Trade-offs between management costs and research benefits: lessons from the forest and the farm

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Author blurbs

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INTRODUCTION

This chapter looks at some of the institutional challenges of combining qualitative and quantitative approaches in development research and asks whether the benefits outweigh the costs. We focus on experience from the forestry (including agroforestry) sector, specifically from the conservation/development interface where debate is often polarised along quantitative and qualitative lines respectively. Our basic premise, however, is that questions relating to the complex interaction of people and natural resources can only be answered by drawing on some combination of quantitative and qualitative information. We also assume that this should be done without compromising the quality of data collection for any component approach. Finally, we take as read that, in the specific context of development research, there is usually a strong emphasis on capacity-building of partners and on achieving buy-in by the eventual users of the research results.

To examine the reasons why the reality of achieving these goals is often frustrating, we draw on four different development research projects (supply and demand of non-timber forest products (NTFPs) in Benin, conservation of trees on farm in Honduras and Mexico, domestication of indigenous fruit trees in Cameroon and Nigeria, and commercialisation of NTFPs in Bolivia and Mexico), all of which deal loosely with the use by local people of trees in a more or less managed environment. Each involved different numbers and types of researchers and institutions as well as representing a different combination of research approaches (Table 1). Based on the experience in these projects, we highlight some of the key practical challenges and trade-offs (in terms of resources and time) associated with trying to bring together more qualitative and quantitative approaches.

[Insert Table 1]

OBSTACLES TO INTEGRATION

A similar range of problems was encountered in all four projects. Some related specifically to how one combines more qualitative and quantitative approaches in the field, some were more to do with the different worldviews of researchers working in different disciplines, and others arose from the fact that collaborating across different disciplines almost always means collaboration across institutes.

Getting the sequencing right

As outlined by Holland and Campbell (introductory chapter), the key to the effective combination of methods and data lies in the iterative relationship between descriptive (usually more quantitative) and explanatory (more qualitative) approaches. In practice this means careful and, where necessary, flexible sequencing of methods so that the results of one strand can feed into another.

Sequencing of methods in the natural resource field is complicated by the fact that so many of them – whether qualitative or quantitative – are seasonally constrained. Phenological studies are by their very nature a record of change across the seasons. Yield studies or market surveys for fresh produce (fruit, leaves, etc.) are similarly seasonal and farmers are more ‘switched on’ to discussion of domestication issues when the trees are fruiting. Botanical surveys may be restricted to periods of the year when plants are in leaf but terrain remains accessible. In the same way, much community-level and household-level work is dependent on farmer availability – affected both by seasonal migration and the agricultural calendar as well as by daily work patterns.

Seasonality issues can spoil plans for integration. In the CUBOS project in Honduras, for example, our initial aim had been to have a combined fieldwork team consisting of a socio-economist and a botanist to carry out semi-structured household interviews and biodiversity inventories of the household's plots, the latter accompanied by a member of the household being interviewed. The botanical surveys were under great seasonal constraints, however, and were found to be so time-consuming that it was impossible to wait for farmers' availability to do them. We were therefore obliged to separate the socio-economic and botanical teams.

The CUBOS project also illustrates how important it is to be clear about the objectives of the project when deciding how to sequence methods. If CUBOS had only been about finding the most effective way to conserve threatened tree species diversity, then we should have focused first on botanical surveys to determine the location of threatened species (which turned out to be only in Mexico and not in our other case-study country, Honduras) and then carried out the socio-economic research to see how to conserve them. The fact that the project also had livelihood objectives, however, justified the concurrent implementation of both qualitative and quantitative methods.

Sequencing can also be constrained by how experienced researchers are in different methods. The researcher's knowledge of an area is more important in determining the quality of qualitative than quantitative work (Schreckenberg, 1995). In Benin, for example, the same participatory research was carried out with five groups of women one after the other, over a period of nine months. The information collected later was much more complete and reliable than that obtained from the first group of women. In the early stages we accepted too much information at face value. Later, with a deeper understanding of the area (in part derived from collection of a range of quantitative data on natural resources and markets), we were better able to recognise evasive statements or conflicting information, and probe further. A research team new to an area may, therefore, be better off starting with quantitative work and only engaging in qualitative work at a later stage.

