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MEASURING THE ROLE OF FORESTS AND TREES IN HOUSEHOLD WELFARE AND LIVELIHOODS

Email

Reyan Yumnam

rynyumn99@gmail.com

College of Post Graduate Studies in Agricultural Sciences, CAU (I), Umiam, Meghalaya – 793104, India

The well-being and livelihoods of communities are significantly influenced by forests, which are known as the lungs of the planet. According to FAO (2016), Forests is defined as land spanning more than 0.5 hectares with trees higher than 5 metres and a canopy cover of more than 10 percent, or trees able to reach these thresholds in situ. It does not include land that is predominantly under agricultural or urban land use.

Particularly, wood products are frequently referred to as forest products even though they may have originated in woodlots, agro forestry systems (such as home gardens and silvipastures), fallows, or other tree-based vegetation systems that are not strictly speaking considered to be forests. While defining the economic level of forest income, there is often confusion as to apply narrow forest concept or the ample forest product concept, however both forms of income delimitation may actually be of use to natural resource managers and policymakers. While the precise source of income from forests and trees may vary, in terms of welfare be of secondary concern for the management of forest areas, given that they provide revenue. It will be crucial to understand capacity. For instance, if a region that needs to be protected offers a large source of extractive income for the community; denying anyone access could have inconsistent effects on welfare. Furthermore, forest systems can offer significant ecosystem services (such as the preservation of biodiversity, carbon stocks, or recreational benefits) that aren't always replicated by tree-based systems found outside of forests.

When we refer to forest products, we primarily mean naturally occurring, unplanted, or wild products that are harvested from old-growth, secondary, and regenerating natural forests as well as farmed or planted products from managed plantation forests. The term forest products refers to a variety of natural tree-based products (NTFPs), plants (like tubers),

animals (like bush pigs), and timber. But forest and tree products also include non-forest tree products from home gardens, farm trees, and other agro forestry systems.

Non-forest tree-based and non-forest natural systems are the two categories into which non-forest systems fall. Savannahs, fallows, and cultivated trees found in agroforestry systems are examples of non-forest tree-based systems. Determining the boundary between what is considered agriculture and forest can be difficult since it frequently lies between or below different definitions of land cover hence determining its significance can also be difficult. Products and revenue from the non-forest and wild systems are referred to as wild products and wild product income for the purpose of simplicity.

Categories of Forest Income

- The first source of natural forest income comes from extractive, environmental sources. These sources are naturally found in old-growth, secondary, and regenerating natural forests and are derived from forest species that are rapidly growing (or little managed).
- Second, the products found in well-managed plantation forests provide the source of planted forest income. The primary source of income in a smallholder rural developing country is undoubtedly the forest environment.
- Non-forest tree income from woodlots, farm trees, home gardens, and other agroforestry systems.

A significant differentiation to be made is the exclusion of resources that are cultivated and harvested from aquatic environments, which are currently covered under the LSMS-ISA agricultural and fisheries modules, from agricultural lands (cropland, pasture, crops harvested in agroforestry and silvipasture, fowl areas).

Crucially, the forestry and agricultural modules may both include cultivated trees from plantations as well as trees on farm plots and other agroforestry systems. In the long run, the NSO and other module users will have to choose which tool to use to properly capture this product, though generally speaking, we would contend that the forestry modules will offer a natural setting to evaluate these income flows in sufficient detail.

It is recommended that users utilize the Central Product Classification for products and the ISIC code for all economic activities when implementing the survey, as these are

internationally recognized classifications' accepted codes and definitions. Although all products can, in theory, be assigned to pre-existing classification codes, the survey analyst runs the risk of overloading residual categories by grouping particular forest products into general categories like gathering non-wood forest products.

Methods of Data Collection

The forestry modules contain questions aimed at households at the community level as well as at individuals. As a result, questions have been assigned to the appropriate modules based on whether it is anticipated that the variable being studied will change within the community. It will be less expensive to gather data at the community level rather than using resources to conduct a household survey if the variable is not anticipated to change at the household level. It will occasionally be helpful or required to gather data at both levels. When analyzing individual households, community-level data can offer contextual information and potentially inform the creation of household surveys.

