A Methodology for Assessing Rural Livelihood Strategies in West/Central Africa: Lessons from the Field

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Article

A Methodology for Assessing Rural Livelihood Strategies in West/Central Africa: Lessons from the Field

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This paper critically evaluates and discusses some of the methodological practicalities of applying a combined participatory and small-scale survey approach to investigating rural livelihood strategies of people living in the humid forest zone of Southwest Cameroon, Southeast Nigeria and Southwest Ghana, with particular reference to assessing the economic importance of non-timber forest products. It describes the sampling methods used to select study zones, settlements and households as well as the participatory techniques and instruments used to differentiate households and gather information on rural incomes. Details of the successes and problems encountered during implementation are presented. The challenges faced by those conducting this study are also encountered by others carrying out comparable research. By sharing our experiences, we hope that the design of similar conservation and development-based research can be improved.

Key words: Socio-economic survey methodology, rural livelihood strategies, participatory mapping, wealth ranking, West and Central Africa

'Honest self-criticism is neither easy, rewarded nor popular. There is no Journal of Misleading Findings' (Chambers, 1983:55)

Introduction

Though much published literature exists on the methods used to evaluate the livelihood strategies of rural people, there is little literature which critically evaluates these methods or describes the practice of actually implementing such research. This paper attempts to do just this. It provides practical advice to assist in the planning and implementation of future livelihoods-based research.

The methodology discussed in this paper was implemented over a four-year period from 2000 – 2004. The research was funded by the Forestry Research Programme of the UK's Department for International Development (DFID) and was conducted by the African Rattan Research Programme, an initiative of University College London and the Royal Botanic Gardens, Kew. It aimed to evaluate the means by which NTFPs can be developed and promoted so they can further contribute to the livelihoods of rural forest dwellers.

A specific aim of the socio-economic research component discussed here, was to provide a socially differentiated assessment of the importance of non-timber forest products (NTFPs)[2] to people living in rural parts of Southwest Province, Cameroon, Western Region, Ghana and Cross River State, Nigeria, in order to determine more accurately the role of these products in the lives of different socio-economic

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[2] NTFP's are defined as forest resources that provide subsistence goods and services as well as items of trade, excluding timber, including such diverse products as bark, roots, tubers, corms, leaves, flowers, fruits, seeds, sap, resins, honey and fungi (Falconer 1994).

groups. Such research can unravel the complexity of people's lives and highlight the importance of cross-sectoral linkages (farming and forest conservation) (Ashley et al. n.d.) which can, in turn, feed into policy to make it more effective.

Over the last two decades, rural livelihoods research methods have changed considerably (see Ellis 2000: 183-199). During the 1980s, there was a move away from extensive questionnaire surveys, regarded by some as time-consuming, costly and ineffective (Chambers 1983: 52), to participatory techniques, such as rapid rural appraisal (RRA) and participatory rural appraisal (PRA) that were seen to be more efficient, economical and bottom-up (Chambers 1983:10).

PRA techniques have now become widely accepted tools in conservation and development research. They are now often the only methods used by researchers in this field because of short project cycles and tight budgets. It can be argued, however, that when used in isolation they provide little insight into people's livelihoods and limited understanding of the broader socio-economic, political and historical processes that impact on rural people and influence land-use management practices (Sharpe 1998; Burnham 2000; Malleson 2000). As Homewood (2005: 8) argues, whilst PRA methods may be used successfully as part of pilot studies, they are no substitute for more in-depth research. Ellis (2000: 228) argues that a combination of sample surveys and participatory methods helps to achieve a more complete understanding of livelihood strategies. This paper discusses some of the methodological practicalities of applying a combined participatory and small-scale survey approach to investigating rural livelihoods of people living in the humid forest zone of West and Central Africa.

