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REPORT ON FOREST RESOURCES OF WEST AND NORTH DISTRICTS OF SIKKIM

FOREST SURVEY OF INDIA

EASTERN ZONE

1989

Contents

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PREFACE

This report relates to forest inventory in North and West districts of Sikkim State. The field work was carried out from April,1987 to Nov., 1987, jointly by the Forest Survey of India and Sikkim State Forest Department.

Reserved forests occupy 42.26% and 20.65% of total geographical area respectively in West and North districts.

Forest vegetation varies widely because of the altitudinal variation in both the districts. Broad-leaved forests with Sal as the predominant species occur at one end and in the other extreme, conifer species like Fir, Hemlock and Spruce occur.

The total growing stock of timber is estimated at 5.2 million m3 and 10.6 million m3 respectively in West and North district in reserved forests only. In other forests, the growing stock is much less. It is 0.5 million m3 in the West and 0.56 million m3 in North district.

No comprehensive Working Plan has yet been prepared by the State Forest Department. The survey results, therefore, may be useful for the preparation of the same.

Apart from inventory, a wood consumption study was also conducted. The total annual consumption of timber for house construction, furniture and agricultural implements is 1721 m3 in the West and 771 m3 in the North districts.

The total annual fuelwood consumption is over 120000 m3 in the West district and a little over 40000 m3 in the North district. The per capita fuelwood requirement is 1.649 m3 and 1.643 m3 in rural and urban sectors respectively in North district, whereas in the West district the figures are 1.728 m3 and 1.001 m3 respectively for the rural and urban sector.

The practice of shifting cultivation is not prevalent in the district.

The staff of the Eastern Zone deserves appreciation on their efforts in the preparation of report. Thanks are also due to Officers and staff of Sikkim Forest Department, particularly to those of the Working Plan Circle, who have helped Forest Survey of India in the field work and also in the writing of this report.

Sd/-
(J.B. Lal)
Director.

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TABLE ON STEMS:

* = Stem/ha.by species and diameter classes(in cm.) and total stems are not calculated for stratum-I, Reserved forest, North district, as there is no reserved forest area in this stratum.

R = Reserved
UR = Unreserved

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TABLE ON VOLUME:

Note:- Volume/ha.by species and diameter classes(in cm.) is not calculated for Stratum-I, Reserved forest, North district as there is no reserved forest area in this stratum.

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TABLE ON STEM(RANGE WISE)

R= Reserved

UR=Unreserved

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TABLE ON VOLUME(RANGE WISE)

R = Reserved

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LIST OF MAPS AND DIAGRAMS

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CHAPTER: I

BACKGROUND INFORMATION

1.1. Introduction:

Sikkim is a very small hilly State in the Eastern Himalayas surrounded by vast stretches of Tibetan plateau in the North, the Chumbi valley of Tibet and the kingdom of Bhutan in the East Darjeeling district of West Bengal in the South and the kingdom of Nepal in the West. It lies between 88°00'58" and 88°55'25" longitudes East and 27°04' and 28°07'48" latitudes North in the snow clad hills and mountains of the Eastern Himalayas.

The State being a part of inner ranges of mountains of Himalayas has no open valley and no plains but varied elevations ranging from 300 to 8583mts.above mean sea level consisting of lower hills, middle and higher hills, Alpine Zones and snow bound land, the highest elevation 8583 mts. being the top of Kanchanjunga itself. Sikkim has four administrative districts namely North, South, East and West. The present report pertains to forest inventory in North and West districts of Sikkim.

1.2 Need for survey :

As no up to date working plan for management of forests in the North and West districts is available with the State Forest Department, inventory of the area for a reliable data base was a long felt necessity. Accordingly, inventory of the forests of North and West Sikkim was conducted (with a higher sampling intensity in West District only) to provide categorical information in respect of reserved and unreserved areas alongwith the growing stock availability in both the districts.

1.3 Situation and boundary :

The project area comprises two districts namely North and West districts. The geographical location of these two districts are as under :

West Sikkim: Latitude 88°2'to 88°55'N
Longitude 27°7'to 27°25'E

North Sikkim: Latitude 88°8'to 88°53'N
Longitude 27°25'to 28°8'E

1.4 Area statement:

The geographical area of North and West Sikkim districts are 4226 km2 and 1166 km2 respectively. The break-up of geographical areas of the two districts are furnished below :

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North district:	Reserved forest:	872.53 km2
	Unreserved " :	200.89 "
	Scrub/pastures of Alpine Zone :	1464.45 "
	Snow covered area :	1498.37 "
	Areas under fallows and cultivation etc.:	189.76 "
	Total :	4226.00 "
West district :	Reserved forest:	492.72 "
	Unreserved " :	141.63 "
	Scrub/pastures, rocky barren areas of Alpine Zone :	217.07 "
	Snow covered area :	79.71 "
	Area under current fallows, cultivation etc.:	234.87 "
	Total :	1166.00 "

Source: Reserved forest area, scrub/pastures, rocky barren areas of Alpine Zone, snow covered area supplied by State Forest Deptt., Unreserved forest area - an indicative value calculated by proportional method.

1.5 Locality factor:

1.5.1 Climate :

The climate of both the districts namely North and West Sikkim shows wide variations on account of variations in altitude, slope and aspect. The trend of decrease in temperature with increase in altitude holds good everywhere in the project area.

The areas experience a heavy rainfall due to the proximity to the Bay of Bengal. In general, it is observed that rainfall in North district is comparatively less than that of West district.

1.5.2 Temperature:

Since there is no meteorological station either in the North and West district, the temperature recorded at Gangtok station may be taken to hold good for the districts of North and West.

However, in the plain areas or areas within low altitudinal zones, the variation of temperature is between 4.5°C to 10.5°C whereas in high altitudinal zone, the variation in temperature is between 1.5°C to 9.5°C. Maximum temperature is observed during July and August while the minimum temperature is recorded during December and January.

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1.5.3 Rainfall:

The districts of North and West Sikkim experience heavy rainfall, Maximum rainfall occurs between May and September. However, in Lachung and Lachen valleys and further North the rainfall is less, somewhere between 1250 mm to 1500 mm. The rainy season continues upto middle of October and the rains do occur in the later part of March or April. Showers in December and February assist snowfall at altitude 2743 meter and above. The permanent snowline at Sikkim is above 4876 m and considerable tracts of North Sikkim are above this height.

1.6 Altitude :

Both the districts are highly mountaineous. In the present inventory, four altitudinal zones have been identified namely altitude upto 900m, 900-1800m, 1800-2400m and 2400m and above.

The distribution of areas for both reserved and unreserved forests in four altitudinal strata is summarised in the following table :

West Sikkim district:

Altitudinal class(metre)	R.F. (km2)	%	U.R.F. (km2)	%
Upto 900	11.40	2.31	14.25	10.06
900-1800	11.17	2.27	55.85	39.43
1800-2400	123.25	25.01	61.62	43.51
2400+	346.90	70.41	9.91	7.00
Total:	492.72	100.00	141.63	100.00

North Sikkim district:

Upto 900	-	-	-	-
900-1800	16.81	1.93	14.94	7.44
1800-2400	164.57	18.86	82.28	40.96
2400+	691.15	79.21	103.67	51.60
Total:	872.53	100.00	200.89	100.00

1.7 River system :

Though there are a number of streams and rivulets, the Tista is the main river in Sikkim. The entire Sikkim State is situated in the catchment of Tista river. Two rivers, namely Rangit and Rongni are the tributaries of Tista which forms the main drainage system in the area. Further, there are 180 perennial lakes of different sizes. The area in the Yumthang valley is drained through Yumthang river while Tolung, Sema and Chebu rivers drain the portions of Chuba-Dombang valley. Tolung meets Sema at Dombang and flows as Chebu and then meets Yumthang river and forms the Lachung river which flows down southwards and drains Lachung valley. Tista drains Thangu, Zeema, Lachen and Tarum areas. There are a number of tributaries which feed this river.

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1.8 Geology, rock and soil :

The State of Sikkim has been classified under four techtonic belts :

i) Foot hill belt
ii) Inner belt
iii) Axial belt
iv) Trans-axial belt

Foot hill belt: It comprises essentially of younger Siwalik group of sedimentary rocks exposed near Sevoke in West Bengal border. The Inner and Axial techtonic belt are predominantly occupied by the unfossiliferous metamorphic and Crystalline rocks. The higher region to the North are covered under the Trans-axial belt..

Inner belt: The inner belt is essentially made up of Precambrian Daling and Darjeeling group metasediments and minor development of Buxa group of rocks.

Axial belt: The Axial belt exposes the Crystalline of the Central region and intrusive granites. Daling and Darjeeling group represent rocks ranging from lower green schist facies to Kyanite silliminate gneisses. The Central region covering the Tista and adjoining valleys is occupied by lower grade Daling group of rocks. This is enveloped on all sides to the East, North and West by the higher grade mica schist and gneisses of the Darjeeling group. In the West, a narrow strip of Gondwana rocks comprising of pebble slate, sandstone with... thin coal seams is exposed in the Rangit river valley.

The State is endowed with rich mineral resources.Large reserves of dolomite are available in the Rishi and Rangit river valleys of West Sikkim. Coal occurs extensively in the Rangit river valley and Namchi area.Indications and occurrences of limestone and marble are known in North Sikkim. Rock phosphates are seen in parts of West Sikkim. One of the important industrial mineral graphite occurs in the western part of the State at Chitrey.

Soil:

The soil developed from the Gneissic group of rocks is a brown clay, generally shallow and poor. The soil resulting from Daling group of rocks is dark grey, porous, rich and adaptable to most species.

1.9 Landuse pattern of the State :

As both the districts are mountaineous with innumerable ridges and spurs, terraced cultivation is the common feature in agricultural sector. Although forestry is the major landuse in Sikkim State,agriculture forms the main occupation of the rural people. Paddy, Maize, and Millet are the common agricultural crop. Cultivation of Cardimum and Orange are also widely practiced in the hills. The instance of shifting cultivation is practically unknown in this area. The landuse pattern of the State in general is classified in the following categories :-

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Landuse pattern	Area in '000 ha.	Percentage of area
Barren land	209.01	28.28
Land put to non-agricultural use	69.96	9.58
Permanent pastures and grazing land including cultivable waste	102.49	14.40
Land under miscellaneous tree crop and grass	4.17	0.57
Forest land	265.21	36.34
Land under operational holdings	79.06	10.83

Source: State Report : Agricultural Census: 1976-77, Sikkim.

It is seen that a substantial portion of this land is barren. Out of the total land under operational holding 82.12% is under crop, 9.5% fallow and 8.36% not available for cultivation.

1.10 People and their socio-economic condition:

Among the four districts of the State, East district is most developed and the general living standard of the people is better in comparison to other districts.

It is observed that East district is thickly populated and 43.86% of the total population of the State is in East district. In North district, the density of population is sparse and accounts for only 8.36% of the total population.

Percentage of literacy is highest(41.39%)in East district while in North district it is 29.74% and in West district it is 23.62%.

Employment structures of the two districts is furnished below :

Percentage of total population in different working groups:

	North district	West district
Main workers	46.34	51.41
Marginal workers	6.91	0.48
Non-workers	46.75	48.11
Break-up of main workers(% distribution:		
Cultivators	41.56	81.84
Agricultural labourers	12.83	3.14
Household industry	1.27	0.58
Other workers	44.34	14.44

Source: District Census Handbook, Series 19,Sikkim.

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The general living standard of the people in the two districts is unsatisfactory. The hilly terrain non-availability of plain land and other retarding factors like lack of skilled workers and transport and communication facilities have stood on the way to development of industry in the two districts.

Originally there are three main stocks in Sikkim aboriginal inhabitants of Sikkim known as 'Rong' meaning literally the ravine folk or usually known from their Nepali titles as Lepchas. The next in importance came the Khampa or Khamba, the immigrants from the Tibetan province of Khams, commonly called Bhutias; while the Sikkim Limbus ranks next to them. They are believed to have migrated from places in the Tibetan province.

Its present population comprises of Nepali, Bhutia, Lepcha and plainsmen(those who have come from the other States). At present, majority of the people are from Nepalese stock. Of the Nepalese stock, Kami, Damai, Sarki have been notified as Scheduled Castes and of the Sikkim stock, Bhutia, Lepcha and Sherpas have been notified as Scheduled Tribes.

1.11 F o r e s t s :

The forests of Sikkim have been identified into three distinct types on the basis of rainfall, aspect and altitude.

a) Lower hill forests which correspond to Champion and Seth's revised type 3C/CIa(i),C3b(upto 900m altitude). These lower hill forests are further sub-divided into three types(i) Sal (ii)Dry mixed and (iii) Wet mixed forests.

Sal is gregarious confined to ridges,southern and south-western slopes and well drained flats at the foot of the hills. It reaches higher elevations on southern rather than on northern slopes. Principal associates of Sal are Garuga pinnata, Terminalia crenulata, Schima wallichii, Terminalia chebula. Dry mixed forests are mainly deciduous and occur on ridges and drier slopes. Sal occurs as isolated trees. Common species are Schima wallichii, Albizzia spp., Gmelina arborea. Wet mixed forests comprise evergreen valley forests on north and north-eastern aspects. The common species are Eugenia operculata, Schima wallichii Terminalia species.

b) Middle hill forests: which correspond to Champion and Seth's revised type 8B/CI(900-1800m altitude). Composition: Schima wallichii,Castanopsis hystrix, Alnus nepalensis, Symplocos theifolia,Eurya japonica.

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c) Upper hill forests(above 1800m altitude) which correspond to Champion and Seth's type 11B/CI (East Himalayan Wet Temperate forests). In this Zone the vegetation cover changes pronouncely with change in altitude.

(i) 1800m - 2400m altitude:

Composition: Machilus species, Alnus nepalensis, Quercus lanceaefolia, Quercus lamellosa, Symplocos theifolia, Engelhardtia spicata etc.

(ii) Above 2400m altitude :

Composition: Abies densa, Machilus spp., Betula alnoides, Rhododendron arboreum etc.

There is a distinct conifer belt in the stratum characterised by Tsuga brunoniana, Picea morindoides and Abies densa.

1.12 Legal status of the forests:

The State owned forests are divided into the following three main groups:

i) Reserved forests,
ii) Gocharan forests,
iii) Khas forests.

Both Gocharan and Khas forests belong to Unclassed forest i.e. area which are not classified as reserved or protected forest but which are Government lands. 'Gocharan' land is used mainly for grazing purposes.

Other forest areas which are not under control of the Forest Department are Gumpha forests and private forests. The areas of the reserved forest have been supplied by the State Forest Department, but for Gocharan forests, Khas forests etc., no figure was available from them. For details para 3.7.1 of Chapter III may be referred to.

1.13 Rights and privileges:

In the reserved forests, no rights and concessions exist. In Gocharan forests, the native population has a right of grazing and collection of firewood. But in no case they are allowed to cut trees. In Khas forests, they have been granted similar type of rights. But it may be mentioned that the above concessions are allowed in view of free service by the villagers for clearing forest boundary lines.

1.14 Management practice :

No up to date Working Plan has yet been prepared by the State Forest Department. The last Working Plan dates back to 1950 for the management of the forests of Sikkim State. With gradual development of infrastructure

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and opening up of new roads, it is imperative therefore, to have an intensive forest management. At present, the forests are worked under Selection Felling system. Occasional marking and felling of trees are carried out in the Reserved forests near the village sites for constructional purposes and furniture making. Some suitable sites are worked under clear felling with artificial regeneration system. Fir, Spruce and Juniper forests are worked under Selection system and extraction is limited to the extent of removal of dead dying and fallen trees once in two years. The Juniper forests are subjected to only Selection Felling based on exploitable girth classes. The gaps created by Selection Felling in Fir, Spruce, Juniper forests are re-stocked either by artificial or natural means.

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CHAPTER: II

INVESTIGATION AND METHODOLOGY

2.1 Objectives:

The primary objectives of the inventory set forth in consultation with the Forest Department of Sikkim State are to collect adequate data in order to fulfil the following conditions :-

a) to arrive at a reliable estimate of the total growing stock in each district,

b) to ascertain the availability of resources in Reserved and Unreserved (Gocharan, Khas forests.) forests in each district,

c) to assist the State Forest Department in preparation of the Working Schemes by furnishing data available in inventory with a view to evolve improved management techniques for the two districts. Besides, the finding of the present inventory of two districts is expected to highlight relevant informations down to a micro level planning i.e. ranges which will be of immense help to the State Forest Department to implement their development schemes for specific areas in a district and

d) to estimate consumption of wood for domestic purpose.

2.2 Aerial reconnaissance :

No aerial reconnaissance was carried out for the area.

2.3 Photo interpretation and mapping:

No photo interpretation and maps were available for the area. However, the field inventory was carried out with the available toposheets(1:50,000)as under:

Sl.No.	Toposheet Nos.	Division/District
1	78A/2	North Sikkim
2	78A/6	-do-
3	78A/7	-do-
4	78A/9	-do-
5	78A/10	-do-
6	78A/11	-do-
7	78A/2	West Sikkim
8	78A/4	-do-
9	78A/6	-do-
10	78A/7	-do-
11	78A/8	-do-

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2.4 Sampling design:

2.4.1 Upto 2400 metre altitude:

A systematic sampling was adopted to estimate the growing stock of the project area. Systematic grids of size 1km x 1km were laid out over the entire district below 2400m altitude as shown in the diagram No.1. It was decided to lay out only one square plot of size 0.1 ha.(31.62m x 31.62m) at each grid centre. This sampling method is followed for West Sikkim district only.

2.4.2 Laying out of plot:

The plot of size 0.1 ha. was laid keeping the grid centre as the centre of the plot by taking 22.4m (horizontal) in the North, South, East and West directions by compass and tape and joining the ends. The lay out of plot is clearly depicted in diagram No.1.

2.4.3 Standard Forest Survey of India design: above 2400m altitude :

The sampling design consisted of locating two sample points in each grid of 2½'x 2½'on 1:50,000 scale Survey of India toposheet. Two random numbers were selected from random number table which formed the X and Y co-oridnates of the centres of first sample plot. The South-west corner of each 2½' x 2½' grid is considered as the origin and knowing distances along X axis and Y axis mark the point which is identified as plot centre of the first plot as shown in diagram No.2.

To locate the second plot, join the first plot centre with the grid centre and extend this line in the opposite direction. Mark a point at an equal distance in the opposite direction of the grid centre which will be the plot centre of the second plot. This method is followed for entire North Sikkim district and stratum IV of West Sikkim district.

2.4.4 Distribution of plots:

Number of plots surveyed were calculated at 329 in West Sikkim district and 72 in North Sikkim district. Distribution of plots by reserved,unreserved and stratum are as under :-

Item	Stratum				Others	Total
	I	II	III	IV		
Reserved (West Sikkim)	4	16	102	35	35	
Unreserved	5	80	51	1		
	9	96	153	36	35	329
Reserved (North Sikkim)	-	9	5	21		
Unreserved	1	8	3	3	22	
	1	17	8	24	22	72

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2.5 Methodology:

The field data was collected by a team consisting of one Jr.Technical Assistant/one Dy.Ranger assisted by one Dy.Ranger/two Fieldmen and one Forester/One Forest Guard from State Forest Department, Khalasis and Labourers were engaged locally. The Crew Leader carries the toposheets alongwith a sample point already marked on them to the field. A set of measuring instruments such as Silva Compass, Callipers, measuring tapes and ranging rods etc. are carried by them. On a particular work day, the Crew Leader decides the grid number and plot to be surveyed. He reaches near to the sampling point to a prominent physical feature which is shown on the toposheet and also can be identified on the ground. Normally the reference points are selected from the following features:

i) Bench mark,
ii) Triangulation point,
iii) Village tri-junction point,
iv) Old bridges and culverts,
v) Old temples, Churches, Mosques,
vi) Crossing of railway tracks with roads,rivers and streams,
vii) Junction of rivers,streams and roads,
viii) Junction of streams,
ix) Junction of roads,
x) Prominent bends on roads,rivers and streams,
xi) Old ponds and wells,
xii) Springs,
xiii) Prominent features in hilly areas such as Spurs,Knots etc.
xiv) Milestones or Kilometer stones,
xv) Boundary pillars(International,State, District and Forests)

After locating the prominent features on the ground and on the toposheets the distance and bearing of the sample point is measured from the map. The bearing is measured with the help of Silva Compass. At the reference point, the Crew Leader records details of the reference features e.g. bearing and distance of the sample points from the reference point, the name of the sampling places, the time table to complete the work of plot approach form. This is recorded so that at a future date this reference point may be relocated. From the reference point, the Crew Leader traverses the distance as measured on the map in the direction of the sample plot and reaches there. After laying out of the plot, the Crew Leader with the help of other members collects the data in the following forms:

a) Plot Approach form: meant for time study and help in check, visits at a later stage,
b) Plot Description form: it includes informations on administrative division, landuse and legal status, topography etc.,
c) Plot Enumeration form: for recording trees by species and diameter and,
d) Sample tree form: to record sample tree data. One form is used for ten trees.

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CHAPTER: III

DATA ANALYSIS

3.1 General :

There are three broad components in the data processing system namely manual checking, processing on Unit record machine and processing on Computer.

3.1.1 Manual processing:

It involves the following steps :

i) proper documentation of the field forms, checking of the existence of all field forms with reference to the master list of samples,

ii) coding the information in the field forms which has not been incorporated,

iii) manual checking of the validity of the codes used in various columns of informations and

iv) reconciliation of discrepancy, if any.

3.1.2 Processing on Unit record machine:

The following steps are carried out on the Unit record machine :

i) punching information on cards,
ii) verification of the cards,
iii) sorting and collating the cards and
iv) listing of the data.

3.1.3 Processing on Computer:

On completion of the preparation of input data, the following operations are carried out on Computer:

i) loading of the data on magnetic tape,
ii) consistency checking of the data and its corrections,
iii) calculation of tree and plot volume,
iv) preparation of stand and stock table and,
v) preparation of growing stock table as included in the objectives.

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3.2 Calculation of area:

The tree forest area of the two districts namely North and West have been stratified into four altitudinal strata on the basis of the changes in the vegetative character with altitude. Besides tree forest area, scrub/pasture/rocky barren area of Alpine Zone and snow cover area occupy 38.18% and 39.07% in North district whereas the contribution of those two areas in West district is only 27.49% and 10.10% respectively. The area estimate for reserved forests of the two districts were calculated by dot grid method.(Source:State Forest)

However, for unreserved forests of the two districts the area estimate was based on proportional weightage to each plot falling in different strata, since there was no clear demarcation of the forest boundary. This is rather an indicative value only. Distribution of tree forest(km2) by range and altitude class is as follows:

District:NorthSikkim

Range	Altitude				Total
	Upto 900m	900-1800m (km2)	1800-2400m (km2)	2400m+ (km2)	(km2)
Phodong	-	2.07	30.64	58.43	91.14
Mongan	-	9.26	32,93	80.56	122.75
Dzongu	-	5.48	72.79	237.44	315.71
Tsungthang	-	-	28.21	314.72	342.93
Total:					
(reserved forest)	-	16.81	164.57	691.15	872.53
(unreserved forest)	-	14.94	82.28	103.67	200.89
Total:	-	31.75	246.85	794.82	1073.42
District:West Sikkim:					
Soreng	8.69	5.75	41.66	33.22	89.32
Sombare	-	-	5.51	48.44	53.95
Gyalzing	2.19	1.52	29.40	58.45	91.56
Yuksom	0.52	3.90	46.68	206.79	257.89
Total:forest (reserved/	11.40	11.17	123.25	346.90	492.72
(unreserved forest)	14.25	55.85	61.62	9.91	141.63
Total:	25.65	67.02	184.87	356.81	634.35

3.3 Tree density study:

Spatial distribution of stems per hectare by species and diameter classes is given in table No.1.1 to 1.4, 3.1 to 4.4 and 6.1 to 6.4.

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Number of stems per hectare for both the districts is given as under:

District: West Sikkim:

Stratum	Altitude	No. of stem/hectare	
		Reserved	Unreserved
I	Upto 900m	175.000	108.000
II	900-1800m	145.000	141.000
III	1800-2400m	237.944	148.568
IV	2400m+	276.843	150.000
District: North Sikkim:			
I	Upto 900m	-	220.000
II	900-1800m	158.887	175.000
III	1800-2400m	206.671	139.999
IV	2400m+	147.000	143.332

3.3.1 Strata-I-Upto 900m(reserved forest-West Sikkim)

A detailed evaluation of the stem tables leads to the following conclusion:

i) Stems per hectare is 175.000: *Shorea robusta* is the principal species with 87.5 stems/ha.

ii) Concentration of tree is maximum in diameter classes 40-49cm.with a percentage distribution of 32.9% This is followed by diameter classes(30-39cm.)wherein 22.9% of stems occur.

iii) Mature trees above 70-79cm.diameter class is practically absent in the stratum.

iv) It is interesting to note that trees in diameter class 10-19cm.is only 12.9% of the total stem. The trend shows a gradual increase of occurrence starting from 10-19cm.to 40-49cm.diameter class and thereafter decrease rapidly upto 70-79cm.diameter class.

Important species occuring in the stratum are furnished below:

Species name	Stem/ha.	Percentage distribution
Shorea robusta	87.500	50.0
Schima wallichii	12.500	7.1
Castanopsis indica	10.000	5.7

3.3.2 Strata-I Upto 900m-unreserved forests-West Sikkim

Following observation is made from the distribution of stems in the stratum :

i) Number of stems/ha. is 108.000

ii) Important species in the stratum are *Schima wallichii* followed by *Duabanga grandiflora*, *Albizzia* species and *Dysoxylum* species.

iii) Maximum concentration of trees lies in diameter class 40-49cm.

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iv) Trees above 70cm. diameter is absent in the stratum,

v) As in reserved forests, trees in diameter class 10-19cm. is comparatively low.

The occurrence of important species in this stratum is given in the following table:

Species name	Stem/ha.	Percentage
Schima wallichii	20.000	18.52
Duabanga grandiflora	18.000	16.67
Albizzia spp.	10.000	9.26
Dysoxylum species	10.000	9.26
Canarium species	8.000	7.41

3.3.3 Stratum-II 900-1800m(reserved forest-West Sikkim)

An analysis of the data in this stratum reveals the following conclusions:-

a) Number of stems per hectare in this stratum is 145.000

b) 29.31% of the stems are concentrated in both 10-19cm. and 20-29cm. diameter classes followed by 15.95% and 13.79% in 30-39cm. and 40-49cm.diameter classes respectively.

c) Trees are present in all the diameter classes upto 100cm. and above.

d) The main species in this stratum is Castanopsis hystrix followed by Symplocos theifolia, Alnus nepalensis etc. Stem per hectare for some of the important species are as follows:

Species name	Stem/ha.	Percentage
Castanopsis hystrix	25.000	17.24
Symplocos theifolia	19.375	13.36
Alnus nepalensis	16.875	11.64
Quercus lanceaefolia	15.000	10.34
Schima wallichii	11.875	8.19

3.3.4 Stratum-II 900-1800m unreserved forests-West Sikkim

Salient features in this stratum are appended below:-

i) Number of stems/ha. is 141.000,

ii) Predominant species are Alnus nepalensis and Schima wallichii.

c) Stems are mostly concentrated in the lower diameter classes i.e. 10-19cm. and constitute 41.05% of the total number of stems followed by 30.50%, 12.50% and 9.13% in 20-29cm.,30-39cm. and 40-49cm. diameter classes.

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d) Important species in this stratum are furnished below :-

Species name	Stem/ha.	Percentage
Alnus nepalensis	44.250	31.38
Schima wallichii	18.500	13.12
Castanopsis hystrix	8.250	5.85
Engelhardtia spicata	7.750	5.50
Ficus species	4.875	3.46

3.3.5 Stratum-III,1800-2400m,Reserved forests-West Sikkim:

An analysis of the data in this stratum reveals the following conclusions :

a) Number of stems per hectare is 237.944,

b) 38.88% of the stems are concentrated in 10-19cm.diameter classes followed by 25.33%,11.53% and 10.91% in 20-29cm.,30-39cm.,and 40-49 cm.diameter classes respectively,

c) Trees are present almost in all the diameter classes,

d) Stems are present even above 100cm. diameter class,

e) The main species in this stratum is Symplocos theifolia. Stems per hectare for some of the important species are as follows:-

Species name	Stem/ha.	Percentage
Symplocos theifolia	52.725	22.16
Castanopsis hystrix	38.220	16.06
Quercus spp.	22.244	11.45
Eurya japonica	16.366	6.88
Machilus spp.	9.506	4.00

3.3.6 Stratum-III,1800-2400m,unreserved forests-West Sikkim

Following observations can be made from this stratum:

a) Number of stems/ha.is 148.568

b) Stems are evenly distributed in all the diameter classes

c) Maximum concentration of stems is noticed in 10-19cm. diameter class which accounts 35.62% of the total stems.

d) Principal species in this stratum are Alnus nepalensis, Symplocos theifolia, Castanopsis hystrix. Stems/ha. with percentage of occurrence for important species are summarized below :-

Species name	Stem/ha.	Percentage
Alnus nepalensis	31.752	21.37
Symplocos theifolia	24.304	16.36
Castanopsis hystrix	20.776	13.98
Eurya japonica	8.232	5.54
Quercus species	8.232	5.54

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3.3.7 Stratum-IV,2400m and above,reserved forests-West Sikkim district:

The following observations have been made in respect of this stratum:

a) Number of stems per hectare is 276.843,

b) Most of the stems are concentrated in lower diameter classes i.e. 10-19cm.diameter class which constitute49.12% of the total stems followed by 20-29cm., 30-39cm., and 40-49cm. diameter classes,

c) Stems are evenly distributed over all the diameter classes

d) The principal species in this stratum are :

Species name	Stems/ha.	Percentage
Quercus pachyphylla	36.855	13.31
Symplocos theifolia	28.570	10.32
Tsuga dumosa	25.427	9.18
Rhododendron barbatum	23.713	8.57
Rhododendron arboreum	19.713	7.12
Quercus lamellosa	13.999	5.05

3.3.8 Stratum-IV,2400m and above-unreserved forests-West Sikkim district:

The number of stems/ha. is observed to be 150.000 only. The associations are mainly Tsuga dumosa, Quercus pachyphylla, Rhododendron arboreum and Viburnum spp.

Number of stems is maximum in 10-19cm. and 20-29cm. diameter classes which constitute 46.67% of the total stems. Stems/ha. above 30cm. diameter class is only 10,000 which accounts to 6.67% only. Stems/ha. and percentage occurrence for some of the important species are given below :-

Species name	Stems/ha.	Percentage
Tsuga dumosa	50,000	33.33
Quercus pachyphylla	30.000	20.00
Rhododendron arboreum	20.000	13.33
Viburnum species	20.000	13.33
Acer campbellii	10.000	6.67

3.3.9 Stratum-I upto 900m,reserved forests-North Sikkim district:

No estimation is made as there is no reserved forest area in this stratum.

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3.3.10 Stratum-I upto 900m-unreserved forests-North Sikkim district:

Stems per hectare in this stratum is 22.000 Following observations are made from the distribution of stems in this stratum:

a) Stems are concentrated in the diameter class 10-19cm. which constitute 31.82% of the total stems,

b) Trees above 50cm.diameter class is practically absent,

c) The important species in this stratum mainly are Alnus nepalensis and Bischofia javanica.

Stems/ha. with percentage distribution of some of the species are furnished below:

Species name	Stems/ha	Percentage
Alnus nepalensis	80.000	36.36
Bischofia javanica	50.000	22.73
Albizzia procera	10.000	4.55
Castanopsis indica	10.000	4.55
Schima wallichii	10.000	4.55

3.3.11 Stratum-II 900-1800m, reserved forests-North Sikkim: district:

Number of stems per hectare in this stratum is 158.88%. The following observation is made from the distribution of stems in this stratum:

a) Maximum concentration is noticed in 20-29cm. diameter class followed by 10-19cm. diameter class, the contribution of the same being 36.36% and 30.77% respectively.

b) Stems above 70cm. diameter is practically absent,

c) Alnus nepalensis is the main species in this stratum,

Stems/ha with percentage distribution for some of the important species are furnished below:

Species name	Stems/ha.	Percentage
Alnus nepalensis	57.777	36.36
Machilus species	12.222	7.69
Brassaiopsis metis	6.667	4.20
Engelhardtia spicata	6.667	4.20
Cedrela toona	5.556	3.50

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3.3.12 Stratum-II, 900-1800m, unreserved forests-North Sikkim district:

Number of stems per hectare in this stratum is 175.000 The princi-pal species in this stratum are as under:

Species name	Stems/ha.	Percentage
Alnus nepalensis	62.500	35.71
Viburnum species	21.250	12.14
Engelhardtia spicata	15.000	8.57
Eurya japonica	10.000	5.71
Schima wallichii	8.750	5.00

Most of the trees are concentrated within 40cm. diameter class and stems above 60cm.diameter class is practically absent. The distribution of stems by diameter classes is 25.71% in 10-19cm. diameter class followed by 20.37% and 20.23% in 20-29cm. and 30-39cm. diameter classes respectively.

3.3.13 Stratum-III, 1800-2400m, reserved forests-North Sikkim district:

An analysis of the data in this stratum reveals the following conclusions:

a) Number of stems per hectare in this stratum is 206.671,

b) 33.87% of the stems are concentrated in 10-19cm. diameter class followed by 26.61%,14.52% and 12.10% in 20-29cm, 30-39cm. and 40-49cm. diameter classes respectively.

c) The important species in this stratum are Eurya japonica, Alnus nepalensis, and Castanopsis hystrix. Stems/ha. with percentage distribution for some of the species is furnished below :

Species name	Stems/ha.	Percentage
Eurya japonica	21.667	10.48
Alnus nepalensis	18.334	8.87
Castanopsis hystrix	13.334	6.45
Machilus species	11.667	5.65
Symplocos theifolia	11.667	5.65

3.3.14 Stratum-III, 1800-2400m, unreserved forests-North Sikkim district:

Number of stems per hectare in this stratum is 139.999 only. Principal species in this stratum are Symplocos theifolia, Alnus nepalensis, etc. Some of the important species with their percentage distribution in this stratum are given below :

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Species name	Stems/ha.	Percentage
Symplocos theifolia	26.666	19.05
Alnus nepalensis	13.333	9.52
Cinnamomum species	13.333	9.52
Macaranga peltata	13.333	9.52
Cedrela febrifuga	13.333	9.52

The distribution of stems is maximum i .e. 52.38% in 10-19cm.diameter class followed by 16.67%, 7.14% and 9.52% in 20-29cm.,30-39cm.,and 40-49cm., diameter classes respectively.

3.3.15 Stratum-IV, 2400m and above -reserved forests- North Sikkim district:

The following observations have been made in respect of this stratum:

a) Number of stems/ha. is 147.000

b) Important species in this stratum are Abies densa, Tsuga dumosa and Acer cambellii etc.,

c) Stems are evenly distributed in all the diameter classes,

d) 38.10% of the stems are concentrated within 30cm. diameter class. Trees above 60cm.diameter class is 19.05%.

e) Stems per hectare with percentage distribution of some of the species are furnished below:

Species name	Stems/ha.	Percentage
Abies densa	23.000	15.65
Tsuga dumosa	15.000	10.54
Acer campbellii	14.000	9.52
Quercus pachyphylla	8.500	5.78
Alnus nepalensis	8.000	5.44

3.3.16 Stratum-IV,2400m and above- unreserved forests- North Sikkim district:

The following observations have been made for this stratum:

a) Number of stems per hectare is 143.332 only

b) 93.02% of the trees are below 30cm. diameter class,

c) Trees above 60cm. diameter class is practically absent,

d) Stems/ha. for some ofthe important species are furnished below:

Contents

Species name	Stems/ha.	Percentage
Alnus nepalensis	103.332	72.09
Abies densa	13.333	9.30
Castanopsis hystrix	3.333	2.33

3.4 Tree volume study:

As local volume table for most of the important species in West and North Sikkim districts were available with the State Forest Department, development of volume equations from felled tree data was not necessary. Volume table for the following species are used :-

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Species name	Volume in (m3) Diameter classes (in cm.)							
	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+
Alnus nepalensis	0.700	1.200	1.700	2.200	2.900	3.500	4.200	4.700
Eurya japonica	0.300	0.500	0.700	1.000	1.200	1.400	1.600	1.800
Machilus spp.	0.400	0.700	0.900	1.500	2.300	2.900	3.400	3.800
Michelia champaca	0.300	0.500	1.300	1.900	2.500	3.500	4.400	5.000
Quercus lineata	0.400	0.700	1.100	1.700	2.100	2.600	3.300	3.700
Bucklandia populnea	0.400	0.600	0.800	1.100	1.300	1.600	1.800	2.000
Acer campbellii	0.300	0.700	1.200	1.700	2.500	3.100	3.500	3.800
Echinocarpus dasycarpus	0.400	0.600	0.900	1.300	1.600	1.900	2.400	3.100
Quercus pachyphylla	0.300	0.600	1.100	1.500	2.000	2.600	3.000	3.500
Machilus edulis	0.400	0.900	1.400	2.500	2.800	3.300	4.100	4.700
Abies densa	0.250	0.620	1.190	1.980	3.170	4.640	6.390	8.770
Picea smithiana	0.510	1.100	1.900	2.400	4.400	6.300	8.700	10.700
Terminalia bilata	0.280	0.620	1.100	2.000	3.200	4.700	6.600	8.800
Larix brieffithii	0.420	0.960	1.700	2.600	3.700	4.900	6.600	7.500

3.5 Stock table :

Timber volume per hectare alongwith estimated volume for both the districts is given by species and diameter classes in table 7.1 to 7.4, 9.1 to 10.4 and 12.1 to 12.4.

Timber volume in the present analysis is defined as underbark volume of trees with D.B.H.(O.B.) 30cm. and above. Volume below 30cm. diameter (O.B.) is not included in the present volume calculation.

An abstract of volume per hectare for both the districts in respect of reserved and unfeserved forests is as under :

Stratum	Altitude (mtr.)	West District Reserved Vol(m3)/ha.	West District Unreserved Vol.(m3)/ha.	North District Reserved Vol.(m3) per ha.	North District Unreserved Vol.(m3)/ha.
I	Upto 900	90.650	62.800	-	61.000
II	900-1800	50.325	32.137	47.778	54.750
III	1800-2400	83.614	37.965	72.335	49.666
IV	2400+	116.238	2.800	135.200	6.667

3.5.1 Volume studies: Stratum-I (Upto 900m reserved forest): West District:

Volume per hectare in the stratum is 90.650m3. An analysis of the volume table for the stratum leads to the following inference :

a) *Shorea robusta* is the predominant species in the stratum and contributes about 54% of the total volume of the stratum,

b) *Castanopsis indica* is next in importance to *Shorea robusta* and contributes about 13% of the total volume followed by Schima *wallichii* which contributes 8% of the total volume in the stratum.

Volume distribution by different diameter classes in the stratum is as under :

Diameter class	Percentage of volume
30-39cm.	17.8
40-49cm.	44.6
50-59cm.	24.9
60-69cm.	7.7
70-79cm.	5.0
80-89cm.	-
90-99cm.	-
100 cm.+	-

Thus it is evident that maximum concentration of volume lies in the diameter class 40-49cm.and volume above 80cm. diameter class is absent in the stratum.

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3.5.2 Volume studies:Stratum-I upto 900m.Unreserved forest- West district:

Volume per hectare in the stratum is 62.800m3. Notable feature of volume distribution is as under :-

a) Duabanga grandiflora is the principal volume contributing species and contributes about 27.4% of the total volume,

b) Terminalia myriocarpa contributes about 13.0% of the total volume followed by Canarium spp. (10.8%) and Schima wallichii(9.6%).

Diameter class-wise distribution of volume in the stratum is under :-

Diameter class	Percentage of occurrence
30-39cm.	15.3
40-49cm.	35.7
50-59cm.	35.0
60-69cm.	14.0

Thus it is clear that volume above 70cm.dia. class is totally absent in the area.

3.5.3 Volume studies-Stratum-II;900-1800m-reserved forests-West district:

An analysis of the volume table leads to the following inference :

a) volume per hectare in the stratum is 50.325m3.

b) Quercus species is the main volume contributing species and contributes about 11.7% of the volume followed by Schima wallichii(8.7%) and Castanopsis hystrix (8.7%).

Diameter class-wise distribution of volume is as below :-

Diameter class	Percentage of occurrence
30-39cm.	19.5
40-49cm.	27.7
50-59cm.	14.9
60-69cm.	12.2
70-79cm.	4.5
80-89cm.	8.2
90-99cm.	3.5
100cm+	9.5

The aforesaid table clearly shows a positive aspect in the stratum. Volume is represented in all the diameter classes. Volume contribution by trees above 100cm. diameter class is about 9.5% of the total volume.

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3.5.4 Volume studies-stratum-II,900-1800m -unreserved forests- West district:

Volume per hectare in the stratum is 32.437 m3. Salient features of volume distribution in the strata is as below :

a) Castanopsis hystrix is main volume contributing species and contributes 11.5% of the total volume in the stratum.

This is followed by Schima wallichii that contributes 10.2% of the total volume.

Diameter class-wise distribution of volume is as under:-

Diameter class	Percentage of Volume
30-39cm.	28.3
40-49cm.	31.5
50-59cm.	21.2
60-69cm.	9.0
70-79cm.	4.3
80-89cm.	2.7
90-99cm.	-
100cm.+	3.0

3.5.5 Stratum-III- reserved forests-(1800-2400m)- West District:

Volume per hectare in the stratum is 83.614m3. The salient features of the stratum are :-

a) Quercus species is the most predominant species in the stratum and constitutes about 7.5% of the total volume. Moreover, volume is distributed over all the diameter classes. It is observed that contribution of volume in diameter class 100cm. and above is about 21% of the total volume of the species.

b) Cinnamomum is the next volume contributing species and contributes about 26.6% of the total volume. Diameter class-wise distribution of the volume is as under:-

Diameter class	Percentage of volume
30-39cm.	13.7
40-49cm.	21.9
50-59cm.	12.6
60-69cm.	16.0
70-79cm.	9.1
80-89cm.	5.9
90-99cm.	9.7
100cm.+	11.1

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3.5.6 Stratum-III(1800-2400m)-unreserved forests-West District:

Volume per hectare in the stratum is 37.965 m3. Predominant species in the stratum in respect of volume contribution is Castanopsis hystrix which contributes 25% of the total volume followed by Quercus species with a volume contribution of 26.1%.

Diameter class-wise distribution of volume in the stratum is as follows:

Diameter class.	Percentage of volume
30-39cm.	23.5
40-49cm.	23.6
50-59cm.	16.2
60-69cm.	7.2
70-79cm.	8.4
80-89cm.	6.8
90-99cm.	5.8
100cm.+	8.5

3.5.7 Stratum-IV-2400m+ - reserved forests-West District:

Volume per hectare in the stratum is appreciably high and is 116.238 m3. This is owing to less biotic inference in this high altitudinal zone.

Predominant species in the stratum in respect of volume is Tsuga dumosa which contributes 18.6% of the total volume followed by Quercus pachyphylla(18.3%) and Quercus lamellosa(12.3%) Diameter class-wise volume contribution is as under:

Diameter class	Percentage of volume
30-39cm.	8.5
40-49cm.	14.5
50-59cm.	10.5
60-69cm.	17.6
70-79cm.	11.9
80-89cm.	10.0
90-99cm.	14.4
100cm.+	12.6

Thus it can be safely concluded that percentage contribution of volume by mature trees over 60cm. diameter is about 66.5% of the total volume.

3.5.8 Stratum-IV- 2400m+-unreserved forests-West District:

Volume per hectare in the stratum is only 2.800m3. Tsuga dumosa is the only species in this stratum. It is present only upto 30cm.diameter class. Diameter class-wise volume contribution is as under:

Diameter class	Percentage of volume
30-39cm.	100.0
40cm.and above	Nil

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3.5.9 Stratum-I - upto 900 m.- unreserved forests- North District:

Volume per hectare in the stratum is 61.000m3. Predominant species in the stratum is Alnus nepalensis which contributes about 62.3% of the total volume. Distribution of volume by diameter class-wise is as under:

Diameter class	Percentage of volume
30-39cm.	49.18
40-49cm.	50.82

3.5.10 Stratum-II- 900-1800m - reserved forests- North district:

Volume per hectare in the stratum is 47.778m3. The principal volume contributing species is Alnus nepalensis that contributes 50.0% of the total volume. Volume contribution by individual species other than Alnus nepalensis is insignificant. Volume distribution by diameter class-wise is as under:

Diameter class	Percentage of volume
30-39cm.	27.7
40-49cm.	43.5
50-59cm.	16.9
60-69cm.	11.9
70cm.+	Nil

Thus volume above 70cm. diameter is totally absent in the stratum.

3.5.11 Stratum-II - 900-1800m- unreserved forests- North district:

Volume per hectare in the stratum is 54.750m3. Principal volume contributing species in the stratum is Alnus nepalensis and contributes about 50% of the total volume. Volume distribution by diameter class-wise is as under:

Diameter class	Percentage of volume
30-39cm.	51.6
40-49cm.	36.8
50-59cm.	4.6
60-69cm	-
70-79cm.	-
80-89cm.	7.0

3.5.12 Stratum-III- 1800-2400m - reserved forests- North district:

Volume per hectare in the stratum is 72.335m3. Castanopsis spp.is the predominant volume contributing species and contributes about 23.0% of

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the total volume; followed by Quercus spp. that shares 20.5% of the total volume. Contribution by other species occurring in the stratum is insignificant. Diameter class-wise volume distribution in the stratum is as under:-

Diameter class	Percentage of volume
30-39cm.	12.4
40-49cm.	19.4
50-59cm.	19.8
60-69cm.	3.9
70-79cm.	4.1
80-89cm.	5.1
90-99cm.	12.9
100cm.+	22.4

3.5.13 Stratum-III(1800-2400m)-unreserved forests-North district:

Volume per hectare in the stratum is 49.666m3. The predominant volume contributing species in the stratum is Castanopsis hystrix that contributes 40.9% of the total volume. Diameter class-wise volume distribution is as under :

Diameter class	Percentage of volume
30-39cm.	8.1
40-49cm.	18.7
50-59cm.	20.1
60-69cm.	-
70-79cm.	12.1
80-89cm.	-
90-99cm.	18.7
100cm.+	22.3

3.5.14 Stratum-IV(2400m. and above)- reserved forests - North district:

Volume per hectare in the stratum is 135.2 m3. The principal volume contributing species in the stratum is Abies densa and contributes 30.4% of the total volume followed by Tsuga dumosa(20.1%), Acer campbellii(10.6%) and Picea smithiana(7.6%). Diameter class-wise distribution of volume is as under :-

Diameter class	Percentage of volume
30-39cm.	4.8
40-49cm.	12.1
50-59cm.	19.8
60-69cm.	17.0
70-79cm.	16.9
80-89cm.	15.3
90-99cm.	-
100cm.+	14.1

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Thus it is evident from the aforesaid table that volume contribution of stem above 100cm. diameter is appreciable and about 14% of the total volume.

3.5.15 Stratum-IV(2400m and above) - unreserved forests-North district.

Volume per hectare in the stratum is only 6.667m3 which clearly reflects the degraded status of the forest crop. Machilus species and Macaranga peltata are the two major species which contributes 45.0% and 35.0% of the total volume. Diameter class-wise distribution of volume is as under:-

Diameter class	Percentage of volume
30-39cm.	20.0
40-49cm.	35.0
50-59cm.	45.0

3.6 Error calculation:

Standard error has been estimated separately for each stratum both West and North districts for reserved forests only. Percentage of error for each stratum in the districts is given as under:

West district:

Stratum	Forest area (in ha.)	Volume/ha. (in m3)	S.E. %
I(upto 900m)	1140	90.650	- *
II(900-1800m)	1117	50.325	14.40
III(1800-2400m)	12325	83.614	7.55
IV (2400m+)	34690	116.238	10.50
Total North district:	49272	105.991	10.65
I(upto 900m)	-	-	- *
II(900-1800m)	1681	47.778	12.54
III(1800-2400m)	16457	72.335	22.93
IV (2400m+)	69115	135.200	11.79
TOtal :	87253	121.658	8.99

* No error is calculated for stratum-I, West Sikkim and stratum-I, North Sikkim reserved forest area due to absence of sufficient representation of plots.

3.7 Plot data analysis:

Analysis of plots surveyed during inventory is summarised in the following paragraphs.

3.7.1 Distribution of forest area by legal status:

Distribution of forest area by legal status for both West and North districts is shown in the table below :

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Legal Status	Percentage of area	
	West district	North district
1. Reserved forests	48.61	67.14
2. Protected forests	0.93	4.29
3. Unclassed	32.50	-
4. National park	-	-
5. Private forests	13.62	20.00
6. Private land with trees owned by Government	3.10	5.71
7. Undetermined	1.24	2.86
	Total:100.00	100.00

The above table clearly shows that major portion of the forest area lies in the reserved forest in both the districts. North district occupies more reserved forest area than the West district. Percentage of Unclassed forest land is quite appreciable in West district but it is absent in North district.

Private forest also occupies a significant area in both the districts as indicated in the above table:

3.7.2 Distribution of forest area by landuse:

An analysis of the landuse classes as per inventory data for both the West and North districts is shown in the table below :

Landuse	Percentage of area	
	West district	North district
Dense tree forests	18.83	28.57
Moderately dense tree	45.98	41.43
Open tree forests	22.52	17.14
Scrub forests	2.47	1.43
Bamboo forests	-	-
Shifting cultivation	-	-
Young plantation of forestry species	0.93	-
Trees in line	-	-
Forest road etc.	-	-
Govt.grass land	-	-
Barren lands	0.62	4.29
Agricultural land without trees in surround	7.72	5.71
Non-forestry plantation	0.31	-
Habitation	-	1.43
Water bodies	-	-
Other lands	-	-
Agricultural land with trees in surround	0.62	-
	Total:100.00	100.00

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Dense forests constitute 18.83% and 28.57% of the total forest area in West and North districts respectively. Moderately dense forests contribute the major portion of the area in both the districts comprising 45.98% in West and 41.43% in North district. Open forest is only 22.52% in West and 17.14% in North districts indicating depletion of forests due to biotic inference.

Barren land is found to be more in North district than in the West. Problem of shifting cultivation is practically absent in both the districts and there is no bamboo bearing forest also in the region.

3.7.3 Distribution of forest area by general topography class:

Both the districts are upland tract which consists of very hilly to hilly terrain all over the area.

General topography	Percentage of area	
	West district	North district
Flat	-	-
Gently rolling	0.96	-
Hilly	21.34	26.09
Very hilly	77.70	73.91

Very hilly area constitute 77.70% and 73.91% in West and North districts respectively. Plain land is almost absent in both the districts. West district constitute 21.34% hilly area whereas the North district constitute 26.09% only. Lofty hills, inaccessible ridges are the common feature in both the districts.

3.7.4 Distribution of forest area by aspect:

Due to existence of a hilly terrain, aspect varies from place to place. An analysis of the plots surveyed in the project area shows the following classification:

Item	Percentage of area	
	West district	North district
Northern	11.36	11.59
North-eastern	20.82	15.94
Eastern	9.15	4.35
South-eastern	20.81	11.59
Southern	9.15	17.39
South-western	16.09	14.49
Western	4.42	13.06
North-western	8.20	11.59
No aspect	-	-
Total:	100.00	100.00

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It is observed from the above table that main aspect lies between North-eastern to South-eastern.

3.7.5 Distribution of forest area by rockiness:

Percentage of area by rockiness classes in both the districts is as under:

Item	Percentage of area	
	West district	North district
High	1.26	4.41
Medium	15.46	11.76
Low	25.87	36.76
No rock	57.41	47.07
Total :	100.00	100.00

It is evident from the above table that percentage of rockiness is not high and most of the project areas in both the districts lie within "no rock" zone.

3.7.6 Distribution of forest area by humus:

Presence of humus is evident in both the districts:

Item	Percentage of area	
	West district	North district
Shallow	51.59	88.33
Medium	23.73	15.15
Deep	3.48	-
No humus	21.20	1.52
Total:	100.00	100.00

It is clear from the above table that deep humus layer is practically absent in both the districts. Shallow humus layer is the predominant feature in the two districts followed by medium humus layer.

