is provided.

2. The plants which cannot be identified upto Genera or species and plants which are not given code numbers should be put under following codes:

(i)	Unidentified trees/Miscellaneous	1999
(ii)	Identified and uncoded trees	2000
(iii)	Unidentified bamboos	2100
(iv)	Unidentifed canes	2150

Species Code	Botanical Name	Common/Local Names
0001	*Abies densa*	Fir
0002	*Abies pindrow*	Silver Fir, Tosh, Raga, Rainsal, Morinda
0003	*Abies smithiana (also in 0921)*	Spruce, Rai
0004	*Abies spectabilis*	Rainsal, Morinda
0005	*Acacia arabica/Acacia nilotica*	Babul, Kikar, Bawar, Bawal
0006	*Acacia auriculiformis*	Akasmani, Sona jhuri,Australian Babul
0007	*Acacia catechu/Acacia polyacantha*	Khair, Velsundra,Hiwar
0008	*Acacia eburnea*	Udaivel, Kaludai
0009	*Acacia ferruginea*	Velsundra, Vel., Subsam, Babar, Soukhar, Konp
0010	*Acacia horrida/Acacia latronum*	Hottejali,Bher
0011	*Acacia lenticularis*	Safed babul, Amiar, Kanti, Gohira,Hiwar
0012	*Acacia melanoxylon*	
0013	*Acacia pennata*	
0014	*Acacia planifrons*	Dontari
0015	*Acacia suma*	Sundra, Khair, Sai Kanta, Kumtia, White acacia Sonkhairi
0016	*Acacia chundra/Acacia sundra*	Umbrellathorn, Sali, Odei, Solei
0017	*Acacia tortilis*	Mulvara, Barnei, Muglimara
0018	*Acacia totahu*	
0019	*Acer acuminatum*	Kainchli, Kamia, Kanjal, Kainjal, Kamia, Marik, Maple
0020	*Acer campbellii*	Kapasi
0021	*Acer laevigatum*	Kapasi, Putli
0022	*Acer niveum*	
0023	*Acer oblongum*	Phisphuri, Kimolo, Kirmola
0024	*Acer cappadocicum/Acer pictum*	
0025	*Acer species.*	Gadha, Papri, Manesatiru, Kainchji, Titru,

Species Code	Botanical Name	Common/Local Names
		Mandraputi, Maple, Kainjal
0026	*Acrocarpus fraxinifolius*	Kuragaon, Kurangatti, Mandhani, Balanji, Kurangam
0027	*Acronychia pedunculata/ Acronychia laurifolia*	
0028	*Actinodaphne angustifolia*	
0029	*Actinodaphne hookeri*	Pisa
0030	*Actinodaphne sikkimensis*	Sissi
0031	*Adenanthera pavonina*	Yewagyi
0032	*Adhatoda vasica*	Adusoga
0033	*Adina cordifolia/Haldin cordifolia*	Haldu, Haladva, Hedu, Taraksopa, Maja, Kadambu, Arasintega, Bandar,Kadambi
0034	*Adina oligacephala/ Khasia culnea oligocephla*	Haldu, Haludchapa
0035	*Neonauclea sessilifolia/Adina sessilifolia*	Heludehaki
0036	*Ardisia solanacea/Ardisia floribunda (also in 0096)*	
0037	*Aegle marmelos*	Bel, Billi, Bil, Belpatra, Belphas
0038	*Aesculus indica*	Himalayan horse chestunut, Panger
0039	*Aesculus assamica/Aesculus punduana*	
0040	*Agalialaia andamanica*	Letuk
0041	*Aglaia Agalia edulis*	Manai, Letchu
0042	*Aglaia Agalia maiee*	Santhane viri, Vandakamin
0043	*Aglaia Agalia exrtipulata/ Aglaia minutiflora*	Thevathali
0044	*Aglaia Agalia elaeagnoidea/ Aglaia roxburghiana*	Chokhala, Punyaya, Kalbendek
0045	*Ailanthus altissima*	Borpat, Swinde
0046	*Ailanthus excelsa*	Maharukh, Ardusa, Butazod, Arru, Mahalimla, Peddamman, Dhella,Nar,Mahanim
0047	*Ailanthus tryphas (Ailanthus malabarica)*	
0048	*Alangium salvifolium/Alangium lamarckii (also in 0409)*	Lueki, Ansoroli, Ankola, Nirmulei
0049		
0050	*Albizia amara*	Tugle
0051	*Albizia chinensis/Albizia stipulata*	Bombeza,A.Avara
0052	*Albizia julibrissin*	Sirse
0053	*Albizia lebbek*	Kala Siris, Bhander, Sarsaoda, Koko, Kalbage
0054	*Albizia lucidior*	Maj, Sundi
0055	*Albizia mollis*	Sirsa, Kunera, Mandehar

Species Code	Botanical Name	Common/Local Names
0056	*Albizia odoratissima*	Siris, Pullivage, Nellivega, Hiharu, Bilwara, Chamkoroi
0057	*Albizia procera*	Safed Siris, Garkhai, Jantala, Koroi, Kinai
0058	*Albizia sp.*	Hiharu, Moroi, Mog, Kako, Sundi, Pujala,Siris
0059	*Michelia cathcartii/ Alcimandra catheartii*	
0060	*Alnus nepalensis*	Utis
0061	*Alnus nitida*	Kunis
0062	*Alnus sp.*	Utis, Kunis
0063	*Alphonsea ventricosa*	Paknola, Nagakola
0064	*Alphonsea zeylanica*	
0065	*Alpinia galanga*	Duperasme, Greater Galngal
0066	*Alseodaphne semecarpifolia*	Mase, Mashe, Phudgus, Melheve
0067	*Alseodaphne sp.*	Qwdenii
0068	*Alstonia scholaris*	Chatidu, Chatiwan, Satwin, Chatim, Pala, Chatuin, Chhatyal, Chaitan, Cheeni, Pale, Satiama
0069	*Altingia excelsa*	Jutali
0070	*Aglaia jainii/ Amoora canarana*	Hottenola
0071	*Amoora obleona*	
0072	*Amoora sp.*	Rath, Bordardime
0073	*Aglaia spectobilis/Amoora wallichii/Aglaia hiernii*	Lali, Lakhini, Amari
0074	*Anacardium occidentale*	Kaju,Gar,Cashu
0075	*Anacolosa densiflora*	Maiadi, Kalamanikkam, Moradi, Malambara
0076	*Andromeda elliptica*	Angesi
0077	*Anisoptera scaphula*	
0078	*Anneslea fragrans*	
0079	*Annona squamosa*	Seethapal,Setha
0080	*Anogeissus acuminata*	Phasi
0081	*Anogeissus latifolia*	Dhauda, Dhaura, Bakli, Tirman, Vekkali, Dhanda, Damado
0082	*Anogeissus pendula*	Dhauk,Kardai
0083	*Anthocephalus chinensis/ Anthocephalus cadamba*	Kadamb, Attutek, Kodavara, Kadam, Vellaikadamby
0084	*Antiaris toxicaria*	Arunjellia, Marauri, Junglia, Lakuch, Aranji
0085	*Antidesma bunius*	
0086	*Antidesma acidum/Antidesma diandrum*	Halimajjige
0087	*Antidesma menasu*	Naikuttimari
0088	*Aphanamixis polystachya/ Amoora*	

Species Code	Botanical Name	Common/Local Names
	rohituka(also in 0089)	
0089	*Aphnamixis polystachya (also in 0088)*	Karagil
0090	*Codiocarpus andamanicum/ Apodytes andamanica*	
0091	*Apodytes dimidiata/Apodytes beddomei*	
0092	*Aporosa acuminate*	Nirvetti
0093	*Aporosa lindleyana*	Chella, Sali,Vati
0094	*Aporosa octandra/Aporosa roxburghii*	Carokht, Chapnole
0095	*Aquilaria agallocha*	Agar, Diang
0096	*Ardisia floribunda(also in 0036)*	
0097	*Areca catechu*	Adike, Supari
0098	*Areca triandra*	Jangli supari
0099	*Arenga wightii*	Dada salai
0100	*Artabotrys hexapetalus/Artabotrys odoratissimus*	Kathalichapa
0101	*Artocarpus chama/Artocarpus chaplasha*	Chemal, Champ, Sam, Tongpeing
0102	*Artocarpus gomezianeus*	Kala lakuch
0103	*Artocarpus integrifolia/Artocarpus heterophyllus*	Plavu/Phannan, Kathal, Jack fruit, Fanas,Alsu
0104	*Artocarpus hirsuta*	Aini, Ayani, Patphanas, Ramphanas
0105	*Artocarpus lacucha*	Lakooch, Thellipilavu, Bohat, Dowachali, Pulinchekke, Watamb
0106	*Thamnocalamus spathiflorus*	Ringal
0107	*Arytera littoralis*	
0108	*Taraktogenos macrocarpa/ Asteriastigma macrocarpa*	
0109	*Atalantia monophylla*	Kadunimbe
0110	*Atalantia racemosa*	Kod-Kanchi
0111	*Atalantia spinosa*	
0112	*Averrhoa carambola*	
0113	*Avicennia officinalis*	Thame
0114	*Azadirachta indica*	Neem, Nibbaro, Nimdo, Vepa maram
0115	*Acacia mearnsii*	Wattel, Sagar
0116	*Acacia sp.*	Oda, Odal, Ouli, Ramkati babul
0117	*Aconitum ferox*	
0118	*Acontium bisma/Acontium palmatum*	
0119	*Acontium sp.*	
0120	*Allium wallichii*	
0121	*Avicennia marina*	Kala Bain
0122	*Acacia mangium*	
0123	*Agrostistachys longifolia*	

Species Code	Botanical Name	Common/Local Names
0124	*Avicennia alba*	Piara Bain
0125	*Baccaurea courtallensis*	
0126	*Baccaurea sapida*	Pauli, Khataphal
0127	*Bagenlia serrata*	
0128	*Balanites aegyptiaca*	Hingota
0129	*Balanocarpus litelis*	Kharkong
0130	*Balsamodendron caudata*	Kondamavu, Kilve, Nilve, Kondamamidi
0131	*Balsamodendron mukul*	Gugal
0132	*Baliospermum micranthum*	
0133	*Barringtonia acutangula*	Pani kusum, Hanjala, Hijal, Sumudra or Datta phal
0134	*Barringtonia sp.*	Hijal, Nivar
0135	*Bassia butyracea*	Chewri
0136	*Bassia malabarica*	Yanachi
0137	*Bauhinia lawii*	Basavanapada
0138	*Bauhinia malabarica*	Amta, Arampuli, Amli, Kanchilwalla
0139	*Bauhinia purpurea*	Kachna, Chameli, Pasau
0140	*Bauhinia racemosa*	Apta, Asotri, Asintro, Basuvanapada ari
0141	*Bauhinia variegata*	Sahra, Kachnar, Kachan
0142	*Bauhinia sp.*	Kachanar, Papri, Jhingora, Kuiral, Guayal, Kanol, Kawaral, Kanadian, Knola, Semal
0143	*Bauhinia vahlii*	Basavanapada balli,Sayari
0144	*Beilschmiedia assamica/ brandissi*	Amsoi, Laluk, Bangolokai
0145	*Beilschmiedia roxburghiana*	Katti
0146	*Beilschmiedia sikkimensis*	Tarsing
0147	*Balanites aegyptiaca*	
0148	*Benthamidia capitata*	Bamora, Tankoi
0149	*Mahonia napaulensis/Berberis nepalensis*	Chutra, Kesari,Chotra
0150	*Berberis angulosa*	
0151	*Berrya ammonilla*	
~~0152~~	~~*Betiaspermum meirantha*~~	
0153	*Betula alnoides*	Birch, Chambar, Payyan, Kathboj
0154	*Betula cylindrostachys*	Saur
0155	*Betula utilis*	Bhojpatra, Birch
0156	*Bischofia javanica*	Kaen, Pansemal, Nira, Jrium, Thirippa, Theejia, Charakali, Nedi,Kanjal
0157	*Boehmeria sp.*	Genthi, Bora, Kharga, Biomat, Bimoe
0158	*Bombax ceiba/Salmalia malabarica*	Semal, Sawar, Semer, Simul, Shimola, Elavo, Buruga
0159	*Borassus flabellifer*	Tar/Tad, Palm
0160	*Boswellia serrata*	Salai, Salar, Gugal, Salasi, Anduk,Guggar

Species Code	Botanical Name	Common/Local Names
~~0161~~	~~*Bouca burmica*~~	deleted
0162	*Brassaiopsis mitis*	Chuletro or phuta, Chinday (Sikkim)
0163	*Brassaiopsis speciosa*	
0164	*Bridelia verrucosa*	Gaya
0165	*Bridelia retusa*	Kasai, Kag, Khaja, Asan, Asana, Ashal, Mukkayini, Mulluvenga, Kuhir, Kutgi, Gowigi, Mullumaddi, Katak
~~0166~~	~~*Bridelia sonemess*~~ *Bridelia stipularis/scanders/scandens*	~~Mulla honne~~
~~0167~~	~~*Broxgentia wallichi*~~	~~Niruateberu, Chkrani, Beru, Nirssgni~~
0168	*Bruguiera sp.*	Khair, Lakir
0169	*Buchanania angustifolia/ axillaris*	Keradi
0170	*Buchanania lanzan/latifolia*	Achar, Chironji, Char, Muria, Phathbhilawa, Pista, Pial, Charolia, Mora, Mungapira, Chera
0171	*Buddleja sp.*	Shimsenpat
0172	*Bursera serrata(also in 0963)*	Bursera, Levendar
0173	*Butea monosperma/Butea frondosa*	Palas, Kakhar, Khakhara, Palasin, Samatha, Dhak, Sumortha
0174		Papri,Kanghi
0175	*Buxus wallichiana/ Buxus sempervirens*	Papri, Chikri, Kangi, Boxwood
0176	*Bergeria ciliata*	
0177	*Madhuca longifolia/Bassia longifolia*	
0178	*Bassia latifolia/Madhuca latifolia (also in 0759)*	
0179	*Bruguiera cylindrica*	(mangrove spp)
0180	*Bruguiera gymnorrhiza*	Kankra (mangrove spp)
0181	*Beilschmiedia wightii*	
0182	*Bridelia horrid/scleroeyrum pentadrum*	
0183	*Broussonetia papyrifera*	
0184	*Bridelia montana*	
0185	*Baliospermum mantanum*	
0186	*Caesalpinia bonduc*	Gijjaga, Garige,Kachka
0187	*Caesalpinia coriaria*	Divi-Divi,Sumkaffi
0188	*Caesalpinia pulcherrima(also in 0511)*	Krishna-chura
0189	*Callicarpa arborea*	Bahmala, Bahari, Kumbhar (Korta bowl), Gobarhata Maksi
0190	*Callicarpa lanata*	Tawadatti
0191	*Callicarpa longifolia*	
0192	*Callicarpa macrophylla*	Fulvijhe,Daia
0193	*Calophyllum polyanthus/ Calophyllum elatum*	Kattapinna

Species Code	Botanical Name	Common/Local Names
0194	*Calophyllum inophyllum*	Poon, Undi
0195	*Calophyllum polyanthum*	Kurta
0196	*Calophyllum soulattri/ Calophyllum spectabile*	Poon
0197	*Calophyllum tetrapterum*	Trai, Bobbi
0198	*Calophyllum apetalum/ Calophyllum wightianum*	Kalpoone, Irai
0199	*Camellia sinensis*	Tea
0200	*Camellia thea*	Tea plant,Cha,Chah
0201	*Canarium bengalense*	Dhup
0202	*Canarium euphyllum*	White Dhup
0203	*Canarium sikkimense*	Gokul Dhup, Dhuna, Dhunarata,Dhupa
0204	*Canarium strictum/Canarium reziniferum*	Thellim, Payin, Kuthrikka, Doopamara
0205	*Canthium dicoecum (Old) Carallia integerrima*	Balasua, Nallababusu
0206	*Canthium didymum*	Bilachi heddarane
0207	*Canthium neilgherrense*	Belachi, Woppe
0208	*Canthium parviflorum*	Heddarve
0209	*Canthium pergracile*	Meleammepannu
0210	*Capparis decidua*	Karil
0211	*Cassine species*	
0212	*Capparis grandis*	Torate, Kauntel
0213	*Carallia integerrima/Carallia brachiata*	Mahithekerh, Bangana, Phanshi
0214	*Carallia indica*	Varanga, Valovam
0215	*Careya arborea*	Kumbhi
0216	*Careya nepalensis*	
0217	*Carissa carandas*	Kalbli, Kawli, Garchunakai,Karaunda
0218	*Carpinus viminea*	Cham, Khirk, Khirki
0219	*Caryota urens*	Sulphi, Sagapalm, Bherlimad Fish tail palm
0220	*Caseari carcandus*	
0221	*Casearia esculenta*	Pannimurunga
0222	*Casearia graveolens*	Gilchi, Dedak, Manja, Mango, Bokada
0223	*Casearia rubescens*	
0224	*Casearia sp.*	
0225	*Casearia tomentosa/Casearia elliptica*	Gilchi, Dhola, Umbh, Kirrniro, Chilla, Mera, Phempri, Mallampavatta
0226	*Cassia fistula*	Amaltas, Sonari, Bahra, Bhawa, Garmala, Kirola, Konna, Kakke
0227	*Cassia nodosa*	Sonari
0228	*Cassia occidentalis*	Anechagate
0229	*Cassia siamea*	Minjiri, Nellatangedu,Chakunda,Kasid
0230	*Cassia tomentosa*	Sillangi, Killangi

Species Code	Botanical Name	Common/Local Names
0231	*Cassia tora*	Tagate
0232	*Cassia auriculata*	Taravada, Avarkay, Tangadi
0233	*Castanopsis armata*	
0234	*Castanopsis hystrix/ tribuloides*	Katnoj, Kaloni, Kotani
0235	*Castanopsis indica*	Hingori
0236	*Castanopsis javanica*	
0237	*Castanopsis sp.*	Hingori
0238	*Casuarina equisetifolia*	Saru
0239	*Cedrela febrifuga/Toona tebrifiga*	Lekh toon
0240	*Toona ciliata/ Cedrela toona*	Tun, Darli, Darloi, Dal, Mathagiri, Vedi, Vembu, Malavepa, Noga, Chonagil, Jatipoma, Poma
0241	*Cedrus deodara*	Depdar, Dayar, Devadaru,Deodar
0242	*Ceiba pentandra/Toona febrifuga (Eriodendron anfractuosum)*	Seemeburga, Silk cotton, Seauel
0243	*Celtis australis*	Kharik
0244	*Cephalanthus occidentalis*	Kalikat
0245	*Cephalostachyum fuchsianum*	
0246	*Cephalostachyum latifolium*	
0247	*Cephalostachyum pallidum*	
0248	*Cephalostachyum pergracile*	
0249	*Chuckrassia tabularis/ Chuckrassia vefutina*	Chikrasi, Veppu, Karadi keta, Bogipoma, Mala
0250	*Chloroxylon swietenia*	Bhirra, Satin
0251	*Chrysophyllum roxburghii*	Palepannu
0252	*Cinnamomum cecicodaphne*	Gonsoroi
0253	*Cinnamomum impressinervium*	Sissi
0254	*Cinnamomum iners*	Kankutala, Kankula
0255	*Cinnamomum oblongifolium*	
0256	*Cinnamomum obtusifolium*	Meduriduma, Paderi, Tozia, Nagalarhira, Patihunda
0257	*Cinnamomum sp.*	Mahidal, Gonsordi, Dalchini
0258	*Cinnamomum tamala*	Dalchini, Tejpat
0259	*Cinnamomum wightianum/ zeylanicum*	Naikambagam, Karpamara,Sombala
0260	*Cipadessa baccifera (Cipadessa fruticosa)*	Chitumba, Sidugoli
0261	*Citrus maxima/Citrus grandis*	Batabi nebu, Pummelo
0262	*Citrus latipes/Citrus hystrix*	
0263	*Citrus medica*	Elmichai
0264	*Citrus sinensis*	Mausmi
0265	*Citrus sp.*	Lemon, Nimbu
0266	*Clausena anisata/Clausena dentata*	Barpe,Poti
0267	*Cleidion javanicum*	Yellari

Species Code	Botanical Name	Common/Local Names
0268	*Cleistanthus collinus*	Karra, Nallkodigha
0269	*Clerodendrum viscosum*	Kacungyi
0270	*Clochidion assamicum*	Latimanwa
0271	*Cocculus laurifolius*	Tilaphara
0272	*Cochlospermum religiosum*	Galgal, Derani, Jerani, Kendo gogu
0273	*Cochlospermum tomentosum*	
0274	*Cocos nucifera*	Narkel, Naryal, Coconut Tree
0275	*Colubrina asiatica*	Vira
0276	*Columbia floribunda*	
0277	*Commiphora mukul/wightii*	
0278	*Commiphora caudata*	
0279	*Congea tomentosa*	
0280	*Cordia angustifolia*	
0281	*Cordia campanulata*	
0282	*Cordia dichotoma* *(Old) Cordia obliqua*	Gundi, Samar, Bhokar,Lassora,Lessor
0283	*Cordia dichtoner*	
0284	*Cordia fragrantissima*	Kowathutii
0285	*Cordia gharaf*	Gondi
0286	*Cordia grandis*	Thanet
0287	*Cordia macleodii*	Hadage, Dharivar, Satare, Pilichelle, Dahivan
0288	*Cordia myxa*	Mahidal, Bowll, Bhokar, Boal, Semri, Shelu
0289	*Cordia odoratissima*	
0290	*Cordia sp.*	Lassora, Bairula, Borala
0291	*Cordia tomentosa*	
0292	*Cornifora caudateCommiphora caudata*	Kondamavu, Aswai, Pachakilurai
0293	*Cornus macrophylla*	Khagsa, Khasri, Khugsi
0294	*Corylus colurna*	Bhutiabadam, Kapasi, Bhuj
0295	*Corylus ferox*	Lekh katus
0296	*Corypha umbraculifera*	Tale
0297	*Coscinium fenestratum*	Meramenjali
0298	*Cotoneaster bacillaris*	Ruins
0299	*Crateva adansonii sp.*	Odora
0300	*Crataeva unilocularis* *(Old) Crataeva religiosa/ roxburghii*	Gundi, Barun, Barna
0301	*Cratoxylum formosum*	Yepadak
0302	*Cratoxylum neriifolium*	
0303	*Croton joufra*	
0304	*Croton malabaricus*	Kolvachi
0305	*Croton oblongifolius*	Kanki
0306	*Croton tiglium*	Lapcho

Species Code	Botanical Name	Common/Local Names
0307	*Cryptocarya wightiana*	Kadamanpari
0308	*Crypomeria japonica*	
0309	*Crypteronia paniculata/gabra*	Garumarh
0310	*Cryptocarya amygdalina*	Bonlonalus
0311	*Cullenia excelsa*	Karanini
0312	*Cupressus cashmiriana*	
0313	*Cupressus sp.*	
0314	*Cupressus torulosa*	Cupress, Devidiar, Leuri, Surai, Samrani
0315	*Curcuma aromatica*	Kadarshina
0316	*Cycas circinalis*	Madana kamarin, Sanning kai, Erigei, Nalvalanga, Kalarei intha, Kalanga
0317	*Cycas pectinata*	Thakai
0318	*Drypetes assamica/ Cyclostemon assamica*	Rali
0319	*Drypetes longifolia/Cyclostomon marcrophyllus*	Mala payin
0320	*Cynometra beddomei*	Irapu
0321	*Maniltoa polyandra/Cynometra polyandra(also in 0777)*	Ping
0322	*Callicarpa tomentosa*	
0323	*Cupressus macrocarpa*	Samrani
0324	*Celtis wightii*	
0325	*Callicarpa sp.*	
0326	*Callistemon lanceolatus/citrinus (Metrosideros citrina/Melaleuca citrina ??)*	Bottle brush
0327	*Callistemon viminalis*	Bottle brush
0328	*Castanospermum australe*	
0329	*Ceriops decandra*	(mangrove spp)
0330	*Ceriops tagal*	Goran (mangrove spp)
0331	*Cyathocalyx zeylanica*	
0332	*Daemonorops jenkinsiana*	
0333	*Dalbergia latifolia*	Sissam, Veetti, Eetti, kareetti, Jitregi, Biti, Shisham
0334	*Dalbergia paniculata*	Dhobin, Padri, Patarali, Naibiti, Khobi, Sapperra
0335	*Dalbergia sissoo*	Sissoo, Shisham, Tahli
0336	*Dalbergia sp.*	Bandmi
0337	*Dalium travencoricum*Dialium travancoricum	Malampuli
0338	*Dracontomelum mangiferum*	Chinyok
0339	*Debregeasia wallichiana*	Sunkathi, Sankeswari
0340	*Delonix elata*	
0341	*Delonix regia*	Golmohan/Krishnachura
0342	*Daphniphyllum himalayense*	Ratniali, Rakta chandan