Numerous studies have used household surveys to determine the importance of forest products to rural communities (Falconer 1994; Townson 1995; van Dijk 1999; Ambrose-Oji 2003; Brashares et al. 2004; East et al. 2005; Degrande et al. 2006). However, many of these studies have either provided a 'snapshot' of the lives of rural people through the implementation of a single, one-off survey, or have relied on one or a combination of two survey techniques to gather information. Some methodologies (e.g. van Dorp et al.1999), have focused specifically on assessing the socio-economic value of forest resources, with little reference to other sources of income in the local economy.

What differentiates our study from these and many others related to livelihoods and NTFPs in West Africa is that it provides comparative livelihood data for a range of rural households. By collecting quite detailed socio-economic and demographic data we have been able to differentiate a number of contrasting settlement and household typologies in order to clarify who is involved in what income-generating activities. Further in-depth research, including longitudinal surveys, provided data that add a useful temporal dimension that pick up seasonal changes in livelihood patterns.

Methodology
Sampling
In the absence of accurate sampling frames, we used a hierarchical or multi-stage sampling scheme to select our sample population. The socio-economic studies for this research were restricted to the humid forest areas in each target country (see Figure 1). Within these areas, the following administrative regions were selected:

(1)   Southwest Province, Cameroon

(2)   Cross River State, Nigeria

(3)   Western Region, Ghana

These regions were selected, firstly because all they include areas of relatively intact humid forest. Secondly, they contain rural people, some of whom are involved in forest-related activities. Thirdly, they

can be divided into areas with contrasting access to markets and forest resources.   Finally, collaborating institutions in the study countries already carry out research and development activities in these areas, so it was logistically convenient to conduct the research there.

Figure 1: Study Regions in West and Central Africa

Several further stages of sampling took place within the above regions. Firstly, three different areas, hereafter referred to as 'zones'[3] - border zones, remote zones and on-road zones - were chosen purposively to cover differences in accessibility to markets, forest resources, roads and international borders. Border areas in the humid forest zone of West and Central Africa have, until recently, generally been considered economically remote. However, such areas are often where contrasting ecological and socio-economic conditions meet and where informal cross-border trade is economically significant (Malleson 2001). Research undertaken both by us and others (e.g. Ndoye et al. 1998; Lapido 1999; Shiembo 1999; Sunderland and Tchouto 1999; Yembi 1999; Sunderland and Obama 1999; Holbech 2000; Malleson 2001) has shown that forest resources contribute significantly to international trade in the humid forest zone of West and Central Africa. We therefore considered it important to include such border zones in our sample.

Secondly, clusters of neighbouring settlements[4] (between one and five, depending on size) were purposively selected for study within each of the above zones, in order to minimize fieldwork travel time. The socio-economic characteristics of rural settlements within each of these zones tend to be fairly similar, so although the non-random selection of study settlements may introduce some bias into sampling, the settlements chosen are fairly typical of others within the same zone.   Within each settlement, the household was our basic unit for research.

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[3] These 'zones' are not recognised administrative units, but the settlements within them have similar socio-economic characteristics.

[4] Settlements are distinct groups of houses with amenities such as schools, stores and traditional village halls.

Instruments

Participant Observation

Data collection was carried out largely by three Social Research Officers (SROs), one based in each target country, who are nationals of the country they worked in. Throughout their time in the field, the SROs used participant observation (see Holy 1984: 13-34) to collect detailed information on livelihoods and the factors that influence them as well as information on culture and tradition and community structure, through informal conversations with local people and observations of everyday life. They were provided with a checklist of topics to be investigated in this way, drawn and adapted from Ellis (2000) and DFID's sustainable livelihoods guidance sheets (DFID n.d.).

Participatory Exercises

Participatory mapping exercises were carried out in each study settlement to illustrate the location of households, other buildings (e.g. health posts and shops) geographical features and communication networks. Mascarenhas and Kumar (1991) provide useful guidance on how to carry out these exercises. Each household was given a unique number and key informants were asked to record the name of the household head against the number. In this way a list of households in each study settlement and a map of where they are located (see Figure 2 for an example) were generated which provided base-line information about households that was required to carry out further research.

