Section A

Title PRA in India: review and future directions

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In a short period of time an enormous wealth of experience has been built by field-based participatory rural appraisals in India. At this workshop were participants who had been involved in or conducted 145 different field exercises (Table 1 and Figure 1). Every one of these has been unique. Each has confirmed the utility of one method or another, or adapted one or another to meet new needs, or simply produced innovations. This has produced great richness: "Every single PRA has been an event. They have all been full with reality" (Aloysius Fernandez). And this has been a shot in the arm to many people. Fieldwork is varied and interesting: "One doesn't get bored repeating field work. It is always interesting" (John Devavaram).

This experience formed the capital upon which the workshop was able to draw. What worked and why? How did you facilitate that? That is just like what we have been doing. These regularly arising common concerns and issues are summarised in the ten sections to follow:

· Methods and innovations

A common feature of all institutions making use of PRA has been the thorough testing of available methods, the adaptation for new uses, and the invention of new ones. Where attitudes of outsiders are right and rapport is good, it has repeatedly been shown that villagers know a great deal, and this knowledge itself helps to drive innovations. Villagers themselves are often the main innovators, and so innovation is interactive. The list of methods is long, and getting longer. It is a rich and varied menu. Some are plain commonsense and common practice given a new name. Others are ingenious and not obvious. All, however, have been developed and adapted in the field. They are successful because they are grounded in practice, not on abstract social theory. The current list comprises some 33 methods. These are used to differing extents according to organisation and context.

1. Review of secondary data

Analysis of secondary data is vital. But too much emphasis on previous analyses and opinions can also mislead investigators. Secondary data has not yet been heavily stressed because of the concentration upon the reorientation of outsiders and full participation of villagers.

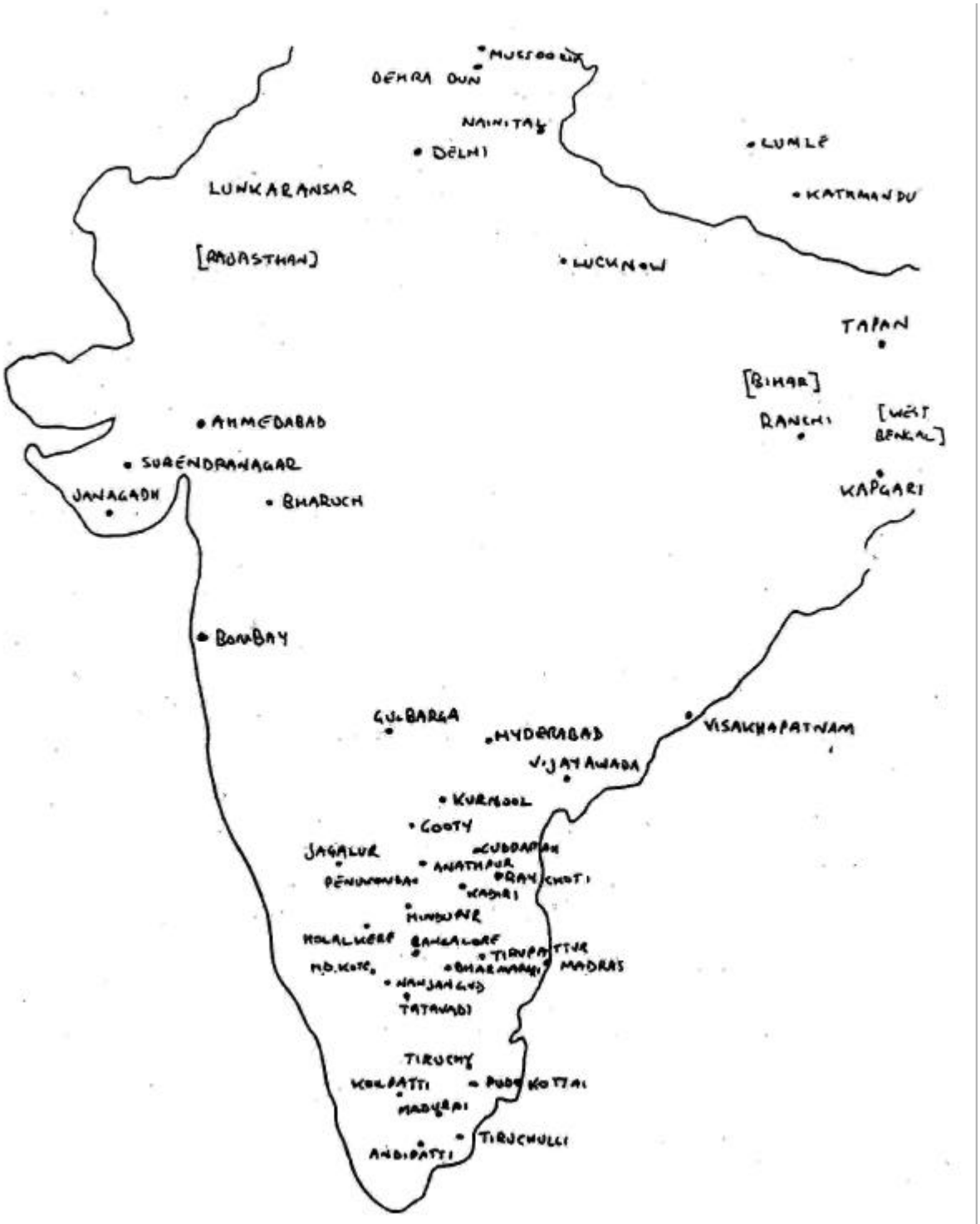
2. Observe directly

See for yourself. It has been striking for many to realise how much they do not see, or do not think to ask about. Observation should be related to questions. Always probe for reasons

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

for what you see. Use what, when, where, who, why, how?

Figure 1. Locations of field-based PRAs conducted in India to early 1991



Note: this map is not comprehensive. There is much that is bound to be missing

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Table 1. Taking stock of PRA in India: PRAs conducted, number of staff trained and number of trainers

Name of organisation	Number of PRAs conducted	Number of staff, field workers and village animators trained (no. trained more than 3 occasions)	No. of trainers in organisation
ACTIONAIDˆ	10	50 (5)	3
The Activists for Social Alternatives (ASA Trust)	2	40* (4)	2
Aga Khan Rural Support Programme (AKRSP)	40	40 (10)	Staff 8 Villagers 8
Xavier Institute of Social Services (XISS)	-	2	1
DRDA, Anantapur	5	160	1
Andhra Pradesh	15	410* (20)	5
SPEECH	5	117* (15)	8
Seva Bharati	1	34*	6
BAIF	6	8 (3)	2
Krishi Gram Vikas Kendra, Ranchi (KGVK)	6	26 (26)	7
MYRADA	**	3000* (97)	31

ˆ Does not include continuing PRAs in 75 villages
*Number of trained do not include substantial numbers of villagers and sngha members also trained during PRAs
** No details for numbers conducted by MYRADA

3. Do-it-yourself

Many PRAs in India emphasise the value of outsiders being supervised and taught by villagers at an early stage of the exercise. Roles are reversed, in which the villagers are clearly the experts; outsiders soon learn how much skill is required, say, to plough a furrow. Do-it-yourself prompts changes in attitude. Other examples of activities include levelling a field, puddling, transplanting rice, weeding, building stone gully plugs, lopping tree fodder, cutting and carrying fodder grass, milking buffaloes, fetching water, fetching firewood, digging compost, sweeping and clearing, washing clothes, drawing water from a well, thatching, plastering a house and many more.

For more details see many of the papers in this issue.

4. Participatory mapping and modelling

This is marking, drawing and colouring by rural people with the minimum of interference and instruction by outsiders - for example “do you know how to make a map of your village?” In addition, great play is made of the issue of ‘who holds the stick’. The person who holds the stick talks about what is most important to them. People use local materials, such as sticks, stones, grasses, wood, cigarette packets, tree leaves, coloured sands and soils, rangoli powders; but many also bring outside materials, such as coloured chalks, pens and paper.

But paper and pens are media that outsiders are familiar with. For villagers it can be quite different: “Villagers' hands shake when they hold a pen, and when they get to the edge of the paper, they're finished” (Eva Robinson). Some organisations are using models of clay and cards that can be rearranged according to discussions (ActionAid). As maps and models take shape, more people become involved, and so want to contribute and make changes. Often when the map is left as the group moves on for focussed discussions, or to go on a transect walk, another group of villagers takes over and makes further changes. This sequential

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

development is very important: "Participatory mapping is not a one-off process - one map leads to another to another" (Parmesh Shah); and this development encourages further participation: "As the map takes shape, more and more people want to make changes and add to it" (Eva Robinson); though the models are not considered by local people to be complete "until the electric wires are put on".

There are several types of maps and models and many uses:

- resource maps of catchments, villages, forests, fields, farms, home gardens;
- social maps of residential areas of a village;
- wealth rankings and household assets surveys on social maps;
- health mapping, where the health and welfare status of each family member is marked on or by each house using coloured stickers or other markers (John Devavaram et al, this issue); categories might include cases of TB, malnutrition, ear infection, handicapped, post/ante-natal mother, jaundice, does or does not visit primary health care centre, family planning operations and so on. "The chronically ill are invisible - at least with this method of health mapping we know where they are" (Eva Robinson);
- topical maps, such as aquifer maps drawn by the local water diviner, soils maps by soils experts, irrigated fields' maps by the village water supervisor (see MYRADA papers), etc; and,
- impact and action monitoring maps, where villagers record or map pest incidence, input usage, weeds distribution, soil quality and erosion rates, etc; some of the most illuminating maps and models combine historical views with those of the present and future. In one case a model of a catchment showing today's situation was compared with one for 50 years past and 20 years in the future. At most sites maps or models are constructed by different interest groups working together within a community, as these will represent their particular interests, e.g. men and women, old and young, poor and wealthy etc.

