Guidelines for adapted Multidisciplinary Landscape Assessment methods for fire management projects in India

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Center for International Forestry Research (CIFOR)
CIFOR advances human wellbeing, environmental conservation and equity by conducting research to inform policies and practices that affect forests in developing countries. CIFOR is one of 15 centres within the Consultative Group on International Agricultural Research (CGIAR). CIFOR's headquarters are in Bogor, Indonesia. It also has offices in Asia, Africa and South America.

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Foreword

We are increasingly faced with the realisation that our planet is reaching its limits when it comes to supporting the species that has probably had the greatest impact on its functions: humans. We have known for a long time that we are living in an environment with limited resources and that the way we live today cannot continue forever. The changes in the climate that we are starting to observe today and the insight that the effects of climate change will continue for another 100 years or more, even if we do everything in our power to stop it, makes this knowledge painfully visible.

There is, however, a positive side: our Earth is a life-supporting system. Since life first appeared on this planet, it has proven that not only can it overcome all sorts of obstacles and tremendous changes, but also that it can create its own conditions and therefore support itself. If we understand the functioning of this life-supporting system, we can use that knowledge as a good base to sustain our existence without too much pain or discomfort.

Fire was an instrumental element in human development, and continues to be one of the major tools we use to exploit our planet's resources. Yet it is dangerous too – learning how to handle it will give us an advantage.

Estimates in the literature suggest that up to 10 per cent of the Earth's surface burns each year. Many of these fires begin naturally, as they always have during the course of evolution, but a great many are also started by humans.

It is very difficult to estimate at a global level the extent to which fires have human or natural causes. For India, however, we have some evidence that almost all of the fires on the landscape are set by humans. Fires have been, and are still, used for a huge variety of reasons, including to reduce fuel and manage wildlife habitats, to stimulate the growth of plants useful to humans, to clear forests to grow food crops, to create pasture or to enhance non-wood forest products. Yet we have very little knowledge or understanding of the human–fire–nature system in India. For example, what are the ecological and socioeconomic drivers of fires? And what are the consequences of fires for forests, and for forest-dependent peoples? This lack of knowledge makes it very difficult to develop systems that enable us to manage forests—one of our most important natural resources—wisely and less wastefully than they are managed today.

To build this knowledge we need tools that enable us to assess why people use fire, how important it is for them and how fires affect the ecology of the landscape. CIFOR has developed, under the leadership of Douglas Sheil, the Multidisciplinary Landscape Assessment (MLA) with exactly this aim: To learn more about how local people manage their landscape and use this local knowledge as a basis for more inclusive decision-making.

With the help of CIFOR, we have selected some of the MLA tools and modified them for specific research questions regarding forest fires in India. The first draft of the fire MLA now in our hands is for internal use and is designed to help us, in the future, to educate practitioners and researchers working on the topic of forest fires in India. We will employ this methodology widely and, as our experience grows, we will be able to add to this document. We hope that soon we will have a well-developed tool that can contribute to the wise and efficient use of a natural resource on which our very existence depends.

Joachim Schmerbeck and Ankila Hiremath
New Delhi, December 2009

About these guidelines

The purpose of these guidelines is to provide steps for applying an adapted MLA method and examples of how to use the MLA method in relation to fire management projects. These guidelines were written and used in both theoretical (classroom) and practical (field) sessions with our project partners, with the expectation that they would be able to conduct the MLA field activities independently.

The guidelines consist of four MLA activities related to fire management, which were selected for use in this project. These guidelines begin with a brief explanation of MLA. In the first subsection in section two, we explain the importance of community meetings in the early stage of MLA implementation in the field. In the second subsection, we describe participatory mapping, which is used to locate the distribution of important natural resources for local people. In the third subsection, we describe the interview and household survey. All questionnaires used for the interview and household survey have been modified as required to align with the project objectives. And in the fourth subsection, we describe the scoring exercise or PDM (Pebble Distribution Method), which is the strength of MLA activities in assessing the importance of landscape features. All the MLA data used in the field are included in the Annex.

These guidelines are an adaptation of the original MLA publication and tools created under CIFOR, enriched by experience from the project.

1. Introduction

In 1999, in collaboration with a range of partners, the Center for International Forestry Research (CIFOR) developed methods for assessing 'what really matters' to communities living in tropical forest landscapes.

Known as 'MLA' (Multidisciplinary Landscape Assessment), this approach enhances understanding between development practitioners, policy makers and forest communities. The intended result is empowered communities and better-informed decisions on policy, land use and payments for ecosystem services, which will improve forest conservation, protect the needs of local people and advance the wiser management of tropical forests.

In line with fire management projects in India (www.forestfireindia.org), the MLA methods were adapted to assess local people's perceptions about the role of fire in their livelihoods, and the socio-cultural and economic drivers of fire occurrence. Analysing this information will help us to identify the reasons for forest fires, their link to existing forest formations and their role in the supply of ecosystem services (ES). This will help us not only to extend the approach to other areas, but also to discuss the findings with decision makers, forest managers and local communities with the aim of implementing these findings in forest and landscape management.

Figure 1. Example of a fire-affected landscape in India

What is MLA?

What?

MLA stands for Multidisciplinary Landscape Assessment. It is an approach for assessing 'what is important to local communities', while making a comprehensive biophysical assessment of the landscape in which they live. This provides a diagnostic baseline of information to develop a deeper dialogue with communities, to guide future research and to make recommendations about land use and policy to decision makers.

Why?

The MLA approach was developed in order to generate biodiversity information with relevance for land use planning, including conservation. It improves understanding between local people and outsiders (researchers, local government or conservationists) regarding the importance of natural resources, sites and their use.

Who?

CIFOR's Biodiversity team developed the approach in East Kalimantan, Indonesia, in collaboration with staff from the Indonesian Forestry Research and Development Agency, two Indonesian universities, an NGO and two experts, one each in anthropology and economics.

What is the essence of MLA?

- MLA is about understanding how local people see their environment, resources and threats and their priorities in regard to biodiversity and the landscape. This improved insight can only come about if researchers keep an open mind and have a genuine interest in understanding the local perspective. Therefore, attitude is important.
- In an MLA survey, a biophysical survey is closely integrated with a survey of local perspectives.
- An MLA survey provides information to local stakeholders that is relevant for land use and conservation decision-making.
- MLA is NOT just collecting indigenous knowledge about natural resources.
- MLA is NOT just doing Pebble Distribution exercises about the importance of forests or participatory mapping.

Six important steps in an MLA survey:
1. Gaining acceptance and building a shared understanding with communities.
2. Asking what occurs where (as in classical biodiversity assessments).
3. Asking why it matters to local people.
4. Diagnosing (evaluating implications and possible courses of action).
5. Sharing insights and implications with stakeholders.
6. Assessing stakeholder feedback.