Species Code	Botanical Name	Common/Local Names
0343	*Dichopsis elliptica*	Panchonta, Ketellupei, Illupei, Pala, Keipales
0344	*Dichrostachys cinerea*	Yettur, Yletur
0345		
0346	*Dillenia indica*	Owtenga
0347	*Dillenia pentagyna*	Karmat, Kerju, Karvat, Karaval, Kathak, Zindyum, Modapana, Pattippana, Valappana, Otenga, Karambel, Karamble,Nelge, Kangal
0348	*Diospyros assimilis*	Karimara
0349	*Diospyros candolleana*	Kerigide, Karimitka
0350	*Diospyros chloroxylon*	Illintha
0351	*Diospyros crumentata*	Kantumri
0352	*Diospyros marmorata/malabarica*	Marblewood
0353	*Diospyros melanoxylon*	Tendu, Kendu, Timru, Abhus, Timbaroo
0354	*Diospyros microphylla/buxifolia (Leucoxylum buxifolium)*	Chunde
0355	*Diospyros nilagirica*	Kartha, Choote
0356	*Diospyros obenum*	Ebony, Karu, Mushtimbi
0357	*Diospyros paniculata*	Kari-Koomar-Karmarala
0358	Diospyros peregrina *(Old) Diospyros embryopteris sylvatica/sontana/ceubroypteris*	Madad tendu, Kakchi, Honeymoontree, GoindaJagalgonti
0359	*Diospyros sp.*	Kendu, Kala kendu, Tendu
0360	*Diospyros tupru*	Tupra
0361	*Diospyros variegata*	
0362	*Diploknema butyracea/Madhuca butyracea/Bassia butyracea*	Raktchena, Danchura, Mohwa
0363	*Dipterocarpus bourdilloni*	Karanjili, Charatta angeli
0364	*Dipterocarpus gracilis (Old)*	
0365	*Dipterocarpus indicus*	Kalapayin, Vellanini, Kalpaini,Kaipad
0366	*Dipterocarpus macrocarpus/ Pterocarpus macrocarpus*	Hollong
0367	*Dipterocarpus* sp.	
0368	*Dipterocarpus tuberculatus*	Medsingh
0369	*Dipterocarpus turbinatus*	Garjan
0370	*Dolichandrone crispa*	Godmurgi
0371	*Dolichandrone falcate*	Metarsingh, Medhasingi waddi
0372	*Drimycarpus recemosus*	
0373	*Drypetes lancifolia*	Haro
0374	*Duabanga grandiflora*	Khakan, Mau, Lampate
0375	*Dysoxylum beddomei*	Adanthei
0376	*Dysoxylum binectariferum*	Rata, Bandardima
0377	*Dysoxylum alliarium/Dysoxylum hamiltonii*	Gendhaki poma, Rannipoma

Species Code	Botanical Name	Common/Local Names
0378	*Dysoxylum malabaricum*	Agie, Vella
0379	*Dysoxylum sp.*	Lahsune
0380	*Daphniphyllum glaucescens*	
0381	*Daphniphyllum neilgherrense*	Mir kakke
0382	*Drypetes wightii/Hemicylia wightii*	
0383	*Desmos chinensis*	Unona discolor
0384	*Desmodium triquetrum*	
0385	*Dypsis lutescens*	
0386	*Dendrophthoe falcato*	
0387		
0388		
0389		
0390	*Echinocarpus dasycarpus(Old)/ Sloanea dasycarpa (also in 1102)*	Gobra,Seta,Binder
0391	*Ehretia acuminata*	Gaul
0392	*Ehretia laevis*	Chamror, Khoba, Datrang
0393	*Eugenia arnottiana*	Naval, Ayri
0394	*Elaeagnus kologa*	Wild olive tree
0395	*Elaeagnus umbellata*	Giwain, Giwai
0396	*Elaeocarpus cuneatus*	Bigadamara
0397	*Elaeocarpus lanceifolius*	
0398	*Elaeocarpus munroii*	Narebekki, Kalbikki, Badaga
0399	*Elaeocarpus oblongus*	Analthari, Bikki maram
0400	*Elaeocarpus rugosus*	Panmaku
0401	*Elaeocarpus serratus*	Athkusye, Athakunge
0402	*Elaeocarpus sp.*	
0403	Elaeocarpus sphaericus *(Elaeocarpus ganitrus)*	Rudharakshi
0404	*Elaeocarpus tuberculatus*	Magara, Kodavasi, Lampathi
0405	*Elaeocarpus varunua*	
0406	*Cassine glauca/Elaeodendron glaucum/albens*	Jamrasi, Kalmukho, Dhebri, Loonia, Sauri, Neridu
0407	*Elaeodendron paniculata/ Cassine paniculata*	Purali
0408	*Elaeodendron roxburghii*	Mirandu,Padrium,Bakra,Jamrassi,Janva
0409	*Alangium lamarckii (also in 0048)*	
0410	*Emblica officinalis/ Phyllanthus emblica*	Amla, Aonla, Amlaki, Nellimaram, Nelli, Amloki
0411	*Endospermum chinense (Old) Endospermum malaccense*	Bakota, Phulgamani, Tarua Bakola, Halundrahakj, Handospoka
0412		Godhmohinia, Mohwia
0413	*Engelhardtia spicata/integra/ Engelhardtia colebrookiana*	Mewa, Mauwa
0414	*Enterolobium saman*	Raintree

Species Code	Botanical Name	Common/Local Names
0415	*Erinocarpus nimmoanus/nimmoni*	Andari-Bendi
0416	*Eriobotrya bengalensis*	
0417	*Eriobotrya petiolata*	Maya
0418	*Erioglossum rubiginosa*	
0419	*Eriolaena candollei*	
0420	*Eriolaena hookeriana*	Guakasi, Narbothu
0421	*Eriolaena quinquel ocularis*	
0422	*Eriolaena spectabilis*	
0423	*Erythrina sp.*	Mandan,Pariwela
0424	*Erythrina stricta*	Ilalivane, Keechakenanara
0425	*Erythrina suberosa*	Pangra, Gararo, Mander, Dhaul, Dhak
0426	*Erythrina variegata* *(Old) Erythrina indica*	Pangra, Pangaro, Pengaro, Mendo
0427	*Erythroxylun monogynum*	Deodari,Shimara
0428	*Eucalyptus citriodora*	Nilgiri
0429	*Eucalyptus globulus*	Blue gum
0430	*Eucalyptus grandis*	Nilgiri
0431	*Eucalyptus hybrid*	Nilgiri
0432	*Eucalyptus rostrata*	Red gum
0433	*Eucalyptus sp.*	Nilgiri,Thadya,Thallawara
0434	*Eucalyptus tereticornis*	Nilgiri hybrid
0435	*Sygygium alternifolia/Eugenia alternifolia*	Manchi, Moyadi, Mogi, Mege
0436	*Eugenia corymbosa*	Nyara
0437	*Syzygium caryophyllatum/ Eugenia caryophyllatum*	Kunti-Neeral
0438	*Syzygium syzygioides/Eugenia cymosa (also in 1143)*	Jam, Tita, Nerudu
0439	*Syzygium formusum/Eugenia formosa*	Ambake
0440	*Syzygium venosum/Eugenia frondosa*	Dhubka
0441	*Syzygium gardener/Eugenia gardneri (also in 1137)*	Maleherlu
0442	*Eugenia grandis*	Jia
0443	*Syzygiumhemisphericum/ Eugenia hemispherica*	Jabbalae
0444	*Syzygium leatum/Eugenia laeta*	Madle
0445	*Syzygiumfamilnadensis/ Eugenia montana*	Poriyil
0446	*Syzygiummundagam/Eugenia mundagam*	Kattasamba, Mudagam
0447	*Eugenia praecox* *(Old) Jambosa praecox*	Bogi-jaruk
0448	*Eugenia sp.*	Nerala, naga, javal, Niralu

Species Code	Botanical Name	Common/Local Names
0449	*Syzygium zeylanicum/Eugenia zeylanica (also in 1145)*	Meerongi, Pitkuli, Bhodas
0450	*Euonymus dichotomus*	Kenkutle
0451	*Enamymus fimbriatus/ Euonymus lacerus*	Pinna, Dhyar
0452	*Euonymus pendulus*	Katha, Konkon, Katli, Kapkan
0453	*Euphorbia antiquorum*	Bonthekalli, Mundugalli
0454	*Euphorbia royleana*	Thoar
0455	*Euphorbia sp.*	Sil
0456	*Euphoria longana (also in 0848)*	Kattasamba, Mudagam, Kana, Kindali, Kendale Chakotta, Sannale, Koomathi, Bonlicha
0457	*Eurya japonica*	Jhingri
0458	*Tetradium fraxinifolium/Evodia fraxinifolis*	
0459	*Melicope lunu-ankenda/Euodia lunu-ankenda/Evodia roxburghiana*	Kambli, Chattavamara
0460	*Tetradium glabrifolium/Evodia meliaefolia*	Khanakpa
0461	*Evodia sp.*	Kannlei, Dapper, Kattashambagan
0462	*Excoecaria agallocha*	Tayaw, Genwa
0463	*Eriodendron anfractuosum/Bombax pentandrum/Ceiba pentandra*	
0464	*Euonymus indicus*	
0465	*Eclipta prostrata*	
0466	*Enterolobiuum cyclocarpum*	
0467	*Euphorbia tirucalli*	
0468	*Euphorbia umbellata*	
0469		
0470		
0471		
0472		
0473	*Zanthoxylum retsa /Fagara budrunga (also in 1285)*	Bojrong, Bojorani
0474	*Limonia acidissima/Feronia elephantum(also in 0705)*	Kaweet, Kaitha
0475	*Feronia limonia*	Balnvalgida
0476	*Ficus asperrima*	Gargatti, Kharwatti
0477	*Ficus benghalensis*	Figs, Wad,Bargad, Alamaram
0478	*Ficus callosa*	Nirvala
0479	*Ficus carica*	Common fig, Dumur
0480	*Ficus semicordata (Ficus cunia) (also in 0487)*	Jog dumur
0481	*Ficus drupacea* *(Ficus mysorensis)*	Genimere, Colicare

Species Code	Botanical Name	Common/Local Names
0482	*Ficus elastica*	Ved, Vadlo
0483	*Ficus hispida*	Khakhri, Pipri, Tel, Umerdo, Kharodi
0484	*Ficus nervosa*	Khaipan, Kharipan
0485	*Ficus rticula* *(Ficus glomerata)*	Atti, Rumdi, Atthi, Gular, Umrao
0486	*Ficus religiosa*	Pipal, Pipli, Papada, Pripari, Ragi, Pimpal, Arasa Maram
0487	*Ficus semicordata(also in 0480)*	
0488	*Ficus sp.*	Gular, Anjar, Aumbar, Umerao, Bad, Kheura, Khomnia, Budita, Gaujine, Tungla, Bargad, Akhar, Pair,Atlla,Gani
0489	*Ficus tsiela*	Bilibasari
0490		
0491	*Ficus virens* *(Ficus infectoria)*	Basarimare, Karibasari,Barri
0492	*Filicium decipiens*	Niroli, Valmurricha, Irim-birakki
0493	*Firmiana colorata*	Phirphire
0494	*Flacourtia jangomas (Flacourtia cataphracta)*	Vayankarei charalu, Vayoenkatha thalira, Kanaji
0495	*Flacourtia indica/* *Flacourtia ramontchi*	Kangu, Kakai
0496	*Flacourtia montana*	Sompi, Bensapige, Gudda, Champhar
0497	*Flacourtia sp.*	Kangukandai
0498	*Flueggia mirocarpa*	Huligida
0499	*Fraxinus floribunda*	Angan,Angou,Dakkuri,Tahasi
0500	*Fraxinus sp.*	Ash, Angu
0501	*Ficus mollis/tomentosa*	
0502	*Ficus benjamina*	
0503		
0504		
0505		
0506		
0507		
0508		
0509		
0510		
0511	*Caesalpinia pulcherrima (also in 0188)*	Radhachura
0512	*Gamblea ciliata*	
0513	*Gaultheria fragrantissima*	Winter green oil tree, Moolai
0514	*Garcinia gummi-gutta/Garcinia cambogia*	Kudgelmurga
0515	*Garcinia cowa*	

Species Code	Botanical Name	Common/Local Names
0516	*Garcinia pedunculata*	Bonthekora
0517	*Garcinia indica*	Muriyia, Kokam, Bhirand,Kokum
0518	*Garcinia rticulat/Garcinia morella*	Arsingurge
0519	*Garcinia sp.*	Ponpuli,Pullmeram(kudo)
0520	*Garcinia spicata*	Haraluguriga, Kenjeraka, Kokokattai
0521	*Garcinia pictoria*	Kevanhuli, Garigehuli, Devangi
0522	*Garcinia xanthochymus*	Devanhuli, Gari, Genuli, Devangi
0523	*Gardenia optusa*	Mallanga
0524	*Gardenia resinifera* *(Old) Gardenia turgida/Lucida/ latifolia/gummifera*	Papada, Damburuda, Karinga, Dikamali
0525	*Gardenia sp.*	Thenele
0526	*Garuga pinnata*	Kekad, Thutmule, Titmira, Kajikara, Kharpat
0527	*Gironniera reticulata*	Chuchi
0528	*Gironniera sp.*	
0529	*Gironniera subaequalis*	
0530	*Givotia rotteriformis*	Punki, Panki, Tellapoliki
0531	*Glochidion acuminatum*	Nirvetti
0532	*Glochidion neilgherrense*	Salle
0533	*Glochidion seylanioum*	Bends, Nirsalle, Sevregiada
0534	*Glochidion sp.*	
0535	*Glochidion velutinum*	Kathmalu, Kathnawha, Salai
0536	*Gluta travancorica*	Sheugurni
0537	*Glycosmis mauritiana*	Mavikyan, Kedumarela
0538	*Glycosmis pentaphylla*	Kodumaralugida
0539	*Gmelina arborea*	Siwana, Gumari, Sivan, Gambhar, Kumhar, Khamhal, Gumurteak, Kuli, Kumbil
0540	*Gordonia obtusa*	
0541	*Grevillea robusta*	Silver oak
0542	*Grewia abutilifolia*	
0543	*Grewia asiatica*	Phalsa
0544	*Grewia eriocarpa/Grewia elastica*	Dhaman
0545	*Grewia elatostenioides*	
0546	*Grewia flavescens*	Guthu
0547	*Grewia serrulata/Grewia laevigata*	Achinaru
0548	*Grewia nervosa/Grewia microcos*	Pickla
0549	*Grewia oppositifolia*	Bhimal, Behul
0550	*Grewia daminea/Grewia salvifolia*	Ulli
0551	*Grewia sp.*	Diamiul, Gharbhimti, Pharasai
0552	*Grewia tiliifolia*	Dhaman, Tada, Thadachiee, Chadichi,Chedelie
0553	*Guazuma tomentosa*	Thainpuchi, Rudraksha

Species Code	Botanical Name	Common/Local Names
0554	*Gymnosporia acuminata*	
0555	*Gymnosporia montana*	Tondarsai, Tandarsi
0556	*Gymnosporia royleana*	Guala Darim
0557	*Gymnosporia rufa*	
0558	*Gynocardia odorata*	Bandre, Ramphal
0559	*Gyrocarpus jacquini* *(Old) Gyrocarpus americanus*	Kumar penki
0560	*Gyrocarpus odorata*	Dalmugra
0561	*Gliricidia sepium/ maculata*	Glabsa
0562	*Garcinia mangostana*	
0563	*Garcinia talbotii*	
0564	*Glochilion ellipticum*	
0565	*Goniothalamus cardiopetalus*	
0566		
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0570		
0571	*Haplophragma adenophyllum*	Palthan, Chonapaini,Kath sagon
0572	*Hardwickia binata*	Anjan, Vereppa
0573	*Hardwickia pinnata*	Madeyan, Sampirani, Kolavu nei, Kottei, Uram, Surali, Kiyavu, Kolla, Chittila
0574	*Harpullia cupanioides*	Madakku
0575		
0576	*Helicteres isora*	Maror Phal,Kapasi
0577	*Hemicyclia elata*	Velthachoote
0578	*Hemicyclia venusta*	Vellelambu, Palla, Kanni, Vella kasavu
0579	*Heritiera attenuata*	Boroi, Dhaman
0580	*Heritiera littoralis/Heritiera fomes*	Sundri
0581	*Heritiera macrophylla*	
~~0582~~	~~*Hernada reparia*~~	misc
0583	*Heteropanax fragrans*	Totila
0584	*Trichilia cannaroides/Heynea trijuga*	Banritha
0585	*Hibiscus furcatus*	Huligowri, Huligabari
0586	*Hibiscus macrophyllus*	Chama
0587	*Hibiscus rosasinensis*	Jaba,Gurhal
0588	*Hibiscus tiliaceus*	Safed chilka
0589	*Hiptage benghalensis* *(Hiptage madablota)*	Madvilata, Pikigisam
0590	*Holarrhena pubescens/ Holarrhena antidysenterica*	Inderraja, Dudkhira, Kudi, Inderajav, Kuda, Kurchi, Isteripala,Kurra
0591	*Holigarna arnottiana*	Cheracheru, Malegeru,Toturinji
0592	*Holigarna beddomei*	Palvidinyax
0593	*Holigarna grahamii*	Genu

Species Code	Botanical Name	Common/Local Names
0594	*Holoptelea integrifolia*	Kaneji, Pungo, Aval, Chiebil, Nambinara, Wavala,Ayam,Tabani,Tabasi
0595	*Homalium tomentosum*	
0596	*Homalium zeylanicum*	Manthalaa-mukki, Wavala
0597	*Hopea glabra*	
0598	*Hopea odorata*	Pongu, Thingon
0599	*Hopea parviflora*	Thanbagam, Irupu, Kambagam
0600	*Hopea racophloea*	Neducalipenga, Naikambagam
0601	*Hopea species.*	
0602	*Hopea utilis/longifolia*	
0603	*Hopea wightiana*	Nai-irulu, Kalhoni
0604	*Hevea brasiliensis*	Rubber tree
0605	*Hovenia dulcis*	Bangi
0606	*Humboldtia brunonis*	Hasiga
0607	*Humboldtia sp.*	Koratthi, Kunthani
0608	*Hydnocarpus alpina*	
0609	*Hydnocarpus kurzii/ Taraktogenos kurzii*	Chalmugra
0610	*Hydnocarpus sp.*	Matrupa, Banrang
0611	*Hydnocarpus laurifolia/ Hydnocarpus wightiana*	Nireetia, Nirveti, Mirolhakai, Kawti
0612	*Hymenodictyon excelsum*	Match, Kavai, Kadia, Matrupa, Mad, Banrang
0613	*Hymenodictyon flaccidum*	
0614	*Hymenodictyon obovatum*	Gendale, Bogi, Hirename, Phose, Kurwei, Sirid
0615	*Hippophae salicifolia*	Amej, Chook
0616	*Heracleum wallichii*	Chimpirs
0617	*Haematoxylon campechianum*	Patangi
0618	*Hyophorbe lagenicaulis*	Bottle palm
0619	*Helicteres minor*	
0620	*Hymenodictyon orixense*	
0621	*Hamelia patens*	
0622		
0623		
0624		
0625		
0626	*Ilex denticulate*	Malam thidappu
0627	*Ilex excelsa*	Tumari
0628	*Ilex fragilis*	
0629	*Ilex umbellulata/Ilex godjam*	Hatikirepa
0630	*Ilex sp.*	Kumkum, Gaib, Kandai, Kanderu, Kandek
0631	*Ilex wightiana*	Herale, Hurula

Species Code	Botanical Name	Common/Local Names
0632	*Illicium griffithii*	Lissi
0633	*Pithecellobium dulce/Inga dulcis (also in 0932)*	Vilayari, Humse, Jangle, Jilebee
0634	*Isonandra polyantha*	
0635	*Ixonanthes khasiana*	
0636	*Ixora arborea/Ixora parviflora*	Lakhandi, Telkurma, Korvi, Toroh tree, Kurat
0637	*Ixora brachiata*	Gurani, Gorbale (small tree)
0638	*Ixora calycina*	
0639	*Ixora nigricans*	Lokhandi, Yelgare
0640	*Ixora nontoniana*	
0641	*Isonandra perrottentiana*	
0642	*Ixora species*	
0643		
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0649		
0650	*Saraca asoca*	Asoka
0651	*Juglans regia*	Akhrot, Akhor
0652	*Juniperus macropoda*	Dhimp, Dhup
0653	*Juniperus pseudosabina*	Black juniper
0654	*Juniperus recurva*	Small juniper
0655	*Juniperus sp.*	Guggal
0656	*Jurinea species*	
0657	*Jacaranda mimosifolia*	Jacaranda
0658	*Jatropha gossypiifolia*	
0659		
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0666		
0667	*Kayea assamica*	Sixnahar
0668	*Kayea floribunda*	Karal
0669	*Kigelia pinnata*	
~~*0670*~~	~~*Kingiodendron binata*~~	~~Shurali, Kiyavu~~
0671	*Kingiodendron pinnatum/ Hardwickia pinnata*	Piney, Shurali
0672	*Knema attenuata*	Hedmengan, Buktamsra

Species Code	Botanical Name	Common/Local Names
0673	*Knema glaucescens*	
0674	*Korthalsia laciniosa*	Kadpla
0675	*Kurrimia bipartita*	Kadapla, Konnai
0676	*Kurrimia indica* *(Old) Kurrimia laipartita*	Kadapla
0677	*Kydia calycina*	Baranga, Banakapsia, Pichela, Pula, Bhindi, Waring, Petari, Warang
0678	*Kandelia candel*	(mangrove spp)
0679		
0680		
0681		
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0683		
0684		
0685		
0686		
0687		
0688	*Lagerstroemia hypoleuca*	Jalut, Pyman
0689	*Lagerstroemia indica*	Gulbahar
0690	*Lagerstroemia microcarpa/* *Lagerstroemia lanceolata*	Ventheku, Vellilavap, Benteak, Nana,Vendek
0691	*Lagerstroemia parviflora*	Lendia, Kaka, Padia, Jarup, Bondaro, Supazo, Dhauri, Sidha, Pyinma, Chinangi, Londi, Bongda
0692	*Lagerstroemia reginae/* *Lagerstroemia flosreginae/* *Lagerstroemia spaciosa*	Ajhar, Jaruch, Nirben teak, Manimaruthu, Nirmeruthu, Taman, Bondara
0693	*Lagerstroemia sp.*	
0694	*Lannea coromandelica/Lannea grandis, Odina wodier*	Mode, Modal, Jhingan, Godal, Nabbee, Moi, Shamat, Godda, Gompena
0695	*Reinwardtiodendron anamalaiense/Lansium anamalayanum/ Aglaia anamallayanum*	Chodimare, Chingfwari
0696	*Laportea crenulata*	Morange
0697	*Larix griffithii*	Jalut
0698	*Lasiosiphon eriocephalus*	Mukkan daka
0699	*Lasiosiphon sp.*	Mukardel, Mukadala
0700	Leea indica *(Leea sambucina)*	Nurche, Jini, Midichi
0701	*Leucaena leucocephala*	Subabul
0702	*Leucosceptrum canum*	Churpis
0703	*Licuala peltata*	Salaipatti
0704	*Ligustrum neilgherrense*	Chantrike
0705	*Limonia acidissima*	Beli