For more details see papers in this issue.

5. Transect walks and participatory transects

These are systematic walks with key informants through the area of interest, observing, asking, listening, looking, identifying different zones, seeking problems and possible solutions. The findings can be mapped on to a transect diagram. There are many different types of transects - vertical, loop, combing, nullah, tank, and sweeping. Most transect walks result in the outsiders discovering surprising local practices. Some documented at the workshop included:

- in the Rajasthan desert 20 grass and 6 shrub species, each useful for fodder for different animals at different times of the year, were found (Sam Joseph, ActionAid);
- in West Bengal, the seepage tank technology developed by farmers was discovered (Kamal Kar, workshop);
- at Mahilong village in Bihar, 28 different varieties of paddy rice were discovered, together with ploughs of different woods and different designs for each type of soil (Ravi Jayakaran, KGVK); and,
- in Karnataka, nullah traps of complex and sequential design for catching silt and slowing water flow were discovered (Mr. Satyamurthy, Drylands Development Board).

6. Seasonal calendars

Explore seasonal constraints and opportunities by diagramming changes month by month throughout the year. Use ceremonies to cross-check that names of months are agreed, and ask people to break lengths of stick, draw histograms in the dust or with chalk or make piles of stones, seeds or powders to represent relative quantities and patterns of rainfall, soil moisture, crops, livestock activities, agricultural and non-agricultural labour, diet, food consumption, illnesses, prices, animal fodder, fuel, migration, pests, income, expenditure, debt, children's games, school terms, and so on.

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Seasonal calendars can be drawn in linear fashion with 12 months to show a typical year or 18 months to illustrate changes between years; or can be drawn in a circle. Some are proud of what these seasonal analyses can show: "Our seasonal calendars are not based on statistics - they are based on people's knowledge" (Mr. Satyamurthy). Farmers in Gujarat prefer to use an aggregate of two or three months which correspond to a local calendar and agricultural season. As the frame of reference for many villages does not correspond to a calendar month, it is important to get these terms right at the beginning. Using other methods (particularly interviews and group discussions) becomes more effective if the frame of reference is local.

7. Activity profiles and daily routines

Explore daily patterns of activity through profiles and routines, chart for each hour of the day typical activities, amount of effort, time taken, location of work. Compare for different people e.g. men, women, old, young; compare profiles and routines for different seasons.

8. Semi-structured interviewing

This is guided interviewing and listening in which only some of the questions and topics are predetermined, and questions arise during the interview. The interviews appear informal and conversational, but are actually carefully controlled and structured. Using a guide or checklist the multidisciplinary team poses open-ended questions and probes topics as they arise. New avenues of questioning are pursued as the interview develops. The output is usually in the form of hypotheses and propositions, but can also be in quantitative form.

9. Types, sequencing and chains of interviews

There are many types of interviews that may be combined in sequences and chains:

- key informant interviews - ask: who are the experts? This is so often overlooked. Put together a series of interviews with key informants of a different stage of a process (e.g. men on ploughing, women on transplanting and weeding, shopkeeper for credit and inputs etc.); and,
- group interviews. These may be groups convened to discuss a particular topic (focussed or specialist groups); groups comprising a mix of people whose different perceptions illuminate an issue (structured groups); casual groups met, say, at a tea shop; community and neighbourhood groups. Most participatory diagramming is with groups - the maps, calendars etc. provide the focus for discussion. Group interviews are often powerful and efficient, yet in the past have often been neglected.

10. Permanent groups

Formation of groups (Sangas) with a common interest, e.g. farmer's groups or panels growing a similar crop or all having fields in a micro-watershed; credit groups and so on. These often take several meetings to make clear to farmers that they are a group with a common interest.

11. Time lines

A history of major recollected events in a community with approximate dates, and discussion of which changes have occurred. This has been found to be a good icebreaker for PRA exercises.

12. Local histories

Detailed accounts of the past, of how things have changed, particularly focusing on relationships and trends. These include technology histories and review – "we cannot be sure that existing technologies will always be useful. Facilitating observation and discussion of experiments already carried out by villagers is needed first, and then new experiments can be jointly designed" (Parmesh Shah); crop histories; livestock breed histories; labour availability; trees and forest histories; education change; population change. Folk lore, songs and poems are valuable resources for exploring history.

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

13. Local researchers and village analysts

Local people have a tremendous capacity to collect data, analyse it, use it and present it for taking decisions. The village extensionists trained by AKRSP conduct complete PRA exercises and analyses with little or no external help (see papers by Shah, Bharadwaj and Ambastha, this issue). Villagers conduct transects, interview other villagers, draw maps, observe and produce plans, generate technologies, evaluate technologies and monitor performance. However this requires a strong training and orientation component. Experience has shown that it is important to let villagers carry out this process on their own in the absence of outsiders. This facilitates a generic (organic) build up of analytical capacities. Other potential researchers include school teachers, students, poor etc. This is a frontier requiring further exploration.

14. Chapati (or Venn) diagrams

Use of circles to represent people, groups and institutions. People arrange these to represent degree of real overlap. Innovations include drawing lines between circles and village circle, with thickness of line representing strength of relationship; or representing strength by distance from the centre.

15. Participatory diagramming

Over and again people have shown their capacity to understand and produce pie diagrams, bar charts, flow diagrams etc. by drawing on the ground, and using seeds, fruits, stones, sticks and other materials on the ground as well as chalk or pens and paper. Topics for pie diagrams might include conflict sources; contribution to livelihoods of common property resources; crop mixes etc. As for all other diagramming it is essential to repeat with informants representing different interests, such as men and women, old and young, wealthy and poor. During the workshop participants discussed the utility of diagrams by analysing examples from past PRAs - their findings are reproduced in Table 2.

16. Wealth rankings

A range of methods to identify groups or clusters of households according to relative wealth or well--being. Informants sort a pile of cards or slips of paper, each with one household name recorded on it, into piles. The wealthiest are put at one end, the poorest at the other, and as many piles as desired are made. The process is repeated with at least three informants. But a quicker method is to conduct the ranking directly onto a social map. The social maps were discovered to be of great help in ensuring a complete list of households; several groups had innovated further by asking villagers to indicate on the houses the relative wealth classes. These are coloured for easy identification. Individual assets can also be marked for each household, such as land ownership, animals, tools etc. There have been few problems with confidentiality - an issue dominating the former method. Wealth rankings are useful for:

- leading into other discussions on livelihoods and vulnerability;
- producing a baseline against which future intervention impact can be measured (though this remains to be tested in practice);
- providing a sample frame to cross-check the relative wealth of informants who have been or will be interviewed. Biases against the poor and vulnerable can thus be offset; and,
- producing key local indicators of welfare and well being. Ask participants how someone can move from one group to another. How do local indicators vary from outsider measures of wealth and poverty?

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Table 2. The value of diagrams. List produced by participants of workshop following analysis by 6 buzz groups of 5-6 individuals

Diagrams

- create consensus
- are fun
- are visual
- are precise
- are not exclusive
- require little explanation
- allow more information to be taken in at a glance in less time
- are attractive
- facilitate discussions
- are objective
- are accessible to villagers, including illiterate people and children
- contrast and compare different perceptions, changes over time and different cultures
- permit cross-checking and cumulative build-up of knowledge
- can be made anywhere
- are participatory by nature
- involve villagers
- make things explicit
- are valuable for planning, implementation, monitoring and evaluation

17. Direct matrix and pairwise ranking and scoring

These versatile methods confirm their value for learning from local people about their categories, criteria, choices and priorities. For pairwise ranking items of interest are compared pair by pair, informants being asked which is preferred of the two, and why. What is good and bad about each? Matrix ranking and scoring takes criteria for the rows in a matrix and items for columns, and people fill in the boxes for each row (see plates 24 and 25). The items may be ordered for each of the criteria (e.g. for 6 trees, which is best to worst for fuelwood, fodder, erosion control, fruit supply etc.); or participants may put in piles of stones, seeds, berries for scoring relative values.

18. Matrices

Matrices are useful for ordering and structuring information gathering and planning. They include:

- attributes matrices for technologies e.g. dams and catchment structures along the top and attributes down the side (see Figure 61 in Joseph, this issue);
- problem-opportunity matrices (developed by AKRSP), with column headings including, for example, local name for zone and soil type, land use and cropping pattern, natural resources available for development, problems and constraints in increasing the productivity of these resources on a sustainable basis, local solutions and other initiatives tried out (why they succeeded or failed) and, lastly, possible and feasible solutions;
- Manual Discriminant Analysis matrices for contrast comparisons (AKRSP). Ask group A why group B is different or does something different, and then ask B about A. For example, set up three groups of high, medium and low maize yielding farmers, and ask why the other groups get different yields, and why they get theirs. Record the key findings in a matrix; and,
- treatment sequence matrix (see plate 25)

19. Traditional management systems and local resources inventory

Local people know their area best, and have evolved their own systems of management. Focus on how they manage water, trees, credit, etc. Use local classifications where possible - these are often more diverse than those used

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

by outsiders. “Every village has its local taxonomy and classifications” (Parmesh Shah). Another advantage of knowing the local taxonomy is that effectiveness of other participatory methods increases. Responses become clear and dialoguing becomes easier. Solutions become more specific. This is very useful for generation of a range of solutions related to a common problem.

20. Portraits, profiles, case studies and stories

Brief summaries of a household's history, a farm coping with crisis, how a conflict was resolved etc; short, colourful descriptions of situations encountered by the team; stories recounted by local people.