The greatest difficulties arise when trying to combine seasonally constrained methods with a 'process' approach, in which the issues raised in early rounds of research determine the direction taken by later research activities. In the CEPFOR project, the main data collection tool, a questionnaire investigating various aspects of the commercialisation process of non-timber forest products (NTFPs) amongst community members and traders, was developed in a very participatory manner and took into account the results of preliminary qualitative work in the study communities. By the time it had been completed, tested and revised, however, the pressure to implement it quickly was very great if the project was to finish on time. Unfortunately, of the ten NTFPs studied, several were highly seasonal and some of the communities were only accessible for part of the year. Implementation of the questionnaire in some communities was therefore substantially delayed with knock-on effects on the timing of data analysis.

This raises the issue of how to squeeze research, of whatever type, into a conventional project cycle. Even a slight delay in starting a project can lead to the boat being missed on some seasonally constrained activities and in turn require a change in the overall sequence of methods. Sequencing is further complicated by the need for development research projects to keep an eye on the policy process, producing briefings for specific events. Donors' requirements for interim policy outputs also put increasing pressure on interdisciplinary research projects which may

need to draw on several strands of research (each with its own timetable of analysis) to come up with integrated recommendations.

Reconciling sampling strategies

Sampling strategies (and the resulting recommendation domains) are without a doubt one of the most difficult issues to resolve within a multi-disciplinary team.

The first issue relates to sampling over time. Many quantitative approaches in the forestry sector are dependent on the vagaries of nature (e.g. phenological, yield and market studies) and should be carried out over several years to enable the team to learn (test and amend methods) in the first season and to allow for year-to-year variation in fruiting (which may impact on prices, etc.). In the Cameroon project, for instance, many of the trees that had been selected for observation did not fruit in the year we were working. This need to carry out fieldwork over several years may be difficult to combine with qualitative approaches (community-level PRA in the Cameroon case) that hope to provide rapid feedback to communities.

It may also be necessary to compromise over spatial sampling. In Cameroon the fact that the 'biophysical' team (who were measuring variation in fruit characteristics) needed to access trees of particular species meant that one of the four case-study villages was selected for its abundance of a particular species even though it was atypical of the area in many socioeconomic respects. Furthermore, although we wanted to carry out the biophysical work on the trees observed in the farm tree inventories, this was not possible because the biophysical study required a minimum number of trees and these could not be found within the 20 households involved in the farm inventory (and sometimes not even within the village selected). So the biophysical sampling strategy had to be adapted and we were unable to test some of the hypotheses (e.g. that various farmer characteristics were linked to particular fruit characteristics) that would have required socio-economic and biophysical information to be collected for the same trees/owners.

Collaborating across disciplines

Modern researchers tend to undergo increasingly specialised disciplinary training. Bringing together qualitative and quantitative approaches therefore requires not just a multi-disciplinary team but also a multi-person one. This means that projects need to deal with the relative requirements of the methods as well as of the individual researchers and their parent institutions.

Trying to meet several individual research agendas may 'inflate' projects beyond what is necessary to answer the central questions at hand. How willing individuals are to compromise depends greatly on how well they understand, and are interested in, the different project components. This kind of mutual respect and common focus on project goals may take time to develop. In the CEPFOR project, for example, the assumption of half of the core project team that we should take a participatory approach to the development of the research methods was not explicitly shared or agreed with the other half. As a result, the inception workshops in each country were primarily devoted to collecting a specific subset of data from participants to enable an early trial data analysis. But it meant that methodology development had to be pursued by email in a manner that was very time-consuming and did not result in immediate ownership of the overall approach by all partners.

Ideally trust should be established when sampling strategies and data quality issues for each research strand are being discussed, as these issues can usually be understood across disciplines. Data analysis, however, may be beyond all but the

relevant specialists. Having confidence in each other's conclusions therefore depends on the trust built up early on in the project.

One of the problems of a multi-disciplinary team is that it is often large, and few of the researchers are likely to be working on the project full-time. Budget constraints simply make it impossible to fund a large number of specialists for the duration of the project. Instead, each one is paid for short periods, sufficient to carry out their research component, but rarely sufficient to cover the interaction time required to facilitate integration between disciplines. When all of a project's researchers are dividing their time between several activities, it is hard enough to schedule fieldwork let alone cross-disciplinary project meetings. Successful integration of qualitative and quantitative approaches therefore almost inevitably extends the length of the project.

Collaborating across institutions

Given that many institutions specialise in a particular type of research, achieving multi-disciplinarity often implies working with several institutions. This introduces many complications that, although only indirectly the result of combining qualitative and quantitative approaches, can prove a serious obstacle to integration.

