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The use of activity diaries for understanding the daily lives of farmers and their livelihood choices

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Abstract

This paper reviews the use of activity diaries in two Australian Centre for International Agricultural Research (ACIAR) projects in PNG: a smallholder cocoa project in the East New Britain province (ASEM/2006/127) and a smallholder coffee project in Eastern Highlands province (ASEM/2008/036). Both projects were similarly concerned with identifying the production constraints on cocoa- and coffee-farming households and to better understand the range of socioeconomic and cultural factors influencing farmer decision-making and the allocation of household labour among various livelihood activities. In PNG, the household is the principal production unit underpinning livelihood activities such as commodity production. It is at the household level that decisions and negotiations are made regarding the organisation, mobilisation and management of family and extended family labour. Thus, examining in detail the daily economic and social livelihood activities of household members, through time-allocation studies, helps researchers to understand more comprehensively the factors influencing smallholder decision-making regarding livelihood choices, agricultural practices and the adoption of agricultural innovations. This paper outlines two different techniques using activity diaries employed in the projects, and discusses the methodological advantages and challenges of these techniques in smallholder studies in PNG.

Introduction

Activity diary surveys (sometimes referred to as time allocation surveys) can be employed to measure how people allocate their time and labour. Crosbie (2006, p. 2) notes ‘descriptions of how people use time can tell us much about quality of life, social and economic

well-being and patterns of leisure, work, travel, and communications’. Activity diaries have been used extensively by health scientists, anthropologists and geographers and, to a lesser extent, by agricultural economists to gather information on the gender division of household labour, the allocation of time to productive and leisure activities, seasonal variations

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in workloads, links between workload and nutrition, agricultural practices and household commodity crop production (Acharya and Bennett 1981; Grossman 1984; Suda 1994; Whitehead 1999; Koczberski et al. 2001; Blackden and Wodon 2006; Erdil et al. 2006). The detailed data gathered from activity diaries on the daily activities of rural households in developing countries have been valuable in identifying the extent, range and complexity of livelihood activities in which household members engage and the overall work burden of poor households and, particularly, of women. Thus, data from activity diaries can be useful for informing rural agricultural policies and smallholder extension initiatives. There were several reasons why we used activity diaries in the two Australian Centre for International Agricultural Research (ACIAR) projects under discussion: a smallholder cocoa project (*Commercial sector/smallholder partnerships for improving incomes in the oil palm and cocoa industries in Papua New Guinea*, ACIAR Project ASEM/2006/127) in East New Britain province and a smallholder coffee project (*Improving livelihoods of smallholder families through increased productivity of coffee-based farming systems in the highlands of Papua New Guinea*, ACIAR Project ASEM/2008/036) in Eastern Highlands province.

First, one aim of the cocoa project was to monitor the impact on cocoa farmers' productivity of NGIP-Agmark's⁶ grower support and agricultural extension programs to combat the devastating cocoa pest, cocoa pod borer (CPB). The pest was first detected in East New Britain province in 2006 and it rapidly became established. By 2010, cocoa production in East New Britain province fell by 80% to around 5,000 tonnes (Curry et al. 2012). Because CPB requires high-input management strategies for its control, it was important to ascertain the extent to which NGIP-Agmark-supported farmers were able to make the transition to high-input farming and to determine the impacts on their broader livelihood activities. To do this, activity diaries were designed to capture the capacity of households to respond to the CPB threat through their ability to achieve sustainable changes in their livelihood strategies. By recording where members of cocoa-farming households allocated their time and labour in daily farm and non-farm activities, the diaries assisted in quantifying how farmers were responding to CPB and their uptake of NGIP-Agmark's CPB

training, which required them to adopt intensive farm-management practices to control the pest. The information gathered also helped to identify the time spent on cocoa harvesting, block management and in the pursuit of alternative income sources.

One of the overall aims of the coffee project was to develop farmer-driven extension models involving partnerships between the public and commercial sectors. The research sought to improve nutrient management, extension delivery and the mobilisation of labour for coffee production. Labour mobilisation required identifying how different socioeconomic factors, household characteristics, gender and 'position in the household' influenced smallholder production strategies, particularly labour inputs. The purpose of the activity diaries was to gain a better understanding of the range of livelihood activities in which households were involved in order to pinpoint the constraints on the supply of household labour for coffee production.