21. Key probes

These are questions that can lead directly to key issues, such as “suppose my buffalo enters your field and eats your crop, what do you and I do?”; “what do you talk about when you are together?”; “what new practices have you or others in this village experimented with in recent years?”. Report for different informants/participants, and compare.

22. Folk-lore, songs and poetry

Always in local language using local terminology. Reveals a great deal about values, history, practices, who knows and who does not.

23. Futures possible

How would you like things to look in the year's time? What will happen if nothing is done, if something is done? Exploration of desires, wishes and expectations can also be explored on maps, models and other diagrams.

24. Team interactions

Pay great attention to the behaviour, attitudes and group dynamics of the team. Change team mixes, hold evening discussions and morning brainstorming sessions. Make a play on who holds the stick, pointer, pen, chalk, umbrella and who wags the finger. Outsiders who hold the stick talk and don't listen. Elect one person to monitor team interactions during a group interview or discussion to provide feedback further to provoke attitude changes in outsiders. They should record the location of each person, and record interactions by:

- drawing on paper a circle around each person when they speak; break the circle if they are interrupted;
- drawing an arrow from talker to person being talked to, with duration of speech recorded in seconds (this is feasible for only limited periods of time); and,
- record each contribution in seconds on a separate sheet and put a circle around the number if interrupted.

The results are used simply for illustrating to team members what has happened during the discussion. It is visually clear who has dominated, who has been quiet, who was always interrupted, etc. Conduct this exercise at the beginning of a PRA and at the end to compare changes.

25. Diagrams exhibition

Before group meetings to discuss analysis and planning put diagrams up on a wall in a public place for all to see. When they attend the meeting they will know partly what to expect.

26. Slide inventories

Take photographs of PRA fieldwork, and keep for presentations. Plan a slide programme for villagers by taking projector and show what has happened in other PRAs. Encourage cross-connections between different villages. Encourage the villagers to use slides and the slide projectors for facilitating discussions and making presentations within their village, to other villagers and other outsiders. AKRSP is at present training village extensionists to use slides and slide projectors for sharing experiences within the village and outside the village. Showing slides enables group discussions of problems which everyone has not seen visually.

27. Shared presentations

Findings are presented back to villagers and outsiders. Best if done by -checking and

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

feedback. Where outsiders stand up and present, they invite comment and criticism - a reversal of roles. Essential that outsiders concentrate upon both presentation and analysis of who contributes. Elect two people to record group interactions. Who talks? Who interrupts whom? Whose ideas dominate? Who is different from everyone else? Who lectures? Outsiders must concentrate in listening and facilitating. Not lecturing.

If villagers make presentations first within small groups and then to the whole community, the discussion in the community meetings is of a high order. As Parmesh Shah described, "In one of the villages in Surendranagar area of Gujarat, villagers made presentations to the Government officials using maps and diagrams making the officials realise that the villagers were analytical, could produce a plan and had prioritised the various options. The confidence of the villagers increased considerably and they are able to present their viewpoints to outsiders. Their capacity for analysis in their own meetings has also increased" (Parmesh Shah).

28. The night halts

All interactions between outsiders and villagers are facilitated by staying in the village, the night halt, usually for several nights. Many organisations have made this an essential part of PRA training and practice. It provokes change in outsiders' attitudes - it allows for early morning and evening discussions when people are less busy; and it is a explicit indication of commitment by outsiders to the village and village life.

29. Questionnaires

If necessary, these must be short, not conducted early in the process, and preferably tied to a focussed issue. Best if light, late and tight.

30. Report writing in the field

This is easier said than done (see Documentation section below). But it is essential to record as a team the key findings before dispersal of members to their own organisations, and before arriving back at your desk where other priorities dominate. Report writing is made easier by:

- writing a brief summary of each diagram; and,
- writing up the process in diary form.

31. Self-correcting notes and diaries

Keep a private diary or series of notes to focus on where you, the outsider, would desire things to go better next time. Where were the problems? What could be done to avoid them? Who might be able to provide some solutions? What errors to embrace? What lessons to learn?

32. Survey of villagers' attitudes on PRA

Ask for the villagers' view on why the PRA team is in their village. In one PRA in Bihar some thought the outsiders were bringing a factory, building irrigation systems, making a film, and prospecting (Ravi Jayakaran, workshop). This helps to ensure outsiders are explicit about their work and motives.

33. Intriguing practices and beliefs

A training technique to encourage outsiders to give credence to indigenous practices and beliefs. These do not necessarily accord with conventional scientific thinking, yet should not be judged. Some may appear strange or even based on myth. By making a list, outsiders can draw attention to intriguing practices, simply indicating that these require further examination.

· Training and multiplication

The open and sharing culture of the organisations involved in the development of PRA has contributed enormously to multiplication. Quite often individuals who have attended a PRA training conducted by another organisation, and who have participated fully and been trained at the same time, have then returned to their own organisation to train their colleagues and staff. In the organisations represented at the workshop, there are already 82 PRA trainers (see Table 1). This informal training of

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

trainers has resulted in rapid spread, but many participants now recognise the need for the sharing of more systematic methods for the training of trainers. Discussions on training and multiplication centred on three main issues, namely on attitudes and methods, manuals and games for trainers, and on training needs.

Which comes first: attitudes or methods?

There are two alternative approaches to training: one is to get participants doing something different, and let attitude change come later during reflection; the other is to emphasise changing the attitudes of the participants, opening their eyes to the value of local knowledge, and giving only a minimum of instruction on methods? All trainers should "use their own best judgement at all times" (Robert Chambers). Workshop participants agreed, though, that attitude change comes most often and quickest when people's behaviour is changed first. Training should then be based on learning-by-doing. Trainers should be flexible, improvise, invent and experiment, and be open to people's own creativity.

The approach by government trainers has been to emphasise attitude change rather than giving extended instructions for the use of methods. "Attitude change is the most important barrier" (A. K. Monnappa). Somesh Kumar, working with the Drought Prone Areas Programme in Andhra Pradesh, has emphasised cartoons, role plays and helpful mnemonics to encourage thinking about how to approach villagers (Kumar, this issue). Things to remember include REAL and LEARN:

R - Respect for the people
E - Encourage people to share ideas
A - Ask questions
L - Listen carefully

L - Listen
E - Encourage
A - Ask
R - Review
N - Note

In training staff, Somesh Kumar reported that he gave half the group sheets of do's and don'ts for the field techniques, and the other half just instructions to conduct a transect walk, make a map, model, conduct seasonality analyses etc. He reported that the former were less inventive; the latter innovated more and also collected a wider range of information. "Too much emphasis on methods at the early stage will make it all too rigid ... once attitudes have changed there is a geometric progression".

The central question remains: what is the appropriate balance between sticking to emphasising attitudes, putting faith in human nature and capabilities, reinforced by the growing indications that field workers and villagers have greater capabilities than hitherto supposed, and giving participants lists of instructions to maintain quality?

Manuals and new training methods

Trainers have expressed the need for training materials to help in the conduct of workshops and PRAs. As Sam Joseph put it: "people are struggling to find better methods for the training of facilitators". Most people feel they have become facilitators by accident, rather than methodical design. The shortage of handbooks and manuals should not be rectified by producing materials that are large, linear and full of detailed instructions. They should take an approach that has selections of examples and encourages the reader to dip in. Handbooks become intimidating far too easily, so inhibiting improvisation.

Facilitators need help with new methods, such as:

- communication skills, such as hearsay, fact, opinion, assumptions and inferences (Sam Joseph, this issue);
- participatory games and exercises in workshops;
- icebreakers; and,
- interviewing techniques, such as pictures of interviews to analyse.

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Training needs

Several training concerns emerged during the workshop:

- need for systematic training to be facilitators;
- need for special materials for trainers;
- need to develop training techniques specifically oriented to the training of villager facilitators;
- need to discover ways to ensure self-correction of attitudes, behaviour and methods during self-spreading and multiplication, although, as Parmesh Shah put it: "Let's not worry too much - it will be self-correcting if it is based on experience"; and,
- need for a forum for trainers to share their experiences and make explicit their needs.

· PRA in government

Although the early adoption and spread of PRA was from NGOs to NGOs, several government officials were initially exposed through attending village PRAs. In a few organisations this initial exposure is beginning to provoke a revolution in attitudes and practice.

Impact of adopting PRA

The Director, Mr. Satyamurthy, of the Drylands Development Board of Karnataka attended a PRA early in 1990. He returned to train his own staff, and after one year is training all Divisional level staff. "In one year", he said, "our bureaucracy has become sensitive ... PRA has totally changed our attitude to the planning process". Government participants of the workshop drew attention to severe problems in their work, some of which were highlighted by the PRA process:

- it is difficult to meet targets with current planning and implementation methods;
- maintenance of government planned and implemented structures is non-existent: "villagers say that the government has made it, so it is not for us to be involved" (Somesh Kumar). Even when government interventions are good, rural people do not identify with them;
- people are no longer curious about government work: Mr. Satyamurthy told the story of the pregnant buffalo and its broken leg. They came across the buffalo whilst walking a transect; within 5 minutes the whole village had come to look and had gone away. Commenting on this rapid flow of information within the village and the comparative indifference expressed about government technologies, he said "how can this happen when our technologies do not spread?" (Mr. Satyamurthy); and,
- villagers have low expectations of government officials. The first question often asked is "How much money will you take?" "But", as Mr. Satyamurthy put it, "we're not all corrupt, and staff have been shattered by this question. It is not known to people that we will not be corrupt, so they are intrigued when we come to learn together". Many government workers are doing good work and simply need support.

