Expedition Field Techniques
PEOPLE ORIENTED RESEARCH

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Front cover illustration: Line drawing by Sarah Taylor taken from a painting of 'Family from Manibeli 1993' by Alex Dury

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Section One
INTRODUCTION

Expeditions are now covering increasingly diverse fields of study ranging from natural resource inventories to cultural studies. Many recognise that they cannot function in isolation from local people and are wishing to include, or indeed focus on, some aspects of social research. It is clear now that all environmental aspects must be included, particularly when the objective is problem solving. There is a need therefore to integrate natural and social sciences and this must be done at the conception of the project and be fundamental to its planning, and execution. In the past, failure to do so has lead to ineffective and inappropriate results and recommendations. This has been particularly apparent in the field of conservation, where it is now well established that people must be an integral part of any conservation effort if it is to be effective.

Expeditions can play a vital role in collecting information on local use of resources and indigenous knowledge, and their results can often influence planning and decision-making by authorities, scientific institutions and commercial organisations. By employing appropriate social research techniques, expeditions can ensure that their results reflect the real issues in the community.

The aim of this publication is to introduce the concept of people-oriented research to geographers who hitherto may have had little knowledge or experience of it. The emphasis is on the approaches and techniques available which are appropriate to expeditions, in particular, the participatory methods and the principles of working with rural people. One of the features of rural appraisal methods is that they are flexible and adaptable, clearly then it is not possible to set down a single method or plan appropriate for all situations, this will develop for each group depending on objectives, expertise, perspectives and the response and participation of the local community. As this handbook cannot attempt to include a discussion of all social research techniques, the reader is referred to Appendix C for further reading.

Section Two

EXPEDITIONS AND SOCIAL RESEARCH

2.1 Can research expeditions carry out effective Social Research?

The ability of expeditions to carry out effective social research could be questioned where there is a lack of specialisation and experience in the team, and the inability to follow up their research. However, with the support and cooperation of an established organisation with local experience and strong commitment, the research can contribute to an existing programme and the results implemented (see Section 3.4). In undertaking social research, expeditions are responsible for ensuring that their conclusions are made widely known among local organisations, local government, and most importantly to the community which is the subject of the research.

2.2 Time in the field

Research expeditions are often constrained by a shortage of time and long detailed surveys are usually not possible. Given this, the research process should be carefully planned with well defined objectives which can be realistically achieved within the time allocated. Expeditions should aim to complete a report while in the field, in the host country or soon after return to the UK, otherwise the data can become quickly outdated and the momentum lost.

2.3 Involvement

Research expeditions offer the chance for a multi-disciplinary team from both the UK and the host country to live in the community that is being studied. Groups must become inter-disciplinary by constantly reviewing the research and analysing the data together, thereby combining their differing perceptions. Researchers who have not had experience of working on social topics should be encouraged to join in; this ensures integration and avoids the social research being considered as an independent project.

2.4 Importance of participation

There is a debate over the 'intellectual property rights' of the knowledge collected; i.e. who owns, and has the right to the information. The ownership of information is an important issue and any work must be used to help the village, group or wider community (see Bellamy 1993 for further discussion) and not just for scientists to update records and increase their knowledge. This latter case has been referred to as 'information strip-mining' of communities. This can be avoided if there is true participation by local people. Expeditions must be careful not to raise the expectations of local people as decisions regarding research recommendations may be dependent on the host organisation, and any assistance will inevitably take some time to implement. However, by showing respect and interest in community knowledge and traditions, expeditions can increase cultural integrity (Bellamy 1993). Finally, even where the aim of the research is intended to benefit the local community, the biggest beneficiary remains the researcher. This is evident to the people being interviewed so the team must appreciate the time and effort that is given to them.

2.5 Rewarding information

It is strongly recommended that research teams do not reward individuals for information by payment or material contributions. This is alien to the principles of participation and can only reinforce any feeling of 'us' and 'them', and might embarrass or insult. If requests are made, be firm and polite and indicate that you are not in a position to give any of the research equipment or money away. Sometimes it is felt that some recognition of the community's kindness is necessary at the end of the research in which case a contribution could be made to a community project or school either of money or material goods. Alternatively team members can assist in community projects as labourers, teachers or simply help out respondents when interviewing with tasks around the home or fields.

Section Three
THE EXPEDITION

3.1   Location

The expedition's location should ideally be decided by the team's research objectives, time and resources available. Do not let the location itself be the controlling factor i.e. not "what can we do in Kenya or Costa Rica?", but "where would the best location be to comply with our objectives?". Matters of health, transport, political stability, weather etc. are pertinent to all expeditions, however some need to be viewed in a new perspective when considering social research:

- Is there an organisation there that would welcome this research?
- Can this organisation act as an institutional host, assist in preparation and provide back-up for the participants?
- Is there transport for you to move around the communities?
- Is there sufficient food and accommodation in the community?
- Is the area sensitive in terms of tribal or religious divisions? If so, would an expedition upset the fragile balance?
- Is it a politically sensitive area where the government does not want people asking questions? This kind of information may be sought from relevant embassies and consulate.
- Is the destination linguistically possible? Would it be possible to get translators if needed?
- Does the project interfere with the local people's seasonal calendar (i.e. avoid busy times of the year such as harvests).

The community or area to be studied should be selected through a set of criteria set out by your research objectives and not at random. A further consideration is the cooperation of the community itself. There can be big differences between communities and this must be recognised in the research. In the past, research has [often] been orientated around easily accessible and generally wealthier areas known as 'urban' or 'tarmac' bias (Chambers, 1992).

3.2   Selecting a team

3.2.1 From the UK

When selecting the team, choose a leader who will coordinate the project, act as a spokesperson, liaise with necessary authorities and heads of villages, motivate other team members, have a good understanding of the research aims, and be responsible for difficult and final decisions.

Members must respect local culture (including the value of rituals and belief, social structure and organisation, and customary law and practice), be willing to learn, and be sensitive to the people in the community, as well as to other team members. They should be able to work in an inter-disciplinary group and be receptive to ideas from other disciplines. The research will benefit from members representing a range of disciplines with different perspectives. Experience of social research methods would be of great value as would first hand experience of the study area.

A balance between genders is very important, as this enables research groups access to women and their groups. As gender is socially constructed, researchers, as outsiders, may be assigned their own role. This can be an advantage as female researchers acquire the role "honorary male" allowing gender barriers to be crossed (Warren 1988). Finally, experience in rural areas in less developed countries will enable members to identify the important aspects of village life, and feel comfortable in places where they are a constant source of fascination, as well as accept and endure any demanding physical conditions.

Further advice on choosing team members is given in the RGS-IBG Expedition Advisory Centre's *Expedition Handbook, 2004*.

3.2.2 In the host country

The research effort should combine members of the expedition with people from the host country, ideally from the local region. For an undergraduate team, contemporaries from a university or institute would be the obvious choice, whilst other research teams may wish to collaborate with host scientific organisations, universities and/or non-governmental organisations (NGOs). The criteria set out in 3.2.1 should be used for selection. A working knowledge of the local language is particularly beneficial, this allows the team to learn the local customs, enhance the rapport, and document

indigenous knowledge more accurately, as there are often words referring to their specialist knowledge that cannot be easily translated. Knowledge of the local agricultural or forestry system can be invaluable in preparing the interview questions, although this does mean that assumptions can be made about the answers. Be aware of any potential tribal, religious or other social conflicts when selecting local team members. One local team member should help to coordinate plans, conduct any reconnaissance work and contact the local communities before the UK contingent of the team arrives.

The number of team members should be large enough to represent a number of different disciplines and yet not so large that it becomes unmanageable and overwhelming for local people.

Working as part of an international team allows the members to learn more fully about each others culture and contributes to understanding and collaboration between peoples. The members of the team act as role models in following the protocols, in putting local people first and appreciating the richness of the indigenous knowledge that they have access to. In turn, they will influence local team members who might feel that they do not have to leave their urban homes to do the research or have little respect for "uneducated" villagers. The coalition of two or more parties raises the credibility of the expedition, as it shows a commitment to involve local people.

3.3   Language and translation

Most research expeditions do not have sufficient knowledge of the local language, so field assistants/interpreters will be needed. Interpreters can contribute a great deal to the work. If they have the wrong approach, are not polite to the interviewees, do not translate everything, are inaccurate, and/or are unwilling to work with all members of the community, this can have a profound effect both on relations with the community and the research.

By learning key words of the local language the team can often follow some of the translation and discover whether the assistants are actually translating everything. Any attempts at speaking the language, even if it is just the greetings, will always be rewarded with a warm response. Field assistants can also introduce the team members to minority or specialist

groups, who might otherwise remain unnoticed. Common sense prevails when rewarding them for their time and efforts.

3.4   Liaison with the scientific community

Liaison with scientific and environmental organisations, NGOs, or with conservation groups in Britain and within the host country, is important when selecting a research project and site, and for providing expert assistance. Affiliation with one organisation in the host country ensures that suitable communities for research can be identified and their leaders can be approached using the appropriate channels before the team arrives. All these details must be worked out well in advance; a general guideline is to start the groundwork 12-18 months prior to the date of departure. *Figure 3.4a* illustrates the links between your expedition and other institutions.

3.5   Permission

Your host country institution will probably be best placed to advise you on what formal permits and permissions will be needed to study in a particular area or with a particular group of people. This may involve obtaining permission from the relevant national and local government authorities, as well as key scientific institutions. This is often a long and complicated procedure, and can take anything up to 18 months or more to obtain, so plan well in advance. Some countries have standard requirements for visiting researchers which are widely followed and accepted; elsewhere you may get conflicting advice on how these permissions are obtained and from whom. Research visas are notoriously difficult to get for short-term physical or zoological expeditions, but government officials can become paranoid when studies of people are involved. This can range from fears that the visitors will arouse political or tribal unrest or just bother people unnecessarily. They can fear for the team's safety, if the area of investigation is rugged or remote. There may be a sense of wounded national pride that foreigners have to come to interrogate their own people.

Be sensitive to these issues and be sure to seek permission from local administrators and the village/community leaders regarding your expedition's aims, objectives and outputs. Your local contact should have a good idea who they are and how to contact them.
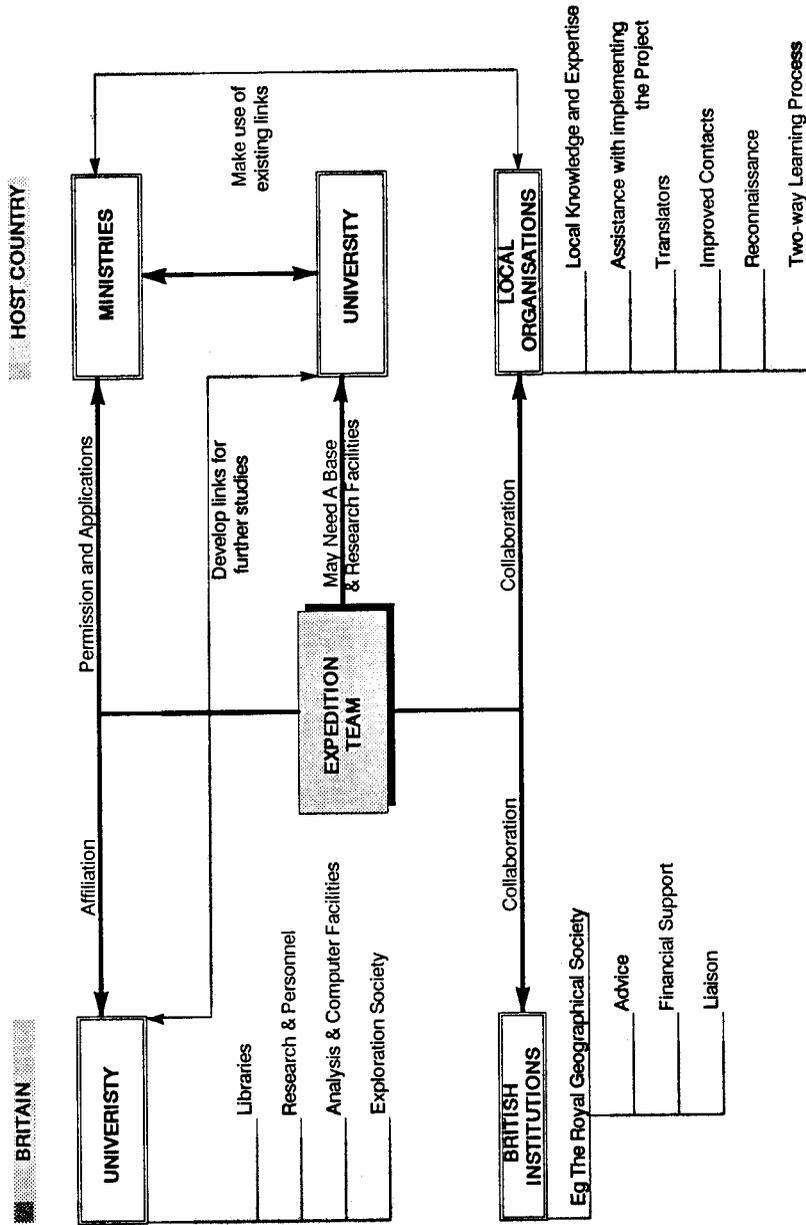
Figure 3.4a: Links between your expedition and other institutions

3.6   Reconnaissance

If it is possible, a reconnaissance can achieve a great deal in terms of selecting the research area, liaising with the host organisation and meeting local team members, logistics, introductions into the communities involved and permission.

A letter from Kyabobo '94: an Oxford University expedition to western Ghana to study the biodiversity of a new national park.

Dear EAC
Greetings from the heart of Ghana. The expedition to Kyabobo, despite a few minor hitches, is turning out to work really well.

After a week of running around Accra and Kusami sorting everything out we were driven down here. We were accepted by the District Secretary who has made life easy in Nkuanta (our base). While we stay in his guest house, we can see the looming mountains on the horizon - this is where we have been doing much of our survey work amidst waterfalls etc. The first week of field work involved introducing ourselves to the 9 villages surrounding the area. We first had to do a libation to the Gods (with local brewed schnapps), then Jen (with the help of her pictures drawn with felt-tips) showed the village what our objectives were. We then had another libation and answered questions - most of these evolved around complaints of the National Parks proposed boundaries (There are many farmers inside the designated area). We assured them that we are not involved in this (it is too political). - but it does show some of the problems in National Park formation.

Our work has involved spending half the time interviewing various user-groups in the villages as to the use of animals and plants (the PRA workshop was invaluable for us to do this). Using our knowledge from these interviews we have done a series of vegetation plots/small mammal trapping stations and combined the 2 types of information to find out what is actually here and what pressures exist on it - The social/biological sides to the expedition have linked nicely together.

Jen (in the her primary school teacher way) persuaded Ed and I that doing short discussions with the secondary/primary schools on wildlife in general would help the development of this remote area - as you will see from the photos - this has been a good idea and successful. We spend another 6 weeks doing fieldwork before we start writing reports (we will translate them into local languages) which will be left out here. All in all, because of the potential of this area for research and the amazing helpfulness/friendliness of the Ghanaians this summer is proving to be interesting and useful to the Ghanaians and us alike.
I hope to see you when we return.

The Kyabobo kids

Section Four
METHODOLOGY

4.1   Designing a research plan

Before starting any research, expeditions need to consider a number of key questions aimed at initiating and prioritizing tasks.