3.7.7 Distribution of forest area by soil colour:

The colour of the upper horizon of the soil below the humus layer is determined. Percentage of area with respect to soil colour is given as below:

Item	Percentage of area	
	West district	North district
Black	0.32	-
Brown	97.46	98.48
Red	-	-
Other	2.22	-
No soil	-	1.52
Total:	100.00	100.00

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In general, it is observed that the soil colour is brown in both the districts.

3.7.8 Distribution of forest area by soil consistency:

The state of soil consistency indicates that 88.60% and 93.93% of the areas in West and North districts are slightly compact. This soil consistency which is prevalent in most of the areas supports good forest crops. Friable and compact soil constitute only a little portion of the area. The distribution of forest area by soil consistency class is given below:

Item	Percentage of area	
	West district	North district
Friable	10.13	3.03
Slightly compact	88.60	93.93
Compact	1.27	1.52
Cemented	-	-
No soil	-	1.52
Total:	100.00	100.00

3.7.9 Distribution of forest area by soil texture:

Texture of soil refers to relative occurrence of clay, silt and sand. Percentage area in respect of soil texture classes for both the districts is as under:

Item	Percentage of area	
	West district	North district
Clayey	-	-
Clayey loam	44.93	12.12
Loam	36.08	46.97
Sandy loam	18.67	39.39
Sandy	-	-
No soil	0.32	1.52
Total:	100.00	100.00

In West district, major portion of the area falls under clayey loam zone (44.93%) whereas the same in North district is under loamy zone(46.97%). Loamy and clayey loam texture are excellent for growth of vegetation.

3.7.10 Distribution of forest area by coarse fragments:

Coarse fragments include gravel, boulders, loose stones. Percentage area for the coarse fragments classes as below:

Item	Percentage of area	
	West district	North district
Loose stones	8.28	24.24
Bouldery	15.29	18.18
Gravely	30.89	21.22
No coarse fragments	45.54	36.36
Total:	100.00	100.00

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It is seen from the above table that only 30.89% and 21.22% area are "gravely" in West and North districts respectively followed by "bouldery" which is 15.29% and 18.18% of the total forest area. 45.54% area in West and 36.36% area in North districts have no coarse fragments.

3.7.11 Distribution of forest area by soil depth:

Percentage of forest area by various soil depth classes is given below:

ITEM	Percentage of area	
	West district	North district
No soil	0.32	3.03
Very shallow	0.64	3.03
Shallow	6.34	6.06
Medium	37.14	33.33
Deep	55.56	54.55
Total:	100.00	100.00

Major portion of the project area has a soil depth medium to deep for the districts. Therefore, both the districts will support good vegetation.

3.7.12 Distribution of forest area by soil erosion:

The extent of soil erosion in both the districts is given in the following table:

Item	Percentage of area	
	West district	North district
Mild erosion	86.08	95.38
Moderate erosion	12.65	3.08
Heavy erosion	1.27	1.54
Total:	100.00	100.00

The above table clearly shows that heavy erosion occurs only in 1.27% area of West and 1.54% area in North districts respectively. Mild erosion is noticeable in majority of the areas in both the districts.

3.7.13 Distribution of forest area by origin of stands:

The present study shows that in both the districts the forests are mainly natural forests of seed origin. It constitutes 92.57% and 100.00% of the total forest area in both West and North districts respectively. Natural forest of coppice origin is practically absent in the region. Manmade forest is observed in West district which accounts 7.43% of the forest area of the district.

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The distribution of forest area by origin of stand is given in the following table :-

Item	Percentage of area	
	West district	North district
Natural forest of seed origin	92.57	100.00
Natural forest of coppice origin	-	-
Manmade forests	7.43	-
Total:	100.00	100.00

3.7.14 Distribution of forest by top height class:

Top height classes for the trees of both the districts are as under:

Top height classes (in mt.)	Percentage of area	
	West district	North district
Upto 10 meters	6.76	-
11 to 20 meters	43.90	31.58
21 to 30 meters	47.65	66.67
31 meters +	1.69	1.75
Total:	100.00	100.00

In both the districts majority of the trees is observed within 21 to 30 meters top height class. However, in both the districts, prevalence of trees in 11 to 20 meters top height class is also existent.

3.7.15 Distribution of forest area by size class:

The inventory results shows that in West district 32.65% of the area is under mixed size class followed by big sized timber constituting 31.29%. Small timber comes next in number and constitute 21.09% of the total crop. Pole and regeneration constitute 14.97% of the total standing tree crop. The position is somewhat different in North district area where small timber constitute 44.07% covering the maximum area. Big sized timber followed next constituting 32.20%. Pole crop constitutes only 3.39% of the total area. The distribution of area by size class is given hereunder:

Item	Percentage of area	
	West district	North district
Regeneration	1.36	-
Pole crop	13.61	3.39
Small timber	21.09	44.07
Big timber	31.29	32.20
Mixed size class	32.65	20.34
Total:	100.00	100.00

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3.7.16 Distribution of forest area by regeneration status:

As per guideline laid down in the "Manual of instructions for field inventory" of the F.S.I., regeneration status was considered only for some of the important species namely *Symplocos theifolia*, *Quercus lanceaefolia*, *Eurya japonica*, *Alnus nepalensis*, for West Sikkim district and *Albizzia* spp. *Macaranga peltata*, *Alnus nepalensis*, *Quercus* spp., *Cedrela toona*, *Machilus* spp., *Rhododendron* spp. in North Sikkim district.

Thus the present study does not reflect the general regeneration status of all the species of the project areas in the two districts.

Distribution of forest areas by various regeneration classes for the above species is given in the following table:

Item	Percentage of area	
	West district	North district
Profuse	9.56	-
Adequate	16.72	4.17
Inadequate	31.74	41.67
Absent	41.30	52.08
Damaged regeneration	0.68	2.08
Total:	100.00	100.00

3.7.17 Distribution of forest area by injuries to crop:

Injuries to crop includes borer attack, top drying, girdling, scarring etc., Percentage of area affected by various injuries is as follows:

Item	Percentage of area	
	West district	North district
Borer attack	-	-
Top drying	-	-
Girdling and illicit felling	26.19	17.54
Scarring of trees	1.36	-
Lopping for fodder	0.68	-
Wind damage and flood damage	4.42	1.75
Other injuries(climber damage, wildlife and lightning damage)	55.45	26.32
No injury	11.90	54.39
Total:	100.00	100.00

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It is very clear from the above table that crops in the North district are subjected to less injuries than the West district. However, damage by human agencies, such as girdling which is 26.19% and 17.54% in West and North districts call for protective measures in vulnerable belts. Natural injury in both the districts are not significant. Other injuries which include climber damage, wildlife and lightning damage are 55.45%, 26.32% in West and North districts respectively.

3.7.18 Distribution of forest area by fire incidence:

Percentage of area affected by fire incidence in both the districts is as under:

Type	Percentage of area	
	West district	North district
Very heavy	4.39	-
Frequent	1.69	-
Occasional	28.72	37.29
No fire	65.20	62.71
Total:	100.00	100.00

It is evident that there is no appreciable incidence of heavy fire. Occasional fire occurs in both the districts from time to time and extends to 28.72% in West and 37.29% in North districts. Preventive measures are to be taken in both the districts.

3.7.19 Distribution of forest area by grazing incidence:

The intensity of grazing for both the districts is as under:

Item	Percentage of area	
	West district	North district
Heavy grazing	9.46	-
Medium grazing	38.51	1.69
Light grazing	32.09	27.12
No grazing	19.94	71.19
Total:	100.00	100.00

It can be concluded that medium to light grazing occurs 70.6% in areas of West and 28.81% in areas of North districts. Thus North district is less disturbed than the West district in respect of grazing incidence. Grazing causes harm to recruits and also deteriorates soil conditions. It is, therefore, suggested to avoid grazing in areas of natural regeneration and reforestation. As an alternative, it is to be experimented if rotational grazing can be introduced in certain demarcated areas for the cattle population.

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3.7.20 Distribution of forest area by obstacle class:

The obstacle class for both the districts is as under:

Items	Percentage of area	
	West district	North district
Badly cut up area	1.66	8.62
Average distance less than 3m	1.66	-
Average distance 3m to 5m	18.21	3.45
Average distance 5m to 7m	30.46	22.41
Average distance more than 7m	48.01	65.52
Total:	100.00	100.00

It is observed from the above table that average distance between obstacles more than 7meters is maximum in both the districts. 48.01% in West and 65.52% in North districts respectively.

3.7.21 Distribution of forest area by degradation status:

The survey result reveals that majority of the areas are either moderately or mildly degraded in both the districts. It constitute 71.23% and 34.85% in West and North districts respectively. Degradation is found to be more in West than the North district. About 46.96% of the forest area in North district is not degraded whereas the same is 14.38% only in West district.

Degradation due to grazing fire, pollarding, illicit felling and lopping	West district	North district
Heavily degraded	11.99	10.61
Moderately degraded	23.29	12.12
Mildly degraded	29.11	4.55
Not degraded	13.01	42.41
Degradation due to natural calamities e.g. landslides, glaciers, flood, rainfall		
Heavily degraded	2.40	7.58
Moderately degraded	7.19	3.03
Mildly degraded	11.64	15.15
Not degraded	1.37	4.55
Total:	100.00	100.00

Heavily degraded areas account for 14.39% in West and 18.19% in North districts respectively. Suitable afforestation measures are to be taken in degraded areas on a priority basis.

3.8 Range-wise information :

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3.8.1 District: West Sikkim:

Sl.No.	Range	Stratum	R/UR	Stem/ha.	Important species	Vol./ha. (m3)	Major volume contri ting species
1	Sombre	II	UR	146.652	Alnus nepalensis	22.000	Moringa species
2	Sombre	III	R	249.900	Quercus species	81.467	Quercus species
3	Sombre	III	UR	224.000	Symplocos theifolia	20.000	Alnus nepalensis
4	Sombre	IV	R	279.916	Quercus pachyphylla	112.059	Quercus pachyphylla
5	Sombre	IV	UR	150.000	Tsuga dumosa	2.800	Tsuga dumosa
6	Soreng	I	R	193.314	Shorea robusta	97.320	Shorea robusta
7	Soreng	I	UR	143.319	Duabanga grandiflora	96.066	Duabanga grandiflora
8	Soreng	II	R	177.255	Castanopsis hystrix	65.337	Quercus lanceaefolia
9	Soreng	II	UR	158.852	Alnus nepalensis	52.541	Alnus nepalensis
10	Soreng	III	R	237.750	Symplocos theifolia	75.500	Castanopsis hystrix
11	Soreng	III	UR	131.000	Symplocos theifolia	46.900	Alnus nepalensis
12	Soreng	IV	R	475.000	Rhododendron barbehum	62.125	Quercus lamellosa
13	Gezing	I	R	120.000	Shorea robusta	69.000	Shorea robusta
14	Gezing	I	UR	55.000	Schima wallichii	12.500	Shorea robusta
15	Gezing	II	UR	146.187	Alnus nepalensis	23.931	Alnus nepalensis
16	Gezing	III	R	239.768	Symplocos theifolia	63.470	Castanopsis hystrix
17	Gezing	III	UR	165.438	Alnus nepalensis	12.362	Castanopsis hystrix
18	Gezing	IV	R	232.000	Symplocos theifolia	116.160	Castanopsis hystrix
19	Yoksum	II	R	185.000	Alnus nepalensis	41.500	Quercus species
20	Yoksum	II	UR	126.910	Schima wallichii	29.706	Castanopsis hystrix
21	Yoksum	III	R	224.196	Symplocos theifolia	114.490	Quercus species
22	Yoksum	III	UR	144.522	Alnus nepalensis	53.469	Quercus species
23	Yoksum	IV	R	249.067	Symplocos theifolia	291.292	Quercus lamellosa

R = Reserved forests
UR = Unreserved forests

CHAPTER: IV

GROWING STOCK AND YIELD

4.1 Estimation of total growing stock:

The total number of stems in West and North districts in different strata are summarized below:

District	Stratum	Total stems ('000 unit) Reserved	Unreserved
West	I upto 900m	199.500	153.900
	II 900-1 800m	161.965	787.485
	III 1800-2400m	2932.660	915.476
	IV 2400m+	9603.694	148.650
	Total:	12897.819	2005.511
North	I upto 900m	-	-
	II 900-1800m	267.090	261.450
	III 1800-2400m	3401.181	1151.911
	IV 2400m+	10159.905	1485.922
	Total:	13828.176	2899.283

Total stem = 31630.789
stem/ha = 185.19

4.2 Total volume:

Total growing stock of timber in West and North districts is 5221118 m3 and 10615074 m3 respectively for reserved forest and 505689 m3 and 559563 m3 respectively for unreserved forests. An abstract of total growing stock by district and stratum is appended below :

District	Stratum	Total volume ('000 m3) Reserved	Unreserved
West	I upto 900m	102.885	89.490
	II 900-1800m	55.431	179.485
	III 1800-2400m	1030.538	233.940
	IV 2400m+	4032.264	2.774
	Total:	5221.118	505.689
North	I upto 900m	-	-
	II 900-1800m	80.307	81.796
	III 1800-2400m	1190.417	408.651
	IV 2400m+	9344.350	69,116
	Total:	10615.074	559.563

Total vol = 16901.444
vol/ha = 98.95

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4.3 Objects of management :

There is no valid working plan operative in the project area. However, the objectives of general pattern of management of the forests of the area are:

a) to preserve and improve the vegetational cover all the area so as to prevent denudation and soil erosion in hill slopes and conserve soil and moisture regime,

b) to convert mixed irregular wet miscellaneous forests into regular even aged forest of economically important species,

c) to cover as quickly as possible barren hill slopes with tree cover of suitable species,

d) consistent with the above objectives, to obtain maximum annual yield in perpetuity of forest produce.

Thus the present management emphasizes on prduction of forest produce which are required for meeting the demand of the local population alongwith forest conservation measures.

4.4 Rotation and conversion period:

On the basis of data collected from silvicultural division, West Bengal Forest Department, it is observed that most of the broad-leaved species in the adjacent Darjeeling and Kalimpong Divisions attain exploitable diameter in 80 years. However, during ground survey, it was noticed that a sizeable portion of the growing stock particularly above 2400m altitude in the two districts is mature and overmature. Thus a considerable portion of the growing stock is not available for actual utilisation due to decay and over maturity.

Inspite of the aforesaid fact, the rotation period for broad-leaved species cannot be brought down as the growth rate of broad-leaved species is rather slow.

It is, therefore, suggested that a rotation period of 80 years for broad-leaved species be adopted in general.

Further, 20% of areas above 2400m altitude is recommended to be set apart as a protection belt in view of the soil erosion problem in the area in question and therefore, no felling will be carried out there.

The annual yield for various strata is calculated as given in the following paragraphs.

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4.5 Annual yield:

An attempt has been made to calculate the annual yield available from reserved forest areas only. Since there is no regular management practice for unreserved forests, no annual yield has been calculated from such areas.

The growing stock in the present inventory for West and North district comprises a large number of commercially important tree species in irregular mixture. The age gradation and diameter class distribution are also strikingly lacking in uniformity. Moreover, sufficient growth data of these trees in natural condition are not available. Under such circumstances, it is not possible to control yield by volume.

Thus in the present yield estimation for both the districts, yield is regulated and calculated by area only.

It may be pointed out that 20% of the area in Stratum-IV is reserved as a protection belt in view of serious soil erosion problem in the area. During ground inventory, it became evident that in areas above 2400m, a sizeable portion of the growing stock is mature and overmature which may lead to a gross wastage of the forest capital.

It is, therefore, suggested that 80% of the area in this stratum may be worked out for yield:

West district:

Stratum: I		
Area of the stratum	1140	ha.
Workable area(area to be worked out at 80 years rotation)	14.25	ha.
Timber volume/ha.	90.650	m3
Total yield	1291.762	m3
Stratum: II		
Area of the stratum	1117	ha.
Workable area(area to be worked out at 80 years rotation)	13.96	ha.
Timber volume/ha.	50.325	m3
Total yield	702.537	m3
Stratum: III		
Area of the stratum	12325	ha.
Workable area(area to be worked out at 80 years rotation)	154.06	ha.
Timber volume/ha.	83.614	m3
Total yield	12881.573	m3
Stratum: IV		
Area of the stratum	34690	ha.
Area reserved for protection belt(20%)	6938	ha.
Effective area	27752	ha.
Workable area(area to be worked out at 80 years rotation)	346.90	ha.
Timber volume/ha.	116.238	m3
Total yield	40322.962	m3

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Thus the total yield available from reserved forest of West district works out as 55198.834 m3.

North district:

Stratum:I

No yield is available since there is no area in this stratum.

Stratum:II

Area of the stratum	1681 ha.
Workable area(area to be worked at 80 years rotation)	21.01 ha.
Timber volume/ha.	47.778 m3
Total yield	1003.815 m3

Stratum:III

Area of the stratum	16457 ha.
Workable area(to be worked at 80 years rotation)	205.71 ha.
Timber volume/ha.	72.335 m3
Total yield	14880.032 m3

Stratum:IV

Area of the stratum	69115 ha.
Area reserved for protection belt(20%)	13823 ha.
Effective area	55292 ha.
Workable area(to be worked at 80 years rotation)	691.15 ha.
Timber volume/ha.	135.200 m3
Total yield	93443.480 m3

Thus the total yield available from North district works out as 109327.327 m3.

An abstract of annual yield available from West and North districts reserved forest is summarized below:

District	Annual yield(m3)				
	Stratum I	Stratum II	Stratum III	Stratum IV	Total
West Sikkim	1291.762	702.537	12881.573	40322.962	55198.834
North Sikkim	-	1003.815	14880.032	93443.480	109327.327
Total:	1291.762	1706.352	27761.605	133766.442	164526.161

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CHAPTER:V

WOOD CONSUMPTION STUDY

5.1 Objectives:

Wood consumption study for West and North districts were carried out with the following objectives:

a) to study the consumption of wood for various categories e.g., household, agricultural implements, K.oil etc.,

b) to find out actual quantum of consumption of fuelwood by the two districts,

c) forecast of future wood consumption for the year 1991 and 2001.

5.2 Sampling design:

A. Rural Sector:

A two stage stratified sampling design has been adopted. The villages constituted the first stage sampling units. Sampling of 7 villages from North Sikkim and 12 villages from West Sikkim districts were taken to arrive at a reliable estimation.

The household formed the second stage sampling unit. At least, five households from each of the selected village were selected randomly so as to include different income group. In general, 1% households were surveyed in rural areas.

B. Urban Sector:

A two stage sampling was adopted. In the first stage urban centres were selected. There are only two towns in West district and one town in North district of Sikkim.

In the second stage at least 5 households from each urban centre were selected for enumeration as to represent all income groups. Attempt was made to survey 5% of the households in the urban centres.

Questionnaire used for collecting data during the survey is given in the manual.

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5.3 Field data collection:

Field data collection was carried out with specially designed questionnaire to obtain detailed information. Selected villages for survey were first located in the mapsheets supplied by the Survey of India. Assistance was sometimes obtained from the local people and the local Officers for locating the villages. After locating the village, the assistance of Village Chief was necessary for collection of data. 10 households were selected randomly in each village. The forms given in the field were filled up by the respective investigators.

5.4 Sampling intensity:

District: West Sikkim:

Rural/ Urban	Population (No.)	No.of households.	No.of households sampled	Sample covering population(No.)	Intensity of sampling (%)
1	2	3	4	5	6
Rural	73495	13084	119	725	0.99
Urban	1697	317	19	113	6.66
Total:	75192	13401	138	838	1.11
District: North Sikkim:					
Rural	25675	5377	56	314	1.22
Urban	780	154	5	32	4.10
Total:	26455	5531	61	346	1.31

5.5 Steps for computation:

The prescribed proforma in the field forms consists of several items regarding number and sizes of various types of wood and bamboo utilised for different purposes. These are processed to find out the present use and per capita consumption of wood for(i) house construction (ii) furniture making (iii) agricultural implements (iv) fuelwood (v)kerosene oil and (vi) agricultural wastes etc. A separate table is prepared for consumption of bamboo. Attempt is also made to estimate the utility of wood for district level as well as for the entire state.

Village-wise information of the sampled villages with respect to number of houses sampled, number of households in the sampled houses with the utilisation of wood in construction of houses, furniture, agriculture implements and fuelwood is summarised and used as the basic data for further calculation. Regarding the estimation of total number and per capita consumption of bamboo, the value is given in terms of numbers.

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Based on the sample data the per capita and total consumption of wood is calculated by the following methods :-

5.6 Estimation of present use of wood in the households:

Per capita consumption of wood for various purposes for each sampled village is derived by adding the wood used in the sampled houses divided by the total number of population in the sampled houses for each of the respective village. Thus, per capita wood used is calculated for 19 villages. Based on this table, per capita consumption of wood for the seven districts is calculated by taking the arithmatic mean of villages falling in respective district. This figure multiplied by total number of population of the district gives the present use of wood on account of various uses like house construction, furniture making, agricultural implements making, domestic consumption of fuelwood and kerosene oil for the whole district. These are calculated both for rural and urban areas in each district. When consumption of seven districts is added up, it gives the present use of wood for the State.

Accordingly, per capita consumption of wood for each house construction can be formulated as follows:

Present consumption of wood for house construction for a district. $= \dfrac{\Sigma_X \text{(total population in the district}}{\text{(N)(total population of the sampled houses in a village)}}$

Where, ΣX = total existing usage of wood for house of the sampled villages.

N = Total number of sampled villages in the district.

Thus, per capita consumption of wood for each house construction is calculated by dividing total use of wood of sampled houses with total population of the houses. The per capita figure in a district is thus obtained for all villages added together and then divided by total number of population of the villages sampled in that particular district. This figure when multiplied by the total rural population of the district gives the present use of wood for house construction for the district.

Similar method is followed to calculate the present use of wood for house construction in urban areas.

5.7 Calculation of present use for furniture making, agriculture implements, fuelwood and kerosene oil :

The same procedure is applied to calculate the present use of wood for furniture, agriculture implements, fuelwood and kerosene oil as explained in the earlier para 5.6 taking the village-wise per capita sample data as a base.

5.8 Annual consumption of wood in house construction, furniture, agriculture equipments, fuelwood and kerosene oil:

Following considerations were made while calculating annual consumption after local investigation :

(i) The life of a house is assumed as 25years and annual requirements of wood for house construction would be 5% of the wood which is in use now. For repairs of house, wood required is 10% of wood required for new construction annually.

(ii) Furniture items being kept indoor and less exposed to weathering, the average life is taken as 25 years and the annual requirement of furniture wood will be 1/25th of the wood presently in use.

(iii) Agricultural implements are replaced every two years.

(iv)Fuelwood collected is consumed during the year.

(v) Kerosene oil used is consumed in every year.

Per capita annual consumption of wood under various categories is calculated on the basis of the sample household study taking into consideration the above mentioned factors. Per capita present use of wood when divided by the respective life period gives the per capita annual consumption in different categories of wood.

5.9 Annual consumption of bamboo and pole:

Bamboo and poles are mainly used for house construction. Therefore, the life of a bamboo and pole is also taken as 25 years considering its utility in house construction.

5.10 Future projections:

There are number of factors which may influence the consumption of different categories of wood in future. For calculating the future trend of consumption, the growth of population is considered as the main criterion. Based on the decadal variation in

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population since 1901, the future projections have been made for the years 1991 and 2001 to coincide with the Census years.

Year	Actual population(NO.)	Increase in population(NO.)	Increase by percentage
1901	59014	-	-
1911	87920	+ 28906	48.98
1921	81721	- 6199	- 7.05
1931	109808	+ 28087	+ 34.37
1941	121520	+ 11712	+ 10.67
1951	137725	+ 16205	+ 13.34
1961	162189	+ 24464	+ 17.76
1971	209843	+ 47654	+ 29.38
1981	316385	+106542	+ 50.77

Source:(Statistical Pocket Book,Sikkim,1985)

As there is no definite trend in decadal variation, the average increase in growth rate for last three decades has been taken as the increase of growth, rate for the decade 1991 which is only 32.63% or say 33% considering other factors for consumption as constant. Decaded increase for the year 1991-2001 has been taken as 30% assuming that some alternatuve measures will be adopted during this period.

5.11 Results and analysis:

The methodology for calculation of per capita present use of wood for household consumption is stated in para 5.6. Based on this, the household consumption study for the following items are made.

1. House construction
2. Furniture
3. Agricultural implements
4. Fuelwood
5. Charcoal
6. Kerosene oil
7. Agriculture and vegetable waste
8. Electricity
9. L.P.G.
10. Thatch
11. Leaves
12. Grass
13. Bamboo
14. Pareng and Melong bamboo

5.11.1 House construction:

Major portion of the houses in rural areas are kachha or semi kachha built with mud and bamboo wall and thatched roofs. Bamboos including Pareng are mostly used for making roof frame. Wooden beams are used for making doors and windows. The present use of wood during the survey is 14403 m3 and 219.18 m3 for rural and urban areas respectively

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in North Sikkim district. The same for West Sikkim district is 32338 m3 and 865.4 m3 respectively. The per capita annual consumption of wood for house construction is 0.0224 m3 and 0.0112 m3 for rural and urban sector respectively in North Sikkim District and for the West Sikkim district, it is only 0.0176 m3 and 0.0204 m3 respectively. District-wise per capita annual uses of wood for house construction is summarised in table 2(a) and 2(b).

5.11.1.1 Annual use of wood for house construction:

Net estimated annual use of wood for house construction is 583.7 m3 in North Sikkim district whereas it is 1327.6 m3 in West Sikkim for rural and urban sectors combined. For details table 2(a) and 2(b) may be referred.

5.11.2 Total wood used for annual maintenance:

The total wood used for maintenance of houses annually is 10% of the total annual use of wood in house construction. Thus the wood used for maintenance is 58.3 m3 and 132.76 m3 for entire North and West Sikkim districts covering urban and rural sectors both.

5.11.2 Wood consumption for furniture:

Need of the people for furniture in rural and urban sector is limited and it is estimated that per capita annual consumption in North district for rural sector is only 0.0027 m3 and for urban sector is 0.0072 m3. In West Sikkim per capita annual consumption in rural sector is 0.0022 m3 while in urban sector it is 0.0024 m3 only. The furniture items generally used are wooden cots, chairs, chowkies and wooden almirah. Net estimated annual usage of wood for furniture items is about 74.6 m3 for North district and 166.1 m3 for West district.

Per capita annual consumption and total annual consumption of wood is given as under:

District	Rural(m3)		Urban(in m3)		Grand total(m3) rural & urban
	Per capita	Total	Per capita	Total	
North	0.0027	69	0.0072	5.6	74.6
West	0.0022	162	0.0024	4.1	166.1

5.11.3 Wood requirement for agricultural implements:

Items like Plough pieces, Yoke, Tool handles etc. are utilised in agricultural work.

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The net wood requirement annually for agricultural implements in the two districts is given as under:

District	Rural(m3)		Urban(in m3)		Grand total rural & urban(in m3)
	Per capita	Total	Per capita	Total	
North	0.0044	113	0.0001	0.08	113.08
West	0.0030	220	0.005	8.5	228.50

From the above table it is evident that usage of wood for agricultural purposes is very limited in both the districts.

5.11.4 Wood requirement for fuelwood consumption:

Firewood is consumed both by rural and urban population. All the rural population is totally dependent on the local forests. The total fuelwood requirement annually for the two districts is shown as under:

District	Rural(in m3)		Urban(inm3)		Grand total rural and urban(inm3)
	Per capita	Total	Per capita	Total	
North	1.649	42338	1.643	1281.5	43619.5
West	1.728	126999	1.001	1698.7	128697.7

5.11.5 Consumption of Charcoal:

Charcoal is mostly used in urban areas. A small amount is, however, used by the rural population. Per capita annual consumption of charcoal in urban sector is 7.812 kg.in North district. The total quantity of charcoal consumed in North district is estimated to be 135050 kg. annually for rural sector while for urban sector it is 13893.3 kg.

In West district, consumption of charcoal is less in comparison with North district. The total charcoal requirement for the two districts is shown as under:

District	Rural(in kg.)		Urban(in kg.)		Grand total rural and urban (in kg.)
	Per capita	Total	Per capita	Total	
North	5.26	135050	17.812	13893.3	148943.3
West	2.56	188515	-	-	188515.0

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5.11.6 Kerosene oil requirement for consumption:

Kerosene oil is used in both rural and urban areas for burning and lighting purposes. It is also used for cooking in urban area and reduces the use of fuelwood to some extent. The total consumption of K.oil for North district is estimated to be 444434 litres for rural and 24858.6 litres for urban area per annum. Per capita per annum usages for respective sectors is 17.31 litres and 31.87 litres respectively. In West district total consumption of K.oil for rural area is 941471 litres and for urban area it is 20890 litres. Per capita consumption for rural sector is 12.81 litre while for urban sector it is 12.31 litres per annum.

The consumption of K.oil for the two districts is shown below:-

District.	Rural(in litre)		Urban(in litre)		Grand total rural and urban (in litre)
	Per capita	Total	Per capita	Total	
North	17.31	444434	31.87	24858.6	469292.6
West	12.81	941471	12.31	20890.0	962361.0

5.11.7 Consumption of electricity :

Electricity is consumed both in rural and urban areas. The level of consumption in urban areas is more than rural areas. It is observed that in North district per capita consumption is 21.92 unit in rural and 39.00 unit in urban sector respectively.

In West district, per capita consumption for rural and urban sector is 18.04 unit and 46.82 unit respectively. The total consumption for North district is 593216 unit while in West Sikkim district it is 1405303.5 units.

It is observed that electrification in 20 revenue blocks out of 45 in North district(i.e. 44.44%) and 37 revenue blocks out of 111 blocks(i.e. 33.33%) in West district has been done while all the towns in both the districts have been electrified. Therefore, total consumption can be reduced in the same percentage as below:

Rural: (in unit):

District	Consumption if entire rural sector is electrified	Electrified(in%)	Annual consumption (units)
North	562796	44.44	250106
West	1325850	33.33	441905

Urban: (in unit):

	Consumption	Actual consumption (rural and urban)
North	30420	280526
West	79453	521358

Source:(Statistical Pocket Book,Sikkim, 1985)

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5.11.8 Consumption of Thatch, Leaves, Grass, Agricultural Vegetable waste:

Besides, firewood and K.oil, thatch, leaves, grass and agriculture and vegetable waste are also being used by rural population for cooking and fuelwood purposes. For details table No.2(a) and 2(b) may be referred.

Table 1(a)

Present usage of wood consumption for different purposes in urban sector. District: North and West Sikkim.

Sl. No.	Item	North District		West District	
		Per capita present use	Net estimated usage	Per capita present use	Net estimated usage
1.	House construction (m3)	0.281	219.18	0.51	865.4
2.	Furniture(m3)	0.181	141.18	0.06	101.8
3.	Agriculture(m3)	0.0002	0.156	0.010	16.9
4.	Fuelwood(m3)	1.643	1281.54	1.001	1698.7
5.	Charcoal(kg)	17.812	13893.36	-	-
6.	K.oil(ltr.)	31.87	24858.60	12.31	20890.0
7.	Agriculture and vegetable waste(in kg)	-	-	64.60	109626.2
8.	Electricity (unit)	39.00	30420.00	46.82	79453.5
9.	L.P.G.(No.)	0.09	70.20	-	-
10.	Thatch(kg.)	-	-	56.63	96101.1
11.	Leaves(kg.)	-	-	113.0	191761.0
12.	Grass(kg.)	228.0	177840.0	387.0	656739.0
13.	Bamboo for house construction(no.)	-	-	0.07	118.7
14.	Pareng & melong for construction (no.)	1250	975000.00	37.5	63637.5
15.	Pareng and melong for agricultural purposes(No.)	6.25	4875.0	7.07	11997.8

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Table 1(b)

Present usage of wood consumption for different purposes in rural sector.

Sl. No.	Items	North district		West district	
		Per capita present use	Net estimated usage	Per capita present use	Net estimated usage
1.	House construction(m3)	0.561	14403	0.44	32338
2.	Furniture(m3)	0.068	1746	0.055	4042
3.	Agriculture implements(m3)	0.0085	218	0.006	441
4.	Fuelwood(m3)	1.649	42338	1.728	126999
5.	Charcoal(kg.)	5.26	135050	2.565	188515
6.	K.oil(ltr.)	17.31	444434	12.81	941471
7.	Agriculture and vegetable waste (kg.)	26.62	683468	-	-
8.	Electricity(unit)	21.92	562796	18.04	1325850
9.	L.P.G.(kg.)	-	-	-	-
10.	Thatch(kg.)	67.29	1727670	9.05	665130
11.	Leaves(kg.)	82.48	2117674	128.8	9466156
12.	Grass(kg.)	213.0	5468775	448.0	32925760
13.	Bamboo for house construction(no.)	1.21	31066	2.6	191087
14.	Pareng and elong for house construction(no.)	182.26	4679525	2198	161540000
15.	Pareng and elong for agriculture purpose(no.)	6.24	160212	8.32	611478

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Table No.2(a)

Per capita annual usage of wood consumption for different purposes in urban sector:

Sl. No.	Items	North District		West District	
		Per capita annual usage	Net estimated annual usage	Per capita annual usage	Net estimated annual usage
1.	House construction(m3)	0.0112	8.7	0.0204	34.6
2.	Furniture (m3)	0.0072	5.6	0.0024	4.1
3.	Agriculture (m3)	0.0001	0.08	0.005	8.5
4.	Fuelwood(m3)	1.643	1281.5	1.001	1698.7
5.	Charcoal(kg)	17.812	13893.3	-	-
6.	K.oil(ltr.)	31.87	24858.6	12.31	20890.0
7.	Agriculture and vegetable waste(kg.)	-	-	64.6	109626.2
8.	Electricity (unit)	39.00	30420.0	46.82	79453.5
9.	L.P.G.(No.)	0.09	70.20	-	-
10.	Thatch(kg.)	-	-	56.63	96101.1
11.	Leaves(kg.)	-	-	113.0	191761.0
12.	Grass(kg.)	228.0	177840.0	387.0	656739.0
13.	Bamboo for house construction (No.)	-	-	0.0028	4.7
14.	Parang and Melong for house construction (No.)	50.00	39000.0	1.50	2545.5
15.	Pareng and Melong for agriculture purpose (No.)	3.12	2433.6	3.53	5990.4

Table No.2(b)

Per capita annual usage of wood consumption for different purposes in rural sector.

Sl. No.	Items	North district		West district	
		Per capita annual usage.	Net estimated annual usage	Per capita annual usage.	Net estimated annual usage
1.	House construction (m3)	0.0224	575	0.0176	1293
2.	Furniture(m3)	0.0027	69	0.0022	162
3.	Agriculture (m3)	0.0044	113	0.0030	220
4.	Fuelwood(m3)	1.649	42338	1.728	126999
5.	Charcoal(kg.)	5.26	135050	2.565	188515
6.	K.oil(ltr.)	17.31	444434	12.81	941471
7.	Agriculture and vegetable waste(kg.)	26.62	683468	-	-
8.	Electricity (unit)	21.92	562796	18.04	1325850
9.	L.P.G.(No.)	-	-	-	-
10.	Thatch(kg.)	67.29	1727670	9.05	665130
11.	Leaves(kg.)	82.48	2117674	128.8	9466156
12.	Grass(kg.)	213.0	5468775	448.0	32925760
13.	Bamboo for house construction (No.)	0.048	1232	0.104	7643
14.	Pareng and Melong for house construction (No.)	7.29	187170	87.16	6405824
15.	Pareng and Melong for agriculture purpose(No.)	3.12	80106	4.16	305739

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5.11.9 Consumption of bamboo:

Bamboo is mostly used for house construction and agricultural purposes. Per capita annual consumption is very low in both the districts. This may be due to non-availability of bamboo in the region. Per capita per annum usage of bamboo and total consumption is appended below:

District	Rural (in No.)		Urban (in No.)		Grand total rural and urban (in No.)
	Per capita	Total	Per capita	Total	
North	0.048	1232	-	-	1232
West	0.104	7643	0.0028	4.7	7647.7

Pareng and Melong types of bamboo are also used for house construction and agricultural purposes. Present usage of wood consumption and per capita annual usage of wood for different purposes for rural and urban sector is summarised in table No.1(a),1(b) and 2(a) and 2(b).

5.12 Future projection of wood consumption:

As per para 5.10, future projection is made for annual consumption for different purposes e.g. house construction, furniture, agriculture, fuelwood K.oil and electricity only.

District: North Sikkim:

Sl. No.	Item	Present annual consumption	Consumption in the year 1991 (33% increase)	Year 2001 (30% increase)
1.	House construction (m3)	583	776	1009
2.	Furniture (m3)	75	99	128
3.	Agriculture (m3)	113	150	195
4.	Fuelwood (m3)	43619	58013	75418
5.	K.oil (ltr.)	469292	624159	811406
6.	Electricity (unit)	280526	373099	485029
District: West Sikkim				
1.	House construction (m3)	1327	1765	2295
2.	Furniture (m3)	166	220	287
3.	Agriculture (m3)	228	303	395
4.	Fuelwood (m3)	128697	171167	222518
5.	K.oil (ltr.)	962361	1279940	1663922
6.	Electricity (unit)	521358	693406	901427

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CHAPTER:VI

SUMMARY AND CONCLUSIONS

6.1 Summary:

1. Geographical areas of North and West Sikkim districts are 4226 km2 and 1166 km2 respectively.

2. Reserved forest area in North district is 872.53 km2, whereas the same in West district is 492.72 km2. Similarly, unreserved forest area in North district is 200.39 km2 whereas the same in West district is 141.63 km2 only.

3. North district occupies 20.65% of reserved forest whereas West district occupies 42.26% reserved forest area of the total geographical area. The percentage of unreserved forest areas for North and West district is 4.74% and 12.15% respectively.

4. Four altitudinal strata have been formed in each district amongst which stratum IV i.e. area above 2400m altitude in the reserved forest area occupies 70.41% and 51.60% in West and North districts respectively. Stratum III(1800-2400m) occupies 25.01% and 40.96% in West and North districts respectively. Percentage area in stratum-I(upto 900m) and stratum-II(900-1800m) in West and North Sikkim district is 4.58% and 7.44% only.

5. Per hectare estimated stems and volume in different strata have been computed both for reserved and unreserved forests as follows:

Stratum	Altitude(mt)	No.of stem/ha. Reserved	Unreserved
District:West Sikkim:			
I	Upto 900	175.000	108.000
II	900-1800	145.000	141.000
III	1800-2400	237.944	148.568
IV	above 2400	276.843	150.000
District:North Sikkim:			
I	Upto 900	-	220.000
II	900-1800	158.887	175.000
III	1800-2400	206.671	139.999
IV	above 2400	147.000	143.332

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Stratum	Altitude (mt.)	Volume (m3)/ha. West district Reserved	West district Unreserved	North district Reserved	North district Unreserved
I	Upto 900	90.650	62.800	-	61.000
II	900-1800	50.325	32.137	47.778	54.750
III	1800-2400	83.614	37.965	72.335	49.666
IV	2400+	116.238	2.800	135.200	6.667

6. The total number of stems in reserved forest areas of West and North districts are 12.897 million and 13.828 million respectively and the total growing stock is 5.221 million m3 and 10.615 million m3 in West and North districts respectively. The total number of stems in unreserved forest areas of West and North districts are 2.005 million and 2.899 million respectively. The total growing stock from unreserved forest area of West and North districts is 0.505 million m3 and 0.559 million m3 respectively.

7. The estimated annual availability of timber is calculated as 55198.834 m3 and 109327.327 m3 in West and North districts respectively.

8. The total annual consumption of timber is 1721 m3 and 771 m3 for house construction, furniture and agricultural implements for West and North districts respectively.

9. The total annual fuelwood requirement is 126999 m3 and 1698 m3 in rural and urban sector respectively in West district whereas the same in North district are 42338 m3 and 1281 m3 only.

10. 20% of forest areas have been set apart as protection belt in stratum - IV of each district.

6.2 Conclusion:

The annual availability of timber in the two districts is 164526 m3 only from the reserved forest areas. This timber volume is calculated for the trees above 30 cm. diameter class only. Trees below 30 cm. diameter were not taken into consideration for volume calculation. Timber available annually is sufficient enough to meet the requirements of house construction, furniture, agricultural implements etc. of both the districts. The surplus timber is to the tune of 162034 m3 which can cater the needs of constructional, Box planking, matchwood, plywood, Saw milling by various utility classes within or outside the two districts. A proper planning is required to utilise these forest resources comprising of various categories of timber available in surplus which have not been put to any commercial or economic use earlier.

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Increased forestry activities through production oriented programme will be effective in utilisation of these locked up resources particularly in North Sikkim, which will also provide ample employment opportunities.

2. Equal amount of fuelwood as that of timber volume will be made available from the two districts of reserved forest areas i.e. 164526 m3 of firewood. The fuelwood requirement both in the urban and rural sector in the two districts is estimated as 172316 m3 thus leaving a deficit of 7790 m3.

In the present yield estimation of firewood yield from reserved forest areas only has been taken into consideration. But it may be pointed out that percentage of forest areas other than reserved forests is 12.15% in West district and 4.75% in North district. This area is 25.09% of the total reserved forest.

Accordingly, it may be safely assumed that the availability of firewood from these forest areas will meet the balance deficit of 7790 m3 of fuelwood. As such, there is no deficit of fuelwood in these two districts.

3. A large chunk of forests in North Sikkim is inaccessible. Therefore, it is necessary to open up such areas by improved logging and extraction facilities, where sizeable quantities of forest produce are in over-mature and mature conditions. Feasibility of introduction of mechanized logging operation specially in North Sikkim may be worked out.

4. The areas of the two districts are susceptible to soil erosion. Substantial area is found to be blank and devoid of any vegetation. These areas need treatment on a priority basis by way of proper structural works as well as afforestation measures.

5. Incidence of grazing is quite appreciable in West district. This is evident from the fact that medium to light grazing occurs over 70% of the area. This requires special attention by suitable amendment of laws. However, in North district the problem is not much where light and medium grazing accounts for less than 30% of the area. As in South and East districts, it is also found in North and West districts that considerable damage is being caused due to girdling and illicit felling of trees. These two account for 26.19% and 17.54% in West and North districts respectively. Therefore, it calls for effective protective measures in both the districts from such damages.

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ANNEXURE - I

DISTRIBUTION OF GRIDS SHOWING RESERVED/UNRESERVED, RANGE, STRATUM, NO. OF STEM PER PLOT AND PLOT VOLUME IN WEST SIKKIM.

Sl. No.	Grid No.	Plot No.	R/U	Stratum	No.of stem/ plot	Plot Volume	Range	Remarks
1	2	3	4	5	6	7	8	9
1	402	1	R	III	19	14.300	Sombare	
2	402	2	R	III	32	0.400	Sombare	
3	403	1	R	IV	42	-	Soreng	
4	501	1	R	IV	18	1.100	Sombare	
5	501	2	R	IV	18	15.300	Sombare	
6	502	2	R	IV	74	4.800	Soreng	
7	601	1	R	IV	26	4.700	Soreng	
8	601	2	R	IV	57	8.600	Soreng	
9	701	1	R	IV	24	1.500	Gezing	
10	702	1	R	IV	x	-	Gezing	Barren land
11	702	2	R	IV	14	6.000	Gezing	
12	703	1	R	IV	27	17.500	Gezing	
13	802	1	R	IV	31	1.200	Gezing	
14	802	2	R	III	33	0.900	Gezing	
15	803	1	R	IV	11	9.400	Yuksom	
16	803	2	R	IV	15	12.600	Yuksom	
17	806	2	R	IV	28	16.600	Yuksom	
18	903	1	R	IV	62	5.700	Yuksom	
19	903	2	R	IV	14	13.100	Yuksom	
20	904	2	R	IV	26	29.700	Yuksom	
21	905	1	R	IV	21	13.700	Yuksom	
22	905	2	R	IV	20	7.300	Yuksom	
23	1006	1	R	IV	30	23.100	Yuksom	
24	1006	2	R	IV	27	19.700	Yuksom	
25	5155	X	R	III	32	2.500	Soreng	No plot number
26	5156	X	R	III	41	10.800	Gezing	No plot number
27	5255	X	R	III	18	5.500	Soreng	No plot number
28	5256	X	U	III	17	0.700	Gezing	No plot number
29	5347	X	R	IV	21	0.600	Sombare	No plot number
30	5355	X	R	III	56	1.100	Soreng	No plot number
31	5356	X	U	III	x	-	Gezing	Open scrub forest
32	5360	X	R	III	22	4.800	Gezing	No plot number
33	5446	X	R	IV	37	1.500	Sombare	No plot number
34	5447	X	R	IV	49	8.500	Sombare	No plot number
35	5453	X	R	III	23	13.700	Soreng	No plot number
36	5454	X	R	III	26	3.000	Soreng	No plot number
37	5455	X	U	III	x	-	Soreng	Scrub forest
38	5456	X	U	III	15	12.200	Soreng	No plot number
39	5457	X	U	III	x	-	Gezing	Barren land
40	5458	X	U	III	20	1.800	Gezing	No plot number
41	5459	X	U	III	07	0.800	Gezing	No plot number
42	5460	X	R	III	29	5.400	Gezing	No plot number
43	5541	X	U	III	18	6.600	Sombare	No plot number
44	5545	X	U	IV	15	-	Sombare	No plot number
45	5546	X	R	IV	29	-	Sombare	No plot number
46	5547	X	R	IV	22	4.000	Sombare	No plot number
47	5553	X	R	III	12	13.000	Soreng	No plot number
48	5554	X	U	III	14	5.000	Soreng	No plot number
49	5555	X	U	III	x	-	Soreng	Agri. land
50	5556	X	U	III	x	-	Soreng	Agri. land
51	5557	X	U	II	x	-	Gezing	Agri. land
52	5558	X	U	II	x	-	Gezing	Agri. land
53	5559	X	R	III	03	-	Gezing	No plot number
54	5641	X	U	II	19	-	Sombare	No plot number
55	5642	1	U	III	16	-	Sombare	
56	5646	X	R	IV	42	19.020	Sombare	No plot
57	5647	X	R	IV	14	19.200	Sombare	No plot

1	2	3	4	5	6	7	8	9
58	5652		R	III	33	16.500	Soreng	
59	5653		U	III	14	13.100	Soreng	
60	5654		U	III	x	-	Soreng	Agri. land
61	5655		U	III	x	-	Soreng	Agri. land
62	5656		U	II	20	12.900	Soreng	
63	5657		U	II	14	-	Gezing	
64	5659		U	III	26	1.700	Gezing	
65	5744		R	IV	30	23.800	Sombare	
66	5745		R	IV	62	12.100	Sombare	
67	5746		R	IV	03	1.100	Sombare	
68	5747		R	IV	13	5.400	Sombare	
69	5752		R	III	24	11.400	Soreng	
70	5753		x	x	x	-	Sareng	Agri. land
71	5754		U	III		-	Sareng	Agri. land
72	5755		U	II	20	10.300	Sareng	
73	5756		U	II	36	2.800	Gezing	
74	5757		U	II	x	-	Sareng	Agri. land
75	5758		R	III	26	1.500	Gezing	
76	5764		R	III	28	-	Gezing	
77	5765		U	III	08	-	Gezing	
78	5766		R	III	26	-	Yuksom	
79	5842		U	III	11	-	Gezing	
80	5843		U	III	27	0.800	Sombare	
81	5845		R	IV	09	-	Sombare	
82	5846		R	III	28	7.300	Sombare	
83	5847		R	III	29	3.300	Sombare	
84	5851		R	III	18	10.400	Sareng	
85	5852		R	III	12	5.700	Sareng	
86	5854		U	II	x	-	Sareng	Cultivative land
87	5855		U	II	x	-	Sareng	Agri. land
88	5856		U	II	24	4.100	Gezing	
89	5857		R	III	22	5.200	Gezing	
90	5862		R	III	20	8.900	Gezing	
91	5863		R	III	30	0.400	Gezing	
92	5864		U	III	07	-	Gezing	
93	5865		U	III	22	2.500	Gezing	
94	5866		R	IV	22	12.500	Yuksom	
95	5939		U	II	14	-	Sombare	
96	5944		U	III	24	0.400	Sombare	
97	5946		R	III	33	13.200	Sombare	
98	5948		R	III	38	10.100	Sareng	
99	5951		R	III	10	3.600	Sareng	
100	5952		R	III	23	11.400	Sareng	
101	5954		U	II	x	-	Sareng	Agri. land
102	5955		U	II	40	3.200	Sareng	
103	5956		U	II	x	6.300	Gezing	Agri. land
104	5957		R	III	19	1.800	Gezing	
105	5960		R	III	27	5.600	Gezing	
106	5961		R	III	15	5.300	Gezing	
107	5962		R	III	07	0.400	Gezing	
108	5963		R	III	26	1.200	Gezing	
109	5964		U	II	x	-	Yuksom	Village site
110	5965		R	III	20	-	Yuksom	
111	6045		U	III	14	7.100	Sombare	
112	6046		U	III	17	1.700	Sombare	
113	6048		U	III	20	4.700	Sareng	
114	6051		R	III	28	6.200	Sareng	
115	6052		R	III	24	9.800	Sareng	
116	6053		R	III	67	0.300	Sareng	
117	6054		U	II	x	-	Sareng	Agri. land
118	6055		U	II	11	6.800	Sareng	
119	6056		U	II	x	-	Gezing	Agri. land
120	6057		R	III	24	0.700	Gezing	
121	6059		R	III	27	9.800	Gazing	
122	6060		U	III	03	-	Gezing	

Contents

1	2	3	4	5	6	7	8	9
123	6061		R	III	14	7.800	Gezing	
124	6062		U	II	x	-	Gezing	Agri. land
125	6063		U	II	18	13.600	Gezing	
126	6064		U	III	12	4.500	Yuksom	
127	6152		R	III	29	3.300	Sareng	
128	6153		R	III	19	3.200	Sareng	*Confusion in plot.number.
129	6154		U	II	18	7.700	Sareng	
130	6155		x	x	x	x		Cultivation land
131	6159		R	III	17	10.400	Gezing	
132	6161		U	II	x	-	Gezing	Agri. land
133	6162		U	II	07	-	Yuksom	
134	6163		U	III	15	4.900	Yuksom	
135	6164		R	III	15	7.200	Yuksom	
136	6246		R	III	26	3.200	Sareng	
137	6247		R	III	21	3.300	Sareng	
138	6248		R	III	31	16.600	Sareng	
139	6250		R	III	21	8.000	Sareng	
140	6251		R	III	15	4.300	Sareng	
141	6252		R	II	02	-	Sareng	
142	6254		U	II	15	1.500	Sareng	
143	6255		U	II	x	-	Sareng	Agri. land
144	6258		R	IV	20	11.900	Gezing	
145	6259		R	III	22	7.800	Gezing	
146	6260		U	II	14	-	Gezing	
147	6263		R	III	16	7.000	Yuksom	
148	6264		U	III	4	1.700	Yuksom	
149	6344		U	x	x	x	Yuksom	Cultivation land
150	6345		U	III	x	-	Sareng	Scrub forest
151	6346		R	III	15	4.300	Sareng	
152	6350		R	III	38	15.700	Sareng	
153	6351		R	III	31	6.900	Sareng	
154	6352		R	III	14	1.100	Sareng	
155	6354		x	x	x	-	Sareng	Cultivative land
156	6355		x	x	x	-	Sareng	Cultivative "
157	6356		U	III	8	-	Sareng	
158	6358		R	III	18	3.600	Gezing	
159	6359		U	II	9	2.100	Gezing	
160	6360		U	II	49	0.700	Gezing	
161	6362		R	III	07	2.900	Yuksom	
162	6363		R	III	16	4.200	Yuksom	
163	6364		U	II	07	-	Yuksom	
164	6365		R	III	22	6.900	Yuksom	
165	6366		R	III	17	5.000	Yuksom	
166	6447		R	III	24	2.400	Sareng	
167	6449		R	III	18	6.400	Sareng	
168	6450		R	III	28	19.200	Sareng	
169	6451		R	III	28	7.100	Sareng	
170	6452		R	III	07	8.800	Sareng	
171	6453		U	II	x	-	Sareng	Cardamum plantation.
172	6454		U	x	x	-	x	Agri. land
173	6455		U	x	x	-		Agri. land
174	6456		U	II	06	-	Gezing	
175	6458		R	III	23	6.600	Gezing	
176	6463		U	III	26	1.400	Yuksom	
177	6464		U	III	17	0.700	Yuksom	
178	6465		R	III	16	6.300	Yuksom	
179	6466		U	II	15	9.300	Yuksom	
180	6545		U	II	25	21.700	Sareng	
181	6547		U	III	x	-	Sareng	Scrub forest
182	6548		R	III	12	8.700	Sareng	
183	6549		U	III	22	-	Sareng	Bamboo Enumeration.
184	6551		R	III	21	12.000	Sareng	

Contents

1	2	3	4	5	6	7	8	9
185	6552		R	III	48	8.600	Sareng	
186	6554		U	II	07	-	Sareng	
187	6555		U	x	x	-	x	Agri. land
188	6556		U	II	09	-	Gezing	
189	6557		U	II	10	0.700	Gezing	
190	6558		R	III	15	7.600	Gezing	
191	6559		R	III	30	7.100	Gezing	
192	6560		U	II	18	3.700	Gezing	
193	6561		U	II	06	0.800	Yuksom	
194	6564		U	III	02	-	Yuksom	
195	6565		U	II	05	1.400	"	
196	6566		U	II	04	-	"	
197	6567		U	III	22	9.500	"	
198	6568		R	III	22	6.500	"	
199	6571		R	III	31	23.000	"	
200	6644		R	II	14	2.600	Sareng	
201	6645		R	II	23	6.600	Sareng	
202	6646		U	II	13	0.400	"	
203	6647		U	II	x	-	"	Inaccessible
204	6648		U	III	08	4.900	"	
205	6649		U	II	29	13.200	"	
206	6650		U	II	02	-	"	
207	6651		U	III	x	-	"	Agri. land
208	6652		R	III	26	9.400	"	
209	6653		U	III	01	1.800	"	Open forest
210	6654		U	II	06	-	"	Bamboo Enumeration
211	6656		U	II	10	1.200	"	
212	6658		U	II	09	8.700	Gezing	
213	6659		R	III	16	15.000	"	
214	6662		U	III	38	6.100	"	Bamboo Enumeration
215	6663		U	II	09	1.800	"	
216	6664		U	II	06	-	"	
217	6665		U	II	16	7.900	"	
218	6666		U	II	09	-	"	
219	6667		U	II	18	0.400	"	
220	6668		R	III	20	6.600	"	
221	6669		R	III	60	10.600	"	
222	6670		R	III	37	19.300	"	
223	6671		R	IV	24	18.800	Yuksom	
224	6744		R	II	33	1.100	Sareng	
225	6745		R	II	11	2.600	Sareng	
226	6746		U	II	13	0.400	"	
227	6747		R	III	09	4.500	"	
228	6748		R	III	11	7.800	"	
229	6750		U	II	14	7.200	"	
230	6752		R	III	19	6.700	"	
231	6754		U	x	x	-	x	Agri. land
232	6756		U	I	06	0.400	Gezing	
233	6757		U	II	07	-	Gezing	
234	6758		U	II	14	1.200	"	
235	6759		R	III	31	12.800	"	
236	6762		U	II	08	0.800	Yuksom	
237	6763		U	II	06	-	Yuksom	
238	6764		U	II	04	1.100	"	
239	6765		U	II	06	-	"	
240	6766		U	II	15	1.100	"	
241	6767		U	II	07	0.700	"	
242	6768		U	II	12	1.500	"	
243	6769		R	III	32	3.400	"	
244	6770		R	III	28	8.000	"	
245	6848		U	III	20	4.000	Sareng	
246	6852		R	III	14	4.200	"	

Contents

1	2	3	4	5	6	7	8	9
247	6854		U	x	x	-	Sareng	Agri.land
248	6856		U	I	05	2.100	Gezing	
249	6857		U	II	09	-	Gezing	
250	6860		U	II	29	2.500	Gezing	
251	6861		U	II	07	-	Gezing	
252	6863		U	II	06	-	Gezing	
253	6864		U	II	14	0.400	"	
254	6865		U	II	16	0.400	Yuksom	
255	6866		U	II	20	10.400	"	
256	6867		U	II	18	2.400	"	Bamboo Enumeration
257	6868		U	III	16	11.100	"	
258	6869		R	III	22	17.500	"	
259	6870		R	III	20	3.500	"	
260	6875		U	III	25	4.700	"	
261	6948		R	II	13	8.200	Sareng	
262	6949		U	II	14	7.500	Sareng	
263	6951		U	II	03	-	"	
264	6956		R	I	12	6.900	Gezing	
265	6957		U	III	09	1.200	Sareng	
266	6958		U	II	31	6.500	Gezing	
267	6959		R	III	23	4.200	"	
268	6962		U	II	09	-	"	
269	6965		U	II	12	-	Yuksom	
270	6967		U	III	6	-	"	
271	7041		U	x	x	-	"	Agri.land
272	7046		R	II	19	9.300	Sareng	
273	7059		U	II	21	9.100	Gezing	
274	7060		U	II	24	2.100	"	
275	7140		R	I	11	5.800	Sareng	
276	7143		R	II	12	8.800	"	
277	7144		R	I	21	13.200	"	
278	7145		U	II	12	3.300	"	
279	7146		U	II	17	10.800	"	
280	7158		U	II	02	-	Gezing	
281	7159		U	II	02	-	"	
282	7165		U	III	10	8.200	Yuksom	
283	7170		R	III	14	13.300	"	
284	7172		R	III	23	13.700	"	
285	7241		R	I	26	10.200	Sareng	
286	7251		R	III	22	5.900	"	
287	7252		R	II	05	10.700	"	
288	7260		U	III	14	-	Gezing	
289	7266		R	III	21	21.400	Yuksom	
290	7270		R	III	33	17.400	"	
291	7271		R	III	30	16.000	"	
292	7272		R	III	17	13.700	"	
293	7353		R	II	46	9.000	Sareng	
294	7363		U	II	25	13.600	Yuksom	
295	7366		U	III	20	18.200	"	
296	7367		R	III	47	27.900	"	
297	7369		R	III	11	35.000	"	
298	7370		R	II	20	8.300	"	
299	7371		R	III	16	10.100	"	
300	7372		R	III	21	13.600	"	
301	7444		U	x	x	-	"	Agri.land
302	7447		R	II	04	2.500	Sareng	
303	7452		U	I	10	5.300	"	
304	7452		U	I	13	9.100	"	
305	7460		U	II	04	0.800	Yuksom	
306	7464		U	III	12	6.800	"	
307	7465		U	III	23	2.500	"	
308	7466		U	III	15	8.600	"	
309	7467		U	III	20	5.900	"	
310	7468		R	III	39	12.900	"	

Contents

1	2	3	4	5	6	7	8	9
311	7470		R	II	17	-	Yuksom	
312	7471		R	II	17	6.500	"	
313	7547		R	II	15	9.700	Sareng	
314	7559		U	II	25	14.200	Yuksom	
315	7571		U	III	09	5.400	"	
316	7572		R	III	20	-	"	
317	7646		U	I	20	14.300	Sareng	
318	7667		U	II	22	2.600	Yuksom	
319	7767		U	II	16	3.500	"	
320	7867		U	II	19	2.100	"	
321	7868		U	II	17	7.300	"	
322	7869		U	II	24	4.500	"	
323	7870		U	III	5	-	"	
324	7871		U	III	21	6.100	"	
325	7969		U	III	16	1.500	"	
326	7970		U	III	18	8.800	"	
327	8068		U	II	15	1.800	"	
328	8069		U	III	8	0.700	"	
329	8070		U	III	22	-	"	

Contents

ANNEXURE - II

DISTRIBUTION OF GRIDS SHOWING RESERVED/UNRESERVED, STRATUM, NO.OF STEMS PER PLOT AND PLOT VOLUME IN NORTH SIKKIM DISTRICT.