Figure 2: Village Map of Chop Farm
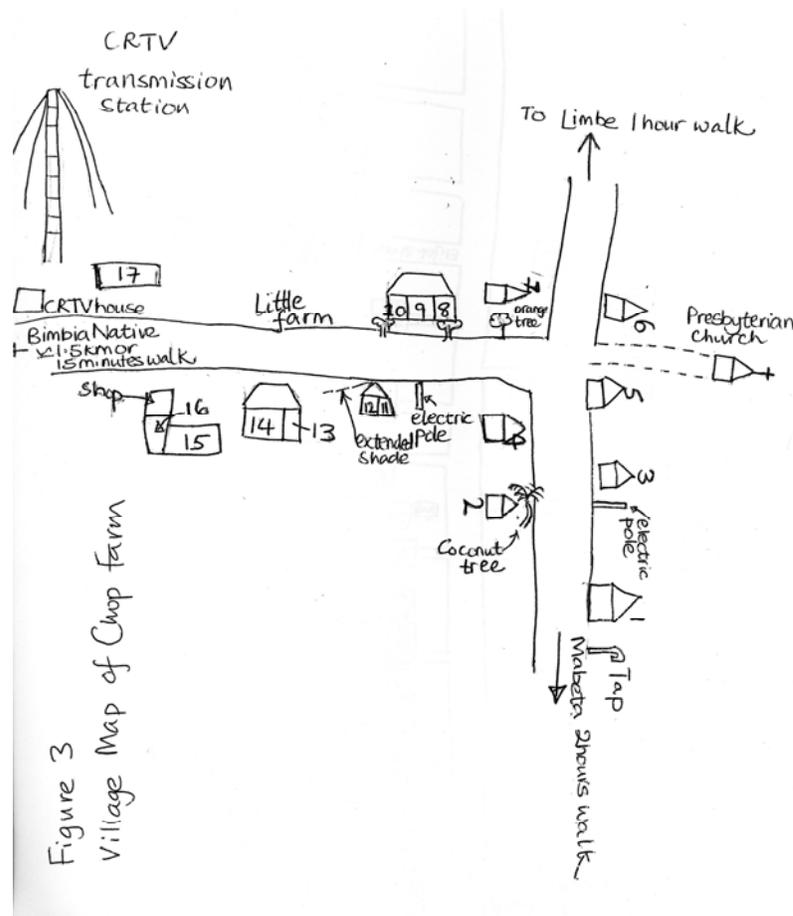
Source: Fieldwork 2000

Wealth ranking exercises were then carried out to identify local criteria used to differentiate households on the basis of wealth and well-being (Mukherjee 1992). Group interviews were carried out with local key informants who were asked to identify the 'poorest of the poor' households in their settlement, by either marking them on the map or going through the list of household heads. They were then asked why they had grouped these households together and to describe what the characteristics of this group were. After this, the key informants were asked to identify the next group of 'slightly better off' households and to identify the characteristics of this group and so on. Information about the types of housing conditions (e.g. type of roof and walls) and household assets (e.g. furniture and bedding) that key informants used as proxy indicators for wealth collected through the wealth ranking exercises was then used to draw up specific questions on housing conditions and household assets for the household census. The information collected through the household census (see below) was then used to differentiate households by economic status for more in-depth research.

A household census was then administered to a sample of 360 households per country (120 from each zone). We used systematic random sampling to ensure that the selected households were spread evenly throughout selected settlements. Every Nth household was sampled, after a randomly chosen starting unit of less than the sampling interval, N.   'N' was calculated by dividing the total number of households in the sampling frame (usually a total of three settlements) by the sample size required (i.e. 120).   For example, if the total number of houses in the three settlements was 280, every second house was sampled.