- Who will use the research (local organisations, government departments or academic institutions?).
- What research do they require (general survey of a large area or a detailed localised case study?).
- How long can the research team work in the field (subject to budget and logistical limitations?).
- What are the other limiting factors (resources, transport, language, field assistants, personal experience of team etc?).

Through this kind of systematic approach and with a set of clear objectives and realistic goals, an efficient plan can be designed.

One of the keys of interdisciplinarity is that the research activities are conceived and executed in an integrated manner; the research plan therefore needs to foster this integration from the outset. The structure of the study should be considered in terms of how many communities are included, what methods are to be employed and in what sequence, what the result and reporting format will be, and how results will be synthesised and analysed in the field.

A timetable should be prepared which gives sufficient time to collect the information needed and also allows for review and appraisal of results.

4.1.1   Choosing research techniques

Social research output can be broadly divided into two parts: quantitative data (referring to figures and statistics) and qualitative data (not statistically orientated). The former when used in research requires the use of questionnaires, sampling and associated statistical techniques. In the past much of qualitative research fell into the domain of social anthropology and entailed "total immersion", whereby research was carried out by living for

long periods within a community and collecting information through observation and questioning.

Other research techniques have been developed in recent years that draw on these methods and are better suited to meeting the needs of the people themselves, by including and involving them in decision making and implementation. The techniques used in this appropriate and participatory research are considered in Section 4.6.

4.2   Literature review

Files, reports, maps, aerial photographs, satellite imagery, articles, books, student dissertations, can all provide valuable background information about the area and the research subject. Natural resource inventories and evaluations are important in that they describe the physical environmental possibilities and constraints of the area, while social documents, in particular objective historical accounts, can provide an understanding of traditions, religion, politics and other influences such as colonisation. Abel et al (1989b) prepared a historical chart from secondary sources documenting milestone events and trends in land tenure, climate etc. Clearly some accounts can be misleading and present pre-determined and fixed ideas and these should be judged accordingly. Literature is useful because it can clarify the objectives and help formulate hypotheses by reviewing what has both been said and missed. Do not however, spend too much time reviewing secondary sources, time which could otherwise be spent in the field.

4.3   Field-work preparation

The quality of data ultimately depends on the nature of the interaction with local people. How you approach, introduce and conduct yourself is vital and needs as much consideration as the techniques and methods used. Although the community to be studied will most likely have already been identified and approached for permission by the host organisation, some reconnaissance is necessary to meet community leaders and clarify the team's aims as well to arrange accommodation.

The team should be clear on the focus of the research from the outset and agree the objectives. In this preparatory phase, time charts can be drawn up and criteria agreed for selecting respondents. Initial exploratory questions,

techniques and formats for results should be established. The team needs to be clear on the principles of working with local people, gain some understanding of community structure and local politics, learn about taboos and local customs and be aware of possible conflicts. All these preparations will minimise the risk of any embarrassment or disrespect which could jeopardise the research and the rest of this chapter suggests some guidelines on how this might be achieved.

4.4 Selecting respondents

4.4.1 Key informants
When collecting data on a specific subject it is most productive to work with 'specialists' including certain groups such as doctors, hunters, blacksmiths and farmers. Information can be held by a single gender or social group which should be taken into consideration to avoid research bias and omission of vital information. Women can often be more difficult to interview or work with, as they tend to have much greater work loads and consequently less time. Women and girls are often too shy and believe (through tradition and culture) that it is the man's role to talk about village livelihoods, activities and decisions. They often find it easier talking to female researchers. For more general topics, community leaders can supply much information as can school teachers, government workers and village elders.

4.4.2 Groups
Group meetings are a good way of introducing the team to the community and describing the aims of the research. This can be done before embarking on individual interviews. Group discussions are an effective way of generating issues which can be explored in more detail at later interviews. Interviewing groups is very productive because one is able to gather varied and abundant information once the discussions flow and the informants are 'at ease'. However, it can be difficult to control large groups through the cross-fire and myriad of information, especially if translation is necessary. Hence, it is important that the interview is 'semi-structured', to keep control but still allow the chance for informants to freely express themselves. There can be problems within groups if there is a dominant (village leader) or disruptive (village drunk) individual present. Groups can be structured so they represent a variety of gender, age, wealth and rank, but it should be

noted that most productive results are obtained when the opposite gender is absent (it allows the informants to relax and feel comfortable about the information they provide, especially in the case of interviewing women). The method of questioning, note taking and translation at group meetings needs to be are fully considered and arranged so that the flow of the discussion is not interrupted.

4.4.3 Case studies

Case studies of one household or an individual can be a useful way of collecting a large quantity of detailed information. It is important to consider how to choose a 'representative family' who will cooperate. Defining a household may cause difficulty as in some cases several households live in one compound, or there are strong links within an extended family. Be careful not to burden and disrupt the family/individual too much.

4.4.4 Sampling

In selecting respondents there is a risk of being biased, for often the richer members of the community are most articulate and thus tend to ignore and suppress the poorer members. Local leaders could be asked to suggest respondents according to simple criteria such as farm size, household size, number of livestock, etc. However this must be approached sensitively. Due to inevitable bias it is important that the information collected is cross-checked from various sectors and sources within the community.

When using questionnaires to generate statistical data, it is necessary to conduct formal 'sampling' to ensure all sectors of the community are covered and that bias is reduced if not avoided. First, the sample 'frame' is developed which lists all households/individuals from which you wish to sample. The most simple form is the 'random sample' whereby respondents are selected from the frame at random. The more people interviewed, the greater the chances that the average figure calculated at the end is near the 'real' average. However, you must consider whether this increased accuracy warrants the additional time spent (see Section 4.5.2).

If it is not possible to develop a frame covering all of the study area, then you can randomly select one community and construct a frame using this as a base. To ensure that the sample is representative and specific categories are included, 'stratified sampling' can be used. Households or

individuals are classified by relative wealth, gender, occupation, age etc. depending on your research and a new frame is established for each category (for worthwhile results each stratified sample should be greater than 30). Alternatively it is possible to carry out a 'random walk' through a settlement with households selected on a random basis. For further discussion consult Dixon, C.J. and Leach B. (1987a).

4.5   Conventional research methods

4.5.1 Semi-structured interview

This is an informal interview with open ended, interactive questions, which can be carried out with large groups, families or individuals.

Slide 1: Showing that interviews do not necessarily have to be conducted indoors or under formal conditions (Photograph: S. Kapila)

Before conducting these interviews it is important to agree a common format for recording the responses. This facilitates result synthesis and comparison with other team members' results. Some examples of formats are given in Abel et al (1989a). Judgements can be made about the value of the response. If there is any hesitancy, misunderstanding, difficulty or reluctance when answering, semi-structured interviews are flexible enough to allow the question to be rephrased, or simply left unanswered. Some guidelines for conducting these interviews are set out below with further discussion in section 4.6.1.

Guidelines in carrying out semi-structured interviews

- Have one researcher to control the interview and it may be necessary for one team member to divert those people who may be over-dominating the group.
- Introduce yourself politely (this may first involve the head of the village), make sure that you are not disturbing them and explain clearly who you are, what you are doing, why you came and what your research will be used for. Stress that your work forms part of a continuing learning process, and you are not there to impose your ideas upon them.
- Begin the interview with local customs such as taking tea if offered.
- Be informal and refer to objects in the room or surroundings to start off discussions.
- Make use of the "six helpers" (who, what, where, when, why and how) when interviewing, as well as using direct observation with these key indicators and check-lists to avoid repetition.
- Have a list of questions and topics as an interview guide or checklist and be prepared to follow other lines of questioning if a different perspective on the issue is raised by the interviewee.
- Lead up to sensitive or important issues by asking other questions around the subject.
- Do not use leading questions to back up your ideas or help the interviewee (by nodding when the 'right' answer is given; or for example, do not use "you cut wood from here don't you?", but instead use "where do you cut the wood from?").

- Do not interrupt each other when two or more researchers are carrying out an interview and never cut in when an informant is answering a question or expressing his/her own views.
- Intensive interviews should not go on for over half an hour. At the end of the interview close your notebook and chat informally for a while. This shows that you are not there just to extract the 'necessary information', but also to listen and will build confidence.
- Finish by letting them ask you some questions. It is a good idea to discuss topics that are far removed from the interview subject matter; this will raise other points of interest for further discussion.

(Based on McCracken et al, 1988)

4.5.2 Questionnaires

Questionnaires are important if statistics are needed or if there is a need to compare data. Care must be taken in the design of the questionnaire. Questions should be concise and explicit in their meaning; the idea is not to confuse or 'catch out' the respondent, but to obtain valuable information. Start with easy questions, such as name of locality, individuals' name, size of family, etc, ensuring that the more sensitive (e.g. personal) questions are left to the end. Translate questionnaire into the local language, remember to use local expressions and measurements. Double or triple- phase questions should be avoided; e.g. do not ask "do you pick this fruit and make it into medicine when it rains?". Pilot questionnaires should be used to expose any problems.

In the design and length of questionnaires consider how the analysis will be undertaken and the results presented. For a number of reasons, even with the most rigorous sampling methods, false information can be collected (non sampling or measurement errors). Often interviewees will present you with the wrong answer rather than no answer at all (a simple analogy being when you ask someone for directions - invariably they will give you the wrong ones rather than appear ignorant). Alternatively the answer provided will be a misleading one, especially in cases where it might put the interviewee at risk (e.g. with the law). It is clearly important to cross-check information through other techniques and social groups.

There is a debate about how "official" the questionnaire should look. This depends on the country and nature of the enquiry. Some people respond more readily if they think that the team has official status. In this case, each interviewer should have an official card of introduction, like door-to-door charity collectors in the UK.

On the other the other hand, there is a danger respondents might fear that this is a covert tax inspection, or a government checking up on men avoiding military service, or anti-subversion, etc. In that case, of course, the team will have to prove that they are not government agents and the data collected will be treated with total confidentiality.

Questionnaires have many limitations due to their narrow subject range, the length of time it takes to complete and formulate, and their preoccupation with quantitative data. They can be most effective when used in conjunction with other research methods. More information is available from Casley and Lury (1987) and Dixon and Leach (1987b).

4.5.3 Participant observation

During long term projects, an accurate method of data collection is obtained by living in close proximity or with the study group itself. All the basic rules of sensitivity and avoidance of interference and interruption apply.

4.6   New Approaches - Participatory Rural Appraisal (PRA)

4.6.1 What is PRA?

Participatory Rural Appraisal (PRA) is a specific form of Rapid Rural Appraisal (RRA); a research technique developed to complement (or as an alternative to) conventional sample surveys in the late 1970s and early 1980s. It is defined as

> "an intensive, systematic but semi-structured learning experience
> carried out in a community by a multi-disciplinary team which
> includes community members" (Theis and Grady, 1991).

Realisation in the 1970s that the simple transfer of technology and resources, as typified by the Green Revolution, was insufficient in solving the problems of most people in developing countries resulted in new models

being developed. These aimed to achieve a more comprehensive understanding of the complexities associated with communities, and to form an integrated system which viewed the various aspects of rural life. In this context RRA was developed, which embodies the principle that different people perceive and understand reality differently (Theis and Grady, 1991). It is characterised by an applied, holistic but flexible approach through progressive learning, conducted by multi-disciplinary teams with an emphasis on community participation and replaces the former rigid quantitative approaches which use questionnaire and statistical analysis. RRA, in turn, gave rise to PRA.

4.6.2. How PRA works

PRA pays particular attention to qualitative aspects such as local peoples' knowledge and the way they organise and control their resources. The value of this information is now being recognised and it is realised that the environment as a "problem" is defined as much socially, economically and culturally as it is physically. PRA is a way of

> "learning from, and with, community members to investigate, analyze and evaluate constraints and opportunities, and make informed and timely decisions regarding development projects" (Theis and Grady 1991).

PRA methodology allows a research team to systematically and quickly collect information pertinent to:

- analysing a specific topic or problem
- feasibility studies and needs assessments
- identifying and prioritizing projects
- project and programme evaluations (Theis and Grady, 1991).

PRA is particularly well suited for community development as it involves the community members alongside the field team in all aspects of the study; the design of the research tools, the collection of information and data and their analysis. PRA is no longer restricted to less developed countries and rural areas, more recently it has been developed in complex urban environments (see Cresswell 1992). Through the continued high level of community participation, such studies can ensure that the information

collected is relevant, and local people are no longer seen as clients or beneficiaries, but as partners in the research and development process.

PRA has been described as rapid, holistic, and interactive. It emphasises inter-disciplinary teamwork, participation, and innovation. Furthermore, users of the approach and methods admit that it is more fun than conventional research for both the researchers and local people!

Its short duration and low cost make it possible to carry out a series of PRAs rather than rely on the results of one large conventional survey. For this reason it is well suited to expeditions. The full PRA process may not be feasible for all expeditions but all social and natural resource management projects can benefit from the general approach and associated tools.

4.6.3 PRA compared to questionnaire and anthropological research methods

The main advantages of PRA over conventional survey research are its high level of community participation, wide scope, short duration and low costs.

When using questionnaires or formal surveys local people get a sense that information is being 'handed over' and 'taken away' with the words of the interviewee transferred to the questionnaire paper where it becomes the 'property' of the 'outsider'. In contrast, the PRA approach emphasises involvement.

Questionnaires can be tedious. They need proper preparation and sufficient time to be completed successfully. Getting a sample size big enough to be valid can be difficult. Data collected by quantitative surveys often has to be analyzed by a computer, usually not available at the research site. Wrongly recorded or missed information is difficult to amend and may require the team returning to the field, which adds financial costs which can often exceed the value of the data.

In contrast, PRA with its iterative and multi-disciplinary approach allows the team to gather momentum quickly and to spend their time more efficiently.

Research expeditions often have to go into the field without a preliminary or exploratory study. This means that the formation of hypotheses and preparation of questionnaires cannot be done successfully

resulting in the important questions not being asked while a large amount of useless information is collected. With increasing evidence of 'non sampling errors' and interview bias, PRA offers researchers an opportunity to move away from the conventional research methods of hypothesis testing by questionnaires and statistics.

In quantitative surveys interviews are inflexible and every interview has equal weight, whereas in a PRA situation every interview or observation is regarded as more important than the last one. Questionnaires tend to have questions structured so that they yield pre-determined answers and form general trends. According to Chambers (1983) "(questionnaire) penetration is usually shallow, concentrating on what is measurable, answerable, and acceptable as a question rather than probing less tangible and more qualitative aspects of society".

With PRA, it is suggested that questionnaires should be used only if they are really necessary and then kept short, simple and at the very end of the process. If they are to be incorporated, then they can be used as a cross-checking tool. It is important that results collected through the use of quantitative research methods are themselves verified through a process of continual cross-checking (see Sections 4.5.2 and 4.6.4). Despite their difficulties, questionnaires and their uses are not redundant, as statistics are often required by planners and in such cases PRA is inappropriate.

Despite the obvious advantages of PRA for expedition research, it does require some understanding of the principles of the approach and ideally some experience. Questionnaire surveys, however, can be conducted by relatively inexperienced field assistants, once the pilot study has been undertaken and the questions established. Questionnaires, although lengthy, do have a finite number of questions and therefore more predictable interview times compared to PRA, allowing easier time management. Where a computer is available, any operator can analyze the results, whereas PRA analysis requires a full understanding of the approach. PRA by its very nature encourages in-depth personal involvement with the community within a short period of time. This in itself introduces bias with some of the issues intensified or exaggerated and not viewed in the larger temporal or spatial context. For example, the season, the year and the mood of the people will all influence the results.