All institutions have different ways of working including the extent to which they insist on strategic versus operational planning of research agendas. In some cases research must be included in annual work plans, in others it can be planned more quickly and informally. Differing financial years can complicate budget management as can varying flexibility in an institution's ability to transfer funds between years and budget lines. Together these factors determine how likely an organisation is to be able to support a process project, in which qualitative and quantitative approaches are sequenced in response to results of earlier data collection.

Different institutions typically have quite different goals, which can impact greatly not only on how research is carried out but also on what forms of dissemination are expected. Thus academic institutions are interested in testing research hypotheses and researchers are judged on the basis of peer-reviewed publications. Others are more interested in achieving policy impact. Development NGOs, on the other hand, usually want immediate results for the study communities. The Benin PhD study was a typical example of the problem of having multiple task masters: the university required 'innovative' work, the bilateral donor required standardised data, and the host project sought practical advice – resulting in the need to collect sufficient data to satisfy all three and produce several types of outputs. In such a situation it is essential to get all stakeholders to agree exactly who needs what at an early stage.

Three of the projects worked with local NGOs, most of which had either a strongly qualitative development focus or a more quantitative conservation focus. While this caused some difficulties with respect to how receptive they were to multidisciplinary approaches, a more fundamental issue was their lack of experience in carrying out rigorous research. In the CEPFOR project it became clear that this was particularly problematic for the qualitative data collection. We had selected various PRA tools precisely because our NGO partners were experienced in using them, but it turned out to be impossible to convince partners that these needed to be employed in as rigorous a manner as our quantitative data collection tools if we wanted data that were comparable across the 17 study communities.

The Cameroon project represents an ideal case in which the national coordinating organisation, in this case the World Agroforestry Centre (ICRAF), itself has a mandate to work in an interdisciplinary manner and therefore had a good

understanding of the methodological and consequent logistical needs of all the research strands.

MAKING IT WORK: THE COSTS

Over the course of the four projects, it has become clear that compromise and sufficient resources of time and money can help overcome many of the obstacles discussed above.

Joint development of hypotheses

Jointly developed hypotheses can be an excellent way of focusing all project partners on the key thematic questions. They are particularly useful in determining the relative contributions of qualitative and quantitative approaches and how they can be integrated most effectively.

It pays to state hypotheses explicitly unlike in the CUBOS project in which hypotheses resided primarily in the heads of the original project planners. They were therefore not 'owned' by the new field team that took over just after the inception of the project. As a result, for justifiable logistical and methodological reasons, this team dropped some of the more quantitative elements of the household interviews and the botanical surveys. Some of the analysis originally foreseen was therefore not possible. The lack of guiding hypotheses was compounded by low intensity management (split between two institutions with very different worldviews) and a lack of project reviews, which might have enabled the team to identify and remedy data gaps at an early stage.

The CEPFOR project took the decision to invest time in developing six fairly general hypotheses, each supported by a set of more specific research questions. Based heavily on the international literature, these turned out to be an excellent way of introducing national partners to this body of theory. More importantly, they were an essential tool for ensuring that different components of the research focused on the same issues and fed into each other's analysis (Table 2).

[Insert Table 2]

Many research projects compromise on their methodology to keep within budget and time. The existence of a clear set of hypotheses can be very helpful in determining just how much it is possible to compromise before the project loses its focus. In the CEPFOR project, for example, it was impossible to carry out a detailed quantitative market analysis for all the NTFPs being studied and decisions about which ones to drop were based on how much each product could contribute to the understanding of the project's hypotheses. This also illustrates that it is often not necessary for all research methods to be implemented across all case-study products or communities. The Cameroon project found that it was more effective to focus qualitative community-level work in Cameroon only while some of the more quantitative tools were also used in two Nigerian communities. Although less complete, the Nigerian data provided a good balance to the Cameroon data and greatly enriched the overall results.

Reciprocal capacity-building

Ravallion (2001) argues that the main barriers to mixing qualitative and quantitative methods lie in the resistance of practitioners to stepping outside the traditional boundaries of practice. To get around this, both the Cameroon and CEPFOR projects invested heavily in capacity-building for their partners.

The Cameroon project began by training biophysical, market and socio-economic researchers in participatory methods and community-level work. In addition to generating a broad understanding of the aims of the project, the training course was a fun way for the diverse research team to get to know each other and appreciate each other's skills and disciplinary perspectives. At the time we considered it less important to train the whole team in the more quantitative (and seemingly more straightforward) biophysical and market research techniques. In retrospect this was a missed opportunity for the biophysical team, in particular, to influence elements of the market and socio-economic work.