In both the cocoa and coffee projects, the activity diaries were part of a broader research framework that relied on qualitative and quantitative techniques. For example, in the cocoa project, in order to monitor and evaluate the effectiveness of NGIP-Agmark's CPB training and the company's partnership with farmers, a monitoring and evaluation framework was developed at the start of the project to guide the research process. The activity diaries were one component of this framework, which drew on a combination of methodologies involving smallholder questionnaire surveys and interviews, farm inspections, attending and recording community and farmer group meetings, collection of cocoa production data and other industry data, and in-depth qualitative interviews with smallholder families and NGIP-Agmark personnel. The multi-method approach enabled a comprehensive understanding to emerge of the changing livelihood strategies in response to CPB, and how NGIP-Agmark working with farmers facilitated the transition towards sustainable smallholder strategies for controlling CPB.

Similarly, in the coffee project, the activity diaries were part of a larger two-phase methodological approach. The first phase was data collection (completed) and analysis (in process); and a second stage (commencing mid 2013) is using the findings to inform interventions to be trialled with farmers through the Coffee Industry Corporation (CIC), the private sector and non-government organisations (NGOs). In the first phase of the project, the activity

⁶ NGIP-Agmark is a diversified agribusiness company based in PNG.

diaries were complemented with other qualitative and quantitative data collected through household socioeconomic surveys, an assessment of farmers' technical knowledge and technical needs, coffee garden inspections and focus group discussions to evaluate CIC extension services. Socioeconomic data collected at the household level provided the sociodemographic and cultural context for the natural resource management (NRM) components of the fieldwork. The NRM work involved an assessment of soil fertility status of smallholder coffee and food gardens and documentation of the pathways of nutrient movement into, through and out of coffee and food gardens to identify points of vulnerability to nutrient loss and points of intervention to maximise nutrient retention or accumulation. Throughout, the research relied on participatory action research approaches with farmers and other stakeholders.

Conducting activity diaries among coffee and cocoa farmers

The research team employed activity diaries over a 14-day period among coffee- and cocoa-farming households in addition to other village-based fieldwork. The coffee activity diaries were conducted in 2011–2012 with 30 households in the coffee flush and non-flush periods in each of 4 villages in Eastern Highlands province: Baira, Marawaka, Bena and Asaro. Activity diaries among cocoa-growing households were undertaken among 135 farmers in 4 villages on the Gazelle Peninsula, East New Britain province: Tokiala, Tinganagalip, Bitagalip and Tabaule.

The two projects used different approaches to conduct the activity diaries: (1) researcher-administered activity diary (coffee); and (2) farmer-administered activity diary (cocoa).

Coffee project: researcher-administered diaries

In the coffee project, a researcher visited a household late in the afternoon and collected information from the household by asking about activities undertaken that day and the preceding day by individual household members and recording the information on prepared data sheets. During the 14-day fieldwork periods, the team resided in the houses of respected community members. A small rental was paid of PNG kina (K)10 per head per night for each team member. The research team brought food with it and

also purchased food locally and contracted women or a church group to prepare and cook food for the team. This helped to maximise the amount of time team members spent collecting data and also fostered good relations with the host community (see below).

Collecting information for the activity diaries was logistically not possible in the early morning or during the day because household members would leave their houses early for most work activities. Therefore, activity diaries surveys were carried out in the late afternoon when most family members had returned home. Each team member was allocated four to six households, half of which were interviewed each afternoon every second day (two to three households per day). The number of households interviewed per interviewer depended on how far from base a particular household was located. An effort was made to allocate a spatial cluster of households to one interviewer to minimise time spent moving between household locations and also to afford an opportunity to return to a household the same evening if family members had not yet returned from their gardens when initially visited.

During interviews, each adult family member was asked to recall the main work and leisure activities undertaken that day and on the preceding day, with answers recorded in quarter-day units on prepared data sheets. To avoid double counting, the previous data sheet was referred to during the interview and when double reporting appeared to be possible, it was checked with informants. Initially, male household heads dominated interviews, but as other family members became accustomed to the interviewer and the content of the interview, they tended to answer for themselves. Labour recruited from or given to other households was also noted, together with arrangements governing labour transactions. Because the study also sought to capture nutrient-management strategies associated with coffee, food gardening and livestock, any mention of these activities triggered further prepared questions on nutrient management. The survey also asked about cash income earned and food intake during the 2-day period.

