



National Forest Inventory (Manual & Field Forms)

Two week training Programme for WPO/ ACF/ RFO
Officers
From 15.01.2024 to 25.01.2024

Field Forms



Forest Inventory

1. Plot Approach Form
2. Plot Description Form
3. Plot Enumeration Form
4. Sample Tree Form
5. Bamboo Clump Analysis Form
6. Bamboo Enumeration and Analysis Form (non-clump forming)
7. Bamboo Weight Form
8. NTFP (Herbs, Shrubs, Climber and Regeneration)
9. Soil and Forest Floor Carbon Form
10. Stump, Dead Wood and Woody Litter Form

Tree Outside Forest Inventory (TOF)

■ Tree Outside Forest (Rural) – TOFR

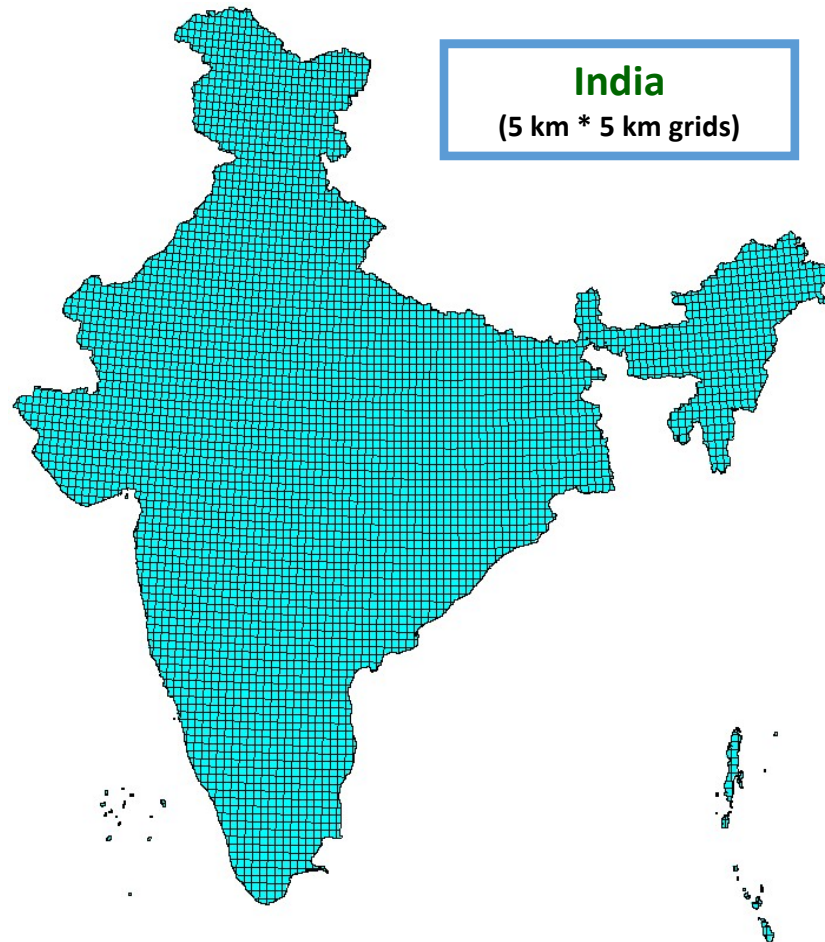
1. Plot Approach Form
2. Plot Enumeration Form