In addition to providing cross-disciplinary training, the CEPFOR project illustrated the need to train NGO partners in general research 'best practice' including consistent standards of data collection, recording and management. It also showed that ongoing capacity-building was vital not just for the field staff but also for the core planning team to ensure that they understood and respected each other's approaches. This was achieved through frequent team meetings and mini seminars by each specialist enabling participants to begin to understand each other's disciplinary languages and appreciate both the potential and the limitations of different analytical approaches.

Early joint analysis

Meetings to trial analysis at an early stage of the project are an essential part of capacity-building for partners, who are much more likely to collect data well if they understand how they are going to be used. Such meetings also provide an early opportunity to determine whether data type and quality are sufficient to meet the project's needs. In Cameroon, for example, very simple information like 'plot age' was not recorded on the inventory forms as the collectors did not realise the importance of this particular information for linking different data sets. Delays between data collection and analysis meant it was then impossible to go back to the same plots to complete the data.

In the CEPFOR case, conclusions based on early analysis of the quantitative data were challenged by the qualitative information, and further inspection revealed an error in the original data. Parallel analysis of the different strands also highlighted which of the project's hypotheses and research questions needed were not being sufficiently tackled by any strand.

Joint analysis at an early stage of the project has the added advantage of focusing the mind of the mainly part-time research team and provides a deadline for work components to be completed by and, where necessary, helps to bring the different research strands back into step with one another.

Inviting selected disciplinary experts to some of these analysis meetings can be very rewarding. In the CEPFOR project, for example, an external statistician facilitated an important discussion about the limitations of our varied research approaches and the implications for the project's recommendation domains.

Intensive management, frequent reviews and long-term commitment

A full-time research coordinator is always a benefit, but particularly so in multi-disciplinary (and multi-institutional) projects which, as outlined above, require additional work to ensure that all collaborators work towards the same goal. It is important that this person understands the research requirements of all the partners and can mediate fairly between different research strands as necessary, e.g. if compromises on sampling strategies are needed or delays in one component cause problems in another. In a comparative project, at least one person from each

discipline should know most if not all the fieldwork sites in order to be able to evaluate the quality of the data collected in them.

It is almost impossible for a project crossing disciplinary, institutional and usually also national boundaries to have too many opportunities to feed ideas from one research team/component to the other(s). As much as Email has revolutionised communications, crossing disciplinary boundaries requires a great deal of trust between collaborators, which can best be fostered through frequent face-to face meetings. In the CEPFOR project, meetings built rapport and enabled all collaborators to question, doubt and explore issues directly with other partners, fuelling learning curves, increasing transparency and reducing any potential confusion, misunderstanding or resentment in achieving joint project goals.

In addition to the more intensive management required and greater number of cross-project meetings, a project combining qualitative and quantitative approaches is likely to need more time simply to allow for the complexity of sequencing, particularly if seasonally constrained quantitative methods are being integrated into a process project.

THE REWARDS

Carvalho and White (1997) discuss three ways of combining the best of qualitative and quantitative approaches:

- *Integrating* the quantitative and qualitative methodologies
- *Examining, explaining, confirming, refuting and/or enriching* information from one approach with that from the other; and
- *Merging the findings* from the two approaches into one set of policy recommendations.

Each of the four case-study projects attempted to achieve some or all of these in different measure. The Benin PhD study deliberately kept each methodological approach quite separate in order not to compromise quality. But the fact that all were undertaken by a single researcher, who could determine sequencing to suit the needs of the research rather than being constrained by the availability of disciplinary specialists, meant that the separate methods were used in a flexible and iterative manner. As a result, even though the research was carried out during a single year, a combination of information about agricultural practices, how women earned their livelihoods and patterns of tree densities (from tree surveys) allowed for a complex understanding of how NTFP use was changing over time.

The original aim in the CUBOS project was to integrate the botanical and socio-economic methodologies. In the event this was not practical but the two teams at least overlapped in the same communities for some of the time and ended up providing different but complementary types of information. In comparing biodiversity in Honduras and Mexico, for example, a good grasp of tenure issues and their relation to biodiversity was vitally important to understand why some areas might have rare species and others not. By merging the findings from the two approaches it was possible to derive rich policy recommendations that spoke to both the conservation and livelihoods worlds.

