26. SOCIAL AND ECONOMIC FACTORS THAT AFFECT THE MANAGEMENT OF PLANTATIONS AND THE TYPES OF PRODUCTS PRODUCED

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This paper proposes a research strategy for collecting socio-economic and attitudinal data from smallholder tree farmers. The research design draws on experiences on a previous study of attitudes towards forestry to help identify key socio-economic variable to be included in the current study. The study will use a structured questionnaire with a combination of closed and open ended questions to elicit information from tree farmers. The questionnaire will seek information about their current silvicultural management practices; their attitudes and experiences towards tree registration and obtaining permits for tree harvesting and transport of logs; their main sources of information about tree farming; their awareness of biodiversity issues and their motivations and experiences with tree farming. Basic socio-economic data such as income sources and size and nature of landholdings will also be collected.

BACKGROUND

Appropriate silvicultural management of tree farms is critical for the both volume and quality of timber produced. There is a large amount of anecdotal evidence that the existing management practices of most smallholder tree farmers is poor, and that this will result in low volumes and poor quality timber being produced. Little information exists however on the current practices, knowledge of smallholders in respect to the management of tree farms. In addition, little is known about where smallholders obtain information about tree farming and the extent to which they then apply this information to the management of their tree farms.

This paper outlines a strategy for collecting information on the attitudes and current practices of smallholder tree farmers. The first section provides and outline of a survey of smallholder households conducted as part of a previous ACIAR project and the lessons that can be drawn for the current survey. The research questions to be addressed in the current study are then presented and related to the wider research objectives of the new ACIAR project. Three possible research strategies are then identified, with a recommendation that a semi-structured interview with mainly closed questions be implemented. A sampling strategy and a tentative list of questions is then presented, followed by a discussion of some key issues that need to be considered when implementing the survey.

SURVEY OF SMALLHOLDER HOUSEHOLDS

A survey of smallholder households and their attitudes towards forestry was undertaken as part of ASEM/2000/088. The survey was a major area of effort and provided a wealth of information in relation to the social and economic factors affecting the development of small-scale forestry in Leyte Province. The survey was designed to enable a needs assessment of the households, and the communities as a whole, in relation to their tree planting and management activities. The survey consisted of three main stages, including initial focus group discussions (FGDs), household surveys conducted using structured interviews, and

validation focus group discussions. To assist in the delivery of information to the relevant stakeholders (community members, representatives of local government agencies, and representatives of national government agencies involved in natural resources management), and to develop policy recommendations for consideration by government agencies involved in natural resource management, a 'policy' workshop was conducted following the completion of the survey activities. Multivariate statistical analysis of the community survey data has also been used to identify landholder groups (typologies) with respect to their interest in forestry.

Two hundred people from four communities were interviewed, and information on about 1500 variables was collected. The survey involved a team of 14 people. Mr Emtage was largely responsible for the design and implementation of the survey, and with the multivariate statistical analysis of the data. Participants were surveyed by four teams of two enumerators and a field coordinator. The project research officer was responsible for the administration of the survey including the payment of wages and allowances. Another project staff member has been responsible for transcribing the project workshop. In addition, Dr Mangaoang and Dr Vega provided invaluable strategic advice and assisted in various phases of the project.

The community survey provided specific information on the economic objectives of landholders, landholder characteristics, land tenure and security, the financial capacity and resources available to landholders, information needs related to forestry, existing landholder skills related to forestry, current access to planting material and landholder attitudes to financial support measures that my be used to support assist forestry development. Information was also collected about processing timber and non-timber forest products. Hierarchal cluster analysis has been used to identify distinct groups or 'types' of landholders. This typology has assisted in the description and interpretation of the socio-economic and attitudinal differences between households. A further intended application of the landholder typology is to help develop policy measures, along with extension and other assistance measures that are clearly targeted to specific groups.

The survey of households provides important information to guide the development of the survey of smallholders. From the household survey we know that a number of variable are important influences on the smallholders interest and importantly their participation in forestry. These include education level, food self sufficiency (and the related variables of income or wealth, especially off-farm income and remittances) and past experience with native forest logging.