Anthropological research is valuable through its deep insights into individual communities, but does require long periods of research time and is thus often not suited to expeditions. Although Anthropological studies often provide much detailed information, but there are risks of over-generalisation in situations where there are complex inter-relationships.

Clearly a flexible approach is always needed and research methods which can be used in a variety of combinations to best suit your project objectives should be considered.

4.6.4 Features of PRA

Main features of PRA

· Cross-checking
· Learning by experience
· Participation
· Flexibility and adaptability
· Informal interviewing
· Diagrams and visualisation
· On-the-spot analysis

PRA is a process or methodology that employs a diverse "toolkit" of techniques in a specific approach. At times the full process cannot be undertaken or is not appropriate so a selection of tools can be used under the guidance of its overall approach. The main features of PRA are:

Cross-checking: The basis of cross-checking is that inter-disciplinary groups work closely together enabling situations to be viewed by different people with different perspectives, thus the process benefits from a combination of skills and approaches. Accuracy is also achieved through diverse information from various sources and not statistical replicability. Cross-checking is carried out in relation to:

·   composition of the team
·   sources of information
·   diversity of techniques used

PRA versus survey and questionnaire research methods

Features	PRA	Questionnaire	Anthropological Immersion
Duration	Short	Long	Long
Cost	Low to medium	Medium to high	Medium to high
Integration	Multidisciplinary	Weak	Weak-solitary research
Structure	Flexible, informal	Fixed, formal	Flexible, Informal
Participation	High	Low	High
Methods	Various	Standardised	Limited
Major research tool	Semi-structured interview	Formal questionnaire	Participatory observation & informal questionning
Sampling	Small sample size based on variation	Representative Random sampling	Various methods
Statistical Analysis	Little or none	Major part	Medium or none
Qualitative descriptions	Very important	Not as important as figures	Very important
Analysis/ learning	In the field/ on the spot	At the office	University out of country or in urban areas
Ideal Use	Learning, under-standing rural peoples opinions, behaviour and attitudes-leading to participation in development	Gathering representative quantitative data and statistical analysis needed for decision making	Getting a deep insight into personal, historical, economic, social and political relationships

(source: Theis and Grady 1991, Chambers 1983)

Natural resource assessment can be used to validate information gained in interviews and quantify any constraints or opportunities which may have been exposed, thus enabling the integration of natural and social science research (Abel et al 1989a and b).

Learning by experience: PRA researchers must be prepared to constantly learn from, and with, rural people. They should not assume that they know everything and that 'modern scientific knowledge' is always right or appropriate. It is important to assess all previous literature on the area and on the subject so that the most appropriate questions can be asked. Researchers should explain that they understand the subject but want to know more details, and continually build upon existing knowledge.

Participation: The main aspect of the PRA is learning from, with, and by members of the community. It is important for the outside researchers to live in or close to the community that they are studying where possible. This enables the team to conduct direct observation (one method of cross checking) and have informal contacts with villagers when not actually doing research. Through this the team will be able to build a good rapport and earn the respect of the villagers. In the past much research has been done by urban based professionals who spent the least amount of time possible in rural areas and so failed to gain a deep understanding. This has been referred to as "rural development tourism" (Chambers, 1983 and 1992).

All parts of the community must be involved in the research and particular attention should be given to ensure that certain low-profile groups such as women, average and poor farmers, the unemployed, elderly and children are included. In these instances, it is imperative that the research team has their confidence and builds up a rapport through sensitivity and close attention to cultural and domestic differences in lifestyle. The most vocal informants providing vital information are often the leaders of various groups in the village; progressive farmers, outside workers and officials, such as teachers, health workers and agricultural extension officers.

Indigenous knowledge systems: Until recently, knowledge held by those who were not educated in the western sense was considered of little value. Now there is increasing attention being paid to this source, referred to as indigenous technical knowledge, people's science, folk ecology, and a variety of terms with the ethno-prefix (ethno-ecology, ethno-soil science,

ethno-agronomy, ethno-botany and ethno-medicine) (Chambers, 1983). It is important to recognise that such knowledge is always in a state of change and may differ considerably within a community depending on the specialisation of the individual (e.g. a blacksmith and a herbalist may have completely different knowledge about the uses of the same tree).

Flexibility and adaptability: Pre-determined views and ideas should not cloud judgements. Allowing plans and research methods to be semi-structured and continually revised, enables the PRA techniques and approaches to be adapted and modified as the fieldwork proceeds.

Informal interviewing: Interviews must be done in an informal, relaxed, manner using 'semi-structured interviews' which are open-ended and interactive. They may be conducted with key informants or groups. There should be no formal questionnaires, rather a set of questions or subtopics generated with care so as not to incorporate previous assumptions. If necessary, the interviewer should repeat questions or rephrase them until the meaning is clear and connections become apparent (this is referred to as 'iteration'). Interviewing should be done in an interdisciplinary group of researchers (optimally 3) so that each can take it in turns to follow their own line of questioning which will reflect their different perspectives (this can be referred to as 'triangulation'). However, in some cases this may be intimidating, in which case numbers should be kept down. In order to avoid bias it is necessary to cross check data.

Diagrams and visualisation: The use of diagrams and maps can empower the weak and disadvantaged and illiterate and will allow a broad cross section of the community to participate. They are able to share in the creation and analysis, and this also provides a focus for discussion without being directed by the values of the professionals (Pretty personal communication 1993).

On-the-spot analysis: Both the learning in the field and the analysis of information are an integral part to the project itself. The team needs to constantly review and analyze its findings in order to determine the "direction" of the project and ways in which it can be modified.

4.6.5 The possible dangers of PRA

Although PRA is becoming an increasingly adaptable and flexible research tool with a wide range of applications, certain considerations have to be taken into account when deciding if PRA is appropriate to your study:

·   difficulty of finding the right team
·   the adaptability and flexibility of the project structure and its ability to make use of new information, and
·   the intended use of the findings and presentation of results

Experience, qualifications, teamwork and the commitment to project objectives are critical in determining the success of a PRA. If these are not available or do not function correctly, then the study may become counterproductive and the results questionable. The team must constantly review the results and stay focused, concentrating on the value of the data rather than the quantity. If done in haste and heavily constrained, PRA becomes superficial, relying largely on initial findings and merely confirms biases, preconceptions and stereotypes (Theis and Grady, 1991). The key to successful research using these PRA techniques is to achieve time and cost-effectiveness through continual and progressive knowledge building processes. Good PRA skills are only developed through practice and field experience.

PRA does have its limitations. In its rapidity, it can miss some of the "social dynamics and cultural complexities". It may also result in minorities being missed (Messerschmidt, 1991). Although PRA has been developed in response to the limitations of conventional research, it can easily tend towards bias without careful control. These include:

·   elite bias - giving more weight to the articulated and educated
·   concreteness bias - generalisations leading from detailed answers of one individual
·   gender bias - working with women often tends to take much longer and they are often unwilling to talk freely. This can be alleviated by having female researchers and interpreters in the team
·   helping the interviewees with leading questions (McCracken et al, 1988).

Possible dangers and shortcomings of PRA

· Difficulty of finding the right team
· Going too quickly may lead to superficiality
· Desire for statistics and quantitative data
· Difficulty in finding the right questions to ask
· Difficulty in finding key informants
· Failure to involve community members
· Failure to listen and lack of respect for poorly educated members
· Making value judgements about others
· Having too many preconceptions
· Guiding interviewees with leading questions so as to gain
  predetermined answers
· Being mislead by myth and gossip
· Imposing "our ideas" on "them", and not learning from "them".
· Male teams and neglect of women

(Based on Theis and Grady 1991)

4.7   A PRA toolkit

There is no 'blueprint' for carrying out a PRA since the procedure will change for each project and will always be adapting. A list of all informants and researchers present at each exercise, and a brief synopsis on their comments, problem areas, future ideas and general biases will give the study team an overview of how successful the PRA was and how it may be tailored and adjusted for future studies. The following are a list of ideas that have been used successfully; they can be tailored to suit individual research objectives. The different techniques and how to carry them out are covered in more detail in Theis and Grady (1991). Combinations of different techniques and tools can provide 'project flexibility' and offer the chance to cross check data and discover omissions.

4.7.1 Chronologies

Oral histories can be collected listing major events in the community such as changes in land tenure, technologies and crops as well as political events and

disasters. These can be linked to 'trend lines' showing relative changes in agriculture, population, migration, climate etc. The information can be collected from interviews with key informants within the community (e.g. school teachers or community elders), also through secondary sources (archives and reports) which can be used to cross check the interviews. This is an excellent exercise to start the PRA with as it provides background information on the community and acts as an 'ice breaker' at the beginning of the work. This exercise could be combined with transects which offer good discussion points for changes in land use patterns, settlements etc.

4.7.2 Participatory mapping

This method can yield a great amount of detail which may otherwise be ignored. It compares to the social science concept of 'mental mapping' and it is often found that rural people in less developed countries have more detailed and extensive mental maps than urban people in developed

Slide 2: Example of participatory mapping by children during a village drawing exercise. (Photograph: S. Kapila)

countries. Participatory mapping should be done with the minimum of interference and using local materials (such as soil, leaves, seeds, stones, rice, etc.) so that people are not intimidated by pens and paper, and larger maps can be drawn on the ground, which can then be recorded onto paper by a member of the team. As the concept of scale may not be clear to local people, exaggerations in the map features will probably reflect personal perceptions rather than the relative sizes. This is also a useful way of highlighting changes in the environment.

It is important that during this exercise, over importance and acknowledgement is not given to dominant members within the group, and it should be emphasised that the exercise is to be carried out by all the members within the group. Discussion and debating should be encouraged but at the same time assistance from the team should be avoided, enabling the group to draw their own map.

4.7.3 Map types
· Natural resource maps of catchments, including villages, forests, fields, and streams etc. (possibly in 3 dimensions and using models made in the soil). These can be done for a much smaller area or concentrate on certain features such as soils, trees, ownership, soil erosion or landslides.
· Social maps of residential areas of the village can be used to create an informal census. A group of informants can mark on the relative wealth/well being of each household and their assets (land, livestock, machinery etc). They can also be used to collect demographic data on the size and composition of households, education of members, health/welfare status (immunisation status, cases of TB, malnutrition, infections, and the location of handicapped, post/ante-natal mothers, those that do/don't use family planning/primary health care). This has the added advantage of revealing the houses of those villagers often ignored, such as the chronically ill. Follow up with questions on the map and cross check the data with other groups. Social maps are probably most effectively carried out at the end of the PRA, when there is mutual trust and a rapport between the research team and the villagers.

· Historical mapping can show how the area has changed in the past 10-50 years. This can be done in comparison to the present day situation.

· Aerial photographs are used with transparent overlays and form a useful link between detailed ground information and non visible aspects such as soil and vegetation types, land conditions and ownership. It may be necessary to point out a few well known objects so that the informant can become familiar with the photograph. People who live in mountainous areas tend to be very successful in interpreting aerial photographs, as they are used to looking at the landscape from above. Aerial photographs enable macroscopic areas to be easily distinguished and areas of interest pin-pointed. They are also useful as a form of secondary data which may be used in defining research plans. If possible old and new photographs can be compared.

4.7.4 Transects walks

Systematic walks with key informants through the area of interest can be used to identify different land use/type zones and their respective constraints and opportunities through observation, listening to, and questioning the informant. Transects can also be used to prompt historical information and where they follow a slope, can coincide with soil sequences. *Figure 9* in Appendix A is an example.

4.7.5 Seasonality diagrams

These can show the changes in climate, precipitation (quantity and rain days), soil moisture, employment, income, prices, cropping, livestock activities, forest use, diet, sickness, labour demand, levels of tourism etc. These 'calendars' can be drawn in a circle diagram representing a year or in linear fashion covering 12-18 months as their unit of reference. Use ceremonies to cross check that the names of the units are agreed and ask the people to break lengths of sticks, draw histograms in the dust or on paper, make piles of stones etc to represent the relative quantities and patterns. *Figure 7* in Appendix A gives an example of a seasonal calendar drawn on a linear diagram.

4.7.6 Ranking

The use of ranking as an analytical tool complements semi-structured interviewing because it is able to generate basic information which can lead

to more direct questioning. In particular, ranking is useful when tackling sensitive information, for example, income or wealth, and informants tend to be more willing to dispense relative rather than absolute figures. Ranking methods include:

·   **Preference ranking**: When an informant will make a list of items ranked in order of their preference. If there are only two items then pairwise ranking is used.

·   **Pairwise ranking**: Compares items two at a time; informants being asked which is preferred, why it is preferred and what is good or bad about each choice. This method is good for documenting indigenous knowledge, and gaining qualitative data, on types of trees, crops, technologies, medications etc., and finding out the priorities and important criteria or categories.

·   **Matrices**: A diagram is set up with various items (e.g. types of trees) on the rows and various criteria on the columns (e.g. quality of fuel wood, fodder, fruit, timber, soil erosion control etc). The attributes of each tree species is either ranked, as above, or people score the relative values by putting a number of marks/seeds in each box. Examples are presented in Abel et al (1989a and b)

·   **Wealth/wellbeing ranking** done by the people of the village using their criteria.
        a) sort out cards or slips of paper representing each household into any number of different piles with the richest at one end and the poorest at the other.
        b) Mark the relative wealth/wellbeing on to a social map (see 4.7.3) with codes for individual assets. These can be used to lead into other discussions on livelihoods, vulnerability and local measures of wealth. It also shows the relative wealth of the key informants in other parts of the PRA process so a balanced sample can be obtained and the bias against the poor is offset. Finally it can be used as a baseline to monitor future developments and identify clusters of households, according to wealth.

4.7.7 Daily activity programmes

With the aid of this analytical tool, information about daily activities of community members may be easily collected and analyzed. In using daily patterns different groups of people within the community (for example, women, men, old, young, educated, uneducated) may be compared, as well

as seasonal changes analyzed. It is similar to a seasonal diagram in that it helps identify time shortages, problem areas and opportunities. The daily activity profile can be completed for an individual through interview, direct observation or both, noting that the information collected should be cross-checked. *Figure 5* in Appendix A shows a daily activity profile diagram for a group of park wardens working in the Podocarpus National Park, southern Ecuador.

4.7.8 Systems diagrams and flow charts

These can be used to illustrate the complex components and flows within a 'system'. Some questioning may be necessary to draw attention to possible linkages but local people should control the diagramming. For example, when discussing agriculture, ask the farmers to draw a diagram of his/her field. Then ask how much livestock he has and draw a stable or a figure of the animals. Then ask what happens to the dung and indicate this by, for instance, putting arrows to the field and to the house stove. Next explore other components such as fertiliser, pesticides, seeds, fodder, straw, water, money/credit, vaccination, advice, markets etc. Finally discuss how this differs from other farmers and what are the responses and adaptations to the problems (PSPDP, 1992).

4.7.9 Mobility analysis and resource flows

In cases where one wants to see how communities interact with the "outside world", then spatial mobility maps are very useful. They can be used to indicate the individual's or the community's contact with, and knowledge of, the outside, which in turn might reflect freedom, wealth, education etc. Factors or activities like health visits, education, shopping trips, frequency of visitors and so on may be recorded and analyzed within the spatial framework (see *Figure 8* in Appendix A). Different colours can be used to distinguish between the different activities, and these maps can also be used to show differences in the frequency of mobility, by making the lines thicker or thinner as necessary. Another important use of this analytical tool is the comparisons that can be made between different elements of the community, such as men and women, young and old, educated and uneducated etc., which yields valuable information on their general activities and responsibilities within that community.