Sl. No.	Grid No.	Plot No.	R/U	Stratum	No.of stem/ plot	Plot volume	Remarks
1	0910	1	R	II			Paddy field
2	0911	1	U	I			Agri.land
3	0911	2	R	IV	19		
4	0912	2	U	II	26	12.4	
5	0913	2	U	II	18	5.4	
6	0914	2	U	II	30	6.6	
7	0915	2	U	II	17	4.0	
8	0916	2	U	IV	30		
9	1011	2	U	III	7	2.9	
10	1012	1	U	II	x		Permanent cultivation land.
11	1012	2	U	I	23	10.4	
12	1013	1	R	III	23	12.0	
13	1013	2	R	III	19	15.2	
14	1014	1	U	III	10		
15	1014	2	U	II	21	11.7	
16	1015	1	U	III	12		
17	1015	2	R	II	16	12.5	
18	1016	1	R	IV	27	3.8	
19	1110	2	R	IV	22	11.5	
20	1111	1	R	III	25	7.3	
21	1111	2	R	II			Steep slope/vicinity visited
22	1112	1	U	II			Agri.land
23	1115	1	R	IV			No enumeration data/could not reach the plot.
24	1116	1	R	IV	-		No enu. data/Unapproachable
25	1210	1	R	II	12	1.9	
26	1211	1	R	II	21	5.5	
27	1211	2	U	II	10	1.8	
28	1212	2	R	I			Could not approach due to broken hill.
29	1213	1	U	II			Agri.land and habitation
30	1213	2	R	II			Steep slope
31	1214	1	U	II	7	0.4	
32	1214	2	U	II	11	1.5	
33	1215	1	U	IV	15	2.0	
34	1215	2	R	II	12	1.8	
35	1309	1	R	II	35	10.6	
36	1310	1	U	II			No. Enu. data/Steep slope
37	1310	2	R	II	17	4.9	
38	1311	2	R	II	2		Plot falls on open tree forest
39	1311	1	R	II	11	0.7	
40	1312	2	R	II	26	5.1	
41	1313	1	R	IV	17	5.3	
42	1313	2	R	IV	20	4.4	
43	1314	2	R	III	21	4.8	
44	1315	1	R	III	23	4.1	
45	1315	2	R	IV			Could not approach due to origin of a nala/Inaccessible.
46	1316	1					Plot could not tackle due to unapproachability.
47	1316	2					No data due to steep slope
48	1410	2	R	IV			-do-
49	1414	1/2					Steep hill
50	1415	1	R	IV			Barren land
51	1415	2	R	IV			Steep slope
52	1513	1	R	IV	20	16.9	
53	1514	1	U	x			Habitation
54	1514	2	R	IV	16	15.0	

Contents

1	2	3	4	5	6	7	8
55	1515	1	R	IV	x	x	Barren land
56	1515	2	R	IV	16	20.7	
57	1517	1	R	IV			No data/Land without vegetation.
58	1517	2	R	V	17	6.2	
59	1613	1	R	V	21	20.12	
60	1613	2	R	IV			No data/Rocky surface/No tree
61	1614	1	R	V	15	18.6	
62	1614	2	R	IV	12	7.3	
63	1617	1	U	V	3		
64	1713	2	R	V	21	40.58	
65	1812	1	R	V	12	20.02	
66	1813	1	R	V	25	19.96	
67	1817	2	U	V	4		
68	1913	1	R	V	16	12.8	
69	1913	2	R	V	5		
70	2013	1	R	V	6		
71	2013	2	R	V	4		
72	2112	1	R	V	7		

Contents

TABLE NO. 1.1

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : RESERVED FOREST

DISTRICT: WEST SIKKIM

Species name-with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Albizzia procera(045)	2.500	-	-	-	-	-	-	-	-	-	2.500
Bombax ceiba(109)	2.500	-	-	-	-	-	-	-	-	-	2.500
Castanopsis indica(157)	-	-	-	5.000	-	2.500	2.500	-	-	-	10.000
Chukrassia vellutina(171)	-	-	-	2.500	2.500	-	-	-	-	-	5.000
Cordia nyxa(195)	-	-	-	2.500	-	-	-	-	-	-	2.500
Duabanga grandiflora(251)	-	2.500	-	-	-	-	-	-	-	-	2.500
Evodia species(298)	-	-	2.500	-	-	-	-	-	-	-	2.500
Fillicium decipiens(309)	-	2.500	-	2.500	-	-	-	-	-	-	5.000
Lagestroemia parviflora(397)	2.500	-	-	-	-	-	-	-	-	-	2.500
Macaranga denticulata(425)	-	5.000	-	-	-	-	-	-	-	-	5.000
Mangifera indica(444)	2.500	-	-	-	-	-	-	-	-	-	2.500
Schima wallichii(627)	-	2.500	2.500	5.000	2.500	-	-	-	-	-	12.500
Semecarpus anacardium(630)	-	-	-	-	2.500	-	-	-	-	-	2.500
Shorea robusta(633)	-	10.000	32.500	35.000	7.500	2.500	-	-	-	-	87.500
Sterculia villosa(649)	2.500	-	-	-	-	-	-	-	-	-	2.500
Terminalia citrina(680)	2.500	-	-	-	-	-	-	-	-	-	2.500
Toona ciliata(691)	-	-	2.500	2.500	-	-	-	-	-	-	5.000
Cynocordia odorata(772)	-	-	-	2.500	2.500	-	-	-	-	-	5.000
Spondias axillaris(786)	-	-	-	-	2.500	-	-	-	-	-	2.500
Others(924)	7.500	2.500	-	-	2.500	-	-	-	-	-	12.500
Total :	22.500	25.000	40.000	57.500	22.500	5.000	2.500	-	-	-	175.000

Contents

TABLE NO. 1.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : RESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Albizzia species(046)	-	0.625	1.250	0.625	-	-	-	-	-	-	2.500
Alnus nepalensis(048)	5.625	9.375	1.250	0.625	-	-	-	-	-	-	16.875
Amoora species(057)	-	-	-	-	-	-	-	0.625	-	-	0.625
Castanopsis hystrix(156)	14.375	5.625	2.500	0.625	1.250	-	0.625	-	-	-	25.000
Castanopsis indica(157)	-	-	0.625	-	1.250	-	-	-	-	-	1.875
Chukrassia vellutina(171)	-	-	-	0.625	0.625	-	-	-	-	-	1.250
Cupressus kashmiriana(213)	-	-	-	-	-	-	-	-	-	0.625	0.625
Diospyros chloroxylon(231)	-	-	-	-	-	-	-	-	0.625	-	0.625
Elaeagnus umbellata(257)	-	0.625	-	-	-	-	-	-	-	-	0.625
Engelhardtia spicata(270)	-	1.875	-	1.250	1.250	-	-	0.625	-	-	5.000
Erythrina species(280)	-	0.625	-	-	-	-	-	-	-	-	0.625
Euginea species(289)	2.500	0.625	2.500	0.625	-	-	-	-	-	-	6.250
Eurya japonica(295)	3.125	0.625	1.875	1.875	-	-	-	-	-	-	7.500
Evodia species(298)	-	-	0.625	0.625	-	-	-	-	-	-	1.250
Excoceria agallocha(299)	-	0.625	-	-	-	-	-	-	-	-	0.625
Fillicium decipiens(309)	-	-	1.875	-	0.625	-	-	-	-	-	2.500
Juglans regia(383)	-	-	-	0.625	-	0.625	-	-	-	-	1.250
Machilus species(435)	-	0.625	0.625	0.625	-	-	-	-	-	-	1.875
Michelia doltsopa(463)	-	-	-	0.625	-	-	-	-	-	-	0.625
Michelia lanuginosa(464)	-	-	-	-	0.625	0.625	-	-	-	-	1.250
Nyssa javanica(497)	-	-	-	0.625	-	-	-	-	-	-	0.625
Ostodes paniculata(508)	1.250	1.875	1.250	-	-	-	-	-	-	-	4.375
Premna species(556)	-	0.625	-	-	-	-	-	-	-	-	0.625
Quercus lanceaefolia(587)	-	6.875	4.375	3.750	-	-	-	-	-	-	15.000
Quercus species(594)	0.625	1.250	0.625	0.625	-	1.250	-	0.625	-	0.625	5.625
Rhus species(604)	-	0.625	-	-	-	-	-	-	-	-	0.625
Schima wallichii(627)	2.500	3.125	0.625	5.000	0.625	-	-	-	-	-	11.875
Syzygium species(668)	0.625	-	-	-	-	-	-	-	-	-	0.625
Terminalia myriocarpa(683)	-	-	-	-	0.625	-	-	-	-	-	0.625
Symplocos theifolia(745)	10.625	6.875	1.875	-	-	-	-	-	-	-	19.375
Cedrela febriguga(767)	-	-	-	0.625	-	-	-	-	-	-	0.625
Machilus grammioana(778)	-	-	-	-	-	0.625	-	-	-	-	0.625

Contd. to Table No.1.2.

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Spondias axillaris(786)	-	-	-	0.625	0.625	-	-	-	-	-	1.250
Sarcosperma arboreum(797)	0.625	-	-	-	-	-	-	-	-	-	0.625
Others(924)	0.625	-	1.250	-	-	1.250	0.625	-	-	-	3.750
Total :	42.500	42.500	23.125	20.000	7.500	4.375	1.250	1.875	0.625	1.250	145.000

TABLE NO. 1.3.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : RESERVED FOREST DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Acer niveum(015)	0.196	-	-	-	-	-	-	-	-	-	0.196
Acer species(018)	0.098	-	-	0.196	-	-	-	-	-	-	0.294
Alangium salvifolium(037)	0.196	-	0.098	0.098	-	-	-	-	-	-	0.392
Alcimandra catheartii(047)	-	-	-	0.098	-	-	-	-	-	-	0.098
Alnus nepalensis(048)	2.254	4.116	2.156	0.294	0.098	0.098	-	-	-	-	9.016
Beilschmiedia assamica(100)	0.784	0.686	1.274	1.176	0.392	0.588	0.098	-	-	-	4.998
Betula alnoides(105)	-	0.196	0.098	0.196	-	-	-	-	-	-	0.490
Castanopsis hystrix(156)	5.488	11.270	5.488	6.860	3.038	3.234	0.588	0.882	0.686	0.686	38.220
Cephalostachyum latifolium(166)	-	0.098	-	-	-	-	-	-	-	-	0.098
Cinnamomum species(178)	1.078	0.490	0.588	0.196	-	-	-	-	-	-	2.352
Dephoephyllum himalayanse(227)	-	0.196	-	-	-	-	-	-	-	-	0.196
Elaeocarpus lanceaefolium(258)	-	0.196	0.098	0.294	0.392	-	0.294	-	-	-	1.274
Endospermum chinense(268)	-	0.098	-	0.098	-	-	-	-	-	-	0.196
Engelhardtia spicata(270)	1.274	0.588	0.588	0.980	-	0.196	0.098	-	-	-	3.724
Euginea frondosa(285)	-	-	0.098	-	-	-	-	-	-	-	0.098
Euginea species(289)	-	-	-	0.098	-	-	-	-	-	-	0.098
Eudnymus lacerus(290)	0.098	0.098	0.098	-	0.098	-	-	-	-	-	0.392
Eurya japonica(295)	9.114	4.606	2.156	0.392	-	0.098	-	-	-	-	16.366
Evodia species(298)	0.098	0.098	-	-	-	-	-	-	-	-	0.196
Ficus species(308)	0.980	0.392	0.196	-	-	-	-	-	-	-	1.568
Glochidion velutinum (324)	0.098	-	-	-	-	-	-	-	-	-	0.098
Juglans regia(383)	0.294	0.294	0.196	0.196	0.098	-	-	-	-	-	1.078
Litsaea species(420)	0.196	0.686	0.392	0.392	0.196	0.098	-	-	-	-	1.960
Macaranga denticulata(425)	0.882	0.980	0.588	0.784	0.098	-	-	-	-	-	3.332
Macaranga peltata(427)	-	0.098	-	0.098	-	-	-	-	-	-	0.196
Machilus odoratissima(432)	0.098	0.490	0.294	0.294	-	0.196	-	0.098	-	0.098	1.568
Machilus parviflora(434)	0.098	-	-	-	-	-	-	-	-	-	0.098
Machilus species(435)	0.686	3.528	2.156	1.862	0.392	0.686	0.196	-	-	-	9.506
Mallotus philppinensia(441)	-	0.098	-	-	-	-	-	-	-	-	0.098

Contd.Table No.1.3.

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Mangifera sylvatica(445).	0.098	0.098	-	-	-	-	-	-	-	-	0.196
Meleosma simplicifolia(456)	-	0.098	-	-	-	-	-	-	-	-	0.098
Meliosma species(457)	0.196	0.098	0.098	-	-	0.098	-	-	-	-	0.490
Michelia doltsopa(463)	0.294	0.294	0.294	0.294	0.098	0.195	-	-	0.098	-	1.568
Michelia lanuginosa(464)	0.490	-	-	0.098	0.098	-	-	-	-	-	0.686
Michelia species(468)	0.098	0.098	-	0.196	0.196	-	0.196	-	-	-	0.784
Nyssa javanica(497)	0.686	0.490	0.098	0.294	0.196	0.294	0.098	-	0.098	-	2.254
Prunus species(564)	0.196	0.588	0.588	1.078	0.098	0.098	-	-	-	-	2.646
Quercus lanceaefolia(587)	0.294	-	0.098	0.196	0.098	0.098	-	-	-	-	0.784
Quercus species(594)	3.332	6.272	3.430	4.704	2.352	2.058	1.568	0.588	1.470	1.470	27.244
Rhododendron arboreum(600)	0.980	-	0.490	0.294	0.588	-	-	-	0.098	-	2.450
Rhododendron species(601)	0.098	0.294	-	0.098	-	-	-	-	-	0.098	0.588
Rhus javanica(602)	-	-	-	-	-	-	-	-	-	0.098	0.098
Rhus succedanea(603)	0.098	-	-	-	-	-	-	-	-	-	0.098
Rhus species(604)	0.686	0.392	0.294	0.098	-	-	-	-	-	-	1.470
Saurinia nepalensis(624)	0.588	0.392	-	-	-	-	-	-	-	-	0.980
Swietenia mahagoni(660)	-	0.098	-	-	-	-	-	-	-	-	0.098
Symingtoria populnea(661)	0.098	0.098	0.294	0.196	-	-	-	-	-	-	0.686
Symplocos laurina(663)	0.490	0.784	-	-	-	-	-	-	-	-	1.274
Syzygium species(668)	0.098	-	0.098	-	-	-	-	-	-	-	0.196
Terminalia chebula(679)	-	0.098	-	-	-	-	-	-	-	-	0.098
Toona ciliata(691)	-	0.098	-	-	-	-	-	-	-	-	0.098
Tsuga dumosa(697)	0.294	0.098	-	-	-	-	-	-	-	-	0.392
Turpinia cochinichinensis(699)	0.098	-	-	-	-	-	-	-	-	-	0.098
Zanthoxylum pudrunga(730)	0.784	-	-	-	-	-	-	-	-	-	0.784
Acer campbellii(739)	0.882	1.862	0.882	0.784	0.294	0.196	0.490	0.098	-	-	5.488
Ec-hinocarpus dasycarpus(743)	0.294	0.294	-	0.294	0.196	0.196	0.098	0.294	0.294	0.098	2.058
Symplocos t heifolia(745)	38.220	12.936	1.078	0.490	-	-	-	-	-	-	52.724
Symplocos species(746)	-	-	-	0.098	-	-	-	-	-	-	0.098
Barberis nepalensis(748)	0.098	-	-	-	-	-	-	-	-	-	0.098
Lindra species(754)	0.098	-	-	-	-	-	-	-	-	-	0.098

Contd.Table No.1.3.

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Tilicium grifitheii(755)	0.098	0.098	-	-	-	-	-	-	-	-	0.196
Ligustrum robustrum(760)	-	0.098	-	-	0.098	-	-	-	-	-	0.196
Actinodaphene sikkimensis(763)	0.588	0.294	0.098	0.196	0.098	0.294	-	0.098	-	-	1.666
Betula cydrestachys(765)	-	-	-	0.098	-	-	-	-	-	-	0.098
Buddleia species(766)	0.098	-	-	-	-	-	-	-	-	-	0.098
Cedrela febrifuga(767)	0.490	0.294	-	-	-	-	-	-	-	-	0.784
Juniperus pseudosabina(775)	0.098	-	-	-	-	-	-	-	-	-	0.098
Machilus gammidana(778)	-	-	-	-	-	0.098	-	-	-	0.098	0.196
Magnolia campbelli(779)	0.098	0.098	-	-	-	-	-	-	-	-	0.196
Magnolia pterocarpa(780)	-	-	-	-	-	-	-	-	-	0.098	0.098
Rhododendron hodgronii(783)	-	-	0.294	0.098	0.098	-	-	-	-	-	0.490
Rhododendron griffithianum(784)	0.392	-	-	-	-	-	-	-	-	-	0.392
Viburnum species(789)	3.920	0.490	-	0.098	-	-	-	-	-	-	4.508
Prunus peddum(792)	-	-	0.098	-	-	-	-	-	-	-	0.098
Acer oblongum(793)	-	0.196	0.196	-	-	-	-	-	-	-	0.392
Acer laevigatum(794)	-	-	0.098	0.098	-	-	-	-	-	-	0.196
Pyrularia edulia(795)	0.294	0.196	0.098	-	-	-	-	-	-	-	0.588
Pieris villosa(796)	1.372	0.392	0.098	0.098	-	0.098	0.098	-	-	-	2.156
Sarcusperma arboreum(797)	0.098	-	0.098	-	-	-	-	-	-	-	0.196
Machilus edulis(799)	-	-	-	0.098	0.196	0.098	-	-	-	-	0.392
Others(924)	11.378	3.332	2.058	1.372	0.980	0.196	0.196	0.098	0.196	-	19.806
Total :	92.512	60.270	27.440	25.970	10.486	9.408	4.018	2.156	2.940	2.744	237.944

TABLE NO. 1.4

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-IV :RESERVED FOREST DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Abies densa(001)	5.428	0.857	1.429	1.143	0.286	-	1.143	0.286	0.571	0.286	11.428
Alnus nepalensis(048)	1.714	2.286	0.286	-	-	-	-	-	-	-	4.286
Beilschmiedia assamica(100)	-	-	-	0.571	0.286	0.286	0.571	-	-	-	1.714
Betula alnoides(105)	0.286	-	-	0.286	-	-	-	-	-	-	0.571
Betula utilis(106)	1.429	1.714	0.571	-	-	-	-	-	-	-	3.714
Castanopsis hystrix(156)	0.857	0.571	1.714	2.286	1.714	2.857	0.286	1.143	0.571	-	11.999
Cinnamomum species(170)	0.286	0.286	-	-	-	-	-	-	-	-	0.571
Cupressus kashmiriana(213)	6.571	-	-	0.286	-	-	-	-	-	-	6.857
Ehretia caevis(256)	-	-	-	-	0.286	-	-	-	-	-	0.286
Elaeocarpus lanceaefolius(258)	-	0.571	-	0.286	0.286	0.571	0.286	-	-	-	2.000
Euginea formosa(286)	-	-	-	-	-	0.286	-	-	-	-	0.286
Eurya japonica(295)	3.428	2.000	0.857	0.286	-	-	-	-	-	-	6.571
Evodia species(298)	-	0.857	-	-	-	-	-	-	-	-	0.857
Fagara budgrounga(300)	0.571	-	-	-	-	-	-	-	-	-	0.571
Litsaea species(420)	0.286	0.286	0.286	0.571	0.571	0.286	-	-	-	-	2.286
Machilus odoratissima(432)	-	-	-	0.571	-	-	-	-	-	-	0.571
Machilus species(435)	0.857	2.000	1.429	1.714	0.857	0.857	-	-	-	-	7.714
Macropanax oreophyllum(436)	-	-	-	-	-	0.286	-	-	-	-	0.286
Magnolia species(438)	-	-	-	-	-	-	-	-	0.286	-	0.286
Michelia doltsopa(463)	-	-	-	0.571	0.286	0.571	-	-	-	-	1.429
Michelia species(468)	-	0.286	0.286	-	0.286	0.286	0.571	-	-	-	1.714
Prunus species(564)	0.571	0.571	0.857	-	-	0.286	-	-	-	-	2.286
Quercus lamellosa(586)	0.286	1.429	1.429	4.000	2.286	1.429	2.286	0.286	-	0.571	13.999
Quercus lanceaefolia(587)	0.286	0.571	1.143	0.286	0.286	-	-	-	-	-	2.571
Quercus lineata(590)	-	-	-	0.571	0.286	0.286	-	-	0.286	-	1.429
Rhododendron arboreum(600)	15.714	2.286	0.857	0.857	-	-	-	-	-	-	19.713
Rhododendron species(601)	-	0.286	0.286	-	-	-	-	-	-	-	0.571

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Saurinia napaulansis(624)	-	0.286	-	-	-	-	-	-	-	-	0.286
Sterculia guttata(647)	0.286	-	-	-	-	-	-	-	-	-	0.286
Symplocos laurina(663)	-	0.571	-	-	-	-	-	-	-	-	0.571
Syzygium syrygoides(667)	0.286	-	-	-	-	-	-	-	-	-	0.286
Tsuga dumosa(697)	17.713	1.143	1.143	0.571	0.571	1.429	0.571	0.571	0.857	0.857	25.427
Xanthophyllum andamanicum(710)	-	-	-	0.286	-	-	-	-	-	-	0.286
Acer campbellii(739)	2.000	1.714	1.429	2.286	0.286	-	-	-	-	-	7.714
Echinocarpus dasycarpus(743)	-	-	0.286	-	0.286	0.286	-	-	0.286	-	1.143
Symplocos theifolia(745)	20.285	7.428	0.857	-	-	-	-	-	-	-	28.570
Cephalenthus occidentalis(757)	0.286	-	-	-	-	-	-	-	-	-	0.286
Ligustrum robustrum(760)	-	-	-	0.286	-	-	-	-	-	-	0.286
Actinodaphene sikkimensis(763)	0.571	-	-	0.857	-	0.286	-	-	-	-	1.714
Dysoxylon species(769)	0.286	0.286	-	-	-	-	-	-	-	-	0.571
Magnolia campbellii(779)	0.857	0.857	1.143	1.143	0.286	0.857	-	-	-	-	5.143
Rhododendron barbehum(782)	19.428	3.714	0.286	0.286	-	-	-	-	-	-	23.713
Rhododendron hodgronii(783)	-	-	0.286	0.571	0.286	-	-	-	-	-	1.143
Rhododendron griffithianum(784)	7.714	0.571	1.429	0.286	-	-	-	-	-	-	10.00
Viburnum species(789)	3.143	-	-	-	-	-	-	-	-	-	3.143
Prunus peddum(792)	-	-	0.286	-	-	-	-	-	-	-	0.286
Pyrularia edulis(795)	-	0.286	-	-	-	-	-	-	-	-	0.286
Pieris villosa(796)	2.571	0.286	-	0.286	-	-	-	-	-	-	3.143
Quercus pachyphylla(798)	6.857	10.285	8.285	3.143	1.714	2.286	0.857	1.714	1.143	0.571	36.855
Others(924)	15.142	1.715	-	0.857	0.857	-	0.286	-	-	0.286	19.141
Total :	135.993	45.998	27.427	24.856	11.999	13.714	6.285	4.000	4.000	2.571	276.843

TABLE NO. 2.1

TOTAL STEMS (IN 000 UNIT) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-I : RESERVED FOREST DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Albizzia procera(045)	2.850	-	-	-	-	-	-	-	-	-	2.850
Bombax ceiba(109)	2.850	-	-	-	-	-	-	-	-	-	2.850
Castanopsis indica(157)	-	-	-	5.700	-	2.850	2.850	-	-	-	11.400
Chukrassia vellutina(171)	-	-	-	2.850	2.850	-	-	-	-	-	5.700
Cordia myxa(195)	-	-	-	2.850	-	-	-	-	-	-	2.850
Duabanga grandiflora(251)	-	2.850	-	-	-	-	-	-	-	-	2.850
Evodia species(298)	-	-	2.850	-	-	-	-	-	-	-	2.850
Fillicium decipiens(309)	-	2.850	-	2.850	-	-	-	-	-	-	5.700
Lagerstroemia parviflora(397)	2.850	-	-	-	-	-	-	-	-	-	2.850
Macaranga denticulata(425)	-	5.700	-	-	-	-	-	-	-	-	5.700
Mangifera indica(444)	2.850	-	-	-	-	-	-	-	-	-	2.850
Schima wallichii (627)	-	2.850	2.850	5.700	2.850	-	-	-	-	-	14.250
Semecarpus anacardium(630)	-	-	-	-	2.850	-	-	-	-	-	2.850
Shorea robusta(633)	-	11.400	37.050	39.900	8.550	-	-	-	-	-	99.750
Sterculia villosa(649)	2.850	-	-	-	-	-	-	-	-	-	2.850
Terminalia citrina(680)	2.850	-	-	-	-	-	-	-	-	-	2.850
Toona ciliata(691)	-	-	2.850	2.850	-	-	-	-	-	-	5.700
Cynocordia odorata(772)	-	-	-	2.850	2.850	-	-	-	-	-	5.700
Spondia axillaris(786)	-	-	-	-	2.850	-	-	-	-	-	2.850
Others(924)	8.550	2.850	-	-	2.850	-	-	-	-	-	14.250
Total :	25.650	28.500	45.600	65.550	25.650	5.700	2.850	-	-	-	199.500

TABLE NO. 2.2.

TOTAL STEMS (IN 000 UNIT) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-II : RESERVED FOREST DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Albizzia species(046)	-	0.698	1.396	0.698	-	-	-	-	-	-	2.792
Alnus nepalensis(048)	6.283	10.472	1.396	0.698	-	-	-	-	-	-	18.849
Amoora species(057)	-	-	-	-	-	-	-	0.698	-	-	0.698
Castanopsis hystrix(156)	16.057	6.283	2.792	0.698	1.396	-	0.698	-	-	-	27.925
Castanopsis indica(157)	-	-	0.698	-	1.396	-	-	-	-	-	2.094
Chukrassia vellutina(171)	-	-	-	0.698	0.698	-	-	-	-	-	1.396
Cupressus kashmiriana(213)	-	-	-	-	-	-	-	-	-	0.698	0.698
Diospyros chloroxylon(231)	-	-	-	-	-	-	-	-	0.698	-	0.698
Elaeagnus umbellata(257)	-	0.698	-	-	-	-	-	-	-	-	0.698
Engelhardtia spicata(270)	-	2.094	-	1.396	1.396	-	-	0.698	-	-	5.585
Erythrina specie s(280)	-	0.698	-	-	-	-	-	-	-	-	0.698
Euginea species(289)	2.792	0.698	2.792	0.698	-	-	-	-	-	-	6.981
Eurya japonica(295)	3.491	0.698	2.094	2.094	-	-	-	-	-	-	8.377
Evodia species(298)	-	-	0.698	0.698	-	-	-	-	-	-	1.396
Excoecaria agallocha(299)	-	0.698	-	-	-	-	-	-	-	-	0.698
Fillicium decipiens(309)	-	-	2.094	-	0.698	-	-	-	-	-	2.792
Juglans regia(383)	-	-	-	0.698	-	0.698	-	-	-	-	1.396
Machilus species(435)	-	0.698	0.698	0.698	-	-	-	-	-	-	2.094
Michelia doltsopa(463)	-	-	-	0.698	-	-	-	-	-	-	0.698
Michelia lanuginosa(464)	-	-	-	-	0.698	0.698	-	-	-	-	1.396
Nyssa javanica(497)	-	-	-	0.698	-	-	-	-	-	-	0.698
Ostodes paniculata(508)	1.396	2.094	1.396	-	-	-	-	-	-	-	4.887
Premna species(556)	-	0.698	-	-	-	-	-	-	-	-	0.698
Quercus lanceaefolia(587)	-	7.679	4.887	4.189	-	-	-	-	-	-	16.755
Quercus species(594)	0698	1.396	0.698	0.698	-	1.396	-	0.698	-	0.698	6.283

Contd. to Table No.2.2

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Rhus species(604)	-	0.698	-	-	-	-	-	-	-	-	0.698
Schima wallichii(627)	2.792	3.491	0.698	5.585	0.698	-	-	-	-	-	13.264
Syzygium species(668)	0.698	-	-	-	-	-	-	-	-	-	0.698
Terminalia myriocarpa(685)	-	-	-	-	0.698	-	-	-	-	-	0.698
Symplocos theifol ia(745)	11.868	7.679	2.094	-	-	-	-	-	-	-	21.542
Cedrela febrifuga(767)	-	-	-	0.698	-	-	-	-	-	-	0.698
Machilus gammioana(778)	-	-	-	-	-	0.698	-	-	-	-	0.698
Spondia ax illaris(786)	-	-	-	0.698	0.698	-	-	-	-	-	1.396
Sarcosperma arboreum(797)	0.698	-	-	-	-	-	-	-	-	-	0.698
Others (924)	0.698	-	1.396	-	-	1.396	0.698	-	-	-	4.188
Total :	47.473	47.472	25.831	22.340	8.377	4.887	1.396	2.094	0.698	1.396	161.965

TABLE NO. 2.3.

TOTAL STEMS (IN 000 UNIT) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III: RESERVED FOREST DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Acer niveum(015)	2.416	-	-	-	-	-	-	-	-	-	2.416
Acer species(018)	1.208	-	-	2.416	-	-	-	-	-	-	3.624
Alangium salvifolium(037)	2.416	-	1.208	1.208	-	-	-	-	-	-	4.831
Alcimandra catheartii(047)	-	-	-	1.208	-	-	-	-	-	-	1.208
Alnus nepalensis(048)	27.781	50.730	26.573	3.624	1.208	1.208	-	-	-	-	111.122
Beilschmiedia assamica(100)	9.663	8.455	15.702	14.494	4.831	7.247	1.208	-	-	-	61.600
Betula alnoides(105)	-	2.416	1.208	2.416	-	-	-	-	-	-	6.039
Castanopsis hystrix(156)	67.640	138.903	67.640	84.549	37.443	39.859	7.247	10.871	8.455	8.455	471.061
Cephalostachyum latifolium(166)	-	1.208	-	-	-	-	-	-	-	-	1.208
Cinnamomum species(178)	13.286	6.039	7.247	2.416	-	-	-	-	-	-	28.988
Dephnephyllum himalayanse(227)	-	2.416	-	-	-	-	-	-	-	-	2.416
Elaeoc-arpus lanceaefolius(258)	-	2.416	1.208	3.624	4.831	-	3.624	-	-	-	15.702
Endospermum chinense(268)	-	1.208	-	1.208	-	-	-	-	-	-	2.416
Engelhardtia spicata(270)	15.702	7.047	7.247	12.078	-	2.416	1.208	-	-	-	45.898
Euginea frondosa(285)	-	-	1.208	-	-	-	-	-	-	-	1.208
Euginea species(289)	-	-	-	1.208	-	-	-	-	-	-	1.208
Eudyymus lacerus(290)	1.208	1.208	1.208	-	1.208	-	-	-	-	-	4.831
Eurya japonica(295)	112.330	56.769	26.573	4.831	-	1.208	-	-	-	-	201.711
Evodia species(298)	1.208	1.208	-	-	-	-	-	-	-	-	2.416
Ficus species(308)	12.078	4.831	2.416	-	-	-	-	-	-	-	19.326
Glochidion velutinum(324)	1.208	-	-	-	-	-	-	-	-	-	1.208
Juglans regia(383)	3.624	3.624	2.416	2.416	1.208	-	-	-	-	-	13.286
Litsaea species(420)	2.416	8.455	4.831	4.831	2.416	1.208	-	-	-	-	24.157
Macaranga denticulata(425)	10.871	12.078	7.247	9.663	1.208	-	-	-	-	-	41.067
Macaranga peltata(427)	-	1.208	-	1.208	-	-	-	-	-	-	2.416
Machilus odoratissima(432)	1.208	6.039	3.624	3.624	-	2.416	-	1.208	-	1.208	19.326
Machilus parviflora(434)	1.208	-	-	-	-	-	-	-	-	-	1.208

Contd. to Table No.2.3

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Machilus species(435)	8.455	43.483	26.573	22.949	4.831	8.455	2.416	-	-	-	117.161
Mallotus phillipinensia(441)	-	1.208	-	-	-	-	-	-	-	-	1.208
Mangifera sylvatica(445)	1.208	1.208	-	-	-	-	-	-	-	-	2.416
Meleosma simplicifolia(456)	-	1.208	-	-	-	-	-	-	-	-	1.208
Meliosma species(457)	2.416	1.208	1.208	-	-	1.208	-	-	-	-	6.039
Michelia doltsopa(463)	3.624	3.624	3.624	3.624	1.208	2.416	-	-	1.208	-	19.326
Michelia species(468)	1.208	1.208	-	2.416	2.416	-	2.416	-	-	-	9.663
Michelia lanuginosa(464)	6.039	-	-	1.208	1.208	-	-	-	-	-	8.455
Nyssa javanica(497)	8.455	6.039	1.208	3.624	2.416	3.624	1.208	-	1.208	-	27.781
Prunus species(564)	2.416	7.247	7.247	13.286	1.208	1.208	-	-	-	-	32.612
Quercus lanceaefolia(587)	3.624	-	1.208	2.416	1.208	1.208	-	-	-	-	9.663
Quercus species(594)	41.067	77.302	42.275	57.997	28.988	25.365	19.326	7.247	18.118	18.118	335.782
Rhododendron arboreum(600)	12.078	-	6.039	3.624	7.247	-	-	-	1.208	-	30.196
Rhododendron species(601)	1.208	3.624	-	1.208	-	-	-	-	-	1.208	7.247
Rhus javanica(602)	-	-	-	-	-	-	-	-	-	1.208	1.208
Rhus succedanea(603)	1.208	-	-	-	-	-	-	-	-	-	1.208
Rhus species(604)	8.455	4.831	3.624	1.208	-	-	-	-	-	-	18.118
Saurinia nepaulensis(624)	7.247	4.831	-	-	-	-	-	-	-	-	12.078
Swietenia mahagoni(660)	-	1.208	-	-	-	-	-	-	-	-	1.208
Symingtoria populnea(661)	1.208	1.208	3.624	2.416	-	-	-	-	-	-	8.455
Symplocos laurina(663)	6.039	9.663	-	-	-	-	-	-	-	-	15.702
Syzygium species(668)	1.208	-	1.208	-	-	-	-	-	-	-	2.416
Terminalia chebula(679)	-	1.208	-	-	-	-	-	-	-	-	1.208
Toona ciliata(691)	-	1.208	-	-	-	-	-	-	-	-	1.208
Tsuga dumosa(697)	3.624	1.208	-	-	-	-	-	-	-	-	4.831
Turpinia cochinchinensis(699)	1.208	-	-	-	-	-	-	-	-	-	1.208
Zanthoxylum budrunga(730)	9.663	-	-	-	-	-	-	-	-	-	9.663
Acer campbellii(739)	10.871	22.949	10.871	9.663	3.624	2.416	6.039	1.208	-	-	67.640
Schinocarpus dasycarpus(743)	3.624	3.624	-	3.624	2.416	2.416	1.208	3.624	3.624	1.208	25.365

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Contd.to Table No.2.3

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Symplocos theifolia(745)	471.061	159.436	13.236	6.039	-	-	-	-	-	-	649.823
Symplocos species(746)	-	-	-	1.208	-	-	-	-	-	-	1.208
Berberis nepalensis(748)	1.208	-	-	-	-	-	-	-	-	-	1.208
Lindra species(754)	1.208	-	-	-	-	-	-	-	-	-	1.208
Ilicium grifitheii(755)	1.208	1.208	-	-	-	-	-	-	-	-	2.416
Ligustrum robustrum(760)	-	1.208	-	-	1.208	-	-	-	-	-	2.416
Actinodaphene sikkimensis(763)	7.247	3.624	1.208	2.416	1.208	3.624	-	1.208	-	-	20.533
Betula cyidrostachys(765)	-	-	-	1.208	-	-	-	-	-	-	1.208
Buddleia species(766)	1.208	-	-	-	-	-	-	-	-	-	1.208
Cedrela febriguga(767)	6.039	3.624	-	-	-	-	-	-	-	-	9.663
Juniperous psequdosabina(775)	1.208	-	-	-	-	-	-	-	-	-	1.208
Machilus gammidana(778)	-	-	-	-	-	1.208	-	-	-	1.208	2.416
Magnolia campbelii(779)	1.208	1.208	-	-	-	-	-	-	-	-	2.416
Magnolia pterodarpa(780)	-	-	-	-	-	-	-	-	-	1.208	1.208
Rhododendron hodgronii(783)	-	-	3.624	1.208	1.208	-	-	-	-	-	6.039
Rhododendron griffithianum (784)	4.831	-	-	-	-	-	-	-	-	-	4.831
Viburnum species(789)	48.314	6.039	-	1.208	-	-	-	-	-	-	55.561
Prunus peddum(792)	-	-	1.208	-	-	-	-	-	-	-	1.208
Aceroblongum (793)	-	2.416	2.416	-	-	-	-	-	-	-	4.831
Acer laevigatum(794)	-	-	1.208	1.208	-	-	-	-	-	-	2.416
Pyrularia edulis(795)	3.624	2.416	1.208	-	-	-	-	-	-	-	7.247
Pieris villosa(796)	16.910	4.831	1.208	1.208	-	1.208	1.208	-	-	-	26.573
Sarcosperma arboreum(797)	1.208	-	1.208	-	-	-	-	-	-	-	2.416
Machilus edulis(799)	-	-	-	1.208	2.416	1.208	-	-	-	-	4.831
Others(924)	140.111	41.068	25.365	16.909	12.079	4.832	-	2.416	2.416	-	245.196
Total :	1140.210	742.828	338.198	320.080	129.240	115.954	49.522	26.573	36.236	33.820	2932.660

TABLE NO. 2.4.

TOTAL ITEMS (IN 000 UNIT) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV: RESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Abies densa(001)	188.308	29.733	49.555	39.644	9.911	-	39.644	9.911	19.822	9.911	396.437
Alnus nepalensis(048)	59.466	79.287	9.911	-	-	-	-	-	-	-	148.664
Beilschmiedia assamica (100)	-	-	19.822	9.911	9.911	19.822	-	-	-	-	59.466
Betula alnoides(105)	9.911	-	-	9.911	-	-	-	-	-	-	19.822
Betula utilis(106)	49.555	59.466	19.822	-	-	-	-	-	-	-	128.842
Castanopsis hystrix(156)	29.733	19.822	59.466	79.287	59.466	99.109	9.911	39.644	19.822	-	416.259
Cinnamomum species(178)	9.911	9.911	-	-	-	-	-	-	-	-	19.822
Cupressus kashmiriana (213)	227.951	-	-	9.911	-	-	-	-	-	-	237.862
Ehretia caevis(256)	-	-	-	-	9.911	-	-	-	-	-	9.911
Elaeocarpus lanceaefolius (258)	-	19.822	-	9.911	9.911	19.822	9.911	-	-	-	69.377
Euginea formosa(286)	-	-	-	-	-	9.911	-	-	-	-	9.911
Eurya japonica(295)	118.981	69.377	29.733	9.911	-	-	-	-	-	-	227.951
Evodia species(298)	-	29.733	-	-	-	-	-	-	-	-	29.733
Gagara budrunga(300)	19.822	-	-	-	-	-	-	-	-	-	19.822
Litsaea species(420)	9.911	9.911	9.911	19.822	19.822	9.911	-	-	-	-	79.287
Machilus odoratissima(432)	-	-	-	19.822	-	-	-	-	-	-	19.822
Machilus species(435)	29.733	69.377	49.555	59.466	29.733	29.733	-	-	-	-	267.595
Macropanax oreophyllum (436)	-	-	-	-	-	9.911	-	-	-	-	9.911
Magnolia species(438)	-	-	-	-	-	-	-	-	9.911	-	9.911
Michelia doltsopa(463)	-	-	-	19.822	9.911	19.822	-	-	-	-	49.555
Michelia species(468)	-	9.911	9.911	-	9.911	9.911	19.822	-	-	-	59.466
[illegible]us species(564)	19.822	19.822	29.733	-	-	9.911	-	-	-	-	79.287
[illegible]cus lamellosa(586)	9.911	49.555	49.555	138.753	79.287	49.555	79.287	9.911	-	19.822	485.636
[illegible]cus lanceafolia(587)	9.911	19.822	39.644	9.911	-	-	-	-	-	-	89.198
[illegible]cus lineata(590)	-	-	-	19.822	9.911	9.911	-	-	9.911	-	49.555

Contd. to Table No.2.4

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Rhododendron arboreum (600)	545.101	79.287	29.733	29.733	-	-	-	-	-	-	683.854
Rhododendron species(601)	-	9.911	9.911	-	-	-	-	-	-	-	19.822
Saurinia nepaulensis(624)	-	9.911	-	-	-	-	-	-	-	-	9.911
Sterculia guttata(647)	9.911	-	-	-	-	-	-	-	-	-	9.911
Symplocos laurina(653)	-	19.822	-	-	-	-	-	-	-	-	19.822
Syzygium syrygoides(667)	9.911	-	-	-	-	-	-	-	-	-	9.911
Tsuga dumosa(697)	614.478	39.644	39.644	19.822	19.822	49.555	19.822	19.822	29.733	29.733	882.073
Xanthophyllum andamanicum(720)	-	-	-	9.911	-	-	-	-	-	-	9.911
Acer campbellii(739)	69.377	59.466	49.555	79.287	9.911	-	-	-	-	-	267.595
Echinocarpus dasycarpus (743)	-	-	9.911	-	9.911	9.911	-	-	9.911	-	39.544
Symplocos theifolia(745)	703.676	257.684	29.733	-	-	-	-	-	-	-	991.093
Cephalenthus occidentalis (747)	9.911	-	-	-	-	-	-	-	-	-	9.911
Ligustrum robustrum(760)	-	-	-	9.911	-	-	-	-	-	-	9.911
Actinodaphene sikkimensis (763)	19.822	-	-	29.733	-	9.911	-	-	-	-	59.466
Dysoxylon species(769)	9.911	9.911	-	-	-	-	-	-	-	-	19.822
Magnolia campbellii(779)	29.733	29.733	39.644	39.644	9.911	29.733	-	-	-	-	178.397
Rhododendron barbehum (782)	673.943	128.842	9.911	9.911	-	-	-	-	-	-	822.607
Rhododendron hodgronii(783)	-	-	9.911	19.822	9.911	-	-	-	-	-	39.644
Rhododendron griffithianum(784)	257.595	19.822	49.555	9.911	-	-	-	-	-	-	346.883
Viburnum species(789)	109.020	-	-	-	-	-	-	-	-	-	109.020
Prunus peddum(792)	-	-	9.911	-	-	-	-	-	-	-	9.911
Pyrularia edulis(795)	-	9.911	-	-	-	-	-	-	-	-	9.911
[illegible]is villosa(796)	89.188	9.911	-	9.911	-	-	-	-	-	-	109.020
[illegible]cus pachyphylla(798)	237.862	356.794	287.417	109.020	59.466	79.287	29.733	59.466	39.644	19.822	1278.510
[illegible]rs(924)	525.279	59.466	-	29.733	29.733	-	9.911	-	-	9.911	664.033
T o t a l	4717.604	1595.660	951.450	862.251	416.259	475.725	218.041	138.753	138.753	89.198	9603.694

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TABLE NO. 3.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : RESERVED FOREST DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Albizzia procera(045)	2.000	-	-	-	-	-	-	-	-	-	2.000
Albizzia species(046)	-	-	6.000	2.000	2.000	-	-	-	-	-	10.000
Bombax ceiba(109)	-	-	-	-	4.000	-	-	-	-	-	4.000
Canarium species(139)	-	-	-	4.000	4.000	-	-	-	-	-	8.000
Castanopsis hystrix(156)	-	-	-	2.000	-	-	-	-	-	-	2.000
Duabanga grandiflora(251)	-	-	-	8.000	6.000	4.000	-	-	-	-	18.000
Erythrina variogata(279)	2.000	-	2.000	-	-	-	-	-	-	-	4.000
Ficus species(308)	-	2.000	-	-	-	-	-	-	-	-	2.000
Filicium decipiens(309)	-	-	4.000	-	-	-	-	-	-	-	4.000
Schima wallichii(627)	-	8.000	8.000	4.000	-	-	-	-	-	-	20.000
Shorea robusta(633)	-	-	-	2.000	2.000	-	-	-	-	-	4.000
Sterculia villosa(645)	2.000	-	-	-	-	-	-	-	-	-	2.000
Terminalia myriocarpa(683)	-	-	-	2.000	4.000	2.000	-	-	-	-	8.000
Dysoxylon species(769)	-	-	4.000	6.000	-	-	-	-	-	-	10.000
Gynocardia odorata(772)	-	2.000	-	2.000	-	-	-	-	-	-	4.000
Others(924)	6.000	-	-	-	-	-	-	-	-	-	6.000
Total :	12.000	12.000	24.000	32.000	22.000	6.000	-	-	-	-	108.000

TABLE NO. 3.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : RESERVED FOREST DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Acer species(018)	-	-	0.125	0.125	-	-	-	-	-	-	0.250
Acrocarpus fraxinifolius(019)	-	-	-	-	-	0.125	-	-	-	-	0.125
Alangium salvifolium(037)	0.250	-	-	-	-	-	-	-	-	-	0.250
Albizzia chinensis(039)	-	-	-	0.125	-	-	-	-	-	-	0.125
Albizzia lebbek(041)	0.125	-	-	-	-	-	-	-	-	-	0.125
Albizzia procera(045)	0.500	0.125	0.500	-	-	-	-	-	-	-	1.125
Albizzia species(046)	1.875	1.250	0.875	0.375	0.250	-	-	-	-	-	4.625
Alnus nepalensis(048)	19.625	12.125	7.125	2.375	0.875	0.125	-	-	-	-	44.250
Aroora species(057)	0.125	0.625	-	0.250	-	-	-	-	-	-	1.000
Beilschmiedia assamica(100)	-	-	-	0.250	0.125	-	-	-	-	-	0.375
Betula alnoides(105)	0.250	0.125	0.125	-	-	0.125	-	-	-	-	0.625
Bischofia javanica(107)	0.250	0.125	0.250	0.250	0.125	-	-	-	-	-	1.000
Bombax ceiba(109)	0.375	0.250	0.125	0.125	-	0.125	-	-	-	-	1.000
Bridelia retusa(114)	0.125	-	-	-	-	-	-	-	-	-	0.125
Canarium species(139)	-	-	-	-	0.125	-	-	-	-	-	0.125
Castanopsis hystrix(156)	0.750	2.750	1.625	1.375	1.125	0.500	-	0.125	-	-	8.250
Castanopsis indica(157)	0.375	0.375	0.375	0.250	0.125	-	-	-	-	-	1.500
Cinnamomum species(178)	-	0.125	-	-	-	-	-	-	-	-	0.125
Cordia myxa(195)	0.250	0.250	-	-	0.125	-	-	-	-	-	0.625
Diploknema butyracea(241)	-	-	-	0.125	-	-	-	-	-	-	0.125
Elaeocarpus lanceaefolius(258)	-	-	-	0.125	0.125	-	-	-	-	-	0.250
Engelhardtia spicata(270)	3.250	2.875	0.625	0.750	0.125	-	0.125	-	-	-	7.750
Erythrina species(280)	0.500	0.375	-	-	-	-	-	-	-	-	0.875
Eurya japonica(295)	2.125	0.625	0.125	-	-	-	-	-	-	-	2.875
Evodia species(298)	-	-	0.125	-	-	-	-	-	-	-	0.125
Ficus bengalensis(302)	-	0.375	-	-	-	-	-	-	-	-	0.375
Ficus species(308)	2.875	2.000	-	-	-	-	-	-	-	-	4.875
Fillicium decipiens(309)	-	-	0.125	0.250	-	-	-	-	-	-	0.375
Gelina arborea(327)	0.125	-	-	-	-	-	-	-	-	-	0.125
Gymnosporia ruba(340)	0.125	0.250	-	0.625	-	-	-	-	-	-	1.000
Hynda trigura(350)	-	0.125	-	-	-	-	-	-	-	-	0.125
Hymenodictyon excelsum(370)	-	-	0.125	-	-	-	-	-	-	-	0.125

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Contd.Table No.3.2.