In the early evening, when team members had returned to the house where they were residing, an hour or two was spent checking survey forms to ensure they were completed properly. Each team member was allocated a set of forms to check (not their own). Any questions or ambiguities were resolved that evening while the surveys were fresh in everyone's memory.

Cocoa project: farmer-administered diaries

The farmer-administered activity diaries for cocoa farmers on the Gazelle Peninsula were completed by the farmers themselves. Households were asked to record, each day, the morning and afternoon activities of each household member. Records were also made of tasks performed by family members for other households, such as those for relatives, community groups, farmer groups, or for the school or church. Tasks performed for the household by non-household members were also recorded and the relationship to the head of the household noted. At the time the diaries were conducted, some farmers had received CPB training by NGIP-Agmark (e.g. those at Tokiala village), while other farmers nearby had not (e.g. Tinganagalip).

Two research staff resided full-time at each village while the activity diaries were being completed by farmers. Before the start of the study, a letter was given to each household head that informed the family about the project work in general and what to expect from the project team temporarily staying in their village to supervise the farmer diaries. At the beginning of the survey period, an information sheet was circulated to farmers (and their children) with an example of a partly completed farmer diary as a guide. Prior experience indicated that farmers would report only those activities they thought researchers would be interested in (e.g. cocoa activities) and they would under-report activities that they considered mundane or thought were of little interest to researchers. The example of the partly completed diary given to farmers emphasised the importance of reporting 'mundane' activities like socialising, food preparation, other domestic chores, pig husbandry and so on.

At the start of the survey period, two team members visited each household every day, in the afternoon or evening, to monitor how farmers were progressing with completing their diaries and to assist where needed. Some households took to the diary very quickly and after receiving initial assistance were able to complete the rest of the diary entries on their own. Other households, where the literacy levels among family members were relatively low, required more assistance and some had to be assisted to complete the diaries for the entire survey period. When a household was managing diary entries competently, a member of the team would visit that

household every second day to assess progress and to ensure that diary entries were completed for each family member and were legible. This sometimes required a clarification of particular diary entries. These corrections or clarifications were added to the diary while activities of household members were still fresh in their memories.

Research benefits of the activity diaries

Activity diaries were a very valuable component of the research framework of both projects because of the insights they afforded into the economic and social lives of smallholder families and household decision-making, and provided some of the key findings of the two projects.

Cocoa project

The farmer-administered activity diaries provided a way to gauge differences in the livelihood strategies between cocoa households making the transition to high-input farming and those which had not received training or were unable to make the transition. As stated above, the main purpose of the diaries was to quantify how farmers were responding to CPB and their uptake of NGIP-Agmark's CPB training, which required them to adopt intensive farm-management practices to control the pest. It was clear from the activity diaries that Tokiala farmers, who had received training from NGIP-Agmark, were putting much more effort into cocoa than the nearby village of Tinganagalip, where farmers had not received training (Figure 1). Tokiala farmers had successfully made the transition to high-input farming. Their increased inputs of labour and chemicals, and their adoption of rotational replanting, were associated with greatly improved block maintenance and significantly reduced incidence of diseased and CPB-affected pods (Figures 2 and 3). Farmers reported getting double or treble the yields they got in pre-CPB days.

The fact that the farmer diary results showed that farmers who adopted high-input farming had significantly increased their incomes compared with the pre-CPB period was a critical finding. It demonstrated to farmers that their additional labour inputs were rewarded with considerably increased production and income. This made it much easier for NGIP-Agmark to promote their model of addressing CPB.