Species Code	Botanical Name	Common/Local Names
0706	*Limonia sp.*	
0707	*Lindera assamica*	Sanu pahale
0708	*Lindera heterophylla*	Lekhpipli
0709	*Lindera neesiana*	Siltimur
0710	*Lindera pulcherrima*	Sinkoli
0711	*Ligustrum robustum*	Keri,Banpatra
0712	*Linociera malabarica*	Akkarkal
0713	*Lepisanthes tetraphylla*	Jhingan
0714	*Litchi chinensis*	Lichu, Lichi
0715	*Lithocarpus elegans/ Lithocarpus spicata(also in 1021)*	
0716	*Lithocarpus pachyphylla(also in 1016)*	Singrekatus
0717		
0718	*Litsea cubeba/Litsea citrata*	
0719	*Litsea grandis*	
0720	*Litsea laeta*	
0721	*Litsea monopetala/ Litsea polyantha*	Huoria
0722	*Litsea doshia/Litsea oblonga*	
0723	*Litsea panamonja*	Buichapa
0724	*Litsea salicifolia*	
0725	*Litsea shasyana*	
0726	*Litsea sp.*	Lakri, Narkh, Bailara, Shurur, Lampatia, Maida
0727	*Litsea stocksii*	Litsae
0728	*Litsea floribunda/Litsea wightiana*	Litsae
0729	*Litsea zeylanica*	Messi, Sudagenasu
0730	*Lonicera quinquelocularis*	
0731	*Lophopetalum wightianum/ Lophopetalum fimbriatum (also in 0732)*	Sutrang
0732	*Lophopetalum wightianum (also in 0731)*	Venkotha, Venkottai, Palmani, Popsa
0733	*Lyonia ovalifolia/Pieris ovalifolia*	Ainyar, Ayar
0734	*Lumnitzera racemosa*	(mangrove spp)
0735	*Litsea ghatica*	
0736	*Lawsonia inermis/ lawsonia alba*	
0737	*Linociera intermedia*	
0738		
0739	*Laguncularia Racemosa*	
0740	*Lepisanthes species*	
0741		
0742		
0743		

Species Code	Botanical Name	Common/Local Names
0744	*Macaranga denticulata*	Jageru, Bhura
0745	*Macaranga indica*	Papri,Malkot
0746	*Macaranga peltata*	Vetta,Bette Kannl
0747	*Macaranga pustulata*	
0748	*Macaranga sp.*	Malata
0749	*Persea frutifera/Machilus edulis*	
0750	*Persea gamblei/Machilus gamblei*	Shum
0751	*Persea gammieana /Machilus gammieana*	Chupli kawla
0752	*Persea globularia/Machilus globosa*	Kanta
0753	*Persea macrantha/Machilus macrantha*	Uravu, Gulumb
0754	*Persea odoratissima/Machilus odoratissima*	Latikawala
0755	*Persea minutiflora/Machilus parviflora*	
0756	*Machilus sp.*	Kaula, Sunkaula
0757	*Persea villosa/Machilus villosa*	
0758	*Macropanax oreophilum*	
0759	*Madhuca latifolia/M. indica (Old) Bassia latifolia(also in 0178)*	Mohwa, Lappa, Mahudo,Ippe
0760	*Magnolia campbellii*	Choge champ
0761	*Magnolia pterocarpa*	Patpate
0762	*Magnolia sp.*	Sapa
0763	*Mallotus albus*	Morolia
0764	*Mallotus khasianus*	
0765	*Mallotus philippensis*	Rehini, Sindhuri, Ruina, Rolli, Kamela, Kaplo, Kalujhade, Kanku, Kumkum, Kamalagundi, Shendri, Kukkum, Kabli, Anato
0766	*Mammea suriga (Ochrocarpus longifolius)(also in 0869)*	Surigi, Suragi
0767	*Mangifera andamanica*	Jangliam
0768	*Mangifera indica*	Am, Amb, Ambo, Mavu, Moru, Mamidi,Magani
0769	*Mangifera sylvatica*	Banam, Lakshmi
0770	*Manihot esculenta*	
0771	*Manihot glaziovii*	
0772	*Manihot utilissima*	Safeda, ~~Chiku~~, Cassava
0773	*Manilkara zzapota/Manilkara achras*	Khirni, Rayan
0774	*Manilkara hexandra/ Mimusops hexandra*	
0775	*Manilkara littoralis*	Andaman bullet wood
0776	*Manilkara roxburghiana (Mimusops roxburghiana)*	Gunolale, Ranjal

Species Code	Botanical Name	Common/Local Names
0777	*Maniltoa polyandra (also in 0321)*	
0778	*Mansonia dipake*	
0779	*Mappia foetida*	Arali choral,Pinari
0780	*Mastixia arborea*	Kumbalamara gulle
0781	*Mastixia pentandra*	Velladambu, Nir, Kuranthu
0782	*Maytenus emarginata*	Kankera,Kapoor
0783	*Melanorrhoea usitata*	Mansonia
0784	*Melia azadirach*	Bijainn, Baknia, Motilimdo, Betain, Bakamlimdo
0785		
0786	*Melia dubia/ Melia composita*	Bucavbevu
0787	*Melia sp.*	Vishapari
0788	*Meliosma arnottiana*	Kusavithagari
0789	*Meliosma pinnata*	
0790	*Meliosma simplicifolia*	
0791	*Meliosma sp*	Gwel, Busha, Goi, Gex
0792	*Memecylon angustifolium*	Mathu, Kavumara
0793	*Memecylon edule/umbellatum*	Anjani
0794	*Mentha aruensis*	Mentha
0795	*Mesua ferrea*	Negeshwar, Nangu, Peri, Vellathappala, Nahar, Atha, Gangan, Nagchapha,Vainav
0796	*Michelia baillonii(also in 1159)*	
0797	*Michelia champaca*	Champa, Titasopa, Bampige,Sembage
0798	*Michelia doltsopa/ Michelia excelsa*	
0799	*Michelia lanuginosa*	Purrochamp
0800	*Michelia leailleni*	
0801	*Michelia glabra/Michelia montana*	Sundi
0802	*Michelia nilagirica*	Kadu sampige
0803	*Michelia parviflora*	
0804	*Michelia sp.*	Champ, Garari, Kanjira
0805		
0806	*Miliusa sp.*	Jangli, Segwan
0807	*Miliusa tomentosa/ Saccopetalum tomentosum(also in 1058)*	Kari, Umbh
0808	*Miliusa velutina*	Domsal,Guasal
0809	*Miliusa wightiana*	
0810	*Millingtonia hortensis*	Akashneem, Akash limdo
0811	*Mimusops elengi*	Bakul, Yelande, Wawli
0812	*Mimusops roxburghiana*	Kanapalei
0813	*Mimusops sp.*	Dhekul, Khaja
0814	*Mistixia arborea*	Kunbalnara, Gulle
0815	*Mitragyna parvifolia/Stephegyne parvifolia (also in 1111)*	Mundi, Phaldu, Kaiz, Battaganam, Kalamb, Panikadam

Species Code	Botanical Name	Common/Local Names
0816	*Mansonia sp.*	Badam
0817	*Moringa oleifera/Moringa pteryogosperma*	Sohnigna, Sainjana, Shivga
0818	*Morinda tinctoria/tomentosa*	Aal, Ali, Aledi, Achu, Togarmoghli
0819	*Moringa sp.*	Sohjna, Sajna, Munga,Saragua
0820	*Morus alba*	Tori,Tuntri,Tont
0821	*Morus laevigata*	Bola
0822	*Morus sp.*	Tut, Kimu, Shahtoot
0823	~~*Munaya*~~ *Vernonia amygdalina*	
0824	*Murraya paniculata*	Bilgar,Marchula,Kamini
0825	*Murraya koenigii*	Gandhela,Keth Nim
0826	*Myrica esculenta/ Myrica nagi*	Kaphal
0827	*Myristica andamanica*	
0828	*Myristica attenuata*	Paktamara
0829	*Myristica beddomei/ Myristica dactyloides*	Hed-Patre, Zajikui
0830	*Myristica canarica*	Pindi
0831	*Myristica laurifolia/ Myristica linifolia*	Kathi, Jai, Juthi, Choremara, Ramgote, Katijijaji
0832	*Myristica magnifica*	Ramanadike
0833	*Myristica malabarica*	Bempatre, Kadjaiphal, Ranjaiphal
0834	*Myristica sp.*	Jaiphal
0835	*Memecylon malabaricum*	Bandke
0836	*Muntingia calabura*	
0837	*Memecylon talbotianum*	
0838	*Meyna spinosa*	
0839	*Myristica fragrans/aromatic/moschala/officinalis*	
0840	*Mitragyna tubulosa*	
0841	*Markhamia platycalyx*	
0842	*Memecylon species*	
0843	*Moringa concanensis*	
0844	*Maba buxifolia (Diaspyros ferrea)*	
0845		
0846	*Neonauclea griffithii/ Nauclea griffithii*	Jeinkola
0847	*Neonauclea gageana/Nauclea gageana*	Teiukala
0848	*Nephelium longana (old)/ Euphoria longana/ Dimocarpus longan (also in 0456)*	Kattasamba, Mudagam, Kana, Kindali, Kendale Chakotta, Sannale, Koomathi, Bonlicha
0849	*Nephelium stipulaceum*	Malekoomathi
0850	*Nerium indicum (Oleander)*	Karabi, Kaner,Asubora
0851	*Nothapodytes foetida*	Peenari, Helari,Pineri
0852	*Nothopegia colebrookiana*	Ambari

Species Code	Botanical Name	Common/Local Names
0853	*Nyctanthes arbortristis*	Harshingar, Kari
0854	*Nyssa javanica* *(Old) Nyssa sessiliflora*	Goharisapa
0855	*Nardostachys jatamansi*	
0856	*Naringi crenulata/Limonia crenulata*	
0857	*Nephelium lappacacum*	
0858	*Nothopegia / Glycycarpus racemosus*	
0859		
0860		
0861		
0862		
0863		
0864		
0865	*Ochna squarrosa* *(Old) Ochna obtusata*	Nadli
0866	*Ochna wightiana*	Silimbi, Katkurai
0867	*Ochroma lagopus*	
0868	*Ochroma pyramidale*	Balsa
0869	*Ochrocarpus longifolius(also in 0766)*	Surangi
0870	*Ochrocarpus siamensis*	
0871	*Olea cuspidata*	Bairbanj, Kau
0872	*Olea dioica*	Akksale, Madle, Parjambhul, Lauki
0873	*Olea ferruginea*	Olive
0874	*Olea glandulifera*	Garura,Galda,Gair
0875	*Operculina turpethum*	Bilialutigadda, Trupeth
0876	*Ormosia travancorica*	Manchadi,Chlwaiaial
0877	*Oroxylum indicum*	Tarlu, Tantia, Dumpii, Jaimangal, Dingorri, Teta, Telvo, Sona, Pharkot
0878	*Osmanthus fragrans*	Silang, Silangi
0879	*Ostodes paniculata*	Bepari
0880	*Ostodes zeylanica*	Balinga
0881	*Ougeinia dalbergioides*	Tinsa, Sandhan, Tenaph, Tiwas, Dargu
0882	*Oxytenanthera monostigma*	Garate, Choua
0883	*Dactylorhiza hatagirea/Orchis latifolia*	
0884		
0885		
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0889		
0890	*Phonix reclinata*	
0891	*Paramignya monophylla*	
0892	*Phyllanthus reticulatus*	
0893	*Pajanelia longifolia*	Jingin

Species Code	Botanical Name	Common/Local Names
0894	*Pajanelia rheedii*	Jingan, Ohirw
0895	*Palaquium ellepticum*	Pala, Cheppala, Pacherthi, Pali
0896	*Palaquium polyanthum*	Kurta
0897	*Elaeis guineensis*	*Palm oil tree*
0898	*Pandanus furcatus*	Mundige, Gubbikedini
0899	*Pandanus tictorius* *(Old) Pandanus odoratissimus*	Sathepu
0900	*Parashorea stellata*	
0901	*Parinarium indicum*	
0902	*Parkia joyrica/ roxburghii*	Manipurmuroh
0903	*Parkinsonia aculeata*	Kodanchi
0904	*Pavetta indica*	Pavate, Pappadi, Pavattei
0905	*Pemphis acidula*	Kiri
0906	*Pentace burmanica*	
0907	*Pentace suavis*	
0908	*Perishia insignis*	Red dhup
0909	*Persea owdenii* *(Old) Alseodaphne owdenii*	Tulsi sundi
0910	*Pittosporum ferrugineum*	
0911	*Phoebe attenuata*	Nikahi
0912	*Phoebe cooperiana*	Makahi
0913	*Phoebe goalparensis*	Bonsum
0914	*Phoebe hainesiana*	
0915	*Phoebe lanceolata*	Tumri, Bhadrai, Bhader, Kekra, Suankaula, Bagdo
0916	*Phoebe paniculata*	
0917	*Phoebe sp.*	
0918	*Phoenix humilis*	Shawri,Khajoor,Khazira
0919	*Phoenix sylvestris*	Betha, Khajur
0920	*Phoenix tarnifera*	Kirichilu
0921	*Picea smithiana(also in 0003)*	Spruce
0922	*Picea spinulosa*	Spruce
0923	*Lyonia villosa/ Pieris villosa*	Lek, Augeri
0924	*Pinanga dicksonii*	Jonjarige
0925	*Phoenix paludosa*	Hetal
0926	*Pinus wallichiana/excelsa*	Kail
0927	*Pinus gerardiana*	Chilgoza
0928	*Pinus kesiya/insularis*	Pine, Dingsa, Saral
0929	*Pinus roxburghii/ Pinus longifolia*	Chir
0930	*Pistacia integerrima*	Kakkar, Kakroi, Kakra
0931	*Pithecellobium bigeminum/ Archidendron monadelphum*	Muthakopappen
0932	*Pithecellobium dulce(also in 0633)*	Seemehunse,Jugal,Jalatri
0933	*Pittosporum floribundum/*	Dadgoli, Tamatta

Species Code	Botanical Name	Common/Local Names
	Pittosporum napaulense	
0934	*Planchonellia longipetiolata/ Sideroxylon longipetiolatium (also in 1100)*	Lambapatti, Lambapretti
0935	*Planchonia andamanica*	Red bambhury
0936	*Plumeria rubra*	Devakekigal
0937	*Podocarpus latifolia/wallichianus*	Narambali
0938	*Podocarpus neriifolia*	Jinari, Jhitamin
0939	*Poeciloneuron indicum*	Ballagi
0940	*Poeciloneuron pauciflorum*	Puttangkolta, Puli vayila
0941	*Pogostemon pathchouli*	Patchouli
0942	*Poinciana elata*	Nirangi, Padenarayam, Sukeswar, Shakesulta
0943	*Polyalthia cerasoides*	Kala kasAI, Chilkaduddi
0944	*Polyalthia coffeoides*	Maragowri
0945	*Polyalthia fragrans*	Nedunar, Kakechapaya
0946	*Polyalthia longifolia*	Chorwnna, Arunna, Assotham
0947	*Polyalthia sp.*	Chami, Kohori
0948	*Pometia pinnata/tomentosa*	Jhit, Kandam
0949	*Pongamia pinnata* *(Old) Pongamia glabra/derris indica*	Karanji, Kauge, Polangunge,Panga,Honga
0950	*Populus ciliata*	Poplar, Safeda, Paharipipal,Vanu
0951	*Populus sp.*	Bonpipal, Godhpipal
0952	*Pouteria grandifolia*	
0953	*Premna bengalensis*	Gohra, Pingta, Guze, Pakirhar
0954	*Premna latifolia*	Gunaru,Munnamera,Bokracha,Bakar
0955	*Premna milleflora*	Silgomari
0956	*Premna sp.*	Bakarcha
0957	*Premna tomentosa*	
0958	*Prosopis cineraria/ Prosopis spicigera*	Hingota,Jand,Sondad,Jant
0959	*Prosopis juliflora*	Bengali babul, Mulmaram, SeemaiKaruvelam
0960	*Prosopis sp.*	Pahari kikar
0961		
0962	*Commiphora eticul / Protium caudatum*	Kondamavu
0963	*Protium serratum/ Bursera serrata(also in 0172)*	Mirtegna, Neur, Hern
0964	*Prunus communis/ varinsitia*	Pulum
0965	*Prunus cornuta* *(Old) Prunus padus*	Payyan, Jamun, Padam, Paji
0966	*Prunus domestica*	Plum
0967	*Prunus martabanica/javanica*	Lal thingam
0968	*Prunus nepaulensis*	Arupate

Species Code	Botanical Name	Common/Local Names
0969	*Prunus sp.*	Aria, Gont, Aru, Khurmani, Chiller
0970		
0971	*Pseudostachyam polymorphum*	Bajal
0972	*Psidium guajava*	Guava, Jam
0973	*Psychotria dalzellii*	Dutiyale, Fatpati
0974	*Psychotria sp.*	Ottumadikay
0975	*Pterocarpus indicus/ dalbergioides*	Pokak, Podauk
0976	*Pterocarpus marsupium*	Bija, Bijo, Bib, Bijasal, Pesur, Vengi, Honne, Damsal, Bibla, Asan
0977	*Pterocarpus santalinus*	Rakta chandan
0978	*Pterocymbium tinctorium/ Sterculia companculata*	Papita
0979	*Pterospermum acerifolium*	Kapak, Champa, Ratipalia
0980	*Pterospermum canescens*	Hathipalli
0981	*Pterospermum glabrescens/ diversifolium*	Vatta Polavu, Pambaram
0982	*Pterospermum heyneanum*	Giringa
0983	*Pterospermum lancifolium*	Bongloguri
0984	*Pterospermum reticulatum*	Mulipolovu, Tholpuli, Kora toverary, Malavuram punangke
0985	*Pterospermum rubiginosum*	Malamthodali, Chittilei, Polavo
0986	*Pterospermum sp.*	Bhatgila, Togune
0987	*Pterospermum suberifolium*	Sownamara
0988	*Pterygota alata/ Sterculia alata(also in 1112)*	
0989	*Punica granatum*	Anar, Kotla, Darum, Sarchamia, Bandurpela
0990	*Putranjiva roxburghii*	Putajan, Putranjiv
0991	*Pyrularia edulis*	Amplu
0992	*Pyrus pashia*	Kainth, Mehal
0993	*Pyrus sp.*	Galya, Mohul, Moi, Moli
0994	*Pyrus communis*	Nashpati
0995	*Pinus petula*	Pine
0996	*Prunus persica*	Aadu
0997	*Podophyllum hexandrum*	
0998	*Picrorhiza kurroa*	
0999	*Platanus orientalis*	Chinar
1000	*Pouteria campechiana*	
1001	*Persea eticulat/gratissima*	
1002	*Pittosporum dasycaulon*	
1003	*Plumeria alba*	
1004	*Quercus acutissima/ Quercus serrata*	Titonj, Moru, Moruoak
1005		
1006	*Quercus floribunda/ Quercus dilatata/*	Moru, Moru oak

Species Code	Botanical Name	Common/Local Names
	Quercus himalayana	
1007	*Quercus glauca*	Bani,Phanat
1008	*Quercus griffithii*	Ban oak, Banj
1009		
1010		
1011	*Quercus lamellosa*	Bajrant, Buk
1012	*Castanopsis lanceifolia/ Quercus lanceifolia*	Patle, Katus
1013	*Quercus lanata/Quercus lanuginosa*	
1014	*Quercus leucotrichophora/ Quercus incana*	
1015	*Quercus lineata*	Phalat, Katus
1016	*Lithocarpus pachyphylla/ Quercus pachyphylla(also in 0716)*	
1017	*Quercus semecarpifolia*	Kharsu oak
1018	*Quercus semiserrata*	Kharsu
1019		
1020	*Quercus sp.*	Oak, Philiant, Rainj, Riani
1021	*Lithocarpus elegans/Quercus spicata(also in 0715)*	Ar kanla
1022		
1023	*Parkia biglandulosa*	Earlier given 999 to be given new code on 23-2-2017
1024		
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1030		
1031		
1032	*Radermachera xylocarpa/ Stereospermum xylocarpum (also in 1120)*	Genasu
1033	*Randia dumetorum*	Phetra, Kala phetra, Gela
1034	*Randia species*	Mainphal
1035	*Randia uliginosa*	Kala phetra
1036	*Rauvolfia serpentina*	Sarpagandha, Garudapotala
1037	*Rhizophora spp.*	~~Khair~~
1038	*Rhododendron arboreum*	Burans, Biirans
1039	*Rhododendron barbatum*	Lalchimal
1040	*Rhododendron falconeri*	Korlingo
1041	*Rhododendron griffithianum*	Sctochimal
1042	*Rhododendron hodgsonii*	Korlings

Species Code	Botanical Name	Common/Local Names
1043	*Rhododendron spp.*	Ghemula, Talias, Simris, Taqueaha
1044	*Rhus javanica*	
1045	*Rhus spp.*	Jung, Nizas, Tibri, Arkhol, Almora
1046	*Rhus succedanea*	Arkhol
1047	*Robinia pseudacacia*	
1048	*Rheum emodi/australe*	
1049	*Rhizophora apiculata*	Garjan (mangrove spp)
1050	*Rhizophora mucronata*	(mangrove spp)
1051	*Roystonea regia*	
1052	*Rinoria bengalensis*	
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1057		
1058	*Saccopetalum tomentosum/ Miliusa tomentosa(also in 0807)*	Ubalu
1059	*Sageraea elliptica*	Chvoi
1060	*Sageraea laurifolia*	Kanakaitha
1061	~~*Sageraea*~~ *Sageretia oppositifolia*	Gonta
1062	*Salix acmophylla*	Bed,Bisu
1063	*Salix alba*	Bhains,Willow
1064	*Salix spp.*	Bed, Bhainshara, Bashroi, Manju, Gadhbhains
1065	*Salix tetrasperma*	Bheh
1066	*Salmalia insignis (Old) Bombax insigne*	Karilavu, Pareillavu, Dumboil, Kalilavu, Pariilavu
1067	*Salvadora oleoides*	Piloo, Mithijar
1068	*Salvadora persica*	Piloo, Khanjau
1069	*Salvadora Species*	Jal, Jhal
1070	*Samanea samam*	Raintree
1071	*Santalum album*	Chandan, Santhanam, Sukhad
1072	*Sapindus attenuatus*	
1073	*Sapindus emarginatus (Old) Sapindus trifoliatus*	Ritha, Aritha, Chootokoi, Kumkuda,Soapnut
1074	*Sapindus laurifolius*	Arithi,Hantwala
1075	*Sapindus mukorossi*	Ritha/Bhilwa, Bhilam, Bhiwalo
1076	*Sapium baccatum*	Selling, Bella
1077	*Sapium eugeniaefolium*	
1078	*Sapium insigne*	Khinna, Khirna, Khimi, Hure
1079	*Sapium sebiferum*	Tarharbi,Pahari,Shisham
1080	*Sarcosperma arboreum*	Kalikath
1081	*Saurauia nepalensis*	Gogun