In Cameroon, there was no direct integration of methodologies though each took into account the other's needs when determining sampling strategies and used the same villages. The location of the project within a permanent research institution with ongoing work in the study areas also made it possible for some iteration to take place

and additional research to be carried out. The merging of the findings from the qualitative and quantitative strands was important not just in the development of high-level policy recommendations, but also at a very practical level in helping farmers select trees for domestication. This requires not only an understanding of people's very varied preferences (e.g. for large kernels or tasty fruit, for low trees to facilitate harvesting, or for aseasonal production to meet local market requirements) but also an understanding of the existing biophysical variation within a particular species or tree population and how different characteristics are linked. For the individual researchers, the greatest benefit of the multi-disciplinary collaboration was the personal understanding and experience they gained, which has benefited their subsequent work.

The CEPFOR project made the greatest attempts to achieve methodological integration. Its research hypotheses were framed in such a way that they could only have been investigated with a combination of qualitative or quantitative approaches. Based on qualitative work at community level, the project developed a survey tool that provided data for econometricians, market analysts, socio-economists and Bayesian networkers. The process was much more time-consuming than if the research approaches had been pursued separately and also led to some loss of quality in the data collected. The benefits were in the establishment of a truly interdisciplinary team, from field based researchers to office based managers, who shared a fuller understanding of the project objectives and achievements, and in a comprehensive and multi-faceted approach to commenting on the project's hypotheses.

Overall, the projects suggest that there are many benefits of combining qualitative and quantitative approaches:

- More complex understanding of the issues being researched leads to more meaningful recommendations;
- Drawing on different disciplinary approaches ensures a broader policy impact as recommendations are taken seriously by policy-makers from both quantitative and qualitative schools;
- Reciprocal capacity-building within the team opens researchers' eyes to the potentials and pitfalls of different approaches;
- Working within a multi-disciplinary team means that each researcher is constantly being challenged to justify their approach and conclusions, ensuring that only the best is taken from each;
- The continuing challenge and opportunity to learn from colleagues leads to much greater researcher satisfaction.

CONCLUSIONS: IS IT WORTH IT?

This chapter began with the premise that natural resource management questions can only be answered with some combination of qualitative and quantitative data. These data could be obtained through two or more separate single-disciplinary projects, with an additional project to integrate the results. Depending on when and how well the separate projects were planned, the integrated results might or might not respond precisely to the questions being asked. Another option would be to design a single integrated project from the start. The lessons of the projects presented in this chapter are that this latter option is worthwhile not only because it produces a set of rich and layered results that are more relevant, useful and adoptable at the level of the ultimate (farmer) beneficiary, but also because it ensures

buy-in from varied stakeholders and has the added benefit of achieving high levels of researcher capacity-building and satisfaction.

We should not, however, be under any illusions that simply because we are dealing with one project instead of several, a project integrating qualitative and quantitative approaches will be a cheaper or faster option. The costs are primarily in the form of more project meetings and capacity-building to ensure mutual methodological acceptance, the time needed for iteration of methods (particularly if some are seasonally constrained), and the intensive management required to keep a multi-disciplinary (and usually multi-institutional) project on track. If we face up to these resource implications, then qualitative and quantitative approaches can be combined to great benefit.

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Table 1. Comparison of salient methodological aspects of the different projects referred to in this paper