2. The adaptation of MLA methods for the Fire Management Project

The MLA guidelines were developed and modified in order to cover all information required. For these guidelines we prepared the data sheets and questionnaires required for the village-based activities. Information was collected through direct interviews with key informants and group discussions and from the scoring exercise or Pebble Distribution Method (PDM), which required involvement by all residents (men, women, young and old) in each village.

The data matrix was established in 2008 during the first MLA (1) workshop in Andhra Pradesh. This matrix consists of the target information and participatory tools for Forest Fire Management in India (Table 1). We then developed the adaptation of MLA for fire management projects. We decided to conduct four activities to be implemented in the field (Table 2):

1. Community meetings
2. Participatory mapping
3. Personal interviews and household surveys
4. Scoring exercises (PDM) and focus group discussions (FGD)

In the Indian case, the household survey, although initially planned, was not done because there was not enough time. Conducting the survey will be important for future activities in India; as such, it was discussed during the final workshop (as it is important to know whether people with different access to resources/livelihoods manage fires differently).

2.1. Community meetings

Community meetings are important for introducing the team members and the activities to the community and for answering the many questions or concerns they often have.

Ideally, preliminary contact with villagers has already been established before the meeting, and so the survey of the area is part of an ongoing commitment with them. In our experience (India), it is beneficial to have a strong partner in the field who has already established a good relationship with villagers. In any case, it is necessary to get permission from the village head or community representatives before embarking on any activities.

Essential points for the first community meeting

- To ensure broad attendance, go and talk to people personally beforehand. Consider offering refreshments (food or drinks) as an incentive to attend.
- Ensure the whole team maintains the right attitude: do not rush anyone, and repeat yourself whenever asked, listen as much as you talk, ask for people's input, welcome questions and check schedules.

Table 1. Data matrix: target information and its sources

Target information	Source of information									
	Community meeting	FGD	PDM	Seasonality	Remote sensing	Transect walks	Community mapping	Interviews with key people	Vegetation survey of LU	Official records
Administrative setting of the village**										X
History of the settlement**								X		X
Existing Landscape Units (LU)						X	X			X
Importance of LU			X							
Landscape users: LU, FT, UC (motivation)	X	X						X		
Seasonality of fire use, occurrence, hazards, collection of forest products, festivals (forest), LU management				X						
Fire regime of LU (type, frequency, extent and seasonality)	X	X				X	X	X	X	
Importance of fire type (back or head fire)**			X							
Ecosystem Services from LU			X							
Importance from ES			X							
Vegetation of LU						X	X		X	
Influence of fire on vegetation		X				X			X	
Management systems for LU	X	X						X		
Importance of existing management practices			X							
Reasons for fire		X						X		
Importance of reasons for fire			X							
Fire control mechanism		X					X	X		
Social/legal background of fire use		X						X		X
Fire history					X			X		X

** Lower priority; LU – landscape unit; FT – forest type; UC – use category; ES – environmental services

Table 2. Data collection and information using adapted MLA method for village-based surveys

Activity	Information	Aims	Material/Method
Community meeting	To collect information on: • landscape units and forest types (can be parallel to the community mapping (PLA)) • use categories and motivation • management practices • fire types	• Introduce survey and team explain research and reason for doing the study	• Data sheet
Participatory mapping	Listing and mapping of: • landmarks (settlements, roads, etc) • extent of (used) village land • land units (terrain/cover/use), local names • specific resources Placing symbols on maps, e.g. for: • forest ,agricultural land, grazing, rivers, etc	• To collect information on natural resources, specific location & local view in geographical framework • Land use change	• Data sheet • Basic map • FGD
Interviews	• Village overview and traditional community • Household surveys • Land use features • Forest management by community • Fires: pattern, type, burnt area, occurrence, motivation, religious use • Traditional control of fire • Legal provisions of forest fire	• Survey on social economy and culture	• Data sheet • Questionnaire • Interviews with village leaders, key informants, • Household survey (max. 30 HH)
PDM & FGD	• PDM on land type • PDM on forest type • PDM on reasons for setting fire • PDM on existing management practices • PDM on fire types by landscape units • PDM on fire types by forest types • FGD on impact of fire to forest vegetation and specific landscape units • FGD on fire regime in specific landscape units • FGD for landscape use	• To determine the importance of natural resources for local community • To understand the traditional motivations of using fire as a management tool	• Data sheet • Questionnaire

- In all the societies we've worked so far, you go and meet the village head or elders before embarking on a project such as the MLA survey and ask for their permission.
- Introduce the team and the activities to the community at large and answer questions.
- Make sure the survey objectives are very clear and all team members are able to present them. We suggest preparing a briefing note together, for the team members' reference (see Box 1, 'Briefing note').
- Ensure community members' role has been defined, and whether it includes payments (or not).
- Indicate possible outputs and benefits, but be aware of raising expectations.
- Discuss participants' experience with approaching communities in the area for which a survey is planned.
- Consider the cultural and political setting. What obstacles might there be to the team's acceptance?
- If possible, use an experienced facilitator.

Box 1. Briefing note (sample)

It is important that all team members are able to provide consistent, clear and honest answers to common questions. The notes below offer an example of common organisation/research information for all team members to note and understand.

Commonly asked questions about what the research organisation (X) does.

X is a research organisation; it does not make money by buying or selling anything. It does research in many countries, not just Indonesia (or India). It is interested in how people use the forest, and how to protect the value of the forest and the quality of the environment while also helping local people to improve their living standards.

Please do not expect too much from us, the researchers. We do not have any power other than to provide better information to those who require it. We believe that some of what we do may sometimes prove helpful in informing and guiding how the government and other organisations decide to plan and act.

The money X spends is not ours. Our activities are paid for by many countries such as Japan and America as well as by Indonesia; these countries want to know more about this part of Kalimantan and want to promote development that is better for local people and the environment. We have to tell these countries and governments how we have spent their money, and they have to be satisfied that we are spending it for the agreed activities or they may stop supporting us. For this reason we cannot easily contribute when asked for money – even when the reason for request is clearly a good one. Please understand that it is not our money to give freely.

Many of our questions and activities may appear strange or even foolish. When our demands and questions seem excessive or unreasonable, we ask for your forgiveness. We are grateful for your tolerance and understanding. X hopes to work in this area for some years to come. But this will depend on our ability to gain support and continued funds.