Census data provided useful baseline information about individual household members (including age, gender, level of education, occupation, length of residence, land ownership, ethnic origin) for the more in-depth surveys and provided a clear picture of the local demographic characteristics.

Then, through a simple method adapted from Ghirotti (1991), which scores housing conditions and assets as a proxy for economic status, answers to different questions in the household census were weighted by the relative importance of the answers. Table 1 demonstrates how the scores were allocated to different household assets for grouping households by wealth.

The choice of weighting was arbitrary but was based on the assumption that each extra point means a relatively asset rich household. For example, in ranking housing quality, a corrugated metal roof scores one point, while a thatched roof scores zero; a mud wall scores zero, while mud bricks or cement plaster score one point (as shown in Table 1). The maximum possible score was eighteen; the higher the score the wealthier the household. Households scoring eight or above were grouped as 'relatively wealthy' and those that scored below eight were grouped as 'relatively poor'. This classification was used consistently in all zones and in all countries.

A question on the household census form was included to identify whether or not people in the household obtained income from rattan-related enterprises. Involvement in rattan-related enterprises was chosen as one of the criteria for grouping households because an original aim of the research was to gain a more comprehensive and socially differentiated view of the significance of rattan for rural livelihoods in the study regions. Later in the project, the aims of the research were widened to include other NTFPs.

Households were then grouped together according to their wealth ranking and involvement in rattan-related activities and sub-samples of households in each zone were then randomly selected from these groups for more in-depth surveys, described below, as shown in Table 2. The total sample size for the in-depth surveys in each country was approximately 240 households, or 80 households per zone.

Table 1: Scores allocated to different household assets for grouping households by wealth

Item	Scores	Item	Scores
Roof: Thatch Corrugated metal	0 1	Number of rooms: 1-2 More than 2	0 1
Walls: Mud Wood Cement/Mud blocks Mud Plastered	0 1 1 1	Toilet: Open system Enclosed Pit Latrine	0 1 1
Household Items: Radio Cassette recorder TV Wooden Chairs/ tables Upholstery chairs Cane chairs/tables Wooden cupboard Cane cupboard Wooden bed Metal bed	 1 1 1 1 1 1 1 1 1 1	Farmland Ownership: Owns farmland Rents farmland Does not own farmland	 1 0 0
House ownership: Owns house Rents house	1 0	Hiring farm labour: Hires labour Does not hire labour	1 0
Trading: Trades Does not trade	1 0		

Source: Malleson et al. (2005)

Multi-round Income Survey

The purpose of this survey was to assess:
1. The relative importance of NTFP-related cash income compared with other cash-earning activities.
2. Seasonal variations in the significance of different income sources as well as the household use of rattan cane products.

This survey involved repeat visits to the same households at approximately four monthly intervals over a period of two years.

Long Rattan Survey

This survey aimed to collect in-depth information on the characteristics of rattan specialists and their enterprises. Rattan specialists can be relatively hard to find, as there generally may be only one or two specialist in small rural settlements, so we included two questions on the household census to purposively select rattan specialists: (1)'Is any person in this household engaged in rattan-related activities?' (2) 'Do you know of anyone in this settlements involved in rattan-related activities?'

Table 2: Sub-sampling for in-depth surveys for each sample zone

		Involvement in rattan-related enterprises	
		Households involved in rattan-related enterprises	Households not involved in rattan-related enterprises
Economic status and well-being	Relatively poor households	20	20
	Relatively rich households	20	20

Source: Malleson et al. (2005)

Discussion

Participant Observation

Information collected by the SROs through participant observation provided valuable background and case study data to complement and cross-check data collected through PRA exercises and formal surveys. This method helped the SROs to acquaint themselves better with local people and gain a thorough understanding of people's livelihoods.