	Benin PhD	**CUBOS**	**Cameroon project**	**CEPFOR**
Project aims	To investigate demand and supply of NTFPs in the Bassila region of Benin	To investigate the potential for conservation-through-use of trees on farm in the Mesoamerican dry forest zone of southern Mexico and Honduras.	To investigate the constraints and opportunities for resource-poor farmers to obtain greater benefits from indigenous fruit trees	To investigate the factors which determine the success or failure of NTFP commercialisation enterprises
Countries in which fieldwork was carried out	Benin	Mexico and Honduras	Cameroon and Nigeria	Mexico and Bolivia
Additional countries in which partners were located	Germany, UK	UK	UK, Australia	UK, Nicaragua
Languages	English and French	English and Spanish	English and French	English and Spanish
No. of partners, & organisation types	2 universities, 1 bilateral forestry project	1 university, 1 research institute, 4 herbaria, 2 government departments, 1 international and 2 national NGOs, 3 independent researchers	2 research institutes, 2 CGIAR organisations, 1 commercial research institute, 1 national agricultural research institute, 1 government extension service, 4 national NGOs, 1 bilateral project	2 research institutes, 2 international and 3 national NGOs, 2 independent researchers
Core[1] research team with disciplines	1 person (social forestry)	5 people (social forestry x 2, forestry, natural resource economics, botany)	5 people (social forestry, agroforestry x 2, agricultural economics, market economics)	6 people (natural resource management, ecology, social forestry, market economics x 2, econometricis)
Timeframe: total length (and period during which fieldwork was carried out)	5 years (13 months)	1996-2003 (4 years)	1999-2003 (2.5 years)	2001-2004 (4 years)
Methods used, listed in order of those producing the most quantitative data to those producing the most qualitative data	• Tree inventory around 3 villages to measure density of NTFP species • Fortnightly phenological study of 11 NTFP species • Yield studies for 2 species • Weekly market surveys at 2 markets	• Botanical surveys of species occurrence in different land use types in 8 communities • Economic studies of benefits of on-farm trees in 2 communities • Community-level participatory work in 8	• Biophysical measurements of fruit of two species • Phenological studies of same two species • Monthly NTFP market surveys at 11 markets • Inventories of fruit trees on farms in 6 communities	• Household surveys in all 17 communities • Trader surveys along market chains for 10 NTFPs • Market reports for 10 NTFPs • Community-level participatory work in 17 communities • Background policy study in

[1] 'Core' team members are those who contributed substantially to the development of the research methods and analysis of the results. 'Other' team members are those who participated in the implementation of the research.

	• Household surveys of NTFP use in 4 villages • Focus groups on women's income and expenditure patterns • Focus groups on uses of main NTFP species • Participant observation of NTFP harvesting and processing	communities • Semi-structured household interviews in 8 communities on tree management and use practices • Focus groups on particular tree products and production systems	• Community-level participatory work • Household interviews in 6 communities	each country
Sequencing of methods	Phenological study and market surveys carried out simultaneously with focus groups. These provided background for development of a very specific household survey instrument applied at end of study period. Timing of inventory and yield studies determined by seasonality.	Community-level work provided general context for selection of households for hhd interviews. Timing of botanical surveys constrained by seasonality and need for land use information from the hhd interviews. Results from hhd interviews and botanical surveys fed into design of economic study. Information from hhd interviews was later crosschecked with focus groups.	Community-level work provided context for selection of households for interviews and farm inventories. Biophysical and phenological work constrained by seasonality. Market surveys carried out independently of other work but in nearest markets to study communities.	Community-level work provided context for selection of households for surveys and for identifying market routes and traders to be interviewed. Together with the Policy studies, the community-level work helped identify the issues to be addressed in the hhd survey.
Existence of explicit research hypotheses	No. Methods used to explore general research themes.	No. Some implicit in project document but never explicitly amended in the light of emerging findings and changing donor priorities.	No. But some developed as research progressed.	Yes. 6 hypotheses, each with about 10 research questions, were developed at first project meeting.
Number and types of meetings held	None between all partners. Few others. Most consultation by post.	All project partners only brought together for the final project 'maturity' meeting. Core team met about once per year.	Inception workshop combined with training of whole team; Interim monitoring workshop; Data analysis workshop; Maturity workshop; Writing workshop; and UK-based team met twice per year.	4 workshops for core team; 2 inception workshops in Bolivia and Mexico; 2 market training workshops; 2 whole project data analysis workshops; 1 dissemination workshop; and quarterly meetings of UK-based team.
Reference	Schreckenberg (1996)	Gordon et al. (2003)	Leakey et al. (2003)	Marshall et al. (2003)

Table 2. Example of how the CEPFOR project used hypotheses and research questions to determine data source and type of analysis

Hypotheses and research questions	**Data Source**	**Analysis methods**	**Who?**
Hyp: Changes in trade in NTFPs have a greater impact on the poorest producers, processors and traders.			
RQ: Are the same individuals involved in production (collection and cultivation), processing and trade?	1. Survey question 1.1 2. Community reports sections 7.5 and 7.6	1. Regression against measures of success 2. Tabulation by products and communities	1. DWtV 2. EM and KS
Explanatory note: Each of the project's six hypotheses was broken down into several research questions	*Explanatory note: For each research question, we determined which data sources would provide relevant data*	*Explanatory note: This column indicated what kind of analysis would be carried out*	*Explanatory note: Here we assigned responsibility for different parts of the analysis*