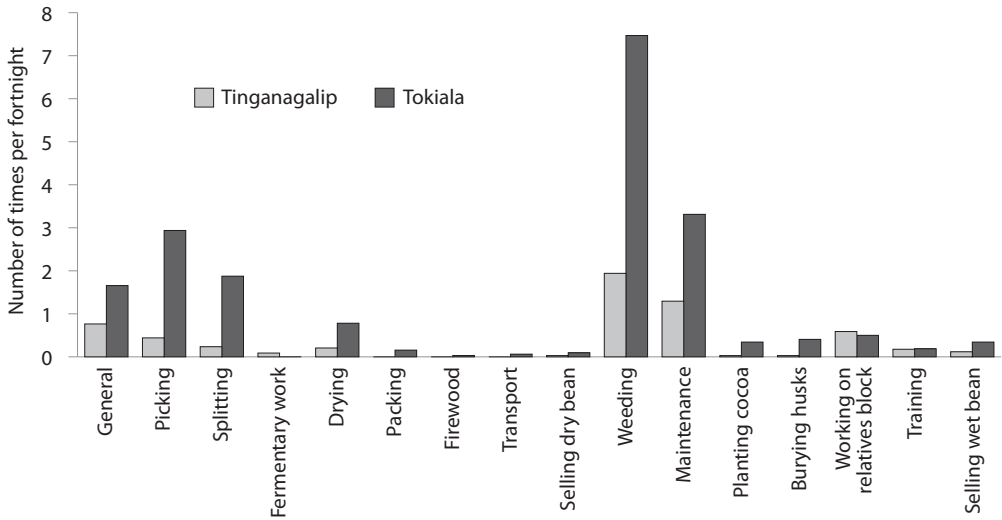


Figure 1. Average number of times each cocoa activity was conducted per household per fortnight, Tinganagalip and Tokiala, 2009

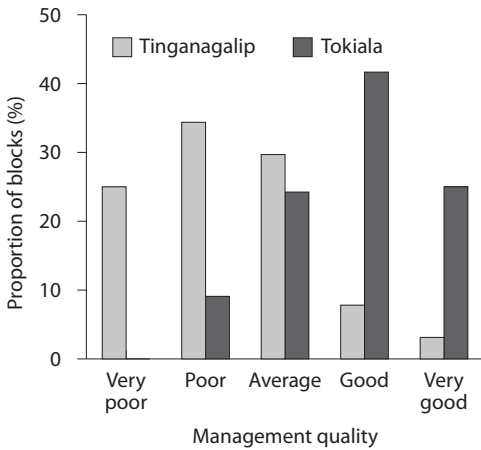


Figure 2. Average levels of block management (weeding, pruning, shade control and sanitation), Tinganagalip and Tokiala, 2009

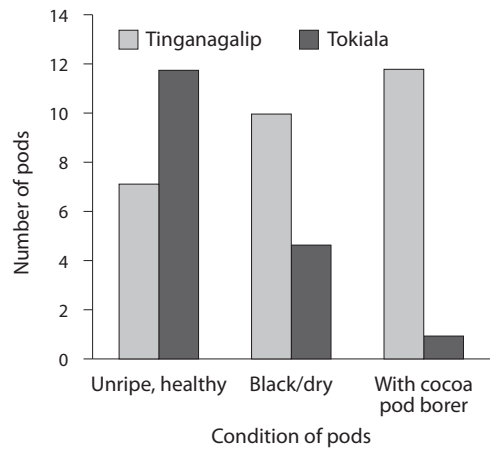


Figure 3. Average numbers of pods per tree and their condition, Tinganagalip and Tokiala, June 2009

Coffee project

Similarly in coffee, although the data are still under analysis, the activity diaries provided a detailed picture of labour strategies and the constraints on labour supply. The diaries were valuable for identifying household needs, priorities, labour demands and the constraints they contend with daily. Research team members also reported much deeper

appreciation of the differences in opportunities within the community—between genders, age groups, educated and poorly educated people, and people with greater or lesser access to social and economic resources like land, labour, savings and remittances (such understandings were also facilitated greatly by residing in the community during data collection—see below). The information generated from

the activity diaries showed that unlike surveys using longer recall periods, say over a week, month or year, repeat surveys over short intervals (daily or every 2 days) tend to generate more accurate data because activities are still fresh in the memories of individual family members. The repetitive surveying over short intervals also improves accuracy as respondents come to realise that they will have to recall their activities since the preceding survey.

Very importantly, especially in the coffee project, the activity diaries gave the teams a greater appreciation of the different opportunities between communities with relatively good access to markets and those in remote areas (e.g. in accessible sites, there are much greater livelihood opportunities, far better returns on labour and much easier access to services, including extension). This had a notable influence on the way the research team thought about potential strategies to increase productivity through new extension initiatives. For example, in the accessible coffee sites within half an hour of a serviceable road, farmers had a diverse range of lucrative livelihood opportunities, including the large-scale production of pineapples, cabbages, sweetpotato and carrots for the markets of Goroka, Lae and Madang; opportunities that were not available to growers in remote sites. Thus, the high opportunity cost of labour in accessible sites meant that growers were less likely to commit additional labour to coffee garden maintenance than growers in remote sites where alternative income sources were highly constrained.