■ Tree Outside Forest (Urban) – TOFU

1. UFS Block Approach Form
2. UFS Block Enumeration Form

National Forest Inventory

National Forest Inventory Design

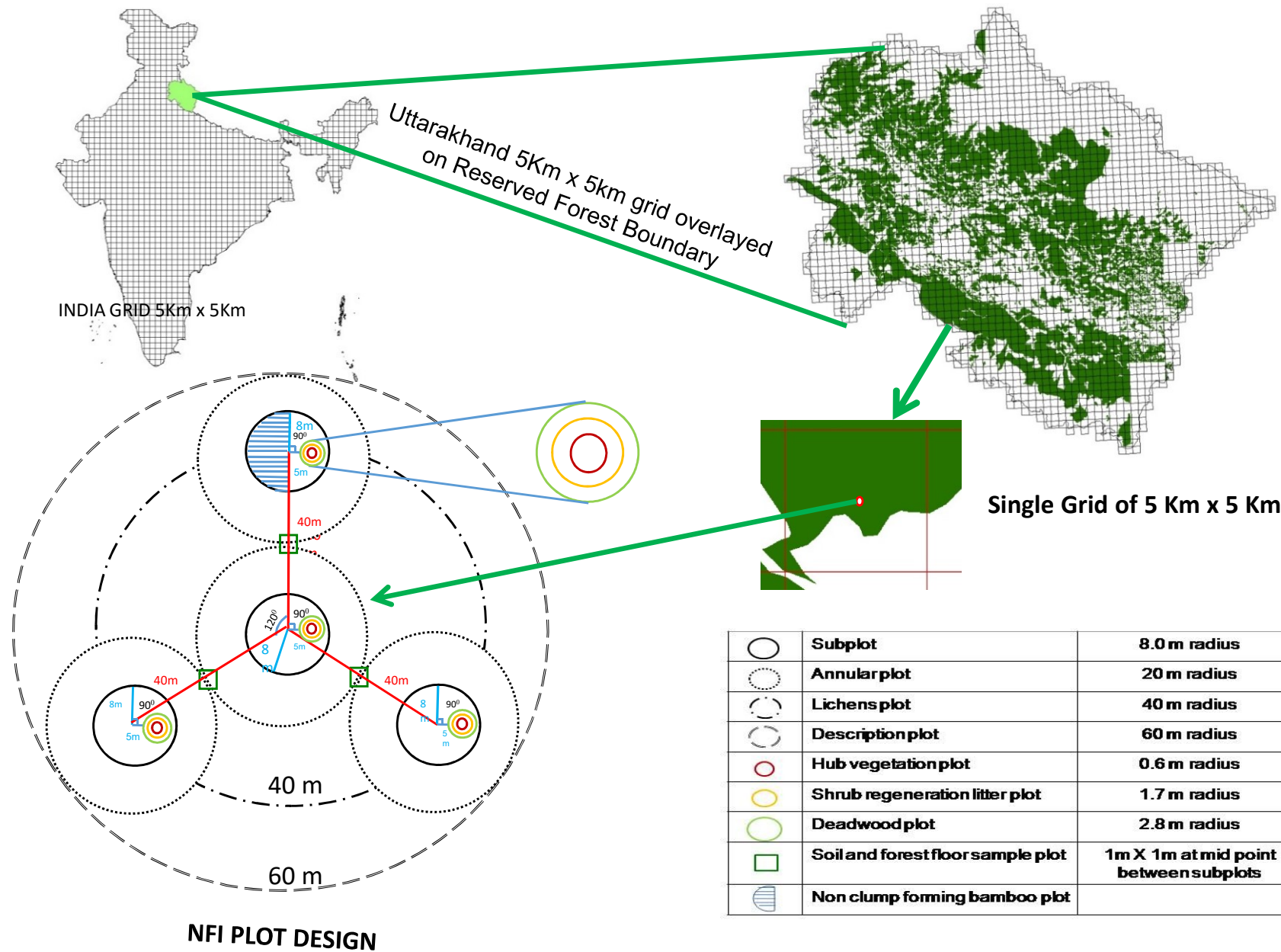


Sampling of grids on 5 yr cycle
 1st yr – all 1s 2nd yr- all 3s 3rd yr – all 5s
 4th yr – all 2s 5th yr- all 4s 6th yr- all 1s

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

Around 7,000 forested grids & 10,000 TOF grids to be inventoried/ year.

National Forest Inventory Design – contd.



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 decimal)	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.								