Species name with code	Diameter classes (in cm.) 10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Juglans regia(383)	0.250	-	-	-	-	-	-	-	-	-	0.250
Macaranga denticulata(425)	1.625	2.500	0.500	0.125	-	-	-	-	-	-	4.750
Macaranga indica(426)	0.125	0.125	-	-	-	-	-	-	-	-	0.250
Macaranga peltata(427)	2.750	0.625	-	0.250	-	-	-	-	-	-	3.625
Machilus species(435)	0.125	0.125	0.125	0.125	-	-	-	-	-	-	0.500
Michelia lanuginosa(464)	0.125	-	-	-	-	-	0.125	-	-	-	0.250
Moringa species(480)	-	-	-	-	-	-	-	-	-	0.250	0.250
Ostodes paniculata(508)	1.250	0.625	0.125	-	-	-	-	-	-	-	2.000
Phoebe species(527)	0.125	0.125	-	-	-	-	-	-	-	-	0.250
Quercus lanceaefolia(587)	-	-	0.125	0.250	0.250	0.250	-	-	-	-	0.875
Quercus species(594)	0.125	0.250	0.375	0.625	0.375	0.125	0.125	0.125	-	-	2.125
Rhus species(604)	0.625	0.250	0.375	-	-	-	-	-	-	-	1.250
Saurinia nepaulensis(624)	1.750	0.625	0.125	0.125	0.125	-	-	-	-	-	2.750
Schima wallichii(627)	7.250	6.250	2.625	1.625	0.375	-	0.250	0.125	-	-	18.500
Sideroxylon grandiflorum(635)	-	0.125	-	-	-	-	-	-	-	-	0.125
Sloanea dasycarpa(637)	0.125	-	-	-	-	-	-	-	-	-	0.125
Syzygium cuminii(665)	0.125	0.250	0.250	-	-	-	-	-	-	-	0.625
Syzygium species(668)	-	0.125	-	-	-	-	-	-	-	-	0.125
Talauma hodgaoni(669)	-	0.125	-	-	-	-	-	-	-	-	0.125
Terminalia chebula(679)	-	0.250	0.125	-	-	-	-	-	-	-	0.375
Terminalia myriocarpa(683)	-	0.250	-	-	-	-	-	-	-	-	0.250
Toona ciliata(691)	0.625	0.375	-	-	0.125	-	-	-	-	-	1.625
Echinocarpus dasycarpus(743)	-	0.125	-	-	-	-	-	-	-	-	0.125
Symplocos theifolia(745)	1.875	1.250	-	-	-	-	-	-	-	-	3.125
Actinodaphene sikkimensis(763)	-	0.125	-	-	-	-	-	-	-	-	0.125
Gynocordia odorata(772)	-	-	-	-	0.125	-	-	-	-	-	0.125
Hovenia dulois(774)	-	0.125	-	-	-	-	-	-	-	-	0.125
Leucosceptrum species(777)	0.125	-	-	-	-	-	-	-	-	-	0.125
Magnolia pterocarpa(780)	0.125	-	0.125	0.125	-	-	-	-	-	-	0.375
Spondia axillaris(786)	0.250	-	-	0.250	0.125	0.125	-	-	-	-	0.750
Viburnum species(789)	1.000	0.250	-	-	0.125	-	-	-	-	-	1.375
Brassaiopsis metis(791)	0.750	0.500	0.125	-	-	-	-	-	-	-	1.375
Prunus peddum(792)	0.125	-	-	-	-	-	-	-	-	-	0.125
Acer laevigatum(794)	0.250	-	-	-	-	-	-	-	-	-	0.250
Others(924)	2.500	0.875	0.375	1.500	1.375	0.500	0.125	-	-	-	7.250
Total :	57.875	43.000	17.625	12.875	6.250	2.000	0.750	0.375	-	0.250	141.000

TABLE NO. 3.3

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : UNRESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Acer species(018)	0.784	0.196	-	-	-	-	-	-	-	-	0.980
Alangium salvifolium(037)	0.196	-	-	-	-	-	-	-	-	-	0.196
Alnus nepalensis(048)	8.036	15.288	6.272	1.176	0.980	-	-	-	-	-	31.752
Alnus nitida(049)	-	0.196	-	-	-	-	-	-	-	-	0.196
Amoora species(057)	-	-	-	0.196	-	-	-	-	-	-	0.196
Beilschmiedia assamica(100)	-	-	0.196	0.196	0.196	-	-	-	-	-	0.588
Betula alnoides(105)	-	-	0.196	0.196	-	-	-	-	-	-	0.392
Castanopsis hystrix(156)	1.372	9.408	2.352	3.724	1.568	0.980	0.588	0.392	0.392	-	20.776
Cinnamomum species(178)	0.392	-	0.196	-	-	-	-	-	-	-	0.588
Cordia companilata(190)	-	-	-	-	-	0.196	-	-	-	-	0.196
Elaeocarpus lanceaefolius(258)	-	-	-	0.392	0.196	0.196	-	-	-	-	0.784
Endospermum chinense(260)	-	0.196	-	-	-	-	-	-	-	-	0.196
Engelhardtia spicata(270)	1.372	2.744	1.176	0.196	-	-	-	-	-	-	5.488
Eurya japonica(295)	2.548	3.920	1.568	0.196	-	-	-	-	-	-	8.232
Ficus species(308)	0.588	0.196	-	-	0.196	-	-	-	-	-	0.980
Juglans regia(383)	-	0.588	-	-	-	-	0.196	-	-	-	0.784
Litsaea species(420)	-	0.196	0.196	0.196	-	-	-	-	-	-	0.784
Macaranga denticulata(425)	0.784	0.784	0.392	-	-	-	-	-	-	-	1.960
Machilus odoratissima(432)	0.196	0.784	0.392	0.196	-	0.392	-	0.196	-	-	2.156
Machilus species(435)	0.392	2.156	0.784	0.784	-	-	-	-	-	-	4.116
Maniklara hexandra(448)	-	0.196	-	-	-	-	-	-	-	-	0.196
Meliosma species(457)	-	-	0.196	-	-	-	-	-	-	-	0.196
Michelia doltsopa(463)	0.196	-	-	-	-	-	-	-	-	-	0.196
Myristica laurifolia(489)	-	0.196	-	-	-	-	-	-	-	-	0.196
Nyssa javanica(497)	2.352	3.136	0.392	0.392	-	-	-	-	-	-	6.272

Contd. to Table No. 3.3

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Ostodes paniculata(508)	0.588	0.980	0.196	-	-	-	-	-	-	-	1.764
Prunus species(564)	0.196	-	-	0.196	0.392	-	-	-	-	-	0.784
Quercus lanceaefolia(587)	-	-	0.196	-	-	-	-	-	-	-	0.196
Quercus serrata(592)	0.196	-	-	-	-	-	-	-	-	-	0.196
Quercus species(594)	0.392	1.176	1.372	1.176	1.176	-	0.980	0.588	0.392	0.980	8.232
Rhus species(604)	1.372	0.588	-	-	-	-	-	-	-	-	1.960
Salix tetrasperma(611)	-	-	-	-	-	0.196	-	-	-	-	0.196
Saurinia nepaulensis(624)	0.588	0.196	-	0.588	-	-	-	-	-	-	1.372
Sloanea d asycarpa(637)	0.196	-	-	-	-	-	-	-	-	-	0.196
Symingtoria populnea(661)	-	-	0.392	0.196	0.196	-	-	-	-	-	0.784
Symplocos laurina(663)	0.588	-	-	-	-	-	-	-	-	-	0.588
Syzygium cuminii(665)	0.196	-	-	-	-	-	-	-	-	-	0.196
Turpinia cochinchinensis(699)	-	0.392	-	-	-	-	-	-	-	-	0.392
Acer campbellii(739)	0.196	-	0.196	0.784	-	-	-	-	-	-	1.176
Symplocos theifolia(745)	18.620	5.096	0.392	0.196	-	-	-	-	-	-	24.304
Meliosma pinnata(749)	-	-	-	0.196	-	-	-	-	-	-	0.196
Lindra species(754)	0.196	-	-	-	-	-	-	-	-	-	0.196
Woodfordia florithemnda(788)	0.196	-	-	-	-	-	-	-	-	-	0.196
Viburnum species(789)	3.136	0.588	-	-	-	-	-	-	-	-	3.724
Prunus peddum(792)	-	0.196	-	-	-	-	-	-	-	-	0.196
Acer laevigatum(794)	-	-	-	0.196	-	-	-	-	-	-	0.196
Pieris villosa(796)	-	0.392	-	-	-	-	-	-	-	-	0.392
Others(924)	7.056	3.920	0.784	0.588	0.392	-	-	-	-	-	12.740
Total :	52.920	53.704	17.836	11.956	5.488	1.960	1.764	1.176	0.784	0.980	148.568

TABLE NO. 3.4.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : UNRESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Rhododendron arboreum(600)	10.00	10.00	-	-	-	-	-	-	-	-	20.00
Tsuga dumosa(697)	20.00	20.00	10.00	-	-	-	-	-	-	-	50.00
Acer campbellii(739)	-	10.00	-	-	-	-	-	-	-	-	10.00
Rhododendron griffithianum(784)	-	10.00	-	-	-	-	-	-	-	-	10.00
Viburnum species(789)	20.00	-	-	-	-	-	-	-	-	-	20.00
Pieris villosa(796)	10.00	-	-	-	-	-	-	-	-	-	10.00
Quercus pachyphylla(798)	10.00	20.00	-	-	-	-	-	-	-	-	30.00
Total:	70.000	70.000	10.000	-	-	-	-	-	-	-	150.000

TABLE NO. 4.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II(RESERVED FOREST)

DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.) 10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Ailanthus altissima(035)	-	1.111	-	-	-	-	-	-	-	-	1.111
Alangium salvifolium(037)	1.111	2.222	-	-	-	-	-	-	-	-	3.333
Albizzia procera(045)	-	-	1.111	1.111	-	-	-	-	-	-	2.222
Albizzia species(046)	-	-	1.111	-	-	-	-	-	-	-	1.111
Alnus nepalensis(048)	7.778	28.889	8.889	8.889	2.222	1.111	-	-	-	-	57.777
Casearia species(150)	1.111	2.222	-	-	-	-	-	-	-	-	3.333
Castanopsis indica(157)	-	-	-	3.333	-	-	-	-	-	-	3.333
Cedrela toona(162)	1.111	-	1.111	-	3.333	-	-	-	-	-	5.556
Cordia myxa(195)	-	1.111	-	-	-	-	-	-	-	-	1.111
Dipterocarpus tuberculatus(245)	1.111	-	-	-	-	-	-	-	-	-	1.111
Engelhardtia spicata(270)	1.111	2.222	1.111	2.222	-	-	-	-	-	-	6.667
Erythrina species(280)	1.111	-	-	-	-	-	-	-	-	-	1.111
Eurya japonica(295)	1.111	-	-	-	-	-	-	-	-	-	1.111
Gmelina arborea(327)	-	1.111	-	-	-	-	-	-	-	-	1.111
Juglans regia(383)	1.111	-	-	1.111	-	-	-	-	-	-	2.222
Macaranga indica(426)	4.444	-	-	-	-	-	-	-	-	-	4.444
Macaranga peltata(427)	3.333	1.111	1.111	-	-	-	-	-	-	-	5.556
Machilus species(435)	3.333	3.333	-	3.333	1.111	1.111	-	-	-	-	12.222
Morus laevigata(482)	-	-	1.111	-	-	-	-	-	-	-	1.111
Ostodes paniculata(508)	1.111	-	-	-	-	-	-	-	-	-	1.111
Rhus species(604)	2.222	1.111	-	-	-	-	-	-	-	-	3.333
Schima wallichii(627)	-	-	-	-	-	1.111	-	-	-	-	1.111
Syzygium species(668)	-	1.111	-	-	-	-	-	-	-	-	1.111
Symplocos theifolia(745)	1.111	1.111	-	-	-	-	-	-	-	-	2.222
Cedrela febrifuga(767)	-	1.111	-	1.111	-	-	-	-	-	-	2.222
Hovenia dulots(774)	-	2.222	-	-	-	-	-	-	-	-	2.222
Spondia axillaris(786)	1.111	1.111	-	-	-	-	-	-	-	-	2.222
Viburnum species(789)	4.444	1.111	-	-	-	-	-	-	-	-	5.556
Brassaiopsis metis(791)	-	4.444	2.222	-	-	-	-	-	-	-	6.667
Acer laevigatum(794)	-	-	1.111	-	-	-	-	-	-	-	1.111
Sarcosperma arboreum(797)	1.111	-	1.111	-	-	-	-	-	-	-	2.222
Others(924)	10.000	1.111	-	1.111	-	-	-	-	-	-	12.222
Total:	48.888	57.777	20.000	22.222	6.667	3.333	-	-	-	-	158.887

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TABLE NO. 4.3.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-III: RESERVED FOREST DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Alangium salvifolium(037)	3.333	-	-	-	-	-	-	-	-	-	3.333
Alnus nepalensis(048)	3.333	11.667	3.333	-	-	-	-	-	-	-	18.334
Castanopsis hystrix(156)	-	-	6.667	1.667	1.667	-	-	1.333	-	-	13.334
Cinnamomum species(178)	1.667	3.333	-	-	-	-	-	-	-	-	5.000
Diospyros chloroxylon(239)	-	1.667	-	-	-	-	-	-	-	-	1.667
Elaeocarpus lanceaefolius(258)	-	-	1.667	-	-	-	-	-	-	-	1.667
Engelhardtia spicata(270)	-	1.667	1.667	-	-	-	-	-	-	-	3.333
Eurya japonica(295)	10.000	6.667	3.333	-	1.667	-	-	-	-	-	21.667
Juglans regia(383)	1.667	-	1.667	1.667	-	-	-	-	-	-	5.000
Macaranga indica(426)	-	3.333	-	-	-	-	-	-	-	-	3.333
Macaranga peltata(427)	5.000	3.333	-	-	-	-	-	-	-	-	8.334
Machilus species(435)	-	1.667	5.000	3.333	1.667	-	-	-	-	-	11.667
Melia composita(455)	-	3.333	-	-	-	-	-	-	-	-	3.333
Michelia doltsopa(463)	-	-	-	1.667	-	-	-	-	-	-	1.667
Nyssa javanica(497)	-	-	1.667	-	-	-	-	1.667	-	-	3.333
Prunus species(564)	-	-	1.667	1.667	-	-	-	-	-	-	3.333
Quercus species(594)	-	-	-	-	-	-	-	-	3.333	1.667	5.000
Rhus species(604)	-	-	-	1.667	-	-	-	-	-	-	1.667
Schima wallichii(627)	-	-	-	-	1.667	-	-	-	-	-	1.667
Acer campbellii(739)	-	-	-	-	-	3.333	-	-	-	-	3.333
Echinocarpus dasycarpus(743)	-	-	-	-	-	-	-	-	-	3.333	3.333
Symplocos theifolia(745)	10.000	1.667	-	-	-	-	-	-	-	-	11.667
Lanraceae species(7056)	1.667	-	-	-	-	-	-	-	-	-	1.667
Cedrela febrifuga(767)	-	1.667	-	6.667	1.667	-	-	-	-	-	10.000
Viburnum species(789)	3.333	-	-	-	-	-	-	-	-	-	3.333
Brassaiopsis metis(791)	5.000	1.667	1.667	-	-	-	-	-	-	-	8.334
Others(924)	25.001	13.334	1.667	6.667	1.667	-	-	-	-	-	48.335
Total :	70.001	55.001	30.001	25.001	10.000	3.333	-	5.000	3.333	5.000	206.671

TABLE NO. 4.4.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM : IV : RESERVED FOREST DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Abies spectabilis(003)	2.000	-	0.500	2.500	3.000	3.000	1.500	1.500	-	2.000	23.000
Alangium salvifolium(037)	-	0.500	-	-	-	-	-	-	-	-	-0.500
Alnus nepalensis(048)	2.000	3.000	2.500	-	0.500	-	-	-	-	-	8.000
Beilschmiedia assamica(100)	-	-	-	1.000	0.500	-	-	-	-	-	1.500
Betula alnoides(105)	-	0.500	-	-	-	-	-	-	-	-	0.500
Betula utilis(106)	-	1.000	2.500	1.000	1.000	0.500	-	-	-	-	6.000
Castanopsis hystrix(156)	-	0.500	1.500	0.500	-	-	-	-	-	-	2.500
Cinnamomum species(178)	0.500	-	-	-	0.500	0.500	-	-	-	-	1.500
Dephnephyllum himalayanse(227)	0.500	-	-	-	-	-	-	-	-	-	0.500
Elaeocarpus lanceaefolius(258)	-	-	0.500	-	-	-	-	-	-	-	0.500
Engelhardtia spicata(270)	1.000	0.500	-	1.000	-	-	-	-	-	-	2.500
Eurya japonica(295)	1.000	2.000	0.500	-	-	-	-	-	-	-	3.500
Juglans regia(383)	0.500	0.500	-	0.500	0.500	-	-	-	-	-	2.000
Litsaea species(420)	-	-	0.500	0.500	-	-	-	-	-	-	1.000
Machilus species(435)	0.500	0.500	1.000	2.500	-	0.500	-	-	-	-	5.000
Melia composita(455)	-	0.500	0.500	-	-	-	-	-	-	-	1.000
Michelia doltsopa(463)	-	-	-	0.500	0.500	-	-	-	-	-	1.000
Michelia lanuginosa(464)	-	-	0.500	-	-	-	-	-	-	-	0.500
Ostodes paniculata(500)	-	-	0.500	-	-	-	-	-	-	-	0.500
Picea smithiana(531)	-	-	-	0.500	0.500	0.500	1.000	0.500	-	-	3.000
Populus cilata(549)	-	-	-	-	1.000	0.500	-	-	-	-	1.500
Prunus species(564)	-	-	-	0.500	-	-	-	-	-	0.500	1.000
Quercus lamellosa(586)	-	-	-	0.500	1.500	0.500	-	1.000	-	-	3.500
Quercus lineata(590)	0.500	-	0.500	0.500	1.500	2.000	-	-	-	-	5.000
Quercus species(594)	-	-	-	0.500	1.000	-	-	-	-	-	1.500
Rhododendron arboreum(600)	2.500	4.500	1.000	-	-	-	-	-	-	-	8.000
Rhododendron species(601)	3.500	0.500	-	-	-	-	-	-	-	-	4.000

Contd. to Table No.4.4

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Taxus baccata(672)	-	-	-	-	-	0.500	0.500	-	-	-	1.000
Tsuta dumosa(697)	-	0.500	-	4.500	4.000	2.500	2.500	1.500	-	-	15.500
Acer campbellii(739)	1.500	1.000	1.000	2.000	6.000	1.000	1.500	-	-	-	14.000
Symplocos theifolia(745)	0.500	-	-	-	-	-	-	-	-	-	0.500
Cedrela febrifuga(767)	0.500	-	-	0.500	-	-	-	-	-	-	1.000
Juniperous pseudosabina(775)	3.000	-	-	-	-	-	-	-	-	-	3.000
Rhododendron barberum(782)	1.000	0.500	-	-	-	-	-	-	-	-	1.500
Viburnum species(789)	4.000	-	-	-	-	-	-	-	-	-	4.000
Pieris villosa(796)	4.000	-	-	-	-	-	-	-	-	-	4.000
Quercus pachyphylla(798)	-	0.500	1.000	3.500	1.500	1.000	0.500	0.500	-	-	8.500
Others(924)	3.000	1.000	0.500	0.500	-	-	-	-	-	-	5.000
Total :	32.000	24.000	15.000	24.500	23.500	13.000	7.500	5.000	-	2.500	147.000

TABLE NO. 5.2.

TOTAL STEMS (IN 000 UNIT) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM : II : RESERVED FOREST DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Ailanthus altissima(035)	-	1.868	-	-	-	-	-	-	-	-	1.868
Alangium salvifolium(037)	1.868	3.736	-	-	-	-	-	-	-	-	5.603
Albizzia procera(045)	-	-	1.868	1.868	-	-	-	-	-	-	3.736
Albizzia species(046)	-	-	1.868	-	-	-	-	-	-	-	1.868
Alnus nepalensis(048)	13.074	48.562	14.942	14.942	3.736	1.868	-	-	-	-	97.123
Casearia species(150)	1.868	3.736	-	-	-	-	-	-	-	-	5.603
Castanopsis indica(157)	-	-	-	5.603	-	-	-	-	-	-	5.603
Cedrela toona(162)	1.868	-	1.868	-	5.603	-	-	-	-	-	9.339
Cordia myxa(195)	-	1.868	-	-	-	-	-	-	-	-	1.868
Dipterocarpus tuberculatus(245)	1.868	-	-	-	-	-	-	-	-	-	1.868
Engelhardtia spicata(270)	1.868	3.737	1.868	3.736	-	-	-	-	-	-	11.207
Erythrina species(280)	1.868	-	-	-	-	-	-	-	-	-	1.868
Eurya japonica(295)	1.868	-	-	-	-	-	-	-	-	-	1.868
Gmelina arborea(327)	-	1.868	-	-	-	-	-	-	-	-	1.868
Juglans regia(383)	1.868	-	-	1.868	-	-	-	-	-	-	3.736
Macaranga indica(426)	7.471	-	-	-	-	-	-	-	-	-	7.471
Macaranga peltata(427)	5.603	1.868	1.868	-	-	-	-	-	-	-	9.339
Machilus species(435)	5.603	5.603	-	5.603	1.868	1.868	-	-	-	-	20.545
Morus laevigata(462)	-	-	1.868	-	-	-	-	-	-	-	1.868
Ostodes paniculata(508)	1.868	-	-	-	-	-	-	-	-	-	1.868
Rhus species(604)	3.736	1.868	-	-	-	-	-	-	-	-	5.603
Schima wallichii(627)	-	-	-	-	-	1.868	-	-	-	-	1.868
Syzygium species(668)	-	1.868	-	-	-	-	-	-	-	-	1.868
Symplocos theifolia(745)	1.868	1.868	-	-	-	-	-	-	-	-	3.736
Cedrela febrifuga(767)	-	1.868	-	1.868	-	-	-	-	-	-	3.736
Hovenia dulois(774)	-	3.736	-	-	-	-	-	-	-	-	3.736
Spondia axillaris(786)	1.868	1.868	-	-	-	-	-	-	-	-	3.736
Viburnum species(789)	7.471	1.868	-	-	-	-	-	-	-	-	9.339
Brassaiopsis metis(791)	-	7.471	3.736	-	-	-	-	-	-	-	11.207
Acer laevigatum(794)	-	-	1.868	-	-	-	-	-	-	-	1.868
[illegible]osperma arboreum(797)	1.868	-	1.868	-	-	-	-	-	-	-	3.736
[illegible]rs(924)	16.810	1.868	-	1.868	-	-	-	-	-	-	20.545
Total:	82.181	97.123	33.620	37.355	11.207	5.603	-	-	-	-	267.090

Contents

TABLE NO. 5.3.

TOTAL STEMS (IN 000 UNIT) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III: RESERVED FOREST

DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.) 10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alangium salvifolium(037)	54.858	-	-	-	-	-	-	-	-	-	54.858
Alnus nepalensis(048)	54.858	192.002	54.858	-	-	-	-	-	-	-	301.718
Castanopsis hystrix(156)	-	-	109.716	27.429	-	-	-	54.858	-	-	219.431
Cinnamomum species(178)	27.429	54.858	-	-	-	-	-	-	-	-	82.287
Diospyros chloroxylon(239)	-	27.429	-	-	-	-	-	-	-	-	27.429
Elaeocarpus lanceaefolius(258)	-	-	27.429	-	-	-	-	-	-	-	27.429
Engelhardtia spicata(270)	-	27.429	27.429	-	-	-	-	-	-	-	54.858
Eurya japonica(295)	164.573	109.716	54.858	-	27.429	-	-	-	-	-	356.575
Juglans regia(383)	27.429	-	27.429	27.429	-	-	-	-	-	-	82.287
Macaranga indica(426)	-	54.858	-	-	-	-	-	-	-	-	54.858
Macaranga peltata(427)	82.858	54.858	-	-	-	-	-	-	-	-	137.144
Machilus species(435)	-	27.429	82.287	54.858	27.429	-	-	-	-	-	192.002
Melia composita(455)	-	54.858	-	-	-	-	-	-	-	-	54.858
Michelia doltsopa(463)	-	-	-	27.429	-	-	-	-	-	-	27.429
Nyssa javanica(497)	-	-	27.429	-	-	-	-	27.429	-	-	54.858
Prunus species(564)	-	-	27.429	27.429	-	-	-	-	-	-	54.858
Quercus species(594)	-	-	-	-	-	-	-	-	54.858	27.429	82.287
Rhus species(604)	-	-	-	27.429	-	-	-	-	-	-	27.429
Schima wallichii(627)	-	-	-	-	27.429	-	-	-	-	-	27.429
Acer campbellii(739)	-	-	-	-	-	54.858	-	-	-	-	54.858
Echinocarpus dasycarpus(743)	-	-	-	-	-	-	-	-	-	54.858	54.858
Symplocos theifolia(745)	164.573	27.429	-	-	-	-	-	-	-	-	192.002
Lauraceae species(756)	27.429	-	-	-	-	-	-	-	-	[illegible]	27.429
Cedrela febrifuga(767)	-	27.429	-	109.716	27.429	-	-	-	-	-	164.573
Viburnum species(789)	54.858	-	-	-	-	-	-	-	-	-	54.858
Brassaiopsis metis(791)	82.287	27.429	27.429	-	-	-	-	-	-	-	137.144
Others(924)	41.433	219.431	27.429	109.716	27.429	-	-	-	-	-	795.438
Total :	1152.013	905.153	493.720	411.433	164.573	54.858	-	82.287	54.858	82.287	3401.181

TABLE NO. 5.4.

TOTAL STEMS (IN 000 UNIT) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : RESERVED FOREST DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Abies densa(001)	138.230	414.690	34.558	241.903	207.345	207.345	103.673	103.673	-	138.230	1589.645
Alangium salvifolium(037)	-	34.558	-	-	-	-	-	-	-	-	34.558
Alnus nepalensis(048)	138.230	207.345	172.788	-	34.558	-	-	-	-	-	552.920
Beilschmiedia assamica (100)	-	-	-	69.115	34.558	-	-	-	-	-	103.673
Betula alnoides(105)	-	34.558	-	-	-	-	-	-	-	-	34.558
Betula utilis(106)	-	69.115	172.788	69.115	69.115	34.558	-	-	-	-	414.690
Castanopsis hystrix(156)	-	34.558	103.673	34.558	-	-	-	-	-	-	172.788
Cinnamomum species(178)	34.558	-	-	-	34.558	34.558	-	-	-	-	103.673
Dephnephyllum himalayanse (227)	34.558	-	-	-	-	-	-	-	-	-	34.558
Elaeocarpus lanceaefolius (258)	-	-	34.558	-	-	-	-	-	-	-	34.558
Engelhardtia spicata(270)	69.115	34.558	-	69.115	-	-	-	-	-	-	172.788
Eurya japonica(295)	69.115	138.230	34.558	-	-	-	-	-	-	-	241.903
Juglans regia(383)	34.558	34.558	-	34.558	34.558	-	-	-	-	-	138.230
Litsaea species(420)	-	-	34.558	34.558	-	-	-	-	-	-	69.115
Machilus species(435)	34.558	34.558	69.115	172.788	-	34.558	-	-	-	-	345.575
Melia composita(455)	-	34.558	34.558	-	-	-	-	-	-	-	69.115
Michelia doltsopa(463)	-	-	-	34.558	34.558	-	-	-	-	-	69.115
Michelia lanuginosa(464)	-	-	34.558	-	-	-	-	-	-	-	34.558
Ostodes paniculata(508)	-	-	34.558	-	-	-	-	-	-	-	34.558
Picea smithiana(531)	-	-	-	34.558	34.558	34.558	69.115	34.558	-	-	207.345
Populus c ilata(549)	-	-	-	-	69.115	34.558	-	-	-	-	103.673
Prunus species(564)	-	-	-	34.558	-	-	-	-	-	34.558	69.115
Quercus lamellosa(586)	-	-	-	34.558	103.673	34.558	-	69.115	-	-	241.903
Quercus lineata(590)	34.558	-	34.558	34.558	103.673	138.230	-	-	-	-	345.575
Quercus species(594)	-	-	-	34.558	69.115	-	-	-	-	-	103.673
Rhododendron arboreum	172.788	311.018	69.115	-	-	-	-	-	-	-	552.920

Contd. to Table No.5.4

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Rhododendron species (601)	241.903	34.558	-	-	-	-	-	-	-	-	276.460
Taxus baccata(672)	-	-	-	-	-	34.558	34.558	-	-	-	69.115
Tsuga dumosa(697)	-	34.558	-	311.018	276.460	172.788	172.788	103.673	-	-	1071.283
Acer campbellii(739)	103.673	69.115	69.115	138.230	414.690	69.115	103.673	-	-	-	967.610
Symplocos theifolia(745)	34.558	-	-	-	-	-	-	-	-	-	34.558
Cedrela febrifuga(767)	34.558	-	-	34.558	-	-	-	-	-	-	69.115
Juniperous pseudosabina (775)	207.345	-	-	-	-	-	-	-	-	-	207,345
Rhododendron barbehum (782)	69.115	34.558	-	-	-	-	-	-	-	-	103.673
Viburnum species(789)	276.460	-	-	-	-	-	-	-	-	-	276.460
Pieris villosa(796)	276.460	-	-	-	-	-	-	-	-	-	276.460
Quercus pachyphylla(798)	-	34.558	69.115	241.903	103.673	69.115	34.558	34.558	-	-	587.478
Others(924)	207.345	69.115	34.558	34.558	-	-	-	-	-	-	345.575
Total :	2211.680	1658.760	1036.725	1693.317	1624.202	898.495	518.363	345.575	-	172.788	10159.905

TABLE NO. 6.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : UNRESERVED FOREST DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Albizzia procera(045)	-	-	10.000	-	-	-	-	-	-	-	10.000
Alnus nepalensis(048)	10.000	30.000	20.000	20.000	-	-	-	-	-	-	80.000
Bischofia javanica(107)	40.000	10.000	-	-	-	-	-	-	-	-	50.000
Castanopsis indica(157)	-	10.000	-	-	-	-	-	-	-	-	10.000
Engelhardtia spicata(270)	-	-	10.000	-	-	-	-	-	-	-	10.000
Macaranga denticulata(425)	-	-	10.000	-	-	-	-	-	-	-	10.000
Schima wallichii(627)	-	-	-	10.000	-	-	-	-	-	-	10.000
Semecarpus anacardium(630)	-	10.000	-	-	-	-	-	-	-	-	10.000
Spondia axillaris(786)	10.000	-	-	-	-	-	-	-	-	-	10.000
Others(924)	10.000	-	10.000	-	-	-	-	-	-	-	20.000
Total :	70.000	60.000	60.000	30.000	-	-	-	-	-	-	220.000

TABLE NO. 6.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM -,II : UNRESERVED FOREST

DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Albizzia lebbek(041)	1.250	-	-	-	-	-	-	-	-	-	1.250
Albizzia species(046)	-	1.250	1.250	-	-	-	-	-	-	-	2.500
Alnus nepalensis(048)	7.500	21.250	26.250	7.500	-	-	-	-	-	-	62.500
Bischofia javanica(107)	-	-	-	-	1.250	-	-	-	-	-	1.250
Engelhardtia spicata(270)	-	6.250	1.250	6.250	1.250	-	-	-	-	-	15.000
Eurya japonica(295)	7.500	1.250	1.250	-	-	-	-	-	-	-	10.000
Evodia species(298)	1.250	-	2.500	1.250	-	-	-	-	-	-	5.000
Ficus species(308)	2.500	-	-	-	-	-	-	-	-	-	2.500
Juglans regia(383)	-	-	-	2.500	-	-	-	-	-	-	2.500
Macaranga indica (426)	-	1.250	3.750	1.250	-	-	-	-	-	-	6.250
Macaranga peltata(427)	2.500	1.250	1.250	-	-	-	-	-	-	-	5.000
Machilus species(435)	1.250	1.250	1.250	-	-	-	-	-	-	-	3.750
Michelia species(468)	-	2.500	-	-	-	-	-	-	-	-	2.500
Ostodes paniculata(500)	-	2.500	1.250	1.250	-	-	-	-	-	-	5.000
Schima wallichii(627)	-	-	6.250	2.500	-	-	-	-	-	-	8.750
Symplocos theifolia(745)	1.250	-	-	-	-	-	-	-	-	-	1.250
Hovenia dulots(774)	1.250	-	-	1.250	-	-	-	1.250	-	-	3.750
Viburnum species(789)	12.500	5.000	2.500	1.250	-	-	-	-	-	-	21.250
Brassaiopsis metis(791)	1.250	-	2.500	-	-	-	-	-	-	-	3.750
Others(924)	5.000	6.250	-	-	-	-	-	-	-	-	11.250
Total :	45.000	50.000	51.250	25.000	2.500	-	-	1.250	-	-	175.000

TABLE NO. 6.3.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : UNRESERVED FOREST DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Alnus nepalensis(048)	6.667	6.667	-	-	-	-	-	-	-	-	13.333
Castanopsis hystrix(156)	-	-	-	-	-	-	-	-	3.333	3.333	6.667
Cinnamomum species(178)	13.333	-	-	-	-	-	-	-	-	-	13.333
Elaeocarpus lanceaefolius (258)	-	-	-	3.333	-	-	-	-	-	-	3.333
Juglans regia(383)	-	-	3.333	-	3.333	-	-	-	-	-	6.667
Macaranga peltata(427)	6.667	6.667	-	-	-	-	-	-	-	-	13.333
Prunus species(564)	-	-	-	3.333	3.333	-	-	-	-	-	6.667
Quercus species(594)	-	-	-	-	3.333	-	3.333	-	-	-	6.667
Acer campbellii(739)	-	-	-	3.333	-	-	-	-	-	-	3.333
Symplocos theifolia(745)	23.333	3.333	-	-	-	-	-	-	-	-	26.666
Cedrela febrifuga(767)	-	6.667	3.333	3.333	-	-	-	-	-	-	13.333
Hovenia culois(774)	10.000	-	-	-	-	-	-	-	-	-	10.000
Viburnum species(789)	10.000	-	-	-	-	-	-	-	-	-	10.000
Others(924)	3.333	-	3.333	-	-	-	-	-	-	-	6.667
Total :	73.333	23.333	10.000	13.333	10.000	-	3.333	-	3.333	3.333	139.999

TABLE NO. 6.4.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-IV : RESERVED FOREST

DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Abies spectabilis(003)	10.000	3.333	-	-	-	-	-	-	-	-	13.333
Alnus nepalensis(048)	40.00	63.333	-	-	-	-	-	-	-	-	103.332
Castanopsis hystrix(156)	3.333	-	-	-	-	-	-	-	-	-	3.333
Macaranga peltata(427)	-	-	-	3.333	-	-	-	-	-	-	3.333
Machilus species(435)	-	-	-	-	3.333	-	-	-	-	-	3.333
Viburnum species(789)	-	3.333	-	-	-	-	-	-	-	-	3.333
Others(924)	3.333	6.667	3.333	-	-	-	-	-	-	-	13.334
Total :	56.666	76.666	3.333	3.333	3.333	-	-	-	-	-	143.332

TABLE NO. 7.1.

VOLUME PER HA. (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : RESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Castanopsis indica(157)	-	-	-	3.500	-	3.500	4.500	-	-	-	11.500
Chukrassia vellutina(171)	-	-	-	1.750	2.500	-	-	-	-	-	4.250
Cordia myxa(195)	-	-	-	1.750	-	-	-	-	-	-	1.750
Evodia species(298)	-	-	1.000	-	-	-	-	-	-	-	1.000
Fillicium decipiens(309)	-	-	-	1.750	-	-	-	-	-	-	1.750
Schima wallichii(627)	-	-	1.000	3.500	2.500	-	-	-	-	-	7.000
Semecarpus anacardium(650)	-	-	-	-	2.500	-	-	-	-	-	2.500
Shorea robusta(653)	-	-	13.000	24.500	7.500	3.500	-	-	-	-	48.500
Toona ciliata(691)	-	-	1.000	1.750	-	-	-	-	-	-	2.750
Gynocordia odorata(772)	-	-	-	1.750	2.500	-	-	-	-	-	4.250
Spondia axillaris(786)	-	-	-	-	2.500	-	-	-	-	-	2.500
Others(924)	-	-	-	-	2.500	-	-	-	-	-	2.500
Total :	-	-	16.000	40.250	22.500	7.000	4.500	-	-	-	90.650

TABLE NO. 7.2.

VOLUME PER HA. (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-II: RESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Albizzia species(046)	-	-	0.500	0.438	-	-	-	-	-	-	0.938
Alnus nepalensis(048)	-	-	0.875	0.750	-	-	-	-	-	-	1.625
Amoora species(057)	-	-	-	-	-	-	-	1.375	-	-	1.375
Castanopsis hystrix(156)	-	-	1.000	0.438	1.250	-	1.125	-	-	-	3.813
Castanopsis indica(157)	-	-	0.250	-	1.250	-	-	-	-	-	1.500
Chukrassia vellutina(171)	-	-	-	0.438	0.625	-	-	-	-	-	1.063
Cuppressus kashmiriana(213)	-	-	-	-	-	-	-	-	-	2.063	2.063
Diospyros chloroxylon(231)	-	-	-	-	-	-	-	-	1.750	-	1.750
Engelhardtia spicata(270)	-	-	-	0.875	1.250	-	-	1.375	-	-	3.500
Euginea species(289)	-	-	1.000	0.438	-	-	-	-	-	-	1.438
Eurya japonica(295)	-	-	0.563	0.938	-	-	-	-	-	-	1.500
Evodia species(298)	-	-	0.250	0.438	-	-	-	-	-	-	0.688
Fillicium decipiens(309)	-	-	0.750	-	0.625	-	-	-	-	-	1.375
Juglans regia(363)	-	-	-	0.438	-	0.875	-	-	-	-	1.313
Machilus species(435)	-	-	0.250	0.438	-	-	-	-	-	-	0.688
Michelia doltsopa(463)	-	-	-	0.438	-	-	-	-	-	-	0.438
Michelia lanuginosa(464)	-	-	-	-	0.625	0.875	-	-	-	-	1.500
Nyssa javanica(497)	-	-	-	0.438	-	-	-	-	-	-	0.438
Ostodes paniculata(508)	-	-	0.500	-	-	-	-	-	-	-	0.500
Quercus lanceaefolia(587)	-	-	1.750	2.625	-	-	-	-	-	-	4.375
Quercus species(594)	-	-	0.250	0.438	-	1.750	-	1.375	-	2.063	5.875
Schima wallichii(627)	-	-	0.250	3.500	0.625	-	-	-	-	-	4.375
Terminalia myriocarpa(683)	-	-	-	-	0.625	-	-	-	-	-	0.625
Symplocos theifolia(745)	-	-	1.125	-	-	-	-	-	-	-	1.125
Cedrela febrifuga(767)	-	-	-	0.438	-	-	-	-	-	-	0.438
Machilus gammioana(778)	-	-	-	-	-	0.875	-	-	-	-	0.875
Spondina axillaris(786)	-	-	-	0.438	0.625	-	-	-	-	-	1.063
Others(924)	-	-	0.500	-	-	1.750	1.125	-	-	-	3.375
Total:	-	-	9.813	13.938	7.500	6.125	2.250	4.125	1.750	4.125	50.325

Contents

TABLE NO. 7.3.

VOLUME PER HA. (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III -: RESERVED FOREST DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Acer species(018)	-	-	-	0.137	-	-	-	-	-	-	0.137
Alangium salvifolium(037)	-	-	0.039	0.069	-	-	-	-	-	-	0.108
Alcimandra catheartii(047)	-	-	-	0.069	-	-	-	-	-	-	0.069
Alnus nepalensis(048)	-	-	1.509	0.353	0.167	0.216	-	-	-	-	2.244
Beilschmiedia assamica(100)	-	-	0.510	0.823	0.392	0.823	0.176	-	-	-	2.724
Betula alnoides(105)	-	-	0.039	0.137	-	-	-	-	-	-	0.176
Castanopsis hystrix(156)	-	-	2.195	4.802	3.136	4.665	1.058	2.156	1.921	2.264	22.197
Cinnamomum species(178)	-	-	0.235	0.137	-	-	-	-	-	-	0.372
Elaeocarpus lanceaefolius(258)	-	-	0.039	0.206	0.392	-	0.529	-	-	-	1.165
Endospermum chinense(268)	-	-	-	0.069	-	-	-	-	-	-	0.069
Engelhardtia spicata(270)	-	-	0.235	0.685	-	0.274	0.176	-	-	-	1.372
Euginea frondosa(285)	-	-	0.039	-	-	-	-	-	-	-	0.039
Euginea species(289)	-	-	-	0.069	-	-	-	-	-	-	0.069
Eudnymus lacerus(290)	-	-	0.039	-	0.098	-	-	-	-	-	0.137
Eurya japonica(295)	-	-	0.647	0.196	-	0.098	-	-	-	-	0.941
Ficus species(308)	-	-	0.078	-	-	-	-	-	-	-	0.078
Juglans regia(383)	-	-	0.078	0.137	0.098	-	-	-	-	-	0.314
Litsaea species(420)	-	-	0.157	0.274	0.196	0.137	-	-	-	-	0.764
Macaranga denticulata(425)	-	-	0.235	0.549	0.098	-	-	-	-	-	0.882
Macaranga peltata(427)	-	-	-	0.069	-	-	-	-	-	-	0.069
Machilus odoratissima(432)	-	-	0.118	0.206	-	0.274	-	0.216	-	0.323	1.137
Machilus species(435)	-	-	0.862	1.303	0.353	1.029	0.431	-	-	-	3.979
Meliosma species(457)	-	-	0.039	-	-	0.137	-	-	-	-	0.175
Michelia doltsopa(463)	-	-	0.118	0.206	0.098	0.274	-	-	0.274	-	0.970
Michelia lanuginosa(464)	-	-	-	0.069	0.098	-	-	-	-	-	0.167
Michelia species(468)	-	-	-	0.137	0.196	-	0.353	-	-	-	0.685
Nyssa javanica(497)	-	-	0.039	0.206	0.196	0.412	0.176	-	0.274	-	1.303

Continued to Table No.7.3

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Prunus species(564)	-	-	0.235	0.755	0.098	0.137	-	-	-	-	1.225
Quercus lanceaefolia(587)	-	-	0.039	0.137	0.098	0.137	-	-	-	-	0.412
Quercus species(594)	-	-	1.411	3.293	2.352	2.881	2.822	1.294	4.116	4.851	23.020
Rhododendron arboreum(600)	-	-	0.196	0.206	0.588	-	-	-	0.274	-	1.264
Rhododendron species(601)	-	-	-	0.069	-	-	-	-	-	0.323	0.392
Rhus javanica(602)	-	-	-	-	-	-	-	-	-	0.323	0.323
Rhus species(604)	-	-	0.118	0.069	-	-	-	-	-	-	0.186
Symingtoria pupulnea(661)	-	-	0.118	0.118	-	-	-	-	-	-	0.235
Syzygium species(668)	-	-	0.039	-	-	-	-	-	-	-	0.039
Acer campbellii(739)	-	-	0.265	0.549	0.353	0.333	1.225	0.304	-	-	3.028
Echinocarpus dasycarpus(743)	-	-	-	0.176	0.176	0.255	0.157	0.559	0.706	0.304	2.332
Symplocos theifolia(745)	-	-	0.647	0.539	-	-	-	-	-	-	1.185
Symplocos species(746)	-	-	-	0.069	-	-	-	-	-	-	0.069
Ligustrum robustrum(760)	-	-	-	-	0.098	-	-	-	-	-	0.098
Actinodaphene sikkimensis(763)	-	-	0.039	0.137	0.098	0.412	-	0.216	-	-	0.902
Betula cyidrostachys(765)	-	-	-	0.069	-	-	-	-	-	-	0.069
Machilus gammidana(778)	-	-	-	-	-	0.137	-	-	-	0.323	0.461
Magnolia pterocarpa(780)	-	-	-	-	-	-	-	-	-	0.323	0.323
Rhododendron hodgronii(783)	-	-	0.118	0.069	0.098	-	-	-	-	-	0.284
Viburnum species(789)	-	-	-	0.069	-	-	-	-	-	-	0.069
Prunus peddum(792)	-	-	0.039	-	-	-	-	-	-	-	0.039
Acer oblongum(793)	-	-	0.078	-	-	-	-	-	-	-	0.078
Acer laevigatum(794)	-	-	0.039	0.069	-	-	-	-	-	-	0.108
Pyrularia edulis(795)	-	-	0.039	-	-	-	-	-	-	-	0.039
Pieris villosa(796)	-	-	0.039	0.069	-	0.137	0.176	-	-	-	0.421
Sarcosperma arboreum(797)	-	-	0.039	-	-	-	-	-	-	-	0.039
Machilus edulis(799)	-	-	-	0.069	0.196	0.137	-	-	-	-	0.402
Others(924)	-	-	0.784	0.892	0.882	0.548	0.353	0.216	0.548	-	4.224
Total:	-	-	11.535	18.326	10.555	13.455	7.634	4.959	8.114	9.036	83.614

TABLE NO. 7.4.

VOLUME PER HA. (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : RESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Abies spectabilis(003)	-	-	0.357	0.708	8.340	-	3.623	1.327	3.648	2.508	12.511
Alnus nepalensis(048)	-	-	0.200	-	-	-	-	-	-	-	-0.200
Beilschmiedia assamica(100)	-	-	0.229	0.200	0.286	0.800	-	-	-	-	-1.514
Betula alnoides(105)	-	-	-	0.200	-	-	-	-	-	-	0.200
Betula utilis(106)	-	-	0.229	-	-	-	-	-	-	-	0.229
Castanopsis hystrix(156)	-	-	0.686	1.600	1.714	4.000	0.514	2.514	1.600	-	12.628
Cupressus kashmiriana(213)	-	-	-	0.200	-	-	-	-	-	-	0.200
Ehretia caevis(256)	-	-	-	-	0.286	-	-	-	-	-	0.286
Elaeocarpus lanceaefolius(258)	-	-	-	0.200	0.286	0.800	0.514	-	-	-	1.800
Euginea formosa(286)	-	-	-	-	-	0.400	-	-	-	-	0.400
Eurya japonica(295)	-	-	0.257	0.143	-	-	-	-	-	-	0.400
Litsaea species(420)	-	-	0.114	0.400	0.571	0.400	-	-	-	-	1.486
Machilus odoratissima(432)	-	-	-	0.400	-	-	-	-	-	-	0.400
Machilus species(435)	-	-	0.571	1.200	0.771	1.286	-	-	-	-	3.828
Macropanax oreophyllum(436)	-	-	-	-	-	0.400	-	-	-	-	0.400
Magnolia species(438)	-	-	-	-	-	-	-	-	0.800	-	0.800
Michelia doltsopa(463)	-	-	-	0.400	0.286	0.800	-	-	-	-	1.486
Michelia species(468)	-	-	0.114	-	0.286	0.400	1.029	-	-	-	1.823
Prunus species(564)	-	-	0.343	-	-	0.400	-	-	-	-	0.743
Quercus lamellosa(586)	-	-	0.571	2.800	2.286	2.000	4.114	0.629	-	1.186	14.285
Quercus lanceaefolia(587)	-	-	0.457	0.200	0.286	-	-	-	-	-	0.943
Quercus lineata(590)	-	-	-	0.400	0.314	0.486	-	-	0.943	-	2.143
Rhododendron arboreum(600)	-	-	0.343	0.600	-	-	-	-	-	-	0.943
Rhododendron species(601)	-	-	0.114	-	-	-	-	-	-	-	0.114
Tsuga dumosa(697)	-	-	0.320	0.354	0.629	2.857	1.828	2.686	5.657	7.285	21.616
Xanthophyllum andamanicum(720)	-	-	-	0.200	-	-	-	-	-	-	0.200

Contd. to Table No.7.4.