RESEARCH QUESTIONS

1. What are the current silvicultural management practices of smallholders (Activity 1.2, 2.4)

2. What are the attitudes/experiences of tree farmers to tree registration, transport approvals and selling of timber (Activity 1.1)

3. What are the main sources of information/advice about tree farming practices and what are key influences (e.g. neighbours) (Activity 1.2)

4. What is the current smallholder awareness of biodiversity, native species and use of tree farms to improve biodiversity (Activity 2.5)

5. What are the motivations and experiences of smallholders in establishing and managing tree farms and are they happy with the results and will they replant (Activity 2.4).

In addition, information about the following key socio-economic variables will be collected.

- education
- total land holdings by type (rice, farm land etc)
- amount and source of family income (on-farm, off-farm – work, remittances)
- 'personality' i.e. how open to change

R.Q. 1 addresses Activity 2.2. (iv) (social and economic factors affecting the management of plantations and the types of products produced). It will also provide information relevant to the design of extension activities in the 15 tree farms in Activity 2.4.

R.Q. 2 addresses Activity 1.1 (survey of smallholders who have registered trees). It will also provide information to feed into Activity 1.2 (improving the flow of information about tree registration and harvest and transport approval mechanisms) and Activity 1.3 (Policy framework). It will also provide information about current markets which will feed into Activity 2.3 (pilot scheme to bring together buyers and sellers of timber).

R.Q. 3 will provide information useful for the Activity 1.2 (improving the flow of information) and Activity 2.4

R.Q. 4 will provide attitudinal knowledge to compliment the biophysical data collected as part of Activity 2.5 Biodiversity in tree farms. It will also assist in assessing the potential for incorporating biodiversity elements into the livelihood systems in Activity 3.1 and the policy development and reform in Activity 3.2.

R.Q. 5 will provide information for the design of livelihood systems in Activity 3.1. Information about whether landholders intend to replant and with what species will also provide input into the supply side of Activity 2.2 (iii) modelling of timber supply and demand

GENERAL RESEARCH APPROACH

Three possible approaches have been considered, a semi-structured interview with open ended questions, a structured questionnaire with mainly closed questions to be completed by the tree farmer; and a structured interview schedule with mainly closed questions.

A semi-structured interview with open ended questions would provide a deep understanding of the issues. However this approach requires skilled interviewers and would likely take from between 2 and 3 hours to administer. In addition, the resulting qualitative data would require high level analytical skills and many hours to analyse. The qualitative nature of the resulting data means that it could not be easily linked with the biophysical data sets collected at the site. Coding of the dataset would be needed and this would involve substantial additional work.

The second alternative is to use a structured questionnaire with mainly closed questions to be completed by the farmer. The advantage of this approach is that the resulting dataset can be easily linked with the biophysical datasets for univariate and multivariate analysis. However, given that some or possibly many tree farmers have low levels of education, a self administered questionnaire is likely to produce a low response rate, and may introduce a response bias towards the more educated tree farmers. For the various modelling activities, it is important that we capture as many responses from tree farmers as possible.

The third is to administer a structured questionnaire with mainly closed responses to each tree farmer via an interview. This approach will produce a dataset that can be easily linked with the biophysical data sets. In addition, it overcomes low response rates and possible response bias associated with a self administered questionnaire.

RESEARCH METHODS AND SAMPLY STRATEGY

A structured questionnaire will be developed and administered via an interview. The questionnaire will be administered to each tree farmer whose tree farm is sampled as part of Activity 2.2.

Where possible, the questionnaire will be administered by the field supervisor at the time that the tree farms are sampled, after enumerators have commenced measuring the trees. Where this is not possible (i.e. owner not on-site), the contact details of the owner will be recorded for later contact by one of the two field supervisors.

The questionnaire will comprise of the following sections, which largely correspond to the research questions.