4.7.10 Venn diagrams

Also known as chapatti diagrams, these use circles to represent people, groups, institutions and organisations and their relationships and relative importance. Venn diagrams are not easy to execute, or easy to understand for people who have not been exposed to them before so ensure that everyone in the group understands the concept before embarking on the exercise. This is an excellent way to understand community links, structure and relations. An example is presented on page 61 in Appendix B.

> **Steps for creating a venn diagram**
>
> · Identify key institutions and individuals responsible for decision-making in a community/organisation
> · Identify degree of contact and overlap, which occurs when one party tells another to do something, or if they have to co-operate in some way.
> · Obtain information from secondary sources, group interviews or key informants (remember to cross-check).
> · Represent each individual/organisation/institution as a circle; it's size indicates the degree of importance.
> · Next, arrange the circles as follows:
>   Separate circles = no contact
>   touching circles = information passes between institutions
>   small overlap   = some co-operation in decision-making
>   large overlap   = large amount of co-operation in decision making
> · Draw the venn diagram by adjusting the sizes and arrangement of circles until the representation is accurate. Also experiment with different materials.
> · Encourage community members to draw their own diagrams
>
> (Theis and Grady, 1991)

4.7.11 Livelihood analysis

Within communities there are families with different incomes, social pressures and responsibilities, all of which lead to the different ways in which each family copes with its decision-making, general day-to-day living and survival. In order to interpret each household's behaviour with different

"socio-economic characteristics", livelihood analysis diagrams may be used. Variables for this form of analysis vary, but may include:

- · household size and composition
- · livestock and land ownership
- · proportion of income by source

Diagrams are used to represent the variety of forms within this exercise; pie-charts, bar diagrams or line diagrams, and can be presented on the ground using grain or another convenient material to fill in the segments. See Appendix B for an example of a livelihood analysis diagram.

4.7.12 Comparing case studies
These can be of individuals or households and should include detailed interviews on the various aspects of the project. Useful material can be collected concerning the daily routine, the amount of time taken at each task, and location of task. This can be compared between genders, social groups, wealthy/poor, occupations and age, as well as between seasons.

4.8   Validating PRA
Critics of PRA accuse the approach of being undisciplined, sloppy and using subjective observation. However, the PRA process involves many cross checks that enable the researchers to identify mistakes and bias (Pretty personal communication 1993). These are continuously developing and becoming more sophisticated as PRA users learn from mistakes. Most importantly, researchers and participants must practice cross checking by viewing the subject from several angles. Discrepancies or events which are not typical should be used to explore the subject deeper. Cross-checking can take several forms:

- ·   Work with a group of people who give different views and initiate discussions.
- ·   Have several interviewers from different disciplines, who can see the subject through different 'professional lenses' and so follow different lines of questioning.
- ·   Work with several groups and compare the results. This can be done by two groups working in parallel with discussions afterwards, or one research team discussing the same topics with each group.

·   Use different tools with groups, 'sequencing', in order to cross check data that was given earlier.
·   Compare with secondary material and explore differences.
·   Use conventional natural resource assessments to confirm or contradict local evaluations.

Further checks can be made on the data, analysis, interpretation and conclusions by local participants. These should be done throughout the PRA process and can be easily done when using visual methods which enable different groups to comment and make changes to the maps or diagrams. After analysis, the material should be presented to the participants before finishing the writing up of the work.

4.9   Personal bias

Avoid personal bias by accepting it at the beginning of the study, constantly examining behaviour and welcoming error as an opportunity to do better, what Chambers (1992) refers to as "self critical awareness". Working in a team helps to expose individual biases. Researchers should include their biographic details in the report; this can also be done for the key informants. Bias can also be minimised by living in the community which encourages a better rapport as well as a more relaxed and trusting environment. It also allows the minority and disadvantaged groups to be sought out (Chambers, 1992).

Section Five

RESULTS

5.1   Analysis of results

Whatever the method used, result synthesis, analysis and presentation should be considered from the outset.

The analysis of results collected through PRA is a continuous process, and should be carried out as the information is collected and not left until the end of the project. Analysis allows the information to be reviewed, appraised, classified and verified. Following this, additional questions can be formed and conclusions drawn. Use of common formats in interviews, such as matrices and tables will greatly facilitate this stage. Some guidelines for analysis of PRA results are presented below. Always allow time to present results to the community, perhaps at a group meeting or as a simple poster display as well as a written document. Encourage comments from them and if you are making recommendations ask the community to appraise them, thereby continuing their participation.

Guidelines for Analysis of PRA findings

- Prepare a list of key issues and arrange your findings according to the list. Be self-critical throughout this process of sorting and sifting through the information looking for patterns, differences and contradictions.
- Formulate a series of questions based on each research topic and try answering them with the collected information.
- Discuss each sub-topic and summarize the results using diagrams, matrices, ranking methods and other analytical tools to draw conclusions based on the fieldwork.
- If further clarification is required, then tabulate your results, which will allow the comparison of differences between individuals.
- Check your findings by presenting them to key informants and/or groups within the community.
- Try and avoid statements which contradict each other as your findings should be consistent, and remember your findings have to be believable. *(Based on Theis and Grady, 1991)*

Some procedures continue beyond result analysis to design and evaluate interventions appropriate to the constraints and opportunities of the situation (Abel et al 1989 and Raintree 1987).

5.2   Writing the report

General points on writing expedition reports are included in the EAC Planners' Handbook, and are also available as an offprint. Some points which you may find useful in the presentation and writing stages of the report are given here and summarised below for a PRA report. Whilst it is your responsibility to compile a full report with methods, results and recommendations for presentation to the host country's government, local organisations, and your sponsors, it may be a good idea to prepare a separate summary document which will have a greater chance of being read.

Guidelines to writing the PRA report

· Keep the report concise and use short sentences.
· Prepare the report quickly, for the results, conclusions and ideas should be disseminated as soon as possible upon completion of the fieldwork.
· The evidence presented should be convincing, and any ideas put forward should be specific, practicable, cost-effective and realistic.
· Concentrate on factors that will be used by the community, remembering their access to equipment, transport, communication facilities etc. and their socioeconomic infra-structure.
· Make use of tables, charts, diagrams and drawings prepared during the PRA. Present the illustrations as they were drawn in the field and add information explaining them if necessary.
· A draft of the report should be handed to all team members and any advisors for their comments.
· The report should be written in the local language and distributed to all relevant parties.

A shortened and simplified version, with the emphasis on pictures and diagrams, might be more appropriate for the community. The report should be translated into the host language(s) where necessary, thereby showing a

strong commitment to the project and the host country. Writing of the report will most likely be a team exercise although one team member should be responsible for compilation, editing and coordination.

5.3   Presentation of results

It is important that the results of your deliberations are disseminated as effectively and widely as possible. Reports are important as they provide a permanent record of your work. But people tend not to read (or believe) a report, however good, unless it happily confirms what they already believe or fits into existing structures and frameworks for taking action. A report can be an excuse to avoid bringing together the people who have been the subject of the study, and the relevant decision makers. These decision makers have to be brought into direct contact with the people concerned in effective discussion, based on the findings of the studies that have taken place, leading to action which all can concur. Presentations and slide shows with an appropriate audience are an excellent way of initiating these discussions.

Before you leave you will want to ensure that the impetus your visit has generated is continued. You may want to inform local NGO's and environmental organisations about your work; publishing papers in the scientific press (probably the most effective way of disseminating valid scientific information); trying to raise the interest of the media or by initiating and facilitating secondary proposals for further study and collaboration. You may never know - you could return to the same place one day and actually help bring about some of the changes that your team has recommended; after all that is your main objective, is it not?

References

Abel N.O.J., Drinkwater M.J., Ingram J.A., Okafor J. and Prinsley R.T. (1989a) *Guidelines for Training in Rapid for Agroforestry Research and Extension*. Commonwealth Science Council, UK

Abel N.O.J., Drinkwater M.J., Ingram J.A., Okafor J. and Prinsley R.T. (1989b) *Agroforestry for Shurugwi, Zimbabwe*. Report of an Appraisal Exercise for Agroforestry Research and Extension. Commonwealth Science Council, UK

Alasuutari, P. (1995) *Researching Culture.* Sage: London. (Alasuutari attempts to tie cultural research methods to qualitative research.)

Bellamy, R. (1993). *Ethnobiology in Tropical Forests*, Expedition Field Techniques, Expedition Advisory Centre, Royal Geographical Society, Kensington Gore, London, UK.

Blaikie, N. (1993) *Approaches to Social Enquiry*. Polity: Cambridge. (This provides a very quick overview of the key epistemological positions and their methodological implications. A very useful guide.)

Bryman, A. and Burgess, R. (1994) *Analyzing Qualitative Data* Routledge: London

Casley, D.J. and Lury, D.A. (1987). *Data collection in Developing countries*. Oxford University Press.

Chambers, R. (1983). *Rural Development; Putting the Last First,* Longman, Harlow.

Chambers, R. (1992). *Rural Appraisal: Rapid, Relaxed and Participatory, Discussion Paper* 311, Institute of Development Studies, University of Sussex, UK.

Clark, W.A.V. and Hosking, P. (1986) *Statistical methods for geographers.* Wiley

Clifford, J. and Marcus, G.E. (1986) *Writing culture: The poetics and politics of ethnography.* University of California Press: Berkeley. (Key text for the anthropological debate about method and representation.)

Creswell, T. (1992). Unemployment and Health: The development of the use of PRA in identified communities in Staveley, North Derbyshire, *RRA Notes*, No. 16: 27-30.

Denzin, N. and Lincoln, Y. (1994) *A Handbook of Qualitative Research.* London: Sage. (An excellent book with a good discussion of the current debates in the use of different methods. Now available in several volumes.)

Dixon, C.J. and Leach B. (1987a). *Sampling Methods for Geographical Research*, CAT MOG 17.

Dixon, C.J. and Leach B. (1987b). *Questionnaires and Interviews in Geographical Research,* CAT MOG 18.

Fardon, R. (1995) *Counterworks: Managing the Diversity of Knowledge*. Routledge: London. (One of a series of books published from the ASA Decennial Conference 'The Uses of Knowledge: Global and Local Relations'. Definitely worth reading if you are interested in issues of 'social experience' and 'knowledge construction'.)

Fetterman, D.M. (1989) *Ethnography step by step* Newbury Park, CA: Sage. (Elaborated methods for analysing ethnographic material)

Geertz, C. (1973) *The interpretation of cultures*. Basic Books: New York. (A classic!)

Glaser,B. and Strauss, A.L.(1967) *The discovery of grounded theory: Strategies for qualitative research*, Hawthorne, NY: Aldine. A classic! (The authors have subsequently published separately.)

Gluck, S.B. & Patai, D. (1991) *Women's Words: The Feminist Practice of Oral History*. Routledge. London. (This book addresses the ethics and politics of research and I would recommend it.)

IIED (1991). *Farmer Participatory Research in North Omo, Ethiopia: Report of a training course in Rapid Rural Appraisal* - Girara P.A. and Abela P.A., IIED, London, UK.

May, T. (1993). *Social research, issues, methods and processes.* Oxford University Press. (A good undergraduate level text. Is a good introduction for those who have not done research methods at an undergraduate level.)

McCracken, J.A., Pretty,J.N. and Conway, G.R. (1988). *An introduction to Rapid Rural Appraisal for Agricultural Development, Sustainable Agricultural Programme,* IIED, London, UK.

Miles, M. and Huberman, M. (1994) *Qualitative Data Analysis: An Expanded Handbook*, London: Sage

Messerschmidt, D.A. (1991). Rapid Appraisal for Community Forestry: the RA process and Rapid diagnostic tools. *Technical Paper*, No. TP 91/2, Institute of Forestry Project, Pokhara, Nepal.

Morgan, D. (1988) Focus Groups as Qualitative Research, Sage: London.

Noblit, G.W. and Hare R.D. (1988) *Meta-ethnography: Synthesizing qualitative studies* Newbury Park, CA: Sage

PSPDP (1992). *Participatory Rural Appraisal for Farmer Participatory Research in Punjab, Pakistan, (Pakistan-Swiss Potato Development Project), Sustainable Agricultural Programme*, IIED, London, UK.

Raintree, J.B. (1987) D and D User's Manual. An introduction to agroforestry diagnosis and design

Riley, J. (1990) *Getting the most from your data: A handbook of practical ideas on how to analyse qualitative data* Bristol: Technical and Educational Services. (Technical but quite useful).

Sandywell, B. (1996) *Reflexivity and the crisis of Western Reason*. Routledge: London.

Sanjek, R. (ed.) (1990) *Fieldnotes: The makings of anthropology*. Ithaca, NY: Cornell University Press

Seale C. (1998) *Researching Society and Culture.* Sage. *London*: (Undergraduate text with social science in dominance but from an interdisciplinary team at Goldsmiths).Slim H and Thompson P (1993) *Listening for a Change: Oral Testimony and Development.* Panos Publications, London. (Very good text on interview techniques and analysing oral testimonies)

Spradley, J.P. (1979) *The ethnographic interview* New York: Holt, Rinehart & Winston. (Spradley has worked out a style of analysing qualitative material which is quite distinctive. Not very commonly used nowadays.)

Spradley, J.P. (1980) *Participant Observation New York*: Holt, Rinehart & Winston

Stewart, D. and Shamsadani, P. (1990) *Focus Groups: Theory and Practice*, Sage: London.

Theis, J. and Grady, H.M. (1991) *Participatory Rapid Appraisal for Community Development: A Training Manual Based on Experiences in the Middle East and North Africa*, IIED and Save the Children Federation, London, UK.

Van Maanen (1995) Ethnography in Practice. Sage: London. (A very good read.)

Warren, C.A.B. (1988). *Gender Issues in Field Research*, Sage Publications.

Werner, O and Schoepfle, M. (1987) *Systematic fieldwork: Foundations of ethnography and interviewing (vol. I*). Sage: Newbury Park, CA

Werner, O and Schoepfle, M. (1987) *Systematic fieldwork: ethnographic analysis and data management (vol. II)*. Sage. Newbury Park, CA: (NB:

Sage has a series of books on doing research using qualitative and
quantitative data.)
Winser, S. (ed.) *Expedition Handbook* (2004). Expedition Advisory Centre
Royal Geographical Society (with IBG). Profile Books

Further reading is provided in Appendix C

Appendix A

Case Study: The application of PRA techniques in Podocarpus National Park

Introduction

This is a synopsis of the work carried out by members of the recent expedition "Parrots in Peril - Ecuador 1992", which received funding and endorsement from the Royal Geographical Society. This example of the use of PRA's illustrates the methodologies available and their respective applications.

Background information and objectives

In the 1990 "Parrots in Peril" expedition report, Toyne and Jeffcote (1992) recommended a study on the effectiveness of the Podocarpus National Park (PNP) as a protected area. Illegal colonisation and gold mining in the interior were identified as the major and most imminent threats to the Park. The objectives of the study were as follows:

· Devise a strategy for implementing PRA techniques and methodologies around the PNP.
· Review the existing management procedures and carry out PRA's at PNP warden stations.
· Use PRA techniques to assess the problems of colonisation at selected study sites.
· Put forward proposals for the future development of the PNP.

Each PRA ensured that there was a local input from the environmental non-governmental organisation (NGO), Arcoiris, who were based in Loja (adjacent to the PNP). The international team members had attended workshops and seminars prior to the expedition, and were therefore familiar with the applications and techniques used in PRA and were responsible for training the local team members.