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Acer campbellii(739)	-	-	0.429	1.600	0.343	-	-	-	-	-	2.371
Echinocarpus dasycarpus(743)	-	-	0.114	-	0.257	0.371	-	-	0.686	-	1.429
Symplocos theifolia(745)	-	-	0.514	-	-	-	-	-	-	-	0.514
Ligustrum robustrum(760)	-	-	-	0.200	-	-	-	-	-	-	0.200
Actinodaphene sikkimensis(763)	-	-	-	0.600	-	0.400	-	-	-	-	1.000
Magnolia campbellii(779)	-	-	0.457	0.800	0.286	1.200	-	-	-	-	2.743
Rhododendron barbehum(782)	-	-	0.114	0.200	-	-	-	-	-	-	0.314
Rhododendron hodgronii(783)	-	-	0.114	0.400	0.286	-	-	-	-	-	0.800
Rhododendron griffithianum (784)	-	-	0.571	0.200	-	-	-	-	-	-	0.771
Prunus peddum(792)	-	-	0.114	-	-	-	-	-	-	-	0.114
Pieris villosa(796)	-	-	-	0.200	-	-	-	-	-	-	0.200
Quercus pachyphylla(798)	-	-	2.486	1.886	1.886	3.428	1.714	4.457	3.428	2.000	21.285
Others(924)	-	-	-	0.600	0.857	-	8.514	-	-	8.943	2.914
Total :	-	-	9.820	16.890	12.253	20.428	13.851	11.612	16.762	14.621	116.238

TABLE NO. 8.1.

TOTAL VOLUME (IN 000 M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : RESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Castanopsis indica(157)	-	-	-	3.390	-	3.390	5.130	-	-	-	13.110
Chukrassia vellutina(171)	-	-	-	1.995	2.850	-	-	-	-	-	4.845
Cordia myxa(195)	-	-	-	1.995	-	-	-	-	-	-	1.995
Evodia species(290)	-	-	1.140	-	-	-	-	-	-	-	1.140
Fillicium decipiens(309)	-	-	-	1.995	-	-	-	-	-	-	1.995
Schima wallichii(627)	-	-	1.140	3.990	2.850	-	-	-	-	-	7.980
Sececarpus anacardium(630)	-	-	-	-	2.850	-	-	-	-	-	2.850
Shorea robusta(633)	-	-	14.820	27.930	8.550	3.990	-	-	-	-	55.290
Toona ciliata(691)	-	-	1.140	1.995	-	-	-	-	-	-	3.135
Gynocordia odorata(772)	-	-	-	1.995	2.850	-	-	-	-	-	4.845
Spondia axillaris(786)	-	-	-	-	2.850	-	-	-	-	-	2.850
Others(924)	-	-	-	-	2.850	-	-	-	-	-	2.850
Total :	-	-	18.240	45.885	25.650	7.980	5.130	-	-	-	102.885

Contents

TABLE NO. 8.2.

TOTAL VOLUME (IN 000 M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM- II : RESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Albizzia species(046)	-	-	0.059	0.489	-	-	-	-	-	-	1.047
Alnus nepalensis(048)	-	-	0.977	0.838	-	-	-	-	-	-	1.815
Amoora species(057)	-	-	-	-	-	-	-	1.536	-	-	1.536
Castanopsis hystrix(156)	-	-	1.117	0.489	1.396	-	1.257	-	-	-	4.259
Castanopsis indica(157)	-	-	0.279	-	1.396	-	-	-	-	-	1.676
Chukrassia vellutina(171)	-	-	-	0.489	0.698	-	-	-	-	-	1.187
Cupressus kashmiriana(213)	-	-	-	-	-	-	-	-	-	2.304	2.304
Diospyros chlorozylon(231)	-	-	-	-	-	-	-	-	1.995	-	1.995
Engelhardtia spicata(270)	-	-	-	0.977	1.396	-	-	1.536	-	-	3.909
Euginea species(289)	-	-	1.117	0.489	-	-	-	-	-	-	1.605
Eurya japonica(295)	-	-	0.628	1.047	-	-	-	-	-	-	1.676
Evodia species(298)	-	-	0.279	0.489	-	-	-	-	-	-	0.768
Fillicium decipiens(309)	-	-	0.838	-	0.698	-	-	-	-	-	1.536
Juglans regia(383)	-	-	-	0.489	-	0.977	-	-	-	-	1.466
Machilus species(435)	-	-	0.279	0.489	-	-	-	-	-	-	0.768
Michelia doltsopa(463)	-	-	-	0.489	-	-	-	-	-	-	0.489
Michelia lanuginosa(464)	-	-	-	-	0.698	0.977	-	-	-	-	1.676
Nyssa javanica(497)	-	-	-	0.489	-	-	-	-	-	-	0.489
Ostodes paniculata(508)	-	-	0.559	-	-	-	-	-	-	-	0.559
Quercus lanceaefolia(587)	-	-	1.955	2.932	-	-	-	-	-	-	4.887
Quercus species(594)	-	-	0.279	0.489	-	1.955	-	1.536	-	2.304	6.562
Schima wallichii(627)	-	-	0.279	3.909	0.698	-	-	-	-	-	4.887
Terminalia myriocarpa(683)	-	-	-	-	0.698	-	-	-	-	-	0.698
Symplocos theifolia(745)	-	-	1.257	-	-	-	-	-	-	-	1.257
Cedrela febrifuga(767)	-	-	0.489	-	-	-	-	-	-	-	0.489
Machilus gammioana(778)	-	-	-	-	-	0.977	-	-	-	-	0.977
Spondia axillaris(786)	-	-	-	0.489	0.698	-	-	-	-	-	1.187
Others(924)	-	-	0.559	-	-	1.955	1.257	-	-	-	3.770
Total :	-	-	10.961	15.568	8.371	6.842	2.513	4.608	1.955	4.608	55.431

TABLE NO. 8.3.

TOTAL VOLUME (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III :RESERVED FOREST DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Acer species(018)	-	-	-	1.691	-	-	-	-	-	-	1.691
Alangium salvifolium(027)	-	-	0.483	0.845	-	-	-	-	-	-	1.329
Alcimandra catheartii(047)	-	-	-	0.845	-	-	-	-	-	-	0.845
Alnus nepalensis(048)	-	-	18.601	4.348	2.053	2.657	-	-	-	-	27.660
Beilschmiedia assamica(100)	-	-	6.281	10.146	4.831	10.146	2.174	-	-	-	33.578
Betula alnoides(105)	-	-	0.483	1.691	-	-	-	-	-	-	2.174
Castanopsis hystrix(150)	-	-	27.056	59.185	38.651	57.494	13.045	26.573	23.674	27.901	273.578
Cinnamomum species(178)	-	-	2.899	1.691	-	-	-	-	-	-	4.590
Elaeocarpus lanceafolius(258)	-	-	0.483	2.536	4.831	-	6.522	-	-	-	14.373
Endospermum chinense(268)	-	-	-	0.845	-	-	-	-	-	-	0.845
Engelhardtia spicata(270)	-	-	2.899	8.455	-	3.382	2.174	-	-	-	16.910
Euginea frondosa(285)	-	-	0.483	-	-	-	-	-	-	-	0.483
Euginea species(289)	-	-	-	0.845	-	-	-	-	-	-	0.845
Eudnymus lacerus(290)	-	-	0.483	-	1.208	-	-	-	-	-	1.691
Eurya japonica(295)	-	-	7.972	2.416	-	1.208	-	-	-	-	11.595
Ficus species(308)	-	-	0.966	-	-	-	-	-	-	-	0.966
Juglans regia(383)	-	-	0.966	1.691	1.208	-	-	-	-	-	3.865
Litsaea species(420)	-	-	1.933	3.382	2.416	1.691	-	-	-	-	9.421
Macaranga denticulata(425)	-	-	2.899	6.764	1.208	-	-	-	-	-	10.871
Macaranga peltata(427)	-	-	-	0.845	-	-	-	-	-	-	0.845
Machilus odoratissima(432)	-	-	1.449	2.536	-	3.382	-	2.657	-	3.986	14.011
Machilus species(435)	-	-	10.629	16.064	4.348	12.682	5.315	-	-	-	49.039
Meliosma species(457)	-	-	0.483	-	-	1.691	-	-	-	-	2.174
Michelia doltsopa(463)	-	-	1.449	2.536	1.208	3.382	-	-	3.382	-	11.958
Michelia lanuginosa(464)	-	-	-	0.845	1.208	-	-	-	-	-	2.053
Michelia species(468)	-	-	-	1.691	2.416	-	4.348	-	-	-	8.455
Nyssa javanica(497)	-	-	0.483	2.536	2.416	5.073	2.174	-	3.382	-	16.064
Prunus species(564)	-	-	2.899	9.300	1.208	1.691	-	-	-	-	15.098
Quercus lanceaefolia(587)	-	-	0.483	1.691	1.208	1.691	-	-	-	-	5.073
Quercus species(594)	-	-	17.393	40.584	28.988	35.511	34.786	15.944	50.730	59.789	283.724
Rhododendron arboreum(600)	-	-	2.416	2.536	7.247	-	-	-	3.382	-	15.581

Contd. to Table No.8.3.

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Rhododendron species(601)	-	-	-	0.845	-	-	-	-	-	3.986	4.831
Rhus javanica(602)	-	-	-	-	-	-	-	-	-	3.986	3.986
Rhus species(604)	-	-	1.449	0.845	-	-	-	-	-	-	2.295
Symingtoria populnea(661)	-	-	1.449	1.449	-	-	-	-	-	-	2.899
Syzygium species(668)	-	-	0.483	-	-	-	-	-	-	-	0.483
Acer campbellii(739)	-	-	3.261	6.764	4.348	4.107	15.098	3.744	-	-	37.323
Echinocarpus dasycarpus(743)	-	-	-	2.174	2.174	3.140	1.993	6.885	8.697	3.744	28.747
Symplocos theifolia(745)	-	-	7.972	6.643	-	-	-	-	-	-	14.615
Symplocos species(746)	-	-	-	0.845	-	-	-	-	-	-	0.845
Ligustrum robustrum(760)	-	-	-	-	1.208	-	-	-	-	-	1.208
Actinodaphene sikkimensis(763)	-	-	0.483	1.691	1.208	5.073	-	2.657	-	-	11.112
Betula cyidrostachys(765)	-	-	-	0.845	-	-	-	-	-	-	0.845
Machilus gammioana(778)	-	-	-	-	-	1.691	-	-	-	3.986	5.677
Magnolia pterocarpa(780)	-	-	-	-	-	-	-	-	-	3.986	3.986
Rhododendron hodgronii(783)	-	-	1.449	0.845	1.208	-	-	-	-	-	3.503
Viburnum species(789)	-	-	-	0.845	-	-	-	-	-	-	0.845
Prunus peddum(792)	-	-	0.483	-	-	-	-	-	-	-	0.483
Acer oblongum(793)	-	-	0.966	-	-	-	-	-	-	-	0.966
Acer laevigatum(794)	-	-	0.483	0.845	-	-	-	-	-	-	1.329
Pyrularia edulis(795)	-	-	0.483	-	-	-	-	-	-	-	0.483
Pieris villosa(796)	-	-	0.483	0.845	-	1.691	2.174	-	-	-	5.194
Sarcosperma arboreum(797)	-	-	0.483	-	-	-	-	-	-	-	0.483
Machilus edulis(799)	-	-	-	0.845	2.416	1.691	-	-	-	-	4.952
Others(924)	-	-	9.663	10.991	10.871	6.764	4.348	2.657	6.764	-	52.058
Total :	-	-	142.164	225.868	130.085	165.838	94.092	61.117	100.010	111.364	1030.538

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TABLE NO. 8.4

TOTAL VOLUME (IN 000 M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-IV : RESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-	20-	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Abies spectabilis(003)	-	-	12.385	24.579	11.794	-	125.671	45.987	126.662	86.919	434.000
Alnus nepalensis(048)	-	-	6.938	-	-	-	-	-	-	-	6.938
Beilschmiedia assamica(100)	-	-	7.929	6.938	9.911	27.751	-	-	-	-	52.528
Betula alnoides(105)	-	-	-	6.938	-	-	-	-	-	-	6.938
Betula utilis(106)	-	-	7.929	-	-	-	-	-	-	-	7.929
Castanopsis hystrix(156)	-	-	23.786	55.501	59.466	138.753	17.840	87.216	55.501	-	438.063
Cupressus kashmiriana(213)	-	-	-	6.938	-	-	-	-	-	-	6.938
Ehretia caevis(256)	-	-	-	-	9.911	-	-	-	-	-	9.911
Elaeocarpus lanceaefolius(258)	-	-	-	6.938	9.911	27.751	17.840	-	-	-	62.439
Euginea formosa(286)	-	-	-	-	-	13.875	-	-	-	-	13.875
Eurya japonica(295)	-	-	-	8.920	4.955	-	-	-	-	-	13.875
Litsaea species(420)	-	-	3.964	13.875	19.822	13.875	-	-	-	-	51.537
Machilus odoratissima(432)	-	-	-	13.875	-	-	-	-	-	-	13.875
Machilus species(435)	-	-	19.822	41.626	26.760	44.599	-	-	-	-	132.807
Macropanax oreophyllum(436)	-	-	-	-	-	13.875	-	-	-	-	13.875
Magnolia species(438)	-	-	-	-	-	-	-	-	27.751	-	27.751
Michelia doltsopa(463)	-	-	-	13.875	9.911	27.751	-	-	-	-	51.537
Michelia species(468)	-	-	3.964	-	9.911	13.875	35.679	-	-	-	63.430
Prunus species(564)	-	-	11.893	-	-	13.875	-	-	-	-	25.768
Quercus lamellosa(586)	-	-	19.822	97.127	79.287	69.377	142.717	21.804	-	65.412	495.547
Quercus lanceaefolia(587)	-	-	15.857	6.938	9.911	-	-	-	-	-	32.706
Quercus lineata(590)	-	-	-	13.875	10.902	16.849	-	-	32.706	-	74.332
Rhododendron arboreum(600)	-	-	11.893	20.813	-	-	-	-	-	-	32.705
Rhododendron species(601)	-	-	3.964	-	-	-	-	-	-	-	3.964
Tsuga dumosa(697)	-	-	11.100	12.290	21.804	99.109	63.430	93.163	196.236	252.729	749.861
Zanthophyllum andamanicum(720)	-	-	-	6.938	-	-	-	-	-	-	6.938
Acer campbellii(739)	-	-	14.866	55.501	11.893	-	-	-	-	-	82.261

Contd. to Table No.8.4

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Echinocarpus dasycarpus(743)	-	-	3.864	-	8.920	12.884	-	-	23.786	-	49.555
Symplocos theifolia(745)	-	-	17.840	-	-	-	-	-	-	-	17.840
Ligustrum robustrum(760)	-	-	-	6.938	-	-	-	-	-	-	6.938
Ac tinodaphene sikkimensis(763)	-	-	-	20.813	-	13.875	-	-	-	-	34.688
Magnolia campbellii(Ø779)	-	-	15.857	27.751	9.911	41.626	-	-	-	-	95.145
Rhododendron barbehum(782)	-	-	3.964	6.938	-	-	-	-	-	-	10.902
Rhododendron hodgronii(783)	-	-	3.964	13.875	9.911	-	-	-	-	-	27.751
Rhododendron griffithianum(784)	-	-	19.822	6.938	-	-	-	-	-	-	26.760
Prunus peddum(792)	-	-	3.964	-	-	-	-	-	-	-	3.964
Pieris villosa(796)	-	-	-	6.938	-	-	-	-	-	-	6.938
Quercus pachyphylla(798)	-	-	86.225	65.412	65.412	118.931	59.466	154.611	118.931	69.377	738.365
Others(924)	-	-	-	20.813	29.733	-	17.840	-	-	32.705	101.090
Total :	-	-	340.638	585.934	425.080	708.632	480.482	402.781	581.574	507.143	4032.264

TABLE NO. 9.1

VOLUME PER HA. (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : UNRESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Albizzia species(046)	-	-	2.400	1.400	2.000	-	-	-	-	-	5.800
Bombax ceiba(109)	-	-	-	-	4.000	-	-	-	-	-	4.000
Canarium species(139)	-	-	-	2.800	4.000	-	-	-	-	-	6.800
Castanopsis hystrix(156)	-	-	-	1.400	-	-	-	-	-	-	1.400
Duabanga grandiflora(251)	-	-	-	5.600	6.000	5.600	-	-	-	-	17.200
Erythrina variogata(279)	-	-	0.800	-	-	-	-	-	-	-	0.800
Fillicium decipiens(309)	-	-	1.600	-	-	-	-	-	-	-	1.600
Schima wallichii(627)	-	-	3.200	2.800	-	-	-	-	-	-	6.000
Shorea robusta(633)	-	-	-	1.400	2.000	-	-	-	-	-	3.400
Terminalia myriocarpa(603)	-	-	-	1.400	4.000	2.800	-	-	-	-	8.200
Dysoxylon species(769)	-	-	1.600	4.200	-	-	-	-	-	-	5.800
Gynocordia odorata(772)	-	-	-	1.400	-	-	-	-	-	-	1.400
Total:	-	-	9.600	22.400	22.000	8.400	-	-	-	-	62.800

TABLE NO. 9.2.

VOLUME PER HA. (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - MIXED UNRESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.) 10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acer species(018)	-	-	0.050	0.088	-	-	-	-	-	-	0.138
Acrocarpus fraxinifolius(019)	-	-	-	-	-	0.175	-	-	-	-	0.175
Albizzia chinensis(039)	-	-	-	0.088	-	-	-	-	-	-	0.088
Albizzia procera(045)	-	-	0.200	-	-	-	-	-	-	-	0.200
Albizzia species(046)	-	-	0.350	0.263	0.250	-	-	-	-	-	0.863
Alnus nepalensis(048)	-	-	4.987	2.850	1.487	0.275	-	-	-	-	9.600
Amoora species(057)	-	-	-	0.175	-	-	-	-	-	-	0.175
Beilschmiedia assamica(100)	-	-	-	0.175	0.125	-	-	-	-	-	0.300
Betula alnoides(105)	-	-	0.050	-	-	0.175	-	-	-	-	0.225
Bischofia javanica(107)	-	-	0.100	0.175	0.125	-	-	-	-	-	0.400
Bombax ceiba(109)	-	-	0.050	0.088	-	0.175	-	-	-	-	0.313
Canarium species(139)	-	-	-	-	0.125	-	-	-	-	-	0.125
Castanopsis hystrix(156)	-	-	0.650	0.963	1.125	0.700	-	0.275	-	-	3.712
Castanopsis indica(157)	-	-	0.150	0.175	0.125	-	-	-	-	-	0.450
Cordia myxa(195)	-	-	-	-	0.125	-	-	-	-	-	0.125
Diploknema butryacea(241)	-	-	-	0.088	-	-	-	-	-	-	0.088
Elaeocarpus lanceaefolius(258)	-	-	-	0.088	0.125	-	-	-	-	-	0.213
Engelhardtia spicata(270)	-	-	0.250	0.525	0.125	-	0.225	-	-	-	1.125
Eurya japonica(295)	-	-	0.037	-	-	-	-	-	-	-	0.037
Evodia species(298)	-	-	0.050	-	-	-	-	-	-	-	0.050
Fillicium decipiens(309)	-	-	0.050	0.175	-	-	-	-	-	-	0.225
Gymnosporia ruba(340)	-	-	-	0.438	-	-	-	-	-	-	0.438
Hymenodictyon excelsum(370)	-	-	0.050	-	-	-	-	-	-	-	0.050
Macaranga denticulata(425)	-	-	0.200	0.088	-	-	-	-	-	-	0.287
Macaranga peltata(427)	-	-	-	0.175	-	-	-	-	-	-	0.175
Machilus species(435)	-	-	0.050	0.088	-	-	-	-	-	-	0.138
Michelia lanuginosa(464)	-	-	-	-	-	-	0.225	-	-	-	0.225
Moringa species(480)	-	-	-	-	-	-	-	-	-	0.825	0.825

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Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Ostodes paniculata(508)	-	-	0.050	-	-	-	-	-	-	-	0.050
Quercus lanceaefolia(587)	-	-	0.050	0.175	0.250	0.350	-	-	-	-	0.825
Quercus species(594)	-	-	0.150	0.438	0.375	0.175	0.225	0.275	-	-	1.638
Rhus species(604)	-	-	0.150	-	-	-	-	-	-	-	0.150
Saurinia nepaulensis(624)	-	-	0.050	0.088	0.125	-	-	-	-	-	0.263
Schima wallichii(627)	-	-	1.050	1.138	0.375	-	0.450	0.275	-	-	3.287
Syzygium cuminii(665)	-	-	0.100	-	-	-	-	-	-	-	0.100
Terminalia c hebula(679)	-	-	0.050	-	-	-	-	-	-	-	0.050
Toona ciliata(691)	-	-	-	0.350	0.125	-	-	-	-	-	0.475
Gynocordia odorata(772)	-	-	-	-	0.125	-	-	-	-	-	0.125
Magnolia pterocarpa(780)	-	-	0.050	0.088	-	-	-	-	-	-	0.138
Spondia axillaris(786)	-	-	-	0.175	0.125	0.175	-	-	-	-	0.475
Viburnum species(789)	-	-	-	-	0.125	-	-	-	-	-	0.125
Brassaiopsis metis(791)	-	-	0.050	-	-	-	-	-	-	-	0.050
Others(924)	-	-	0.150	1.051	1.500	0.700	0.225	-	-	-	3.625
Total:	-	-	9.175	10.200	6.863	2.900	1.350	0.825	-	0.825	32.137

TABLE NO. 9.3.

VOLUME PER HA. (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-III :UNRESERVED FOREST

DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Alnus nepalensis(048)	-	-	4.390	1.411	1.666	-	-	-	-	-	7.468
Amoora species(057)	-	-	-	0.137	-	-	-	-	-	-	0.137
Beilschmiedia assamica(100)	-	-	0.078	0.137	0.196	-	-	-	-	-	0.412
Betula alnoides(105)	-	-	0.078	0.137	-	-	-	-	-	-	0.216
Castanopsis hystrix(156)	-	-	0.947	2.607	1.568	1.372	1.058	0.862	1.098	-	9.506
Cinnamomum species(178)	-	-	0.078	-	-	-	-	-	-	-	0.078
Cordia companilata(190)	-	-	-	-	-	0.274	-	-	-	-	0.274
Elaeocarpus lanceaefolius(258)	-	-	-	0.274	0.196	0.274	-	-	-	-	0.745
Engelhardtia spicata(270)	-	-	0.470	0.137	-	-	-	-	-	-	0.608
Eurya japonica(295)	-	-	0.470	0.098	-	-	-	-	-	-	0.568
Ficus species(308)	-	-	-	-	0.196	-	-	-	-	-	0.196
Juglans regia(383)	-	-	-	-	-	-	0.353	-	-	-	0.353
Litsaea species(420)	-	-	0.078	0.137	0.196	-	-	-	-	-	0.412
Macaranga denticulata(425)	-	-	0.157	-	-	-	-	-	-	-	0.157
Machilus odoratissima(432)	-	-	0.157	0.137	-	0.549	-	0.431	-	-	1.274
Machilus species(435)	-	-	0.314	0.549	-	-	-	-	-	-	0.862
Meliosma species(457)	-	-	0.078	-	-	-	-	-	-	-	0.078
Nyssa javanica(497)	-	-	0.157	0.274	-	-	-	-	-	-	0.431
Ostodes paniculata(508)	-	-	0.078	-	-	-	-	-	-	-	0.078
Prunus species(564)	-	-	-	0.137	0.392	-	-	-	-	-	0.529
Quercus lanceaefolia(587)	-	-	0.078	-	-	-	-	-	-	-	0.078
Quercus species(594)	-	-	0.549	0.823	1.176	-	1.764	1.294	1.098	3.234	9.937
Salix tetrasperma(611)	-	-	-	-	-	0.274	-	-	-	-	0.274
Saurinia nepaulensis(624)	-	-	-	0.412	-	-	-	-	-	-	0.412
Symingtoria populnea(661)	-	-	0.157	0.118	0.157	-	-	-	-	-	0.431
Acer campbellii(739)	-	-	0.059	0.549	-	-	-	-	-	-	0.608
Symplocos theifolia(745)	-	-	0.235	0.216	-	-	-	-	-	-	0.451
Meliosma pinnata(740)	-	-	-	0.137	-	-	-	-	-	-	0.137
Acer laevigatum(794)	-	-	-	0.137	-	-	-	-	-	-	0.137
Others(924)	-	-	0.313	0.412	0.392	-	-	-	-	-	1.117
Total:	-	-	8.918	8.977	6.135	2.744	3.175	2.587	2.195	3.234	37.965

TABLE NO. 9.4.

VOLUME PER HA. (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-IV: UNRESERVED FOREST DISTRICT: WEST SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Tsuga dumosa(697)	-	-	2.800	-	-	-	-	-	-	-	2.800
Total:	-	-	2.800	-	-	-	-	-	-	-	2.800

TABLE NO. 10.2

VOLUME PER HA. (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : RESERVED FOREST

DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia procera(045)	-	-	0.0444	0.778	-	-	-	-	-	-	1.222
Albizzia species(046)	-	-	0.444	0.778	-	-	-	-	-	-	1.222
Alnus nepalensis(048)	-	-	7.000	10.667	3.778	2.444	-	-	-	-	23.889
Castanopsis indica(157)	-	-	-	2.333	-	-	-	-	-	-	2.333
Cedrela toona(162)	-	-	0.444	-	3.333	-	-	-	-	-	3.778
Engelherdtia spicata(270)	-	-	0.444	1.556	-	-	-	-	-	-	2.000
Juglans regia(383)	-	-	0.444	0.778	-	-	-	-	-	-	1.222
Macaranga peltata(427)	-	-	0.444	-	-	-	-	-	-	-	0.444
Machilus species(435)	-	-	0.444	2.333	1.000	1.667	-	-	-	-	5.444
Morus laevigata(482)	-	-	0.444	-	-	-	-	-	-	-	0.444
Schima wallichii(627)	-	-	-	-	-	1.556	-	-	-	-	1.556
Cedrela febrifuga(267)	-	-	0.889	0.778	-	-	-	-	-	-	1.667
Brassaiopsis metis(791)	-	-	0.889	-	-	-	-	-	-	-	0.889
Acer laevigatum(794)	-	-	0.444	-	-	-	-	-	-	-	0.444
Sarcosperma arboreum(797)	-	-	0.444	-	-	-	-	-	-	-	0.444
Others(924)	-	-	-	0.778	-	-	-	-	-	-	0.778
Total:	-	-	13.227	20.778	8.111	5.667	-	-	-	-	47.778

TABLE NO. 10.3

VOLUME PER HA.(IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-III : RESERVED FOREST DISTRICT: NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										Total
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	
Castanopsis hystrix(156)	-	-	2.000	1.167	3.333	-	-	-	4.667	5.500	16.667
Elaeocarpus lanceaefolius(258)	-	-	0.667	1.167	-	-	-	-	-	-	1.833
Engelhardtia spicata(270)	-	-	0.667	-	-	-	-	-	-	-	0.667
Eurya japonica(295)	-	-	1.000	-	1.167	-	-	-	-	-	2.167
Juglans regia(383)	-	-	0.667	-	-	-	-	-	-	-	0.667
Machilus species(435)	-	-	0.667	1.167	1.500	-	-	-	-	-	3.333
Nyssa javanica(497)	-	-	0.667	-	-	-	-	3.667	-	-	4.333
Prunus species(564)	-	-	0.667	2.333	1.667	-	-	-	-	-	4.667
Quercus species(594)	-	-	-	-	1.667	-	3.000	-	4.667	5.500	14.834
Rhus species(604)	-	-	-	1.167	-	-	-	-	-	-	1.167
Schima wallichii(627)	-	-	-	-	1.667	-	-	-	-	1.667	
Acer campbellii(739)	-	-	-	1.167	-	2.833	-	-	-	-	4.000
Echinocarpus dasycarpus(743)	-	-	-	-	-	-	-	-	-	5.167	5.167
Cedrela febrifuga(767)	-	-	-	3.500	1.667	-	-	-	-	-	5.167
Brassaiopsis metis(791)	-	-	0.667	-	-	-	-	-	-	-	0.667
Others(924)	-	-	1.334	2.333	1.667	-	-	-	-	-	5.334
Total:	-	-	9.000	14.000	14.334	2.833	3.000	3.667	9.334	16.167	72.335

Table No. 10.4

VOLUME PER HA. (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : RESERVED FOREST

DISTRICT - NORTH SIKKIM.

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Abies densa (001)	-	-	0.125	2.170	3.570	5.940	4.755	6.960	-	17.540	41.060
Alnus nepalensis (048)	-	-	1.750	-	0.850	-	-	-	-	-	2.600
Beilschmiedia assamica(100)	-	-	-	0.700	0.500	-	-	-	-	-	1.200
Betula atilis (106)	-	-	1.000	0.700	1.000	0.700	-	-	-	-	3.400
Castanopsis hystrix(156)	-	-	0.600	0.350	-	-	-	-	-	-	0.950
Cinnamomum species (178)	-	-	-	-	0.500	0.700	-	-	-	-	1.200
Elaeocarpus lanceaefolius(258)	-	-	0.200	-	-	-	-	-	-		0.200
Engelhardtia spicata (270)	-	-	-	0.700	-	-	-	-	-	-	0.700
Eurya japonica (295)	-	-	0.150	-	-	-	-	-	-	-	0.150
Juglans regia (383)	-	-	-	0.350	0.500	-	-	-	-	-	0.850
Litsaea species(420)	-	-	0.200	0.350	-	-	-	-	-	-	0.550
Machilus species (435)	-	-	0.400	1.750	-	0.750	-	-	-	-	2.900
Melia composita(455)	-	-	0.200	-	-	-	-	-	-	-	0.200
Michelia doltsopa(463)	-	-	-	0.350	0.500	-	-	-	-	-	0.850
Michelia languincsa(464)	-	-	0.200	-	-	-	-	-	-	-	0.200
Ostodes paniculta(508)	-	-	0.200	-	-	-	-	-	-	-	0.200
Picea smithiana(531)	-	-	-	0.550	0.950	1.200	4.400	3.150	-	-	10.250
Populus ciliata(549)	-	-	-	-	1.000	0.700	-	-	-	-	1.700
Prunus species(564)	-	-	-	0.350	-	-	-	-	-	1.650	2.000
Quercus lamellosa(586)	-	-	-	0.350	1.500	0.700	-	2.200	-	-	4.750
Quercus lineata(590)	-	-	0.200	0.350	1.650	3.400	-	-	-	-	5.600
Quercus species(594)	-	-	-	0.350	1.000	-	-	-	-	-	1.350
Rhododendron arboreum(600)	-	-	0.400	-	-	-	-	-	-	-	0.400
Taxus baccata (672)	-	-	-	-	-	0.700	0.900	-	-	-	1.600
Tsuga dumosa(697)	-	-	-	2.790	4.400	5.000	8.000	7.050	-	-	27.240
Acer campbellii (739)	-	-	0.300	1.400	7.200	1.700	3.750	-	-	-	14.350
Cedrela febrifuga (767)	-	-	-	0.350	-	-	-	-	-	-	0.350
Quercus pachyphylla(798)	-	-	0.300	2.100	1.650	1.500	1.000	1.300	-	-	7.850
O t h e r s (924)	-	-	0.200	0.350	-	-	-	-	-	-	0.550
T o t a l :	-	-	6.425	16.360	26.770	22.990	22.805	20.660	-	19.190	135.200

Table No. 11.2.

STRATUM - II : RESERVED FOREST TOTAL VOLUME (IN '000 M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

DISTRICT-NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia procera (045)	-	-	0.748	1.308	-	-	-	-	-	-	2.056
Albizzia species (046)	-	-	0.746	1.308	-	-	-	-	-	-	2.054
Alnus nepalensis (043)	-	-	11.767	17.931	6.351	4.108	-	-	-	-	40.157
Castanopsis indica (158)	-	-	3.921	-	-	-	-	-	-	-	3.921
Cedrela toona (162)	-	-	0.746	-	5.604	-	-	-	-	-	6.350
Engelhardtia spicata (270)	-	-	0.746	2.615	-	-	-	-	-	-	3.361
Juglans regia (383)	-	-	0.746	1.308	-	-	-	-	-	-	2.054
Macaranga peltata (427)	-	-	0.746	-	-	-	-	-	-	-	0.746
Machilus species (435)	-	-	0.746	3.921	1.681	2.802	-	-	-	-	9.150
Morus laevigata (482)	-	-	0.746	-	-	-	-	-	-	-	0.746
Schima wallichii (627)	-	-	-	-	-	2.616	-	-	-	-	2.616
Cedrela febrifuga (767)	-	-	1.494	1.308	-	-	-	-	-	-	2.802
Erassaiopsis metis (791)	-	-	1.494	-	-	-	-	-	-	-	1.494
Acer laevigatum (794)	-	-	0.746	-	-	-	-	-	-	-	0.746
Sarcosperma arboreum (797)	-	-	0.746	-	-	-	-	-	-	-	0.746
O t h e r s (924)	-	-	-	1.308	-	-	-	-	-	-	1.308
T o t a l :	-	-	26.138	31.007	13.636	9.526	-	-	-	-	80.307

Table No. 11.3.

STRATUM - III : RESERVED FOREST — TOTAL VOLUME (IN '000 M3) BY SPECIES AND DIAMETER CLASSES (IN CM.) — DISTRICT - NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100 +	Total
Castanopsis hystrix (156)	-	-	32.914	19.205	54.851	-	-	-	76.804	90.513	274.288
Elaeocarpus lanceaefolius(258)	-	-	10.976	19.205	-	-	-	-	-	-	30.165
Engelhardtia spicata (270)	-	-	10.976	-	-	-	-	-	-	-	10.976
Eurya japonica (295)	-	-	16.457	-	19.205	-	-	-	-	-	35.662
Juglans regia (383)	-	-	10.976	-	-	-	-	-	-	-	10.976
Machilus species (435)	-	-	10.976	19.205	24.685	-	-	-	-	-	54.851
Nyssa javanica (497)	-	-	10.976	-	-	-	-	60.347	-	-	71.308
Prunus species (564)	-	-	10.976	38.394	27.433	-	-	-	-	-	76.804
Quercus species (594)	-	-	-	-	27.433	-	49.371	-	76.804	90.513	244.123
Rhus species (604)	-	-	-	19.205	-	-	-	-	-	-	19.205
Schima wallichii (627)	-	-	-	-	27.433	-	-	-	-	-	27.433
Acer campbellii(739)	-	-	-	19.205	-	46.622	-	-	-	-	65.828
Echinocarpus dasycarpus(743)	-	-	-	-	-	-	-	-	-	85.167	85.167
Cedrela febrifuga(767)	-	-	-	49.371	27.433	-	-	-	-	-	85.033
Brassaiopsis metis (791)	-	-	10.976	-	-	-	-	-	-	-	10.976
O t h e r s (924)	-	-	21.952	38.394	27.433	-	-	-	-	-	87.780
T o t a l :	-	-	148.113	230.398	235.845	46.622	49.371	60.347	153.609	266.060	1190.417

Table No. 11.4.

TOTAL VOLUME (IN '000 M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : RESERVED FOREST

DISTRICT-NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100 +	Total
Abies spectabilis (003)	-	-	8.639	149.979	246.741	410.543	328.643	481.042	-	1212.290	2837.864
Alnus nepalensis (048)	-	-	120.951	-	58.784	-	-	-	-	-	179.699
Beilschmiedia assamica (100)	-	-	-	48.381	34.558	-	-	-	-	-	82.938
Betula utilis (106)	-	-	69.115	48.381	69.115	48.381	-	-	-	-	234.991
Castanopsis hystrix (156)	-	-	41.469	24.190	-	-	-	-	-	-	65.659
Cinnamomum species (178)	-	-	-	-	34.558	48.381	-	-	-	-	82.938
Elaeocarpus lanceaefolius (258)	-	-	-	13.823	-	-	-	-	-	-	13.823
Engelhardtia spicata (270)	-	-	-	48.381	-	-	-	-	-	-	48.381
Eurya japonica (295)	-	-	10.367	-	-	-	-	-	-	-	10.367
Juglans regia (383)	-	-	-	24.190	34.558	-	-	-	-	-	58.748
Litsaea species (420)	-	-	13.823	24.190	-	-	-	-	-	-	38.013
Machilus species (435)	-	-	27.646	120.951	-	51.836	-	-	-	-	200.434
Melia composita (455)	-	-	13.823	-	-	-	-	-	-	-	13.823
Michelia doltsopa (463)	-	-	-	24.190	34.558	-	-	-	-	-	58.748
Michelia languinosa (464)	-	-	13.823	-	-	-	-	-	-	-	13.823
Ostodes paniculata (508)	-	-	13.823	-	-	-	-	-	-	-	13.823
Picea smithiana (531)	-	-	-	38.013	65.659	82.938	304.106	217.712	-	-	708.429
Populus cilata (549)	-	-	-	-	69.115	48.381	-	-	-	-	117.496
Prunus species (564)	-	-	-	24.190	-	-	-	-	-	114.040	138.230
Quercus lamellosa (586)	-	-	-	24.190	103.673	48.381	-	152.053	-	-	328.296
Quercus lineata (590)	-	-	13.823	24.190	114.040	234.991	-	-	-	-	387.044
Quercus species (594)	-	-	-	24.190	69.115	-	-	-	-	-	93.305
Rhododendron arboreum (600)	-	-	27.646	-	-	-	-	-	-	-	27.646
Taxus baccata (672)	-	-	-	-	-	48.381	62.204	-	-	-	110.584
Tsuga dumosa (697)	-	-	-	192.831	304.106	345.575	552.920	487.261	-	-	1182.693
Acer campbellii (739)	-	-	20.735	96.761	497.628	117.496	259.181	-	-	-	991.800
Cedrela febrifuga (757)	-	-	-	24.190	-	-	-	-	-	-	24.190
Quercus pachyphylla (798)	-	-	20.735	145.142	114.040	103.673	69.115	89.850	-	-	542.553
Others (924)	-	-	13.823	24.190	-	-	-	-	-	-	38.013
Total :	-	-	444.064	1130.720	1850.212	1588.957	1576.169	1427.918	-	1326.310	9344.350

Table No. 12.1.

VOLUME PER HECTARE (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : UNRESERVED FOREST DISTRICT-NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100 +	Total
Albizzia procera (045)	-	-	4.000	-	-	-	-	-	-	-	4.000
Alnus nepalensis (048)	-	-	14.000	24.000	-	-	-	-	-	-	38.000
Engelhardtia spicata(270)	-	-	4.000	-	-	-	-	-	-	-	4.000
Macaranga denticulata(425)	-	-	4.000	-	-	-	-	-	-	-	4.000
Schima wallichii (627)	-	-	-	7.000	-	-	-	-	-	-	7.000
O t h e r s (924)	-	-	4.000	-	-	-	-	-	-	-	4.000
T o t a l :	-	-	30.000	31.000	-	-	-	-	-	-	61.000

Table No. 12.2

VOLUME PER HA. (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-II : UNRESERVED FOREST DISTRICT - NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia species (046)	-	-	0.500	-	-	-	-	-	-	-	0.500
Alnus nepalensis (048)	-	-	18.375	9.000	-	-	-	-	-	-	27.375
Bischofia javanica (107)	-	-	-	-	1.250	-	-	-	-	-	1.250
Engelhardtia spicata (270)	-	-	0.500	4.375	1.250	-	-	-	-	-	6.125
Eurya japonica (295)	-	-	0.375	-	-	-	-	-	-	-	0.375
Evodia species (298)	-	-	1.000	0.875	-	-	-	-	-	-	1.875
Juglans regia (388)	-	-	-	1.750	-	-	-	-	-	-	1.750
Macaranga indica (426)	-	-	1.500	0.875	-	-	-	-	-	-	2.375
Macaranga peltata (427)	-	-	0.500	-	-	-	-	-	-	-	0.500
Machilus species (435)	-	-	0.500	-	-	-	-	-	-	-	0.500
Ostodes paniculata (508)	-	-	0.500	0.875	-	-	-	-	-	-	1.375
Schima wallichii (627)	-	-	2.500	1.750	-	-	-	-	-	-	4.250
Hovenia duldts (774)	-	-	-	0.875	-	-	-	2.750	-	-	3.625
Viburnum species (789)	-	-	1.000	0.875	-	-	-	-	-	-	1.875
Brassaiopsis metis (791)	-	-	1.000	-	-	-	-	-	-	-	1.000
T o t a l	-	-	28.250	21.250	2.500	-	-	2.750	-	-	54.750

Table No. 12.3

STRATUM - III : UNRESERVED FOREST

VOLUME PER HA. (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

DISTRICT- NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100 +	Total
Castanopsis hystrix (156)	-	-	-	-	-	-	-	-	9.333	11.000	20.333
Elaeocarpus lanceaefolius (258)	-	-	-	2.333	-	-	-	-	-	-	2.333
Juglans regia (383)	-	-	1.333	-	3.333	-	-	-	-	-	4.667
Prunus species(564)	-	-	-	2.333	3.333	-	-	-	-	-	5.667
Quercus species (59-)	-	-	-	-	3.333	-	6.000	-	-	-	9.333
Acer campbellii (739)	-	-	-	2.333	-	-	-	-	-	-	2.333
Cedrela febrifuga (767)	-	-	1.333	2.333	-	-	-	-	-	-	3.667
O th e r s (924)	-	-	1.333	-	-	-	-	-	-	-	1.333
T o t a l :	-	-	4.000	9.333	10.000	-	6.000	-	9.333	11.000	49.666

Table No. 12.4

VOLUME PER HA. (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : UNRESERVED FOREST.

DISTRICT - NORTH SIKKIM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100 +	Total
Macaranga peltata (427)	-	-	-	2.333	-	-	-	-	-	-	2.333
Machilus species (435)	-	-	-	-	3.000	-	-	-	-	-	3.000
O t h e r s (924)	-	-	1.333	-	-	-	-	-	-	-	1.333
T o t a l :	-	-	1.333	2.333	3.000	-	-	-	-	-	6.667

Table No. 1.1.2.2.

Stems per hectare by species and diameter classes (in cm.)

STRATUM - II : UNRESERVED FOREST DISTRICT : WEST SIKKIM RANGE : SOMBARE

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100 +	Total
Alnus nepalensis (048)	116.655	13.332	-	-	-	-	-	-	-	-	129.987
Macaranga peltata (429)	9.999	-	-	-	-	-	-	-	-	-	9.999
Moringa species (480)	-	-	-	-	-	-			-	6.666	6.666
T o t a l :	126.654	13.332	-	-	-	-	-	-	-	6.666	146.652

Table No. 1.1.3.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : RESERVED FOREST DISTRICT : WEST SIKKIM RANGE : SOMBARE

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acer species (018)	1.666	-	-	1.666	-	-	-	-	-	-	3.332
Alnus nepalensis(048)	8.330	3.332	-	-	1.666	-	-	-	-	-	13.328
Castanopsis hystrix(156)	-	4.998	4.998	6.664	-	-	-	-	-	-	16.660
Engelhardtia spicata(270)	-	-	-	1.666	-	1.666	-	-	-	-	3.332
Eurya japonica(295)	1.666	1.666	-	-	-	-	-	-	-	-	3.332
Macaranga denticulata(425)	-	1.666	-	11.662	1.665	-	-	-	-	-	14.994
Machilus species(435)	-	-	1.666	1.666	-	-	-	-	-	-	3.332
Quercus species (594)	14.994	29.988	6.664	6.664	4.998	1.666	1.666	3.332	1.666	.	77.638
Rhododendron arboreum(600)	16.660	-	8.330	4.998	9.995	.	-	-	1.666	-	41.650
Tsuga dumosa(697)	4.998	1.666	-	-	-	-	-	-	-	-	6.664
Acer campbellii(739)	4.998	1.666	6.998	1.666	-	-	-	-	-	-	13.328
Symplocos theifolia(745)	11.662	6.664	-	-	-	-	-	-	-	-	18.326
Actinodaphene sikkimensis(763)	-	1.666	-	-	-	-	-	-	-	-	1.666
Magnolia compbelli(779)	1.666	1.666	-	-	-	-	-	-	-	-	3.332
Rhododendron griffithianum(784)	6.664	-	-	-	-	-	-	-	-	-	6.664
Viburnum species(789)	9.996	-	-	-	-	-	-	-	-	-	9.996
Prunus peddum(792)	-	-	1.666	-	-	-	-	-	-	-	1.666
Pieris villosa(796)	3.332	1.666	-	-	-	-	-	-	-	-	4.998
O t h e r s (924)	9.996	-	-	1.666	-	-	-	-	-	-	11.662
	96.628	56.644	28.322	38.318	18.326	3.332	1.666	3.332	3.332	-	249.900

Table No. 1.1.3.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : UNRESERVED FOREST DISTRICT : WEST SIKKIM RANGE : SOMBARE

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alnus nepalensis (048)	2.000	6.000	10.000	6.000	-	-	-	-	-	-	24.000
Amoora species (057)	-	-	-	2.000	-	-	-	-	-	-	2.000
Castanopsis hystrix(156)	2.000	44.000	2.000	-	-	-	-	-	-	-	48.000
Elaeocarpus lanceaefolius(258)	-	-	-	-	2.000	-	-	-	-	-	2.000
Endospermum chivense(268)	-	2.000	-	-	-	-	-	-	-	-	2.000
Engelhardtia spicata (270)	4.000	2.000	-	-	-	-	-	-	-	-	6.000
Eurya japonica(295)	8.000	-	-	-	-	-	-	-	-	-	8.000
Machilus species(435)	2.000	14.000	4.000	-	-	-	-	-	-	-	20.000
Nyssa javanica(497)	14.000	12.000	-	-	-	-	-	-	-	-	26.000
Quercus species(594)	-	8.000	-	-	-	-	-	-	-	-	8.000
Rhus species (604)	-	2.000	-	-	-	-	-	-	-	-	2.000
Symplocos theifolia(745)	56.000	6.000	-	-	-	-	-	-	-	-	62.000
Pieris villosa(796)	-	2.000	-	-	-	-	-	-	-	-	2.000
O t h e r s (924)	6.000	6.000	-	-	-	-	-	-	-	-	12.000
	94.000	104.000	16.000	8.000	2.000	-	-	-	-	-	224.000

Table No. 1.1.4.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : RESERVED FOREST

DISTRICT : WEST SIKKIM

RANGE : SOMBARE

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Abies densa (001)	8.549	-	-	-	-	-	-	-	-	-	8.549
Alnus nepalensis(048)	-	1.538	-	-	-	-	-	-	-	-	1.538
Betula alnoides(105)	0.769	-	-	-	-	-	-	-	-	-	0.769
Cupressus kashmiriana(213)	17.687	-	-	0.769	-	-	-	-	-	-	18.456
Eurya japonica(295)	1.538	-	0.769	-	-	-	-	-	-	-	2.307
Litsaea species(420)	-	-	-	0.769	-	-	-	-	-	-	0.769
Machilus species(435)	0.769	-	0.769	-	-	-	-	-	-	-	1.538
Magnolia species(438)	-	-	-	-	-	-	-	-	0.769	-	0.769
Quercus lamellosa(586)	-	-	0.769	-	-	0.769	-	-	-	-	1.538
Quercus lanceaefolia(587)	-	-	0.769	-	-	-	-	-	-	-	0.769
Rhododendron arboreum(600)	9.228	3.076	1.538	1.538	-	-	-	-	-	-	15.380
Rhododendron species(601)	-	-	0.769	-	-	-	-	-	-	-	0.769
Sterculia guttata(647)	0.769	-	-	-	-	-	-	-	-	-	0.769
Syzygium syrygoides(667)	0.769	-	-	-	-	-	-	-	-	-	0.769
Tsuga dumosa(697)	47.678	2.307	1.538	1.538	-	3.845	1.538	0.769	0.769	0.769	60.751
Acer campbellii(739)	3.845	1.538	-	2.307	-	-	-	-	-	-	7.690
Symplocos theifolia(745)	0.769	1.538	-	-	-	-	-	-	-	-	2.307
Actinodaphene sikkimensis(763)	0.769	-	-	0.769	-	-	-	-	-	-	1.538
Desoxylon species(769)	0.769	0.769	-	-	-	-	-	-	-	-	1.538
Magnolia compbellii(779)	1.538	-	0.769	2.307	0.769	1.538	-	-	-	-	6.921
Rhododendron barbatum(782)	-	-	-	0.769	-	-	-	-	-	-	0.769
Rhododendron griffithiarum(784)	4.614	0.769	2.307	0.769	-	-	-	-	-	-	8.459
Viburnum species(789)	6.152	-	-	-	-	-	-	-	-	-	6.152
Prunus peddum(792)	-	-	0.769	-	-	-	-	-	-	-	0.769
Pyrularia edulis(795)	-	0.769	-	-	-	-	-	-	-	-	0.769
Pieris villosa(796)	6.152	0.769	-	0.769	-	-	-	-	-	-	7.690
Quercus pachyphylla(798)	16.149	17.687	19.225	8.459	3.845	5.383	2.307	4.614	2.307	1.538	81.514
O t h e r s (924)	35.374	0.769	-	0.769	0.769	-	-	-	-	-	38.450
T o t a l :	163.797	31.529	29.991	21.532	5.383	11.535	4.614	5.383	3.845	2.307	279.916

Table No. 1.1.4.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : UNRESERVED FOREST DISTRICT : WEST SIKKIM RANGE : SOMBARE

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Rhododendron arboreun(600)	10.000	10.000	-	-	-	-	-	-	-	-	20.000
Tsuga dumosa (697)	20.000	20.000	10.000	-	-	-	-	-	-	-	50.000
Acer campbellii(739)	-	10.000	-	-	-	-	-	-	-	-	10.000
Rhododendron griffithianum(784)	-	10.000	-	-	-	-	-	-	-	-	10.000
Viburnum species (780)	20.000	-	-	-	-	-	-	-	-	-	20.000
Pieris villosa (796)	10.000	-	-	-	-	-	-	-	-	-	10.000
Quercus pachyphylla (798)	10.000	20.000	-	-	-	-	-	-	-	-	30.000
T o t a l :	70.000	70.000	10.000	-	-	-	-	-	-	-	150.000

Table No. 1.2.1.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : RESERVED FOREST DISTRICT - WEST SIKKIM RANGE : SARENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Bombax ceiba (109)	3.333	-	-	-	-	-	-	-	-	-	3.333
Castanopsis indica (157)	-	-	-	6.666	-	3.333	3.333	-	-	-	13.332
Chukrasia vellutina (171)	-	-	-	3.333	3.333	-	-	-	-	-	6.666
Cordia myxa (195)	-	-	-	3.333	-	-	-	-	-	-	3.333
Duabanga grandiflora(251)	-	3.333	-	-	-	-	-	-	-	-	3.333
Evodia species(298)	-	-	3.333	-	-	-	-	-	-	-	3.333
Fillicium decipiens(309)	-	3.333	-	3.333	-	-	-	-	-	-	6.666
Lagerstroemia parviflora(397)	3.333	-	-	-	-	-	-	-	-	-	3.333
Macaranga denticulata(425)	-	6.666	-	-	-	-	-	-	-	-	6.666
Mangifera indica(444)	3.333	-	-	-	-	-	-	-	-	-	3.333
Schima wallichii(627)	-	-	3.333	6.666	3.333	-	-	-	-	-	13.332
Semecarpus anacardium(630)	-	-	-	-	3.333	-	-	-	-	-	3.333
Shorea robusta (633)	-	13.332	43.329	29.997	3.333	-	-	-	-	-	89.991
Terminalia citrina(680)	-	3.333	-	-	-	-	-	-	-	-	3.333
Toona ciliata (691)	-	-	3.333	3.333	-	-	-	-	-	-	6.666
Gynocordia odorata (772)	-	-	-	3.333	3.333	-	-	-	-	-	6.666
Spondin axillaris(786)	-	-	-	-	3.333	-	-	-	-	-	3.333
O t h e r s (924)	9.999	-	-	-	3.333	-	-	-	-	-	13.332
T o t a l :	23.331	26.664	53.328	59.994	23.331	3.333	3.333	-	-	-	193.314

Table No. 1.2.1.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE : SARENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia species (046)	-	-	9.999	3.333	3.333	-	-	-	-	-	16.665
Bombax ceiba (109)	-	-	-	-	6.666	-	-	-	-	-	6.666
Canarium species (139)	-	-	-	6.666	6.666	-	-	-	-	-	13.332
Castanopsis hystrix(156)	-	-	-	3.333	-	-	-	-	-	-	3.333
Duabanga grandiflora(251)	-	-	-	13.332	9.999	6.666	-	-	-	-	29.997
Erythrina variogata(279)	3.333	-	3.333	-	-	-	-	-	-	-	6.666
Fillicium decipiens(300)	-	-	6.666	-	-	-	-	-	-	-	6.666
Schima wallichii(627)	-	-	6.666	6.666	-	-	-	-	-	-	13.332
Terminalia myriocarpa(683)	-	-	-	3.333	6.666	3.333	-	-	-	-	13.332
Desoxylon species(759)	-	-	6.666	9.999	-	-	-	-	-	-	16.665
Gynocordia odorata (772)	-	3.333	-	3.333	-	-	-	-	-	-	6.666
O t h e r s (924)	9.999	-	-	-	-	-	-	-	-	-	9.999
T o t a l :	13.332	3.333	33.330	49.995	33.330	9.999	-	-	-	-	143.319

Table No. 1.2.2.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : RESERVED FOREST DISTRICT - WEST SIKKIM RANGE : SARENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia species (046)	-	-	1.818	0.909	-	-	-	-	-	-	2.727
Amoora species (057)	-	-	-	-	-	-	-	0.909	-	-	0.909
Castanopsis hystrix(156)	20.907	8.181	3.636	0.909	0.909	-	0.909	-	-	-	35.451
Castanopsis indica(157)	-	-	0.909	-	1.818	-	-	-	-	-	2.727
Chukrasia vellutina(171)	-	-	-	0.909	0.909	-	-	-	-	-	1.818
Cupressus kashmiriana(213)	-	-	-	-	-	-	-	-	0.909	0.909	0.909
Diospyros chloroxylon(231)	-	-	-	-	-	-	-	-	0.909	-	0.909
Elaeagnus unbellata(257)	-	0.909	-	-	-	-	-	-	-	-	0.909
Engelhardtia spicata(270)	-	2.727	-	1.818	1.818	-	-	0.909	-	-	7.272
Erythrina species(280)	-	0.909	-	-	-	-	-	-	-	-	0.909
Euginea species (289)	3.636	0.909	3.636	0.909	-	-	-	-	-	-	9.090
Eurya japonica (295)	4.545	0.909	2.727	2.727	-	-	-	-	-	-	10.908
Evodia species (298)	-	-	0.909	0.909	-	-	-	-	-	-	1.818
Excoecaria agallocha(299)	-	0.909	-	-	-	-	-	-	-	-	0.909
Fillicium decipiens(309)	-	-	2.727	-	0.909	-	-	-	-	-	3.636
Juglans regia (383)	-	-	-	0.909	-	0.909	-	-	-	-	1.818
Machilus species (435)	-	-	0.909	0.909	-	-	-	-	-	-	1.818
Michelia doltsopa (453)	-	-	-	0.909	-	-	-	-	-	-	0.909
Michelia languinosa(454)	-	-	-	-	0.909	0.909	-	-	-	-	1.818
Nyssa javanica (497)	-	-	-	0.909	-	-	-	-	-	-	0.909
Ostodes paniculata (503)	4.818	2.727	1.818	-	-	-	-	-	-	-	6.363
Premna species (556)	-	0.909	-	-	-	-	-	-	-	-	0.909
Quercus lanceaefolia(587)	-	9.999	6.363	5.454	-	-	-	-	-	-	21.816
Quercus species (594)	-	-	0.909	0.909	-	0.909	-	0.909	-	-	3.636
Rhus species (604)	-	0.909	-	-	-	-	-	-	-	-	0.909

Contd. to Table No.1.2.2.1.