Species Code	Botanical Name	Common/Local Names
1082	*Saurauia pundula*	
1083	*Schima khasiana(also in 1084)*	Diengan
1084	*Schima khasiana(also in 1083)*	Makrisal
1085	*Schima wallichii*	Makrisal
1086	*Schleichera oleosa/Trijuga*	Kusum, Poova, Segade, Gosum, Katha, Ume, Koshimb, Kosam, Poovam,Gutel
1087	*Schrebera swietenioides*	Mokha, Mokho, Mokab
1088	*Scolopia crenata*	Kodelimara, Sompai, Japal, Charle
1089	*Semecarpus anacardium*	Bhilwa, Bhela, Bibi,Bibwa
1090	*Semecarpus auriculata*	Vellei charei, Man cherei, Charei
1091	*Semecarpus kurzii*	Bora bhilwa, Bibi
1092	*Semecarpus travancorica*	Kattu, Shenkottei, Punnacheri, Avukeram
1093	*Sesbania bispinosa*	Chaveri
1094	*Sesbania grandiflora*	Bakful
1095	*Shorea assamica*	Makai
1096	*Shorea robusta*	Sal
1097	*Shorea talura*	
1098	*Shorea tumbuggaia*	Congu, Tambugai, Tanbagum, Thamba guggilapukara
1099	*Sideroxylon grandifolium*	
1100	*Sideroxylon longipetiolatum /Planchonella longipetiolata (also in 0934)*	Lambapatti, Lambapretti
1101	*Sloanea assamica* *(Old) Echinocarpus assamicus*	Joba, Kori, Gingori
1102	*Sloanea dasycarpa /Echinocarpus dasycarpus (Old) (also in 0390)*	Gobra, Seta, Binder
1103	*Smilax prolifera*	Nirubetta, Karinarigaddi
1104	*Solanum nigrum*	Piloo, Pilchhi
1105	*Sonneratia apetala*	Keowara, Keoda,Solanum tarvum, Kaora
1106	*Sonneratia caseolaris* *(Old) Sonneratia acida*	Lamu
1107	*Soymida febrifuga*	Rohan, Royan, Somi
1108	*Spondias acuminata*	Ambat
1109	*Spondias axillaris*	Lapsi
1110	*Spondias pinnata/* *Spondias mangifera*	Ambra, Amra, Amar, Amria, Amora, Khati, Kadambate, Ambudi, Ambada,Akariai
1111	*Stephegyne parvifolia/ Mitragyna parviflora(also in 0815)*	Mundi, Phaldu, Kaiz, Battaganam, Kalamb, Panikadam
1112	*Sterculia asper/alata(also in 0988)*	Eairadanti, Mitle
1113	*Sterculia foetida*	Badam
1114	*Sterculia guttata*	Kithendi, Thendi, Kudare punclal, Kokar, Kolindar
1115	*Sterculia urens*	Kullu, Kadaya, Kadu, Genduli, Tapsi,

Species Code	Botanical Name	Common/Local Names
		Panerukh, Kandol, Salad
1116	*Sterculia villosa*	Udala, Vikka, Chilk, Sarda, Udal, Godgh, Dala
1117	*Stereospermum aungstifolium*	Chaipatoli
1118	*Stereospermum personatum/ colais/Chelonoides*	Padar, Paroli, Malai, Karingkhuru, Pumbhathiri, Dharmara
1119	*Stereospermum suaveolens*	Pedal, Pader, Khadsing
1120	*Stereospermum xylocarpum/ Radermachera xylocarpa(also in 1032)*	Genasu
1121	*Stranvaesia glaucescens*	Gadh meha
1122	*Strobilanthes sp.*	Gurgi, Yelegargu
1123	*Strombosia ceylanica*	Yeeya
1124	*Strombosia leprosa*	Chitramara
1125	*Strychnos nuxvomica*	Ruchala, Mushti, Kajra
1126	*Strychnos potatorum*	Nirmali
1127	*Styrax serrulatum*	
1128	*Swietenia febrifuga*	
1129	*Swietenia mahagoni*	Mohogani
1130	*Symingtonia populnea* *(Old) Bucklandia populnea*	Pipli
1131	*Symphyllia mallotiformis*	Ammemara
1132	*Symplocos crataegoides*	Lodh, Lodhra,Lodar
1133	*Symplocos laurina* *(Old) Symplocos spicata*	Kharana
1134	*Symplocos theaefolia*	Kharana
1135	*Syzygium cerasoideum* *(Old) Euginea cerasoides/ operculatus*	Piamam, Raijamuni
1136	*Syzygium cumini/jambolana* *(Old) Eugenia jambolana/Spp.*	Jamun, Jamoon, Piaman, Rajamun, Jamak, Jambudo, Jambu, Jambudi, Jambhul,Naval,Nellali
1137	*Syzygium gardneri (also in 0441)*	Bilitrupe, Boliurpa, Bilichuropa
1138	*Syzygium jambos*	Rose apple, Golap jam
1139	*Syzygium mentanum*	Ped, Neralu, Panjambul
1140	*Syzygium arnottianum*	Vhikksri
1141	*Syzygium species*	
1142	*Syzygium sonnaranangense/ Samarangense*	Jamrul
1143	*Syzygium syzygoides (also in 0438)*	
1144	*Syzygium utilis*	Hanneralu, Henneri
1145	*Syzygium zeylanicum* *(Old) Eugenia spicata (also in 0449)*	Hole, Lukki, Nekral, Hole-lucky
~~1146~~	~~*Syfroxylon wightii*~~	~~misc~~
1147	*Symplocos cochinchinensis*	Budgemi

Species Code	Botanical Name	Common/Local Names
1148	*Solanum sp.*	
1149	*Schefflera racemosa*	
1150	*Sarcocalinium longifolium/ Agrostistachys borneensis*	
1151	*Spathodea companulata*	
1152	*Scleropyrum wallichianum*	
1153	*Sesbania species*	
1154	*Sterblus asper*	
1155	*Tabernaemontana divaricata*	
1156	*Tabernaemontana heyneana (Old) Ervatamia heyneana*	Madderse, Kuda, Nab, Maddlemera
1157	*Tabernaemontana dichotoma*	Maddrasa
1158	*Magowha hodgsonii/Talauma hodgsonii*	Boramanfluri
1159	*Michelia baillonii (Talauma phellocarpa) (also in 0796)*	Khari, Kasopa, Tite sopa
1160	*Tamarindus indica*	Imali, Amli, Chinch, Ambli, Tentulii, Chinta
1161	*Tamarix rticulate/aphylla*	Farash,Pullinaram
1162	*Taxus baccata*	Thuder
1163	*Tecomella undulata*	
1164	*Tectona grandis*	Sagwan, Teak
1165	*Teinostachyum dullooa*	Palso
1166	*Trema amboinensis*	Bukin patti
1167	*Terminalia arjuna*	Arjun, Kahuwa, Sadadoe, Naiain, Sadada,Holemath
1168	*Terminalia belerica*	Behera, Behdo, Gowa, Phomra, Kamia, Tharala, Thani, Thannia, Thavale, Hela, Vehela
1169	*Terminalia bialata*	White chuglam
1170	*Terminalia catappa*	Bengal almond
1171	*Terminalia chebula*	Harra, Karaka, Har, Harar, Hirdo kadukkai, Karida, Haritaki, Karida
1172	*Terminalia citrina*	Hilka, Hirtake, Bombwe
1173	*Terminalia alata/ Terminalia tomentosa/crenulata*	Saja, Sajad, Saj, Ain, Alu, Asan, Sain, Pakasaj, Karimaradu, Thambavu,Maltri
1174	*Terminalia mannii*	Black chuglam
1175	*Terminalia myriocarpa*	Hollock, Pani
1176	*Terminalia paniculata*	Pillemaradu, Kinjal, Maruthu
1177	*Terminalia procera*	
1178	*Terminalia sp.*	Bomda
1179	*Terminalia travancorensis*	Pei kadukkai, Chule maruther, Kattakadukkai
1180	*Ternstroemia gymnanthera*	

Species Code	Botanical Name	Common/Local Names
	(Old) Ternstroemia japonica	
1181	*Tetrameles nudiflora*	Bhulu, Tulu, Chini, Kapsin, Vellacheeni, Vellapasa, Thitpok, Chandul, Siddam
1182	*Thespesia populnea/populnoides*	Bhendi, Poovarasu, Paras
1183	*Thuja compacta*	
1184	*Vepris bilocularis/Toddalia bilocularis (also in 1221)*	Mangappe
1185	*Trema orientalis*	Geta, Klargol, Kapshi
1186	*Trewia nudiflora*	Gutel, Thumri, Retari, Dhenleppedda, Perumera, Borra, Pituli, Kumbil, Bhura, Mera
1187	*Trigonostemon semperflorens*	
1188	*Tsuga dumosa* *(Old) Tsuga brunoniana*	Tamer, Hemlock, Tansen
1189	*Tupidanthus calyptratus*	Thingsaki
1190	*Turpinia cochinchinensis* *(Old) Turpinia nepalensis*	Kanali, Pambe-Vetti
1191	*Tecoma stans*	
1192	*Tabebuia argentea*	
1193	*Theobroma cacao*	New code to be given 16- 2 -2016
1194	*Tabebuia aurea*	
1195	*Tabebuia pallid*	
1196	*Tabebuia rosea*	
1197	*Tecoma species*	
1198	*Thuja orientalis*	
1199	*Thevetia nerrifolia*	
1200		
1201	*Ulmus integrifolia*	Manuk
1202	*Ulmus lancifolia*	Diengtyrsam
1203	*Ulmus parvifolia*	
1204	*Ulmus wallichiana*	Chamar, Mawa, Himri, Himalayahelm
1205	*Uvaria hamiltonii*	
1206	*Unona pannosa*	
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1215		
~~1216~~	~~*V khasiana*~~	
1217	*Vateria indica*	Payia, Paini, Velthapan,Dhupe,Dhoopa

Species Code	Botanical Name	Common/Local Names
1218	*Vatica chinensis*	Nedunatha
1219	*Vatica lanceifolia*	Morhal
1220	*Vatica roxburghiana*	Adakapaini
1221	*Vepris bilocularis(also in 1184)*	Kareagil
1222	*Viburnum acuminatum*	Yalesandi
1223	*Viburnum punctatum*	Konakaran
1224	*Viburnum species*	Asare
1225	*Vitex alata*	
1226	*Vitex altissima*	Mayilayi, Myla, Mylellu, Bulgi
1227	*Vitex heterophylla*	Panch pate
1228	*Vitex leucoxylon*	Songarbi
1229	*Vitex negundo*	Sinuer
1230	*Vitex peduncularis*	Ahoi
1231	*Vernonia arborea*	
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1241	*Walsura trifolia/Walsura piscidia*	Chokumara
1242	*Walsura trijuga*	Attemara
1243	*Webera corymbosa*	Chikoravi
1244	*Wendlandia exserta*	Bathna, Chaulai, Tirchuni, Nirgondi
1245	*Wendlandia notoniana*	Puva, Kadamban
1246	*Wendlandia wallichii*	
1247	*Woodfordia floribunda/fruticosa*	Asre
1248	*Wrightia speciosissima/Wrightia gigantea*	Baini karru
1249	*Wrightia tinctoria*	Dhudi, Kadav, Motikudi, Bhura, Aiyapale, Pale, Kudi, Kuda,Bela
1250	*Wrightia arborea/Wrightia tomentosa*	Dhudi, Dasla, Dark, Palakodsa, Kuda, Tambada
1251	*Washintonia filefera*	
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Species Code	Botanical Name	Common/Local Names
1260		
1261		
1262	*Xanthophyllum andamanicum*	Latpyan
1263	*Xanthophyllum flavescens*	Ksivokki, Chalape
1264	*Xanthophyllum rhetsa*	Mullilem, Rhetsa, Triphal
1265	*Xeromphis uliginosa*	Kaikorai
1266	*Xerospermum glabratum*	Thingasaki
1267	*Xylia dolabriformis*	Pyinkado
1268	*Xylia xylocarpa*	Tangan, Trul, Irula konda, tangera, Jamba
1269	*Xylocarpus gangeticus*	
1270	*Xylocarpus granatum/ccarapa/ obovate/ Xylocarpus obovatus*	Pinllon, Dhundul
1271		Pintim
1272	*Xylopia parviflora*	Kaikoval
1273	*Xylosma longifolium*	Sallu, Kangrur
1274	*Xylocarpus mekongensis*	Passur (mangrove spp)
1275	*Xantolis tomentosa*	
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1284	*Zanthoxylum armatum*	Tiur
1285	*Zanthoxylum retsa (also in 0473)*	
1286	*Ziziphus glabrata*	Karukunti
1287	*Ziziphus mauritiana* *(Old) Ziziphus jujuba*	Ber,Kul
1288	*Ziziphus oenoplia*	Sodimullu, Santhu pargi, Kaikoral, Kalpatta
1289	*Ziziphus rugosa*	Bilimaralahannu
1290	*Ziziphus xylopyra*	Ghont, Gotti, Cathbor
1291	*Jatropha curcas*	Chanderjyot,Mogle
1292	*Jatropha species*	
1301	*Acanthus ilicifolius*	(mangrove spp)
1302	*Aegialitis rotundifolia*	Tora (mangrove spp)
1303	*Aegiceras corniculatum*	Khalsi (mangrove spp)
1304	*Araucaria*	
1305	*Actinodaphne malabarica*	
1306	*Artocarpus altilis/ communis/ incisa*	

Species Code	Botanical Name	Common/Local Names
1307	*Araucaria columnaris*	
1308	*Annona eticulate/ humboldtiana (Annona humboldtii / laevis / longifolia / riparia / mukosa / Rollinia mucosa / orthopetala / pulchrinervia / sieberi)*	
1309	*Acacia cineraria*	
1310	*Averrhoa bilimbi*	
1311	*Acalypha indica*	
1312	*Araucaria cunninghamii*	
1313	*Atalantia species*	
1314	*Annona muricata*	
1315	*Aglaia malabarica*	
1316	*Aglaia simplicifolia*	
1317	*Acacia modesta*	
1318	*Acacia leucophloea*	
1319	*Antidesma ghaesembilla*	
1320	*Archontophoenix alexandrae*	
1321	*Celtis philippenesis*	
1322	*Citrus eticulate / deliciosa / vangasy*	
1323	*Casia species*	
1324	*Coffea Arabica(coffee)*	
1325	*Couroupita guianensis*	
1326	*Cryptolepis buchananii*	
1327	*Peltophorum pterocarpum*	
1328	*Cinnnamomum camphora*	
1329	*Cunometra iripa*	
1330	*Phyllanthus acidus*	
1331	*Celtis timorensis*	
1332	*Citharexylum spinosum*	
1333	*Cryptocarya stocksii*	
1334	*Margaritaria indica*	
1335	*Orophea zeylanica*	
1336	*Phyllanthus species*	
1337	*Celastrus paniculatus*	
1338	*Celtis tetrandra*	
1339	*Cryptocarya species*	
1340	*Avicennia germinans*	
1341	*Acacia pycnantha*	
1342	*Pisonia alba*	
1343	*Polyscias guilfoylei*	
1344	*Cassia roxburghii*	
1345	*Actinodaphne madraspatana*	

Species Code	Botanical Name	Common/Local Names
1351	*Casearia championii*	*Saptarangi*
1352	*Cinamomum verum*	*Thakthing*
1353	*Cornus capitata*	*Himalayan Strawberry Tree*
1354	*Docynia indica*	*Assam Apple*
1355	*Helicia robusta*	*Pasaltakaza*
1356	*Livistona jendkinsiana*	*Toko Patta*
1357	*Macropanax undulatus*	*Phuanberh*
1358	*Peltophorum*	*N.A.*
1359	*Prunus puddum*	*Wild Himalayan Cherry*
1360	*Sonneratia alba*	*Nakshathrakandel, Apple Mangrove*
1361	*Balanites maughamii*	*(Torch wood)*
1362	*Ximenia Americana*	*Nakeera*
1363	*Bruguiers gumnorrhiza*	*Oriental Mangrove*
1371	*Cestrum noctumum*	*Rat ki Rani*
1372	*Coriarria nepalensis*	*Massura*
1373	*Chrysophyllum cainito*	
1374	*Corchorus olitorius*	
1381	*Picrasma quassioides*	
1382	*Phyllanthus polyphyllus*	
1391	*Simaruba glauca*	
1392	*Streblus asper (also 1154)*	
1401	*Acacia mellifera*	
1402	*Aleurites triloba*	
1403	*Allophylus cobbe*	
1431	*Drypetes sepiaria*	
1551	*Swietenia macrophylla*	
1371	*Chrysophyllum cainito*	
1372	*Corchorus olitorius*	
1999	Unidentified trees/Miscellaneous	
2000	Identified and uncoded trees	
Bamboo & Cane		

Species Code	Botanical Name	Common/Local Names
2001	*Sinarundinaria maling/Arundina maling*	
2002	*Bambusa arundinacea/ bambos*	Kanta, Banas, Budit bans, Bamboo, Hollow bans, Velu
2003	*Bambusa balcooa*	Bamboo, Bhaluka
2004	*Bambusa khasiana*	Bamboo
2005		
2006	*Bambusa nutaus*	Bamboo
2007		
2008	*Bambusa pallida*	Bamboo, Bijli, Makal
2009	*Bambusa polymorpha*	Bamboo
2010	*Bambusa sp.*	Bamboo
2011	*Bambusa affinis*	
2012	*Bambusa tulda*	Bamboo, Jati, Maritonga, Mritenga
2013	*Bambusa vulgaris*	Bamboo
2014	*Calamus andamanicus*	Cane, Thick cane
2015	*Calamus erectus*	Cane
2016	*Calamus floribundus*	Cane
2017	*Calamus latifolius*	Cane
2018	*Calamus leptospadix*	Cane
2019	*Calamus longisetus*	Cane
2020	*Calamus palustris*	Cane, Malaibet
2021	*Calamus sp.*	Cane,Naga
2022	*Calamus tenuis*	Cane
2023	*Dendrocalamus hamiltonii*	Bamboo, Kako, Okagi
2024	*Dendrocalamus longispathus*	Bamboo
2025	*Thamnocalamus spathiflorus*	Ringal
2026	*Dendrocalamus sp.*	Bamboo
2027	*Dendrocalamus strictus*	Kanak, Shib, Udha, Medar, Bamboo, Solid bans, Chhota bans
2028	*Melocanna baccifera*	Mooli bans, Bamboo
2029	*Teinostachyum dullooa*	Bamboo, Rauthla bans
2030	*Ochlandra brandisii*	Nanyurali, Maieetha, Chittu
2031	*Ochlandra travancorica*	Eral, Chittu, Etha
2032		
2033	*Oxytenanthera bourdilloni*	Reed
2034	*Oxytenanthera monostigma*	Bamboo
2035		
2036		
2037	*Oxytenanthera stocksii*	Bamboo, Manga, Konda
2038	*Oxytenanthera thwaitesii*	Reed
2039	*Teinostachyum wightii*	Nanyura, Maieetha
2040	*Cephalostachyum sp.*	
2041	*Sinarundinaria sp.*	

Species Code	Botanical Name	Common/Local Names
2042	*Teinostachyum sp.*	
2051	*Bambusa auriculata*	Comman Bamboo
2052	*Bambusa cacharensis*	Bom/bethua bans
2053	*Bambusa Jaintiana*	Tetua
2054	*Bambusa multiplex*	Nan/Hedge bamboo
2055	*Bambusa nutans*	Kai
2056	*Bambusa polymorpha Munro*	Paura
2057	*Bambusa schizostachyoides*	N.A.
2058	*Calamus viminalis*	C-karak/ Bora bet
2059	*Oxytenanthera nigrociliata /Gigantochola Nogrociliata*	Kalyai
2060	*Schizostachyum dulloa*	Dolu
2061	*Schizostachyum regersil*	N.A.
2062	*Teinostachyum dullooa*	Bamboo
2063	*Thyrosostachys oliveri*	Bamboo clump forming
2064	*Guadua angustifolia*	Clump forming
2100	Unidentified bamboo	
2101	Identified and uncoded bamboo	
2150	Unidentified canes	
2151	Identified and uncoded canes	

Annexure – VIII

List of NTFP (Herb, Shrub and Climbers) Species and their Codes

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
28	Andhra Pradesh	1	Herb	101	Achyranthes aspera	Kempu, Utrani gida,Puth kanda
				105	Aloe barbadensis/aloe vera	Kalabanda,Ghritkumari
				109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg
				112	Aristida setacea	Poochka Gaddi, Cheepuru Gaddi
				120	Centella asiatica	Hnahbial/Lambak, Manimuni
				127	Cyclea peltata	Paatathige
				129	Cyperus rotundus	Muthanga, Bhadra mustee, Nagaramotha
				130	Datura innoxia	Ummetha
				132	Drosera peltata	Kocu vetti
				148	Kaemperia galanga	Kacholam, Chandramoola
				156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				168	Rauvolfia serpentina	Sarpagandhi, Atki
				174	Solanum nigrum	Kasaka,Makoy
				190	Curculigo orchiodes	Nallathadi,Kali musali
				191	Curcuma pseudomontana	Adavi pasapu
		2	Shrub	321	Datura metal	Nallaummatha
				322	Desmodium gangeticum	Githanaram
				330	Ixora coccinea	Bandhujeevamu
		3	Climber	001	Abrus precatorius	Lal Gunja
				004	Asparagus sps	Challagadda
				009	Cardiospermum helicabum	Buddakaukara
				011	Cissus quadrangularis	Pirandai
				012	Clitoria ternatea	Vishnukanti soppu, Sankhu Poolu
				017	Gloriosa superba	Kalalavi, Adavi Naabhi, Menthonni,Kalihari
				018	Hemidesmus indicus	Sugandhipaala, Sogadeberu, Anantmul
				026	Piper species/ Piper longum/ Piper mullesua	Thippali, Wild pepper, long pepper, Pipla
				028	Rubia cordifolia	Manchatti, Monjito, Chiranji, Manderti, Manjistha, Satamul
				034	Withenia somnifera	Ashwagandhi, Pennerugaddi
12	Arunachal	1	Herb	102	Aconitum ferox	Bikh Atees, Bikhumma

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
	Pradesh			103	Acorus calamus	Okhidak, Vekhand,Bach,Vach,Sweet flag, Bojo, Bokha, Sita
				109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg
				164	Pichorhiza kurooa/ Picrorrhiza Rurroa	Kutki
				176	Swertia chiraita	Chirata
				179	Thysanolaena maxima	Shumjit(Broom)
				236	Captis teeta	Mishmi Teeta
				237	Houttuynia cordata	Siahamang
		2	Shrub	332	Justicia gendarussa	Kare lakki/ Tita basak
				378	Berberis aristata	chitra, chotra, dar-chob, dar-hald, darhald, kash-mal, kashmal, kashmar, kasmal, kasmale, kemal, kemal/kasmal, khepacho, rasaunt, rasaut, rasvat, zarishk
				381	Zanthoxylum armatum	darmar, tejphal, timroo, trimal, tumru, Honam, Yorkhung
				387	Caesalpinia bonducella	Lataiguti
				388	Clerodendrum colebrookianum	Ban Bhati
				389	Lavendula vera	Lavender
				390	Potentilla fulgens	Roi-shing
				394	Artemisia nilagirica	Dona
				395	Pelargonium graveolens	Rose scented geranium
		3	Climber	026	Piper species/ Piper longum/ Piper mullesua	Thippali, Wild pepper, long pepper, Pipla
				028	Rubia cordifolia	Manchatti, Monjito, Chiranji, Manderti, Manjistha, Satamul
		4	Tree	0095	Acquillaria mallaccensis/Aquilaria agallocha	Agar
				0114	Azadirachta indica	Neem
				0258	Cinnamomum tamala/bay leaf	Tejpat
				0259	Cinnamomum wightianum/ zeylanicum	Dalchini
				0403	Elaeocarpus sphaoricus (Elaeocarpus Grantiris)	Rudraksha
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0632	Illicium griffithii	Lissi
				0877	Oroxylum indicum	Archangkawn, Totola
				1162	Taxas baccata	European Yew
				1300	Actinidia deliciosa	Kiwi
18	Assam	1	Herb	103	Acorus calamus	Okhidak, Vekhand,Bach,Vach,Sweet flag,