Increasing colonisation within Ecuador

Ecuador lost a substantial amount of its land to Peru in 1941 *(Figure 1)*. The Río de Janeiro Protocol of 1942 established the boundaries between the two
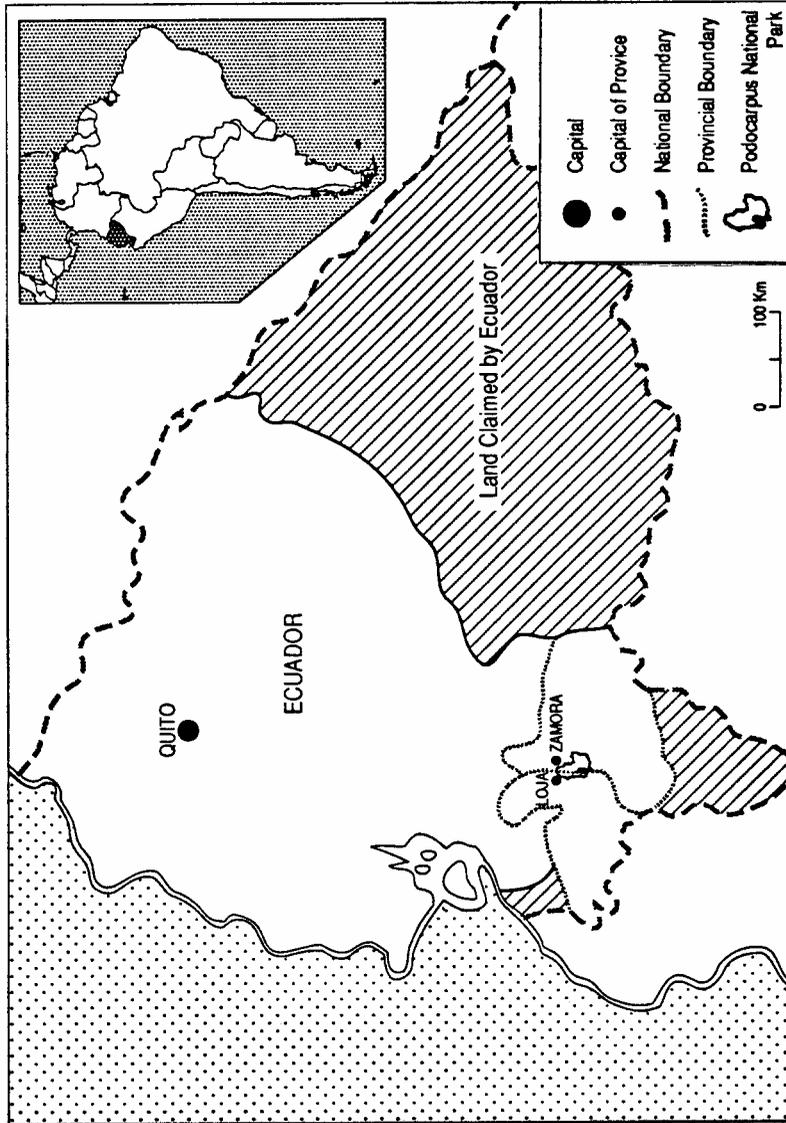
Figure 1: Loja and Zamora - Chinchipie Provinces, southern Ecuador,
showing position of Podocarpus National Park

nations. The Ecuadorian Government, however, refuses to accept this, and by providing free land tenure made a conscious attempt in the 1960s to attract colonisers to its' southern regions in the name of "nationalism". As Ecuador's birth rate became one of the highest in South America (Box, 1991) families were forced to move on from existing homesteads due to land pressures. Through these pressures some colonists have settled close to or even encroached within the national park territory. The authorities now realise the need to address the colonists' plight.

The Podocarpus National Park

The PNP was designated on 15 December 1982 by Ministerial Resolution 0398 and is Ecuador's newest national park. It was named after the Podocarpus tree, Ecuador's only native conifer genus. It straddles the Andes of southern Ecuador covering an area of 146,000 ha in the provinces of Loja and Zamora-Chinchipie *(Figure 2)*. PNP is the last extensive area left in southern Ecuador with substantial tracts of pristine primary forest stretching from the tropical zone to the high altitude paramo grasslands, and is known for its high avian endemism and biodiversity (Bloch et al, 1991). At present PNP is known to hold over 540 bird species, representing 35% of Ecuador's known species (Bloch et al, 1991). The Park may also be one of the last refuges for many endangered animal species, including the Spectacled Bear Tremarctos ornatus and the Mountain Tapir Tapirus pinchaque (IUCN 1990).

Choosing PNP as a study site for the application of PRA techniques

The PNP is currently under threat from colonists that have settled on the Parks' boundaries, and illegal artisanal miners digging for gold (Vallée 1992). The PNP situation provided an excellent opportunity to test and develop PRA techniques and applications with respect to national park management, given its problems of colonisation and mining. This study focused mainly on two areas of research:
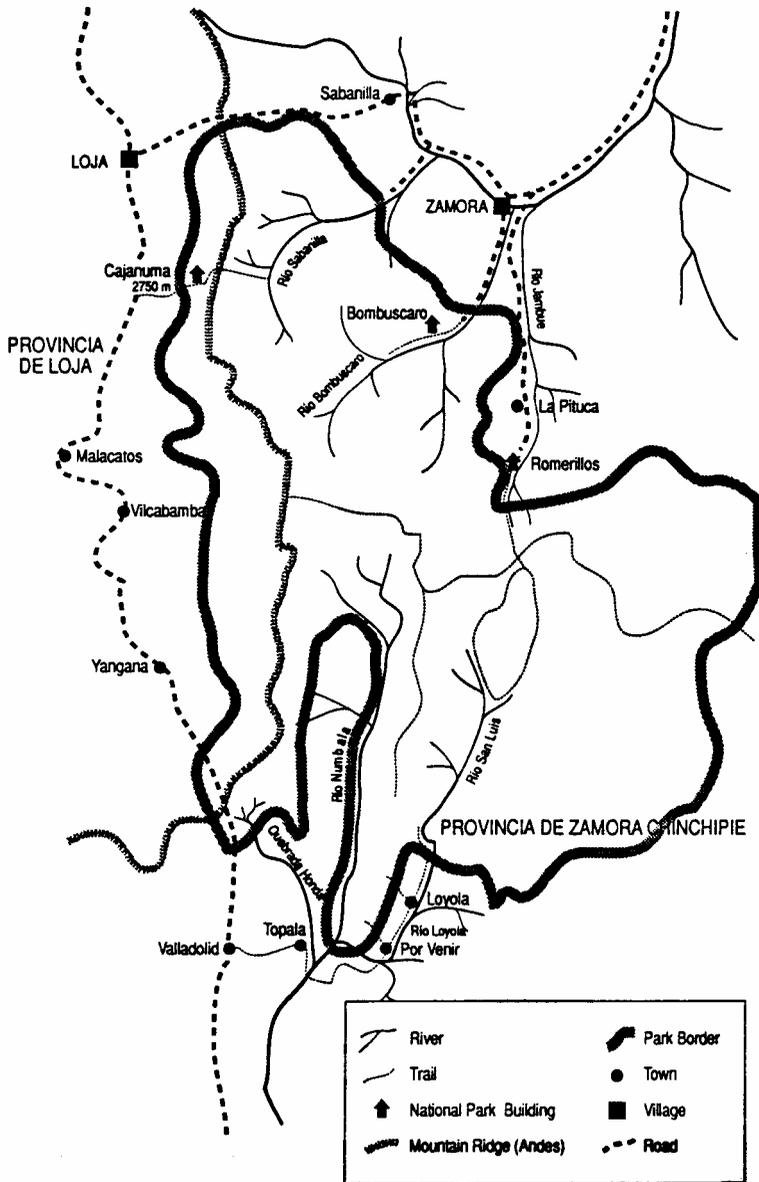
*Figure 2: Podocarpus National Park (*source: MAG Office - Loja*)*

·   Management of the PNP - participatory research was carried out with park wardens at two sites, Cajanuma and Bombuscaro to assess the current management status.
·   Colonisation within the PNP - three villages located on the east and southern points of the Park were selected for PRA study.

The findings would be put into a management plan, which would be discussed with the Park's authorities and it's funding bodies. *Figure 3* shows the systematic outline structure of the study indicating the associated levels and branches of investigation.

Management of Podocarpus National Park

The management of Ecuador's six national parks lies within the jurisdiction of the Ministeria de Agricultura y Ganaderia (MAG) in Quito. From here, decisions are disseminated to regional offices where local Park wardens are situated. The local offices are responsible for day-to-day management decisions, but are under the control of the central office in the capital, Quito. The PNP is funded by the Ministry of Agriculture (MG - Ministeria de Agricultura y Ganaderia) and Fundacíon Natura, an NGO, which receives funds from international environmental organisations including WWF, U.S. Nature Conservancy and the US Agency for International Development. In 1981-82 the limits of the PNP were set by the authorities in Quito, using an altitudinal rather than a physical demarcation system, and were based on grave mis-assumptions regarding the extent of colonisation around the fringes of the park. These colonists were never informed of the intention to develop the area into a national park, and discussions have not been held since to try to resolve resulting problems.

The study team initially concentrated on participatory research with the collaboration of the Park wardens. Using PRA techniques such as *participatory mapping, preference ranking, semi-structured and group interviews, daily activity profiles and seasonal calendars*, specific problems within the management system were identified and discussed.

Participatory mapping was used to discover the extent of the wardens knowledge of the area, and whether they carried out their jobs regularly and fully. The wardens were given a large sheet of paper, pencils, pens and crayons and asked to draw a map of the surrounding region. It was
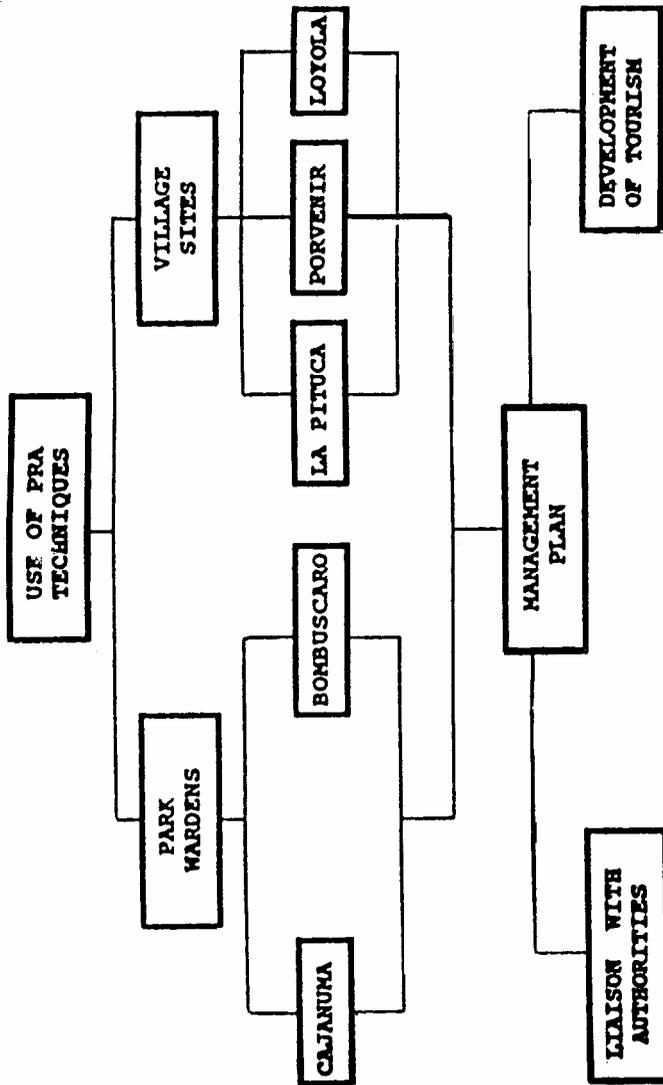
Figure 3: Systematic diagram showing the outline structure of the study

emphasised that the drawing was to be a group exercise, after which they were left alone to discuss and debate its form. *Figure 4* shows the four trails that constitute the Cajanuma region, with the relative amounts of time it would take to walk them. The map also shows the trail (sendero al Río Sabanilla) which leads to the Río Sabanilla and the location of illegal artisanal gold miners. Using the map as a visual aid for discussion purposes it was discovered that the wardens lacked the necessary equipment to patrol the region in the often wet, cold and windy conditions, inevitably leading to their inability to carry out all supposed duties.

As more information was needed regarding these aspects, a series of preference ranking exercises were carried out to prioritise the most needed pieces of equipment. Each warden was asked to list their choice of items and then rank them in order of preference, giving the most essential piece of equipment 1 and the next most needed item 2, and so on. When they found it difficult to distinguish between two items, they were asked to pairwise rank them; i.e. they were asked "which of these is needed more than the other?", "Why is it more important?". In this way a direct comparison could be made, still indicating a preference. The results were tabulated and the numbers added up for each piece of equipment; the item with the lowest score was ranked first, indicating it was needed most *(see Table 1)*.

Having spent some time at Cajanuma, the study team were able to verify that the wardens had not carried out many of their duties, even though there had been an initial bias due to the study team's presence and interest. Chopping wood for the fire, cleaning of the kitchen and sleeping quarters and occasional maintenance of the trails were the major activities carried out. Analysis of the wardens' daily activities plays an important part in assessing how successfully the Park management plan works. This PRA technique allows the study team to build up a daily activity profile through semi-structured interviews and direct observations. This technique can be used to identify how the day could be restructured to improve time management, and comparisons can be made for different sectors within a community such as the employed vs unemployed, men vs women, old vs young etc. *Figure 5* shows the activities that the wardens carried out during a typical day whilst *Figure 6* highlights the duties that the wardens were employed to carry out. A marked difference between diagrams, reveals that only some of the duties are accomplished, and this was attributed to lack of motivation, leadership

(CODE FOR PARK WARDENS: Delizio - D; Victor - V; Hector - H; Guillermo - G).

LIST OF EQUIPMENT	PARK WARDENS RESPONSE				TOTAL SCORE	RANKING
	D	V	H	G		
COMMUNICATION 2-way radios to Loja	1	2	6	1	10	2
TRANSPORT: Additional MAG vehicle for wardens	3	4	3	7	17	4
EQUIPMENT FOR FIELD WORK*	4	1	1	2	08	1
BEDS/MATTRESSES	5	6	4	5	20	5
TOILET/SHOWER FACILITIES	7	7	7	4	25	7
PERSONAL DEFENCE: Rifles	2	3	2	3	10	2
COMPASSES AND ALTIMETERS	6	5	5	6	22	6

Note: * denotes personal equipment such as tents and sleeping bags.