Other benefits

The activity diaries were particularly useful for new researchers and those who had been desk-bound for a long time. Participation in the activity diaries engendered a better sense of the diverse livelihood activities of farmers and helped overcome the common notion among many researchers that smallholders are solely cocoa growers, coffee growers or oil palm growers. The reality is that often these export cash crops represent only a small proportion of their total activities, and researchers' participation in time-allocation studies quickly dispels such ideas. Also, for senior research officers who have little recent fieldwork experience, participation in data collection provides an opportunity to develop a sense of the changes occurring in rural communities because of changing social values (e.g. market engagement and market incentives) and the uptake and impact

of new technologies (e.g. the effect of mobile phone technology on marketing).

In terms of the two approaches, the farmer-administered diaries were an efficient method of conducting time-allocation research because only two members were required to be present in the village to supervise diary entries. In contrast, at least five team members were required to conduct the researcher-administered activity diaries, which were carried out with each family every 2 days. However, the use of farmer-administered diaries is appropriate only in villages with reasonable literacy levels among participating farmers. This was the case with cocoa farmers in East New Britain province, where levels of education are higher than the national average of 4.3 years (UNDP 2011). Indeed, most farmers enjoyed completing the diaries and were keen to finish the task each day: it was the first time for them to have kept a log of their daily activities. Most were able to see which activities they spent most of their time on, which was a surprise to many. Farmers could see how much effort they were putting into cash and food crop production, and how much time they allocated to non-income-generating activities. For some, they could see where they could make adjustments in their use of time to improve their economic situation. While it may have been possible to use farmer diaries in the accessible sites in the coffee project, this would not have been possible in the remote sites, which are characterised by very low literacy levels. Therefore, to standardise the methodological approaches across all coffee sites, the researcher-administered activity diaries with farmers was the method chosen.

Apart from eliciting information on labour activities, the farmer diaries also provided insights into farm-management decision-making, household relations and access to household and non-household labour. Significantly, the diaries also provided a window into other dimensions of people's lives that affected their capacity to pursue particular livelihood options. For example, illness management consumed a great deal of a household's time, and not only that of the person who was ill. When a family member was seriously ill, typically the whole family was involved in illness diagnosis and seeking both traditional and Western medical care for the sick family member. The activity diaries revealed the vulnerability of households to events that could significantly reduce a household's capacity to sustain a high-input production system.

Research benefits of sustained and close interaction with village communities

Village-based fieldwork for research team members residing in the village was quite different from the standard fieldwork practices of the Cocoa Coconut Institute Limited (CCIL), CIC and the National Agricultural Research Institute (NARI). Previously, if researchers from these institutions were spending time overnight in the field, it was during field trips in which they were moving from village to village delivering extension or carrying out large-scale, one-off surveys. The lengthy village-based fieldwork conducted in this project allowed the team to become immersed in a single community for an extended period.

Trust and ownership

The most significant research benefit from prolonged village residence arose from the increased level of trust that developed between researchers and the village community, which contributed to higher participation rates in the study and improved data reliability. The level of trust required for good data collection should not be underestimated. For example, with the private-sector partner in cocoa

research, NGIP-Agmark, some smallholders were initially suspicious of the intent of the company in offering extension services to growers. By living with villagers, the team, as an independent party, was able to explain the company's partnership goals and how such partnerships had the potential to overcome the CPB problem.

The situation in the coffee project was different, and it was even more difficult to build up trust with the community. Initially, when the team began fieldwork, many farmers were reluctant to participate in the research because of a deep suspicion of anything concerning government and government services (mainly because of a widespread perception of the failure of the government to deliver services). Many villagers held resentment from earlier experiences with government representatives. It is likely that in such situations, a one-off cross-sectional survey on a short visit to a community would result in a significant proportion of the population not participating in the survey, leaving only those with a more positive attitude to government or the more educated or progressive farmers to represent the views of the community. Thus, spending time in the village engaging with farmers over an extended period provided more opportunities for the community to get to know the researchers and understand the nature and purpose of the research.