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
						Bojo, Bokha, Sita
				109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg
				120	Centella asiatica	Hnahbial/Lambak, Manimuni
				125	Curcuma caesia	Ailaidum, Black haldhi
				126	Curcuma zedoaria	Manjakoova, Assam haldhi
				143	Homalomena aromatica	Anchiri
				147	Imperata cylindrica	Di, Imom
				168	Rauvolfia serpentina	Sarpagandhi, Atki
				173	Schumannianthus dichotomus	B-Pati bet/ paitara/Mutrak Cane
				238	Chrozophora prostrata	Laham
				239	Spillanthus acmella	Haingos
				240	Premna herbacea	Mati Galdeb
		2	Shrub	311	Calamus guruba	B-sundi bet/ Jai bet C- Dhangri bet/Rab bet rani bet
				352	Thysanolaena latifolia	Amliso
				353	Vitex negundo	Sambhalu, Bana, Sambhalu,Nirgundi, Posotia
				361	Adhatoda vasica	Banasa/Basuti,Adusa, Boga Bahak
				366	Nyctanthes arbortristis	Harsingar,Kuri, Sewali
		3	Climber	003	Asparagus racemosa	Shathavari,Satavar, Satmul
				026	Piper species/ Piper longum/ Piper mullesua	Thippali, Wild pepper, long pepper, Pipla
				031	Tinospora cordifolia	Giloe, Chittamruthu, Giloy,Guduchi
				033	Tylophora indica	Vallippala,Damabuti,Ananatmool
				048	Smilax china	Chopachinee
				049	Paederia scandens	Paduri Lota
		4	Tree	0032	Adhatoda vasica	Bahak
				0114	Azadirachta indica	Neem
				0158	Bombax species/ Bombax ceiba	Simal
				0204	Canarium resiniferum	Mekruk
				0258	Cinnamomum tamala/bay leaf	Tejpat
				0259	Cinnamomum wightianum/ zeylanicum	Dalchini
				0315	Curcuma aromatica	Keturi
				0346	Deienia Indica	Dieng-soh-karbam, Papada
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0515	Garcinia cowa	Thekera
				0609	Hydnocarpus kurzii	Khawitur

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				1075	Sapindus mukurossi	Wash nut ,Ritha
				1096	Shorea robusta	Sal
				1167	Terminalia arjuna	Arjun
				1168	Terminalia belerica	Bahera
				1171	Terminalia chebula	Harra
				1356	Livistona jendkinsiana	Toko Patta
22	Chhatisgarh	1	Herb	109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg
				121	Chlorophytum borivillianum/ Chorophytum tubersum baker	Saphed Musali
				129	Cyperus rotundus	Muthanga, Bhadra mustee, Nagaramotha
				156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				185	Venonia anthelmintica	Vanjeera
		2	Shrub	314	Cassia tora	Charota, Puwad Seeds
				323	Embelica tsjerium-cottam	Baibiding
				356	Woodfordia fruticosa	Dhawai Flower,Dhawi
		3	Climber	001	Abrus precatorius	Lal Gunja
				003	Asparagus racemosa	Shathavari,Satavar, Satmul
				005	Bauhinia vahlii	Mahul, Siali leaves
				010	Celastrus paniculatus	Malkangini, Black oil plant
				031	Tinospora cordifolia	Giloe, Chittamruthu, Giloy,Guduchi
		4	Tree	0037	Aegla Marmelos	Bael
				0074	Anacardium occidentale	Kaju
				0081	Anogeissus latifolia	Dhawada
				0170	Buchanania Lanzan	Char seed, Chironji
				0173	Butea monosperma	Dhak, Palash
				0353	Diospyros melanoxylon	Coromendel Ebony, Tendu
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0590	Holarrhea antidysenterica	Kutaj
				0759	Madhuca indica	Mahudo, Amba, Mango,Mahua
				1096	Shorea robusta	Sal
				1160	Tamarindus indica	Tamarind
				1168	Terminalia belerica	Bahera
				1171	Terminalia chebula	Harra
				1287	Ziziphus mauritiana/jujuba	Ber
07	Delhi	1	Herb	193	Cassia tora	Panwar

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				198	Vernonia cininea	
				199	Blepharis maderaspatensis	
				200	Boerhavia diffusa	
				201	Evolvulus alsiniodes	
				202	Peristrophe paniculata	
				203	Tephrosia purpuria	
				204	Tridex procumbens	
				205	Sida cordata	
				206	Parthenium hysterophorus	
				207	Triumfetta rhomboidea	
				208	Aerva sanguinolanta	
				209	Physalia minima	
				210	Blumea lacera	
		2	Shrub	349	Securinega leucopyrus	Kari Huli
				364	Capparis aphylla/ decidua	Kair/Kareer
				369	Capparis sepiaria	
				370	Grewia tenax	
				371	Carissa opaca	
				372	Flacouttia indica	
				373	Maytenus senegalensis	
				374	Clerodendrum phlomidis	
				375	Dichrostachys cineria	
				376	Lantana camara	
		3	Climber	035	Zizyphus oenoplea	Pariki
				040	Pupalia lappacea	
				041	Ipomoea eriocarpa	
				042	Cissampelos pariera	
				043	Jasminum multiflorum	
		4	Tree	0495	Flacourtia indica	
30	Goa	1	Herb	142	Holarrhena antidysenterica	Pandhra Kuda
				156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				168	Rauvolfia serpentina	Sarpagandhi, Atki
				235	Datura stramonium	Dasusa
		2	Shrub	353	Vitex negundo	Sambhalu, Bana, Sambhalu,Nirgundi, Posotia
				361	Adhatoda vasica	Banasa/Basuti,Adusa, Boga Bahak
				391	ixora arborea	Rai kuda

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				392	Thevetia peruvivana	Arakafal
				393	Cassia angustifolia	Sona mukhi
		4	Tree	0007	Acacia catechu	khair
				0037	Aegla Marmelos	Bael
				0079	Ananous squamosa	Sitafal,Setha
				0105	Artocarpus lakoocha/lacucha	Oatamb
				0173	Butea monosperma	Dhak, Palash
				0217	Carissa carandas	Kilakoy
				0219	Carytaurens	Birla mad
				0226	Cassia fistula/ Sp.	Casia fistula, Amaltas
				0259	Cinnamomum wightianum/ zeylanicum	Dalchini
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0517	Garcinia indica	Kokum
				0609	Hydnocarpus kurzii	Khawitur
				0817	Moringa olifera	Sajina
				1136	Syzigium cumini	Jamun
				1167	Terminalia arjuna	Arjun
				1168	Terminalia belerica	Bahera
				1171	Terminalia chebula	Harra
				1173	Terminalia crenulata/tomentosa	Matti
				1176	Terminalia paniculata	Kindal
				1268	Xylia xylocarpa	zamba
				1287	Ziziphus mauritiana/jujuba	Ber
24	Gujarat	1	Herb	156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				190	Curculigo orchiodes	Nallathadi,Kali musali
				213	Eclipta alba	Bhringraj
				234	Asparagus adscendens	Musli
		2	Shrub	314	Cassia tora	Charota, Puwad Seeds
				316	Commiphora wightii	Guggul
				354	Wihania somnifera	Ashwingandha, Ashwagandha, Agsend,Asgandha
				363	Calotropis procera	Aak,Madar, Aakda Mul
				386	Alkanna tinctoria	Ratanjyot Seeds
		4	Tree	0005	Acacia arabica	Bawal
				0007	Acacia catechu	khair
				0037	Aegla Marmelos	Bael

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				0081	Anogeissus latifolia	Dhawada
				0114	Azadirachta indica	Neem
				0170	Buchanania Lanzan	Char seed, Chironji
				0173	Butea monosperma	Dhak, Palash
				0226	Cassia fistula/ Sp.	Casia fistula, Amaltas
				0353	Diospyros melanoxylon	Coromendel Ebony, Tendu
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0526	Garuga pinnata	Moina Gum
				0590	Holarrhea antidysenterica	Kutaj
				0759	Madhuca indica	Mahudo, Amba, Mango,Mahua
				0959	Prosopis juliflora	Jangali Babul Gum
				1073	Sapindus emarginatus	Boonthikottai, Neikotan, Ritha, Aritha, Chootokoi, Kumkuda,Soapnut
				1115	Sterculia urens	Tapasi,kadhaya
				1136	Syzigium cumini	Jamun
				1168	Terminalia belerica	Bahera
				1171	Terminalia chebula	Harra
06	Haryana	1	Herb	101	Achyranthes aspera	Kempu, Utrani gida,Puth kanda
				103	Acorus calamus	Okhidak, Vekhand,Bach,Vach,Sweet flag, Bojo, Bokha, Sita
				156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				192	Artemesia vulgaris	Khima
				193	Cassia tora	Panwar
				194	Chinopodium album	Bathu
				195	Datura alba	Dhatura
				196	Sida cordifolia	Balu,Kungi
				197	Tephrosia purpurea	Jhojuru,Sarphoka
		2	Shrub	327	Helicteres isora	Edamuri,Marorphali
				350	Solanum nigrum	Makoi,Kandai
				353	Vitex negundo	Sambhalu, Bana, Sambhalu,Nirgundi, Posotia
				354	Wihania somnifera	Ashwingandha, Ashwagandha, Agsend,Asgandha
				356	Woodfordia fruticosa	Dhawai Flower,Dhawi
				360	Abutilom indicum	Pathaka/Petari
				361	Adhatoda vasica	Banasa/Basuti,Adusa, Boga Bahak
				362	Asparagus adscendens	Hazar muli

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				363	Calotropis procera	Aak,Madar, Aakda Mul
				364	Capparis aphylla/ decidua	Kair/Kareer
				365	Indigofera pulchella	Neel
				366	Nyctanthes arbortristis	Harsingar,Kuri, Sewali
				367	Tribulus alatus	Bhankhari
		3	Climber	001	Abrus precatorius	Lal Gunja
				005	Bauhinia vahlii	Mahul, Siali leaves
				010	Celastrus paniculatus	Malkangini, Black oil plant
				031	Tinospora cordifolia	Giloe, Chittamruthu, Giloy,Guduchi
				036	Cucumis pubescens	Kachri
				037	Dioscorea belophylla	Turar
				038	Momordica charantia	Jangali karela
				039	Coccinia cordifolia	Kundra
02	Himachal Pradesh	1	Herb	153	Nardostachys jatamansi	Jatamansi
				164	Pichorhiza kurooa/ Picrorrhiza Rurroa	Kutki
				165	Podophyllum hexandrum	Ban kakri
				176	Swertia chiraita	Chirata
				189	Aconitum heterophyllum	Nilo Bikh/Aconite, monkshood,
				218	Angelica glauca	Smooth Angelica , chohor, chora , Chora, Choru
				219	Arnebia benthamii	Himalayan Arnebia
				220	Bergenia stracheyi	Himalayan Bergenia, Pashanbheda, Shilpada, Pashanbheda
				221	Carum carvi	jangi dhania, jeerka, jeero, kalazera, kalazira, kalazird, shiajira, siya jeera, zira
				222	Eulaliopsis binata	babar grass, babni, babula, bagar, baggar, bhabar, bhabar grass, bhabbar, bhabhar, sabai, sabai grass,
				223	Hedychium acuminatum Roscoe	Vanhaldi,Kapurkachri,Shati,kachur
				224	Jurenia dolomiaea	Himalayan Dolomiaea ,Dhup
				225	Salvia moorcroftiana	thuth, tuth
				226	Saussurea costus	Costus,Kuth
				227	Trillidium govanianum	Himalayan Trillium
				228	Valeriana Jatamansi	Jatamansi, balchhari, mansi, nihani, smak, sumaya, tagar, jatale, naati jatamaansi, nandu batlu, tagara, thagar mool, shadamangie, takaram ,tagara
				229	Viola pilosa/Voila serpens	Thungtu, Banafsha, Bili Kaamakasthoori

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
		2	Shrub	328	Hippophae rhamnoides	Kempu Huli
				378	Berberis aristata	chitra, chotra, dar-chob, dar-hald, darhald, kash-mal, kashmal, kashmar, kasmal, kasmale, kemal, kemal/kasmal, khepacho, rasaunt, rasaut, rasvat, zarishk
				379	Ephedra gerardiana WALL.	ain, khanta, somlata, torgatha, tutgautha
				380	Skimmia laureola	gurl patta, kali, kedar patti, kedarpaiti, nayr, nyan, shashra, shashru, shuru
				381	Zanthoxylum armatum	darmar, tejphal, timroo, trimal, tumru, Honam, Yorkhung
		3	Climber	005	Bauhinia vahlii	Mahul, Siali leaves
				015	Dioscorea alata/deltoidea	Yam,harvish,Jami Jung kinch
				031	Tinospora cordifolia	Giloe, Chittamruthu, Giloy,Guduchi
				045	Pueraria tuberosa	Indian kudzu, Nepalese kudzu, Sural, Bilaikand, Bharda, Tirra, Bankumra, Shimia batraji, Ghorbel, Vidarikand, Darigummadi, Gumadigida, Mutukku, Bhukushmandi
		4	Tree	0883	Dactylorhiza hatagirea	saalab panja, saalab panja special, saalampanja, salaab panja gulabi, salaab panja safed, salam panjo, salampanja, salampanja nepali, salampunja
				1366	Junipures communis	aaraar, bither, guggal, haubera, jhora, padmak
		5	Bamboo	2023	Dendrocalamus hamiltonii	Pecha
				2055	Bambusa nutans	Kai
20	Jharkhand	1	Herb	109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg
				168	Rauvolfia serpentina	Sarpagandhi, Atki
				176	Swertia chiraita	Chirata
		2	Shrub	356	Woodfordia fruticosa	Dhawai Flower,Dhawi
		3	Climber	003	Asparagus racemosa	Shathavari,Satavar, Satmul
				016	Embelia ribes	Vavding
				034	Withenia somnifera	Ashwagandhi, Pennerugaddi
		4	Tree	0007	Acacia catechu	khair
				0037	Aegla Marmelos	Bael
				0114	Azadirachta indica	Neem
				0143	Bauhinia vahil	Adda leaves, Mahulan patta
				0170	Buchanania Lanzan	Char seed, Chironji
				0173	Butea monosperma	Dhak, Palash
				0353	Diospyros melanoxylon	Coromendel Ebony, Tendu
				0410	Embilica	Nellikkai, Amla, Sunhlu

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					officinalis/Phyllanthus	
				0759	Madhuca indica	Mahudo, Amba, Mango,Mahua
				0768	Mengifera/Mangifera indiaca	Aam
				0949	Pongamia glabra/pinnata	Karanj
				1086	Schleichera oleosa	Kusum seed
				1096	Shorea robusta	Sal
				1115	Sterculia urens	Tapasi,kadhaya
				1136	Syzigium cumini	Jamun
				1160	Tamarindus indica	Tamarind
				1168	Terminalia belerica	Bahera
				1171	Terminalia chebula	Harra
29	Karnataka	1	Herb	101	Achyranthes aspera	Kempu, Utrani gida,Puth kanda
				107	Anagallis arvensis	Surya Kanti Soppu,Blue Pimpernel, Kali Fuladi, Chanakchibhadi
				110	Anethum sowa	Sabbasagi,sowa, soya, soyah, suva
				111	Anisochilus carnosus	Doddapatri gida
				124	Curcuma aromatica	Wild turmeric
				128	Cymbopogan citrates	Bothaipul(or) lemon gram, Kavadu grams
				133	Eclipta prostrata	Kaadigegarige, Garugala
				136	Fagonia cretica	Nela Ingaa
				139	Heliotropium indicum	Bangali gida
				152	Mollugo cerviana	Paripastak
				156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				160	Phyla nodiflora	Neeru hippoli
				162	Phyllanthus maderaspatensis	Kiranelli
				175	Solanum surattense	Ramgolla
				187	Zingiber officinale	Sunti
		2	Shrub	313	Cassia senna	Sonamukhi
				317	Corchorus capsularis	Jute
				327	Helicteres isora	Edamuri,Marorphali
				328	Hippophae rhamnoides	Kempu Huli
				331	Justicia adhatoda	Adathoda, Kawaldai
				332	Justicia gendarussa	Kare lakki/ Tita basak
				338	Osmanthus fragrans	Gouri Gida
				349	Securinega leucopyrus	Kari Huli

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		3	Climber	003	Asparagus racemosa	Shathavari,Satavar, Satmul
				012	Clitoria ternatea	Vishnukanti soppu, Sankhu Poolu
				014	Decalepis hamiltonii	Makli Beru
				018	Hemidesmus indicus	Sugandhipaala, Sogadeberu, Anantmul
				026	Piper species/ Piper longum/ Piper mullesua	Thippali, Wild pepper, long pepper, Pipla
				029	Scindapsus officinalis	Kerehippoli
32	Kerala	1	Herb	103	Acorus calamus	Okhidak, Vekhand,Bach,Vach,Sweet flag, Bojo, Bokha, Sita
				106	Alpinia galanga	Kolinji
				116	Biophytum species	Mukkuti
				126	Curcuma zedoaria	Manjakoova, Assam haldhi
				129	Cyperus rotundus	Muthanga, Bhadra mustee, Nagaramotha
				145	Hydrocotyle asiatica	Kudangal
				148	Kaemperia galanga	Kacholam, Chandramoola
				155	Nervilia aragoana	Orilathamara
				156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				161	Phyllanthus amarus	Keezha nelli, Bhumi amla
				168	Rauvolfia serpentina	Sarpagandhi, Atki
				170	Ruta graveolens	Sathappu, Arootha
				186	Vetiveria zinzanioides	Vetiver, Ramacham
		2	Shrub	322	Desmodium gangeticum	Githanaram
				335	Nilgirianthes ciliatus	Karimkurinji
				347	Salacia sps	Ekanayakam, Ponkoranti
		3	Climber	002	Aristolochia indica	Karalakam
				003	Asparagus racemosa	Shathavari,Satavar, Satmul
				013	Coscinium fenestratum	Maramanjal
				017	Gloriosa superba	Kalalavi, Adavi Naabhi, Menthonni,Kalihari
				018	Hemidesmus indicus	Sugandhipaala, Sogadeberu, Anantmul
				019	Holostemma adakodien	Adapathiyan
				021	Ipomoea pestigridis	Pulichuvadi
				024	Mukia scabra	Karthoti
				026	Piper species/ Piper longum/ Piper mullesua	Thippali, Wild pepper, long pepper, Pipla
				027	Pseudarthria viscida	Moovila
				028	Rubia cordifolia	Manchatti, Monjito, Chiranji,

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						Manderti, Manjistha, Satamul
				031	Tinospora cordifolia	Giloe, Chittamruthu, Giloy,Guduchi
				032	Trichosanthus cucumerina	Kaipanpadavalam
				033	Tylophora indica	Vallippala,Damabuti,Ananatmool
23	Madhya Pradesh	1	Herb	103	Acorus calamus	Okhidak, Vekhand,Bach,Vach,Sweet flag, Bojo, Bokha, Sita
				109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg
				121	Chlorophytum borivillianum/ Chorophytum tubersum baker	Saphed Musali
				123	Cucurma augustifolia	Tikhur, Arrow root
				129	Cyperus rotundus	Muthanga, Bhadra mustee, Nagaramotha
				233	Costus Specious	Kevuk
		2	Shrub	315	Clerodendrum serratum	Bharangi
				327	Helicteres isora	Edamuri,Marorphali
				341	Plumbago zeylanica	Pandhara chitrak,Chitraal
				382	Uraria picta	Prisnaparni
				383	Asparagus raecemosus	Satavari
				384	Rauvolifia serpentine	Sarpagandha
				385	Baliosperum montanum	Danti
		3	Climber	010	Celastrus paniculatus	Malkangini, Black oil plant
				017	Gloriosa superba	Kalalavi, Adavi Naabhi, Menthonni,Kalihari
				028	Rubia cordifolia	Manchatti, Monjito, Chiranji, Manderti, Manjistha, Satamul
				031	Tinospora cordifolia	Giloe, Chittamruthu, Giloy,Guduchi
				033	Tylophora indica	Vallippala,Damabuti,Ananatmool
				046	Ceropegia bulbosa	Daruhaldi
				047	Gymnema syvestre	Gudmar
		4	Tree	0160	Boswellia serrata	Sallar, Salai, Salar, Gugal, Salasi, Anduk, Guggar
				0170	Buchanania Lanzan	Char seed, Chironji
				0277	Commiphora mukul	Gugul
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0738	Litsea glutinosa	Maida lakri
				0877	Oroxylum indicum	Archangkawn, Totola
				1118	Stereospermum colais	Padal
				1167	Terminalia arjuna	Arjun
				1168	Terminalia belerica	Bahera

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				1171	Terminalia chebula	Harra
27	Maharashtra	1	Herb	103	Acorus calamus	Okhidak, Vekhand,Bach,Vach,Sweet flag, Bojo, Bokha, Sita
				105	Aloe barbadensis/aloe vera	Kalabanda,Ghritkumari
				117	Boerhavia repens (L.)	Punarnava
				120	Centella asiatica	Hnahbial/Lambak, Manimuni
				121	Chlorophytum borivillianum/ Chorophytum tubersum baker	Saphed Musali
				129	Cyperus rotundus	Muthanga, Bhadra mustee, Nagaramotha
				138	Gymmema sylvestre	Gudmar
				142	Holarrhena antidysenterica	Pandhra Kuda
				146	Hygrophila schulli	Talimkhana
				156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				161	Phyllanthus amarus	Keezha nelli, Bhumi amla
				168	Rauvolfia serpentina	Sarpagandhi, Atki
				177	Symplocos recemosa	Lodhara
				180	Tinospora cordifolia	Gulvel
		2	Shrub	301	Acacia concina/acacia sinuata	Sikakai
				313	Cassia senna	Sonamukhi
				315	Clerodendrum serratum	Bharangi
				316	Commiphora wightii	Guggul
				325	Glycyrrhiza glabra	Jesthmadh,Mulethi
				327	Helicteres isora	Edamuri,Marorphali
				336	Nothapodytes nimmoniana	Narkia
				340	Plantago ovate	Isabgol
				341	Plumbago zeylanica	Pandhara chitrak,Chitraal
				350	Solanum nigrum	Makoi,Kandai
				354	Wihania somnifera	Ashwingandha, Ashwagandha, Agsend,Asgandha
		3	Climber	001	Abrus precatorius	Lal Gunja
				003	Asparagus racemosa	Shathavari,Satavar, Satmul
				016	Embelia ribes	Vavding
				017	Gloriosa superba	Kalalavi, Adavi Naabhi, Menthonni,Kalihari
				018	Hemidesmus indicus	Sugandhipaala, Sogadeberu,

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						Anantmul
				028	Rubia cordifolia	Manchatti, Monjito, Chiranji, Manderti, Manjistha, Satamul
		4	Tree	0007	Acacia catechu	khair
				0037	Aegla Marmelos	Bael
				0170	Buchanania Lanzan	Char seed, Chironji
				0173	Butea monosperma	Dhak, Palash
				0194	Callophyllum inophyllum	Undi
				0226	Cassia fistula/ Sp.	Casia fistula, Amaltas
				0258	Cinnamomum tamala/bay leaf	Tejpat
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0517	Garcinia indica	Kokum
				0539	Gmelina arborea	Shivan
				0650	Saraca asoca	Ashoka
				0795	Mesua ferrea	Nagakesar
				0839	Myristica fragrans	Jayphal
				0949	Pongamia glabra/pinnata	Karanj
				0976	Pterocarpus marsupium	Bibla/Bija
				0977	Pterocarpus santalinus	Raktachandan
				1071	Santalum album	Chandan
				1089	Semecarpus anacardium	Bibba
				1118	Stereospermum colais	Padal
				1136	Syzigium cumini	Jamun
				1171	Terminalia chebula	Harra
				1351	Casearia championii	Saptarangi
				1360	Premna obtusifolia	Airan
14	Manipur	1	Herb	103	Acorus calamus	Okhidak, Vekhand,Bach,Vach,Sweet flag, Bojo, Bokha, Sita
				104	Agaricus species	Mushroom
				120	Centella asiatica	Hnahbial/Lambak, Manimuni
				147	Imperata cylindrica	Di, Imom
				149	Kampferia rotunda	Yaithamnamanbi
				159	Panax pseudoginseng	Ginseng
				179	Thysanolaena maxima	Shumjit(Broom)
		2	Shrub	304	Calamus arborescenes	Lee
				306	Amomum subulatum	Bara Elaichi(Wild cardamom)
				310	Calamus flagellum	Liren
				318	Costus speciosus	Sumbul
				333	Litsaea polyantha	Tumitla
				339	Paris polyphyia	Sing pan