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Schima wallichii (627)	3.636	4.545	0.909	7.272	0.909	-	-	-	-	-	17.271
Syzygium species (668)	0.909	-	-	-	-	-	-	-	-	-	0.909
Terminalia myriocarpa (683)	-	-	-	-	0.909	-	-	-	-	-	0.909
Symplocos theifolia(745)	14.544	9.090	2.727	-	-	-	-	-	-	-	26.361
Cedrela febrifuga(767)	-	-	-	0.909	-	-	-	-	-	-	0.909
Machilus gammioana(778)	-	-	-	-	-	0.909	-	-	-	-	0.909
Spondin axillaris (786)	-	-	-	0.909	0.909	-	-	-	-	-	1.818
Sercosperma arboreum(797)	0.909	-	-	-	-	-	-	-	-	-	0.909
O t h e r s (924)	0.909	-	1.818	-	-	1.818	0.909	-	-	-	5.454
T o t a l :	51.813	43.632	31.815	28.179	9.999	5,454	1.818	2.727	0.909	0.909	177.255

Table No.1.2.2.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM II : UNRESERVED FOREST — DISTRICT-WEST SIKKIM — RANGE : SARENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acer species (018)	-	-	0.526	0.526	-	-	-	-	-	-	1.052
Albizzia species (046)	2.630	2.630	2.630	0.526	-	-	-	-	-	-	8.416
Alnus nepalensis(048)	14.202	22.618	13.150	6.312	2.630	-	-	-	-	-	58.912
Betula alnoides (105)	-	-	-	-	-	0.526	-	-	-	-	0.526
Canarium species (139)	-	-	-	-	0.526	-	-	-	-	-	0.526
Cordia myxa (195)	-	-	-	-	0.526	-	-	-	-	-	0.526
Engelhardtia spicata(270)	1.578	2.630	1.578	2.104	0.526	-	0.526	-	-	-	8.942
Eurya japonica (295)	1.052	1.052	0.526	-	-	-	-	-	-	-	2.630
Evodia species (298)	-	-	0.526	-	-	-	-	-	-	-	0.526
Ficus species (308)	8.416	3.682	-	-	-	-	-	-	-	-	12.098
Fillicium decipiens (309)	-	-	0.526	1.052	-	-	-	-	-	-	1.578
Heynoa triguja(350)	-	0.526	-	-	-	-	-	-	-	-	0.526
Juglans regia (383)	0.526	-	-	-	-	-	-	-	-	-	0.526
Macaranga denticulata(425)	-	2.104	4.734	2.101	-	-	-	-	-	-	8.942
Macaranga indica (426)	0.526	0.526	-	-	-	-	-	-	-	-	1.052
Macaranga peltata(427)	1.052	-	-	-	-	-	-	-	-	-	1.052
Ostodes paniculata(508)	0.526	1.052	0.526	-	-	-	-	-	-	-	2.104
Phoebe species(527)	-	0.526	-	-	-	-	-	-	-	-	0.526
Saurinia nepaulensis(624)	3.682	0.526	-	-	-	-	-	-	-	-	4.208
Schima wallichii (627)	2.630	4.734	4.734	2.630	0.526	-	-	0.526	-	-	15.780
Syzygium species (668)	-	0.526	-	-	-	-	-	-	-	-	0.526
Toona ciliata(691)	0.526	0.526	-	1.052	0.526	-	-	-	-	-	2.630
Symplocos theifolia(745)	1.052	-	-	-	-	-	-	-	-	-	1.052
Gynocordia odorata(772)	-	-	-	-	0.526	-	-	-	-	-	0.526
Hovenia dulois(774)	-	0.526	-	-	-	-	-	-	-	-	0.526
Spondin axillaris(786)	-	-	-	1.052	0.526	0.526	-	-	-	-	2.104
Viburnum species (789)	0.526	0.526	-	-	-	-	-	-	-	-	1.052
Brassaiopsis metis(791)	1.052	-	0.526	-	-	-	-	-	-	-	1.578
O t h e r s (924)	5.260	-	1.578	4.734	5.260	1.578	-	-	-	-	18.410
T o t a l :	47.340	47.340	28.930	19.988	11.572	2.630	0.526	0.526	-	-	158.852

Contents

Table No. 1.2.3.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM-III : RESERVED FOREST DISTRICT - WEST SIKKIM RANGE : SARENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acer niveum(015)	0.500	-	-	-	-	-	-	-	-	-	0.500
Acer species(018)	-	-	-	0.250	-	-	-	-	-	-	0.250
Alnus nepalensis(048)	1.500	6.000	4.250	0.750	-	-	-	-	-	-	12.500
Beilschmiedia assamica(100)	-	0.250	0.250	0.250	0.250	-	-	-	-	-	1.000
Betula alnoides(105)	-	0.500	-	-	-	-	-	-	-	-	0.500
Castanopsis hystrix(153)	4.750	12.000	5.250	6.250	4.500	4.250	0.750	0.250	0.250	0.250	38.500
Cinnamomum species(179)	-	-	-	0.250	-	-	-	-	-	-	0.250
Elaeocarpus lanceaefolius(258)	-	-	-	0.250	0.750	-	0.250	-	-	-	1.250
Endospermum chivense(268)	-	-	-	0.250	-	-	-	-	-	-	0.250
Engelhardtia spicata(270)	0.500	0.250	0.750	1.500	-	0.250	0.250	-	-	-	3.500
Euginea frondosa(285)	-	-	0.250	-	-	-	-	-	-	-	0.250
Euonymus lacerus(290)	-	0.250	-	-	-	-	-	-	-	-	0.250
Eurya japonica(295)	15.000	7.000	3.000	0.750	-	-	-	-	-	-	25.750
Evodia species(298)	0.250	0.250	-	-	-	-	-	-	-	-	0.500
Ficus species(308)	1.750	0.750	0.250	-	-	-	-	-	-	-	2.750
Glochidion velutimum(324)	0.250	-	-	-	-	-	-	-	-	-	0.250
Juglans regia(383)	-	0.750	0.500	0.500	0.250	-	-	-	-		2.000
Litsaea species(420)	-	0.750	0.250	0.250	-	-	-	-	-	-	1.250
Macaranga denticulata(425)	-	0.500	1.000	-	-	-	-	-	-	-	1.500
Macaranga peltata(427)	-	0.250	-	0.250	-	-	-	-	-	-	0.500
Machilus parviflora(431)	0.250	-	-	-	-	-	-	-	-	-	0.250
Machilus species(435)	-	1.750	2.000	1.750	0.500	0.750	-	-	-	-	6.750
Millotus phillippinensis(441)	-	0.250	-	-	-	-	-	-	-	-	0.250
Meliosma species(457)	0.250	-	0.250	-	-	0.250	-	-	-	-	0.750
Michelia doltsopa(463)	-	-	-	-	0.250	0.250	-	-	0.250	-	0.750
Michelia languinosa(464)	1.250	-	-	-	-	-	-	-	-	-	1.250
Michelia species(468)	-	-	-	0.250	-	-	-	-	-	-	0.250
Nyssa javanica(497)	1.250	0.750	0.250	0.750	0.250	0.500	0.250	-	0.250	-	4.500
Prunus species(564)	-	0.250	0.500	0.750	-	0.250	-	-	-	-	1.750
Quercus lanceaefolia(587)	0.250	-	-	0.250	-	0.250	-	-	-	-	0.750
Quercus species(594)	0.500	3.500	2.500	5.000	1.250	2.250	0.750	0.250	1.500	1.250	18.750
Rhododendron species(601)	0.250	0.750	-	0.250	-	-	-	-	-	0.250	1.500

Contd to Table No.1.2.3.1.

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Rhus javanica(602)	-	-	-	-	-	-	-	-	-	0.250	0.250
Rhus succedanea(603)	0.250	-	-	-	-	-	-	-	-	-	0.250
Rhus species(604)	1.250	0.500	0.500	-	-	-	-	-	-	-	2.250
Saurinia napaulensis(624)	1.500	1.000	-	-	-	-	-	-	-	-	2.500
Symplocos laurina (663)	0.500	0.500	-	-	-	-	-	-	-	-	1.000
Syzygium species(668)	-	-	0.250	-	-	-	-	-	-	-	0.250
Acer campbellii(739)	-	2.000	0.750	1.250	0.250	-	0.500	0.250	-	-	5.000
Echinocarpus dasycarpus(743)	0.250	0.250	-	0.750	0.250	0.250	0.250	-	0.500	-	2.500
Symplocos theifolia(745)	41.500	12.000	1.250	0.250	-	-	-	-	-	-	55.000
Symplocos species (746)	-	-	-	0.250	-	-	-	-	-	-	0.250
Ligustrum robustrum(760)	-	0.250	-	-	-	-	-	-	-	-	0.250
Actinodaphene sikkimensis(763)	0.250	0.250	-	0.500	-	0.500	-	-	-	-	1.500
Betula cyidrostachys(765)	-	-	-	0.250	-	-	-	-	-	-	0.250
Buddleia species(766)	0.250	-	-	-	-	-	-	-	-	-	0.250
Juniperous pseudosabina(775)	0.250	-	-	-	-	-	-	-	-	-	0.250
Rhododendron hodgronii(783)	-	-	0.750	0.250	0.250	-	-	-	-	-	1.250
Viburnum species(789)	4.500	0.500	-	-	-	-	-	-	-	-	5.000
Acer oblongum(793)	-	0.250	0.250	-	-	-	-	-	-	-	0.500
Acer laevigatum(794)	-	-	0.250	0.250	-	-	-	-	-	-	0.500
Pyrularia edulis(795)	0.500	0.250	-	-	-	-	-	-	-	-	0.750
Pieris villosa(796)	1.500	0.750	-	0.250	-	-	0.250	-	-	-	2.750
Sarcosperma arboreum(797)	0.250	-	-	-	-	-	-	-	-	-	0.250
O t h e r s (924)	18.000	3.250	1.000	0.500	1.000	-	-	0.250	-	-	24.000
T o t a l :	99.500	58.500	26.250	25.000	9.750	9.750	3.250	1.000	2.750	2.000	237.750

Contents

Table No. 1.2.3.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE - SARENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acer species (018)	4.000	1.000	-	-	-	-	-	-	-	-	5.000
Alnus nepalensis(048)	1.000	4.000	7.000	1.000	4.000	-	-	-	-	-	17.000
Beilschmiedia assamica(100)	-	-	1.000	1.000	-	-	-	-	-	-	2.000
Castanopsis hystrix(156)	-	3.000	1.000	3.000	2.000	-	-	-	1.000	-	10.000
Elaeocarpus lanceaefolius(258)	-	-	-	1.000	-	-	-	-	-	-	1.000
Engelhardtia spicata (270)	1.000	-	-	-	-	-	-	-	-	-	1.000
Eurya japonica(295)	2.000	4.000	2.000	-	-	-	-	-	-	-	8.000
Ficus species(308)	2.000	-	-	-	-		-	-	-	-	2.000
Juglans regia (383)	-	-	-	-	-	-	1.000	-	-	-	1.000
Litsaea species(420)	-	1.000	1.000	1.000	1.000	-	-	-	-	-	4.000
Machilus species(435)	-	-	1.000	-	-	-	-	-	-	-	1.000
Myristica laurieolia(489)	-	1.000	-	-	-	-	-	-	-	-	1.000
Nyssa javanica(497)	1.000	-	2.000	1.000	-	-	-	-	-	-	4.000
Ostodes paniculata(508)	1.000	5.000	1.000	-	-	-	-	-	-	-	7.000
Quercus species(594)	-	-	1.000	1.000	1.000	-	1.000	1.000	-	2.000	7.000
Sloanea dasycarpa(637)	1.000	-	-	-	-	-	-	-	-	-	1.000
Syzygium cuminii(665)	1.000	-	-	-	-	-	-	-	-	-	1.000
Symplocos theifolia(745)	20.000	4.000	1.000	1.000	-	-	-	-	-	-	26.000
Meliosma pinnata(749)	-	-	-	1.000	-	-	-	-	-	-	1.000
Lindra species (754)	1.000	-	-	-	-	-	-	-	-	-	1.000
Woodfordia florishemnda(788)	1.000	-	-	-	-	-	-	-	-	-	1.000
Viburnum species(789)	4.000	1.000	-	-	-	-	-	-	-	-	5.000
O t h e r s (924)	9.000	9.000	4.000	2.000	-	-	-	-	-	-	24.000
T o t a l :	49.000	33.000	22.000	13.000	8.000	-	2.000	1.000	1.000	2.000	131.000

Table No. 1.2.4.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : RESERVED FOREST DISTRICT - WEST SIKKIM RANGE : SARENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Abies spectabilis(001)	20.000	2.500	10.000	5.000	-	-	2.500	-	-	-	40.000
Alnus nepalensis (048)	15.000	15.000	2.500	-	-	-	-	-	-	-	32.500
Eurya japonica (295)	2.500	2.500	2.500	-	-	-	-	-	-	-	7.500
Evodia species (298)	-	7.500	-	-	-	-	-	-	-	-	7.500
Eagara budgrunga (300)	5.000	-	-	-	-	-	-	-	-	-	5.000
Litsaea species (420)	-	2.500	2.500	-	-	-	-	-	-	-	5.000
Machilus species (435)	2.500	7.500	-	-	-	-	-	-	-	-	10.000
Michelia species (468)	-	-	-	-	2.500	-	-	-	-	-	2.500
Prunus speices (564)	-	-	2.500	-	-	-	-	-	-	-	2.500
Quercus lamellosa (586)	-	-	-	5.000	2.500	-	-	2.500	-	-	10.000
Quercus lanceaefolia (587)	-	-	-	2.500	2.500	-	-	-	-	-	5.000
Quercus lineata (590)	-	-	-	-	2.500	-	-	-	-	-	2.500
Rhododendron arboreum(600)	100.000	-	-	-	-	-	-	-	-	-	100.000
Xanthophyllum andamanicum(720)	-	-	-	2.500	-	-	-	-	-	-	2.500
Acer campbellii(739)	2.500	5.000	5.000	-	-	-	-	-	-	-	12.500
Symplocos theifolia(745)	50.000	5.000	-	-	-	-	-	-	-	-	55.000
Cephalanthus occidentalis(747)	2.500	-	-		-	-	-	-	-	-	2.500
Magnolia compbellii(779)	-	-	-	2.500	-	-	-	-	-	-	2.500
Rhododendron barbehum(782)	107.500	5.000	-	-	-	-	-	-	-	-	112.500
Rhododendron griffithianum(784)	25.000	-	-	-	-	-	-	-	-	-	25.000
Viburnum species (789)	2.500	-	-	-	-	-	-	-	-	-	2.500
Pieris villosa(796)	2.500	-	-	-	-	-	-	-	-	-	2.500
Quercus pachyphylla(798)	-	-	-	-	2.500	-	-	-	-	-	2.500
O t h e r s (924)	17.500	7.500	-	-	-	-	-	-	-	-	25.000
T o t a l :	355.000	60.000	25.000	17.500	12.500	-	2.500	2.500	-	-	475.000

Table No. 1.3.1.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM -I : RESERVED FOREST

DISTRICT : WEST SIKKIM

RANGE : GEZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia procera (045)	10.000	-	-	-	-	-	-	-	-	-	10.000
Schima wallichii (627)	-	10.000	-	-	-	-	-	-	-	-	10.000
Shorea robusta (633)	-	-	-	50.000	20.000	10.000	-	-	-	-	80.000
Sterculia villosa (649)	10.000	-	-	-	-	-	-	-	-	-	10.000
O t h e r s (924)	-	10.000	-	-	-	-	-	-	-	-	10.00
T o t a l :	20.000	20.000	-	50.000	20.000	10.000	-	-	-	-	120.000

Contents

Table No. 1.3.1.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : UNRESERVED FOREST

DISTRICT : WEST SIKKIM

RANGE : GAZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia procera (045)	5.000	-	-	-	-	-	-	-	-	-	5.000
Ficus species (308)	-	5.000	-	-	-	-	-	-	-	-	5.000
Schima wallichii (627)	-	20.000	10.000	-	-	-	-	-	-	-	30.000
Shorea robusta (633)	-	-	-	5.000	5.000	-	-	-	-	-	10.000
Sterculia villosa (649)	5.000	-	-	-	-	-	-	-	-	-	5.000
T o t a l :	10.000	25.000	10.000	5.000	5.000	-	-	-	-	-	55.000

Table No. 1.3.2.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM : II : UNRESERVED FOREST DISTRICT : WEST SIKKIM RANGE : GAZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acrocarpus fraxinifolius(019)	-	-	-	-	-	0.333	-	-	-	-	0.333
Alangium salvifolium(037)	0.666	-	-	-	-	-	-	-	-	-	0.666
Albizzia lebbek (041)	0.333	-	-	-	-	-	-	-	-	-	0.333
Albizzia procera (045)	0.333	0.333	-	-	-	-	-	-	-	-	0.666
Albizzia species (046)	1.665	0.999	0.333	-	-	-	-	-	-	-	2.997
Alnus nepalensis(048)	28.638	17.649	8.658	1.665	0.666	0.333	-	-	-	-	57.609
Amoora species (057)	0.333	1.332	-	-	-	-	-	-	-	-	1.665
Beilschmiedia assamica(100)	-	-	-	0.666	0.333	-	-	-	-	-	0.999
Betula alnoides (105)	0.666	0.333	0.333	-	-	-	-	-	-	-	1.332
Bischofia javanica (107)	0.333	-	-	0.333	-	-	-	-	-	-	0.666
Bombax ceiba (109)	-	0.333	-	-	-	-	-	-	-	-	0.333
Castanopsis hystrix(156)	-	1.998	1.665	1.332	0.999	0.666	-	-	-	-	6.660
Castanopsis indica (157)	0.666	-	0.333	0.333	-	-	-	-	-	-	1.332
Elaeocarpus lanceaefolius(258)	-	-	-	0.333	-	-	-	-	-	-	0.333
Engelhardtia spicata (270)	4.329	4.329	0.333	-	-	-	-	-	-	-	8.991
Eurya japonica (295)	3.663	0.333	-	-	-	-	-	-	-	-	3.996
Ficus bengalensis(302)	-	0.999	-	-	-	-	-	-	-	-	0.999
Ficus species (308)	0.999	0.333	-	-	-	-	-	-	-	-	1.332
Macaranga denticulata (425)	2.664	2.664	-	0.333	-	-	-	-	-	-	5.661
Macaranga peltata(427)	4.995	0.999	-	-	-	-	-	-	-	-	5.994
Machilus species(435)	-	0.333	-	-	-	-	-	-	-	-	0.333
Michelia languinosa(464)	-	-	-	-	-	-	0.333	-	-	-	0.333
Ostodes paniculata(508)	1.332	0.333	-	-	-	-	-	-	-	-	1.665
Phoebe species(527)	0.333	-	-	-	-	-	-	-	-	-	0.333

Contd. to Table No. 1.3.2.2.

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Quercus lanceaefolia(587)	-	-	0.333	0.666	0.666	0.666	-	-	-	-	2.331
Quercus species (594)	-	0.666	0.666	0.999	-	-	0.333	-	-	-	3.664
Rhus species (604)	1.332	-	0.333	-	-	-	-	-	-	-	1.665
Saurinia napaulansis(624)	1.665	0.333	0.333	0.333	0.333	-	-	-	-	-	2.997
Schima wallichii (627)	9.324	8.325	1.665	1.332	-	-	-	-	-	-	20.646
Sloanea dasycarpa (637)	0.333	-	-	-	-	-	-	-	-	-	0.333
Toona ciliata(691)	1.332	0.333	-	-	-	-	-	-	-	-	1.665
Echinocarpus dasycarpus(743)	-	0.333	-	-	-	-	-	-	-	-	0.333
Symplocos theifolia(745)	0.999	1.665		-	-	-	-	-	-	-	2.664
Magnolia pierocarpa(780)	0.333	-	0.333	0.333	-	-	-	-	-	-	0.999
Spondin axillaris(786)	0.333	-	-	-	-	-	-	-	-	-	0.333
Viburnum species (789)	0.333	-	-	-	-	-	-	-	-	-	0.333
Prassaiopsis metis (791)	0.333	0.666	-	-	-	-	-	-	-	-	0.333
Prunus peddum (792)	0.333	-	-	-	-	-	-	-	-	-	0.999
Acer laevigatum (794)	0.333	-	-	-	-	-	-	-	-	-	0.333
O t h e r s (924)	-	1.332	-	0.333	0.333	-	-	-	-	-	1.998
T o t a l :	68.931	46.953	15.318	8.991	3.330	1.998	0.666	-	-	-	146.187

Table No. 1.3.3.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : RESERVED FOREST

DISTRICT - WEST SIKKIM

RANGE - GAZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alangium salvifolium(037)	0.344	-	0.344	0.344	-	-	-	-	-	-	1.032
Alnus nepalensis (048)	2.408	3.096	1.032	-	-	-	-	-	-	-	6.536
Beilschmiedia assamica(100)	1.720	0.688	2.064	2.408	1.032	1.376	-	-	-	-	9.288
Betula alnoides(105)	-	-	0.344	0.688	-	-	-	-	-	-	1.032
Castanopsis hystrix(156)	7.224	15.136	4.816	5.160	2.064	3.440	0.688	1.376	-	-	39.994
Cephalostachyum latifolium(166)	-	0.344	-	-	-	-	-	-	-	-	0.344
Cinnamomum species(170)	0.344	0.688	0.344	0.344	-	-	-	-	-	-	1.720
Elaeocarpus lanceaefolius(258)		-	0.688	-	0.344	-	0.344	-	-	-	4.376
Endospermum chinense(268)	-	0.344	-	-	-	-	-	-	-	-	0.344
Engelhardtia spicata(270)	3.784	1.376	1.032	0.344	-	-	-	-	-	-	6.536
Euginea species(289)	-	-	-	0.344	-	-	-	-	-	-	0.344
Eudnymus lacerus(290)	0.344	-	-	-	-	-	-	-	-	-	0.344
Eurya japonica(295)	8.600	5.160	2.408	-	-	-	-	-	-	-	16.168
Ficus species(308)	-	0.344	-	-	-	-	-	-	-	-	0.344
Juglans regia(383)	1.032	-	-	-	-	-	-	-	-	-	1.032
Macaranga denticulata(425)	2.752	2.064	0.688	0.344	-	-	-	-	-	-	5.848
Machilus odoratissima(432)	-	0.344	-	0.688	-	-	-	0.344	-	0.344	1-720
Machilus species(435)	1.720	5.848	1.032	1.376	0.344	0.344	-	-	-	-	10.664
Meleosma simplicifolia(456)	-	0.344	-	-	-	-	-	-	-	-	0.344
Meliosma species(457)	0.344	-	-	-	-	-	-	-	-	-	0.344
Michelia doltsopa(467)	1.032	0.344	0.344	-	-	0.344	-	-	-	-	2.064
Michelia languinosa(464)	-	-	-	-	0.344	-	-	-	-	-	0.344
Prunus species (564)	0.688	0.688	0.688	-	-	-	-	-	-	-	2.064
Quercus lanceaefolia(587)	0.688	-	-	-	-	-	-	-	-	-	0.688
Quercus species(594)	3.784	6.880	4.816	1.720	1.720	1.376	0.344	0.688	-	0.344	21.672
Rhus species(604)	0.688	0.688	0.344	0.344	-	-	-	-	-	-	2.064
Swietenia mahagoni(660)	-	0.344	-	-	-	-	-	-	-	-	0.344
Symingtoria populnea(661)	-	-	1. 032	0.688	-	-	-	-	-	-	1.720

Contd. to Table No. 1.3.3.1.

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Symplocos laurina (663)	0.344	0.688	-	-	-	-	-	-	-	-	1.032
Syzygium species(668)	0.344	-	-	-	-	-	-	-	-	-	0.344
Terminalia chebula(679)	-	0.344	-	-	-	-	-	-	-	-	0.344
Toona ciliata (691)	-	0.344	-	-	-	-	-	-	-	-	0.344
Acer campbellii(739)	1.720	2.408	0.688	0.344	0.344	-	0.344	-	-	-	5.848
Echinocarpus dasycarpus(743)	0.344	0.688	-	-	0.344	-	-	0.344	0.344	-	2.064
Symplocos theifolia(745)	40.592	13.072	1.720	1.376	-	-	-	-	-	-	56.760
Lindre species(754)	0.344	-	-	-	-	-	-	-	-	-	0.344
Llicium grifitheii(755)	-	0.344	-	-	-	-	-	-	-	-	0.344
Ligustrum robustrum(760)	-	-	-	-	0.344	-	-	-	-	-	0.344
Actinodaphene sikkimensis(763)	0.344	0.344	0.344	-	0.344	0.344	-	0.344	-	-	2.064
Cedrela febrifuga(767)	0.688	1.032	-	-	-	-	-	-	-	-	1.720
Viburnum species(789)	2.064	1.032	-	0.344	-	-	-	-	-	-	2.440
Acer oblongum(793)	-	-	0.344	-	-	-	-	-	-	-	0.344
Pyrularia edulia(795)	-	0.344	0.344	-	-	-	-	-	-	-	0.688
Pieris villosa(796)	1.720	-	0.344	-	-	0.344	-	-	-	-	2.408
Machilus edulis(799)	-	-	-	0.344	0.688	0.344	-	-	-	-	1.376
O t h e r s (924)	11.008	3.096	4.128	2.752	1.376	0.600	0.344	-	0.334	-	23.672
T o t a l :	97.008	69.144	29.240	20.296	8.944	8.600	2.064	3.096	0.688	0.688	239.768

Table No. 1.3.3.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : UNRESERVED FOREST DISTRICT : WEST SIKKIM RANGE : GAZING

Species name with code	Diameter classes (in cm.)										
	10 19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alangium salvifolium(037)	0.909	-	-	-	-	-	-	-	-	-	0.909
Alnus nepalensis(048)	14.544	22.725	2.727	-	-	-	-	-	-	-	39.996
Castanopsis hystrix(156)	4.545	12.726	2.727	1.818	0.909	-	-	0.909	-	-	23.634
Engelhardtia spicata(270)	3.636	9.999	1.818	-	-	-	-	-	-	-	15.455
Eurya japonica(295)	3.636	7.272	2.727	-	-	-	-	-	-	-	13.635
Ficus species(308)	-	0.909	-	-	-	-	-	-	-	-	0.909
Juglans regia (383)	-	1.818	-	-	-	-	-	-	-	-	1.818
Macaranga denticulata(425)	3.636	3.636	1.818	-	-	-	-	-	-	-	9.090
Machilus odoratissima(432)	0.909	1.818	-	0.909	-	-	-	-	-	-	3.636
Machilus species(435)	0.909	-	-	-	-	-	-	-	-	-	0.909
Michelia doltsopa(463)	0.909	-	-	-	-	-	-	-	-	-	0.909
Nyssa javanica(497)	3.636	8.181	-	-	-	-	-	-	-	-	11.817
Quercus lanceaefolia(587)	-	-	0.909	-	-	-	-	-	-	-	0.909
Quercus species (594)	-	1.818	0.909	-	-	-	-	-	-	-	2.727
Rhus species (604)	4.545	1.818	-	-	-	-	-	-	-	-	6.363
Saurinia nepalensis(624)	-	0.909	-	-	-	-	-	-	-	-	0.909
Acer campbellii(739)	0.909	-	-	-	-	-	-	-	-	-	0.909
Sumplocos theifolia(745)	5.454	2.727	-	-	-	-	-	-	-	-	8.181
Viburnum species (789)	1.818	-	-	-	-	-	-	-	-	-	1.818
Prunus peddum(792)	-	0.909	-	-	-	-	-	-	-	-	0.909
O t h e r s (924)	12.726	5.454	-	0.909	0.909	-	-	-	-	-	19.998
T o t a l :	62.721	82.719	13.635	3.636	1.818	-	-	0.909	-	-	165.438

Table No. 1.3.4.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : RESERVED FOREST

DISTRICT : WEST SIKKIM

RANGE : GAZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Castanopsis hystrix(156)	-	-	2.000	-	2.000	2.000	2.000	2.000	4.000	-	14.000
Euginea formosa(286)	-	-	-	-	-	2.000	-	-	-	-	2.000
Eurya japonica(295)	16.000	8.000	2.000	2.000	-	-	-	-	-	-	28.000
Litsaea species (420)	2.000	-	-	-	-	-	-	-	-	-	2.000
Machilus species (435)	-	2.000	-	2.000	-	-	-	-	-	-	4.000
Michelia doltsopa(463)	-	-	-	2.000	-	-	-	-	-	-	2.000
Michelia species(468)	-	2.000	2.000	-	-	-	-	-	-	-	4.000
Prunus species(564)	4.000	-	-	-	-	-	-	-	-	-	4.000
Quercus lamellosa(586)	2.000	8.000	2.000	2.000	-	-	4.000	-	-	-	18.000
Quercus lanceaefolia(587)	2.000	4.000	4.000	-	-	-	-	-	-	-	10.000
Quercus lineata(590)	-	-	-	-	-	2.000	-	-	2.000	-	4.000
Saurinia napaulansis(624)	-	2.000	-	-	-	-	-	-	-	-	2.000
Acer campbellii(739)	2.000	-	-	2.000	-	-	-	-	-	-	4.000
Echinocarpus dasycarpus(743)	-	-	2.000	-	-	2.000	-	-	2.000	-	6.000
Symplocos theifolia(745)	62.000	14.000	-	-	-	-	-	-	-	-	76.000
Viburnum species(789)	2.000	-	-	-	-	-	-	-	-	-	2.000
Quercus pachyphylla(798)	6.000	26.000	8.000	-	-	2.000	-	-	2.000	-	44.000
O t h e r s (924)	-	4.000	-	2.000	-	-	-	-	-	-	6.000
T o t a l :	98.000	70.000	22.000	12.000	2.000	10.000	6.000	2.000	10.000	-	232.000

Table No. 1.4.2.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : RESERVED FOREST

DISTRICT: WEST SIKKIM RANGE : YOKSUM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia species(046)	-	5.000	-	-	-	-	-	-	-	-	5.000
Alnus nepalensis (048)	45.000	75.000	10.000	5.000	-	-	-	-	-	-	135,000
Castanopsis hystrix(156)	-	-	-	-	5.000	-	-	-	-	-	5.000
Machilus species (435)	-	5.000	-	-	-	-	-	-	-	-	5.000
Quercus species (594)	5.000	10.000	-	-	-	5.000	-	-	-	5.000	25.000
Symplocos theifolia(745)	5.000	5.000	-	-	-	-	-	-	-	-	10.000
T o t a l :	55.000	100.000	10.000	5.000	5.000	5.000	-	-	-	5.000	185.000

Table No. 1.4.2.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : UNRESERVED FOREST DISTRICT : WEST SIKKIM RANGE : YOKSUM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia chinensis (039)	-	-	-	0.370	-	-	-	-	-	-	0.370
Albizzia procera (045)	1.110	-	1.480	-	-	-	-	-	-	-	2.590
Albizzia species (046)	1.850	0.740	0.370	0.740	0.740	-	-	-	-	-	4.440
Alnus nepalensis (048)	3.330	4.810	2.220	0.740	-	-	-	-	-	-	11.100
Amoora species (057)	-	0.370	-	0.740	-	-	-	-	-	-	1.110
Bischofia javanica (107)	0.370	0.370	0.740	0.370	0.370	-	-	-	-	-	2.220
Bombax ceiba (109)	1.110	0.370	0.370	0.370	-	0.370	-	-	-	-	2.590
Bridelia retusa (114)	0.370	-	-	-	-	-	-	-	-	-	0.370
Castanopsis hystrix(156)	2.220	5.920	2.960	2.590	2.220	0.740	-	0.370	-	-	17.020
Castanopsis indica (157)	0.370	1.110	0.740	0.370	0.370	-	-	-	-	-	2.960
Cinnamomum species (178)	-	0.370	-	-	-	-	-	-	-	-	0.370
Cordia myxa (195)	0.740	0.740	-	-	-	-	-	-	-	-	1.480
Diploknema butyracea(241)	-	-	-	0.370	-	-	-	-	-	-	0.370
Elaeocarpus lanceaefolius(258)	-	-	-	-	0.370	-	-	-	-	-	0.370
Engelhardtia spicata(270)	3.700	1.850	0.370	0.740	-	-	-	-	-	-	6.660
Erythrina species(280)	1.480	1.110	-	-	-	-	-	-	-	-	2.590
Eurya japonica(295)	1.480	0.740	-	-	-	-	-	-	-	-	2.220
Ficus species (308)	1.480	2.960	-	-	-	-	-	-	-	-	4.440
Gmelina arborea (327)	0.370	-	-	-	-	-	-	-	-	-	0.370
Gymnosporia ruba (340)	0.370	0.740	-	1.850	-	-	-	-	-	-	2.960
Hymenodictyon excelsum(370)	-	-	0.370	-	-	-	-	-	-	-	0.370
Juglans regia (383)	0.370	-	-	-	-	-	-	-	-	-	0.370
Macaranga peltata(427)	0.740	0.740	-	0.740	-	-	-	-	-	-	2.220
Machilus species (435)	0.370	-	0.370	0.370	-	-	-	-	-	-	1.110
Michelia languinosa(464)	0.370	-	-	-	-	-	-	-	-	-	0.370
Ostodes paniculata(508)	1.850	0.740	-	-	-	-	-	-	-	-	2.590
Quercus species (594)	0.370	-	0.370	0.740	1.110	0.370	-	0.370	-	-	3.330

Contd. to Table No.1.4.2.2.

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Rhus species (604)	0.370	0.740	0.740	-	-	-	-	-	-	-	1.850
Saurinia nepaulensis (624)	0.740	1.110	-	-	-	-	-	-	-	-	1.850
Schima wallichii (627)	9.250	5.920	2.590	1.480	0.740	-	0.740	-	-	-	20.720
Siderxylon grandifolium(635)	-	0.370	-	-	-	-	-	-	-	-	0.370
Syzygium cuminii(665)	0.370	0.740	0.740	-	-	-	-	-	-	-	1.850
Talauma hodgaoni(669)	-	0.370	-	-	-	-	-	-	-	-	0.370
Terminalia chebula (679)	-	0.740	0.370	-	-	-	-	-	-	-	1.110
Terminalia myriocarpa(683)	-	0.740	-	-	-	-	-	-	-	-	0.740
Toona ciliata(691)	-	0.370	-	0.740	-	-	-	-	-	-	1.110
Symplocos theifolia(745)	3.700	1.850	-	-	-	-	-	-	-	-	5.550
Actinodaphene sikkimensis(763)	-	0.370	.	-	-	-	-	-	-	-	0.370
Leucosceptrum species (777)	0.370	-	-	-	-	-	-	-	-	-	0.370
Spondin maxillaris (786)	0.370	-	-	-	-	-	-	-	-	-	0.370
Viburnum species (789)	2.220	0.370	-	-	0.370	-	-	-	-	-	2.960
Brassaiopsis metis (791)	1.110	0.740	-	-	-	-	-	-	-	-	1.850
Acer laevigatum(794)	0.370	-	-	-	-	-	-	-	-	-	0.370
O t h e r s (924)	3.700	1.110	-	0.740	0.370	0.370	0.370	-	-	-	6.660
T o t a l :	47.360	40.330	14.800	14.060	6.660	1.850	1.110	0.740	-	-	126.910

Table No. 1.4.3.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : RESERVED FOREST

DISTRICT : WEST SIKKIM

RANGE : YOKSUM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alangium salvifolium(037)	0.357	-	-	-	-	-	-	-	-	-	0.357
Alcimandra cathearii(047)	-	-	-	0.357	-	-	-	-	-	-	0.357
Alnus nepalensis (048)	1.785	2.499	0.714	-	-	0.357	-	-	-	-	5.355
Beilschmiedia assamica(100)	1.071	1.428	2.142	1.428	-	0.714	0.357	-	-	-	7.140
Castanopsis hystrix(156)	5.712	7.497	6.426	9.282	2.856	2.499	0.357	1.785	2.142	2.142	40.698
Cinnamomum species (178)	3.570	1.071	1.785	-	-	-	-	-	-	-	6.426
Dephnephyllum himalayanse(227)	-	0.714	-	-	-	-	-	-	-	-	0.714
Elaeocarpus lanceaefolius(258)		-	0.357	0.357	0.357	0.357	-		-	-	1.428
Engelhardtia spicata (270)	-	0.357	-	0.714	-	-	-	-	-	-	1.071
Euonymus lacerus (290)	-	-	0.357	-	0.357	-	-	-	-	-	0.714
Eurya japonica(295)	2.499	1.071	1.071	0.357	-	0.357	-	-	-	-	5.355
Ficus species (308)	1.071	-	0.357	-	-	-	-	-	-	-	1.428
Litsaea species (420)	0.714	1.428	1.071	1.071	0.714	0.357	-	-	-	-	5.355
Macaranga denticulata(425)	0.357	0.357	-	-	-	-	-	-	-	-	0.714
Machilus odoratissima(432)	0.357	1.428	1.071	0.357	-	0.714	-	-	-	-	3.927
Machilus species (435)	0.714	4.284	3.570	2.499	0.357	1.071	0.714	-	-	-	13.209
Mangifera sylvatica(445)	0.357	0.357	-	-	-	-	-	-	-	-	0.714
Meliosma species (457)	-	0.357	-	-	-	-	-	-	-	-	0.357
Michelia doltsopa(463)	-	0.714	0.714	1.071	-	-	-	-	-	-	2.499
Michelia languinosa(464)	-	-	-	0.357	-	-	-	-	-	-	0.357
Michelia species (368)	0.357	0.357	-	0.357	0.714	-	0.714	-	-	-	2.499
Nyssa javanica (497)	0.357	0.714	-	-	0.357	0.357	-	-	-	-	1.785
Prunus species (564)	-	1.071	0.714	2.856	0.357	-	-	-	-	-	4.998
Quercus lanceaefolia(587)	-	-	0.357	0.357	0.357	-	-	-	-	-	1.071
Quercus species (594)	4.284	4.284	2.856	6.783	3.927	2.499	3.927	0.357	2.856	3.213	34.986
Symingtoria populnea(661)	0.357	0.357	-	-	-	-	-	-	-	-	0.714
Symplocos laurina(663)	0.714	1.428	-	-	-	-	-	-	-	-	2.142
Trufinia cochinchinensis(699)	0.357	-	-	-	-	-	-	-	-	-	0.357
Zanthoxylum budrunga(730)	2.856	-	-	-	-	-	-	-	-	-	2.856

Contd. to Table No. 1.4.3.1.

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acer campbellii (739)	0.357	1.071	0.357	0.357	0.357	0.714	0.714	-	-	-	3.927
Echinocarpus dasycarpus(743)	0.357	-	-	-	-	0.357	-	0.714	-	0.357	1.785
Symplocos theifolia(745)	33.915	15.351	0.357	-	-	-	-	-	-	-	49.623
Bereeris nepalensis(748)	0.357	-	-	-	-	-	-	-	-	-	0.357
Ilicium grifitheii(755)	0.357	-	-	-	-	-	-	-	-	-	0.357
Actinodaphene sikkimensis(763)	1.428	-	-	-	-	-	-	-	-	-	1.428
Cedrela febrifuga (767)	1.071	-	-	-	-	-	-	-	-	-	1.071
Machilus gammioana(778)	-	-	-	-	-	0.357	-	-	-	0.357	0.714
Magnolia pterocarpa (780)	-	-	-	-	-	-	-	-	-	-	0.357
Viburnum species (789)	3.570	-	-	-	-	-	-	-	-	-	3.570
Acer oblongum(793)	-	0.357	-	-	-	-	-	-	-	-	0.357
Pyrularia edulis(795)	0.357	-	-	-	-	-	-	-	-	-	0.357
Pieris villosa(796)	0.357	-	-	-	-	-	-	-	-	-	0.357
Sarcosperma arboreum(797)	-	-	0.357	-	-	-	-	-	-	-	0.357
O t h e r s (924)	1.785	4.284	1.428	0.714	0.357	0.714	0.357	-	0.357	-	10.071
T o t a l :	71.757	52.836	26.061	29.274	11.067	11.067	7.497	2.856	5.355	6.426	224.186

Table No. 1.4.3.2.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : UNRESERVED FOREST DISTRICT : WEST SIKKIM RANGE : YOKSUM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alnus nepalensis (048)	9.982	19.964	7.378	0.868	0.434	-	-	-	-	-	38.626
Alnus nitida (049)	-	0.434	-	-	-	-	-	-	-	-	0.434
Beilschmiedia assamica(100)	-	-	-	-	0.434	-	-	-	-	-	0.434
Betula alnoides (105)	-	-	0.434	0.434	-	-	-	-	-	-	0.868
Castanopsis hystrix(156)	0.434	3.0906	3.038	6.076	2.170	2.170	1.302	0.434	0.434	-	19.964
Cinnamomum species(178)	0.868	-	0.434	-	-	-	-	-	-	-	1.302
Cordia companilata(190)	-	-	-	-	-	0.434	-	-	-	-	0.434
Elaeocarpus lanceaefolius(258)		-	-	-	0.434	-	0.434	-	-	-	0.868
Engelhardtia spicata(270)	-	0.868	1.736	0.434	-	-	-	-	-	-	3.038
Eurya japonica(295)	1.302	3.472	1.302	0.434	-	-	-	-	-	-	6.510
Ficus species (308)	0.434	-	-	-	0.434	-	-	-	-	-	0.868
Juglans regia (383)	-	0.434	-	-	-	-	-	-	-	-	0.434
Machilus odoratissima(432)	-	0.868	0.868	-	-	0.868	-	0.434	-	-	3.038
Machilus species (435)	-	1.736	0.434	1.736	-	-	-	-	-	-	3.906
Maniklara hexandra(448)	-	0.434	-	-	-	-	-	-	-	-	0.434
Meliosma species(457)	-	-	0.434	-	-	-	-	-	-	-	0.434
Nyssa javanica(497)	-	0.434	-	0.434	-	-	-	-	-	-	0.868
Ostodes paniculata(508)	0.868	-	-	-	-	-	-	-	-	-	0.868
Prunus species (564)	0.434	-	-	0.434	0.868	-	-	-	-	-	1.736
Quercus serrata(592)	0.434	-	-	-	-	-	-	-	-	-	0.434
Quercus species(594)	0.868	-	2.170	2.170	2.170	-	1.736	0.868	0.868	1.302	12.152
Rhus species(604)	0.868	-	-	-	-		-	-	-	-	0.868
Silix tetrasperma(611)	-	-	-	-	-	0.436	-	-	-	-	0.436
Saurinia nepaulensis(624)	1.302	-	-	1.302	-	-	-	-	-	-	2.604
Symingtoria populnea(651)	-	-	0.868	0.434	0.434	-	-	-	-	-	1.736
Symplocos laurina(663)	1.302	-	-	-	-	-	-	-	-	-	1.302
Turpinia cochinchinensis(699)	-	0.868	-	-	-	-	-	-	-	-	0.868
Acer campbellii(739)	-	-	0.434	1.736	-	-	-	-	-	-	2.170
Symplocos theifolia(745)	17.794	6.944	0.434	-	-	-	-	-	-	-	25.172
Viburnum species(789)	4.340	0.868	-	-	-	-	-	-	-	-	5.208
Acer laevigatum(794)	-	-	-	0.434	-	-	-	-	-	-	0.434
Pieris villosa(796)	-	0.434	-	-	-	-	-	-	-	-	0.434
h e r s (924)	4.340	0.868	-	-	0.434	-	-	-	-	-	5.642
t a l :	45.570	42.532	19.964	17.360	7.378	4.340	3.038	1.736	1,302	1.302	144.522

Contents

Table No. 1.4.4.1.

STEMS PER HECTARE BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : RESERVED FOREST DISTRICT : WEST SIKKIM RANGE : YOKESUM

Species name with code	Diameter classes (in cm.) 10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Abies densa (001)	-	1.666	0.833	1.666	0.833	-	2.499	0.833	1.666	0.833	10.829
Beilschmiedia assamica(100)	-	-	1.666	0.833	0.833	1.666	-	-	-	-	4.998
Betula alnoides(105)	-	-	-	0.833	-	-	-	-	-	-	0.833
Betula utilis(106)	4.165	4.998	1.666	-	-	-	-	-	-	-	10.829
Castanopsis hystrix(156)	2.499	1.666	4.165	6.664	4.165	7.497	-	2.499	-	-	29.155
Cinnamomum species(178)	0.833	0.833	-	-	-	-	-	-	-	-	1.666
Ehretia caevis (256)	-	-	-	-	0.833	-	-	-	-	-	0.833
Elaeocarpus lanceaefolius(258)	-	1.666	-	0.833	0.833	1.666	0.833	-	-	-	5.831
Eurya japonica(295)	0.833	1.666	-	-	-	-	-	-	-	-	2.499
Litsaea species(420)	-	-	-	0.833	1.666	0.833	-	-	-	-	3.332
Machilus odoratissima(432)	-	-	-	1.666	-	-	-	-	-	-	1.666
Machilus species(435)	0.833	2.499	3.332	4.165	2.499	2.499	-	-	-	-	15.827
Macropanax oreophyllum(436)	-	-	-	-	-	0.833	-	-	-	-	0.833
Michelia doltsopa(463)	-	-	-	0.833	0.833	1.666	-	-	-	-	3.332
Michelia species(468)	-	-	-	-	-	0.833	1.666	-	-	-	2.499
Prunus species(564)	-	1.666	1.666	-	-	0.833	-	-	-	-	4.165
Quercus lamellosa(586)	-	0.833	2.499	9.163	5.831	3.332	4.998	-	-	1.666	28.322
Quercus lanceaefolia(587)	-	-	0.833	-	-	-	-	-	-	-	0.833
Quercus lineata(590)	-	-	-	1.666	-	-	-	-	-	-	1.666
Rhododendron arboreum(600)	2.499	3.332	0.833	0.833	-		-	-	-	-	7.497
Rhododendron species(601)	-	0.833	-	-	-	-	-	-	-	-	0.833
Symplocos laurina(663)	-	1.666	-	-	-	-	-	-	-	-	1.666
Tsuga dumosa(697)	-	0.833	1.666	-	1.666	-	-	0.833	1.666	1.666	8.330
Acer campbellii(739)	-	1.666	2.499	3.332	0.833	-	-	-	-	-	8.330
Echinocarpus dasycarpus(743)	-	-	-	-	0.833	-	-	-	-	-	0.833
Symplocos theifolia(745)	15.827	12.495	2.499	-	-	-	-	-	-	-	30.821
Ligustrum robustrum(760)	-	-	-	0.833	-	-	-	-	-	-	0.833
Actinodaphene sikkimensis(763)	0.833	-	-	1.666	-	0.833	-	-	-	-	3.332
Magnolia compbelii(779)	0.833	2.499	2.499	-	-	0.833	-	-	-	-	6.664
Rhododendron arboreum(782)	20.825	9.163	0.833	-	-	-	-	-	-	-	30.821
Rhododendron hodgronii(783)	-	-	0.833	1.666	0.833	-	-	-	-	-	3.332
Rhododendron griffithianum(784)	9.163	0.833	1.666	-	-	-	-	-	-	-	11.662
Viburnum species(789)	0.833	-	-	-	-	-	-	-	-	-	0.833
O t h e r s (924)	-	-	-	0.833	1.666	-	-	-	-	0.833	3.332
T o t a l :	59.976	50.813	29.988	38.318	24.157	23.324	9.996	4.165	3.332	4.998	249.067

Contents

Table No. 2.1.2.2.

VOLUME PER HECTARE (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : U RESERVED FOREST DISTRICT : WEST SIKKIM RANGE : SOMBARE

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Moringa species (480)	-	-	-	-	-	-	-	-	-	22.000	22.000
T o t a l :	-	-	-	-	-	-	-	-	-	22.000	22.000

Table No. 2.1.3.1.

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : RESERVED FOREST DISTRICT : WEST SIKKIM RANGE : SOMBARE

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acer species (018)	-	-	-	1.166	-	-	-	-	-	-	1.166
Alnus nepalensis(048)	-	-	-	-	2.832	-	-	-	-	-	2.832
Castanopsis hystrix(136)	-	-	1.999	4.665	-	-	-	-	-	-	6.664
Engelhardtia spicata (270)	-	-	-	1.166	-	2.332	-	-	-	-	3.499
Macaranga denticulata(425)	-	-	-	8.163	1.666	-	-	-	-	-	9.829
Machilus species(435)	-	-	0.666	1.166	-	-	-	-	-	-	1.833
Quercus species(594)	-	-	2.666	4.665	4.998	2.332	2.999	7.330	4.665	-	29.655
Rhododendron arboreum(600)	-	-	3.332	3.499	9.996	-	-	-	4.665	-	21.491
Acer campbellii(739)	-	-	1.499	1.166	-	-	-	-	-	-	2.666
Prunus peddum(792)	-	-	0.666	-	-	-	-	-	-	-	0.666
O t h e r s (924)	-	-	-	1.166	-	-	-	-	-	-	1.166
T o t a l :	-	-	10.829	26.823	19.492	4.665	2.999	7.330	9.330	-	81.467

Table No. 2.1.3.2.