Michelle Bafeo (Coffee Industry Corporation) interviews a farmer from Baira, Eastern Highlands province, about his daily activities. Farmers must walk for over 4 hours to reach the nearest highway to transport their coffee to the market. (Photo: Susan May Inu)

Understanding objectives

Moreover, farmers enjoyed the close working relationship that developed with the research team, and appreciated the opportunities for informal discussions with the team during the day and in the evenings. Farmers came to feel that the researchers were interested in their lives and livelihoods and that the research was being carried out for their benefit. The sustained engagement of researchers with farmers over 2 weeks did much to improve farmers' understanding of the research process, the purpose of the research, and the role of the research institutes (the team spent many evenings discussing the research in relation to farmer problems). Indeed, it was a case of genuine participatory research in which farmers felt they had a stake in the research and its outcomes.

Moreover, there is no doubt that the reputation of the research institutes was enhanced by an extended and sustained period of engagement with the community focused on their needs and concerns. As noted above, initially some of these communities were very suspicious of the motives of NARI and CIC, especially in remote areas. In the case of CCIL, farmers were sometimes unfamiliar with the role of the institute, but participating farmers came to see themselves as active partners in CCIL's research programs. As farmers developed an understanding of the research, its purpose and its potential benefits, their attitudes to the institutions shifted in a very positive way.

Reinforcement by community leaders

In both projects, the central involvement of community leaders such as councillors, elders and church figures was paramount to building trust, thereby encouraging a high level of farmer participation. Community leaders had a good understanding of project objectives and the process by which data were being collected. Farmers often consulted their leaders about aspects of the project if team members were unavailable or if they had difficulty understanding Melanesian Pidgin. Community leaders often provided information in the local language, which was particularly important in the coffee project where none of the team spoke the local language at any of the sites. In East New Britain province, one member of the cocoa team was from the local community, and farmers, especially women, appreciated communicating with him in Kuanua, the local language. While communicating with farmers in Kuanua assisted

with developing trust and rapport between the team and the community, farmers still consulted their community leaders about aspects of the project they were unsure about.

Data quality

In addition to high levels of trust contributing to a more representative sample of the community, it also highly likely that greater trust increased the validity of the data collected. In coffee, for example, as families became used to the interviewer (they saw the same interviewer regularly), and as they learned more about each other, interviewees tended to relax and feel more able to discuss matters that they may have felt uncomfortable with or embarrassed to discuss initially. This was equally true in the cocoa project. Thus, for example, family disputes which led to the withholding of family labour, such as that of sons and daughters, could be discussed more openly. This provided insights into how labour remuneration interacts with family labour supply to influence productivity. Conversations about family disputes and other sensitive issues are unlikely to be raised in one-off interviews on short visits using cross-sectional survey methods.

Moreover, village residence offers opportunities to complete work and plug gaps in data collection that are not possible on short visits. Often on short-term field visits, delays caused by access problems or people being unavailable for interviews can lead to major gaps in the data record. The problem is not eliminated entirely by extended field visits, but it is reduced considerably. Also, having opportunities to check completed survey forms each evening helped reduce error rates and ensured that all interviewers were recording the data in a standardised format. Potential recording errors or missing data could be followed up the next day while still fresh in the memory of respondents. Also, interesting points to emerge while checking survey sheets, such as particular food gardening practices, could be followed up and investigated while still in the field. Often this is not possible during short-term field surveys.

Research insight

In addition to improving participation rates, representativeness of the sample and improving the validity of the data, there were several other benefits that team members reported from immersion in study sites. For example, cultural immersion of both teams led to a better understanding of local lifestyles and

sociocultural and economic values and how these interact with agricultural practices and other livelihood strategies to affect smallholder productivity. An improved understanding of the project sociocultural environment provided a context for interpreting results. For example, understanding the cultural factors determining land access for coffee was very important for interpreting differences in the size of coffee holdings among farmers. Similarly, cultural values affect gender and generational work roles which influence management practices.

Training opportunities

An extended period of village residence enabled the team to pinpoint the training needs of the community, and to conduct training during fieldwork. Talking to growers and visiting them in their coffee and food gardens enabled the team to see exactly which coffee husbandry and coffee processing skills were deficient. An extended fieldwork period also provided opportunities to overcome these skills deficiencies. For example, many farmers were not aware of the symptoms of particular nutrient deficiencies. The extension members of the coffee team also took the opportunity of funded fieldwork to deliver extension and tools under CIC's District by District Village Coffee Rehabilitation Program (often extension delivery is constrained by a lack of funding).