Guidelines for community meetings

1. Arrange a meeting in a community building.
2. Agree a time with the leader (in the Indian context, it could be after breakfast or sometime in the afternoon).
3. Personally invite all the leaders of the village and as many residents as possible.
4. Start by introducing all the team members.
5. Encourage members of the community to introduce themselves/their village. Get background information about the village: population and number of households, ethnicity, people's present activities, etc. Do they have time to participate in some way? If they do, when do they have time?
6. Introduce the project's aim in the region.
7. Explain the background of this study, and the role of our organisation(s) – including what we can and cannot offer to the community. Avoid making any promises.
8. Explain survey objectives.
9. Describe the research activities and what they intend to achieve and provide. Explain how the community can participate, and how we would like them to help and advise us.
10. Explain key aspects of the research schedule and activities and listen carefully to identify any problems or conflicts with local activities. Make a first attempt to define an acceptable schedule for main activities.
11. Explain possible local involvement: research assistants, translators and interview assistants (field assistants, cooks or domestic helpers, purchasing of local food). Address wages and responsibilities.
12. Through informal discussions, start to identify field experts and key informants.
13. Invite questions and attempt to provide clear and honest answers.
14. Check that the community members are happy with the proposed activities – seek to clarify if there are specific aspects that may be unacceptable. Be willing to accept restrictions. If they are not satisfied, make sure that the discussion is open until you reach a compromise with workable solutions.
15. Arrange a follow-up meeting with full community participation for mapping, etc.
16. Close the meeting. Begin to schedule activities based on likely availability.

Obviously, this may need to be adapted for the culture you are working in. Knowing some of the community members by name before the first meeting and being able to refer to particular issues of importance to the village might help acceptance.

Community meeting exercises

Role play

- A volunteer facilitator prepares an introductory presentation of the project to 'the community' (played here by training participants)
- Other participants assume roles as community members*
- Appoint two observers
- Agree a time limit (10–15 minutes)

Play … and then discuss

- What did the facilitator think and feel about how she/he reached the audience?
- What did the community/audience think and feel about the presenter?
- What did the observers note?

Derive general principles from this discussion.

In the discussion afterwards

Discuss how the facilitator responded to situations; keep this general, as it should not be a judgement of her/his performance. For example, a common problem for inexperienced facilitators is feeling you **must** answer people's questions, whereas it would be better to check/talk with the team first.

Very important: **practice what you preach**! If you tell the community that it is their views that will count in the survey, you should show utmost respect for their views in such meetings too and be open to suggestions!

Another good follow-up activity to this exercise might be drafting a presentation for such an introductory community meeting: how do you present the project to a community? Consider different options (depending on the level of literacy, availability of electricity, expectation of resistance, etc?)

Preparing an introductory presentation in writing may help participants to focus on the details. However, point out that apart from the words, it is very important to pay attention to your manner in presenting the introduction, the response to questions and the attitude of all attending.

Figure 2. Simulation of a community meeting during the training session

Figure 3. Community meeting in Bathinigaaripalli Thanda, Andhra Pradesh, India

2.2. Participatory mapping

In previous MLA surveys, participatory mapping was used as a means to build a shared reference from the beginning, while also gathering information on natural resources, special sites, local names and terms. The mapping usually takes place at the same time as the community meeting at an early stage of the survey.

At the end of the mapping session(s), you will have the following:

- an annotated base map (incl. topographical features such as rivers, streams, lakes, mountain peaks, villages and their local names)
- lists of community terms for resources, special locations, soils and land use
- distribution of features etc marked on the map as symbols

People of different genders and ages often know different details about the community territory (e.g. agricultural areas vs fishing/hunting grounds or NTFP collection areas). Therefore, they can be asked to work in separate groups, with the maps later combined into one. (We did not do this during the training sessions because of lack of time.)

Alternatively, mapping can be done in one group, with everyone contributing to the community map on the first evening (an example from the Indian case).

We usually display the draft community map(s) publicly, to be available for reference in discussions, to plan the fieldwork sites and to give all community members a chance to suggest additions or corrections.

The final map often becomes one of the survey products most valued by the communities.

Participatory mapping may be a sensitive activity in a given political or cultural setting, especially where it is conceived as confirming or empowering communities in their demand for land and/or recognition of ownership.

The best you can do in the context of an MLA survey is to keep emphasising to all involved that the community resource maps do not form a claim to land or resources and have no legal status.

Involving local government in the activities may be one way to remove any suspicion, but may also make the community members uneasy about expressing themselves.

Be aware of conflicts between neighbouring communities, and consider carefully whether to embark on mapping exercises in situations where hostilities are already 'under the surface'.

Consider if conflict resolution is part of the programme's objectives and if there is sufficient expertise to handle conflicts.

Consider unforeseen use of maps. For example, in Malinau (Indonesia), one individual used a community map to negotiate the sale of land to an investor.

Figure 4. Community members drawing the landscape using colour

How to make a base map for participatory mapping

We usually started the participatory mapping with community groups on base maps. These were made on large sheets, and contained at least rivers, village(s) and mountain peaks (no elevation lines as this confuses people a lot). In India, it often happens that topo sheets to create a base map are not available. In this case, tools for remote sensing have to be employed. For the cases where this cannot be realised, we worked with transect walks and pictures of different landscape units or forest types, but these alternatives are not well established and integrated yet.

How are the base maps made?
1. Collect and compile suitable information from all available maps of the area (major visible features, particularly rivers, roads, villages, logging camps and peaks).

2. With local informants and a basic map, do a transect walk to collect GPS points and check local names of places around the village, at forks of main tributaries and at road intersections. Add these to the base map.
3. Prepare a base map by tracing** main rivers, tributaries, locations of present villages and landmarks, with the local names as provided by informants. Do not try to put as much as possible on these base maps, but rather select the visible, clear features that local people relate to.
4. Where local names were provided by informants, include them on the base map.
5. Cross check the map with the one made during the first community meeting. People in Andhra Pradesh, India, for example, drew their resource map during the first meeting on the ground, using dust and coloured marks.
6. Make sufficient copies for the next community mapping activity on large sheets of paper (A1 or A0).

Notes

** We had to be prepared for cases where these base maps have to be made in the field where no printing facilities are available. Therefore, we simply traced these features on tracing paper laid over the satellite image.

You may use digital layers of topographical information if it is available to you when you still have access to GIS computers and printers/plotters.

It can also happen that community members are not familiar with maps and that they cannot create or even read them. In this case, you can use local knowledge as in the case in India by using coloured sand/powder to draw the local landscape briefly but this is not suitable for the final map product. Identify the community reference points on this map. On a pre-prepared map that is to-scale and that has the necessary basic information as described above, identify these reference points. Let the participants explore their landscape based on these points.

Choice of base maps

Different bases for mapping with local communities have been tried out, often in the context of PRA exercises, as we did in Andhra Pradesh. Discuss the pros and cons (see Table 3) of each of these based on notes below:

- an empty, smooth space on the ground, using natural materials to mark features
- a large blank sheet of paper, using coloured pens and pencils.
- a base map with a few geographically correct features (prepared by team) such as main rivers and road (if any).
- enlarged aerial photographs and even three-dimensional models!