VOLUME PER HECTARE (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM : III ! UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE - SOMBORE

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alnus nepalensis (048)	-	-	7.000	7.200	-	-	-	-	-	-	14.200
Amoora species (057)	-	-	-	1.400	-	-	-	-	-	-	1.400
Castanopsis hystrix (156)	-	-	0.800	-	-	-	-	-	-	-	0.800
Elaeocarpus lanceaefolius(258)	-	-	-	-	2.000	-	-	-	-	-	2.000
Machilus species (435)	-	-	1.600	-	-	-	-	-	-	-	1.600
T o t a l :	-	-	9.400	8.600	2.000	-	-	-	-	-	20.000

Contents

Table No. 2.1.4.1.

VOLUME PER HECTARE (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : RESERVED FOREST DISTRICT - WEST SIKKIM RANGE - SOMBORE

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Cuprossus kashmiriana(213)	-	-	-	0.738	-	-	-	-	-	-	0.738
Eurya japonica(295)	-	-	0.231	-	-	-	-	-	-	-	0.231
Litsaea species(420)	-	-	-	0.738	-	-	-	-	-	-	0.738
Machilus species(435)	-	-	0.308	-	-	-	-	-	-	-	0.308
Magnolia species (438)	-	-	-	-	-	-	-	-	5.075	-	5.075
Quercus lamellosa(586)	-	-	0.323	-	-	1.999	-	-	-	-	2.322
Quercus lanceaefolia(587)	-	-	0.323	-	-	-	-	-	-	-	0.323
Rhododendron arboreum(600)	-	-	0.646	1.476	-	-	-	-	-	-	2.122
Rhododendron species (601)	-	-	0.323	-	-	-	-	-	-	-	0.323
Tsuga dumosa(697)	-	-	0.431	0.954	-	7.690	4.922	3.614	5.075	6.537	29.222
Acer campbellii(739)	-	-	-	1.615	-	-	-	-	-	-	1.615
Actinodaphene sikkimensis(763)	-	-	-	0.738	-	-	-	-	-	-	0.738
Magnolia campbellii(779)	-	-	0.323	2.215	1.307	3.999	-	-	-	-	7.844
Rhododendron barbehum(782)	-	-	-	0.738	-	-	-	-	-	-	0.738
Rhododendron griffithianum(784)	-	-	-	0.969	0.738	-	-	-	-	-	1.707
Prunus peddum(792)	-	-	0.323	-	-	-	-	-	-	-	0.323
Pieris villosa(796)	-	-	-	0.738	-	-	-	-	-	-	0.738
Quercus pachyphylla(798)	-	-	5.768	5.075	1.230	8.075	4.611	11.996	6.921	5.383	52.061
O t h e r s (924)	-	-	-	0.738	1.307	-	2.845	-	-	-	4.891
T o t a l :	-	-	9.966	15.503	6.844	21.763	12.381	15.611	17.072	11.919	112.059

Table No. 2.1.4.2.

VOLUME PER HECTARE (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE - SOMBORE

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Tsuga dumosa (697)	-	-	2.800	-	-	-	-	-	-	-	2.800
T o t a l :	-	-	2.800	-	-	-	-	-	-	-	2.800

Table No. 2.2.1.1.

STRATUM - I : RESERVED FOREST

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

DISTRICT - WEST SIKKIM

RANGE - SARENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Castanopsis indica (157)	-	-	-	4.666	-	4.666	5.999	-	-	-	15.331
Chukrasia vellutina(171)	-	-	-	2.333	3.333	-	-	-	-	-	5.666
Cordia myxa (195)	-	-	-	2.333	-	-	-	-	-	-	2.333
Evodia species (298)	-	-	1.333	-	-	-	-	-	-	-	1.333
Fillicium decipiens (309)	-	-	-	2.333	-	-	-	-	-	-	2.333
Schima wallichii (627)	-	-	1.333	4.666	3.333	-	-	-	-	-	9.332
Sececarpus anacardium(630)	-	-	-	-	3.333	-	-	-	-	-	3.333
Shorea robusta(633)	-	-	17.331	20.997	3.333	-	-	-	-	-	41.661
Toona ciliata(691)	-	-	1.333	2.333	-	-	-	-	-	-	3.666
Gynocordia odorata(772)	-	-	-	2.333	3.333	-	-	-	-	-	5.666
Spondin axillaris(786)	-	-	-	-	3.333	-	-	-	-	-	3.333
O t h e r s (924)	-	-	-	-	3.333	-	-	-	-	-	3.333
T o t a l :	-	-	21.330	41.994	23.331	4.666	5.999	-	-	-	97.320

Table No. 2.2.1.2.

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE - SORENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia species (046)	-	-	4.000	2.333	3.333	-	-	-	-	-	9.667
Bombax ceiba (109)	-	-	-	-	6.667	-	-	-	-	-	6.667
Canarium species (139)	-	-	-	4.667	6.667	-	-	-	-	-	11.333
Castanopsis hystrix (156)	-	-	-	2.333	-	-	-	-	-	-	2.333
Duabanga grandiflora (251)	-	-	-	9.333	10.000	9.333	-	-	-	-	28.666
Erythrina variogata (279)	-	-	1.333	-	-	-	-	-	-	-	1.333
Fillicium decipiens (309)	-	-	2.667	-	-	-	-	-	-	-	2.667
Schima wallichii (627)	-	-	2.667	4.667	-	-	-	-	-	-	7.333
Terminalia myriocarpa (683)	-	-	-	2.333	6.667	4.667	-	-	-	-	13.667
Desoxylon species (769)	-	-	2.667	7.000	-	-	-	-	-	-	9.667
Gynocordia odorata (772)	-	-	-	2.333	-	-	-	-	-	-	2.333
T o t a l	-	-	13.333	35.000	33.333	14.000	-	-	-	-	96.066

Table No. 2.2.2.1.

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : RESERVED FOREST DISTRICT - WEST SIKKIM RANGE - SORENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia species (046)	-	-	0.727	0.636	-	-	-	-	-	-	1.364
Amoora species (057)	-	-	-	-	-	-	-	2.000	-	-	2.000
Castanopsis hystrix(156)	-	-	1.455	0.636	0.909	-	1.636	-	-	-	4.636
Castanopsis indica(1[illegible]7)	-	-	0.364	-	1.818	-	-	-	-	-	2.182
Chukrasia vellutina(171)	-	-	-	0.636	0.909	-	-	-	-	-	1.545
Cuprossus kashmiriana(213)	-	-	-	-	-	-	-	-	-	3.000	3.000
Diospyros choloroxylon(231)	-	-	-	-	-	-	-	-	2.545	-	2.545
Engelhardtia spicata(270)	-	-	-	1.273	1.818	-	-	2.000	-	-	5.091
Euginea species(289)	-	-	1.455	0.636	-	-	-	-	-	-	2.091
Eurya japonica(295)	-	-	0.818	1.364	-	-	-	-	-	-	2.182
Evodia species (298)	-	-	0.364	0.636	-	-	-	-	-	-	1.000
Fillicium decipiens(309)	-	-	1.091	-	0.909	-	-	-	-	-	2.000
Juglans regia (383)	-	-	-	0.636	-	1.273	-	-	-	-	1.909
Machilus species(435)	-	-	0.364	0.636	-	-	-	-	-	-	1.000
Michelia doltsopa(463)	-	-	-	0.636	-	-	-	-	-	-	0.636
Michelia languinosa(464)	-	-	-	-	0.909	1.273	-	-	-	-	2.182
Nyssa javanica(497)	-	-	-	0.636	-	-	-	-	-	-	0.636
Ostodes paniculata(508)	-	-	0.727	-	-	-	-	-	-	-	0.727
Quercus lanceaefolia(587)	-	-	2.545	3.818	-	-	-	-	-	-	6.364
Quercus species (594)	-	-	0.364	0.636	-	1.273	-	2.000	-	-	4.273
Schima wallichii (627)	-	-	0.364	5.091	0.909	-	-	-	-	-	6.364
Terminalia myriocarpa(683)	-	-	-	-	0.909	-	-	-	-	-	0.909
Symplocos theifolia(745)	-	-	1.636	-	-	-	-	-	-	-	1.636
Cedrela febrifuga(767)	-	-	-	0.636	-	-	-	-	-	-	0.636
Machilus gammioana(778)	-	-	-	-	-	1.273	-	-	-	-	1.273
Spondina axillaris(786)	-	-	-	0.636	0.909	-	-	-	-	-	1.545
O t h e r s (924)	-	-	0.727	-	-	2.545	1.636	-	-	-	4.909
T o t a l :	-	-	13.000	19.182	10.000	7.636	3.273	6.000	2.545	3.000	65.337

Table No. 2.2.2.2.

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE - SORENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acer species (018)	-	-	0.211	0.368	-	-	-	-	-	-	0.579
Albizzia species (046)	-	-	1.053	0.368	-	-	-	-	-	-	1.421
Alnus nepalensis (048)	-	-	9.210	7.579	4.474	-	-	-	-	-	21.263
Betula alnoides (105)	-	-	-	-	-	0.737	-	-	-	-	0.737
Canarium species (139)	-	-	-	-	0.526	-	-	-	-	-	0.526
Cordia myxa (195)	-	-	-	-	0.526	-	-	-	-	-	0.526
Engelhardtia spicata (270)	-	-	0.632	1.474	0.526	-	0.947	-	-	-	3.579
Eurya japonica (295)	-	-	0.158	-	-	-	-	-	-	-	0.158
Evodia species (298)	-	-	0.211	-	-	-	-	-	-	-	0.211
Fillicium decipiens (309)	-	-	0.211	0.737	-	-	-	-	-	-	0.947
Macaranga denticulata (425)	-	-	0.842	-	-	-	-	-	-	-	0.842
Ostodes paniculata (508)	-	-	0.211	-	-	-	-	-	-	-	0.211
Schima wallichii (627)	-	-	1.895	1.842	0.526	-	-	1.158	-	-	5.421
Toona ciliata (691)	-	-	-	0.737	0.526	-	-	-	-	-	1.263
Gynocordia odorata (772)	-	-	-	-	0.526	-	-	-	-	-	0.526
Spondian axillaris (786)	-	-	-	0.737	0.526	0.737	-	-	-	-	2.000
Brassaiopsis metis (791)	-	-	0.211	-	-	-	-	-	-	-	0.211
O t h e r s (924)	-	-	0.632	3.316	5.263	2.210	--	-	-	-	11.421
T o t a l :	-	-	15.473	17.157	13.421	3.684	0.947	1.158	-	-	52.541

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Table No. 2.2.3.1.

STRATUM - III : RESERVED FOREST

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

DISTRICT - WEST SIKKIM

RANGE : SORENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acer species (018)	-	-	-	0.175	-	-	-	-	-	-	0.175
Alnus nepalensis (043)	-	-	2.975	0.900	-	-	-	-	-	-	3.875
Beilschmiedia assamica(100)	-	-	0.100	0.175	0.250	-	-	-	-	-	0.525
Castanopsis hystrix(156)	-	-	2.100	4.375	4.500	5.950	1.350	0.550	0.700	0.825	20.350
Cinnamomum species (178)	-	-	-	0.175	-	-	-	-	-	-	0.175
Elaeocarpus lanceaefolius(258)	-	-	-	0.175	0.750	-	0.450	-	-	-	1.375
Endospermum chinense(268)	-	-	-	0.175	-	-	-	-	-	-	0.175
Engelhardtia spicata(270)	-	-	0.300	1.050	-	0.350	0.450	-	-	-	2.150
Euginea frondosa(285)	-	-	0.100	-	-	-	-	-	-	-	0.100
Eurya japonica(295)	-	-	0.900	0.375	-	-	-	-	-	-	1.275
Ficus species(308)	-	-	0.100	-	-	-	-	-	-	-	0.100
Juglans regia(383)	-	-	0.200	0.350	0.250	-	-	-	-	-	0.800
Litsaea species(420)	-	-	0.100	0.175	-	-	-	-	-	-	0.275
Macaranga denticulata(425)	-	-	0.400	-	-	-	-	-	-	-	0.400
Macaranga peltata(427)	-	-	-	0.175	-	-	-	-	-	-	0.175
Machilus species(435)	-	-	0.800	1.225	0.450	1.125	-	-	-	-	3.600
Meliosma species(457)	-	-	0.100	-	-	0.350	-	-	-	-	0.450
Michelia doltsopa(463)	-	-	-	-	0.250	0.350		-	0.700	-	1.300
Michelia species(468)	-	-	-	0.175	-	-	-	-	-	-	0.175
Nyssa javanica(497)	-	-	0.100	0.525	0.250	0.700	0.450	-	0.700	-	2.725
Prunus species(564)	-	-	0.200	0.525	-	0.350	-	-	-	-	1.075
Quercus lanceaefolia(537)	-	-	-	0.175	-	0.350	-	-	-	-	0.525
Quercus species(594)	-	-	1.000	2.500	1.250	3.150	1.350	0.550	4.200	4.125	19.125
Rhododendron species(601)	-	-	-	0.175	-	-	-	-	-	0.825	1.000
Rhus javanica(602)	-	-	-	-	-	-	-	-	-	0.825	0.825
Rhus species(604)	-	-	0.200	-	-	-	-	-	-	-	0.200
Syzygium species(668)	-	-	0.100	-	-	-	-	-	-	-	0.100
Acer campbellii(739)	-	-	0.225	0.875	0.300	-	1.250	0.775	-	-	3.425
Echinocarpus dasycarpus(743)	-	-	-	0.350	0.225	0.325	0.400	-	1.200	-	2.600

Contd. to Table No. 2.2.3.1.

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Symplocos theifolia(745)	-	-	0.750	0.275	-	-	-	-	-	-	1.025
Symplocos species(746)	-	-	-	0.175	-	-	-	-	-	-	0.175
Actinodaphene sikkimensis(763)	-	-	-	0.350	-	0.700	-	-	-	-	1.050
Betula cyidrostachys(765)	-	-	-	0.175	-	-	-	-	-	-	0.175
Rhododendron hodgronii(783)	-	-	0.300	0.175	0.250	-	-	-	-	-	0.725
Acer oblongum(793)	-	-	0.100	-	-	-	-	-	-	-	0.100
Acer laevigatum(794)	-	-	0.100	0.175	-	-	-	-	-	-	0.275
Pieris villosa(796)	-	-	-	0.175	-	-	0.450	-	-	-	0.625
O t h e r s (924)	-	-	0.400	0.350	1.000	-	-	0.550	-	-	2.300
T o t a l :	-	-	11.650	17.750	9.725	13.700	6.150	2.425	7.500	6.600	75.500

Table No. 2.2.3.2.

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : U RESERVED FOREST DISTRICT - WEST SIKKIM RANGE - SORENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alnus nepalensis (048)	-	-	4.900	1.200	6.800	-	-	-	-	-	12.900
Beilschmiedia assamica(100)	-	-	0.400	0.700	-	-	-	-	-	-	1.100
Castanopsis hystrix(156)	-	-	0.400	2.100	2.000	-	-	-	2.800	-	7.300
Elaeocarpus lanceaefolius(258)	-	-	-	-	0.700	-	-	-	-	-	0.700
Eurya japonica(295)	-	-	0.600	-	-	-	-	-	-	-	0.600
Juglans regia(383)	-	-	-	-	-	-	1.800	-	-	-	1.800
Litsaea species(420)	-	-	0.400	0.700	1.000	-	-	-	-	-	2.100
Machilus species(435)	-	-	0.400	-	-	-	-	-	-	-	0.400
Nyssa javanica(497)	-	-	0.800	0.700	-	-	-	-	-	-	1.500
Ostodes paniculata(508)	-	-	0.400	-	-	-	-	-	-	-	0.400
Quercus species(594)	-	-	0.400	0.700	1.000	-	1.800	2.200	-	6.600	12.700
Symplocos theifolia(745)	-	-	0.600	1.100	-	-	-	-	-	-	1.700
Meliosma pinnata(749)	-	-	-	0.700	-	-	-	-	-	-	0.700
O t h e r s (924)	-	-	1.608	1.408	-	-	-	-	-	-	3.000
T o t a l :	-	-	10.900	10.000	10.800	-	3.600	2.200	2.800	6.600	46.900

Table No. 2.2.4.1.

VOLUME PER HECTARE (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - IV : RESERVED FOREST DISTRICT - WEST SIKKIM RANGE - SORENG

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30.39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Abies spectabilis(001)	-	-	2.500	3.100	-	-	7.925	-	-	-	13.525
Alnus nepalensis(048)	-	-	1.750	-	-	-	-	-	-	-	1.750
Eurya japonica(295)	-	-	0.750	-	-	-	-	-	-	-	0.750
Litsaea species(420)	-	-	1.050	-	-	-	-	-	-	-	1.050
Michelia species(460)	-	-	-	-	4.250	-	-	-	-	-	4.250
Prunus species(564)	-	-	1.050	-	-	-	-	-	-	-	1.050
Quercus lamellosa(585)	-	-	-	4.800	4.250	-	-	12.250	-	-	21.300
Quercus lanceaefolia(587)	-	-	-	2.400	4.250	-	-	-	-	-	6.650
Quercus lineata(590)	-	-	-	-	2.750	-	-	-	-	-	2.750
Xanthophyllum andamanicum(720)	-	-	-	-	2.400	-	-	-	-	-	2.400
Acer campbellii(739)	-	-	1.500	-	-	-	-	-	-	-	1.500
Magnolia compbelli(779)	-	-	-	2.400	-	-	-	-	-	-	2.400
Quercus pachyphylla(798)	-	-	-	-	2.750	-	-	-	-	-	2.750
T o t a l :	-	-	8.600	15.100	18.250	-	7.925	12.250	-	-	62.125

Table No. 2.3.1.1.

VOLUME PER HECTARE (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : RESERVED FOREST DISTRICT - EST SIKKIM RANGE - GAZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Shorea robusta (633)	-	-	-	35.000	20.000	14.000	-	-	-	-	69.000
T o t a l :	-	-	-	35.000	20.000	14.000	-	-	-	-	69.000

Table No. 2.3.1.2.

VOLUME PER HECTARE (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - I : UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE - GAZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Schima wallichii (627)	-	-	4.000	-	-	-	-	-	-	-	4.000
Shorea robusta(633)	-	-	-	3.500	5.000	-	-	-	-	-	8.500
T o t a l :	-	-	4.000	3.500	5.000	-	-	-	-	-	12.500

Table No. 2.3.2.2.

VOLUME PER HECTARE (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE - GAZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Acrocarpus fraxinifolius(019)	-	-	-	-	-	0.467	-	-	-	-	0.467
Albizzia species (046)	-	-	0.133	-	-	-	-	-	-	-	0.133
Alnus nepalensis(048)	-	-	6.066	2.000	1.133	0.733	-	-	-	-	9.932
Beilschmiedia assamica(100)	-	-	-	0.467	0.333	-	-	-	-	-	0.800
Betula alnoides(105)	-	-	0.133	-	-	-	-	-	-	-	0.133
Bischofia javanica(107)	-	-	-	0.233	-	-	-	-	-	-	0.233
Castanopsis hystrix(156)	-	-	0.667	0.933	1.000	0.933	-	-	-	-	3.533
Castanopsis indica(157)	-	-	0.133	0.233	-	-	-	-	-	-	0.367
Elaeocarpus lanceaefolius(258)	-	-	-	-	0.233	-	-	-	-	-	0.233
Engelhardtia spicata(270)	-	-	0.133	-	-	-	-	-	-	-	0.133
Macaranga denticulata(425)	-	-	-	0.233	-	-	-	-	-	-	0.233
Michelia languinosa(464)	-	-	-	-	-	-	0.600	-	-	-	0.600
Quercus lanceaefolia(537)	-	-	0.133	0.467	0.667	0.933	-	-	-	-	2.200
Quercus species(594)	-	-	0.267	0.700	-	-	0.600	-	-	-	1.567
Rhus species(604)	-	-	0.133	-	-	-	-	-	-	-	0.133
Saurinia napaulansis(624)	-	-	0.133	0.233	0.333	-	-	-	-	-	0.700
Schima wallichii (627)	-	-	0.667	0.933	-	-	-	-	-	-	1.600
Magnolia pterocarpa(780)	-	-	0.133	0.233	-	-	-	-	-	-	0.367
O t h e r s (924)	-	-	-	0.233	0.333	-	-	-	-	-	0.567
T o t a l :	-	-	8.732	7.133	3.800	3.065	1.200	-	-	-	23.931

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Table No. 2.3.3.1.

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : RESERVED FOREST — DISTRICT - WEST SIKKIM — RANGE - GAZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alangium salvifolium(033)	-	-	0.138	0.241	-	-	-	-	-	-	0.378
Alnus nepalensis(048)	-	-	0.722	-	-	-	-	-	-	-	0.722
Beilschmiedia assamica(100)	-	-	0.826	1.686	1.032	1.926	-	-	-	-	5.470
Betula alnoides(105)	-	-	0.138	0.482	-	-	-	-	-	-	0.619
Castanopsis hystrix(156)	-	-	1.926	3.612	2.051	4.816	1.238	3.027	-	-	16.684
Cinnamomum species(178)	-	-	0.138	0.241	-	-	-	-	-	-	0.378
Elaeocarpus lanceaefolius(258)	-	-	-	-	0.241	-	-	0.619	-	-	0.860
Engelhardtia spicata(270)	-	-	0.413	0.241	-	-	-	-	-	-	0.654
Euginea species(289)	-	-	-	0.241	-	-	-	-	-	-	0.241
Eurya japonica(295)	-	-	.722	-	-	-	-	-	-	-	0.722
Macaranga denticulata(425)	-	-	0.275	0.241	-	-	-	-	-	-	0.516
Machilus odoratissima(432)	-	-	-	0.482	-	-	-	0.757	-	1.135	2.374
Machilus species(435)	-	-	0.413	0.963	0.310	0.516	-	-	-	-	2.202
Michelia doltsopa(463)	-	-	0.138	-	-	0.482	-	-	-	-	0.619
Michelia languinosa(464)	-	-	-	-	0.344	-	-	-	-	-	0.344
Prunus species(564)	-	-	0.275	-	-	-	-	-	-	-	0.275
Quercus species(594)	-	-	1.925	1.204	1.720	1.926	0.619	1.514	-	1.135	10.045
Rhus species(604)	-	-	0.138	0.241	-	-	-	-	-	-	0.378
Symingtoria populnea(661)	-	-	0.413	0.413	-	-	-	-	-	-	0.826
Acer campbellii(739)	-	-	0.205	0.241	0.413	-	0.860	-	-	-	1.720
Echinocarpus dasycarpus(743)	-	-	-	-	0.310	-	-	0.654	0.826	-	1.789
Symplocos theifolia(745)	-	-	1.032	1.514	-	-	-	-	-	-	2.546
Ligustrum robustrum(760)	-	-	-	-	0.344	-	-	-	-	-	0.344
Actinodaphene sikkimensis(763)		-	0.138	-	0.344	0.482	-	0.757	-	-	1.720
Viburnum species(789)	-	-	-	0.241	-	-	-	-	-	-	0.241
Acer oblongum(793)	-	-	0.138	-	-	-	-	-	-	-	0.138
Pyrularis edulis(795)	-	-	0.138	-	-	-	-	-	-	-	0.138
Pieris villosa(796)	-	-	0.138	-	-	0.482	-	-	-	-	0.619
Machilus edulis(799)	-	-	-	0.241	0.688	0.482	-	-	-	-	1.410
O t h e r s (924)	-	-	1.551	1.927	1.375	0.963	0.619	-	-	-	7.499
o t a l :	-	-	12.040	14.689	8.944	12.074	3.956	6.708	1.789	2.270	63.470

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Table No. 2.3.3.2.

VOLUME PER HECTARE (IN M^3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE - GAZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alnus neaplensis (048)	-	-	1.909	-	-	-	-	-	-	-	1.909
Castanopsis hystrix (156)	-	-	1.091	1.273	0.999	-	-	2.000	-	-	5.272
Engelhardtia spicata (270)	-	-	0.727	-	-	-	-	-	-	-	0.727
Eurya japonica (295)	-	-	0.818	-	-	-	-	-	-	-	0.818
Macaranga denticulata (425)	-	-	0.727	-	-	-	-	-	-	-	0.727
Machilus odoratissima (432)	-	-	-	0.636	-	-	-	-	-	-	0.636
Quercus lanceaefolia (587)	-	-	0.364	-	-	-	-	-	-	-	0.364
Quercus species (594)	-	-	0.364	.	.	.	.	-	-	-	0.364
O t h e r s (924)	-	-	-	0.636	0.909	-	-	-	-	-	1.545
T o t a l :	-	-	5.999	2.545	1.818	-	-	2.000	-	-	12.362

Table No. 2.3.4.1.

STRATUM - IV : RESERVED FOREST

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

DISTRICT - WEST SIKKIM

RANGE - GAZING

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Castanopsis hystrix(156)	-	-	0.840	-	3.400	5.200	7.400	9.800	26.400	-	53.040
Euginea formosa(286)	-	-	-	-	-	5.200	-	-	-	-	5.200
Eurya japonica(295)	-	-	0.600	1.000	-	-	-	-	-	-	1.600
Machilus species(435)	-	-	-	1.400	-	-	-	-	-	-	1.400
Michelia doltsopa(463)	-	-	-	1.920	-	-	-	-	-	-	1.920
Michelia species(468)	-	-	0.840	-	-	-	-	-	-	-	0.840
Quercus lamellosa(586)	-	-	0.840	1.920	-	-	14.800	-	-	-	17.560
Quercus lanceaefolia(587)	-	-	1.680	-	-	-	-	-	-	-	1.680
Quercus lineata(590)	-	-	-	-	-	3.400	-	-	6.600	-	10.000
Acer campbellii(739)	-	-	-	1.400	-	-	-	-	-	-	1.400
Echinocarpus dasycarpus(743)	-	-	0.800	-	-	2.600	-	-	4.800	-	8.200
Quercus pachyphylla(798)	-	-	2.400	-	-	3.000	-	-	6.000	-	11.400
O t h e r s (924)	-	-	-	1.920	-	-	-	-	-	-	1.920
T o t a l :	-	-	8.000	9.560	3.400	19.400	22.200	9.800	43.800	-	116.160

Contents

Table No. 2.4.2.1.

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : RESERVEI FOREST DISTRICT - WEST SIKKIM RANGE - YOKSOM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alnus nepalensis (048)	-	-	7.000	6.000	-	-	-	-	-	-	13.000
Castanopsis hystrix (156)	-	-	-	-	5.000	-	-	-	-	-	5.000
Quercus species (594)	-	-	-	-	-	7.000	-	-	-	16.500	23.500
T o t a l :	-	-	7.000	6.000	5.000	7.000	-	-	-	16.500	41.500

Table No. 2.4.2.2.

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE - YOKSOM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Albizzia chinensis(039)	-	-	-	0.259	-	-	-	-	-	-	0.259
Albizzia procera (045)	-	-	0.593	-	-	-	-	-	-	-	0.593
Albizzia species(046)	-	-	0.148	0.519	0.741	-	-	-	-	-	1.408
Alnus nepalensis(048)	-	-	1.556	0.889	-	-	-	-	-	-	2.445
Amoora species(057)	-	-	-	0.519	-	-	-	-	-	-	0.519
Bischofia javanica(107)	-	-	0.296	0.259	0.370	-	-	-	-	-	0.926
Bombax ceiba(109)	-	-	0.148	0.259	-	0.519	-	-	-	-	0.926
Castanopsis hystrix(156)	-	-	1.185	1.815	2.222	1.037	-	0.815	-	-	7.075
Castanopsis indica(157)	-	-	0.296	0.259	0.370	-	-	-	-	-	0.926
Diploknema butyracea (241)	-	-	-	0.259	-	-	-	-	-	-	0.259
Elaeocarpus lanceaefolius(258)	-	-	-	-	0.370	-	-	-	-	-	0.370
Engelhardtia spicata(270)	-	-	0.148	0.519	-	-	-	-	-	-	0.667
Gymnosporia ruba(340)	-	-	-	1.296	-	-	-	-	-	-	1.296
Hymenodictoon excelsum(370)	-	-	0.148	-	-	-	-	-	-	-	0.148
Macaranga peltata(427)	-	-	-	0.519	-	-	-	-	-	-	0.519
Machilus species(435)	-	-	0.148	0.259	-	-	-	-	-	-	0.407
Quercus species(594)	-	-	0.148	0.519	1.111	0.519	-	0.815	-	-	3.111
Rhus species(604)	-	-	0.296	-	-	-	-	-	-	-	0.296
Schima wallichii(627)	-	-	1.037	1.037	0.741	-	1.333	-	-	-	4.148
Syzygium cumini(665)	-	-	0.296	-	-	-	-	-	-	-	0.296
Terminalia chebula(679)	-	-	0.148	-	-	-	-	-	-	-	0.148
Toona ciliata(691)	-	-	-	0.519	-	-	-	-	-	-	0.519
Viburnum species(789)	-	-	-	-	0.370	-	-	-	-	-	0.370
O t h e r s (924)	-	-	-	0.519	0.370	0.519	0.667	-	-	-	1.556
T o t a l :	-	-	6.593	10.223	6.667	2.593	2.000	1.630	-	-	29.706

Table No. 2.4.3.1.

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - III : RESERVEI FOREST DISTRICT - WEST SIKKIM RANGE - YOKSOM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alcimandra catheartii(047)	-	-	-	0.250	-	-	-	-	-	-	0.250
Alnus nepalensis(048)	-	-	0.500	-	-	0.785	-	-	-	-	1.285
Beilschmiedia assamica(100)	-	-	0.857	1.000	-	1.000	0.643	-	-	-	3.499
Castanopsis hystrix(156)	-	-	2.570	6.497	2.856	3.499	0.643	3.927	5.998	7.059	33.058
Cinnamomum species(178)	-	-	0.714	-	-	-	-	-	-	-	0.714
Elaeocarpus lanceaefolius(158)		-	0.143	0.250	0.357	-	0.643	-	-	-	1.392
Engelhardtia spicata(270)	-	-	-	0.500	-	-	-	-	-	-	0.500
Eudnymus lacerus(290)	-	-	0.143	-	0.357	-	-	-	-	-	0.500
Eurya japonica(295)	-	-	0.321	0.179	-	0.357	-	-	-	-	0.857
Ficus species(308)	-	-	0.143	-	-	-	-	-	-	-	0.143
Litsaea species(420)	-	-	0.428	0.850	0.711	0.500	-	-	-	-	2.392
Machilus odoratissima(432)	-	-	0.428	0.250	-	1.000	-	-	-	-	1.678
Machilus species(435)	-	-	1.428	1.749	0.321	1.606	1.571	-	-	-	6.676
Michelia doltsopa(463)	-	-	0.285	0.750	-	-	-	-	-	-	1.035
Michelia languinosa(464)	-	-	-	0.250	-	-	-	-	-	-	0.250
Michelia species(468)	-	-	-	0.250	0.714	-	1.285	-	-	-	2.249
Nyssa javanica(497)	-	-	-	-	0.357	0.500	-	-	-	-	0.857
Prunus species(564)	-	-	0.286	1.999	0.357	-	-	-	-	-	2.642
Quercus lanceaefolia(587)	-	-	0.143	0.250	0.357	-	-	-	-	-	0.750
Quercus species (594)	-	-	1.162	4.748	3.927	3.499	7.069	0.785	7.997	10.603	39.770
Acer campbelli(739)	-	-	0.107	0.250	0.428	1.214	1.785	-	-	-	3.784
Echinocarpus dasycarpus(743)	-	-	-	-	-	0.464	-	1.357	-	1.107	2.927
Symplocos theifolia(745)	-	-	0.214	-	-	-	-	-	-	-	0.214
Machilus gammioana(778)	-	-	-	-	-	0.500	-	-	-	1.178	1.678
Magnolia pterocarpa(780)	-	-	-	-	-	-	-	-	-	1.178	1.178
Sarcosperma arboreum(797)	-	-	0.143	-	-	-	-	-	-	-	0.143
O t h e r s (924)	-	-	0.571	0.500	0.357	1.000	0.643	-	1.000	-	4.071
T o t a l :	-	-	10.567	20.420	11.103	15.922	14.280	6.069	14.994	21.124	114.490

Table No. 2.4.3.2.

VOLUME PER HECTARE (IN M3) BY SPECIES AND DIAMETER CLASSES (IN CM.)

STRATUM - II : UNRESERVED FOREST DISTRICT - WEST SIKKIM RANGE - YOKSOM

Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Alnus nepalensis(048)	-	-	5.154	1.042	0.738	-	-	-	-	-	6.944
Beilschmiedia assamica(100)	-	-	-	-	0.434	-	-	-	-	-	0.434
Betula alnoides (105)	-	-	0.174	0.304	-	-	-	-	-	-	0.477
Castanopsis hystrix(156)	-	-	1.215	4.253	2.170	3.038	2.344	0.955	1.215	-	15.190
Cinnamomum species(178)	-	-	0.174	-	-	-	-	-	-	-	0.174
Cordia companilata(190)	-	-	-	-	-	1.608	-	-	-	-	1.608
Elaeocarpus lanceaefolius(258)	-	-	-	-	0.304	-	0.608	-	-	-	0.911
Engelhardtia spicata(270)	-	-	0.694	0.304	-	-	-	-	-	-	0.998
Eurya japonica(295)	-	-	0.391	0.217	-	-	-	-	-	-	0.608
Ficus species(308)	-	-	-	-	0.434	-	-	-	-	-	0.434
Machilus odoratissima(432)	-	-	0.347	-	-	1.215	-	0.955	-	-	2.517
Machilus species(435)	-	-	0.174	1.215	-	-	-	-	-	-	1.389
Meliosma species(457)	-	-	0.174	-	-	-	-	-	-	-	0.174
Nyssa javanica(497)	-	-	-	0.304	-	-	-	-	-	-	0.304
Prunus species(564)	-	-	-	0.304	0.868	-	-	-	-	-	1.172
Quercus species(594)	-	-	0.868	1.519	2.170	-	3.125	1.910	2.430	4.297	16.318
Salix tetrasperma(611)	-	-	-	-	-	0.608	-	-	-	-	0.608
Saurinia nepaulensis(624)	-	-	-	0.911	-	-	-	-	-	-	0.911
Symingtoria populnea(651)	-	-	0.347	0.260	0.347	-	-	-	-	-	0.955
Acer campbellii(739)	-	-	0.130	1.215	-	-	-	-	-	-	1.345
Symplocos theifolia(745)	-	-	0.260	-	-	-	-	-	-	-	0.260
Acer laevigatum(794)	-	-	-	0.304	-	-	-	-	-	-	0.304
O t h e r s (924)	-	-	-	-	0.434	-	-	-	-	-	0.434
T o t a l :	-	-	10.112	12.456	7.596	6.076	5.468	3.819	3.646	4.297	53.469

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Table No. 2.4.4.1.

STRATUM - IV : RESERVED FOREST VOLUME PER HECTARE (IN M3) B SPECIES AND DIAMETER CLASSES (IN CM.)
DISTRICT - WEST SIKKIM RANGE - YOKSOM

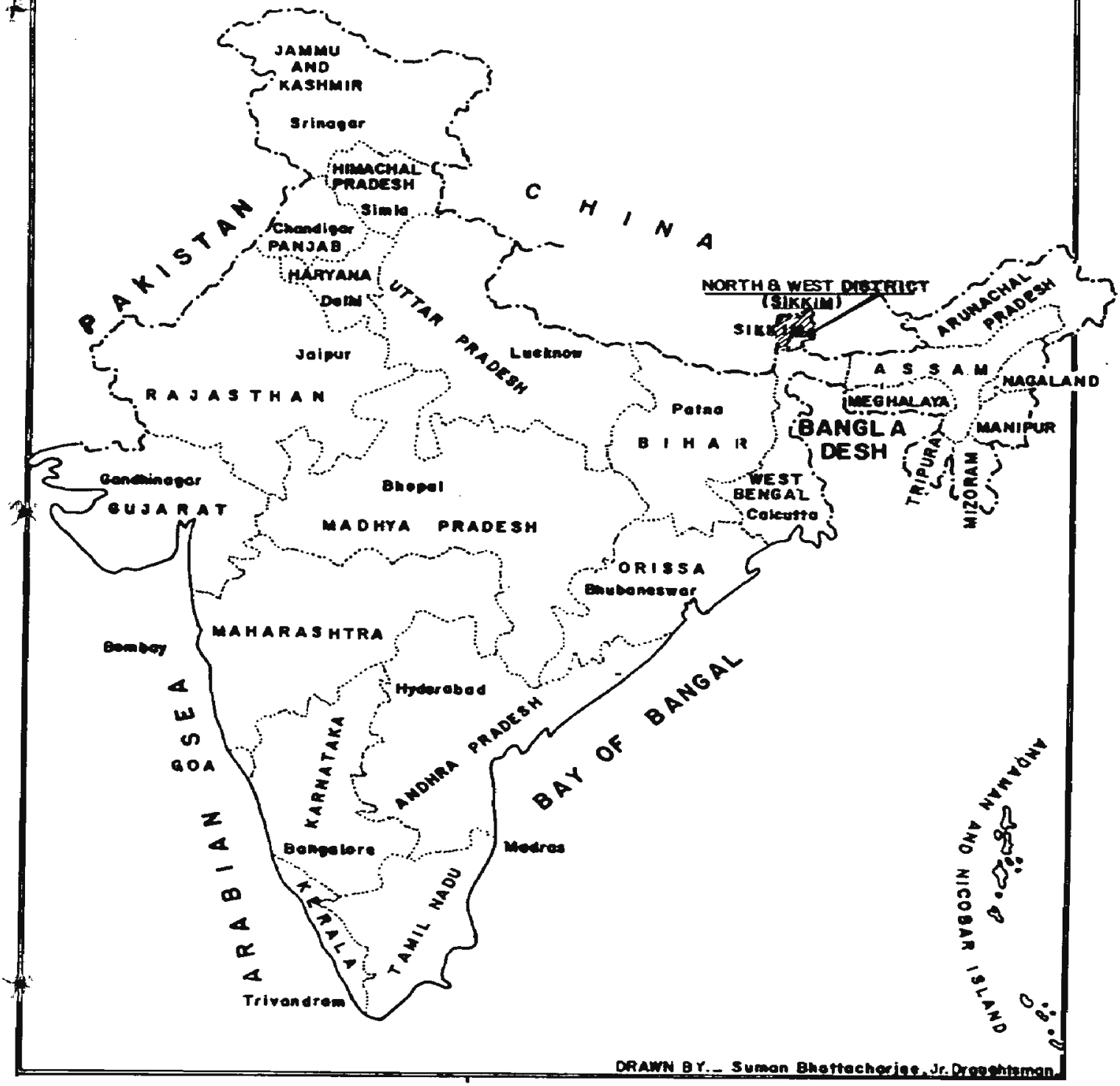
Species name with code	Diameter classes (in cm.)										
	10-19	20-29	30-39	40-49	50-59	60-69	70-79	80-89	90-99	100+	Total
Abies densa (001)	-	-	0.208	1.035	0.991	-	7.992	3.865	10.646	7.305	31.971
Beilschmiedia roxiburghii(100)	-	-	0.850	0.916	1.583	4.831	-	-	-	-	8.180
Betula alnoides(105)	-	-	-	0.916	-	-	-	-	-	-	0.916
Betula utilis(106)	-	-	0.850	-	-	-	-	-	-	-	0.850
Castanopsis hystrix(156)	-	-	2.124	7.330	7.914	21.741	-	15.744	-	-	54.853
Ehretia caevis(256)	-	-	-	-	1.583	-	-	-	-	-	1.583
Elaeocarpus lanceaefolius(258)	-	-	-	0.916	1.583	4.831	3.665	-	-	-	10.996
Litsaea speices(420	-	-	-	0.916	3.165	2.416	-	-	-	-	6.497
Machilus odoratissima(432)	-	-	-	1.833	-	-	-	-	-	-	1.833
Machilus species(435)	-	-	1.333	2.916	2.249	3.749	-	-	-	-	10.246
Macropanax oreophyllum(436)	-	-	-	-	-	2.416	-	-	-	-	2.416
Michelia doltsopa(463)	-	-	-	0.916	1.583	4.831	-	-	-	-	7.330
Michelia species(468)	-	-	-	-	-	2.415	7.330	-	-	-	9.746
Prunus species(564)	-	-	0.850	-	-	2.416	-	-	-	-	3.265
Quercus lamellosa(585)	-	-	1.274	10.079	11.079	9.663	21-991	-	-	17.826	71.911
Quercus lanceaefolia(587)	-	-	0.425	-	-	-	-	-	-	-	0.425
Quercus lineata(590)	-	-	-	1.166	-	-	-	-	-	-	1.166
Rhododendron arboreum(600)	-	-	0.425	0.916	.	.	-	-	-	-	1.341
Tsuga dumosa(697)	-	-	0.466	-	1.833	-	-	3.915	10.996	14.161	31.371
Acer campbellii(739)	-	-	0.750	2.232	1.000	-	-	-	-	-	4.082
Echinocarpus dasycarpus(743)	-	-	-	-	0.750	-	-	-	-	-	0.750
Symplocos theifolia(745)	-	-	1.499	.	-	-	-	-	-	-	1.499
Ligustrum robustrum(760)	-	-	-	0.916	-	-	-	-	-	-	0.916
Actinodaphene sikkimensis(763)		-	-	1.833	-	2.415	-	-	-	-	4.248
Magnolia compbelli(779)	-	-	1.274	-	-	2.416	-	-	-	-	3.690
Rhododendron barbehum(782)	-	-	0.425	-	-	-	-	-	-	-	0.425
Rhododendron hodgronii(783)	-	-	0.425	1.833	1.583	-	-	-	-	-	3.840
Rhododendron griffithianum(784)		-	0.850	-	-	-	-	-	-	-	0.850
O t h e r s (924)	-	-	-	0.916	3.165	-	-	-	-	8.913	12-994
T o t a l :	-	-	14.028	37.685	40.059	64.141	40.909	23.524	21.641	48.206	291.292

MAP NO.- I

MAP OF INDIA

SHOWING PROJECT AREA IN NORTH & WEST DISTRICT (SIKKIM)

SCALE :- 1 : 15 000 000



DRAWN BY.- Suman Bhattacharjee, Jr. Draughtsman.

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MAP NO -4

MAP OF WEST SIKKIM DISTRICT (SIKKIM) SHOWING ROADS, RIVERS & FOREST AREAS. SCALE :— 1 : 150000

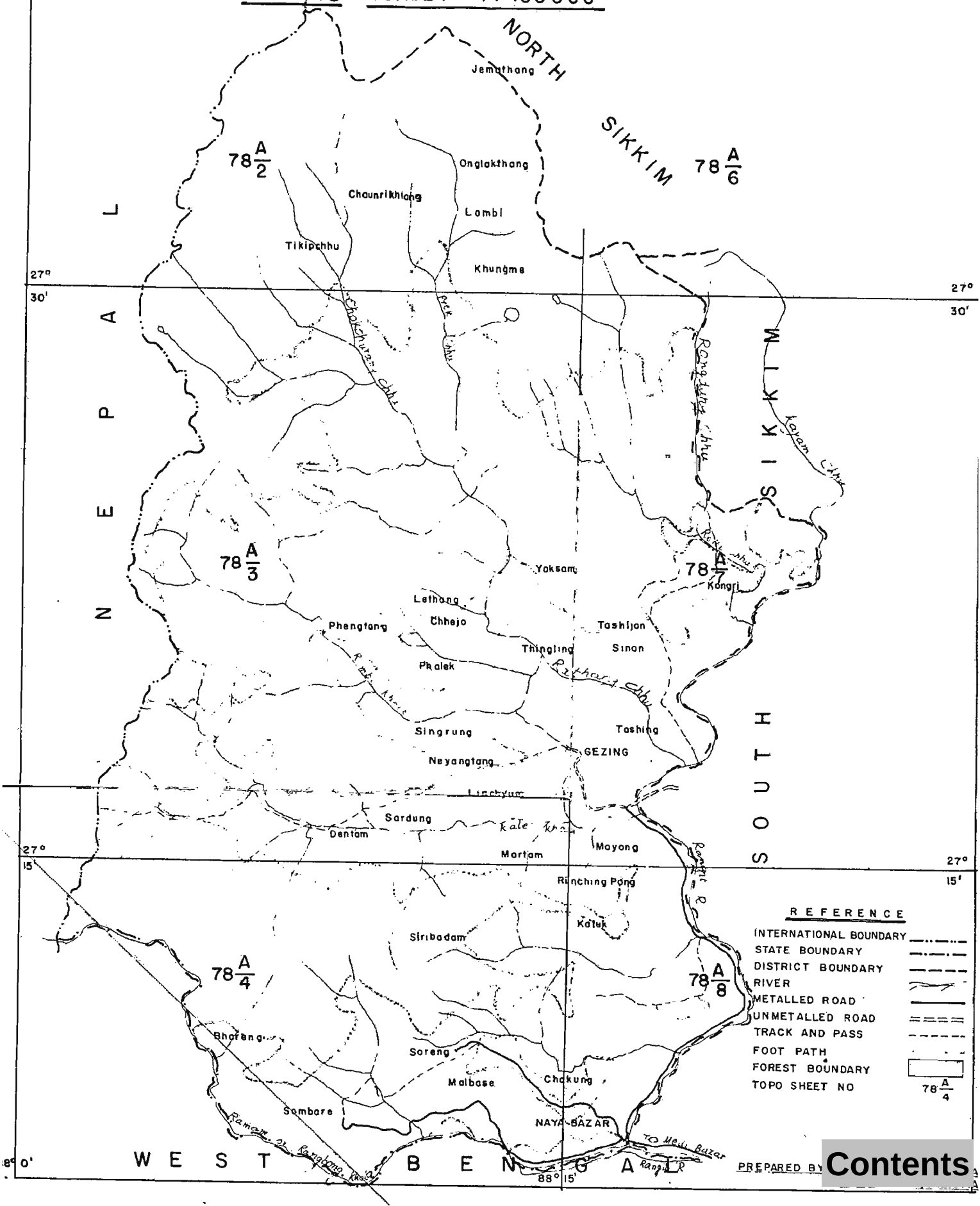

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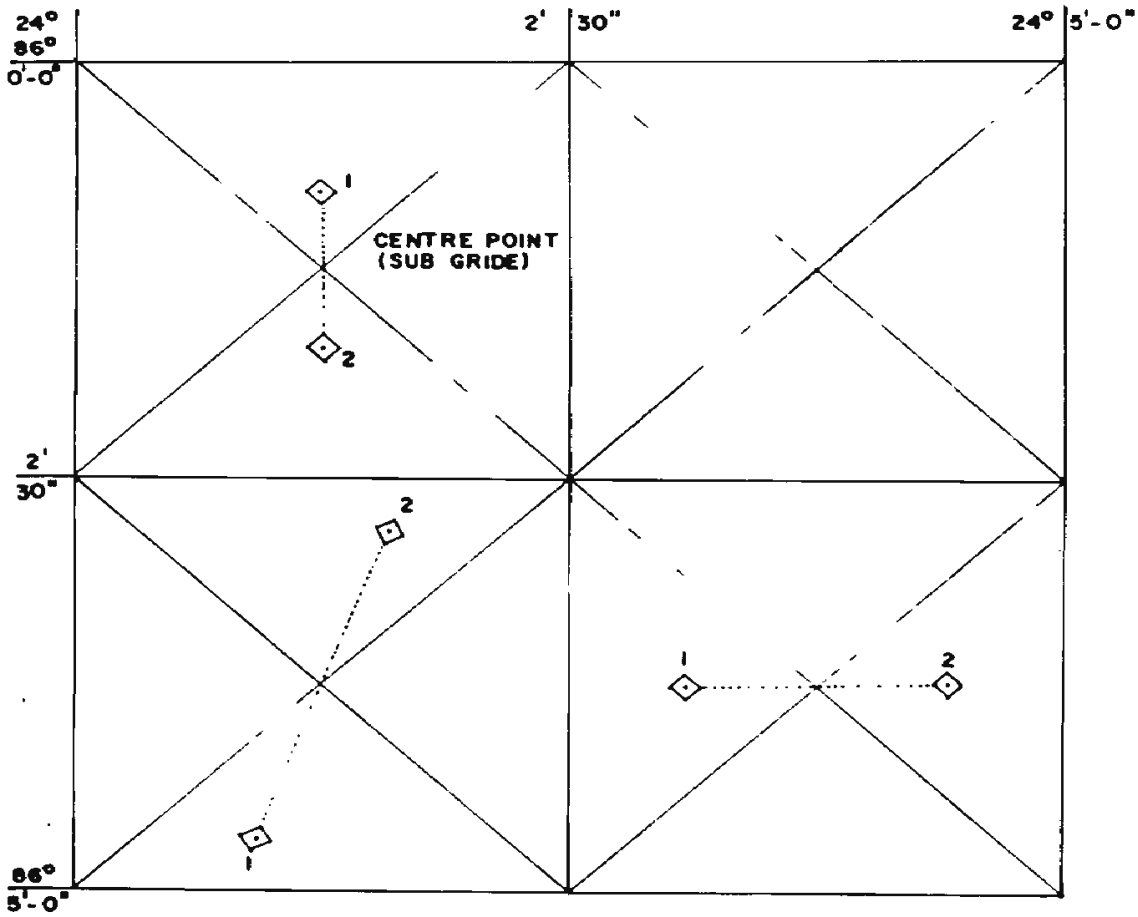
DIAGRAM NO.- I

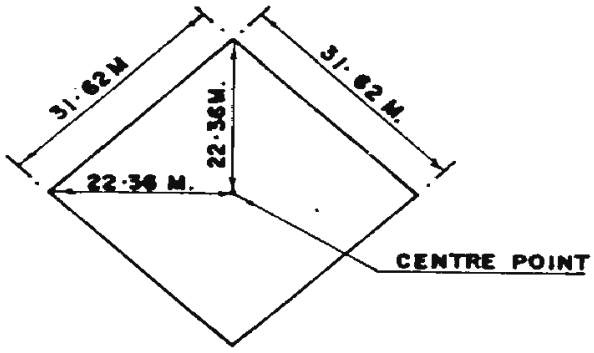
FOREST SURVEY OF INDIA

INVENTORY DESIGN

FOLLOWED ABOVE 2400 M. ALTITUDE IN SIKKIM



FIRST PLOT IS SELECTED RANDOMLY AND THE SECOND PLOT IS SITUATED AT AN EQUAL DISTANCE FROM THE CENTRE OF THE FIRST PLOT TO THE CENTRE OF 2'-30" x 2'-30" SUB GRID AND IS JUST IN THE OPPOSITE DIRECTION.



DETAILS OF PLOT

DRAWN BY.— Suman Bhattacharyya, Jr. D/man.