Institutional relationships

Finally, long-term cross-institutional relationships established among staff of the major service organisations (e.g. NARI, CCIL, Monpi Sustainable Services and NGIP-Agmark) have led to new collaborative partnerships in research and extension among staff of these organisations. Knowledge sharing across institutions has been very positive, with team members learning from their colleagues in partner institutions. In addition, involvement with staff from the private sector has been very positive and helped overcome some of the long-standing divisions between the private and public sectors in PNG. This has facilitated a greater understanding of the commercial imperatives of the private sector and the need for research recommendations to be financially sustainable. Also, such partnerships have been mutually beneficial through the sharing of costs and resources. For instance, when the cocoa team's car was in the workshop for repair, NGIP-Agmark assisted with transport to take staff to and from the field.

Challenges of conducting activity diaries

Despite the value of activity diaries and the research advantages of spending an extended period residing in the community, there are also several challenges to be overcome. These included incomplete data because respondents were not always available for interviewing, logistical problems arising from prolonged fieldwork, the effect of the team's presence on respondents' behaviour, the risk of being perceived to take sides in village conflicts and the problem of excessive and unreasonable demands being placed on the research team. Each of these is discussed briefly below.

In both the coffee and cocoa projects, farmers sometimes arrived home late in the day and were not able to complete their diary entries or were unavailable for interview. This problem is common with other approaches too, but being resident in the village did provide an opportunity the following day to gather the missing information. However, when respondents left the village for 2 or more days, it was difficult to obtain accurate data on their activities while they were away. Such absences were often to attend a funeral, spend time with a sick relative in hospital or help a relative with their subsistence garden or export cash crop.

Logistical problems are greater during prolonged village-based fieldwork, especially in poorly serviced remote sites. On several occasions, the coffee team ran out of store foods and petrol (for drying samples) in remote highland sites. We underestimated the amount of food sharing with the community, which drew down our food supplies more quickly than we anticipated. Local stores are irregularly provisioned and supplies of biscuits, tea and sugar were quickly depleted.

While it is possible that the presence of the team in the village may have affected the behaviour of the farmers, this problem is likely to be common to any method involving outside researchers visiting a community. However, previous research has shown the effect is not enduring and may last a day or two until the novelty wears off. The extended period of fieldwork therefore makes this less of a problem than would occur during a single one-off visit to a village for data collection.

A significant problem that can emerge is when team members are perceived to be partisan in their

relationships with different groups in the community. Outsiders often assume that communities are harmonious when often they are riven with conflict between clans and subclans and even within families. Therefore, it is very important to ensure that the project does not engage with only one social grouping or one side in a conflict. This can happen when local contacts attempt to influence the selection of households by steering the team in the direction of their own clan or subclan, thereby excluding other groups from the study. Care must be taken to ensure that a cross-section of all the main social groupings is included in the study, so that jealousies do not arise that can lead to disputes with project team members. This requires considerable pre-fieldwork planning, with at least one trip to the site before fieldwork commences, and working closely with respected community leaders.

Finally, community members sometimes have very high and unrealistic expectations of what a project will deliver. This can contain elements of ‘cargo cult’ thinking, whereby the project is expected to deliver wealth without work. Expectations can arise from the survey questions themselves. A farmer may conclude that he is going to be given new tools after being asked about the number of the tools he owns and their condition. Great care must be taken to reduce such expectations before the project goes ahead and contain them during the research period. In some highland communities, farmers will demand to be paid for their time and involvement in the research. In one case, we changed a field site because of such demands. These expectations must be managed very carefully, if the communities are not to become frustrated or disappointed with the research.

Lessons learned

Based on the experience of conducting village-based fieldwork, this section provides a brief discussion on what is considered important in facilitating high participation rates among farming households, the collection of reliable data and the community’s receptiveness to the research team residing in their village.

Importance of community leaders

First, it is important that community leaders understand and support the research because it is they who will explain to the community the purpose and

methods of the research, often in the local language. This groundwork of informing the community about the research through local leadership structures is critical and must be done well before the commencement of the research and should be part of formal project planning. Also, when the field trip begins, the team should spend the first couple of days getting to know the community leaders (e.g. councillors, village development officers and church leaders) and as many farmers as possible to explain the purpose of the project and what would be required from the community in terms of participation. Community leaders will have a major role throughout the project, explaining to the community what the team is doing. Do not underestimate the number of times that the project must be explained to different sections of the community, as community members come back for additional clarification of aspects of the project. Community leaders can do much to allay concerns and inform the community of what the project is about. If community leaders are cooperative and trust the team, then it is likely that other community members will follow suit.