Somesh Kumar drew attention to the impact upon cross-disciplinary working within the Drought Prone Areas Programme of Andhra Pradesh. Before the PRA began, the participants from each of the different departments sat separately. By the end they were sitting by mixed team, their morale was high, they were now willing to be with villagers and respected the people's wisdom. A further impact upon internal institutional working has occurred after high level officials have been in the field and seen for themselves. They are then less inclined to send instructions from state HQ about what should be done. However, it was also noted that if the most senior officer present was not supportive or understanding, then the whole PRA would be jeopardised.

Components of government PRA

As we have discussed in the previous section on training, the emphasis by government trainers has been principally upon changing attitudes. As A. K. Monnappa, also of the DLDB, put it: "We went to a village and sat on the ground, refusing chairs, and we got so much information from the people that we

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

realised this new attitude was the key to opening the door". The objective is to build self-confidence first, adding methods later.

This has been made explicit by calling the attitude change component "Learning to Unlearn". In this, the emphasis is upon what has been learnt: "I ask staff to tell only what new things you have learned" (Mr Satyamurthy). Participants are told not to expect people to come to them - they must search out villagers; all sessions are mandatory; all sleep together in the village - drivers, senior and junior officials; no badges of office are permitted - these are barriers. The night halt is crucial in demonstrating to villagers that the government is committed; it also has a demonstrative effect upon junior officials when senior officials refuse mattresses or special comforts. "In one case, 40 staff stayed in a Harijan Colony, staying up to one o'clock at night talking - we realised it was a short way to the people" (A. K. Monnappa). The current training is low-cost and on-the-job, making it more effective and efficient.

Participants divided into small groups to discuss the issue of institutionalising PRA methods in government. A summary of these buzz sessions follows in the form of answers to three questions.

1. Which methods are most useful to governments?

   As with all PRAs, all methods were seen to be potentially valuable, with the choice varying according to objective rather than type of institution. There were some reservations over the ability/capacity to use social mapping or wealth ranking, but it was pointed out that government departments are already using these methods (e.g. in Gujarat). The one method strongly emphasised was the night halt, and its value in proving commitment and provoking attitude change.

2. What are the pressure points that can be identified to encourage adoption?

   - exercises must be task oriented - "fewer barriers remain in those fully involved" (Somesh Kumar);
   - ensure that participants attend the whole of the training course - those who miss introductory sessions or turn up only for the debriefing often remain unconvinced;
   - locate open or reformed staff first (though the problem is not knowing ways to identify these people);
   - identify departments that can work with people or are autonomous; start cautiously;
   - approach training institutes, though training must remain low-cost and on-the-job, so as to relate immediately to work;
   - convince donors and bankers of value of PRA;
   - develop personal rapport with government officials (and vice versa for government with NGO officials);
   - encourage more flexible reporting procedures;
   - night halt essential, not permitted to bring extras;
   - NGOs must be less hostile to government;
   - government could use NGOs and VOs to conduct monitoring and evaluation;
   - conduct training for elected representatives;
   - offer more field exposure for civil servants (in Uttar Pradesh, the Chief Secretary has reportedly issued an instruction that all IAS officers with more than a certain length of service spend one day a month staying overnight in a village); and,
   - facilitate government to government extension - government staff who are convinced are the best teachers and convincers.

3. What are the constraints to adoption?

   - current targeting and reporting procedures;
   - rigidity of working practices;

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

- need supportive leadership - ESSENTIAL, as must convince the top person first, or else no progress;
- current working practices are compartmentalised, and there is poor co-ordination;
- training is centralised; PRA is not on training curricula; emphasis is upon statistical approaches; training decisions are not made at district level;
    - political interference;
    - frequent transfers;
    - government has to establish new relationships with villagers, on the past history of relations has been bad;
    - attitude of some VOs/NGOs - often hostile to government; some VOs can be just as bad as government, e.g. centrally placed with no internal participation; and,
    - top-down targets meeting people's priorities going up could create conflicts - for example, S. Devaraj recalled the case of a watershed PRA coming up with the need for 165 IRDP loans which conflicted with an allocation of 100 loans for the whole block.

· Villagers as analysts and specialists

The devolution of analysis and presentation to villagers is a frontier currently being explored by several organisations through PRA. Villagers are no longer seen as informants, but as participants in a development process. "PRA has given us enough to understand that farmers can teach" (Kamal Kar). To this end, their knowledge, perceptions and criteria for decisions provide the appropriate perspective for analysis.

Farmers, for example, are increasingly being recognised as taking a sequential and long-term view, in contrast to outsiders, who tend to want to do everything at once. This manifests itself in many ways if outsiders look carefully, or hand over the stick:

- silt trap fields in nullahs built up over time are an important stable source of food, but the area is often very small in comparison with total farm area; and,
- nullah traps are sequentially built up by constructing stone layer with stones sticking up, so giving strength, and providing a foundation for the next layer.

The AKRSP in Gujarat catalyses use of village extensionists or Extension Volunteers (EVs) in the watershed management activities initiated by the village institutions. These are a core group of 5-7 in each community who do the planning of the watershed management activity by drawing watershed maps, preparing treatment plans and maps, walking transects and participating in technology generation and diffusion. These core groups routinely conduct PRA's independently of AKRSP. EV's prepare microwatershed maps (as large as 1000 hectares in some cases) containing agronomic, physical and seasonal information for each farm. They also generate and prepare transect diagrams focusing on status, problems and opportunities (see Plates). These EV's also conduct Topical PRA's on specific issues e.g. technology of using spillways in soil and water conservation and evolve technical guidelines in their area. They inventory all technologies (locally generated and externally introduced) and evolve a recommendation domain in consultation with other villagers. Those EV's who gain experience train other extension volunteers and outsider professionals in the participatory appraisal process and methods.

Other people also have specialist knowledge. Bernard J. P. recalled the following story about involving children in Pethanor village, Tamil Nadu: "The children were disturbing us, so we asked why don't you do something of your own interest. So they copied the adults by drawing a seasonal calendar, a base line with perpendicular lines for each month, and then put on the games they play at different times of the year - kites, marbles, spinning tops, water games and so on" (see Plate 23).

PRA has also helped to integrate traditionally marginalised groups into the analysis and discussions: "PRA interactions helped to integrate women into the process - it was more appealing to women, sitting down with them, using their materials" (Eva Robinson).

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Practitioners must continually ask, who is left out? Unless a specific effort is made, women and the poor are likely to be ignored.

· Quality assurance

The major challenge during multiplication of PRA into new institutions is to ensure that the quality of the work does not decline but goes on getting better. There is a need for the building of mechanisms for self-correction and continuous improvement during self-spreading. Some help can come from outside, such as ensuring that enough of the current experiences of process are available for future practitioners. Self-awareness, though, is not automatic. Individuals have to develop methods for self-correction and embrace error.

Quality assurance will come from facing unresolved problems in our work, and getting help with solving them.

An exercise for self-monitoring

On this issue of quality assurance, it was clear that excitement during the workshop was greatest when discussions or presentations were on concrete issues, when it was evident that other practitioners were thinking similarly and had been through recognisably similar situations. As Rolf Lynton put it: "All we have is ourselves as instruments of change. Self-monitoring can be quite deliberate - a small change now can mean a large one sustained into the future. So, think about a live issue, something that matters, and engage it. Record it in a notebook. How will you monitor it? What indicators do you need to measure it, to give you a clue that you are making progress? Make a point of paying particular attention when this situation arises. Record it; then act; and do it regularly. Then think about sharing your experience with others who might face a similar problem". So, in summary:

- write down one incident a day that was surprising - focus on critical incidents or decision points;
- it is hard to begin with, then becomes easier;
- don't let the perfect obstruct the good - in other words, don't be intimidated by perfect looking end products; and,
- the new paradigm is not necessarily to find solutions to problems, but to increase the repertoire of options.

Quality assurance in the field

Amid the power of the methods, the fun of participating and learning, and the attractiveness of the final product, it could be easy to omit rigorous cross-checking and triangulation of information gathered. As has already been indicated a map drawn by a group of women will reflect their concerns and interests, and may look quite different to one drawn by men. A matrix ranking of trees by a camel herder will produce a quite different set of criteria to one produced by a mixed farmer. In a seasonality analysis, the symbols for each month used by a group of women were shown to a group of men, who did not even recognise that they represented months, but a new group of women knew right away (Sam Joseph). There are three ways to ensure quality is maintained:

- repeat the same method with different groups of informants, and compare the results;
- sequence the methods so that the use of one method provides some cross-checks on the information gathered in the previous one, e.g. a map or model suggesting areas for transect walks, which generate information to check the map; or a presentation of findings to a group for comment and analysis; and,
- conduct methods with heterogeneous groups, and monitor carefully disagreements amongst participants.