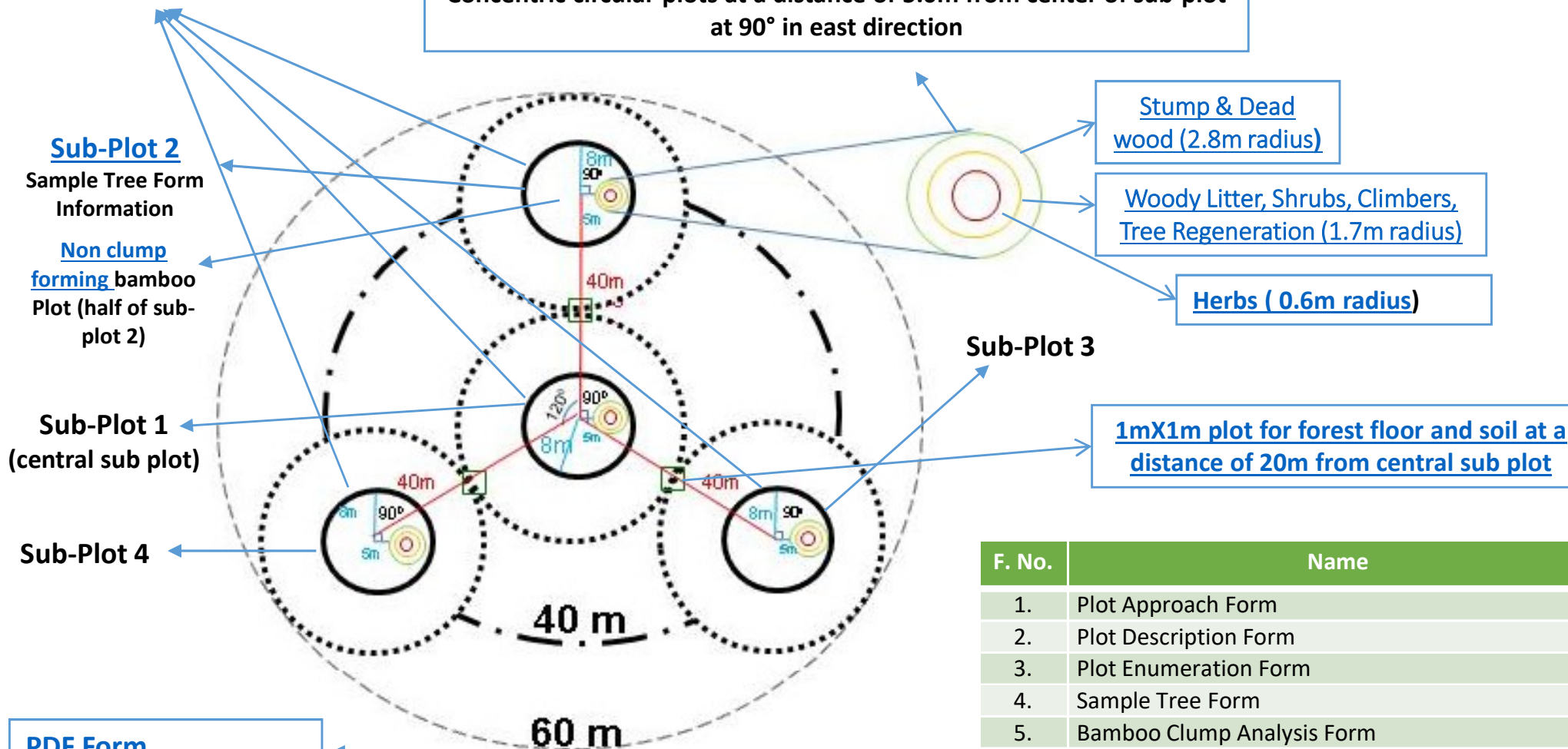
Date: dd /mm /yyyy

Signature of the Crew Leader

NFI Plot Configuration

Plot Enu., Bamboo Clump, Bamboo weight

Concentric circular plots at a distance of 5.0m from center of sub-plot at 90° in east direction



PDF Form Information

NFI Plot Design

F. No.	Name
1.	Plot Approach Form
2.	Plot Description Form
3.	Plot Enumeration Form
4.	Sample Tree Form
5.	Bamboo Clump Analysis Form
6.	Bamboo Enumeration and Analysis Form (non-clump forming)
7.	Bamboo Weight Form
8.	NTFPs (Herbs, Shrubs and Climbers) and Regeneration Form
9.	Soil and Forest Floor Carbon Form
10.	Stump, Dead Wood and Woody Litter Form

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																																															
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.

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										
	Species Name	Species code	Dia (cm)	Status of tree (Dead/ Alive)	Cause of death in case of mortality	Rotten/ missing cull	Decay class	Crown width (meter)		Height (meter)			Incidence of Insect	Incidence of Disease	DBT (mm)	Bark Void %	Clear bole height (m)	Dominance
								CW1	CW2	Total height	Un-compacted Crown Length	Compacted Crown Length						
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.

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 Name Code		Sub-plot number and Clump Sl.No.	Clump Diameter (cm)	Clump size	Green sound culm								Green damaged culms								Dry sound culms				Dry damaged culms				Decayed culms	Total no. of culms			
					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.

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		Current year	Green sound culms								Green damaged culms								Dry sound culms				Dry damaged culms				Decayed culms	Average culm height in dcm.	Total no. of culms		
Name	Code		One to two year old				Over two year old				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	Current year	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.

BAMBOO WEIGHT FORM

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

Species		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	Sample No.	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



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

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° north)	Plot 2 120° azimuth from sub-plot 1	Plot 3 240° azimuth from sub-plot 1)		
11 (5)	12 (5)	13 (5)		14 (4)

Date.....
Leader.....