The role of community leaders in informing the community about the research can be facilitated by providing them with information sheets of about one page maximum explaining the project in Melanesian Pidgin. Leaders find these very useful to refer to when clarifying questions from the community. Information sheets help ensure community leaders stay on track and do not misinterpret the project objectives and methods, which can lead to later problems, such as raising unrealistic expectations about what the project will achieve. For example, much of the coffee research was carried out during a World Bank project that most villagers had heard about. Cargo cult expectations were emerging in relation to the World Bank project and we had to inform villagers repeatedly that we were not part of that project.

Researcher involvement in village life

Second, it is imperative to show respect to people and their cultural practices. Sometimes, for researchers not familiar with the intricacies of village social life, it might not always be clear how to do so, especially during major events that disrupt normal social routines. For example, deaths in the community can cause major disruptions to the work routines of community members. Often it is not only the immediate

family of the deceased whose routines change during the mourning period, and inadvertently attempting to interview members of a household one did not perceive to be part of the group in mourning can be interpreted as being disrespectful to that family. Therefore, it is important to heed the advice of community leaders about which families will be available to interview. Furthermore, although the team are temporary members of the community, they should show respect for the deceased's family by contributing food and cash to the *haus kra* to feed mourners. Although they are largely token contributions, such actions strengthen relationships with the community.

Respect for the community can also be shown through team members participating in community activities and events during fieldwork. Sports and church services are excellent ways to engage socially with the community, and villagers respond very well to such initiatives. They help build trust between the team and the community and demonstrate an interest in the community beyond a work relationship, which is very important culturally in PNG.

Two-way gift giving

Third, small token gifts to participants are culturally appropriate and assist with establishing a good rapport between the research team and the community. The coffee team brought posters on coffee management on field trips and CIC team members skilled in extension ran training programs for villagers and distributed coffee rehabilitation tools under the District by District program. The training was eagerly received and greatly appreciated by project participants, and ideally training should accompany all village-based research, especially in remote areas where people have virtually no access to training. Members of the coffee team from NARI also brought gifts of new planting material, such as maize, rice and yam, and distributed them among the community. In the cocoa project, research staff gave pre-paid K10 (around A\$5) mobile phone top-ups to community leaders to enable them to keep in touch with team members when arranging interviews. Again, these are token gestures but do much to facilitate positive relations with the community.

Gifts are not unidirectional. Gifts of food are frequently given to the team and it is disrespectful to refuse such gifts, even though the team's food supply appears to far outweigh their need. Often, surplus

food can be shared with the host family looking after the team, who will also provide cooked meals to community members assisting the team with the research. Often in the initial interview with a family, a meal will have been prepared in which the interviewer is expected to partake. Sharing food establishes and strengthens the relationship between the team member and the family who prepared the meal. So, it's best to start with one or two interviews and slowly increase the number of households visited each evening as the pressure to consume full meals declines. A slow start to interviews allows interviewees or farmers completing the diaries more time to get used to them.

Finally, towards the end of the fieldwork period, it is appropriate to host a feast for people participating in the research, including community leaders. Typically, the community will contribute food for the feast, usually garden foods. It is appropriate for the research team to purchase some pig meat for the feast or contribute store foods like rice and tinned fish. By hosting a feast, the fieldwork period can finish on a very positive note, which will make subsequent visits easier.

Conclusion

The inclusion of activity diaries in the mix of data-collection techniques employed in the projects proved very successful in capturing how farmers and individual family members allocate their time among different livelihood activities. In the case of cocoa, the farmer diaries revealed the level of inputs required for farmers to respond to and control CPB. Importantly, immersion in the community for an extended period was highly effective in developing positive relationships between the researchers and farmers and for dispelling some of the long-held negative/suspicious views farmers held towards CIC, CCIL, NARI and private-sector partners. Gaining community trust and improving farmers' understanding of research (and their role in research) was an important step to increasing the probability that new smallholder initiatives would be suitable to the needs and lives of farmers. The insights gained from the two approaches to conducting activity diaries discussed here are relevant to other socioeconomic studies where the goal is to understand the factors operating at the household and village levels that affect farm-management decision-making.

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