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Guidelines for Preparation of Local Volume Tables of Non-Teak Species

Preamble

1.0 It is noticed that substantial difference occurs between the estimated outturn of timber and small wood from a coupe and that actually derived in respect of non-teak species. At present, local volume tables for non-teak species are not available. Therefore, for yield estimation of such species, local volume table of teak is relied upon, on the assumption that the associate species of teak have the same growth-pattern as that of teak. Therefore, an urgent need is felt to prepare local volume tables, with well-defined parameters and variables specially in respect of important non-teak species.

2.0 Accordingly, a consultative session with Regional Manager and Divisional Managers of Chandrapur region was held at FDCM Bhawan on 12th October 2022, under the chairmanship of the Chief General Manager (Planning). *Shri Tasneem Ahmad, former PCCF was specially invited to provide guidance to the participants. Shri L.N. Madne and Shri R.K. Tiwari, Divisional Managers (Retd.) also enriched the session with their vast practical experience in FDCM. These Guidelines have been formulated following detailed deliberations and valuable technical guidance provided by Shri Tasneem Ahmad in the said consultative session.

Concept

2.0 Since the Top Height is taken as a measure of Site Quality of a locality, therefore if Site Quality-wise volume tables, having one variable i.e. GBH (OB) are prepared, their applicability shall extend to other localities also of the same Site Quality; thus, serving purpose of a general volume table with reasonable accuracy having two variables, namely girth and height.

3.0 After receipt of permission for annual felling and regeneration for the year 2022-23, the work of felling of trees is in progress in the field. Taking advantage of this situation, data required for the preparation of volume tables in sufficient quantity can be collected from such felled trees by taking actual measurement of trees/logs as per prevailing utilization practices, and then the same can further be processed for making volume tables.

Procedure

4.0 Data shall be collected for the preparation of volume tables in respect of the localities of each of the Teak Site Qualities in respect of following species:

1. **Ain** (*Terminalia tomentosa*),
2. **Bija** (*Pterocarpus marsupium*),
3. **Dhawda** (*Anogeissus latifolia*) and
4. **Bherra** (*Chloroxylon swietenia*).

*Also served as RM (Research and Marketing) in FDCM Headquarters

5.0 The volume tables shall be prepared in the girth intervals, **measured over bark** at the breast height (137 cms. from the ground level), of 15 cms. starting from girth class 15-30 cms. That is to say 15-30 cms, 31-45 cms, 46-60 cms and so on up to the highest girth class available.

6.0 The volume tables shall show Teak Site Quality wise round as well as quarter girth **under bark** volumes of stem timber, including branch wood, but omitting volume of the stump portion of the tree, against Over Bark Girth at Breast Height.

7.0 **Stem Timber**--All pieces of wood (irrespective of length, and length being the direct distance between the two ends), having **over bark** girth exceeding 45 cms. (at the thinnest end) in case of teak, and 60 cms. in case of non-teak shall be considered as stem timber.

8.0 **Small-Wood**-- All pieces of wood/logs, not classed as timber up to the limit of local utilization practice. The volume tables shall also show **over bark** round and quarter girth volumes in cubic meters of small-wood. To save time and energy, under bark measurements of the small-wood need not be taken, as the bark thickness would be too thin to potentially affect the volume computations.

9.0 **Stacked Volume**--Subject to availability and terrain permitting, the small-wood derived from the trees of the same girth class (in case of both teak and non-teak species), shall be separately stacked in the stacks, having one-meter height and 1.20 meters width at a convenient place, having flat surface and the dimension of the stack be recorded to compute stacked volume. This will help in estimating outturn of small wood/firewood from a coupe in terms of stacked volume, and would also help to determine relationship between stacked volume and round volume.

10.0 **Data Collection**--Data in the enclosed **FORM-1** and **FORM-2A & FORM-S2B** for each Teak Site Quality Class described below, shall be collected:

Teak Site Quality	I	I/II	II	II/III	III	III/IV	IV
Top Height in meters	31.5 & up	31.5 to 28.5	28.5 to 25.5	25.5 to 22.5	22.5 to 19.5	19.5 to 16.5	16.5 & below

Selection of Trees

11.0 Sample trees, representing the crop shall be selected for each girth class in the all the above site quality classes in number, in proportion to their presence in that girth class and quality class. But subject to availability, especially in higher girth-classes, number of sample trees in a girth-class should normally be not less than 10.

12.0 In case of shortage of sample trees in a given girth-class in a particular Division, the required number may be achieved by selecting trees from other divisions. Trees in lower girth-classes may be selected from appropriate thinning areas.

13.0 As far as possible, special felling for data collection should be avoided.

14.0 Sample trees should be of the typical shape and development and the tendency to select them above the average quality must be avoided. Suppressed, markedly dominant trees and those with any abnormality or malformation should not be selected. To ensure the consistency in this regard, special teams, each entrusted with specific species should be formed in each division.

15.0 **Follow-up**—Taking into consideration the importance of this exercise, the Regional Managers and Divisional Managers shall be at liberty to invite Shri Tasneem Ahmad, former PCCF to seek his guidance as and when required. He has given his kind consent in this regard. Similarly, the services of Shri R.K. Tiwari and Shri L.N. Madne shall also be available throughout this exercise.

ENCL: FORM-1, FORM-2A & 2B


Sanjeev Gaur
Chief General Manager (Planning)

Draft Approved by the MD.

To,
The General Manager, Nagpur Region
Regional Managers (All)
Divisional Managers (All)
Assistant Managers (All)
Range Forest Officers (All)

Forms for the Data Collection For Preparation Of Volume Tables

FORM - 1

1. Name of the Species <i>e.g. AIn (Terminilia tomentosa)</i>	2. Date of data collection:
3. GIRTH CLASS -based on GBH (OB) in cms.:	<i>e.g. 61-75</i>
Details of the location of the Sample Trees	
4. Forest Division	5. Range
6. Compartment No	7. Felling Series/Coupe No
8. Top Height in the locality	
9. Tenk Site Quality:	
Measurements of the Sample Tree	
10. Crown Class	<i>e.g. Co-dominant</i>
11. Girth at Stump Height (at 15 cm. height from the ground)—Over Bark in Meter	
12. Girth at Stump Height (at 15 cm. height from the ground)—Under Bark in Meter	
13. Girth at Breast Height (at 137 cms. height from the ground)—Over Bark in meters: G1	
14. Girth at Breast Height (at 137 cms. height from the ground)—Under Bark in meters: G2	
15. Height of the tree (as measured after the tree is felled/has fallen) in meters including stump height:	
16. Bark Thickness=(G1-G2)/6.28	

VOLUME COMPUTATION

TIMBER (STEM)

Serial no. of the tree	GBH (OB)	Length of logs in meters		Mid girth of the log in meters		Round Volume in cubic meters (under-bark)	Quarter Girth Volume in cubic meters (under-bark)	Remarks, if any
				over bark	under bark			
1	2	3	4	5	6	7	8	9
		1st log						
		2nd log						
		3rd log						
		4th log						
		5th log						
		6th log						
		7th log						
		8th log						
		9th log						
		10th log						
		11th log						
		12th log						
		-						
		-						
					TOTAL			

Note: Timber (stem) for the purpose of preparation of this volume table, means all pieces of stem-wood, logs, and all branch-wood, having over-bark girth exceeding 45 cms.(at the thinnest end) in case of teak, and 60 cms. in case of non-teak (irrespective of length, and length being direct distance between the two ends), but omits the stump portion of the tree that remains attached to the ground.