Signature of Crew

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

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	

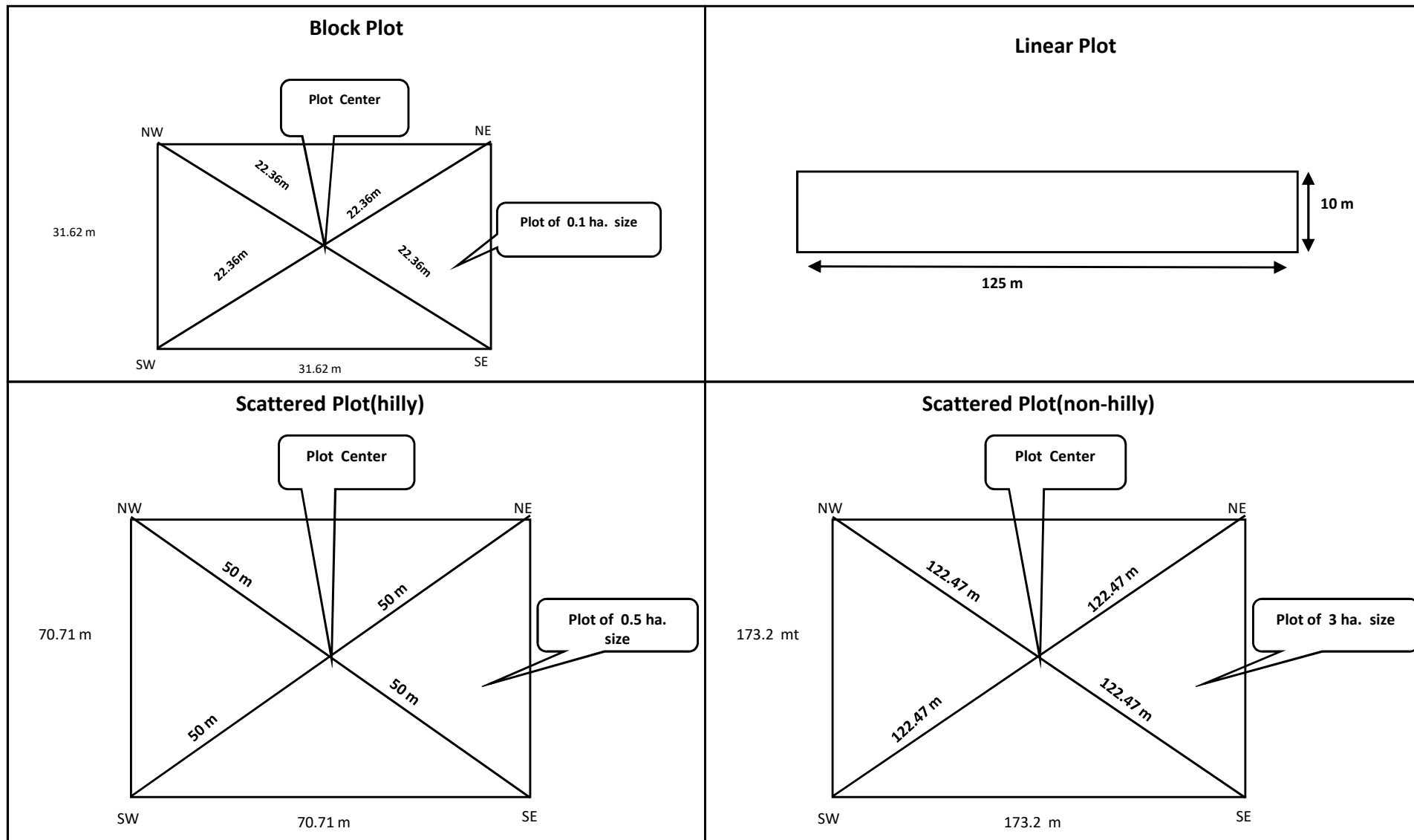
Date..... Signature of the Crew Leader.....