Wealth Ranking

The wealth ranking exercise generated useful comparable data that were used to group households by wealth for the multi-round surveys. In some areas, particularly where there are resident migrants, the state of housing conditions can be an ambiguous proxy for wealth. For example, in Cameroon's border zone settlements, Nigerian households, who make up a significant proportion of the households in this zone, may reside for part of the year in Cameroon and part of the year in their home villages in Nigeria. The housing conditions and household assets of their homes in Nigeria and Cameroon may be very different. Their Cameroonian homes tend to be poorly constructed with little furniture whilst their homes in Nigeria tend to be more permanent and well-furnished. Land ownership, in this case, can also be a poor proxy indicator for wealth, as most Nigerian households living in the border zone rent land there, but may own land in their native villages. In this case, the employment of workers may be the only clear criterion to differentiate households on the basis of economic status. A relatively wealthy migrant household may employ labour, whereas relatively poor households are unlikely to do so.

Defining the household

For this research, a household was defined as a group of people living together in the same house who regularly cook and eat from the same pot. However, as Guyer (1981) points out there are many problems related to defining what constitutes a household in Africa. The above definition of a household is problematic in the case of the Ghana study settlements where, as Fortes (1970: 10) describes, household structure may be strongly influenced by matrilineal kinship ties and where cooked food may be taken by children from the houses in which their mothers live to those in which their fathers live. Another common example of confusion was in cases in which female-headed households were not identified as separate households but were grouped together with their parents. Definitions of what constitutes a household also vary over time and with local social conditions and historical circumstances (Fortes 1970: 32). This makes cross country and cross settlement comparisons of households problematic.

Household Census

Information collected through this survey provided a useful foundation on which the other surveys were based. It was particularly important because little background literature on each of the study settlements was available.

In common with the mapping exercise, the administration of the household census gave the SROs an opportunity to introduce and familiarise themselves with local people. Contacts with local community residents developed during the census period and many inhabitants served as friends and informants throughout the research period.

Multi-round Survey

Multi-round survey data highlighted the seasonal importance of different income sources and the use of household items made with rattan. Such issues would have undoubtedly been more difficult to pick up using a one-off survey. Other researchers working in this field have pointed that under-reporting of NTFPs with marked peak seasons is a major limitation to the accuracy of one-off surveys (Townson 1995; van Dorp et al. 1999).

There were, however, some problems encountered during the administration of the multi-round survey, including respondent fatigue, changes in household membership, and logistical constraints related to weather conditions, etc. Repeated household visits for the many rounds of the survey led to 'respondent fatigue'. To maintain the cooperation of participating households, small gifts of soap and stock cubes were offered to them. This was welcomed by interviewees and seemed to help maintain good relationships with them. However, it can be argued that providing incentives to respondents may bias the research, create expectations in follow-up rounds and create ill-feeling amongst non-participating households. Furthermore providing such gifts is costly and sets a precedent which others, such as less well-funded individual research students may be unable to follow.

Interview fatigue was exacerbated by the fact that many of the settlements studied were the focus of other conservation or development projects. This meant that some of the inhabitants had been subjected to many household-related interviews over the past few years. Furthermore, some of the conservation initiatives in these areas have led to ill-feeling amongst inhabitants because their access to forest resources is being limited, this in turn affects other projects (such as ours) working in the area. It is sometimes very difficult to create an awareness of the differences between external projects. However, the long term presence of SROs in the study settlements helped build a rapport with local people.

As Guyer (1981: 98) remarks, changes in household membership make data collection and analysis more difficult. One of the greatest challenges encountered during the multi-round survey was the issue of maintaining records of changes in household composition over the three year survey period. Many changes occurred to households during the years of the field study including the dissolution or merging of households, as a result of death, marriage and migration.

The SROs found that data collection was hindered by the fact that some household members, particularly young men, were extremely mobile. They were often away from home on social visits (birth or death celebrations) or for economic activities (e.g. trading). The latter case is particularly true for people from the remote villages in Cameroon who spend much of their time in their 'bush houses' harvesting NTFPs (Asaha 2002).