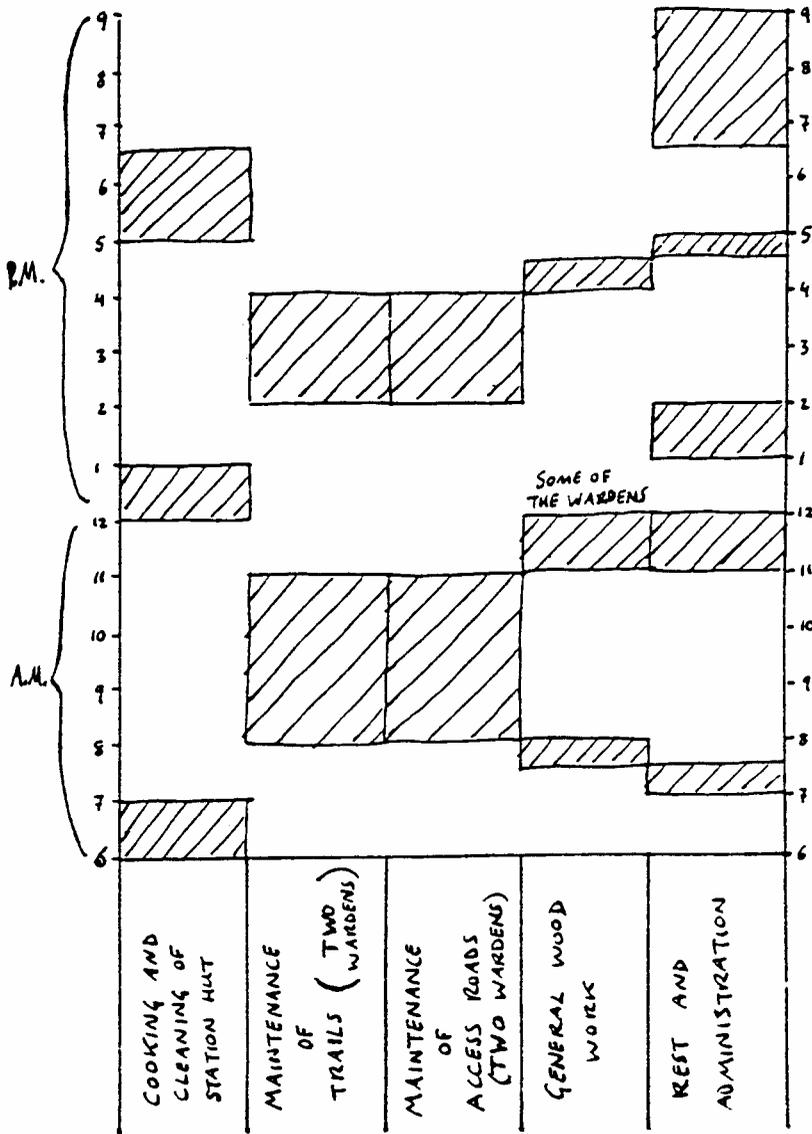*Table 1: Preference ranking of equipment most needed for the Park Wardens*

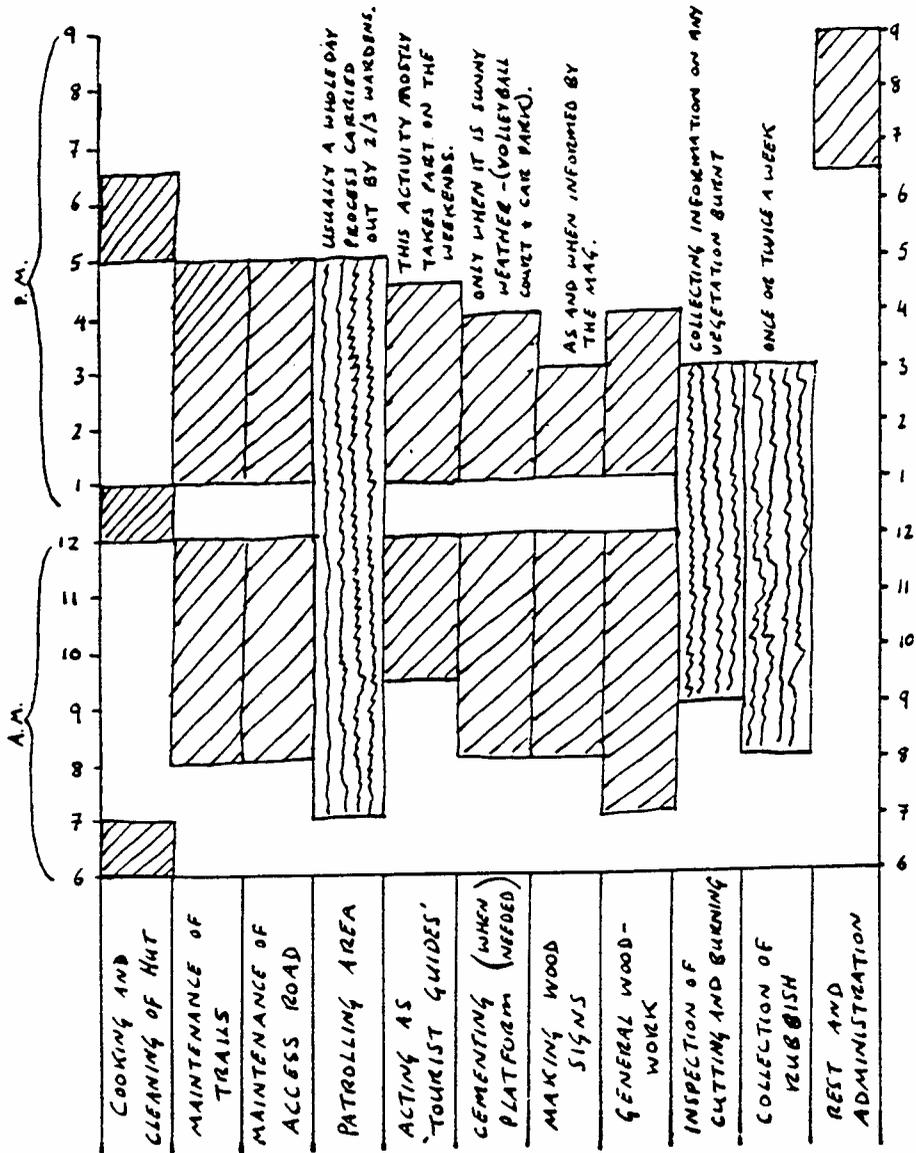*Figure 5: Typical daily activity profile for the wardens*

Figure 6: Daily activity profile showing complete warden responsibilities

and management structure. The morale at Cajanuma was very low due to low wages and the minimal assistance provided by the authorities.

Seasonal calendars were used to identify the months of the year which had the highest rainfall, the most tourism, the greatest labour demand for the wardens and the highest levels of mining activity (as perceived by the wardens). These patterns, apart from showing seasonal variability, can highlight, for example, times to target tourists or to carry out specific work with relation to labour demand. The calendars were prepared by obtaining the information qualitatively, as for example, for tourism: first the busiest months were determined by asking the wardens *"What was the busiest month last year?"*, then *"What was the next busiest month?", "How did this compare to the busiest month - was it 3/4, 1/2, 1/4 as busy?"* and so on. The least busy months were determined in a similar fashion.

The 'middle' months were determined through a series a comparisons such as: *"How did April compare with June - was it busier, the same or not so busy?", "By how much did it differ - was it 3/4, 1/2, 1/4 as busy?"*. In this way the seasonal pattern for an activity was determined. Unfortunately, as the wardens were relatively new to the job and lacked experience, they were unable to quantify the levels of activity within each calendar. *Figure 7* shows the combination of the seasonal patterns, illustrating the correlations between different variables and identifying any problems or opportunity times within the year. Figures from 1991 were taken from the tourist activity book and added to the tourism calendar, to provide a visual comparison with real and perceived degrees of activity. This disparity could then be used to inform the wardens about seasonal activity and possibilities of increased tourism activity.

From the calendars three main areas of interest were identified: labour demand (cleaning the trails, woodwork, making signs and patrolling the area) was inversely related to the weather (i.e. labour demand was high when the rainfall was low, enabling the wardens to venture outside and patrol and maintain the region); mining activity was inversely related to the amount of rainfall while tourism had two main peaks of activity. The first peak being in April-August when rainfall was high and bird activity was at a high level, indicating that most of the visitors were keen bird-watchers and scientists. The second peak occurred between November and December, at a time when
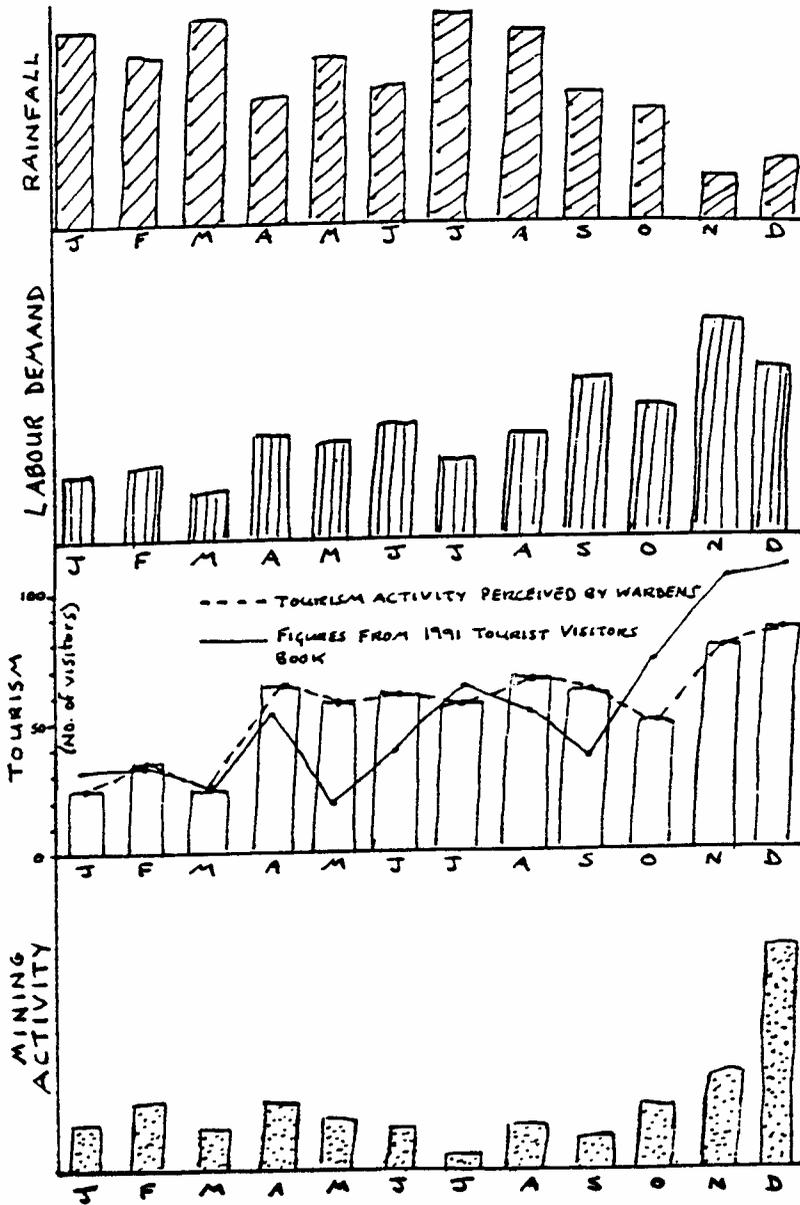
Figure 7: Combined seasonal calendars

school children were on holiday and were brought to Cajanuma as part of an environmental educational programme.

Discussion

Through the PRA's conducted at Cajanuma and Bombuscaro, fundamental comparisons could be made into the way the Park wardens led their lives. The most striking factor was the apparent lack of motivation and will from the wardens. This low morale spread across the range of duties, from the simple tasks like cleaning and maintaining the trails, to the more difficult jobs of patrolling the region for illegal miners or hunters. All the wardens attributed their negligence of duty to the lack of equipment, whilst the team felt that there was the need to address their work and training structure.

In order for the PNP to achieve this they would have to make some drastic changes to their current 'management system'. Thorsell (1991) lays down a set of training criteria for all staff levels. He indicates that there are numerous methods of training; University courses, regional training schools, seminars, workshops and conferences, provision of reference materials, correspondence courses and curriculum design. To implement some of these practices for the PNP, the authorities would have to re-assess their current employment plan for personnel. For Thorsell's criteria to be met, they require that the personnel already have a sound education and knowledge of conservational issues. This is not the case at Cajanuma or Bombuscaro. The study team propose a number of strategies for the development of a management framework.

· Re-assessment of pay with the implementation of a pay structure, depending on positional status and experience.
· Encouragement for personnel to succeed by providing them with necessary equipment and rewards for good work.
· The implementation of a work rota - allocating duties to each warden on either a daily or weekly rotation to avoid stagnation.
· The implementation of a management structure amongst the wardens; whereby wardens can be promoted to senior wardens and then onto managers, thereby giving wardens the much needed incentive for commitment and loyalty.
· Bi-annual appraisals of staff performance, with retraining if necessary.

·   Extensive training for Park wardens on subjects such as first aid, public
    relations and tourism.
·   The introduction of an environmental and Park management course at
    the University of Loja for park wardens.

The development of such a framework requires careful planning and
financing, but with the commitment shown to the PNP from some of the
world's major environmental organisations, the transition could be made.
Trained and professional personnel would be needed to implement the
changes, for it is the view that *"personnel engaged in direct management
must be capable of conducting and implementing resource projects in the
field. They constitute the 'front lines' and are critical at the operational
level"* (Thorsell 1991). As the PNP becomes more internationally recognised
for its high biodiversity and avian endemism, there will be a greater need to
protect, conserve and promote it. Indeed, the wardens at Cajanuma and
Bombuscaro realise that 'their' Park is changing, but feel helpless and lack
assistance in responding to this change. The Park is seeing more scientists
and visitors than ever before, yet the infrastructure remains the same. It is
now the task of the funding organisations to work closely with the authorities
and more importantly local people in developing the PNP.

The colonisation issue

In an attempt to address the plight of the colonists three PRA's at selected
village sites (La Pituca, Loyola and PorVenir) located on the fringes of the
PNP were carried out (see *Figure 2*, on p.43). The main objectives of the
studies were as follows.

·   Collect information on the livelihoods of colonists at selected study
    sites.
·   Assess how the colonists interacted with the authorities.
·   Use PRA techniques to assess the problems of colonisation at selected
    study sites.
·   Make realistic recommendations to the authorities regarding the
    colonisation issue.

PRA techniques including *mobility analysis, group and semi-structured
interviews, daily activity profiles, transects, participatory mapping,*

livelihood analysis, matrix and preference ranking were used to collate information about the villages and their infrastructures. The La Pituca site is used to illustrate some of the different techniques used in addressing the colonisation issue.

Mobility analysis allowed the women's activities and flow of village resources to be schematically represented on a diagram *(Figure 8)*. All nearby towns, rivers and roads were drawn on a large sheet of paper, then the women were asked about an activity that they often carried out, such as shopping. First, they were asked questions like: *"when do you go shopping?"*, *"what do you buy when you go shopping?"*, *"where do you go for your shopping?"*, *"why do you never go to Loja for shopping?"*, *"how often do you go shopping?"* and so on. In this way, the relative movements of shopping were mapped. A different activity was selected next, for example health, and the same process applied to extract the relevant information, which was then mapped using a different symbol or colour. This continued until the women could not think of any more activities. The map was then used as a discussion aid to probe into the women's activities and as a result, it was learnt that the village suffered from poor health facilities, poor education standards, lack of transport and nutrient depleted soils.