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				344	Ricinus communis	kege
				348	Sapindus tritiliatus	Kekru
		3	Climber	006	Calamus floribundus	C-Beat, Lee
				007	Calamus latifolius	Likhel
				015	Dioscorea alata/deltoidea	Yam,harvish,Jami Jung kinch
				026	Piper species/ Piper longum/ Piper mullesua	Thippali, Wild pepper, long pepper, Pipla
				030	Smilex macrophylla	Kwamanbi
		4	Tree	0095	Acquillaria mallaccensis/Aquilaria agallocha	Agar
		4		0158	Bombax species/ Bombax ceiba	Simal
				0204	Canarium resiniferum	Mekruk
				0258	Cinnamomum tamala/bay leaf	Tejpat
				0262	Citrus latipes	Heiribob
				0401	Elaeocarpus serratus	Chorphon
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0516	Garcinia peduculata	Heibung
				0902	Parkia javancia/ timoriana	Yongchak
				1162	Taxas baccata	European Yew
				1172	Terminalia citrina	Manahi
		6	Cane	2015	Calamus Erectus	Lee manbi
				2018	Calamus leptospadix	Lee
				2022	Calamus tenuis	Rngijali/Patli
17	Meghalaya	1	Herb	151	Lycopodium Spp/ Lycopodium clavatum	Lycopodium
				178	Thatch Grass	Coolatai grass
				181	Topchini	Chopchini
		2	Shrub	324	Ficus Hispida	Kagsha
				355	Wild Pepper / Piper sarmentosum	N.A.
		4	Tree	0037	Aegla Marmelos	Bael
				0095	Acquillaria mallaccensis/Aquilaria agallocha	Agar
				0115	Acacia	Wattle bark
				0141	Bauhinia variegate/Phanera varigeta	Ebony tree
				0153	Betula Alnoides	Himalayan or Indian Birch
				0158	Bombax species/ Bombax ceiba	Simal

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				0215	Careya arborea	kumbhi
				0258	Cinnamomum tamala/bay leaf	Tejpat
				0346	Deienia Indica	Dieng-soh-karbam, Papada
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0558	Gynocardia Ordorata	Chhal Mogra
				0826	Myrica esculenta	Bay Berry
				1168	Terminalia belerica	Bahera
				1362	Balanites maughamii	(Torch wood)
15	Mizoram	1	Herb	115	Bergenia ciliate	Kham damdawi, Pakhanbeth
				120	Centella asiatica	Hnahbial/Lambak, Manimuni
				125	Curcuma caesia	Ailaidum, Black haldhi
				143	Homalomena aromatica	Anchiri
				147	Imperata cylindrica	Di, Imom
				150	Lindernia ruellioides	Thasuih
				172	Securinega virosa	Sisiak
				179	Thysanolaena maxima	Shumjit(Broom)
		2	Shrub	305	Clerodendron colebrookianum	Glory bower
				318	Costus speciosus	Sumbul
				326	Hedyotes scandens	Kelhamtur/Laikingtuibur
				331	Justicia adhatoda	Adathoda, Kawaldai
				334	Mimosa pudica	Hlonuar
		3	Climber	008	Calamus spp.	Hruihnang
				016	Embelia ribes	Vavding
		4	Tree	0068	Alstonia scholaris	Thuamriat
				0095	Acquillaria mallaccensis/Aquilaria agallocha	Agar
				0112	Averrhoa carambola	Theiherawt
				0347	Dillenia pentagyna	Kawmkaw/Kaihzawl
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0609	Hydnocarpus kurzii	Khawitur
				0650	Saraca asoca	Ashoka
				0877	Oroxylum indicum	Archangkawn, Totola
				0902	Parkia javancia/ timoriana	Yongchak
				0963	Protium serratum	Bil thei
				1110	Spondias pinnata	Hog-plum Tree
				1352	Cinamomum verum	Thakthing
				1355	Helicia robusta	Pasaltakaza
				1357	Macropanax undulatus	Phuanberh

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		5	Bamboo	2010	Bambusa spp.	Rua
				2026	Dendrocalamus spp.	Bamboo
				2028	Melocana baccifera	Muli, Bamboo
				2063	Teinostachyum dullooa	Bamboo
13	Nagaland	1	Herb	113	Artimessia nilagaricum	Mugwort
				118	Calocasia esculentum	N.A.
				123	Cucurma augustifolia	Tikhur, Arrow root
				159	Panax pseudoginseng	Ginseng
				166	Polygonum capitatum	Pinkhead smartweed
				167	Promodica musa	N.A.
				169	Reccinus cummunis	Castor bean
				179	Thysanolaena maxima	Shumjit(Broom)
				188	Zanthoxylum aromaticum	N.A.
		2	Shrub	305	Clerodendron colebrookianum	Glory bower
				309	Butea minor	N.A.
				339	Paris polyphyia	Sing pan
				346	Rubus ellipticus	Hinsal
		3	Climber	003	Asparagus racemosa	Shathavari,Satavar, Satmul
				025	Paederia foetida	Skunk vine
		4	Tree	0204	Canarium resiniferum	Mekruk
				0258	Cinnamomum tamala/bay leaf	Tejpat
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0651	Juglans regia	Akhrot
				0718	Litsea citara	Chinese Pepper
				0877	Oroxylum indicum	Archangkawn, Totola
				1038	Rhododendron arborium	Burans
				1044	Rhus Semialata	Nut gall
				1162	Taxas baccata	European Yew
				1354	Docynia indica	Assam Apple
				1356	Livistona jendkinsiana	Toko Patta
		5	Bamboo	2012	Bambusa tulda	Mirtinga
		6	Cane	2015	Calamus Erectus	Lee manbi
21	Orissa	1	Herb	109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg
				114	Atylosia scarabaeoides	Bana Kolthi
				123	Cucurma augustifolia	Tikhur, Arrow root
				135	Euliopsis binata	Sabai Grass

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				156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				158	Oscimum bassilicum	Landa baguli,Van tulsi
				168	Rauvolfia serpentina	Sarpagandhi, Atki
				179	Thysanolaena maxima	Shumjit(Broom)
				184	Vanda tascelleleta	Rasana root
		2	Shrub	301	Acacia concina/acacia sinuata	Sikakai
				356	Woodfordia fruticosa	Dhawai Flower,Dhawi
		3	Climber	003	Asparagus racemosa	Shathavari,Satavar, Satmul
				005	Bauhinia vahlii	Mahul, Siali leaves
				018	Hemidesmus indicus	Sugandhipaala, Sogadeberu, Anantmul
				020	Ichnocarpus fruitiscens	Suam lai
				023	Mucuna pruriens	Baidanka
		4	Tree	0114	Azadirachta indica	Neem
				0170	Buchanania Lanzan	Char seed, Chironji
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0759	Madhuca indica	Mahudo, Amba, Mango,Mahua
				0877	Oroxylum indicum	Archangkawn, Totola
				0949	Pongamia glabra/pinnata	Karanj
				1086	Schleichera oleosa	Kusum seed
				1089	Semecarpus anacardium	Bibba
				1096	Shorea robusta	Sal
				1125	Strychnos nuxvomica	Nux Vomica
				1160	Tamarindus indica	Tamarind
				1168	Terminalia belerica	Bahera
				1171	Terminalia chebula	Harra
08	Rajasthan	1	Herb	109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg
				190	Curculigo orchiodes	Nallathadi,Kali musali
				211	Panchystoma senile	
				212	Urginea indica	Koli kaanda, Jungli pyaz.
		2	Shrub	341	Plumbago zeylanica	Pandhara chitrak,Chitraal
				354	Wihania somnifera	Ashwingandha, Ashwagandha, Agsend,Asgandha
				364	Capparis aphylla/ decidua	Kair/Kareer
				377	Pandnus odoratissimus	
		4	Tree	0037	Aegla Marmelos	Bael
				0079	Ananous squamosa	Sitafal,Setha

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				0128	Balanites aegyptica	Hingota,Hingot
				0160	Boswellia serrata	Sallar, Salai, Salar, Gugal, Salasi, Anduk, Guggar
				0173	Butea monosperma	Dhak, Palash
				0277	Commiphora mukul	Gugul
				0282	Cordia dichotoma (Old) Cordia obliqua	Gundi, Samar, Bhokar, Lassora, Lessor,Gundha
				0285	Cordia gharaf	Gondi,Gundhi
				0353	Diospyros melanoxylon	Coromendel Ebony, Tendu
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0487	Ficus glomerata/ racemosa	Umbro,Gular
				0546	Grewia flavescens	Guthu,Charpen
				0759	Madhuca indica	Mahudo, Amba, Mango,Mahua
				0765	Mallotus philippensis	Rehini, Sindhuri, Ruina, Rolli, Rohni,Kamela , Kaplo, Kalujhade, Kanku, Kumkum, Kamalagundi, Shendri, Kukkum, Kabli, Anato
				1073	Sapindus emarginatus	Boonthikottai, Neikotan, Ritha, Aritha, Chootokoi, Kumkuda,Soapnut
				1115	Sterculia urens	Tapasi,kadhaya
				1168	Terminalia belerica	Bahera
				1250	Wrightia arborea/ Wrightia tomentosa	Dhudi, Dasla, Dark, Palakodsa, Kuda, Tambada,khirni
				1365	Rhus mysorensis	Dasrun
		5	Bamboo	2065	Bambusa arundinacea	Bans
				102	Aconitum ferox	Bikh Atees, Bikhumma
				103	Acorus calamus	Okhidak, Vekhand,Bach,Vach,Sweet flag, Bojo, Bokha, Sita
				104	Agaricus species	Mushroom
				105	Aloe barbadensis/aloe vera	Kalabanda,Ghritkumari
				115	Bergenia ciliate	Kham damdawi, Pakhanbeth
				131	Diplagium species	Ningro
11	Sikkim	1	Herb	140	Heracleum wallichi	Chimphing
				153	Nardostachys jatamansi	Jatamansi
				154	Nephrolepis species	Pani Amla
				157	Orchis latifolia	Panchamley
				164	Pichorhiza kurooa/ Picrorrhiza Rurroa	Kutki
				165	Podophyllum hexandrum	Ban kakri
				176	Swertia chiraita	Chirata
				182	Tupistra nutans	Nakima

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				183	Urtica dioca	Sisnoo
				189	Aconitum heterophyllum	Nilo Bikh/Aconite, monkshood,
		2	Shrub	342	Polygonum sp.	Thotney
				343	Rhododendron anthopogan	Sunpati
				352	Thysanolaena latifolia	Amliso
				357	Zanthoxylum acanthopodium	Bokey Timbur
		3	Climber	017	Gloriosa superba	Kalalavi, Adavi Naabhi, Menthonni,Kalihari
				028	Rubia cordifolia	Manchatti, Monjito, Chiranji, Manderti, Manjistha, Satamul
		4	Tree	0615	Hipphophae salicifolia	Aachuk
				0654	Juniper recurva	Dhup
				0749	Machilus edulis	Pomsee, kawla
				0877	Oroxylum indicum	Archangkawn, Totola
				1109	Spondias axillaris	Lapsi
		5	Bamboo	2010	Bambusa spp.	Rua
		6	Cane	2021	Calamus spp.	Cane Shoot
33	Tamilnadu	1	Herb	112	Aristida setacea	Poochka Gaddi, Cheepuru Gaddi
				128	Cymbopogan citrates	Bothaipul(or) lemon gram, Kavadu grams
				134	Eugenia aromatic	Clover
				141	Heteropogon contortus	Sambal grams
				171	Saccharum spontaneum	Thatching grams
				186	Vetiveria zinzanioides	Vetiver, Ramacham
		2	Shrub	301	Acacia concina/acacia sinuata	Sikakai
				351	Solanum toruvm	Sundaikai
		3	Climber	001	Abrus precatorius	Lal Gunja
				011	Cissus quadrangularis	Pirandai
		4	Tree	0050	Albizia amara	Oocil(usil) leaver
				0074	Anacardium occidentale	Kaju
				0079	Ananous squamosa	Sitafal,Setha
				0158	Bombax species/ Bombax ceiba	Simal
				0159	Borassus flabellfier	Tad
				0177	Bassia latifolia	Illuppai
				0217	Carissa carandas	Kilakoy
				0258	Cinnamomum tamala/bay leaf	Tejpat
				0346	Deienia Indica	Dieng-soh-karbam, Papada
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0825	Murraya koenigii	Karripata

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				0919	Phoenix sylvestris	khajuri
				1020	Quercus spp.	Machakoy
				1073	Sapindus emarginatus	Boonthikottai, Neikotan, Ritha, Aritha, Chootokoi, Kumkuda,Soapnut
				1160	Tamarindus indica	Tamarind
				1168	Terminalia belerica	Bahera
				1171	Terminalia chebula	Harra
				1287	Ziziphus mauritiana/jujuba	Ber
				1328	Cinnamommum camphora	Karpuram
36	Telangana	1	Herb	101	Achyranthes aspera	Kempu, Utrani gida,Puth kanda
				105	Aloe barbadensis/aloe vera	Kalabanda,Ghritkumari
				109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg
				112	Aristida setacea	Poochka Gaddi, Cheepuru Gaddi
				120	Centella asiatica	Hnahbial/Lambak, Manimuni
				127	Cyclea peltata	Paatathige
				129	Cyperus rotundus	Muthanga, Bhadra mustee, Nagaramotha
				130	Datura innoxia	Ummetha
				132	Drosera peltata	Kocu vetti
				148	Kaemperia galanga	Kacholam, Chandramoola
				156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				168	Rauvolfia serpentina	Sarpagandhi, Atki
				174	Solanum nigrum	Kasaka,Makoy
				190	Curculigo orchiodes	Nallathadi,Kali musali
				191	Curcuma pseudomontana	Adavi pasapu
		2	Shrub	321	Datura metal	Nallaummatha
				322	Desmodium gangeticum	Githanaram
				330	Ixora coccinea	Bandhujeevamu
		3	Climber	001	Abrus precatorius	Lal Gunja
				004	Asparagus sps	Challagadda
				009	Cardiospermum helicabum	Buddakaukara
				011	Cissus quadrangularis	Pirandai
				012	Clitoria ternatea	Vishnukanti soppu, Sankhu Poolu
				017	Gloriosa superba	Kalalavi, Adavi Naabhi, Menthonni,Kalihari
				018	Hemidesmus indicus	Sugandhipaala, Sogadeberu, Anantmul

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				026	Piper species/ Piper longum/ Piper mullesua	Thippali, Wild pepper, long pepper, Pipla
				028	Rubia cordifolia	Manchatti, Monjito, Chiranji, Manderti, Manjistha, Satamul
				034	Withenia somnifera	Ashwagandhi, Pennerugaddi
				035	Zizyphus oenoplea	Pariki
		4	Tree	1086	Schleichera oleosa	Kusum seed
				1089	Semecarpus anacardium	Bibba
				1115	Sterculia urens	Tapasi,kadhaya
				1119	Stereospermum suaveolens	Padal
				1125	Strychnos nuxvomica	Nux Vomica
				1126	Strychnos patatorum	Chilla
				1128	Soymida febrifuga	Rohan
				1136	Syzigium cumini	Jamun
				1160	Tamarindus indica	Tamarind
				1167	Terminalia arjuna	Arjun
				1168	Terminalia belerica	Bahera
				1171	Terminalia chebula	Harra
				1287	Ziziphus mauritiana/jujuba	Ber
				1363	Ximenia Americana	Nakeera
16	Tripura	1	Herb	119	Cardamum ammomum	Bara Ilaichi
				144	Homalouema aromatic	Gndhaki
				173	Schumannianthus dichotomus	B-Pati bet/ paitara/Mutrak Cane
				179	Thysanolaena maxima	Shumjit(Broom)
		2	Shrub	311	Calamus guruba	B-sundi bet/ Jai bet C- Dhangri bet/Rab bet rani bet
				320	Daemonorops jenkinsiana	C-Gala/ Assam bet
		3	Climber	006	Calamus floribundus	C-Beat, Lee
				023	Mucuna pruriens	Baidanka
		5	Bamboo	2002	Bambusa bambos	Kanta Bans
				2003	Bambusa balcoa	Barak
				2008	Bambusa	Makal
				2012	Bambusa tulda	Mirtinga
				2023	Dendrocalamus hamiltonii	Pecha
				2024	Dendrocalamus longispathus	Rupai
				2027	Dendrocalamus strictus	Lathi Bans
				2028	Melocana baccifera	Muli, Bamboo
				2052	Bambusa cacharensis	Bom/bethua bans
				2053	Bambusa Jaintiana	Tetua
				2054	Bambusa multiplex	Nan/Hedge bamboo

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				2055	Bambusa nutans	Kai
				2056	Bambusa polymorpha Munro	Paura
				2059	Oxytenanthera nigrociliata/Gigantochola Nogrociliata	Kalyai
				2061	Schizostachyum dulloa	Dolu
				2064	Thyrosostachys oliveri	Kanaak kaich
		6	Cane	2015	Calamus Erectus	Lee manbi
				2017	Calamus latifolius	C-bhudum bet
				2022	Calamus tenuis	Rngijali/Patli
				2058	Calamus viminalis	C-karak/ Bora bet
09	Uttar Pradesh	1	Herb	103	Acorus calamus	Okhidak, Vekhand,Bach,Vach,Sweet flag, Bojo, Bokha, Sita
				105	Aloe barbadensis/aloe vera	Kalabanda,Ghritkumari
				109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg
				121	Chlorophytum borivillianum/ Chorophytum tubersum baker	Saphed Musali
				138	Gymmema sylvestre	Gudmar
				158	Oscimum bassilicum	Landa baguli,Van tulsi
				163	Phyllanthus niruri/ Phyllanthus fraternus	Bhumi amla
				168	Rauvolfia serpentina	Sarpagandhi, Atki
				174	Solanum nigrum	Kasaka,Makoy
				176	Swertia chiraita	Chirata
				213	Eclipta alba	Bhringraj
				214	Cyperus scariosus	Nagarmotha
				215	Datura somnifera	Dhatura
				216	Bacopa monnieri	Bramhi
				217	Cymbopogon flexuosus	Lemon ghas
				230	Vettveria zizanoides	khus
				231	Stylosanthes hamata	Caribbean Stylo, Cheesy toes, hamata
				232	Dasmostachya	Khas
		2	Shrub	316	Commiphora wightii	Guggul
				325	Glycyrrhiza glabra	Jesthmadh,Mulethi
				327	Helicteres isora	Edamuri,Marorphali
				353	Vitex negundo	Sambhalu, Bana, Sambhalu,Nirgundi, Posotia
				354	Wihania somnifera	Ashwingandha, Ashwagandha, Agsend,Asgandha

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				361	Adhatoda vasica	Banasa/Basuti,Adusa, Boga Bahak
				363	Calotropis procera	Aak,Madar, Aakda Mul
		3	Climber	003	Asparagus racemosa	Shathavari,Satavar, Satmul
				026	Piper species/ Piper longum/ Piper mullesua	Thippali, Wild pepper, long pepper, Pipla
				031	Tinospora cordifolia	Giloe, Chittamruthu, Giloy,Guduchi
				044	Cuscuta reflexa	Amerbel
05	Uttarakhand	1	Herb	137	Grewia sapida	Falsa
		2	Shrub	319	Cudrania javensis	Cockspur Thorn
				329	Indopiptadenia oudhensis	Gainti
				358	Zanthoxylum alatum	Prickly Ash
		3	Climber	010	Celastrus paniculatus	Malkangini, Black oil plant
		4	Tree	0037	Aegla Marmelos	Bael
				0060	Alnus nepalensis	Alder Tree, Utis
				0086	Antidesma diandrum/Antidesma acidum	Black Current Tree ,Halimajjige
				0153	Betula Alnoides	Himalayan or Indian Birch
				0258	Cinnamomum tamala/bay leaf	Tejpat
				0353	Diospyros melanoxylon	Coromendel Ebony, Tendu
				0358	Diospyros embryopteris	Malabar Ebony, Gaub tree
				0362	Diploknema butyracea	Nepali Butter Tree, Chiuri
				0392	Ehretia laevis	Chamror
				0479	Ficus carica/ Ficus cunia	Fig, Anjeer
				0494	Flacourtio cataphracta	Indian Plum, Tallspatri
				0694	Lannea coromandelica	Modad, Indian Ash Tree, Mohin
				0714	Litsea chinensis	Bolly Gum
				0826	Myrica esculenta	Bay Berry
				0871	Olea cuspidata	African Olive
				0954	Premna latifolia	Bakarcha, Jhatel, Basota
				0989	Punica ganatum	N.A.
				1038	Rhododendron arborium	Burans
				1075	Sapindus mukurossi	Wash nut ,Ritha
				1162	Taxas baccata	European Yew
				1167	Terminalia arjuna	Arjun
				1353	Cornus capitata	Himalayan Strawberry Tree
				1359	Prunus puddum	Wild Himalayan Cherry
19	West Bengal	1	Herb	105	Aloe barbadensis/aloe vera	Kalabanda,Ghritkumari
				109	Andrographis paniculata	Chireita/Bhuin-neem , Kalmegh, Kaambheg

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
				120	Centella asiatica	Hnahbial/Lambak, Manimuni
				142	Holarrhena antidysenterica	Pandhra Kuda
				151	Lycopodium Spp/ Lycopodium clavatum	Lycopodium
				156	Ocimum species (Ocimum gratissimum/ Ocimum sanctum/ Ocimum tenuiflorum/ Ocimum americanum)	Bana Tulsi/Krishna Tulsi
				176	Swertia chiraita	Chirata
		3	Climber	003	Asparagus racemosa	Shathavari,Satavar, Satmul
				006	Calamus floribundus	C-Beat, Lee
				026	Piper species/ Piper longum/ Piper mullesua	Thippali, Wild pepper, long pepper, Pipla
				028	Rubia cordifolia	Manchatti, Monjito, Chiranji, Manderti, Manjistha, Satamul
		4	Tree	0037	Aegla Marmelos	Bael
				0068	Alstonia scholaris	Thuamriat
				0073	Amoora wallichii	Lali
				0158	Bombax species/ Bombax ceiba	Simal
				0173	Butea monosperma	Dhak, Palash
				0258	Cinnamomum tamala/bay leaf	Tejpat
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0759	Madhuca indica	Mahudo, Amba, Mango,Mahua
				0817	Moringa olifera	Sajina
				0877	Oroxylum indicum	Archangkawn, Totola
				1096	Shorea robusta	Sal
				1167	Terminalia arjuna	Arjun
				1168	Terminalia belerica	Bahera
				1171	Terminalia chebula	Harra
		5	Bamboo	2026	Dendrocalamus spp.	Bamboo
35	Andaman Nicobar Islands	2	Shrub	302	Calamus longisetus	N.A.
				303	Calamus palustris	N.A.
				337	Nypa fruticans	nipa palm
				345	Rizophora mucronata	Pikandal
		3	Climber	022	Korthalsia laciniosa	Rotan Dahan
		4	Tree	0580	Heritiera littoralis	Looking Glass Tree
				0703	Licula Peltata	Elegant Palm
				0925	Phoenix palludosa	Mangrove Date Palm, sea dates
				1106	Sonneratia griffithii	N.A.
				1361	Sonneratia alba	Nakshathrakandel, Apple