Locating respondents was especially difficult during the peak farming seasons when some households spend most of their time based on their farms, living in 'bush houses', only returning to their houses in the village at weekends. For this reason, most interviews took place in the evenings, after people had returned from their farms, on traditional public holidays or on Sundays, when people were resting.

Due to time constraints and logistical problems (e.g. impassable, muddy roads and flooded rivers during the rainy season), the four month recall periods for the multi-round surveys were difficult to adhere to. The irregular administration of the multi-round survey meant that seasonal variations in NTFP

usage and sales were blurred. Ideally four seasons should have been identified: early rainy, late rainy, early dry and late dry seasons, however in practice it was only possible to define two main seasons: rainy season and dry season. Despite these problems, repeat visits to the same households during different seasons provided very useful insights into the seasonal variations of livelihood activities.

Attrition (or respondent drop out) due to respondents migrating (e.g. civil servants being transferred), dying, or deliberately refusing to respond was also a problem encountered during the multi-round survey (Asaha 2002). This point also leads us on to an important shortfall of our study. In focusing on local communities, we made no attempt to investigate how economic activities of specific households 'stretch' beyond the physical boundaries of community, which is, as Murray (2001: 12) points out, a crucial component of livelihood research. However such detailed and lengthy studies require considerably more time, effort and resources and generate many other methodological challenges (see Bagchi et al.1998, and Attawell 2003 for discussions of the challenges of longitudinal research).

Conclusion

This paper has provided a critical assessment of a combined approach investigating rural livelihoods, using sample surveys and participatory methods. In conclusion, the experience of this research project suggests that this approach provides an efficient and cost effective way to generate a socially differentiated assessment of the importance of forest products for rural communities in the humid forest zone of Cameroon, Ghana and Nigeria. Such an understanding can help unravel the complexity of people's lives and feed into policy by shedding light on the role that NTFPs play in the lives of different groups of people.

The following final comments emerge from this brief summary of the research methodology. First, we have elaborated on the sampling aspects of our work, as Stern et al. (2004: 98) suggest, the way that study units (individuals, households, settlements and regions) are chosen is just as important as the types of research methods used to study them. There are some significant problems associated with using the household as a study unit. These included problems associated with defining what constitutes a household and with how household structure varies over time and with local social conditions, historical circumstances.

Second, combining the findings of participant observation and the participatory wealth ranking exercise with information collected from the household census was useful for establishing a socially differentiated picture of the livelihood situation. These data, combined with data collected through the multi-round survey also allowed us successfully to examine the seasonal significance of different income sources for the livelihoods of different categories within the population, with special reference to the rural poor and women. A combination of participant observation, PRA techniques and small-scale surveys provided an effective low-cost approach. Other researchers have also found the combination of qualitative and quantitative approaches effective (Ellis 2000:227; Howe and Mckay 2007),

Third, it is evident that there are some significant problems associated with using housing conditions as well as house and land ownership as proxy indicators for wealth, particularly in settlements with migrant households who may have more than one residence. Other proxy indicators, such as employment of workers, may be useful in some situations. It is important to identify and use appropriate indicators.

Fourth, attrition and changing household membership were significant issues for the administration of the multi-round survey due to the highly mobile nature of household members. Repeat visits are also costly in terms of time and financial resources. However, such visits allowed us to gain some very useful insights into the seasonal aspects of livelihood strategies which would not necessarily been picked up in a one-off survey.

Despite the problems encountered, our study provides useful comparative livelihood data for a range of rural households in the humid forest zones of Cameroon, Ghana and Nigeria. By collecting quite detailed socio-economic and demographic data we have been able to differentiate a number of contrasting settlement and household typologies in order to clarify who is involved in what income-generating activities. Further, in-depth research, including longitudinal surveys, provided data that adds a useful temporal dimension and picks up seasonal changes in livelihood patterns. As a result, our research resulted in some important livelihood insights which will be disseminated in due course.

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