Notes

Discuss how to choose between the above options for base maps based on the following: availability of topographical maps, air photos or satellite images; familiarity of community with maps; the use of unfamiliar tools (coloured pens); or even local people's reluctance to spoil 'official-looking' maps.

Table 3. Pros and cons of different choices for base maps in participatory mapping

	With a base map, on paper	Without base map, on ground
Pros	• Base map has geographically referenced features; easier to transfer to official map/GIS model later. • The result can be displayed in public places, used as reference for discussions with community members; people can see their contribution and correct/add • May also start on blank paper. If large enough, may feel less restrictive to people. They can choose their own way of showing how the landscape looks directly from their perspective.	• People not worried about spoiling valuable materials such as paper. • Fewer spatial limitations – can always expand the ground map. • Natural materials may be more associative for resources than symbols (especially for illiterate people). Stones, leaves, branches of tree, seeds, coloured powder etc may be used. • Marks can be easily changed.
Cons	• People are often not familiar with maps (i.e. projections of real features on a flat surface). • People may be afraid of spoiling the 'official-looking' maps and feel inhibited. • Drawing and writing cannot easily be changed/erased unless using pencils.	• Result is temporary and needs to be transferred to paper or photographed. • No geographic reference, which means it is hard to transfer and analyse information.

Instructions for participatory mapping

- Explain the process of mapping to the participants. It should take two sessions of 2-3 hours. Schedule your time.
- Before they even look at the base map, list together with community members which landscape units, soil types, resources etc. they recognise and want to map.
- This is where you learn the terms people use, which will be adopted for the survey. Ensure common understanding of terms and consensus (cross check with quiet people).
- You may consider developing a data sheet for this. See data sheet for community meeting.
- Divide the community in groups for the mapping. Make sure there are a facilitator/ secretary for each group who is responsible for writing things down. Ensure each group includes someone who speaks the local language and Indonesian and is willing to help explain and answer questions as they arise. Arrange for other team members to circulate and help as needed.
- Suggest the groups start with put in the locations villages, adding names to the rivers, abandoned villages, graveyards, sacred sites, and restricted access areas. Then ask them to draw the location of important resources, special places and soil types on the map. They need to develop symbols for these first.
- Encourage participants to list and name: types of land use; different types of land and landscape elements; types of natural resources; types of soil drainage (e.g. swamp); special features, natural and anthropogenic – suggest limestone, forest area blown down by wind, waterfalls, graveyards.
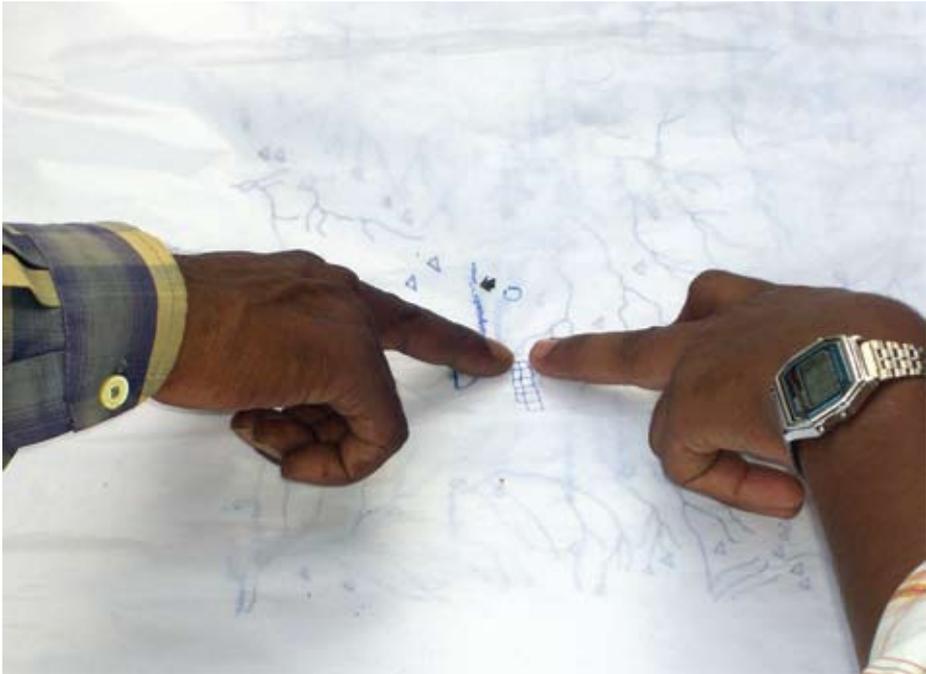
Figure 5. Example of participatory mapping in Bathinigaaripalli Thanda, Andhra Pradesh, India

- Pay attention to who is attending the meeting? Watch out for bias, lack of input by minorities.
- The village team then compiles all maps drawn during the community meeting into one or more 'master maps'. This map can be updated, corrected each day. The final map and the maps drawn during the community meeting are returned to the village before the team leaves for the next location.

Participatory Mapping Exercises

- Make sure that participants have full understanding of the different maps available including the meaning of scale and symbols.
- Ask participants to present some real life experiences with participatory mapping, then try to generalize pros and cons of different choices.
- Make a base map together; selection of features.
- Make participants the 'local informants' and ask them to map the direct surroundings of the training location.
- Discuss principles of participatory mapping.
    - Usually the mapping is done in groups of potentially different interest (e.g. men-women, young and old), and later the maps can be combined
    - Community members draft their own legend; use their own classification and selection. Facilitators just asking for clarification, making sure categories are not overlapping
    - Consider the pros and cons of participatory mapping.

Participatory mapping can be combined with or followed by transect walking. This is an effective and fun way to increase understanding of how people name and classify their landscape.

2.3. Interviews and household survey

The original MLA survey included a wide range of interviews and questionnaires, targeting different community members. See Table 4 for an overview.

Table 4. Overview of interviews and household survey

Emphasis of data collection	Method
Village description/perspective of land use	Interview with village head only
Cultural background of land use	Interview with traditional leader only
Demography	Household survey (Census) and documentation from village head
Price of traded goods	Interview of shop keepers
Household survey (includes questionnaire of problems and aspirations, with comments on needs and solutions)	Interview of head of household of at least 30 households
Traditional knowledge of land use	Interview of 3–5 key informants
Forest product collection and sale	Interview of 3–5 key informants
Settlement history and land use	Interview with village head and traditional leader
Disasters and important events	Interview with village head and traditional leader
Identification of land and forest types	Community meeting (with mapping exercise)
Identification of forest products	Community meeting
Scoring the importance of landscape units	Focus group discussion. Women/men, old/young separate
Scoring changes in importance of landscape units and natural resources over time	Focus group discussion. Women/men, old/young separate
Scoring how distance of landscape units influences importance	Focus group discussion. Women/men, old/young separate
Scoring the importance of different sources of products	Focus group discussion. Women/men, old/young separate
Scoring the most important species per use category of forest	Focus group discussion. Women/men, old/young separate

Interviews

- Compare methods (open, closed, guided)
- Whom to interview? How many are needed for a good sample? Language? Duration?
- Firstly consider carefully what questions to ask whom (key informants, focus groups, 'everyone' (household survey)
  - How to ask unambiguous, non-leading questions
  - You may want to follow people on their daily activities in fields or forest when interviewing them about their livelihoods; you learn a lot from asking questions directly where things are happening; why do you do it this way, how do you select, how do you recognize that this is good land, etc.