Following this, a transect of the area was used to determine how the lands surrounding the village were being utilised. Three male farmers who had a good knowledge of the area were selected to traverse along the road which dissected the village. On the way the group stopped at points where land use changed, and information was gathered, through simple questioning, on agricultural practices, village history, problems and respective solutions. It was clear from the transect walk that some villagers used a range of mixed cropping practices, including growing fruits, vegetables, coffee and cocoa. Other villagers either grew single crops of fruit or used the land for pasture. It was also apparent that there was a lot of wasted land due to nutrient deficient soils. The main solutions were seen as the implementation of a "soil-science" programme aimed at improving soil quality and crop yields, and an education programme, which would teach the farmers about more efficient agricultural practices. All of the information collated was represented on a transect diagram *(Figure 9)*.Following these exercises, information was obtained about the village's relationship with the Ministeria de Agricultura y Ganaderia. The villager's

Fig. 8 Mobility map drawn by the women of La Pituca

major problems were the lack of communication, advice and assistance given by the Ministry of Agriculture regarding their existing territorial problem within the PNP. The villagers had become disillusioned with the MAG, as they felt that the authorities should assist them in developing and improving their village structure and livelihoods, rather than arranging for their relocation.

PRA was invaluable in obtaining this information, as it allowed the team to learn about communities in an informal manner with participation as the key element. Trust and respect were built up through a continuous learning process and there were no pre-conceptions, pre-determined or fixed questions and most importantly, no imposition of our ideas onto the participants. Finally, the team were able to represent and document accurate and well researched information through a system of cross-checking and direct observation.

Learning through the PRA

- Using an interpreter and collaborating with Arcoiris proved invaluable in building a rapport between the villagers and the research team, thereby increasing the villagers confidence, and their willingness to co-operate and discuss various issues.
- Due to time restrictions on the project, it was impossible to carry out a reconnaissance trip to some of the more remote areas (Loyola and PorVenir). Such surveys however should be carried out before visiting any study site. They allow both research team and villagers to discuss the forthcoming study and its objectives and logistics with village leaders and community elders. The researchers can assess the accessibility of food, the relevant equipment needed, the provisions for accommodation etc.
- At the beginning of the study we felt that every aspect of PRA should be applied, encompassing all of its techniques. This proved unnecessary, as continuous meetings were held to assess the 'direction' of the study enabling PRA to be tailored as the study proceeded.
- During the PRA it was sometimes difficult not to convey our views and ideas to villagers, as we only saw how they conducted their lives from the 'outside'. It is very important to take into account the cultural, social and domestic differences that are present, and try not to pass on what
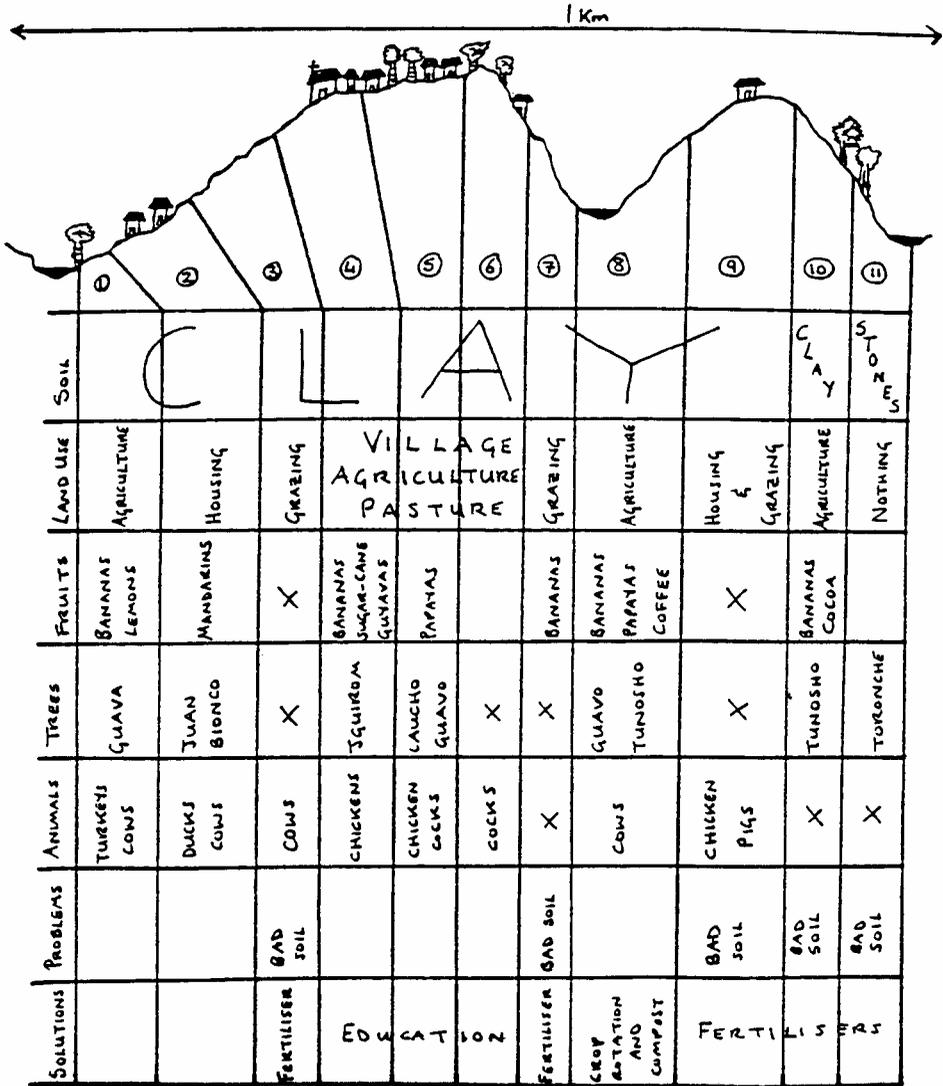
1 Km

	①	②	④	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
Soil	C	L	A			Y				CLAY	STONES
Land Use	Agriculture	Housing	Grazing	VILLAGE AGRICULTURE PASTURE			Grazing	Agriculture	Housing & Grazing	Agriculture	Nothing
Fruits	Bananas Lemons	Mandarins	X	Bananas Sugar-cane Guyavas	Papayas		Bananas	Bananas Papayas Coffee	X	Bananas Cocoa	
Trees	Guava	Juan Bionco	X	Iguirom	Caucho Guavo	X	X	Guavo Tunosho	X	Tunosho	Toronche
Animals	Turkeys Cows	Ducks Cows	Cows	Chickens	Chicken Cocks	Cocks	X	Cows	Chicken Pigs	X	X
Problems			Bad Soil				Bad Soil	Bad Soil	Bad Soil	Bad Soil	Bad Soil
Solutions			Fertiliser	EDUCATION			Fertiliser	Crop Rotation and Compost	FERTILISERS		

Figure 9: Transect of La Pituca

'you' think is best for 'them' (remember it is a continuous two-way learning process).

- The initial training of the Arcoiris members took quite a long time. We had to continually convey the message that we were carrying out qualitative, not quantitative research.

- We carried out the participatory mapping exercises using children, women and men in order to get different views and perspectives about similar issues. When working with the women, our female member of the team led the exercise in order to break down immediate shyness and confrontational barriers. By using a female, the village women appeared to have a tangible contact and were more willing to talk and express opinions.

- When carrying out different exercises and trying to cross-check information, we became aware that we should not show any kind of mistrust or disbelief in the information that we received. In cross-checking information, care must be taken in how the questions are phrased and at whom they are directed.

- Once the PRA had been completed we returned to our base in Loja and wrote up the results in Spanish. The brief synopsis along with reported problems, respective solutions and future ideas were then left with the village, so that they felt that their time had not been wasted and we were not there simply to extract information which would never be used. Furthermore, we discussed our findings with the Ministeria de Agricultura Ganaderia and promised all parties a copy of the full report.

Recommendations made to the authorities

- Implementing a physical demarcation programme in conjunction with a natural limit system in some regions. This "buffer-zone" would ensure that focal areas such as trail and river heads would be protected from further encroachment with the correct management.

- Introduction of environmental education programmes at warden stations aimed at school children, tourists and visiting scientists so they can learn about the Park's flora and fauna and how they can assist in preserving and managing its fragile ecosystem.

- Creation of a conservation programme with projects on reforestation, improved agricultural practice, implementation of a handicraft trade etc. directed at existing colonised villages within the Park's boundaries. This

would encourage the farmers to become "guardians" of their land, which would in turn provide them with the incentive to manage and protect the surrounding lands which fall within national park territory.

· Implementation of a programme linking conservation with religion, whereby the authorities liaise with the Church to teach and educate rural people about conservation and environmental protection. The use of religion as a forum for conservation is an effective and practicable way to pass on this message as faith and religion are a major part of people's lives in Latin America.

Conclusions

Participatory Rapid Appraisal techniques were used to assess the problems of illegal colonisation around the Park's borders and the management framework currently employed by the Ministeria de Agricultura y Ganaderia. PRA was shown to be useful in highlighting the needs of both colonists and park managers. The results showed that there is a urgent need for a management structure to be implemented within the MAG. A formalised structure will raise Park wardens' morale and provide them with an incentive to work for the Park's benefit. Factors such as new equipment, work rotas, extensive training and financial rewards would encourage loyalty and would provide the wardens with what they really want, a good basis for promotion and a possible career within the MAG.

Results from the PRA study at three selected village sites showed that the Ministry of Agriculture had never clarified the park boundary and never informed the villagers that they were colonising a national park. The colonists felt that the lack of communication between the Ministry of Agriculture and themselves to be the greatest problem and biggest fear regarding their future. The colonists were willing to collaborate with the authorities in finding a solution or compromise to this dilemma, and suggestions of employing these colonists as guardians of their own land and surrounding PNP territory were warmly received. The PRA study highlighted some of the complex issues that the colonists faced and revealed that there was a solution, if, with the collaboration of the Ministry of Agriculture and the PNP's aid agencies, a number of reform programmes could be implemented. The introduction of programmes such as agricultural, re-afforestation, environmental education and linking conservation with religion

were seen as key elements in the success of a new management plan proposed by this study. Education was one of the most important development areas, and using Arcoiris to take school children on guided nature trails together with slide shows was seen as an important step in the environmental education for the young.

This study has shown that PRA techniques can be successfully used to highlight national park management needs and that PRA tools provided valuable information in meeting the study's objectives. This study has also identified the need for a secondary investigation into the complex issues regarding illegal colonisation within a national park. A full case study at one of the selected village sites is recommended.

References

Bloch, H., Poulsen, M.K., Rahbek, C. and Rasmussen, J.F. (1991). A survey of the Montane Forest Avifauna of the Loja Province, southern Ecuador, *ICBP Study Report* No.49 Cambridge, UK.

Box, B. (1991). *1992 South American Handbook*, Ecuador pp 761-877, Prentice Hall Travel, New York.

IUCN, (1990). *1990 IUCN Red List of Threatened Animals,* IUCN, Gland, Switzerland.

Thorsell, J W. (1991). Strengthening Protected Area Management Training in Tropical Countries, Parks, 2 (1): 9-13, IUCN.

Toyne, E.P., and Jeffcote, M.T. 1992. "Parrots in Peril-Ecuador 1990", *Unpubl. Expedition Report*, Biology Department, Imperial College of Science, Technology and Medicine, London, UK.

Vallée, D. 1992. Environmental impacts of gold mining in the Podocarpus National Park in southern Ecuador, *Unpubl. M.Sc. thesis*, Centre for Environmental Technology, Imperial college of Science, Technology and Medicine, University of London, UK.

Appendix B
Additional examples of PRA techniques

Systems diagrams or flow charts (see Section 4.7.8)

Economic and environmental change in Central Kordofan, Sudan
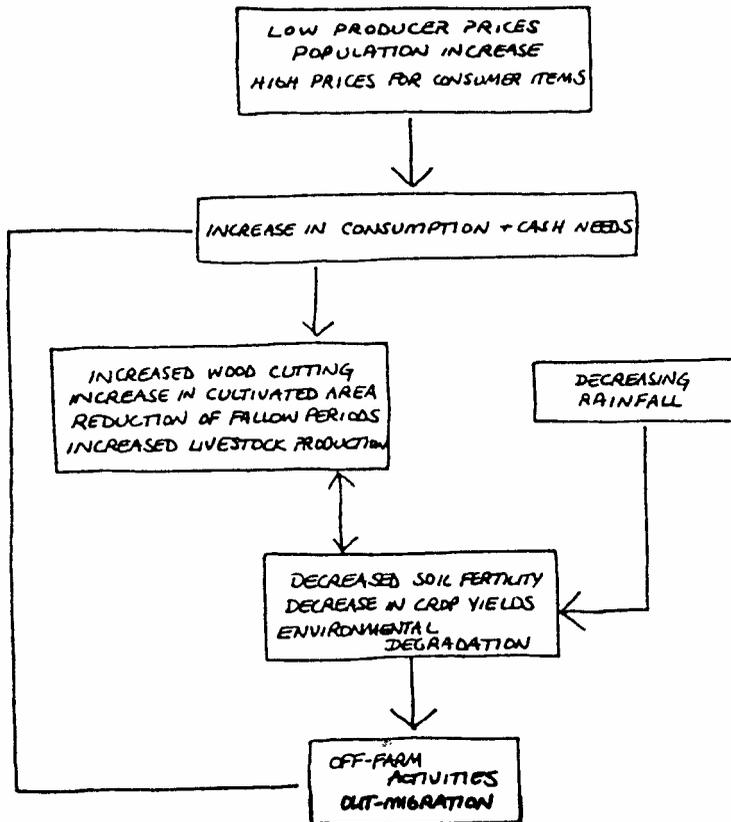
(source: Theis, J. and Grady, H.M. 1991. *Participatory Rapid Appraisal for Community Development: A Training Manual Based on Experiences in the Middle East and North Africa*, ILED and Save the Children Federation, London UK, pp113)

Venn diagrams (see Section 4.7.10)