On the other hand, data gathered at the household level will be useful for community-focused studies as it can offer insights into particular interhousehold variations, such as how various kinds of households in the community perceive and follow local laws governing resource usage. In a community study, having household-level data also lessens the possibility of making poor judgments based only on aggregated data.

In the community questionnaires (standard modules on most important products and seasonal calendar, and extended modules on forest institutions and community environmental services), focus groups (FGDs) are a frequently used technique. Village meetings and focus group discussions (FGDs) are valuable tools for gathering qualitative data that is significant because they capture values and importance that go beyond immediate economic gain, such as those associated with forest and wild products. Small FGDs give participants more room to discuss and reach an agreement. An appropriate number of participants was considered to be 13 for the FGDs in the Indonesian field-testing of the forestry modules, as reported by Bong et al. (2016). This allowed for an inclusive and productive discussion. These sections could be finished in conjunction with a key informant to take into consideration the time and resource constraints that NSOs may encounter when implementing FGDs at the community level.

The community instrument uses key informant interviews (KIIs) to gather data on things like pricing and quantitative units. Village officials and other stakeholders who have been part of the community for a long time and/or who are aware of changes and patterns in the socioeconomic, political, and cultural conditions in the area are frequently involved in KIIs. They are frequently excellent sources of information, particularly in the absence of written records.

Secondary data are valuable resources for contextual information about village land uses (forest, farms), demographics (population, age distributions), and infrastructure (roads, schools). Implementers of surveys may also utilize observation or measurement to put the gathered data into context. In actuality, it's critical to triangulate data by gathering data using a variety of sources and techniques in order to guarantee data accuracy.

Even in LSMS surveys, perception data collection also known as subjective data is a commonly used technique to gather people's expressed opinions or perceptions on a given subject.

Data Collection Issues

- **Difficult concepts** - Enumerators may discover during a survey that some terms and concepts are poorly understood by respondents, possibly as a result of inadequate communication. Enumerators and pre-test survey instruments must therefore be trained in order to rectify and modify questions appropriately.
- **Seasonality and recall period**- Since forest-based activities frequently exhibit strong seasonality; care must be taken when scheduling the survey and remembering key points during the data collection process. Ideally, surveys should be conducted more frequently and with recall periods that are shorter than annual (e.g., quarterly) to better capture seasonal variations in forest uses. In national surveys, this will not always be feasible, though. Shorter recall periods are ideal for recording information about routine, non-seasonal transactions and activities like gathering wood fuel; longer recall periods may be necessary for irregular activities like seasonally harvested NTFPs or a significant flooding incident.
- **Distinguishing product origins**- The categories for origin consist of managed plantation forests (code = 3), old-growth natural forests (code = 1), secondary/regenerating natural forests (code = 2), and non-forest tree-based wild

systems (code = 4), non-forest tree-based cultivated systems (code = 5), and non-forest natural systems (code = 6), such as savannah and fallows. When analyzing data from a survey with a wide range of origins, issues with data validation and comparability may arise. However, tying the products' origins to the places where they are gathered will draw attention to the regions that might be under more strain due to resource use and the sustainability of the resource base.

- Measurement unit and price - When it comes to estimating income and performing intersite comparisons and aggregations, the widespread use of non-standardized weight or volume measures in local markets across nations for the trade of forest and wild products may pose challenges. Data entry in local units is made possible by the forestry modules, and the Codebook contains a complete list of codes. Keeping track of local units will guarantee more accurate data. To enable data analysis and comparison across communities, regions, and even nations, local measurements must be standardized to common units.

Conclusion

As essential collaborators in promoting household well-being and livelihoods, forests merit a thorough analysis of assessment techniques. This method guarantees a sophisticated comprehension that honors the intricacies of regional ecosystems and human relationships. By deepening our knowledge of the functions of forests, we are better able to make decisions that strike a balance between the demands of modern life and the necessity of protecting these essential natural resources for future generations.

Variations in concepts related to forests, resource ownership, and resource use are likely to occur among study sites due to differences in socioeconomic, biophysical, and cultural factors. Consequently, we require a shared list of definitions that are recognized globally that can be methodically used to the greatest extent possible to enable intersite contrasts.

Reference

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