



Tropentag, October 9-11, 2007, Witzenhausen

“Utilisation of diversity in land use systems:  
Sustainable and organic approaches to meet human needs”

## NWFP Resource Assessment: Options and Challenges to Maximize Potential Contribution of NWPs in Conservation

BABURAM RIJAL<sup>1</sup>, RAJENDRA K. C.<sup>2</sup>, NETRA BHANDARI<sup>3</sup>, CHRISTOPH KLEINN<sup>4</sup>

<sup>1</sup>Georg-August-Universität Göttingen, Institute of Forest Biometrics/Centre for Applied Statistics, Germany

<sup>2</sup>Georg-August-Universität Göttingen, Department of Forest Science and Forest Ecology, Germany

<sup>3</sup>University of Hohenheim, Institute for Social Sciences in Agriculture, Germany

<sup>4</sup>Georg-August-Universität Göttingen, Institute of Forest Management, Germany

### Abstract

Non-Wood Forest Product (NWFP) has received increasing hierarchical demands from local to national levels for different scopes of uses since a couple of decades in Nepal. Its scientific management is common concerns as a new discipline unlike timber management which is backed up by significantly older data, well established management tools and long experiences. Its complexities in distribution and habitat make the assessment rather difficult as compared to conventional forest inventory. Efficient inventory techniques support to acquire more precise data on growing stock and other management parameters which are the bases of scientific management in all hierarchical structure from local community-products relation to national policy frameworks are the current needs in NWFP management. This article explores and analyzes the various sampling techniques used in various NWFP inventories in Nepal and discusses possibility of product base inventory designs to make the estimation biometrically sound and community adoptive.

Spatial distribution, ecological setting, physiography, and cost are the general considerations on sampling design. Among the well established sampling techniques such as simple random, systematic, adaptive cluster sampling (ACS) etc., systematic sampling is most common in practice in contemporary Community Forest Inventory and National Forest Inventory in Nepal in timber forestry and it is considered as legally mandatory as well. NWFP assessment is based on methods applied in inventory designed for timber management which is not efficient way. It creates the necessity of further research on the area.

Inventory of *Nardotachys grandiflora* (herbs: rhizome), *Rhododendron anthopogon* (shrub: leaf), *Juniperus indica* (tree: berry) have been taken for discussion on systematic sampling and scope of its alternatives based on field. Based on applied statistics and literatures found, comparative discussion has been presented on other sampling techniques. Availability-abundance of these species is observed in cluster form. Microclimate affects abundancy within a small quadrants/strip and spatial discontinuation is clearly visible soon. The study concludes that the ACS would be cost effective than the others in such type of products. It can take advantages of selecting the quadrants/strips wherever the targeted species is available in cluster and drop it when absence begins. It has minimal statistical rigorousness therefore local communities could adopt the methods preserving the statistical principles.

**Keywords:** Growing stock, inventory, Nepal, NWFP assessment, resource base

---

**Contact Address:** Baburam Rijal, Georg-August-Universität Göttingen, Institute of Forest Biometrics/Centre for Applied Statistics, Bonhoefferweg 2/9a, 37075 Göttingen, Germany, e-mail: brrijal@yahoo.com