Household survey

- Developing a good questionnaire or checklist for interviews needs due attention and enough time.
- Even before developing questionnaires with your team members, make them aware of 'bad questioning' in interviews. See here for a suggested exercise
- Plan a try-out before administering to all recipients! That will reveal things you have never thought of before!
- Questionnaire used in Malinau. Just look at it as an example; you need to develop your own questionnaire, adapted to the specific survey objectives and area specifications.

"Open mind"

- Interviewing should not just be about 'getting data', but rather about 'gaining understanding'
- This requires a good rapport with people, as well as
- an open mind, without pre- conceptions.
- Do not stop asking clarification till you have really understood an answer!
- E.g. an informant says "the river is the most important place for him in providing firewood". Do not just write that down when it does not make sense to you. Rather ask follow-up questions like "but there are no trees growing in the water, how can it provide firewood?" or "Do you mean the trees that grow on the riverside?" etc. Little by little you may find out that this river often carries dead tree trunks from upstream after a storm and deposits them on the beach in front of the village. Once they have dried in the sun, they are a great source of firewood.

Guidelines and suggestions for interviewing

1. You go to them.
2. Try and keep interviews private with as few people as possible; personal relationship and political power may influence responses.
3. Establish rapport. Put informant at ease.
4. Relax, watch posture and body language.

5. Explain purpose.
6. Explain confidentially rules.
7. Lay down ground rules-be clear that if they don't know an answer that's all right.
8. Keep it short, watch time and watch for fidgeting, changing the subject, lack of attention. Stop or call a break if necessary. Don't rush.
9. Be patient and easy going, but serious.
10. Use simple language; prepare alternate ways of asking the same thing.
11. Never lead an informant by suggesting an answer or giving your own opinion: be patient and give respondent time to think.
12. Determine and respect local views, rules and rites (an example we found relevant was that men could not interview women alone, case study in Kalimantan, Indonesia).
13. Use lack: leave sensitive issues to the end or a second interview.
14. Don't force informants to answer.
15. Allow informants to talk and even drift from the questions a little, but not for too long.
16. Have props, maps, or pictures to help you explain an idea.
17. Activities, such as map-making, are good for maintaining interest.
18. Accept their hospitality and offer some compensation for missed work, but do not buy information.
19. Don't make promises.
20. Make sure you thank your informants. Leave open the possibility that you might need to return to check information.

Semi-structured Interviewing Exercises

What is wrong with the question?

Objective: to illustrate to participants the details of ambiguous and leading questions; to encourage them to avoid such unsatisfactory interviewing techniques

Materials needed: prepared list of ambiguous and leading questions

Time: 20-30 minutes

Procedure
1. Ask participants of they understand what an ambiguous question is and what a leading question is and reach agreement on this.
2. Read out a range of questions (see examples below) or give out a prepared sheet and ask the group to identify what is wrong with each of them
   a. Is it true that it is difficult to find resource x these days?
   b. How do you get your construction wood?
   c. Wouldn't you prefer if your children could go to school nearby?
   d. Isn't it great that you can now use the logging road to get to your fields?
   e. How do you find the new health clinic?
   f. Shouldn't it be better to plant perennial crops here?
3. Then ask them to rephrase it in a less ambiguous or more open-ended fashion

Discussion

Often the discussion will lead to questioning whether ambiguous or leading questions are always bad. Good opportunity to stress there is no absolute correct or incorrect question and that it will depend on the stage of the interview, the topic and context. In general, participants should become aware of the need to word their questions carefully.

Emphasize that leading questions lead the respondent o say yes or no, whereas an open-ended one that uses what? how? when? or who? opens up the conversation. There may, however, be occasions where a closed question is correct and necessary.

2.4. Focus Group Discussion and Pebble Distribution Methods

2.4.1. Focus Group Discussion

A focus group discussion (FGD) is a facilitated discussion of a group which consists of five to seven participants/villagers on a focused topic related to landscape, e.g. Fire types and regimes on specific landscape, fire impacts on types of vegetation.

Length of discussion for each session can be arranged with the group member, but normally it should be set for not longer than two hours. As important as asking the right time to the member for doing discussion, this timeframe proposed to ensure people's concentration and attention on the issue.

There are examples of datasheets for the FGD in this guidelines (datasheets 9 - 11), which are open to be modified on different issues and questions.

The use of FGD

1. Focus research and develop relevant research hypotheses by exploring in greater depth the problem to be investigated and its possible causes.
2. Formulate appropriate questions for more structured, larger scale surveys.
3. Help understand and solve unexpected problems in interventions.
4. Develop appropriate messages for health education programmes and later evaluate the messages for clarity.
5. Explore controversial topics.

Important point when preparing FGD

a. Recruitment of participants:
   Participants should be roughly have a similar background in relation to the issue under investigation. Participants should be invited at least a day or two in advance (preferably during community meeting, see section 2.1), and the general purpose and procedures of the FGD should be explained, in order to obtain their consent to join.

b. Selection of participants:
   In early community meeting, villagers can be invited to join focus group discussion and form the groups.
c. Physical arrangements:
   Communication and interaction during the FGD should be encouraged in every way possible. Arrange the chairs in a circle. Make sure that there will be no disturbances, sufficient quietness, adequate lighting, etc. Try to hold the FGD in a neutral setting which encourages participants to freely express their views.
d. Preparation of a discussion guide:
   Datasheets can be treated as a written list of topics to be covered. It can be formulated as a series of open-ended questions.
e. Conducting the session:
   One of the members of the research team should act as 'facilitator' or 'moderator' for the focus group discussion. One should serve as 'recorder'. The facilitator should preferably be as close as possible to the participants in their characteristics (same sex, roughly same age, etc.).
f. Functions of the facilitator:
   - Introduce the session
   - Encourage discussion
   - Encourage involvement
   - Deal correctly with sensitive issues.
   - Build rapport, empathize
   - Avoid being placed in the role of expert
   - Control the rhythm of the meeting, listen and keep the allocated time
   - Take time at the end of the meeting to summaries, check for agreement and thank the participants.