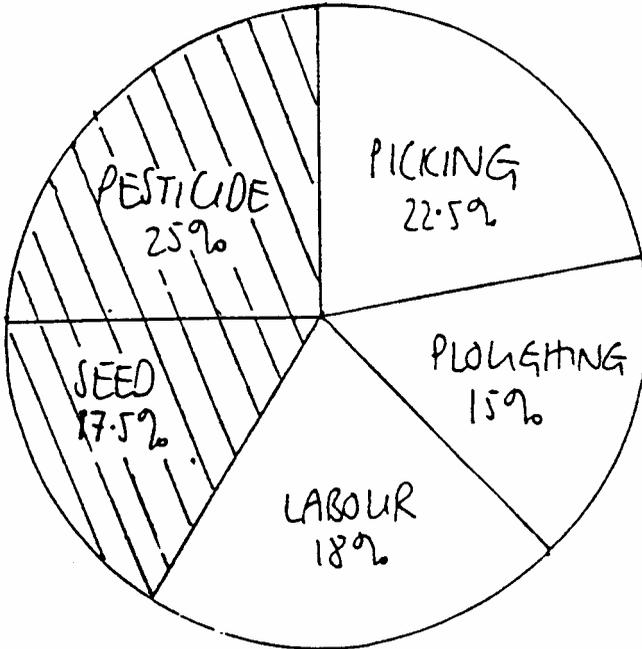Village water use control in Sudan
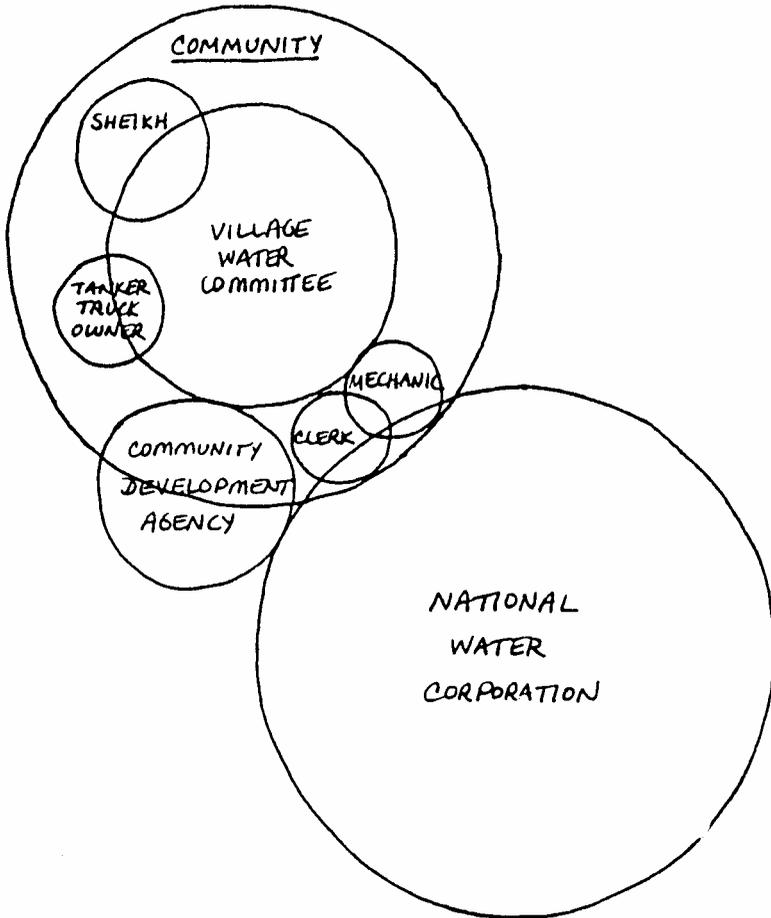
(source: Theis, J. and Grady, H.M. 1991. *Participatory Rapid Appraisal for Community Development: A Training Manual Based on Experiences in the Middle East and North Africa*, ILED and Save the Children Federation, London UK, pp116)
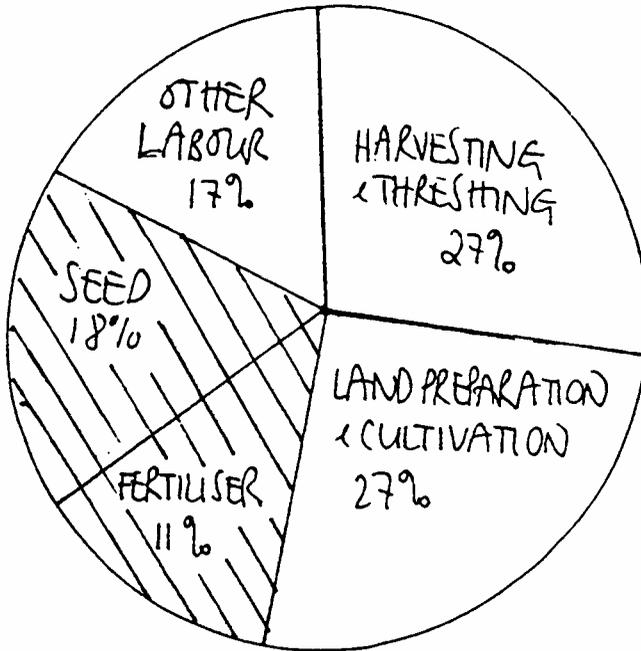
Livelihood analysis (see Section 4.7.11)

Proportion of expenditure on input for cotton and maize

COTTON

MAIZE

N.B. Information is from one old and one young farmer, both comparatively wealthy.

(source: ILED, 1991. *Farmer participatory research in north Omo, Ethiopia; report of a training course in Rapid Rural Appraisal – Girara PA and Abela PA*. ILED, London, pp.65)

Appendix C

Further reading

The uses of PRA are varied and diverse and it would be impossible to list all of the recorded literature, most of which in the past has concentrated on analysing, assessing and aiming to improve agricultural output and domestic quality. However, here are some references to browse through and get an idea of the diversity of methods and analytical tools and that can be used in people oriented research.

Abbot J and Guijt I (1998) 'Changing Views on Change: Participatory approaches to monitoring the environment', *SARL Discussion Paper* 2 IIED, London. (Excellent text on participatory monitoring of the environment)

Ahluwalia M (1997) 'Representing communities: The case of a community-watershed management project in Rajastan, India' *IDS Bulletin* 28 (4) (good case study of participatory research/results)

Barnes, J.A. (1963) Some Ethical Problems in Modern Fieldwork. *British Journal of Sociology 14*, pp 118-134.

Beauclerk, John; Narby, Jeremy and Townsend, Janet (1988) Indigenous peoples: a fieldguide for development. *Development guidelines series no 2*. Oxfam publications.

Box, L. (1987) Experimenting cultivators: a methodology for adaptive agricultural research. *Overseas Development Institute, Agricultural Administration Unit, Discussion Paper 23*

Burgess, Robert G. (1984) *In the field: an introduction to field research.* Contemporary Social research Series no 8. George Allen & Unwin.

Bulmer, M. (1982) *The Uses of Social Research*. Allen and Unwin.

Burgess, Robert G. (1982) *Field Research: a sourcebook and field manual.*Contemporary Social research Series no 4. George Allen & Unwin.

Casley and Lury (1987). *Data Collection in Developing Countries*, Clarendon Press, London.

Chambers, R. (1992) *Rural appraisal: rapid, relaxed and participatory*. Institute of development Studies Discussion paper 331.

Chambers, R. (1987) *Notes and reflections on the workshop on farmers and agricultural research: complementary methods*. Institute of Development Studies, University of Sussex

Cernea, M.M., (1992) 'The Building Blocks of Participation: Testing Bottom-up Planning', *World Bank Discussion Papers*, No. 166, The World Bank, Washington.

Cramb R A, Garcia J N M, Gerrits R V and Saguiguit G C (1999) 'Smallholder Adoption of Soil Conservation Technologies: Evidence from Upland Projects in the Philippines' *Land Degradation and Development* 10: 405-423 (a good example of research project design)

Defoer T, Budelman A, Toulmin C, Carter S and Ticheler J (1998) *Soil fertility management in Africa. Resource Guide for Participatory Learning and Action Research.* KIT publication, Netherlands. (Harder to get hold of, only useful if doing participatory soil fertility research)

Devereux S and J Hoddinott (eds) (1992) *Fieldwork in Developing Countries*. Boulder, Colorado: Lynne Reiner. (General text for more conventional methods, good on interviewing techniques)

Edwards, R. and Kean, S. (1987) Informal Research and Development. Institute of Development Studies Conference July 1987

Farrington, J. and Martin, A. (1987) Farmer participatory research: a review of concepts and practices. *Overseas Development Institute, Agricultural Administration Unit, Discussion Paper 19*

Fink, A. and Kosecoff J. (1985) *How to conduct surveys: a step by step guide*. Sage, London

Guijt, Irene (1991) *Perspectives on participation: Views from Africa. An inventory of rural development institutions and their uses of participatory methods*. IIED.

Guijt I and Hinchcliffe F (1998) *Participatory valuation of wild resources: an overview of the Hidden Harvest methodology.* IIED, London. (Very good even if researching other issues, short, easy to get hold of from IIED)

Hobley, Mary (1994) *Participatory Forest Management in South Asia.* Overseas Development Institute.

Holloway R (ed) (1989) *Doing Development: Government, NGOs and the Rural Poor in Asia*. Earthscan London. (Good on protocols, dress codes etc. when doing your research in different areas/cultures)

Hurst, J (ed), (1998) *Education Projects*: Available from the EAC at the RGS-IBG

IIED (1992). *From Input to Impact: Participatory Rural Appraisal for Action Aid The Gambia*, IIED, London, UK.

IIED *RRA Notes*. A regular series publications produced by the Sustainable Agriculture Programme, International Institute of Environment and Development (IIED), London.

Kapila S and F Lyon (1994) *People-Oriented Research*. London: Expedition Advisory Centre, RGS. (A comprehensive, all-round text for expeditions summarising all the key issues and methods for social and PRA research in developing areas)

Kessler J J, Slingerland M A and Savadogo M (1998) 'Regeneration of Sylvopastoral Lands in the Sahel Zone Under Village Management Condition' *Land Degradation and Development* 9:95-106 (good example of a project that would have been more productive had the people been consulted.)

Khon Kaen University (1987) Proceedings from the 1985 International conference on Rapid Rural Appraisal. Khon Kaen Thailand, Rural Systems Research and Farming Systems Research Projects

Kirby, Perpetua (1999 *Involving young researchers: How to enable young people to design and conduct research*. Joseph Rowntree Foundation,. ISBN 1 902633 45 8.

Lamb, R. (1993). Designs of Life. *New Scientist,* 30th October, pp 37-40.

Lightfoot, C. and Thrupp, L.A. (1987) Research Methods. Institute of Development Studies Conference July 1987

McCracken, J.A. (1988). *Participatory Rapid Rural Appraisal in Gujarat: A Trial Model for the Aga Khan Rural Support Programme (India), Sustainable Agriculture Programme,* IIED, London, UK.

McCracken, J.A. and Mearns, R. (Eds.) (1989). *Action Aid in Local Partnership - An experiment with Rapid Rural Appraisal in Ethiopia,* Sustainable Agriculture Programme, ActionAid - Ethiopia and IIED, London, UK.

Mosse D (1994) "Authority, Gender and Knowledge: Theoretical Reflections on the Practice of PRA", *Development and Change* 25: 497-526. (Easy to read paper on some of the drawbacks of participatory methods, definitely worth reading)

Nichols, Paul (1991) *Social Survey methods: a guide for development workers.* Development guideline series. Oxfam publications.

Moser, C.A. and Kalton, G. (1971) *Survey Methods in Social Investigation*. Heinemann Educational.

Paliniswamy, A., Subramanian, S.R., Pretty J.N. and John, K.C. (Eds.) (1992). *Participatory Rural Appraisal (PRA) for Agricultural Research at Paiyur, Tamil Nadu,* Department of Agricultural Economics, Centre for Agricultural and Rural Development Studies, Tamil Nadu Agricultural University, Coimbatore and IIED, London, UK.

Oppemheim, A.N. (1966) *Questionnaire Design and Attitude Measurement.* Heinemann.

PLA Notes (1996) '*Participation, Policy and Institutionalisation'*, No.27, IIED, London.

Pratt, B. and Loizos, P. (1992). *Choosing research methods; Data Collection for Development Workers*. Oxfam Development Guidelines, No. 7.

Pretty, J.N. (1993). *Participatory Inquiry and Agricultural Research.* IIED Participatory Inquiry; Notes for ICRA Course.

Robson, Elsbeth and Willis, Katie (1994) *Postgraduate fieldwork in Developing Areas: a rough guide.* Monograph 8. Developing Areas reseearch Group, Institute of British Geographers. *Good text for those spending longer amounts of time in the field, available through the Developing Areas Research Group of the RGS/IBG*

Royal Anthropological Institution (1967) *Notes and Queries on Anthropology*. Sixth Edition. London. Scottish Natural Heritage (1993) *SNH Visitor Monitoring Training Manual*. Scottish Natural Heritage, 2 Anderson place, Edinburgh EH6 5NP.

Saukko, P. (1998) *Poetics of voice and maps of space: Two trends within empirical research in cultural studies* European Journal of Cultural Studies, 1, 2, 259-275.

Slim, H. and Paul (1993) *Listening for a change: oral testimony and development*. Panos Publications.

Slocum, R., Wichhart, L., Rocheleau, D., & Thomas-Slayter, B., (1998) '*Power, Process and Participation - Tools for Change'*, Intermediate Technology Publications, London.

Sterk G and Hagis J (1998) 'Farmer's Knowledge of Wind Erosion Processes and Control Methods in Niger' *Land Degradation and Development* 9:107-114 (example of people and science coming together)

Sutherland A J, Irungu J W, Kang'ara J, Muthamia J and Ouma J (1999) 'Household food security in semi-arid Africa: The contribution of participatory adaptive research and development to rural livelihoods in

Eastern Kenya' *Food Policy* 24 (4): 363-390 (discusses methods used to assess food security, useful paper)

Thompson, J., '*Participatory approaches in government bureaucracies: facilitating the process of institutional change*', World Development, v23, No.9, pp1521-1554.

Uphoff, N., (1992) '*Local Institutions and Participation for Sustainable Development*', Gatekeeper Series, No.31, IIED, London.

Yow, Valerie R. (1994) *Recording Oral history: A practical guide for social scientists*, Sage: London.

Appendix D
Expedition reports:

The Royal Geographical Society (with The Institute of British Geographers) maintains a collection of past expedition reports. Many of these expeditions, supported by the RGS-IBG, used PRA techniques. If you would like to consult these reports, please make contact with the Expedition Advisory Centre who can help you identify those most appropriate to your needs and arrange an appointment for you to visit.

All expeditions are encouraged to register their plans with the Expedition Advisory Centre Database of past and planned expeditions to help develop a network of expertise of benefit to all those planning expeditions and fieldwork overseas.

Appendix E
Useful addresses and websites:

BRIDGE a development and gender website (www.bridge.ids.ac.uk)

Envirolink (http://www.envirolink.org)

Environment matters - the environment magazine of the World Bank (http://www-esd.worldbank.org/envmat)

DEVLINE host to several useful environment and development resources (http://www.ids.ac.uk)

Directory of Development Organizations (http://www.devdir.org/)

ELDIS (www.eldis.org) environment and development website with useful search facility and online publications

FAO - Food and Agriculture Organisation of the United Nations (http://www.fao.org) online papers and journals available

Institute for Development Studies (IDS) University of Sussex, Brighton, BN1 9RE produces a useful resource guide including a 'participation reading room' Website: www.ids.ac.uk

ID21 (http://www.id21.org) provides summaries of 'problem solving work on critical development dilemmas around the world'

International Institute for Environment and Development (IIED)
3 Endsleigh St, London WC1H 0DD.
IIED will be able to provide your team with all the necessary information and advice on matters regarding the application and uses of PRA.)
Website: www.iied.org.

IIED also produce *PLA notes*. These provide useful examples of people's experiences with participatory methodologies (check the IIED website).

IIED video: *Questions of Difference: PRA, Gender and the Environment*. Irene Guijt. (Excellent two hour video illustrating different methods and case studies from around the world. Designed as a training tool. Not cheap!)

IUCN - World Conservation Union (http://www.iucn.org) sections on communities, natural resources etc.

One World – (http://www.oneworld.org). This site contains hundreds of links to organisations (including IDS, IIED and many developmental organisations) around the world committed to social justice. It also has up-to-date news information, a book service, action network and opportunities for further training, volunteers and jobs.

Refugees Studies Programme, Queen Elizabeth House, 21 St Giles, Oxford OX1 3LA (email: rsp@qeh.ox.ac.uk)

Real Time Video are based in Reading and specialise in participatory video with local people.
Website: www.real-time.org.uk

RGS-IBG Developing Areas Research Group
http://www.gg.rhul.ac.uk/DARG/events.htm

Technical Centre for Agriculture and Rural Co-operation (ACP-EU)
(http://www.agricta.org) online journal and information for countries with
Africa, Caribbean and Pacific.

UNDP - United Nations Development Programme (www.undp.org)

World Bank (http://www.worldbank.org/html/extdr/thematic.htm) Have sites
on environment, participation and rural development and agriculture

WRI - World Resources Institute (http://wri.org) useful social and
environment data available