1. General information about owner and attitudes
   * Age, Sex, Education
   * Size of tree farm, total land area of property on which tree farm is located

2. Current management (to compliment independent assessment by field supervisor)
   * Where did you get the planting stock (wildlings, nursery, collected seed, purchased seed, other)
   * How did you prepare the site for planting
     o Soil preparation/clearing
     o Planting (dig hole?), fertilizer?
     o Post plant weed control
   * Have you thinned the tree farm
     o at what ages
     o how did you choose the trees to thin
     o what did you use the thinnings for (firewood, sale etc)
     o if sold, for how much
   * Have you pruned the trees?
     o At what ages
     o How did you decide on what branches to prune?

3. Tree registration
   * Have you registered your trees?
     o If not, why
     o If so, explore cost, processes that went through
   * I found it very easy to register my trees (1=SA, 5=SD)

4. Harvest activities
   * Have you harvested any trees for your own use? List uses
   * Have you sold any trees, if so, how many, how much, type of use
   * Did you need to get harvest approval? If so, explore cost, processes that went through
   * I found it very easy to get harvest approval for my trees (1=SA, 5=SD)
   * I found it easy to get approval to transport my logs to market (1=SA, 5=SD)

5. Sources of information
   * How did you first find out about tree farming?
   * Since then, have you tried to find out anything more?
   * What would you most like information about?
   * In what form do you want information?

- Rank the following in decreasing order of usefulness (talking with neighbours, field days, pamphlets, signs, visits by DENR, visits by LSU, radio segments etc)
- Who is the most influential farmer in this area? Why?

6. Experiences
   - Why did you establish the tree farm?
   - Why did you select the species (good returns, seed available, like the trees, others?
   - What do you expect to get out of the tree farm?
   - Are you happy with the result?(open ended plus Lickert)
   - Do you intend to replant the tree farm after you harvest the current trees? With what species?
   - What are your past experiences with forestry (tree farms and native forest)

7. Livelihood information
   - Number of family members
   - Total land holdings by type (rice, maize, tree farm etc)
   - Amount and source of family income by family member (on-farm, off-farm work, remittances from other family members)
   - Highest level of education in family
   - Personality – how open to changes (maybe surrogate of how often visit town, travel to Manila, O/S?)

EXPECTED RESULTS

The survey of smallholder tree farmers will produce the following project outputs:

1.1 Understanding of key factors affecting the rates of tree registration applications from the perspective of smallholders
2.2d An understanding of the social and economic factors to be considered in designing tree farming systems

It will also provide information that will help with achieving the following project outputs:

1.2a Increased rates of tree registration
1.2b Increased rates of log transport approvals and harvest approvals where appropriate
1.2c Greater access to timber markets and increased prices
1.3 Improved regulatory framework for tree registration and transport approvals
2.4b Improved management regimes for tree farms
3.1 Recommendations on smallholder tree farming systems matched to livelihood strategies
3.2 Recommendations on policy reforms based on project findings

LINKS WITH OTHER PROJECT ACTIVITIES

The survey of smallholders is closely linked with the collection of biophysical information from the tree farms in activity 2.2(i). It is also the primary source of information for Activity 1.1 and the related Activities 1.2 and 1.3. The survey of tree farmers will also feed information into a range of other activities including the design of extension materials and the development and modelling of livelihood systems.

DISCUSSION

The main challenge associated with the survey of smallholder tree farmers will be to identify the owners and then physically locate them in order for the interviews to take place. Initial

experiences suggest that this may pose a significant challenge, with many smallholders not likely to be present when their tree farms are measured by the field crews.

There are also sampling issues that need to be considered. The key question is how to define the population and then how a sample is to be drawn from it. Alternatively, are we actually surveying the entire population? This in turn has implications for the type of inferential statistics that can be applied. For instance, how will the tree farms be selected? Will we sample the entire population of registered tree farms? If this is not feasible, how will we draw a subsample? If we use a stratified random sample, on what basis is the population stratified? Options include either biophysical (e.g. soil type, rainfall, species) or socio-economic (e.g. farm size, income levels, livelihood strategy).