2.4.2. Pebble Distribution Methods

The Pebble distribution method (PDM) is one of central components of the MLA surveys to date. People scored the relative importance of landscape units, resources, species, etc. on a scale of 1-100. It is a quick and fun procedure to clarify people's priorities.

Most insight, however, is gained by 'asking why?' after the scoring is done.

PDM is Not new: known since some decades from PRA surveys

In MLA, PDM applied as a practical method to assess importance of biodiversity to people who are partly dependent on wild resources

Do not take quantitative data to be absolute; they indicate relative importance
Most informative: asking what the scores mean, after obtaining them. That is how understanding is improved.

Figure 6. Training for facilitators in the field (left), PDM exercise with a village community (right)

Learning by doing

- Before talking about it in theory, let's first experience doing a PDM ourselves.
- The exercise is followed by a discussion to derive principles for its proper application.

How to do a PDM exercise?

- Categories to be scored (landscape units, resources, uses, etc) are determined together with community.
- Prepare cards with local terms and drawings for illiterate members.
- 100 counters of $\pm$ equal size are collected (pebbles, buttons, beads, matches).
- Prepare data sheets for recording the scores (must still be adapted for your own survey, e.g. categories of use).
- Selection of group members: age, gender, ethnicity, main livelihood?
- Ensure that categories and question are well understood before starting the scoring.
- Explanation of exercise; distributing counters to indicate importance. Everyone to agree before score is considered final and written down.
- Ground rules: e.g. 10 counters means twice as important as 5 counters! It is possible/acceptable to give a zero score.
- Facilitator observes and waits for consensus. Write down interesting remarks during the scoring.
- (S)he counts and writes down final score, checks that the total is 100.
- (S)he presents the results verbally to the group members, asking for clarification where needed.

Ranking-scoring?

- Do not confuse between ranking and scoring: ranking only orders items (e.g. increasing importance), but does not reveal how much more one is compared to the other. That is what scoring does.
- In MLA we have always scored out of 100. This has the advantage of allowing comparing between and combining scoring exercises.

Table 5. Scoring of 'importance' of different forest types and it represents the mean of four groups (men, women, old and young) in "Mutugadegadde" village, India (Rodrigo Thesis)

"Keredimba"	Marketable items	Food	Ceremony/ recreation	Firewood	Medicine	Fodder	Construction	Agriculture	Average
Forest types									
Kanu Kadu (*evergreen forest*)	22.3	18.8	20.5	20.3	20.8	20.0	17.8	21.3	20.2
Kollada Kadu (*riparian forest*)	17.8	19.5	23.0	18.5	18.8	17.5	19.3	14.5	18.6
Male Kadu (*deciduous forest*)	27.5	29.0	23.3	25.5	26.5	23.3	22.3	27.3	25.6
Boli Kadu (*shola forest*)	16.5	17.3	18.3	19.5	18.8	23.0	23.3	21.3	19.7
Nadu Kadu (*scrub forest*)	16.0	15.5	15.0	16.3	15.3	16.3	17.5	15.8	15.9
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Illustration of the difference between ranking and scoring

- You have asked two villages to rank the importance of 5 resources (a-e) for their livelihoods. The result is that both villages ranked them as a > b > c > d > e (where > means 'more important than'). It appears that these two villages are very similar in opinion (see figure 7).
- However, scoring with the same two villages reveals quite a different picture: in village 1 resource 'a' is more important than all other resources together, and e is even unimportant (zero score), whereas in village 2 people recognise significant importance for all 5 resources.
- You would not have realized this without scoring.

PDM Exercises

Firstly

Discuss and list all leisure time activities you regularly do.
- Agree as a group on 6-8 leisure activities you all do or have done.
- Write those on cards (+ symbol drawing).
- Agree on how to rank them as a group, in order of preference (which one would you choose to do first if your time was really limited).
- Then distribute 50 counters over the cards to indicate how much you, as a group, prioritize one activity over the other.
- 10 counters means twice as high a preference as 5.
- Check you all agree on the final result and then write it down.
- For comparison, you might also try it individually, as a second step. Then collect the results and average them: how similar is the outcome? In ranking terms as well as in scoring terms? What explains the difference?

Secondly (if time allows)
- Decide individually on scores for each activity.
- Note down individual scores and work out the average.
- Present the average scores in a table.
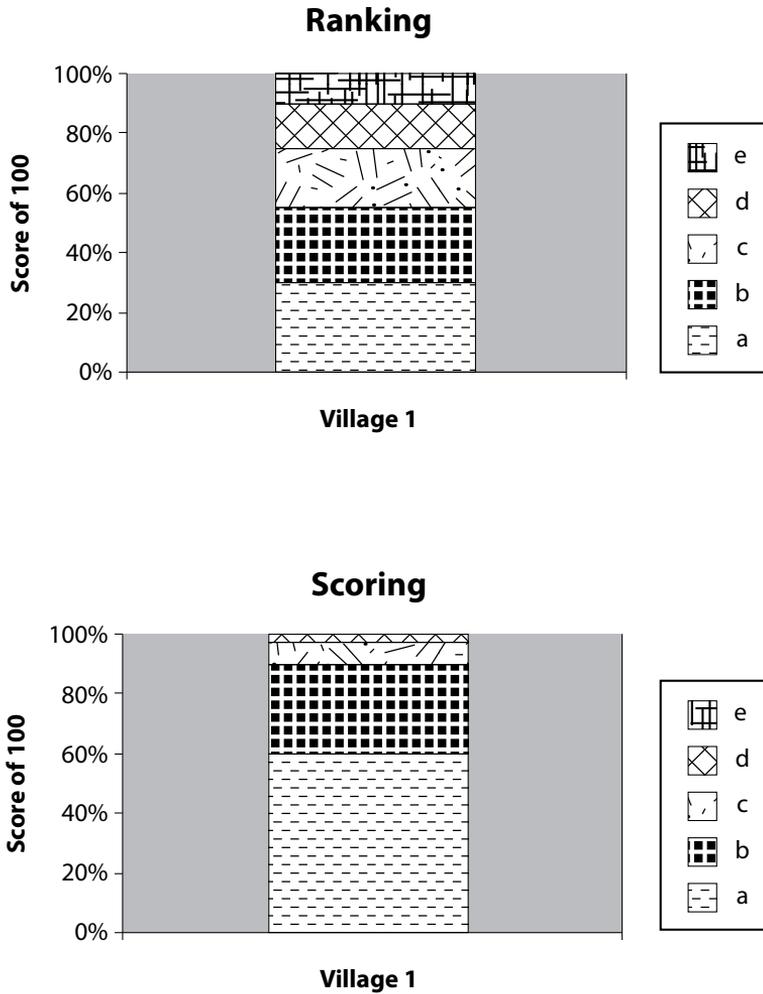
Ranking

Scoring

Figure 7. An example of the difference between ranking and scoring

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Annex

Data sheets for MLA for fire management in India

On the following pages, we provide data sheets for community meetings, PDM exercises and focus group discussions and questionnaires for key informants. All the data sheets include an example from related MLA studies in India. The purpose is to give our collaborators better understanding about how to fill in the data forms and to avoid misunderstandings due to lack of common terminology.