· Attitudes and behaviour

Attitudes and behaviour are critically linked to the methods and sharing (Figure 2). This implies roles quite different to those that outsiders (we) and villagers (they) are accustomed to play:

We establish rapport
convene, catalyse, facilitate, enquire
choose, adapt, improvise methods
"hand over the stick"
watch, listen and learn

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

They map
model
diagram
quantify
rank, score
inform, explain
show
discuss, analyse
plan, present

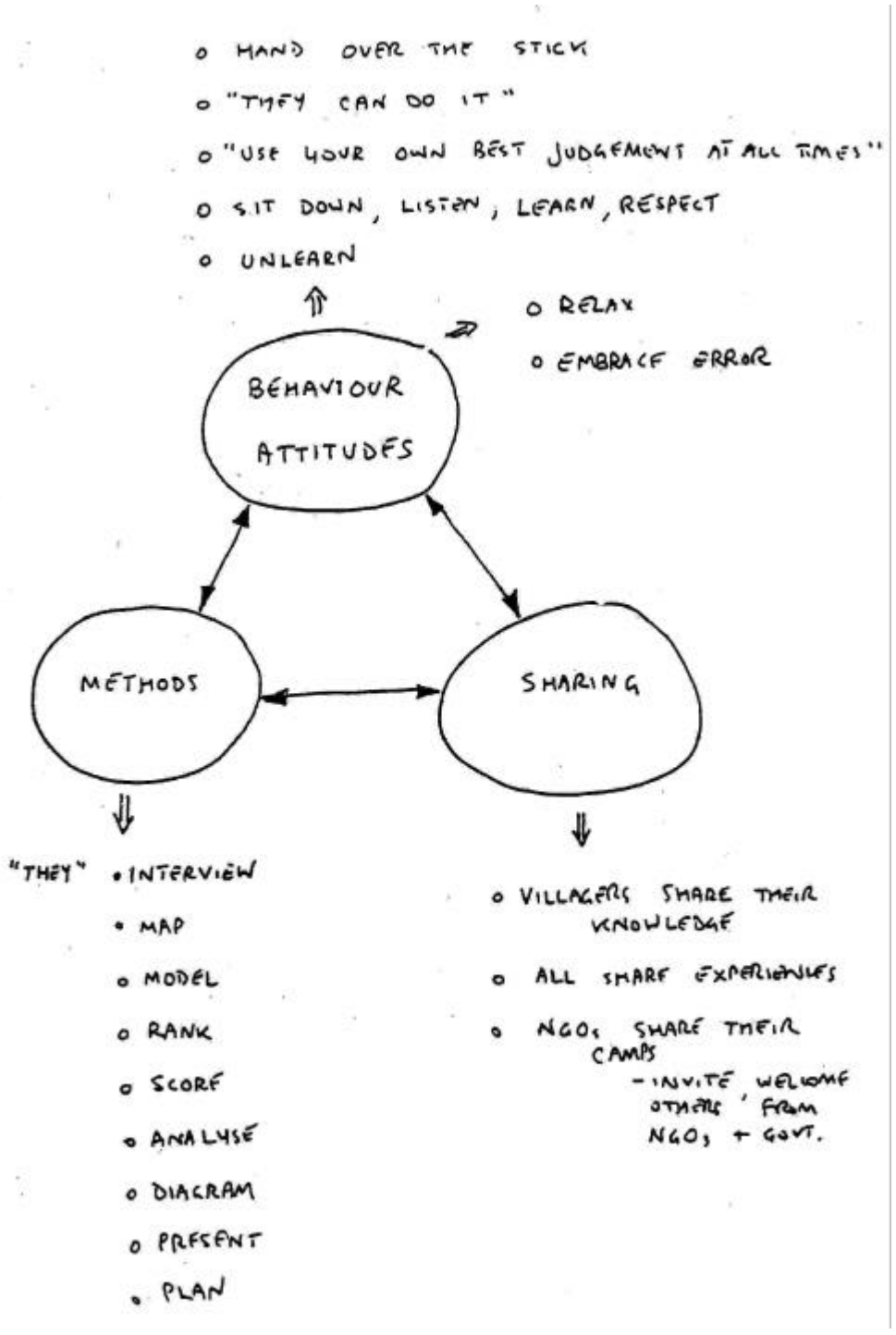
PRA thus is introducing a new culture to many people. They must now unlearn what they know, or at least focus on what they learn from rural people. “I had negative feelings at first because I felt I knew village and rural life already. But now I know that is not the case” (Somesh Kumar). This enlightenment is coming to NGO as well as government workers: “The PRA methods really enlighten NGOs that work in the field” (John Devavaram).

PRA methods provoke attitude change. As “attitude change is the most important barrier to government uptake” (A. K. Monnappa), it is important to give strict instructions on the process of learning, or unlearning. For example:

- “I ask staff to report only on the new things they have learned” (Mr. Satyamurthy);
- focus on intriguing practices and beliefs;
- “Don’t expect people to come to you - you must go to them and ask” (Mr. Satyamurthy);
- evening sessions are mandatory;
- night halts are mandatory;
- get the highest officers possible into the field - their demonstration effect is very strong; and,
- use icebreakers to build rapport between villagers and outsiders. For example chat over the morning fire; or ask villagers to choose those tasks based on activities that form part of daily tasks and livelihoods of villagers - “participants must perform these seriously as part of their unlearning” (Eva Robinson); or play games - KGVK took a volleyball and net, playing during the PRA and leaving them behind on departure. “Once the ice was broken, then we went into informal groups” (Ravi Jayakaran).

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Figure 2. Three principal components of PRA: behaviour and attitudes, methods and sharing (from Robert Chambers)

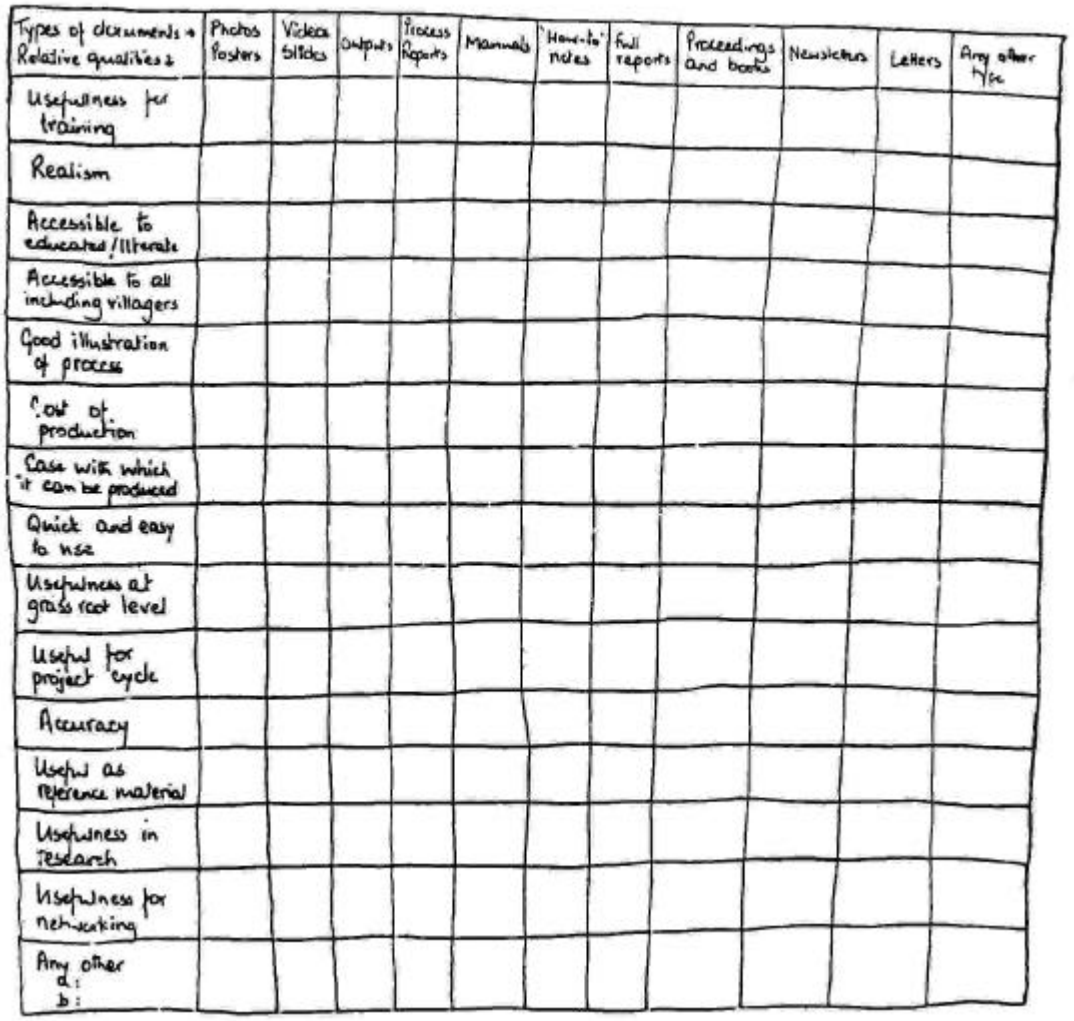


Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

· Documentation of PRA

Documentation and information sharing is widely recognised as a major problem. Too little of the rich experience of field activities is being documented and shared. As James Mascarenhas put it during the workshop: "Much of what I have heard today is for the first time, even from within my own organisation". Participants divided into five groups to explore the following questions: what documents do you need? What would you use and why? What are the major constraints that stop you producing documentation? How can these be resolved? In what areas do you need help?

Figure 3. Documentation in PRA: Matrix of types of documents and 15 attributes



Types of documents → Relative qualities ↓	Photos Posters	Video slides	Outputs	Process Reports	Manuals	'How-to' notes	Full reports	Proceedings and books	Newsletters	Letters	Any other Pls
Usefulness for training											
Realism											
Accessible to educated/illiterate											
Accessible to all including villagers											
Good illustration of process											
Cost of production											
Ease with which it can be produced											
Quick and easy to use											
Usefulness at grass root level											
Useful for project cycle											
Accuracy											
Useful as reference material											
Usefulness in Research											
Usefulness for networking											
Any other a: b:											

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Types and uses

The types of documentation include:

- proceedings and books;
- reports of PRAs;
- reports for donors (each with a unique format);
- slides;
- videos;
- posters;
- photographs;
- diagrams/charts;
- newsletters;
- letters;
- full reports;
- manuals/handbooks;
- users' notes; and,
- case histories of successful PRAs.