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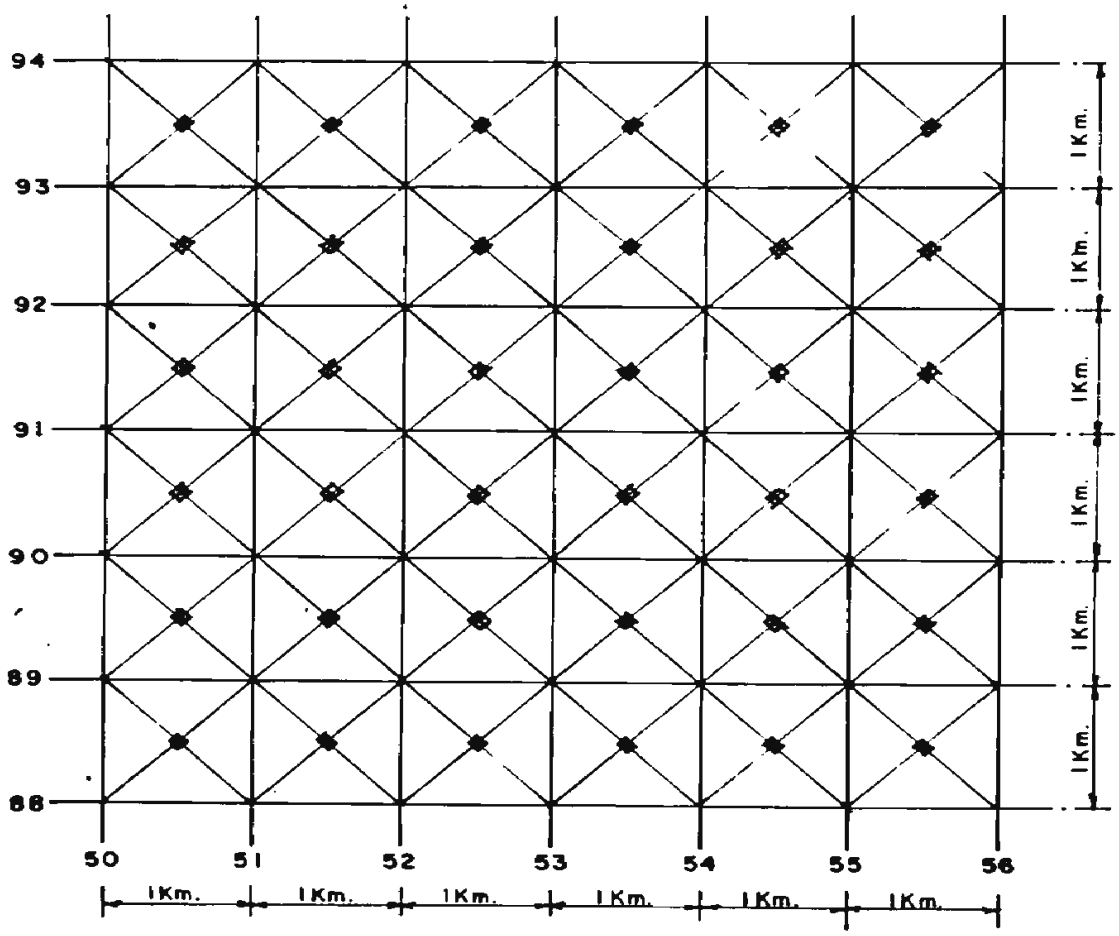
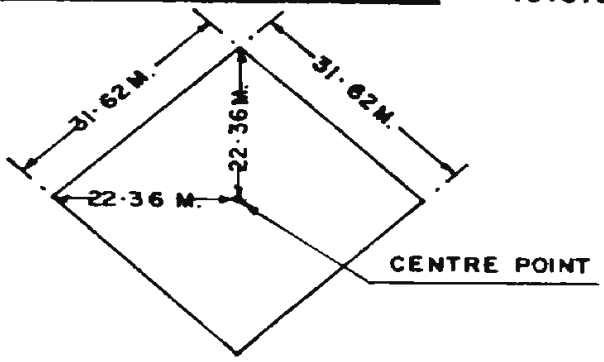
DIAGRAM NO.- 2

INVENTORY DESIGN FOR WEST SIKKIM DISTRICT



ORIENTATION OF GRIDS OF SIZE 1Km. x 1Km.
BELOW ALTITUDE 2400 M.
(SYSTEMATIC SAMPLING)

LAY OUT OF PLOT AT THE GRID CENTRE



PLOT SIZE :- 0·1HA.

DRAWN BY.. Suman Bhattacharjee, Jr. D/man.

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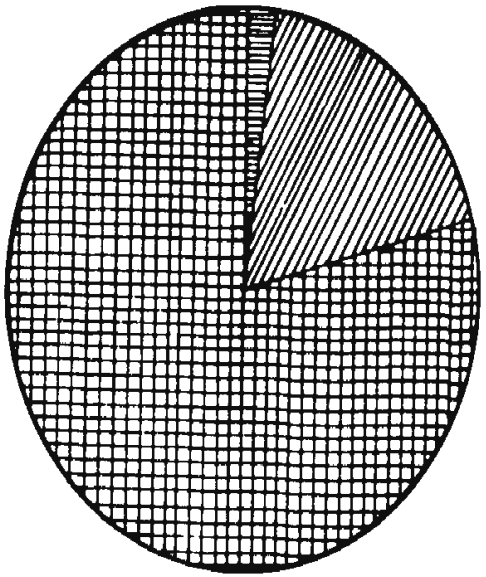
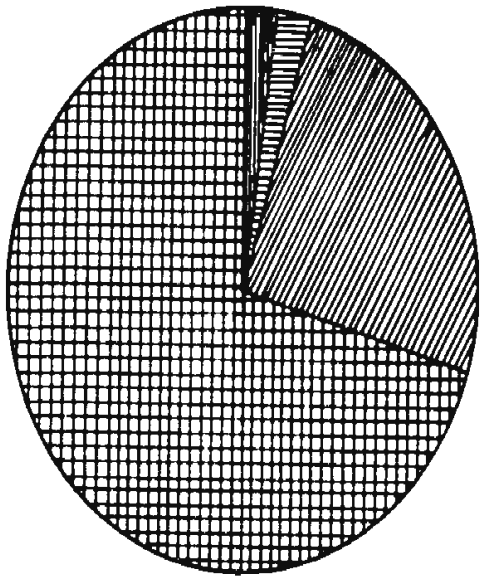
DIAGRAM NO.- 3

DISTRIBUTION OF RESERVED FOREST AREA BY STRATUM

NORTH SIKKIM



WEST SIKKIM



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	NORTH SIKKIM	WEST SIKKIM
STRATUM – I	—	2·31 %
STRATUM – II	1·93 %	2·27 %
STRATUM – III	18·86%	25·01 %
STRATUM – IV	79·21%	70·41 %

DISTRIBUTION OF STEMS / HA. BY DIAMETER CLASS & STRATUM

NORTH SIKKIM DISTRICT (RESERVED FOREST)

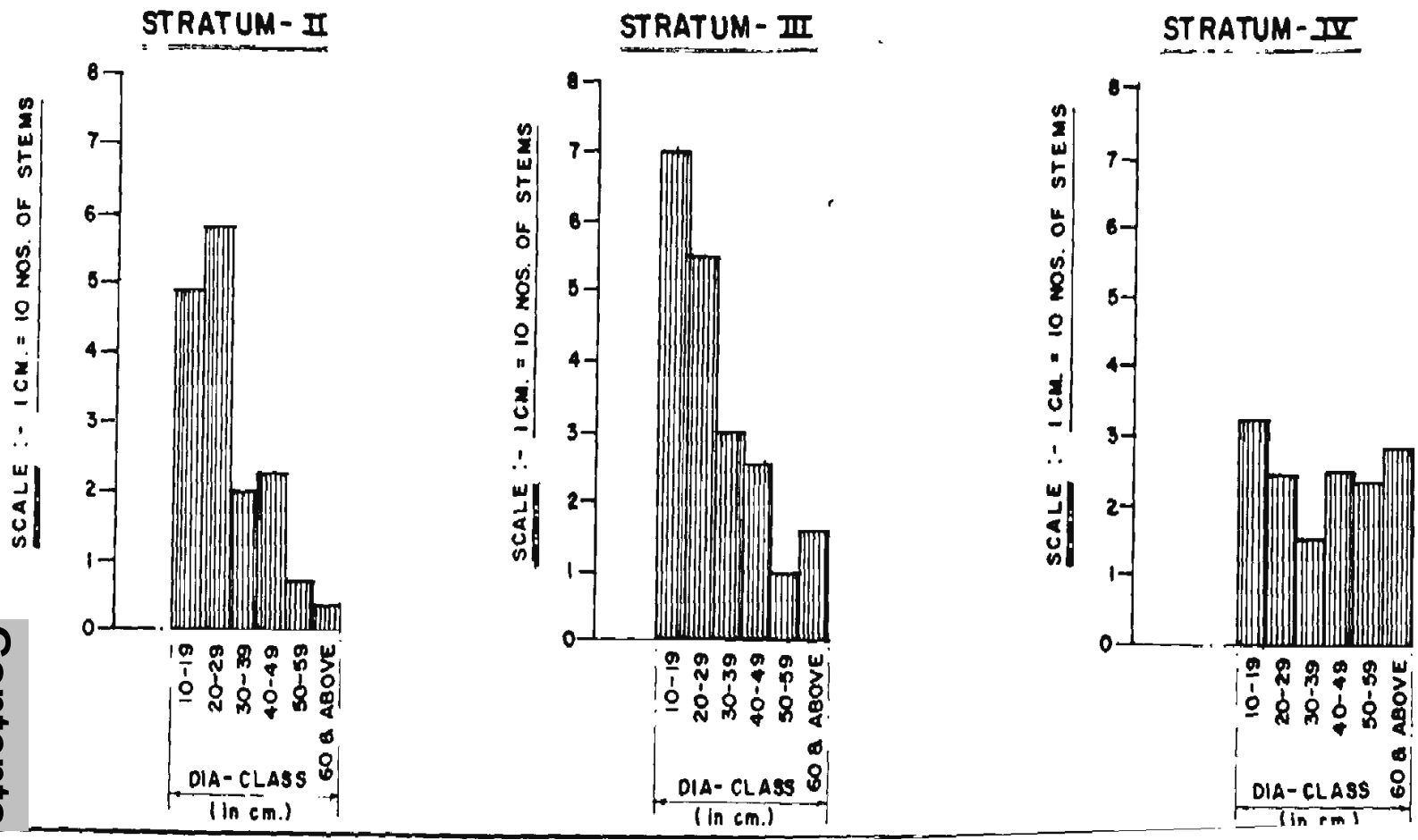

DIAGRAM NO.- 5

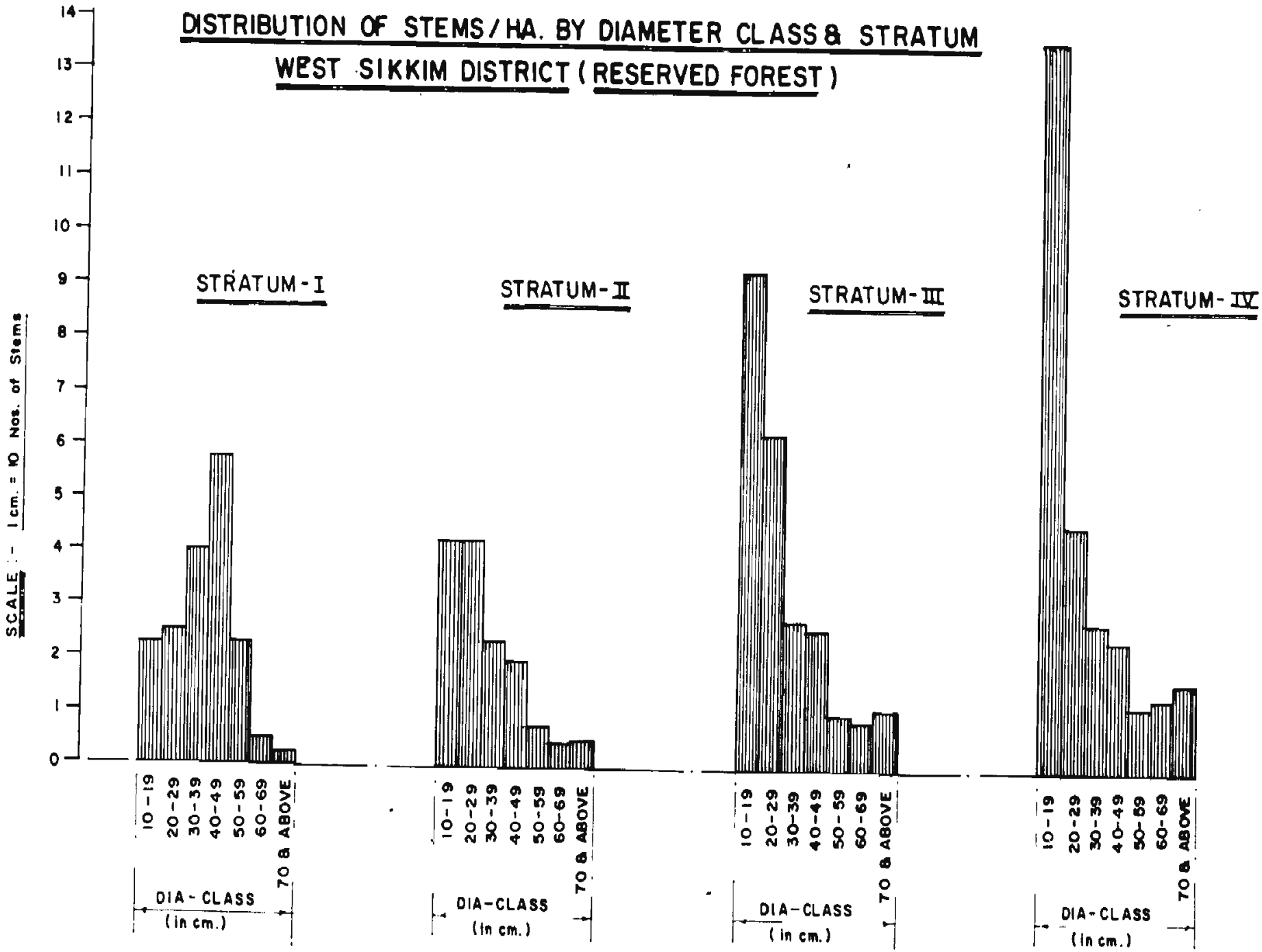

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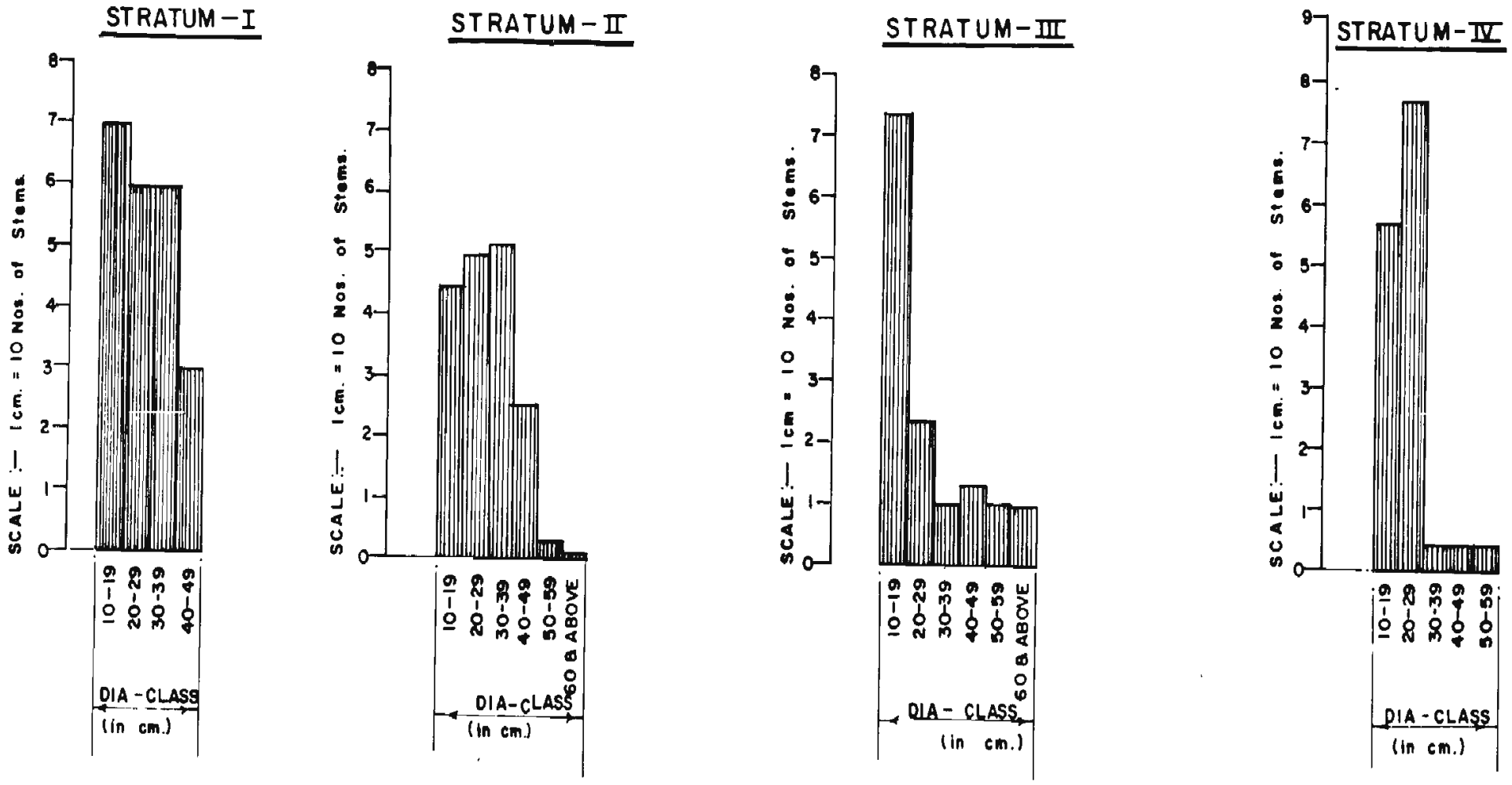
DIAGRAM NO. - 6

DISTRIBUTION OF STEMS/HA. BY DIAMETER CLASS & STRATUM
NORTH SIKKIM DISTRICT (UNRESERVED FOREST)



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DISTRIBUTION OF STEMS/HA. BY DIAMETER CLASS & STRATUM
WEST SIKKIM DISTRICT (UNRESERVED FOREST)

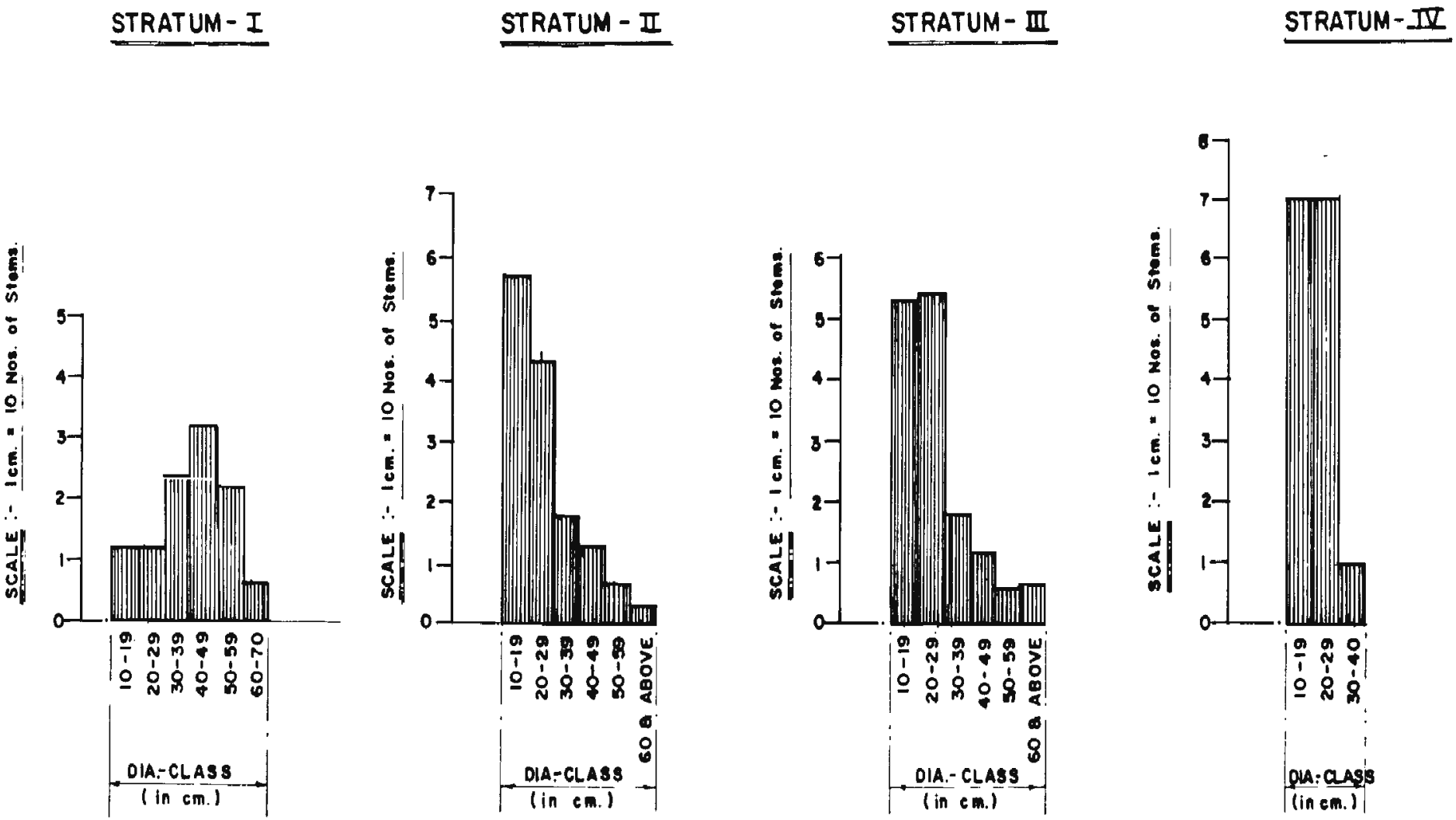
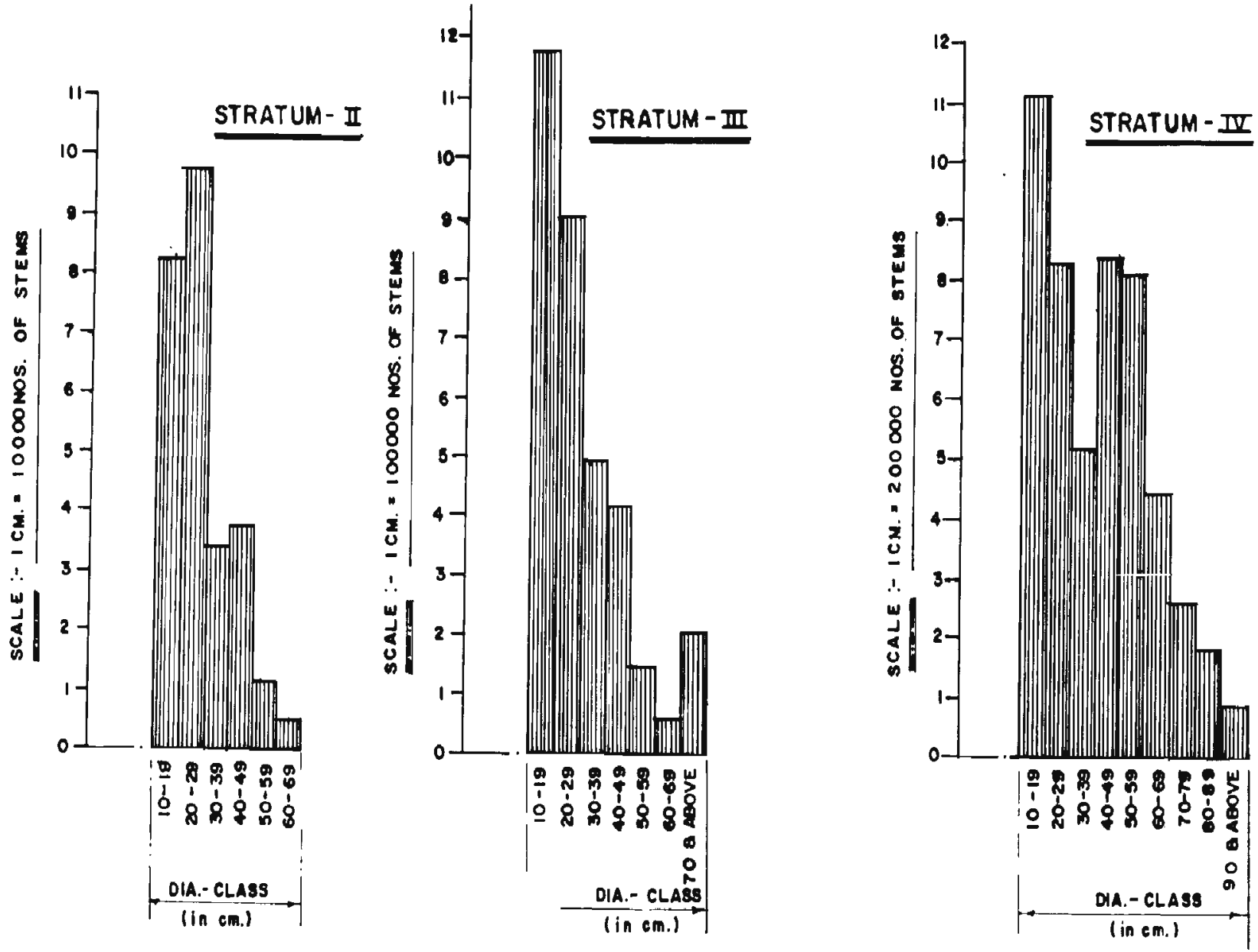


DIAGRAM NO. – 8

DISTRIBUTION OF TOTAL STEMS BY DIA. CLASS & STRATUM

NORTH SIKKIM DISTRICT (RESERVED FOREST)



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DISTRIBUTION OF TOTAL STEMS BY DIA. CLASS & STRATUM

WEST SIKKIM DISTRICT (RESERVED FOREST)

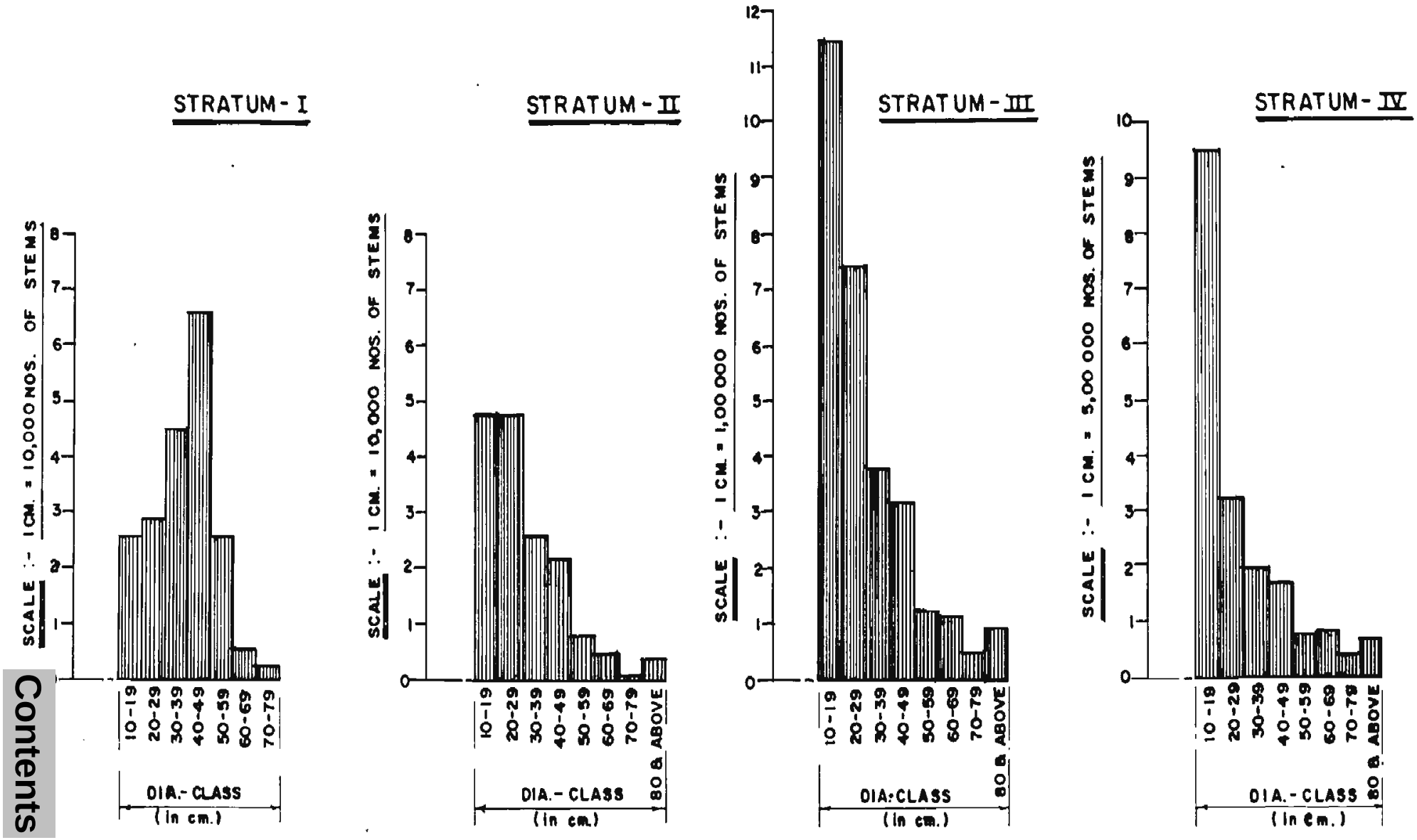

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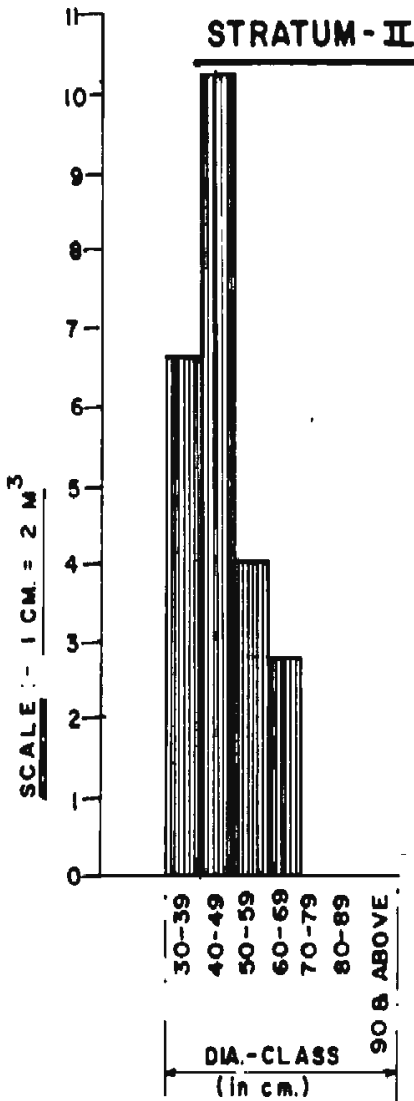
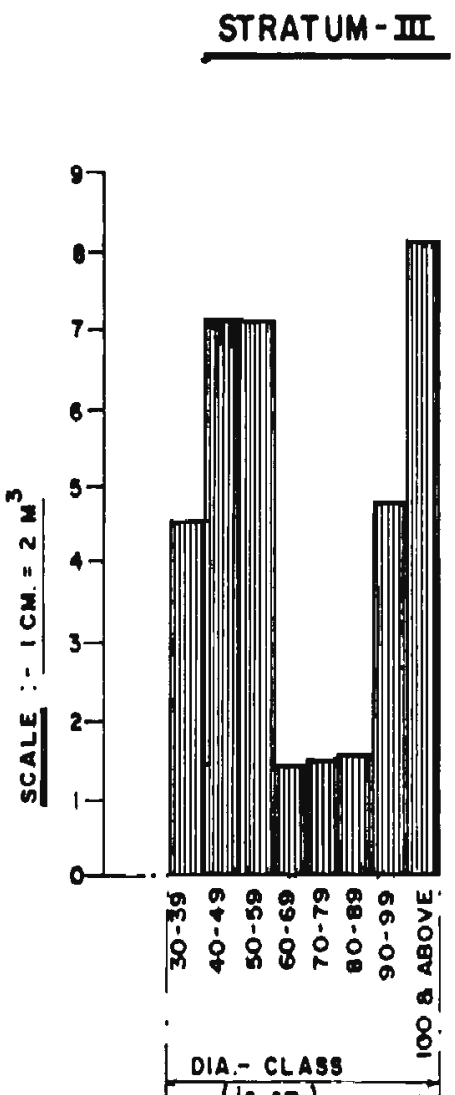
DIAGRAM NO.-10

DISTRIBUTION OF VOLUME / HA. BY DIAMETER CLASS & STRATUM

NORTH SIKKIM DISTRICT (RESERVED FOREST)





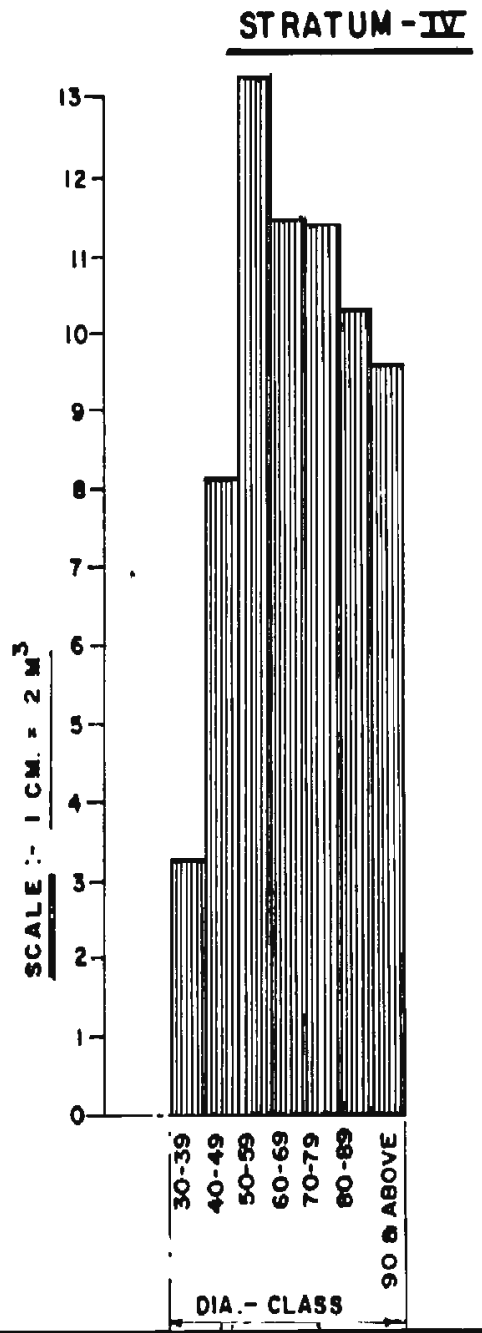


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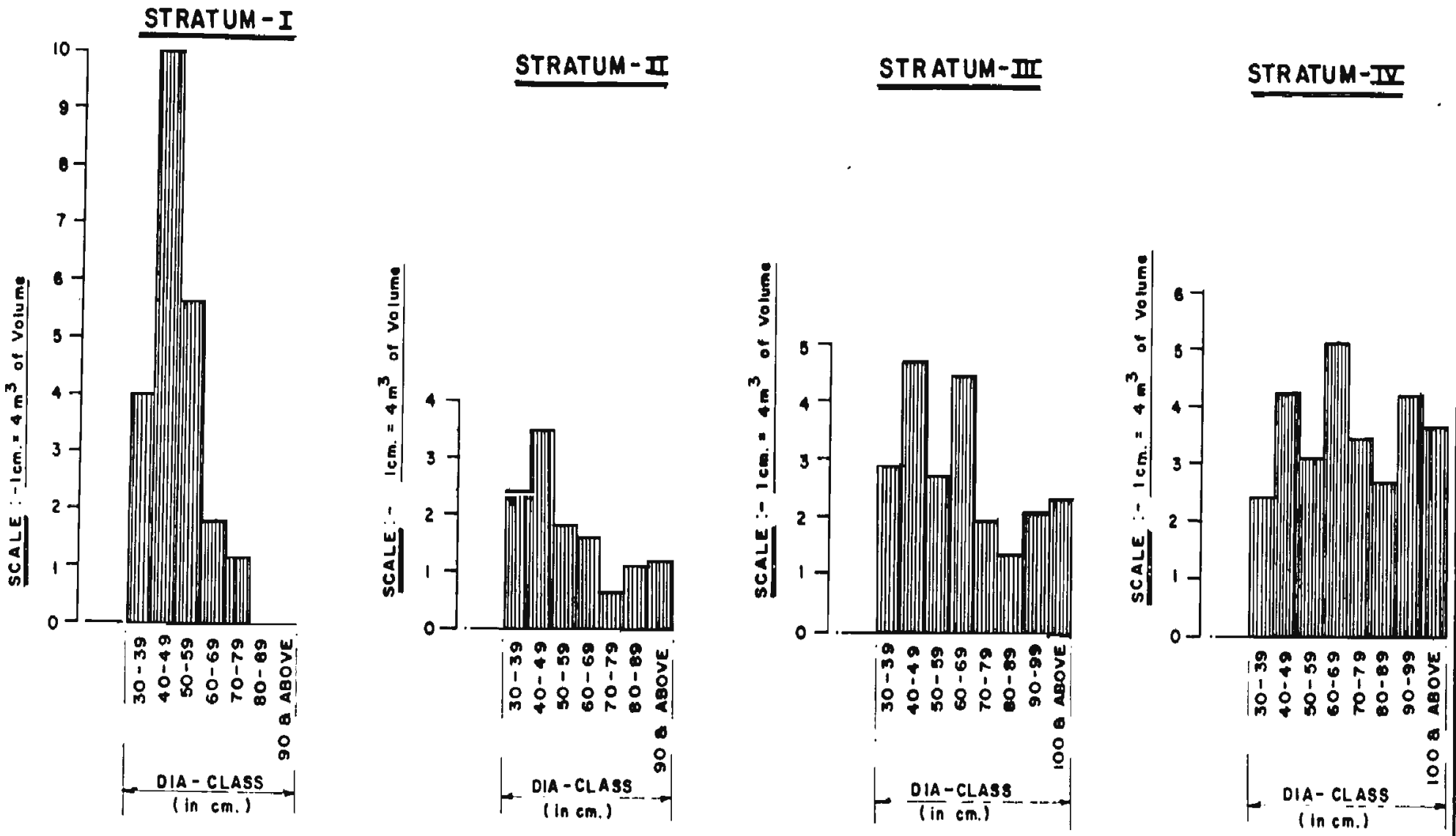
DIAGRAM NO.- II

DISTRIBUTION OF VOLUME / HA. BY DIAMETER CLASS & STRATUM
WEST SIKKIM DISTRICT (RESERVED FOREST)



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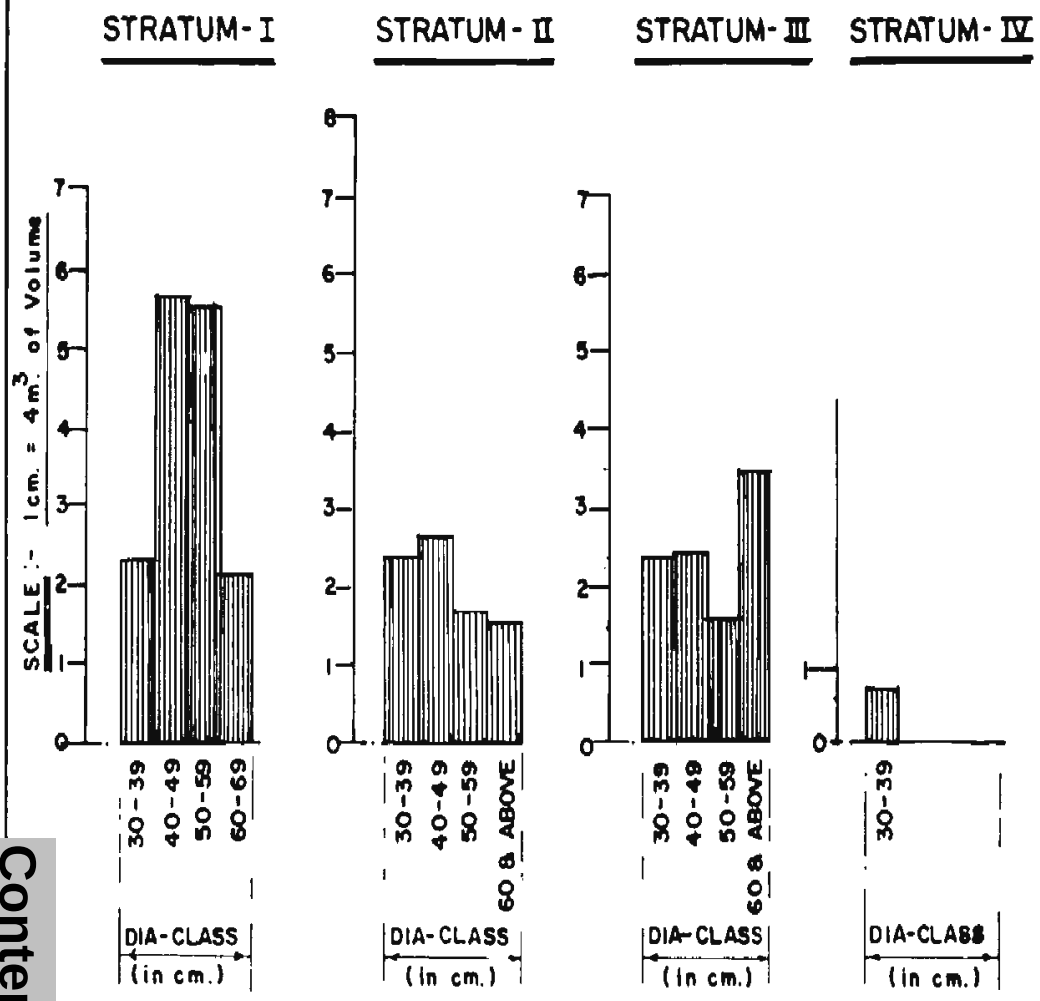
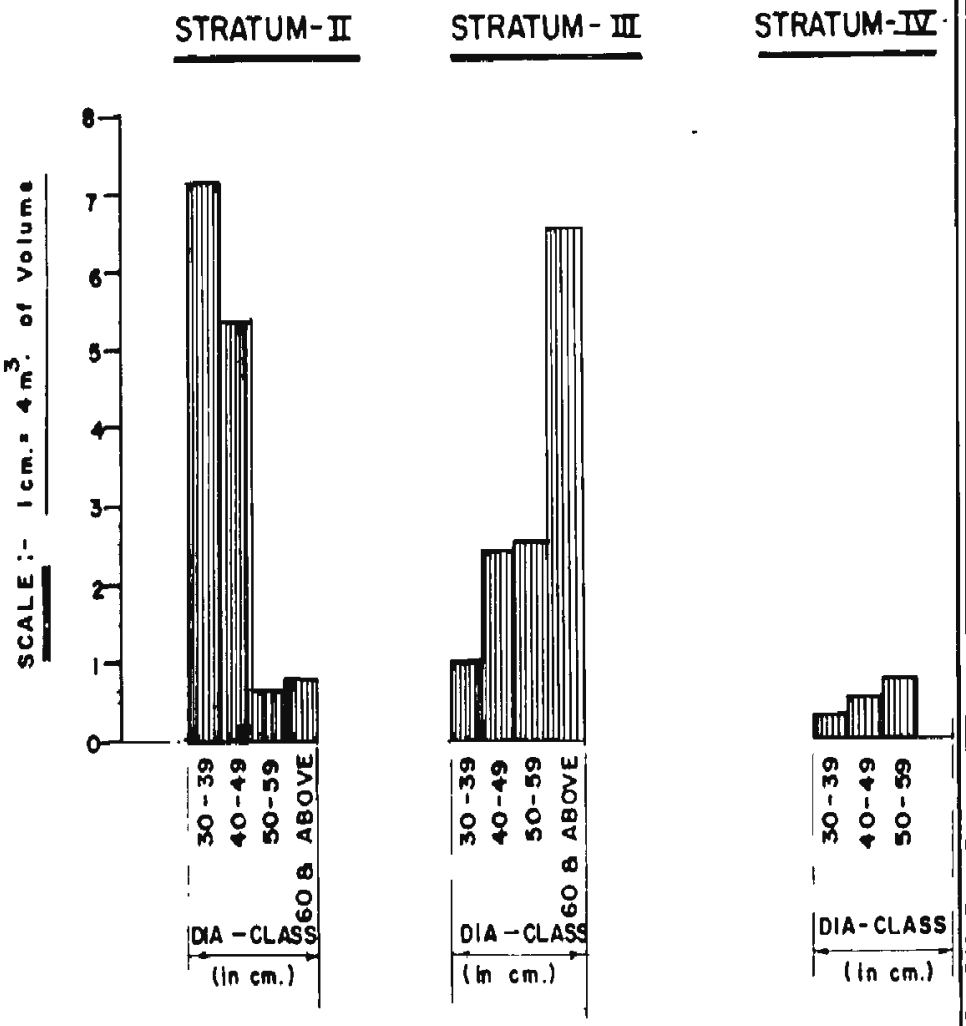
DISTRIBUTION OF VOLUME / HA. BY DIAMETER CLASS & STRATUM

WEST SIKKIM DISTRICT (UNRESERVED FOREST)

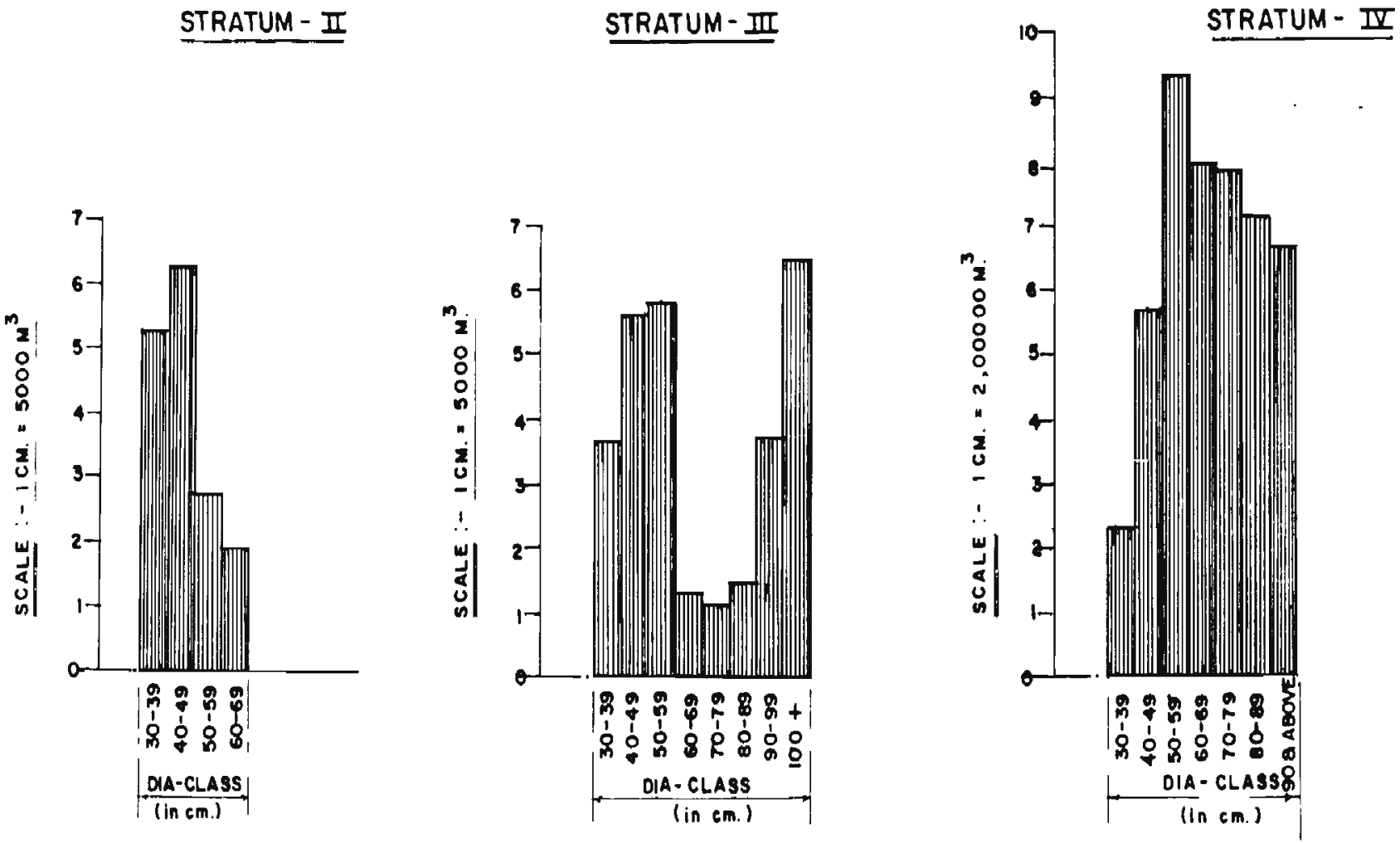


NORTH SIKKIM DISTRICT (UNRESERVED FOREST)



DISTRIBUTION OF TOTAL VOLUME BY DIA. CLASS & STRATUM

NORTH SIKKIM DISTRICT (RESERVED FOREST)



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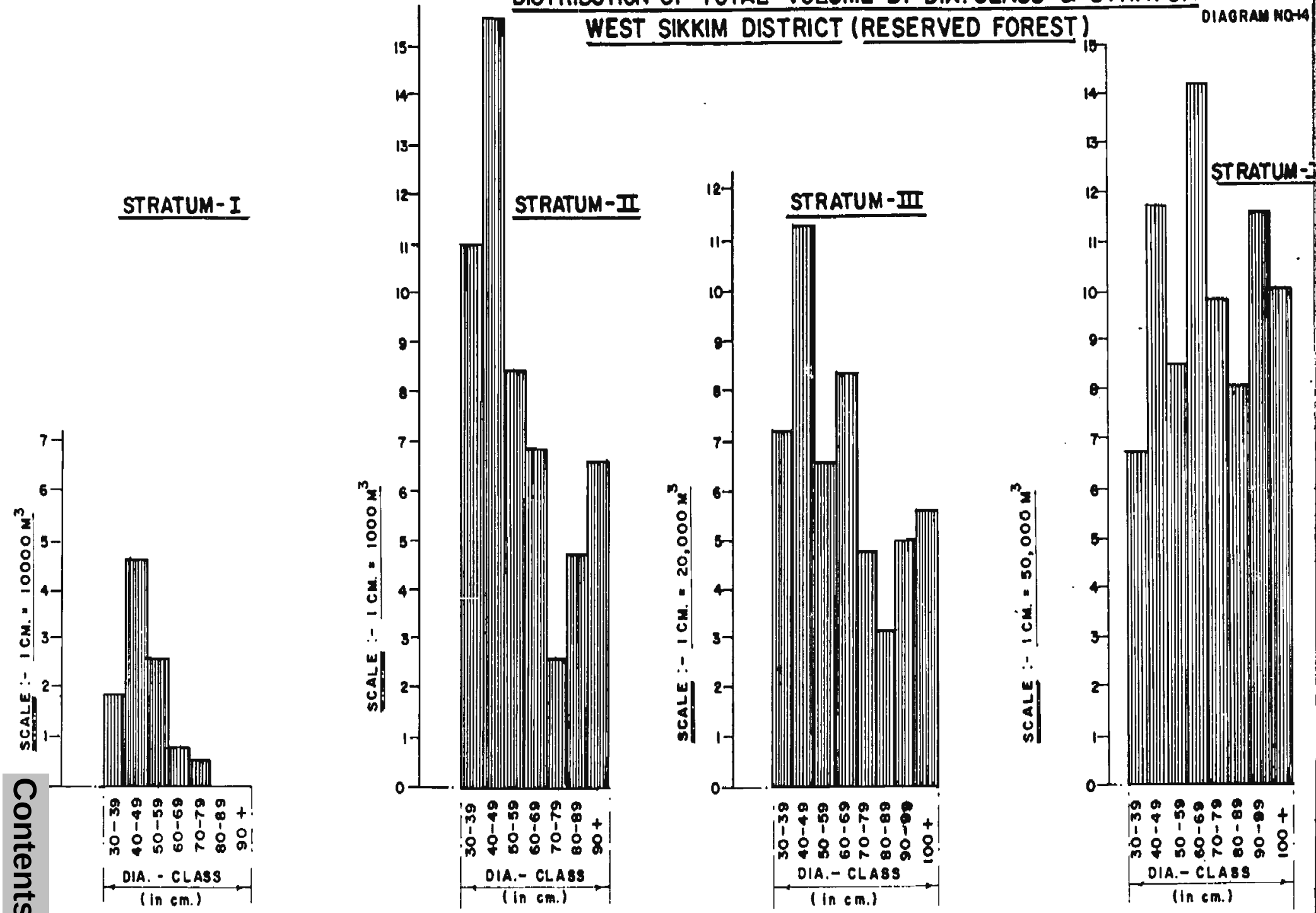
DISTRIBUTION OF TOTAL VOLUME BY DIA. CLASS & STRATUM

WEST SIKKIM DISTRICT (RESERVED FOREST)

DIAGRAM NO-14



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