Data sheet 1: Community meeting for landscape units and forest types (Parallel to the community mapping (not to scale))
LU, FT, UC (motivation), MP, Fire types

Respondent		Date (day/month/yr.)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back			**Y**	**N**	This is page	of

No	Landscape units (Local name)	Landscape units (English)	No	Forest types (Local name)	Forest types (English)
1	*Adivi*	Forest	1	*Kanu kadu*	Evergreen forest
2	*Cheruvu*	Tanks	2	*Kollada kadu*	Riparian forest
3	*Thari Bhumi*	Wet agriculture	3	*Male kadu*	Deciduous forest
4	*Metta Bhumi*	Dry Agriculture	4	*Boli kadu*	Shola forest
5	*Kunta*	Lakes	5	*Nadu kadu*	Scrub forest
6	*Palle*	Village	6		
7			7		
8			8		
9			9		
10			10		
11			11		
12			12		

Note: Example of scoring of 'importance' of different land types in Andhra Pradesh, India (MLA 1 Workshop).
Example of Scoring of 'importance' of landscape units in BRT wildlife, India (Rodrigo Thesis).

Data sheet 2: Community meeting for use categories and motivation
LU, FT, UC (motivation), MP, Fire types

Respondent		Date (day/month/yr.)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back			**Y**	**N**	This is page	of

No	Use Category (Local name)	Use Category (English)	Raw material				Processing material		
			No	**domestic use**	**sale**		**domestic use**	**sale**	
1	*Gaddy*	Grazing							
2	*Vasaalu dulalu*	Heavy construction							
3	*Vyavasaaya*	Light construction							
4	*Chaapalu gampalu*	Basketry							
5	*Aahaaram*	Food							
6	*Mandulu*	Medicines							
7	*Veeta*	Hunting							
8	*Pandugalu jaatara*	Festival/recreation/ceremony							
9	*Gaddi*	Fodder							
10	*Ammukonutaku*	Marketable							
11	*Endukattelu*	Fuel wood							

Note: Example of scoring of 'importance' of use category in Andhra Pradesh, India (MLA 1 Workshop)

Data sheet 3: Community meeting for management practices
LU, FT, UC (motivation), MP, Fire types

Respondent		Date (day/month/yr.)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back			**Y**	**N**	This is page	of

No	Management Practices (Local name)	Management Practices (English)	Reason (Local name)	Reason for setting fire (English)
1	*Nerugundi*	Digging		Food Requirements
2	*Taragu benki*	Litter fire		Hunting (included access to game)
3	*Mara kapatu*	Pruning		Fodder (either domestic or wild animals)
4	*Sangarane*	Collection		Protection, Clearance
5	*Mevu*	Grazing		Pest management, weed control
6	*Sute*	Smoke		Agriculture (land preparation, fertilizer from ash)
7				NTFPs (collection)
8				Others (firebreaks, protection of especial sites, communication,)
9				
10				
11				

Note: Example of Scoring of 'importance' of management practices in BRT wildlife, India (Rodrigo Thesis).
Example of the main reasons for aboriginal burning practices which have directly involved local people in the research (Rodrigo Thesis).

Data sheet 4: PDM landscape units

Respondent		Date (day/month/yr.)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back		**Y**	**N**	This is page		of
Name of respondents/Age:						
1.		4.			7.	
2.		5.			8.	
3.		6.			9.	

Instruction:

1. Among the following landscape units on these cards, which one do you think is the most important? Please distribute 100 pebbles among the cards to express the importance!

2. For each of the use categories (food, medicine, etc.) on the cards, which type of land is the most important? Please distribute 100 pebbles among the cards based on importance of this land types!

3. *Please explain the scores means*

Landscape Units	**Overall UC**
Forest	
Agriculture land	
Grass land	
Hilly areas	
Swamp	
Plantation	
Village	
Total =	100

Note: Example of Scoring of 'importance' of different landscape units in BRT wildlife, India (Rodrigo Thesis).

Data sheet 5: PDM forest types

Respondent		Date (day/month/yr.)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back			Y	N	This is page	of

Name of respondents/Age:

1.

2.

3.

4.

5.

6.

7.

8.

9.

Instruction:

1. Among the following forest types on these cards, which one do you think is the most important? Please distribute 100 pebbles among the cards to express the importance!
2. For each of the use categories (food, medicine, etc.) on the cards, which type of forest is the most important? Please distribute 100 pebbles among the cards based on importance of this forest type!
3. *Please explain the scores means*

Use Category / Forest Types	Overall Use Category	Marketable	Food	Ceremony /recreation	Firewood	Medicine	Fodder	Construction	Agriculture			
Evergreen forest												
Riparian forest												
Deciduous forest												
Shola forest												
Scrub forest												
Total per use category = 100	100	100	100	100	100	100	100	100	100			

Note: Example of Scoring of 'importance' of different forest types and uses category in BRT wildlife, India (Rodrigo Thesis).

Data sheet 6: PDM existing management practices

Respondent		Date (day/month/yr.)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back			Y	N	This is page	of

Name of respondents/Age:

1.		4.		7.	
2.		5.		8.	
3.		6.		9.	

Instruction:

1. Among the following management practices on these cards, which one do you think is the most important? Please distribute 100 pebbles among the cards to express the importance!
2. For each of the use categories (food, medicine, etc.) on the cards, which management practice is the most important? Please distribute 100 pebbles among the cards based on importance of this management practices!
3. *Please explain the scores means*

Management Practices \ Use Category	Overall Use Category	Marketable	Food	Ceremony /recreation	Firewood	Medicine	Fodder	Construction	Agriculture			
Digging/*Nerugundi*												
Litter fire/*Taragu benki*												
Pruning/*Mara kapatu*												
Collection/*Sangarane*												
Grazing/*Mevu*												
Smoke/*Sute*												
Total per use category = 100	100	100	100	100	100	100	100	100	100	100	100	100

Note: Example of Scoring of 'importance' of existing management practices and uses category in BRT wildlife, India (Rodrigo Thesis).

Data sheet 7: PDM reason for Setting fire on landscape unit

Respondent		Date (day/month/yr.)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back			Y	N	This is page	of
Name of respondents/Age:						
1.		3.			5.	
2.		4.			6.	