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



Tree Outside Forest (TOF) Inventory

Layout Plots in the Field for Rural area



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	Mapsheets 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								

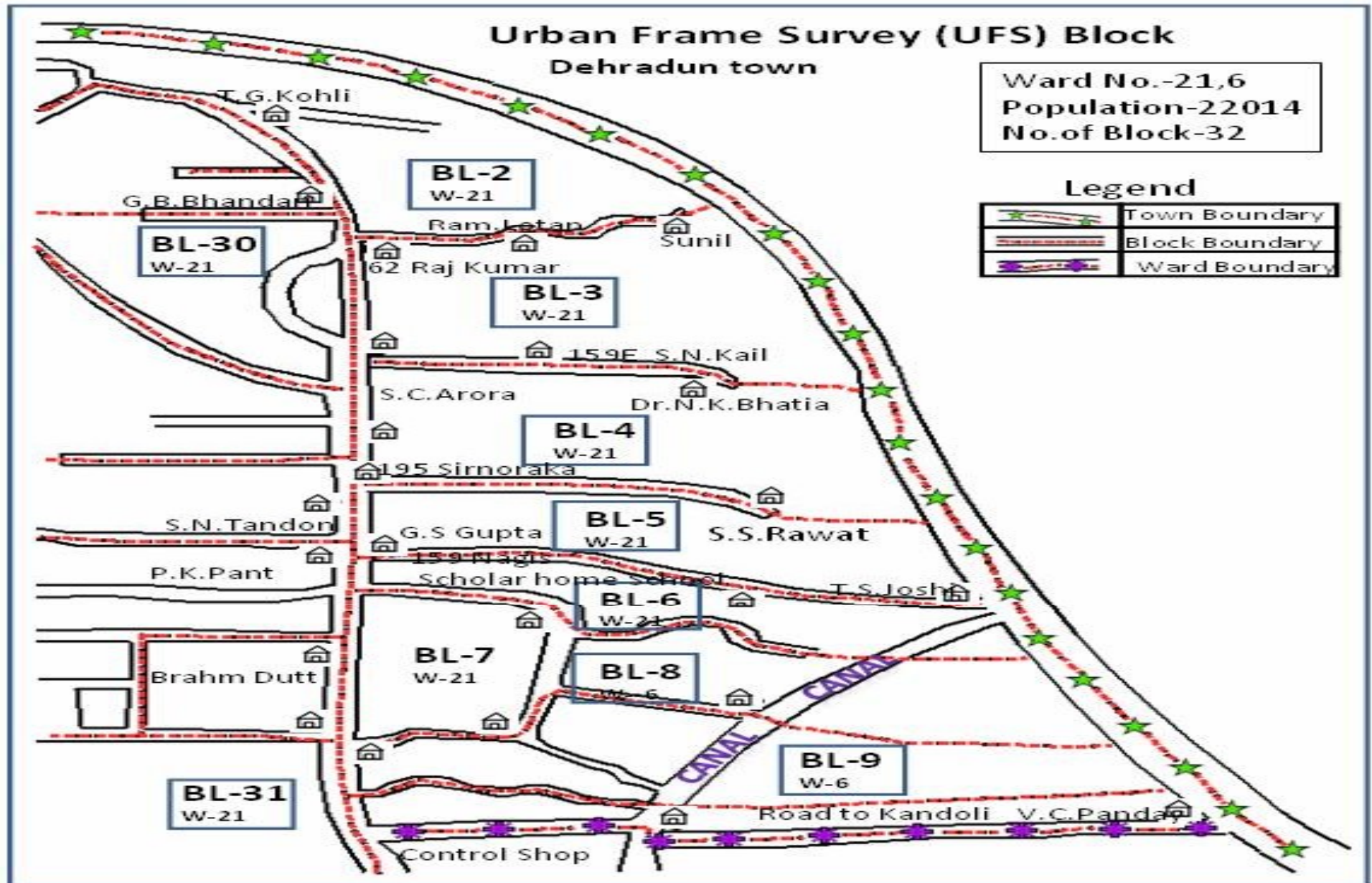
Latitude dd mm sss	Longitude dd mm sss	Category of plot	Shifted Latitude dd mm sss	Shifted Longitude dd mm sss	Plot Type
12(8)	13(8)	14(1)	21(8)	22(8)	24(1)

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.

TOF Urban inventory





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.	Mapsheets 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	District 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.....
date

Sign of Crew Leader with

Note: (i) 1st number in the row below the field headings represent 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.

List of Equipments for Field Work

List of Equipements

S. No.	Equipements
1	Silva compass
2	GPS handset
3	Hypsometer/ Haga altimeter
4	30-50m measuring metallic
5	Steel scale (6 and 12 inch)
6	Bark thickness gauge
7	Callipers
8	Vernier Calliper
9	Wedge Prism
10	Densitometer
11	Weighing Machine
12	Axe
13	Pathal/Khukhri
14	Plastic bags
15	Topographic maps and field maps



Thank you



Forest Survey of India
Ministry of Environment, Forest and Climate change
Kaulagarh road Dehradun -248195
www.fsi.nic.in