These will vary in their:

- usefulness for trainers;
- emphasis on process and structure;
- accessibility to non-English speakers, especially field level workers, and illiterate people;
- realism;
- cost of production;
- quickness and ease of use;
- usefulness in the project process;
- usefulness at the grassroots level;
- accuracy and representativeness;
- value for research;
- documentation of new ideas and methods;
- usefulness in research; and,
- usefulness for networking.

These different types of documents and their various qualities may be combined in a matrix so as to help decide the priorities (see Figure 3).

Constraints to documentation

- loss of details and distortion of proportions when transforming maps/models from the ground to paper (see Plates 1 and 2);
- maps and charts which stay in villages for continuous monitoring and updating must be copied for use elsewhere;
- PRA forms only a part of participants' work;
- little access to other PRA materials;
- not knowing what quality levels are acceptable;
- writing is time-consuming;
- team work is required if the process is to be well documented;
- not having the writing skills;
- not having the skills to pull a report together;
- organisational culture and attitude may not be supportive;
- strict format for reporting to donors; and,
- documentation distracts from day to day needs of project implementation. Just that much may be recorded that is necessary, and the rest put aside 'to be written up later'.

Possible resolutions

- use the diary approach as a basic framework for writing about process. For example, "I woke up and attended a brainstorming meeting before breakfast. We discussed ...". Focus upon what was surprising and unusual, so as to document the richness of experience;
- record experiences in letter form and share with colleagues and fellow practitioners;
- train villagers in own documentation;
- use more diagrams and photos as these documents are more attractive;
- need documents that pull together all experiences with example PRAs;
- need training materials for training teams and village trainers especially in local languages as this not only gives access of information to many more people, but is also empowering;
- need detailed case studies, with successes and shortcomings;
- hire a typist;
- preserve the narrative by using a tape-recorder;
- accept 'local English' in drafts;
- write in teams to provide support to each other;
- need training in documentation and communication skills;
- more training in semi-structured interviewing;
- don't be put off by a blank sheet of paper;

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

- avoid the block of being put off by other people's final products - quality improves with habit;
- need an information network and inventory;
- build in documentation as part of the process of PRA - leave time for writing;
- need for central organisation to coordinate information flow;
- need more information on PRAs with women, children and other groups; and,
- persuade donors to accept flexible reporting procedures.

· Role of PRA methods in monitoring and evaluation

As yet the use of PRA methods in monitoring and evaluation has been limited. Of the participating organisations at this workshop only AKRSP and MYRADA are using it in their watershed development programmes.

Some of the constraints that have restricted the scope of PRA methods in monitoring and evaluation have been:

- the fact that classical indications like literacy level, infant mortality rate, etc. are preferred for impact evaluation. Such information, being basically statistical, is difficult to obtain through PRA methods;
- many people are of the opinion that PRA results are alright for internal consumption but may not be acceptable to outsiders since there is a feeling that they are subjective (which is not to say that other methods are not); and,
- if it is data that can be 'seen', like changes in a watershed, PRA evaluation results may be accepted as correct, but for results that have to be inferred from analysis, for example, improvement in health status, PRA results may not be acceptable to all.

The following areas were identified by the participants at this workshop for expanding the use of PRA methods for monitoring and evaluation:

- Integrating people's perceptions of indicators into the impact evaluation;
- using PRA methods in monitoring agricultural and watershed development programmes where they have already begun to be used with success; and,
- convincing donors to accept PRA results as indicative of the impact of the project being evaluated.

· Dangers, weaknesses and challenges

Many dangers, weaknesses and challenges have already been identified in this overview. However, three surfaced regularly throughout discussions, relating to popularity and rate of spread, individual skills and backsliding.

Too popular too soon

There is a well recognised danger that capture by donors or central government agencies, who might issue instructions for the adoption of methods, could result in adoption without the appropriate attitudes. The speed of spread must not exceed the capacity for individual institutions to conduct social and organisational experiments to discover what is most appropriate for them. Good key probes for exploring whether institutions who say they are conducting PRA are needed. Three are:

- "To what extent are villagers doing the planning and analysing, as well as the implementation?";
- "Do you stay in the village during PRAs?";
- "When rural people don't want what you want to give them, then how do you react?".

Individual skills

Several areas were identified that needed improvement:

- little emphasis hitherto on interviewing technique, mainly because many outsiders involved are experienced fieldworkers - during spread there will be a need to emphasise semi-structured interviewing techniques;

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

- need to select persons with the appropriate aptitudes and attitudes as trainers;
- lack the mechanisms for prioritising methods for information collection and how to integrate PRA into current workplans;
- documentation skills;
- need better listening and learning skills;
- need to ensure that verification and triangulation are at all levels - must be emphasised at individual level; and,
- an unresolved question is how to introduce new practitioners to a technique without hindering future innovation.

Backsliding

There are dangers that good practice will slide away as old biases come to dominate:

- the problem of not reaching all interest groups persists, especially women, landless, harijans;
- the literate take over - "An illiterate man made a map with no names or writing; he put the map on the wall for a presentation, but then someone else added names; during the presentation the illiterate was isolated and the literates took over" (Parmesh Shah);
- higher level planning targets disrupt bottom-up demands and desires;
- the rich and landlords take over, and the poor are left out;
- senior officials in organisations are obstructive, particularly if they miss the first day before going to the field, and thus have not charged their behaviours or preconceived notions;
- PRA will not produce final answers, it is a process. As Sheelu put it: "Even after sitting in the village for 3 days we still hadn't got the full picture"; and,
- institutions say they are doing PRA, when they carry on as before. This is the greatest problem. We need to develop indicator questions to check their commitment and understanding.

· The impact and implications of PRA

It is too early for any formal evaluations to have been conducted on the efficacy of PRA. However, there are already strong indications that the participatory approach is resulting in more efficient and more effective development. This is manifest in many ways:

- raised awareness and expectations of rural people means they are more willing to act without outside financial support. For example, after a PRA conducted by SPEECH in Tamil Nadu involving analysis of the tank and plans for trees on field boundaries, people have begun a nursery with no financial support (John Devavaram);
- increased devolution of responsibility from implementing agencies to rural people themselves. As A. K. Monnappa, of DLDB, Karnataka, put it: "The government has now realised how assets can be left with the people if participation is from the planning stage, not just expected in implementation". Public works execution is now through the villages, not independent of them.
- raised local awareness feeding into local monitoring - "Now we are able to generate a lot of local information that can be used ... and now lots of what happens and is discovered remains in the village" (Parmesh Shah). This increases the opportunity for adaptive and contingency planning if rural people themselves are analysts and feed back information into the planning system;
- improved capacity of development workers in both government and NGOs. As Sam Joseph put it: "Our field staff have acquired tools that they can use on an ongoing basis ... their knowledge becomes sharp and the quality of their work is better";
- breakdown of political barriers in villages, barriers between government and villagers, and between different government departments (Somesh Kumar, this issue);

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

- cheaper and more sustainable watershed protection. For example, a project worker of the MYRADA Gulbarga project, reflected that "Villagers said they did not want outside technical support, because the government always often got something wrong". Now that villagers are involved in watershed management and are making budgeting decisions, protection is costing about half the former costs. The structures are also more sustainable: "If they do it themselves, then they are committed to doing the repairs and maintenance". The implementation is overseen by sanga committees - farmers contribute 20-30% of total cost; the committees go round to observe and evaluate the work on site and make payments if acceptable;
- decreasing training costs once villagers become trainers themselves. Parmesh Shah reports that it costs AKRSP 50-60 person days to train a group of 20 village extension volunteers. (AKRSP professionals have to first change their attitudes, learn from the local people, facilitate the process of experience sharing and remove biases that only outsiders can teach, people can also learn from themselves). When village extension volunteers undertake the role of a trainer the training process can be completed more efficiently in 10 person days. They know the situation, they facilitate the process better, they are familiar with the local classifications and are able to generate responses without a bias and in the absence of outsiders. Although the first stage involves considerable experimentation and trying of different methods, EV's are more efficient because they understand their audience better and can do a number of local and on the spot innovations;
- multiplication is more effective and efficient when conducted by trainers from the same location or institution as trainees, e.g. villager to villager, or government official to Government officials; and,
- improved monitoring through use of villagers' own maps. Through the sustained use of villagers' maps for the last year AKRSP has found they are valuable for monitoring physical processes; for identifying bottlenecks; for conflict resolution in meetings; for reinforcing group identity; for providing a framework for future discussions; and for monitoring impact. Maps are stuck to hardboard so that they can be used for discussion in groups and can remain in the village for continuous update and further analysis by groups which were not able to actively participate in group meetings and are relatively inarticulate.

· Follow-up networking needs and sources

Participants desired supporting materials and documentation for their work. During one exercise, individual participants identified areas where they currently needed actual experience-based help. It is needs such as these which must form the basis for a future network:

- how to increase the number of facilitators/trainers;
- how to manage time for training;
- how to improve trainer quality;
- how to verify data;
- how to handle social conflicts;
- how to get more PRA training carried into action;
- how to involve women more;
- how to resolve the problem of having too many villagers present during presentation of plans, so not all participate; and,
- how to deal with the situation when funders suddenly withdraw and the raised expectations of villagers are left high and dry.

Several initiatives have been identified:

- the Drought Prone Areas Programme of AP produces a newsletter for its watershed teams (Somesh Kumar);
- ActionAid of Bangalore has offered to act as a clearing house for information. They will send on copies of material received to anyone on their mailing list;

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

- MYRADA of Bangalore produce the PRA/PALM Series of Users Notes. These are available from MYRADA Notes. These are available from MYRADA free of charge. MYRADA will also act as a conduit for information on PRA when approached; and,
- RRA Notes from IIED in London is available free of charge to PRA practitioners and other interested parties.