Instruction:
1. Among the following reason for setting fire on these cards, which one do you think is the most important? Please distribute 100 pebbles among the cards to express the importance!
2. For each of the landscape unit on the cards, which reason is the most important? Please distribute 100 pebbles among the cards based on importance of this reason for setting fire!
3. *Please explain the scores means*

Reason for Setting Fire \ Landscape Units	Overall Landscape Units	Forest	Agriculture land	Grass land	Hilly areas	Swamp	Plantation	Village	Forest	Agriculture land
Food Requirements										
Hunting (included access to game)										
Fodder (either domestic or wild animals)										
Protection, Clearance										
Agriculture (land preparation, fertilizer from ash)										
NTFPs (collection)										
Others (firebreaks, protection of especial sites, communication,)										
Total per use category = 100	100	100	100	100	100	100	100	100	100	100

Note: Example of Scoring of 'importance' of reason for setting fire and landscape units in BRT wildlife, India (Rodrigo Thesis).

Data sheet 8: PDM reason for setting fire on forest types

Respondent		Date (day/month/yr.)		/	/	Village	
Checked by		Writer				Interviewer	
Written on back			**Y**	**N**	This is page		of
Name of respondents/Age:							
1.					3.	5.	
2.					4.	6.	

Instruction:

1. Among the following reason for setting fire on these cards, which one do you think is the most important? Please distribute 100 pebbles among the cards to express the importance!
2. For each of the forest type on the cards, which reason is the most important? Please distribute 100 pebbles among the cards based on importance of this reason for setting fire!
3. *Please explain the scores means*

Forest types / Reason for Setting Fire	Overall FT	Evergreen forest	Riparian forest	Deciduous forest	Shola forest	Scrub forest				
Food Requirements										
Hunting (included access to game)										
Fodder (either domestic or wild animals)										
Protection, Clearance										
Pest management, weed control										
Agriculture (land preparation, fertilizer from ash)										
Total per use category = 100	100	100	100	100	100	100	100	100	100	100

Note: Example of Scoring of 'importance' of reason for setting fire and forest types in BRT wildlife, India (Rodrigo Thesis).

Data sheet 9: FGD fire types on specific landscape units and forest types

Respondent		Date (day/month/yr.)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back		**Y**	**N**	This is page		of

Instruction:
To discuss with the group about the fire type on specific landscape unit and forest types

No.	Questions	Answers
1.	What kind of fire type based on the local perception?	
2.	Where they are located the fire on specific landscape units?	
3.	Where they are located the fire on specific forest types?	

Data sheet 10: FGD impact of fire on forest vegetation on specific landscape unit

Respondent		Date (day/month/yr.)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back		**Y**	**N**	This is page		of
Name of respondents /Age:						
1.		4.			7.	
2.		5.			8.	
3.		6.			9.	

Instruction:
To discuss with the group about impact of fire on forest vegetation on specific landscape unit.

No	Questions	Answers
4	Regeneration of plants	
5	Mortality of plants	
6	Vitality of plants	
7	Change in vegetation type in absence/presents	

Data sheet 11: FGD fire regime on specific landscape unit and forest types

Respondent		Date (day/month/yr.)		/	/	Village	
Checked by		Writer				Interviewer	
Written on back			**Y**		**N**	This is page	of

Name of respondents/Age:

1.	4.	7.
2.	5.	8.
3.	6.	9.

Instruction:
To discuss with the group about frequency of fire occurrence on each landscape unit (how many times per year)

Landscape Unit	**Fire frequency**				
	>1 per year	1 per year	1 in 3 yrs	1 in 5 yrs	1 in 10 yrs
Forest					
Agriculture land					
Grass land					
Hilly areas					

Forest Types	**Fire frequency**				
	>1 per year	1 per year	1 in 3 yrs	1 in 5 yrs	1 in 10 yrs
Evergreen forest					
Riparian forest					
Deciduous forest					

Note: Example of landscape units and forest type were taken from Rodrigo Thesis

Questionnaire 1: Key person

Respondent		Date (day\month\yr)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back			Y	N	This is page	of

No.	Questions	Answers
1	How did the settlement come into being? How long have you been here as a village?	
2	What are the sources of livelihood in this village?	
3	What are the activities you have been doing collectively in your village?	

Respondent			Date (day\month\yr)	/	/	Village	
Checked by			Writer			Interviewer	
				Y	N	This is page	of

No.	Written on back / Questions	Answers
4	Do you have any traditional rules and mechanisms for managing village resources, mainly the landscape units?	
5	Please describe the land use features of the village.	
6	What are the community arrangements for the management of forest?	

Respondent			Date (day\month\yr)			Village	
Checked by			Writer			Interviewer	
				Y	N	This is page	of
No.	Written on back					**Answers**	
	Questions						
7	Is there any collective arrangement for management of crop lands? If yes, what are they?						
8	How do you classify your forest?						
9	What is the pattern of fire pertaining to different landscape unit?						

Respondent		Date (day\month\yr)	/	/	/	Village	
Checked by		Writer				Interviewer	
	Written on back		**Y**	**N**	This is page		of

No.	Questions	Answers
9.1	What type of fire is generally observed in your locality? (Refer to local fire classification)	
9.2	What is the extent of burnt areas in each landscape unit?	
9.3	In which period of the year do you experience fire in various landscape units?	

Respondent		Date (day\month\yr)	/	/	Village	
Checked by		Writer			Interviewer	
			Y	**N**	This is page	of

No.	Questions			**Answers**	
9.4	How many times a year do fires occur in the different landscape units?				
10	What are the motivations behind setting fires?				
11	Are there any traditional rules/mechanism pertaining to forest fire use and control? If yes then,				

Respondent		Date (day\month\yr)		/		Village	
Checked by		Writer		/		Interviewer	
				Y	N	This is page	of

No.	Questions	Answers
	Written on back	
11.1	Are the traditional rules concerning fire use and control still functioning significantly here?	
11.2	How long will the traditional rules be valid and what are the reasons?	
11.3	To whom do the traditional rules apply and how are they maintained?	

Respondent		Date (day\month\yr)	/	/	Village	
Checked by		Writer			Interviewer	
Written on back			Y	N	This is page	of

No.	Questions	Answers
12	Are there any cultural/religious practices in connection to fire?	
12.1	If yes please describe such practices?	
13	What are the present rules and mechanism for fire management in the village?	

Respondent		Date (day\month\yr)	/	/	Village	
Checked by		Writer			Interviewer	
		Written on back	Y	N	This is page	of

No.	Questions	Answers
14	Are you aware of any legal provisions with respect forest fire?	
14.1	If yes then what are the provisions?	
15	Is there any instance of legal action against anybody in connection with forest fire?	
15.1	If yes, what kind of action?	

Federal Ministry
for Economic Cooperation
and Development

Center for International Forestry Research
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