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
						Mangrove
				1364	Bruguiers gumnorrhiza	Oriental Mangrove
		5	Bamboo	2014	Calamus andamanicus	N.A.
				2051	Bambusa auriculata	Comman Bamboo
				2057	Bambusa schizostachyoides	N.A.
				2059	Oxytenanthera nigrociliata/Gigantochola Nogrociliata	Kalyai
				2062	Schizostachyum regersil	N.A.
04	Chandigarh	2	Shrub	308	Bougainvilea	Bougainvilea
				353	Vitex negundo	Sambhalu, Bana, Sambhalu,Nirgundi, Posotia
				354	Wihania somnifera	Ashwingandha, Ashwagandha, Agsend,Asgandha
		3	Climber	031	Tinospora cordifolia	Giloe, Chittamruthu, Giloy,Guduchi
		4	Tree	0016	Acacia chundra	Khair
				0114	Azadirachta indica	Neem
				0141	Bauhinia variegate/Phanera varigeta	Ebony tree
				0158	Bombax species/ Bombax ceiba	Simal
				0173	Butea monosperma	Dhak, Palash
				0226	Cassia fistula/ Sp.	Casia fistula, Amaltas
				0298	Cordia myxa	Lasura
				0348	Delonix regia	Gulmohar
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0486	Ficus religiosa	Pipal
				0491	Ficus virens	Pilkhan
				0594	Holopetelia integrifolia	Kanaji, Papri
				0759	Madhuca indica	Mahudo, Amba, Mango,Mahua
				0811	Mimusops elengi	Moulsari
				0822	Mulberry	Shahtoot
				0825	Murraya koenigii	Karripata
				0972	Psidium guava	Amrood
				1136	Syzigium cumini	Jamun
				1164	Tectona grandis	Sagwan
				1167	Terminalia arjuna	Arjun
				1287	Ziziphus mauritiana/jujuba	Ber
26	Dadra Nagar	2	Shrub	312	Calotropis gigantea	Akdo
		4	Tree	0005	Acacia arabica	Bawal

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
	Haveli			0007	Acacia catechu	khair
				0009	Acacia Ferruginosa/Acacia ferruginea	Kanti, Velsundra, Vel., Subsam, Babar, Soukhar, Konp
				0037	Aegla Marmelos	Bael
				0046	Ailanthus excelsa	Aduso
				0057	Albizzia procera	kinai
				0074	Anacardium occidentale	Kaju
				0079	Ananous squamosa	Sitafal,Setha
				0081	Anogeissus latifolia	Dhawada
				0114	Azadirachta indica	Neem
				0158	Bombax species/ Bombax ceiba	Simal
				0159	Borassus flabellfier	Tad
				0215	Careya arborea	kumbhi
				0225	Casearia Tomentosa	kirmira
				0226	Cassia fistula/ Sp.	Casia fistula, Amaltas
				0346	Deienia Indica	Dieng-soh-karbam, Papada
				0353	Diospyros melanoxylon	Coromendel Ebony, Tendu
				0410	Embilica officinalis/Phyllanthus	Nellikkai, Amla, Sunhlu
				0426	Erythrina variegate	Pangara
				0477	Ficus bengalensis	Vad
				0486	Ficus religiosa	Pipal
				0487	Ficus glomerata/ racemosa	Umbro,Gular
				0594	Holopetelia integrifolia	Kanaji, Papri
				0690	Lagestromia lanceolata	Nirgundi
				0694	Lannea coromandelica	Modad, Indian Ash Tree, Mohin
				0759	Madhuca indica	Mahudo, Amba, Mango,Mahua
				0807	Miliusa tomentosa	Umbh
				0881	Oogenia oogenesis	Tanach, Tiwas
				0919	Phoenix sylvestris	khajuri
				1128	Soymida febrifuga	Rohan
				1136	Syzigium cumini	Jamun
				1186	Trewia nudiflora	Petar
				1287	Ziziphus mauritiana/jujuba	Ber
34	Puducherry	1	Herb	108	Ananas comosus	Pineapple, Ananas
				120	Centella asiatica	Hnahbial/Lambak, Manimuni
				122	Coleus spp.	N.A.
				163	Phyllanthus niruri/ Phyllanthus fraternus	Bhumi amla
				168	Rauvolfia serpentina	Sarpagandhi, Atki

State Code	State Name	Habit Code	Habit	NTFP Species Code	NTFP Species Botanical Name	Common Name
		2	Shrub	307	Agave species	N.A.
				359	Zizyphus spp.	N.A.
		4	Tree	0103	Artocarpus heterophyllus	N.A.
				0114	Azadirachta indica	Neem
				0134	Barringtonia sp.	N.A.
				0158	Bombax species/ Bombax ceiba	Simal
				0173	Butea monosperma	Dhak, Palash
				0194	Callophyllum inophyllum	Undi
				0217	Carissa carandas	Kilakoy
				0226	Cassia fistula/ Sp.	Casia fistula, Amaltas
				0242	Ceiba pentandra	Kapok
				0290	Cordia	N.A.
				0296	Corypha Umbraculifera	N.A.
				0694	Lannea coromandelica	Modad, Indian Ash Tree, Mohin
				0759	Madhuca indica	Mahudo, Amba, Mango,Mahua
				0949	Pongamia glabra/pinnata	Karanj
				0972	Psidium guava	Amrood
				0989	Punica ganatum	N.A.
				1113	Sterculia foetida	N.A.
				1136	Syzigium cumini	Jamun
				1168	Terminalia belerica	Bahera
				1171	Terminalia chebula	Harra
				1358	Peltophorum	N.A.

Annexure – IX

Note on bearing and distance

Note on Bearing

The bearing is an angle by any direction/line with the north direction at a particular place. The bearing of the line joining any two points or, in this case, reference point to plot centre would be calculated as follows:

1. Spread the toposheet on levelled ground surface.

2. Put the Silva Compass on it.

3. Adjust the north-south direction of the toposheet i.e. any printed longitude line exactly with the north-south of the needle of Silva Compass. This process when finalised will indicate that the map is correctly oriented.

4. Magnetic variation given in top right margin of the toposheet must be accounted for while orienting the map. The magnetic variation has to be either added or substracted to the campass bearing as the case may be. If the magnetic variation is in the North-West of True North, this should be added and in case it is in the North-East of True North then to be substracted from the compass bearing. The magnetic variation to be accounted for to the nearest degree e.g. if the deviation is by $3/4^0$ or more that same has to be taken as 1^0 for addition or substraction and if it is $1/4^0$ or less, may be ignored.

5. Ensure the reference point and the plot centre correctly on the map.

6. Without disturbing the map, place the silva Compass in such a manner that its longer axis or any printed longitudinal line on it connects both the points i.e. reference point and the plot centre. The mirror of the compass should be towards the plot centre.

7. With a steady hand, rotate the dial of the compass in such a manner that the North mark on the rim of the compass and North of the needle coincide exactly.

8. Now take out a compass and read the bearing against the index pointer of the compass.

9. Silva Compasses are manufactured in degrees as well as in grades. A precaution has to be taken to see that grades are not confused with degrees and vice versa. Similarly, since the Silva Compass is a magnetic instrument all iron and magnetic articles should be kept sufficiently away from the compass so as to avoid effect of such articles on the magnetic needle and ultimately on the bearings of the plot centre.

10. While proceeding towards the plot centre or any other object at known bearing the job has to be done by a team of three persons one holds the Silva Compass and other two carry ranging roads. The person holding a Silva compass adjusts the exact bearing on the rim of

the compass, then by holding compass in a levelled manner in one palm and stretching the hand straight in front of his eyes, settles the needle steady North-South and sights the trees or objects which exactly coincide with the thread line of the viewing slit of the compass, centre of the needle and notch at the top of the mirror. The other two persons proceed ahead along bearing line with ranging rods and stand with vertical ranging rods in their hands at the places directed by the person holding Silva Compass. Usually small distances are traversed, say 50 to 100 meter at a time, so that the possibility of error is minimised. The person holding Silva compass frequently directs other persons holding ranging rods to stand at a sufficient distance along the bearing line. After fixing the persons holding ranging rods on two spots on a bearing line, the person holding Silva compass proceeds to the spot of the first person holding ranging rod and views again, further ranging the second person holding ranging rod and directing the person shifted from first spot to occupy further position on the bearing line as viewed from Silva compass and decided by him. Likewise, the process goes on till a desired distance is covered upto the plot centre.

Note on Distance

All distances on the map are horizontal distances. As such the distance in field has to be measured in terms of horizontal distance. An instrument named as Blume-Leiss Hypsometer or any other hypsometer can be used for knowing the degree of slope between two points. A person at the first point on line views the person at the same height at the other end of the line through the hypsometer and reads the angle of elevation or depression. A ready reckoner for reading horizontal distances of certain common slope distances against specific degrees of slope has been provided in the end of the manual (see Annexure I). A corresponding horizontal distance against a definite slope distance and slope degrees may be read from the table so that a desired horizontal distance can be reached although the coverage of slope distance will be more. The difference in slope distance and horizontal distance is more in hilly areas than that in plain areas. (Note - The slope correction be made after every chain/rope and not at the end).

Annexure – X

List of Invasive Forest Species

S. No.	Species code	Invasive Forest Species Name	Local Name
1	01	*Acacia farnesiana*	
2	02	*Acacia mearnsii*	
3	03	*Achyranthes aspera*	
4	04	*Ageratina adenophora*	
5	05	*Ageratum conyzoides*	
6	06	*Ageratum houstonianum*	
7	07	*Alternanthera philoxeroides*	
8	08	*Argemone mexicana*	
9	09	*Cassia/Senna occidentalis*	
10	10	*Cassia tora*	
11	11	*Chromolaena odorata*	
12	12	*Cuscuta spp.*	
13	13	*Cyperus pilosus*	
14	14	*Cyperus rotundus*	
15	15	*Cytisus scoparius*	
16	16	*Desmodium laxiflorum*	
17	17	*Dioscorea deltoidea*	
18	18	*Dioscorea pentaphylla*	
19	19	*Eclipta prostrata*	
20	20	*Eichornia crassipes*	
21	21	*Fimbristylis miliacea*	
22	22	*Glinsoga parviflora*	
23	23	*Ichnocarpus frutescens*	
24	24	*Mimosa pigra*	
25	25	*Imperata cylindrica*	
26	26	*Ipomoea carnea*	
27	27	*Ipomoea fistulosa*	
28	28	*Lantana camara*	
29	29	*Leucanea leucocephala*	
30	30	*Melochia corchorifolia*	
31	31	*Microcystis*	
32	32	*Mikania micrantha*	
33	33	*Parthenium hysteropharus*	
34	34	*Prospis chilensis*	
35	35	*Prosopis juliflora*	
36	36	*Saccharum spontanem*	
37	37	*Salvinia molesta*	
38	38	*Sida carpinifolia/acuta*	
39	39	*Sida orientalis*	
40	40	*Solanum elaeagnifolium*	
41	41	*Solanum viarum*	

42	42	*Tridax procumbens*	
43	43	*Triumfetta rhomboidea*	
44	44	*Ulex europaeus*	
45	45	*Xanthium strumarium*	
46	00	*Not applicable*	

Annexure XI

State- wise list of the Conservation/Community Reserves of the country

According to "Wildlife (Protection) Act 1972" (WLPA), the definition for Conservation/Community Reserve is given below.

Conservation Reserve: - Section 36 A(I) of WLPA: - "The State Government may, after having consultations with the local communities, declare any area owned by the Government, particularly the areas adjacent to National Parks and Sanctuaries and those areas which link one protected area with another, as a Conservation Reserve for protecting landscapes, seascapes, flora and fauna and their habitat".

Community Reserve: - Section 36C of WLPA: - "The State Government may, where the community or an individual has volunteered to conserve wild life and its habitat, declare any private or community land not comprised within a National Park, Sanctuary or a Conservation Reserve, for protecting fauna, flora and traditional or cultural conservation values and practices".

There are about 10 States in which these areas are defined and the State/district wise list of conservation/community reserves in the country is attached in Annexure-XII at the end.

State-wise details of the Conservation/Community Reserves of the country

Sl.No.	State/UT	No. of Conservation Reserves	No. of Community Reserves
1	Gujarat	1	0
2	Haryana	2	0
3	Jammu &Kashmir	34	0
4	Karnataka	2	1
5	Kerala	0	1
6	Maharashtra	1	0
7	Punjab	1	2
8	Rajasthan	5	0
9	Tamil Nadu	1	0
10	Uttarakhand	2	0
	Total	**49**	**4**

State wise list of Coservation Reserve in the Country

Area in sq.km.

Sl.No.	Name of the State	Name of the District	Name of the Conservation Reserve	Year of Notification	Total Area
1	Gujarat	Kachchh	Chharidhandh Con. Res.	2008	227
2	Haryana	Jind	Bir Bara Ban WLS	2007	4.19
3	Haryana	Kurukshetra, Kaithal	Saraswati Plantation WLS	2007	44.53
4	Jammu &Kashmir	Anantnag	Khiram CR	1945	15.75
5	Jammu &Kashmir	Pulwama	Panyar CR	1945	10
6	Jammu &Kashmir	Pulwama	Khanagund CR	1945	15
7	Jammu &Kashmir	Pulwama	Shikargah CR	1945	15.5
8	Jammu &Kashmir	Pulwama	Khrew CR	1945	50.25
9	Jammu &Kashmir	Pulwama	Khonmoh CR	1945	67
10	Jammu &Kashmir	Srinagar	Brain-Nishat CR	1945	15.75
11	Jammu &Kashmir	Srinagar	Khimber/Dara/ Sharazbal CR	1945	34
12	Jammu &Kashmir	Srinagar	Wangat/Chatergul	1945	12
13	Jammu &Kashmir	Bandipora	Ajas CR	1945	48
14	Jammu &Kashmir	Baramula	NaganariCR	1981	22.25
15	Jammu &Kashmir	Srinagar	Zaloora, Harwan	1970	25.25
16	Jammu &Kashmir	Udhampur	Sudhmahadev CR	1981	142.25
17	Jammu &Kashmir	Doda	Jawahar Tunnel	1981	18
18	Jammu &Kashmir	Kathua	Thein	1981	19
19	Jammu &Kashmir	Jammu	Bahu	1981	19.75
20	Jammu &Kashmir	Leh	Sabu	1981	15
21	Jammu &Kashmir	Kargil	Boodh Karbu	1981	12
22	Jammu &Kashmir	Srinagar	Hokera (Ramsar Site) (WL)	1945	13.75
23	Jammu &Kashmir	Budgam	Narkara (WL)	1991	3.25
24	Jammu &Kashmir	Pulwama	Manibugh (WL)	1970	4.5
25	Jammu &Kashmir	Pulwama	Chatlam, Pampore (WL)	1970	0.25
26	Jammu &Kashmir	Budgam	Mirgund (WL)	1970	4
27	Jammu &Kashmir	Srinagar	Shallabugh (WL)	1945	16
28	Jammu &Kashmir	Bandipora	Ajas (WL)	1945	1
29	Jammu &Kashmir	Baramula	Hygam (WL)	1945	7.25
30	Jammu &Kashmir	Baramula	Malgam (WL)	1970	4.5
31	Jammu &Kashmir	Jammu	Gharana (WL)	1981	0.75
32	Jammu &Kashmir	Jammu	Pargwal (WL)	1981	49.25
33	Jammu &Kashmir	Jammu	Kukarian (WL)	1981	24.25
34	Jammu &Kashmir	Jammu	Nanga (WL)	1981	15.25

35	Jammu &Kashmir	Jammu	Sangral-Asa Chak (WL)	1981	7
36	Jammu &Kashmir	Leh	Tsomoiri (Ramsar Site) (WL)	1981	120
37	Jammu &Kashmir	Leh	Norrichain (WL)	1981	2
38	Karnataka	Haveri	Bankapur Peacock Conservation Reserve (Bird)	2006	0.56
39	Karnataka	Tumkur	Jayamangali Black Buck Reserve	2007	3.23
40	Maharashtra	Nashik	Bhorkada Conservatin Reserve	2008	3.49
41	Punjab	Taran Taran	Rakh Sarai Amanat Khan Con. Res.	2010	4.95
42	Rajasthan	Tonk	Bisalpur Con Res	2008	48.31
43	Rajasthan	Bikaner	Jor Beed Gadwala Bikaner Con res	2008	56.47
44	Rajasthan	Jalore, Sirohi	Sundha Mata Con Res	2010	117.49
45	Rajasthan	Jodhpur	Gudha Bishnoi	2011	2.32
46	Rajasthan	Sikar, Jhunjhunu	Shakambhari	2012	131
47	Tamil Nadu	Tirunelveli	Thiruppudai-maruthur Birds	2005	0.03
48	Uttarakhand	Dehradun	Asan Barage Wetland CR (Bird)	2005	4.44
49	Uttarakhand	Haridwar	Jhilmi Jheel CR(Bird)	2005	37.84

State wise list of Community Reserve in the Country

Area in sq.km.

Sl.No.	Name of the State	Name of the District	Name of the Community Reserve	Year of Notification	Total Area
1	Karnataka	Mandya	Kokkare Bellur Community Reserve (Bird)	2007	3.12
2	Kerala	Malappuram	Kadalundi-Vallikkunnu	2007	1.5
3	Punjab	Hoshiarpur	Lalwan Community Reserve	2007	12.67
4	Punjab	Gurdaspur	Keshopur-Chhamb Community Reserve	2007	3.4

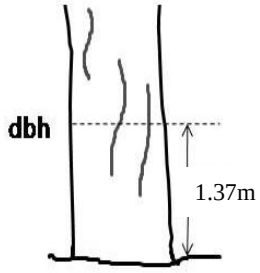
Annexure-XII

Measurement of tree diameter

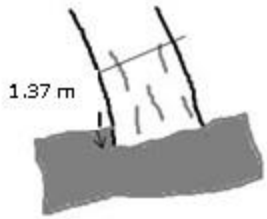
In the forest inventory work, tree diameter has been traditionally measured at 1.37 meters above the ground or root of the crown if the root crown is exposed, a point defined as diameter at breast height(DBH). The exact position of DBH is also dependent of individual tree form and topography. For measurement of diameter of a tree, callipers or diameter tapes are used. The following situations may be encountered in measurement of tree diameter.

(i) Flat ground
(ii) Leaning trees
(iii) Leaning tree on hillsides
(iv) Trees on slope
(v) Trees with irregularities
(vi) Trees with missing bark or wood
(vii) Trees with but Swell or bottleneck.
(viii) Forked trees
  (a) Forked trees below 1.37 meter
  (b) Forked trees above 1.37 meter
(ix) Live wind thrown trees
(x) Trees with curved bole

Diameter on flat ground: Measure DBH at 1.37 m above the ground.

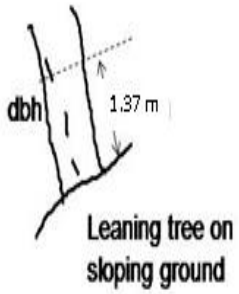


Leaning tree: Measure diameter at 1.37 m from the ground along the bole.

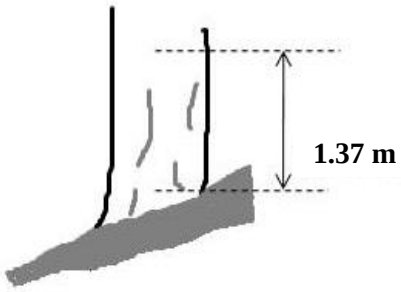


Leaning tree on Sloping ground:

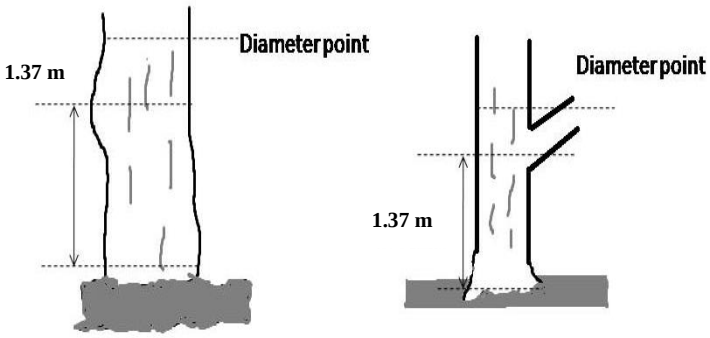
Measure the diameter 1.37 m from the ground along the uphill side of the tree.



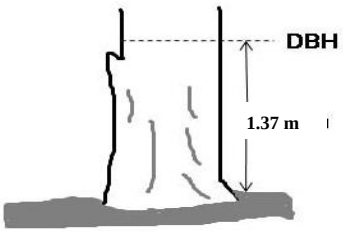
Tree on slope: Measure diameter at 1.37 m from the ground along the bole on the uphill side of the tree.



Tree with irregularities at DBH:
On trees with swellings, bumps, depressions, and branches at DBH, diameter will be measured immediately above the irregularity at the place it ceases to affect normal stem form.

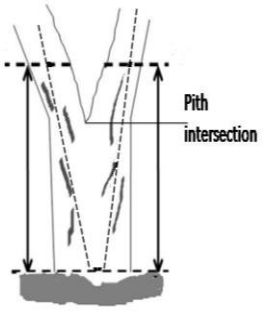


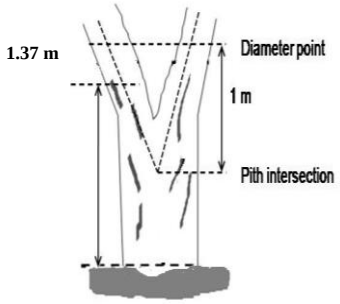
Missing wood or bark: Do not reconstruct the DBH of a tree that is missing wood or bark or at the point of measurement. Record the Diameter of the wood and bark that is still attached to the tree.



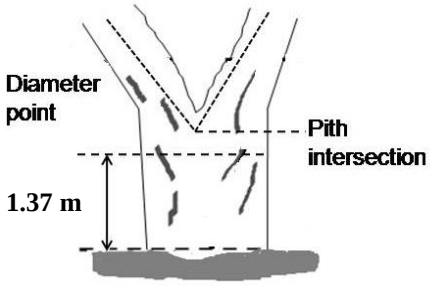
Forked tree: Visually locate the point of separation

Trees forked below 1.37 m. Trees forked in this region are treated as distinctly separate trees. Distances and azimuths are measured individually to the centre of each stem where it splits from the stump. DBH is measured for each stem at 1.37 m above the ground

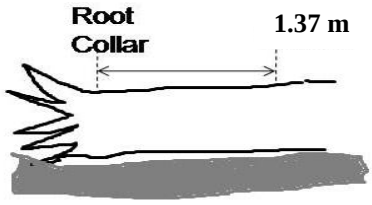




Trees forked at or above 1.37 m. Trees forked in this region count as one single tree. If a fork occurs at or immediately above 1.37 m, measure diameter below the fork just beneath any swelling that would inflate DBH.

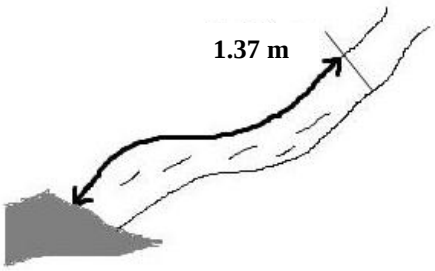


Live wind thrown tree: Measure from the top of the root collar along the length to 1.37 m.



Trees with curved bole:

Measure diameter along the bole on the uphill (upper surface) of the tree**.**



Annexure-XIII

Tree Height Measurement

The height of a tree is important characteristics for measuring the total amount of wood contained in tree. It is vertical distance from ground level to the highest given point on the tree known as tip of the tree. Identifying actual tree top and the fact that the tree top may not be directly over the base of the tree are main sources of for tree height measurements. Height can be measured through ocular estimates, non-instrumental, (Shadow method, single pole method,) Tree height measurements can be done with the help of clinometers, altimeters, relaskopes or hypsometers.