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 1. Social map on ground, Kistagiri, Mahbubnagar, Andhra Pradesh *Photo: Robert Chambers*

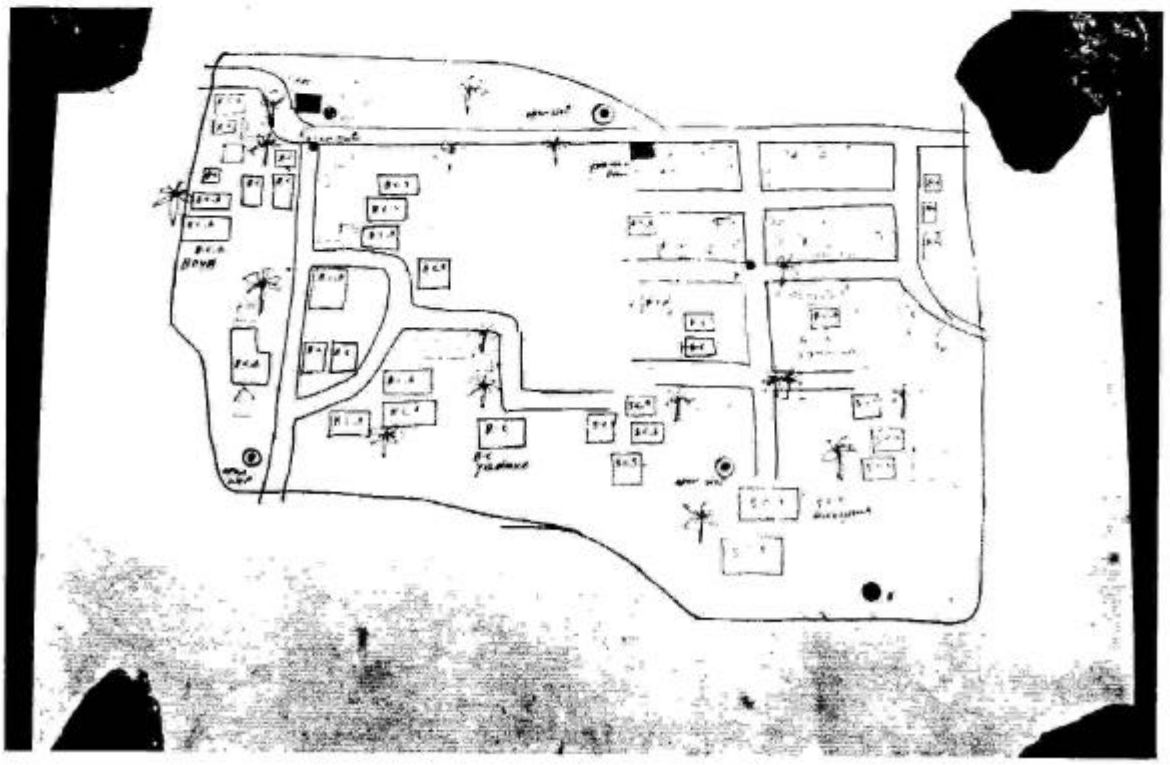


Plate 2. Social map transferred to paper, Kistagiri, Andhra Pradesh *Photo: Robert Chambers*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 3. Village map, Gopasandra, Tamil Nadu *Photo: Bernard JP*

Plate 4. Village map, Gopasandra, Tamil Nadu *Photo: Bernard, JP*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 5. Village map, Kuchasuli, Midnapore District, West Bengal *Photo: Kamil Kar*

Plate 6. Village map, Kuchasuli, Tamil Nadu *Photo: Kamil Kar*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 7. Social and resource map, Gerebir, Ranchi District, Bihar *Photo: Robert Chambers*

Plate 8. Forest degradation map, Haryana *Photo: Robert Chambers*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 9. Watershed model, Kalmandargi, Gulbarga District, Karnataka *Photo: Robert Chambers*

Plate 10. Watershed model (silt traps), Limbu watershed, Gulbarga District, Karnataka Photo: Robert Chambers

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 11. Watershed model with trees on boundaries, Udayanampatti *Photo: John Devavaram*

Plate 12. Tank model and individual plots, Udayanampatti, Tamil Nadu *Photo: John Devavaram*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 13. Village model, Gundapuram, Andhra Pradesh *Photo: Eva Robinson*

Plate 14. Electric wires for model, Udayanampatti, Tamil Nadu *Photo: John Devavaram*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 15. Seasonal calendar, Hazaribagh District *Photo: Robert Chambers*

Plate 16. Seasonal calendar, Hazaribagh District *Photo: Robert Chambers*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 17. Rainfall and soil moisture calendar, Nugudam, HD Kote, Karnataka *Photo: Robert Chambers*

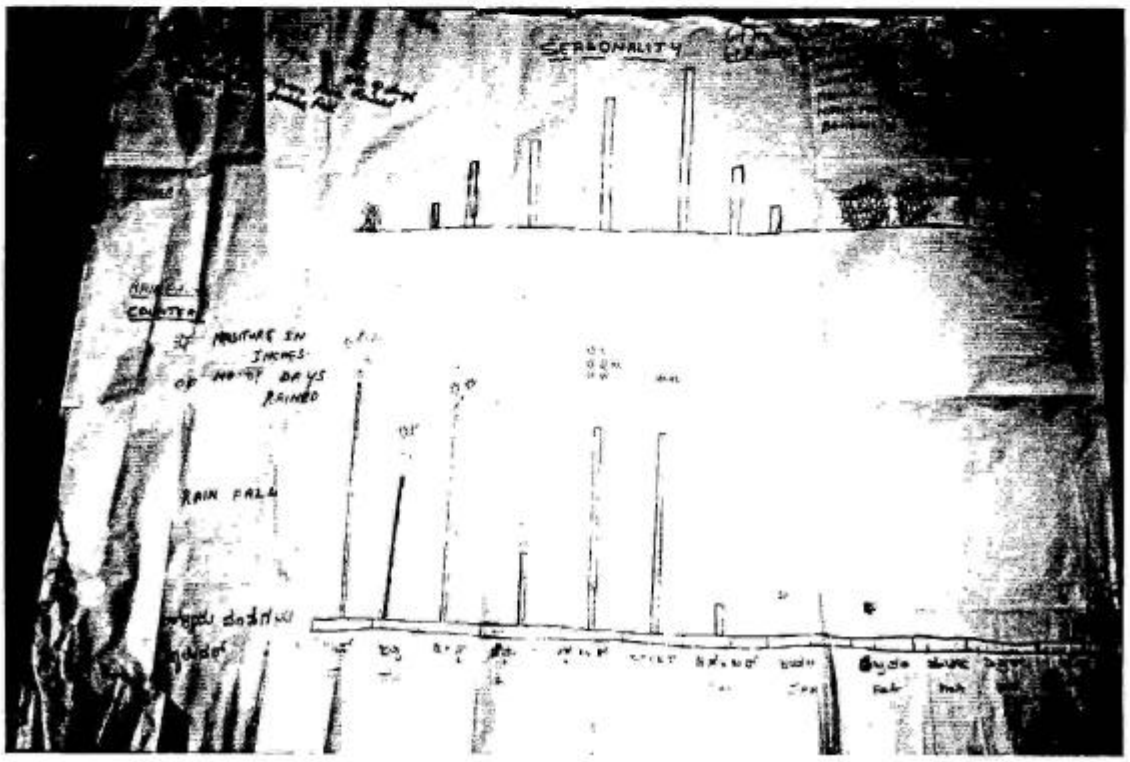


Plate 18. Rainfall and moisture calendar, Gujarat *Photo: AKRSP*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 19. Seasonality diagramming, Udayanampatti, Tamil Nadu *Photo: John Devavaram*

Plate 20. Seasonality and children's games, Pethanor, Tamil Nadu *Photo: Bernard, JP*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