Measuring tree height

i) Walk around the tree and find the best location to view the top of the tree.
ii) Stand far away from the tree so that the top of ree is less 90 degrees above the line of sight.
iii) Always stand up-slope of the tree (fig).
Standing down-slope of the tree should only take place when no other option exists.
iv) Measure height of dominant canopy trees.
v) Follow the instructions provided by the manufacturer of the instruments.
vi) Please chalk mark on the tree to indicate that the tree has been measured.
vii) all trees should be tagged with the placement of an aluminium numbered tag and nail.
viii) Record species name, the local name and associated, DBH and height.
ix) When all of the trees in the cluster (Sub-plot) have been measured, there should be double check to see that all of trees have been measured.

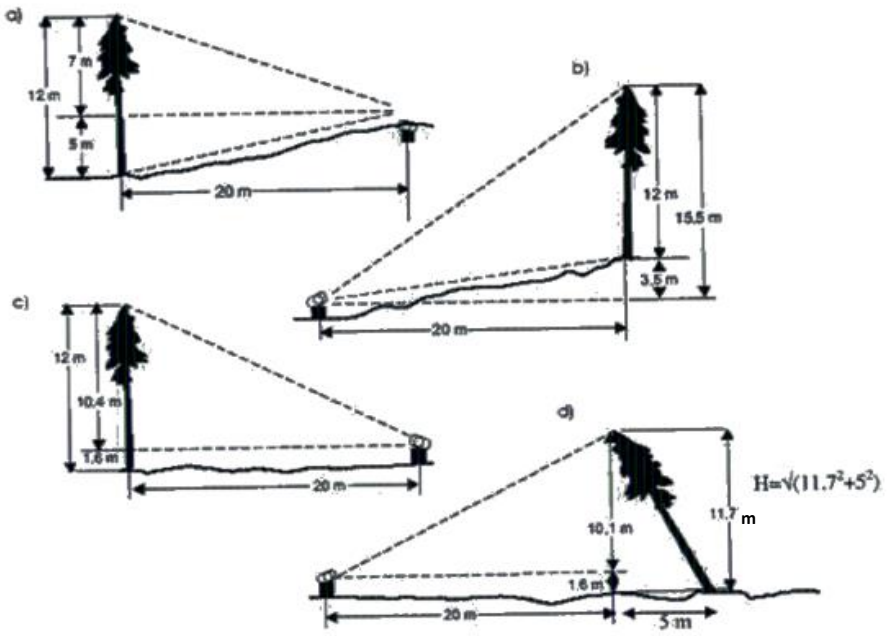


Figure: Different arrangements to measure **tree height**

Annexure-XIV:
Field Forms for National Forest Inventory

Field Form No. 1

PLOT APPROACH FORM

Job No.	FSI Zone code	Phy. Zone Code	State code	Forest Division Code	District Code	Mapsheet No.	Grid Code	Name of Camp	Time (hrs.) at which left the camp/plot (IST Time)	Distance covered by vehicle (km)	Time taken in journey by vehicle (in hours)	Latitude & Longitude of the place upto which journey performed by vehicle	
												Latitude	Longitude
1 (3)	2 (1)	3 (2)	4 (2)	5 (2)	6 (2)	7 (6)	8 (6)	9	10 (4)	11 (2)	12 (4)	13 (8)	14 (8)
	01												

Time(hrs.) at which started on foot to plot centre (IST)	Distance covered on foot upto the plot centre (km upto two decimal place)	Time (hrs.) of arrival at the Plot (IST)	Time (hrs) of departure from the plot (IST)	Time (hrs.) at which returned to the camp (IST)	Compassing/Navigation done by (Name of person)	Plot laid out by (Name of person)	Tree Enumeration done by (Name of person)	Height Measurement taken by(Name of person)	B.T. & other measurements taken by(Name of person)	Bamboo enumeration done by(Name of person)	Bamboo weight taken by (Name of person)
15 (4)	16 (4)	17 (4)	18 (4)	19 (4)	20	21	22	23	24	25	26

Herbs/Shrubs/ Climbers/ Regeneration Data collected by (Name of person)	Soil & Forest Floor data Collected by(Name of person)	Details of the Reference Tree(In case of plot status 1& 5)					Latitude and Longitude of the place upto where crew approached (in case of plot status 2/3/4)		Name of the Crew Leader	Remarks (Upto 50 (Fifty) words)
		Reference Tree Sl. No.	Spp Code	Species Name	Distance from Tree to Plot Centre (in meters upto two decimel)	Bearing from Tree to Plot Centre (in degree)	Latitude	Longitude		
27	28	29	30(4)	31	32(4)	33(3)	34(8)	35(8)	36	37
		1.								
		2.								

Date: dd /mm /yyyy

Signature of the Crew Leader

Field Form No. 2

PLOT DESCRIPTION FORM

Job No.	Survey code	Form Code	FSI Zone	Phy. Zone	State	District	Forest Division	Mapsheet No.	Grid code	Lat.	Long.	Legal Status	Land Use	Density for LUC 7&14	Wild life protected area
1 (3)	2 (1)	3 (2)	4 (1)	5 (2)	6 (2)	7 (2)	8 (2)	9 (6)	10 (6)	11 (8)	12 (8)	13 (1)	14 (2)	14 (a) (2)	15 (1)
	1	02													

Terrain Data						Soil Data							Crop Data																						Bamboo Data								Degraded Forest				
General Topography	Slope	Position on slope	Altitude	Aspect	Rockiness	Humus	Soil colour	Soil consistency	soil texture	Coarse Fragments	Soil depth	Soil erosion	Origin of stand	Crop composition	Canopy layer or storey	Top height	Size class	Intensity of regeneration	Species under regeneration	Injuries to crop due to Girdling	Injuries to crop due to Illicit felling	Lopping for fodder etc.	Fire incidence	Grazing incidence	Presence of understorey vegetation	Presence of grass	Presence of most occurring invasive species	Presence of second most occurring invasive species	Extent of most occurring invasive species	Extent of second most occurring invasive species	Bamboo density	Bamboo quality	Bamboo flowering	Bamboo regeneration	Plantation potential	Distance from road (km)	Type of water bodies in the vicinity of plot	Distance from river/stream (m)	Plot status	Biotic influence	Natural calamity	Date of survey(dd/mm/yy)	Basel Area (at factor 1.5) by wedge prism (in sq. m upto 5 decimal places)	Canopy Denisty by using densitometer
16 (1)	17 (3)	18 (1)	19 (4)	20 (1)	21 (1)	22 (1)	23 (1)	24 (1)	25 (1)	26 (1)	27 (1)	28 (1)	29 (1)	30 (2)	31 (1)	32 (2)	33 (1)	34 (1)	35 (4)	36 (1)	37 (1)	38 (1)	39 (1)	40 (1)	41 (1)	42 (1)	43 (2)	44 (2)	45 (1)	46 (1)	47 (1)	48 (1)	49 (1)	50 (1)	51 (1)	52 (1)	53 (1)	54 (1)	55 (1)	56 (1)	57 (1)	58	59 (8)	60 (2)

Signature of the Crew Leader……

Note:- i) First Number in the row below the field headings represents the column number and the number inside the bracket represents the column width.

ii) For Lat& Long, seconds to be recorded upto two decimal places, no need to put the decimal point.

Field Form No. 3

PLOT ENUMERATION AND SAMPLE TREE FORM

Job No.	Form Code	Mapsheet No.	Grid code
1 (3)	2 (2)	3 (6)	4 (6)
	03		

Sub-plot	Slope %	Sub-plot status	Land use class of Sub-plot	Sub-plot Selected for STF (Yes/ No)
5 (1)	6 (3)	7 (1)	7a(2)	7 (b)

Total No. of bamboo clumps	Total No. of trees
26 (3)	27 (3)

Sl. No	Plot Enumeration Form Parameters							Sample Tree Form Parameters									
								Crown width (meter)		Height (meter)							
	Species Name	Species code	Dia (cm)	Status of tree (Dead/ Alive)	Cause of death in case of mortality	Rotten/ missing cull	Decay class	CW1	CW2	Total height	Un-compacted Crown Length	Compacted Crown Length	Incidence of Insect	Incidence of Disease	DBT (mm)	Bark Void %	Clear bole height (m)	Dominance
8	*8.1*	*9 (4)*	*10 (3)*	*11 (1)*	*12 (1)*	*13 (1)*	*14(1)*	15(2)	16(2)	17(2)	18 (2)	19(2)	20(1)	21(1)	*22(2)*	*23(2)*	*24(2)*	*25(1)*

Date…….. Signature of the Crew Leader…….

Note:- i) First Number in the row below the field headings represents the column number and the number inside the bracket represents the column width

ii) If species is identified but uncoded in the manual, then please mention the botanical/local name of the species.

Field Form No. 4

SAMPLE TREE FORM (discontinued from 30.01.2021)

Job No.	Form Code	Mapsheet No.	Grid code
1 (3)	2 (2)	3 (6)	4 (6)
	04		

Total No. of trees	Sub-Plot no.
23 (2)	24(1)

Species name	Tree serial No.	Species code	Dominance	DBH OB (cm)	DBT (mm)	*Bark Void %*	Tree height (m)	Clear bole height (m)	Species name	Tree serial No.	Species code	Dominance	DBH OB (cm)	DBT (mm)	Bark Void %	Tree height (m)	Clear bole height (m)
5	6 (2)	7 (4)	8 (1)	9 (3)	10 (2)	*11 (2)*	12 (2)	13 (2)	14	15 (2)	16 (4)	17 (1)	18 (3)	19 (2)	20 (2)	21 (2)	22 (2)

Date…….. Signature of the Crew Leader…….

Note:- i) First Number in the row below the field headings represents the column number and the number inside the bracket represents the column width

Field Form No.-5

BAMBOO CLUMP ANALYSIS FORM

Job No.	Form Code	Mapsheet No.	Grid code
1 (3)	2 (2)	3 (6)	4 (6)
	05		

Average culm height (in dcm)		Bamboo quality
Upto 1 cm top dia	Upto 2 cm top dia	
38 (3)	39 (3)	40 (1)

Species		Sub-plot number and Clump Sl.No.	Clump Dia-meter (cm)	Clump size	Green sound culm									Green damaged culms									Dry sound culms				Dry damaged culms				Deca-yed culms	Total no. of culms
Name	Code				Current	One to two years old				Over two years old				Current	One to two years old				Over two years old														
						1<2cm	2<5 cm	5<8 cm	8+ cm	1<2cm	2<5 cm	5<8 cm	8+ cm		1<2cm	2<5 cm	5<8 cm	8+ cm	1<2cm	2<5 cm	5<8 cm	8+ cm	1<2cm	2<5 cm	5<8 cm	8+ cm	1<2cm	2<5 cm	5<8 cm	8+ cm		
5	6 (4)	7 (3)	8 (3)	9 (1)	10 (2)	11 (2)	12 (2)	13 (2)	14 (2)	15 (2)	16 (2)	17 (2)	18 (2)	19 (2)	20 (2)	21 (2)	22 (2)	23 (2)	24 (2)	25 (2)	26 (2)	27 (2)	28 (2)	29 (2)	30 (2)	31 (2)	32 (2)	33 (2)	34 (2)	35 (2)	36 (2)	37 (3)

Date…….. Signature of the Crew Leader……

Note:- i) First Number in the row below the field headings represents the column number and the number inside the bracket represents the column width

ii) If species is identified but uncoded in the manual, then please mention the botanical/local name of the species.

Field Form No. -6

BAMBOO ENUMERATION AND ANALYSIS FORM (NON CLUMP FORMING)

Job No.	Form Code	Mapsheet No.	Grid code	Sub-plot No.
1 (3)	2 (2)	3 (6)	4 (6)	36 (1)
	06			

Species			Green sound culms								Green damaged culms									Dry sound culms				Dry damaged culms				Deca-yed culms	Average culm height in dcm.	Total no. of culms
Name	Code	Current year	One to two year old				Over two year old				Current year	One to two year old				Over two year old															
			1<2cm	2<5 cm	5<8 cm	8+ cm	1<2cm	2<5 cm	5<8 cm	8+ cm		1<2cm	2<5 cm	5<8 cm	8+ cm	1<2cm	2<5 cm	5<8 cm	8+ cm	1<2cm	2<5 cm	5<8 cm	8+ cm	1<2cm	2<5 cm	5<8 cm	8+ cm			
5	6 (4)	7 (3)	8 (3)	9 (3)	10 (3)	11 (3)	12 (3)	13 (3)	14 (3)	15 (3)	16 (3)	17 (3)	18 (3)	19 (3)	20 (3)	21 (3)	22 (3)	23 (3)	24 (3)	25 (3)	26 (3)	27 (3)	28 (3)	29 (3)	30(3)	31 (3)	32 (3)	33 (3)	34 (3)	35 (4)

Date…….. Signature of the Crew Leader…….

Note:- i) First Number in the row below the field headings represents the column number and the number inside the bracket represents the column width

ii) If species is identified but uncoded in the manual, then please mention the botanical/local name of the species.

Field Form No. 7

BAMBOO WEIGHT FORM

Job No.	Form Code	Mapsheet No.	Grid code
1 (3)	2 (2)	3 (6)	4 (6)
	07		

Species		Sample No.	1 to under 2cm					2 to under 5 cm					5 to under 8 cm					8 cm and over					Green weight of sub-sample for co-relation with dry weight			
Name	Code		Dia in cm	Total length in dcm	Utilisable length in dcm		Weight in grams	Dia in cm	Total length in dcm	Utilisable length in dcm		Weight in grams	Dia in cm	Total length in dcm	Utilisable length in dcm		Weight in grams	Dia in cm	Total length in dcm	Utilisable length in dcm		Weight in grams	Sub-sample culm 1 & under 2 cm dia	Sub-sample culm 2 & under 5 cm dia	Sub-sample culm 5 & under 8 cm dia	Sub-sample culm 8 cm and over
					Upto 1 cm top dia	Upto 2 cm top dia				Upto 1 cm top dia	Upto 2 cm top dia				Upto 1 cm top dia	Upto 2 cm top dia				Upto 1 cm top dia	Upto 2 cm top dia					
5	6 (4)	7 (1)	8 (2)	9 (3)	10 (3)	11 (3)	12 (5)	13 (2)	14 (3)	15 (3)	16 (3)	17 (5)	18 (2)	19 (3)	20 (3)	21 (3)	22 (5)	23 (2)	24 (3)	25 (3)	26 (3)	27 (5)	28 (4)	29 (4)	30 (4)	31 (4)

Date…….. Signature of the Crew Leader……

Note:- i) First Number in the row below the field headings represents the column number and the number inside the bracket represents the column width

Field Form No. 8

NTFP (HERBS, SHRUBS and CLIMBERS) AND REGENERATION FORM

Job No.	Form Code	State Code	Mapsheet No.	Grid code	Lat	Long
1 (3)	2 (2)	3 (2)	4(6)	5 (6)	6 (8)	7 (8)
	08					

Herb Plot size: 0.6 meter radius
Shrub, Climber & Regeneration Plot size: 1.7 meter radius

Sub-Plot number	NTFP (herbs, shrubs and climbers)							Regeneration (Trees)						
	Species			No. of plants				Species				No. of plants		
	Name	Code	Habit (herbs/shrubs/ climbers)	Collar diameter class (mm for herbs /cm for shrubs & climbers)				Name	Code	Diameter at breast height (cm)	Status of tree (alive/dead)	Category of regeneration		
				0-2	2-5	5-8	8+					1	2	3
8(1)	9	10 (3)	11(1)	12 (3)	13 (3)	14 (3)	15 (3)	16	17(4)	18 (1)	19 (1)	20 (2)	21 (2)	22 (2)

Date…… Signature of the Crew Leader…….....

Note:- i) First Number in the row below the field headings represents the column number and the number inside the bracket represents the column width

Field Form No. 9

SOIL AND FOREST FLOOR CARBON FORM

Job No.	Form Code	Mapsheet No.	Grid code	Lat	Long	Proportion of		Forest floor sample No.	Soil sample No.
						Gravel	Soil		
1 (3)	2 (2)	3 (6)	4 (6)	5 (8)	6 (8)	7 (3)	8 (3)	9 (4)	10 (4)
	09								

Weight of Forest Floor in gms.			Volume of soil	Weight of soil (gms)
Plot 1 (360^0 north)	Plot 2 120^0 azimuth from sub-plot 1	Plot 3 240^0 azimuth from sub-plot 1)		
11 (5)	12 (5)	13 (5)		14 (4)

Date…… Signature of Crew Leader…..……

Note:- i) First Number in the row below the field headings represents the column number and the number inside the bracket represents the column width

SOIL AND FOREST FLOOR SAMPLE CARD

(To be read with Field Form 9)

1. Mapsheet No.
   _____

2. Grid Code
   _____

3. Lat. and Long.
   _____

4. Sample No.
   _____

5. Date of Collection
   _____

Signature_____

Field Form No. 10

STUMP, DEAD WOOD AND WOODY LITTER FORM

Job No.	Form Code	Mapsheet No.	Grid code	Lat	Long	Prsence of Dead Wood information
1 (3)	2 (2)	3(6)	4 (6)	5 (8)	6 (8)	17(1)
	10					

Stump and Dead wood: circular plot of size 2.8 m radius
Woody litter: circular plot of size 1.7 m radius

Sub-plot number	Stump Information				Dead wood information			Woody litter (branch less than 5 cm)	
	Species code	Status of stump (alive/ dead)	Dia in cm.	Height in cm.	Species code	Dbh/Dia (cm)	Length of the Log (cm)	**Sub-plot number**	**Weight (in kg upto two decimal places)**
7(1)	8 (4)	9(1)	10(3)	11(3)	12 (4)	13(3)	14 (3)	15(1)	16(4)
								1	
								2	
								3	
								4	

Date…… Signature of the Crew Leader…….....

Note:- i) First Number in the row below the field headings represents the column number and the number inside the bracket represents the column width

Field Form No. 11

Shrubs, Climbers and Herbs Biomass Form

Job No.	Form Code	State Code	Mapsheet No.	Grid code	Latitude	Longitude	Sub-plot number	Shrubs & Climbers: circular plot of size 1.7 m radius
1 (3)	2 (2)	3(2)	4 (6)	5(6)	6(8)	7(8)	8 (1)	
	11							Herbs: circular plot of size 0.6 m radius

Shrubs					Climbers					Herbs			Remarks
Species name	Weight				Species name	Weight				Species Name	weight		
	Woody part		Non Woody part			Woody part		Non Woody part					
	Green wt. (kg. upto two decimal places)	Dry wt. (%)	Green wt. (kg. upto two decimal places)	Dry wt. (%)		Green wt. (kg. upto two decimal places)	Dry wt. (%)	Green wt. (kg. upto two decimal places)	Dry wt. (%)		Green wt. (gms)	Dry wt. (%)	
9	10(4)	11 (2)	12(4)	13 (2)	14	15 (4)	16 (2)	17 (4)	18 (2)	19	20(4)	21 (2)	22

Date: …..
Leader…...……

Signature of Crew

Name of Crew Leader.....

Note:- i) First Number in the row below the field headings represents the column number and the number inside the bracket represents the column width

TOFR –1

PLOT APPROACH FORM

Job No.	Survey code	Form code	FSI Zone	Phy. Zone	State code
1(3)	2(1)	3(1)	4(1)	5(2)	6(2)
	2	1			

District code	Stratum code	Grid code	*Mapsheet No.*	*Latitude dd mm sss*	Longitude dd mm sss	Plot Type
7(2)	8(1)	9(6)	10(6)	11(8)	12(8)	13(1)

1. Name of Camp/District
2. Time (hrs.) at which left the camp/time at which move to the next plot
3. Distance covered by vehicle (km)
4. Time taken in journey by vehicle Hours Minutes
5. Time at which started on foot hrs.
6. Distance covered on foot
   up to the Plot Centre (km up to two decimal places)
7. Time of arrival at the Plot hrs.
8. Plot destination Mark (Name of village)
9. Time of departure from the Plot hrs.
10. Time at which returned to the camp/ time at which move to the next plot hrs
11. Navigation done by Name GPS/Compass (tick one)
12. Plot laid out by
13. Enumeration done by
14. Remarks

Name of Crew Leader
Signature with Date

Note: 1st number in the row below the field headings represent the column number and the number inside the bracket represent the column width.

TOFR -2

PLOT ENUMERATION FORM

Job No.	Survey Code	Form code	FSI Zone	Phy. Zone	State code	District code	Stratum code	Grid Code	Plot Status	Plot Ownership
1(3)	2(1)	3(1)	4(1)	5(2)	6(2)	7(2)	8(1)	9(6)	10(1)	11(1)
	2	2								

Latitude dd mm sss	Longitude dd mm sss	Category of plot	Shifted Latitude dd mm sss	Shifted Longitude dd mm sss	Plot Type
12(8)	13(8)	14(1)	21(8)	22(8)	24(1)

S. No.	Species name	Species Code	dbh (cm)	No. of culms	Crown Width/ spread of clump	Category of trees/ bamboo	Bamboo Quality	Status of Tree
		15(4)	16(3)	17(3)	18(3)	19(1)	20(1)	23(1)
	Total							

Note: i) 1st number in the row below the field headings represents the column number and the number inside the bracket represent the column width.

ii) If species is identified but uncoded in the manual, then please mention the botanical/local name of the species.

TOFU –1

UFS BLOCK APPROACH FORM

Job No.	Survey code	Form code	FSI Zone	Phy. Zone
1(3)	2(1)	3(1)	4(1)	5(2)
	3	1		

State code	District code	Town name	Town class	IV No.	UFS Block No.	Mapsheet No.	Grid Code.
6(2)	7(2)		8(1)	9(3)	10(2)	11(6)	12(6)

1. Name of the Camp/district
2. Time (hrs.) at which left the camp to grid (plot)/moved to next grid (plot)
3. Distance covered by vehicle (km)
4. Time taken for journey by vehicle hrs.
5. Time at which arrived at the UFS block hrs.
6. UFS block Destination mark (Name of the Area)
7. Time of departure from UFS block hrs.
8. Time at which returned to the camp/move to next grid (plot) hrs.
9. Conspicuous feature selected as the starting point for the survey.
10. Description of the starting point and approach to this point.
11. Verifications of UFS block boundaries done by
12. UFS block Tree enumeration done by
13. UFS block Area of block measured by
14. Remarks
15. Maps of UFS attached

Name of Crew Leader

Signature with date

Note: 1st number in the row below the field headings represents the column number and the number inside the bracket represent the column width.

TOFU –2

UFS BLOCK ENUMERATION FORM

Job No.	Survey code	Form code	FSI Zone	Phy. Zone	State code	Distrct Code	Town name	Town code	Town class code
1(3)	2(1)	3(1)	4(1)	5(2)	6(2)	7(2)		8(6)	9(1)
	3	2							

IV unit No.	UFS Block No	UFS Block Area (ha.)	Category of UFS block	Latitude dd mm sss	Longitude dd mm sss	Mapsheet No.	Grid Code.	Shifted Latitude dd mm ssss	Shifted Longitude dd mm ssss
10(3)	11(2)	12(5)	13(1)	14(8)	15(8)	16(6)	17(6)	26(8)	27(8)

S.No.	Species name	Code	dbh (cm)	Crown Width/ spread of clump (m)	Category of plantation (trees/bamboo)	Area* in ha	Bamboo Quality
18	19	20(4)	21(3)	22(3)	23(1)	24(4)	25(1)

*Mention area in case of Block plantations only

Page No……. Total No. of Pages……. Sign of Crew Leader with date

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(ii) If species is identified but uncoded in the manual, then please mention the botanical/local name of the species.