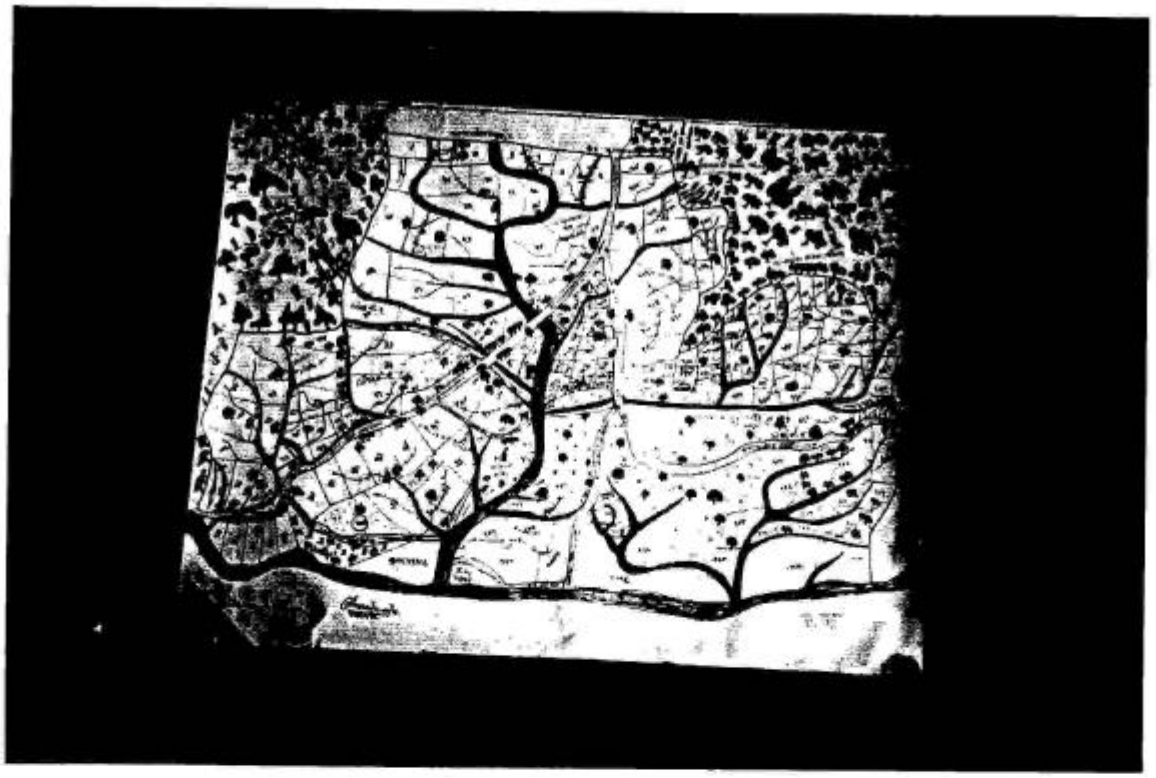


Plate 21. Extension volunteer's map, Pangham, Gujarat *Photo: AKRSP*

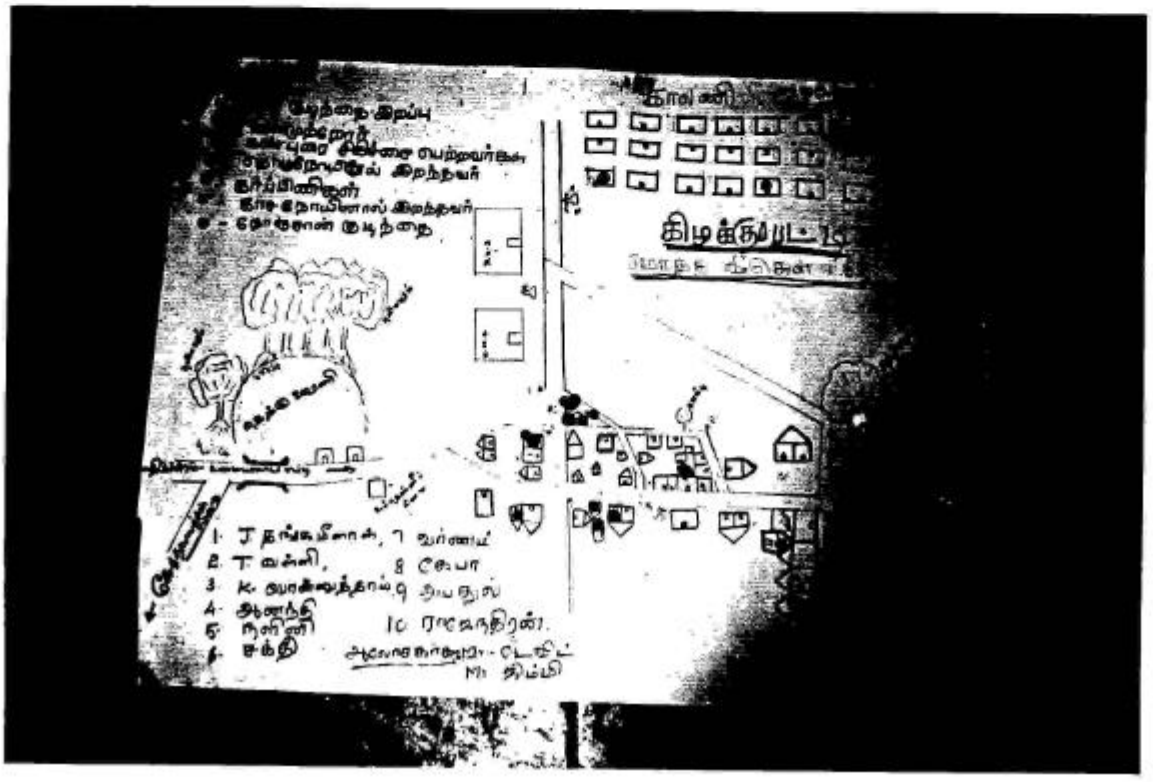


Plate 22. Health map, Udayanampatti, Tamil Nadu *Photo: John Devavaram*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

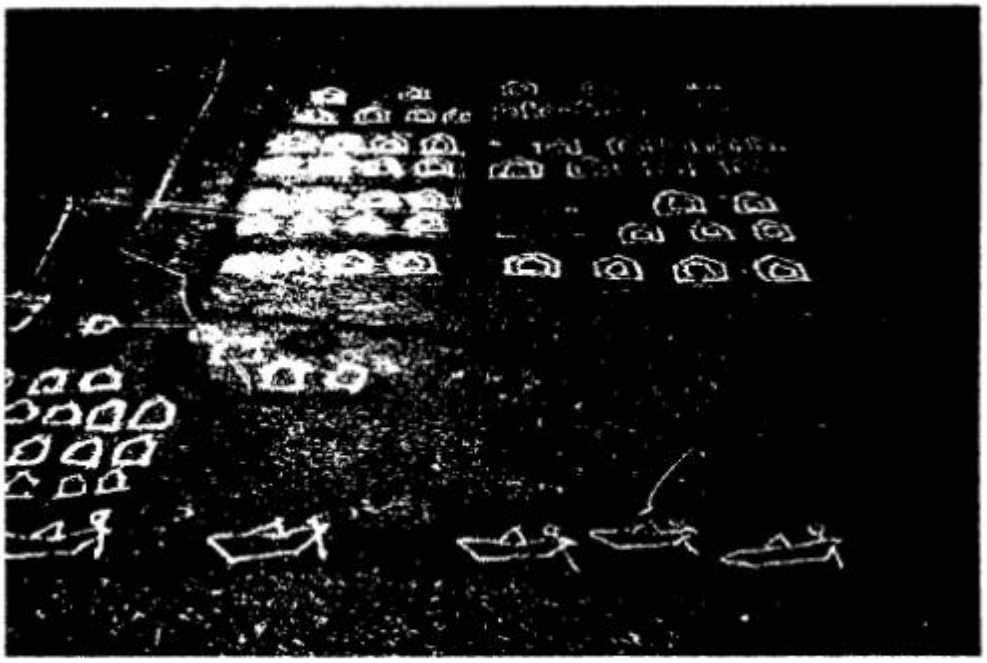


Plate 23. Social map, Punavalli, Andhra Pradesh *Photo: Eva Robinson*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London

Plate 24. Matrix ranking of trees, Nugudam, HD Kote, Karnataka *Photo: Robert Chambers*

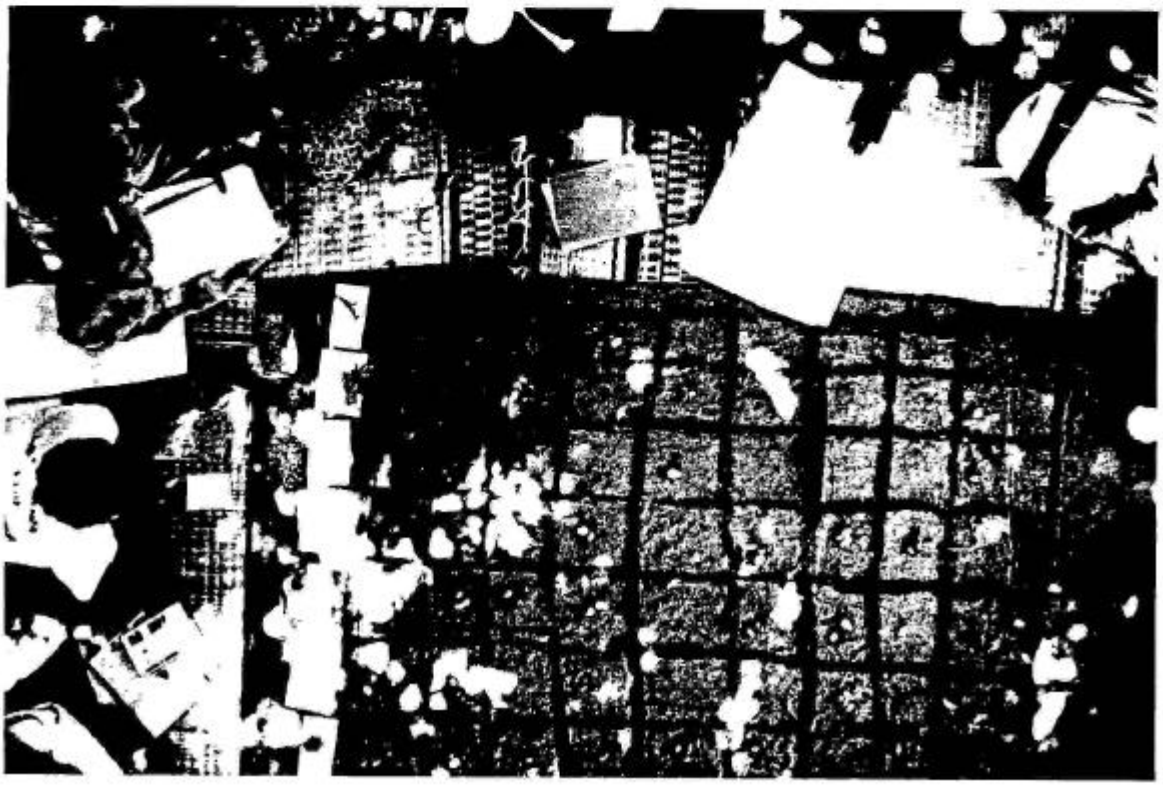


Plate 25. Treatment sequence matrix, Kethanaya Kampatti village, Tamil Nadu *Photo: Robert Chambers*

Source: RRA Notes (1991), Issue 13, pp.6–25, IIED London