

Editorial

We owe all our readers an apology for the long delay between the production of RRA Notes 16 and this issue. Technology failed us (or did we fail technology?!) last summer when our entire mailing list was lost in the computer and from the back-up. We have put a lot of effort in producing a new list, using all the subscription renewals that have come in. But there will undoubtedly be some people wondering what happened to the RRA Notes. Should you know of others who should be receiving the Notes and are not, please ask them to write to us requesting another subscription.

More specifically we owe the authors of articles in both this issue and *RRA Notes 18* an apology for the delay in publishing their contributions. As you know we had two focus issues in 1992. This meant that other articles not necessarily relevant for the issues on wealth ranking or applications in health kept piling up, the disadvantage of producing focus issues. This and the next issue will once again be a rich mix of reflections and case studies. *RRA Notes 19* will be a focus issue on anything and everything to do with *training of participatory methods*. So please do send us your training experiences! This year we will be producing the RRA Notes as follows:

- RRA Notes 18 May 1993
- RRA Notes 19 August 1993 *Training Focus*
- RRA Notes 20 November 1993

RRA Notes 17 starts with a new *Correspondence Corner*. We receive many interesting letters and would like to include them as shorter pieces in the Notes. Nonthokozo Nabane and Louise Fortmann write us from Zimbabwe with a brief account of how they set about mapping resources “with no instructions other than to have plenty of leaves for trees”. No sooner said than done! For more words of encouragement from the field, Meena Bilgi and the late Selina Adjabeng-Asem write about their excitement

with the sensitization process and the research potential of the PRA methods they used in India and Nigeria. Chris Roche adds a swinging start with a musical reflection on the crucial elements of PRA (or is it RAP??). And Louise Fortmann continues to challenge our thinking with keen comments on the down side of professionalism. She invites us to acknowledge villagers as co-authors. After all, they have invested their time to the process and shared generously with their knowledge. Let’s share the title page with them!

In the first of five articles describing the potential of ranking, Raymond Auerbach describes the use of visual techniques to determine development priorities in South Africa. It had proved very difficult to understand what people wanted from the future but after drawing their surroundings, it sparked debate on everything from agriculture to family planning.

The next two contributions are from India, describing how ranking methods formed the basis to probe farmers’ processes of decision-making and sustainability analysis. Rama Gounder, a farmer from Tamil Nadu, used a wide array of symbols to describe his resources, flows and transformations in different plots, resource allocation decisions and institutions that influence his decisions. The experiences with Mrs. and Mr. Marappan are described by researchers from a range of universities in Tamil Nadu. They used a variation of matrix scoring to discuss the preferred tree-crop species combinations, inter-year and inter-plot comparisons, and even made a comparison of a relatively well-endowed and poorer farmer. This led to a sustainability analysis of the Marappan’s very diverse farm, which had enabled them to withstand many ecological changes.

Still talking of matrix scoring but this time back in Africa, Michael Drinkwater writes about the effectiveness of using a matrix to evaluate finger millet varieties in Zambia.

During the discussion that followed, it became clear that the farmers used a range of largely untested, different criteria to judge the value of different millet varieties, and had specific notions of what was considered as acceptable 'evidence' of the quality of different varieties. Another application of ranking was written by Marie-Noel Vieu who explores the potential for identifying priority areas of emergency relief supply. While there is no dearth of micro-level experiences, few examples such as this of the macro-level use of PRA are known.

Sharif provides us with some thorough insights into the steps needed for good focus-group interviewing. We so often take for granted that the group we are speaking to is 'adequately focused' or even 'appropriately random' without taking the time to thoroughly prepare ourselves.

We have an insightful account of a comparative study from Marit Plateau, Nigeria. It is one of the rare case studies which provides a comparison between the results of a long-term study and a short study using a participatory approach. It highlights, for example, that while the RRA was generally successful in identifying 'key issues' in the village, certain issues of particular concern to women were overlooked.

PRA in Hindupur is a brief account which highlights the experience of working only with women, a rare occurrence for the organisations involved, as it undoubtedly would be for many of us. The outside resource people noted that the women they worked with did not need as many tea and smoke breaks, and they seemed to embrace the new ideas easily with fewer intellectual hang-ups!

A second case study discusses wetland development in Guinea Bissau. Koos Neefjes describes how mapping and ranking were used in the rice polders. Mapping proved effective to encourage discussion on land rights and on possible management improvements in the complex system of rice cultivation. Pair-wise ranking was helpful to identify the extent to which 'weeds' are considered damaging or not. The presence of weeds in certain rice fields is one indication of the potential land use options available. Is it an alternative for

more expensive and time-consuming soil-sampling?

Uwe Kievelitz and Rolf-Dieter Reineke throw us a theoretical challenge from Germany. They discuss how PRA can be used to understand organisational cultures. With triangulation, observation, interviews and, possibly, questionnaires, they describe how organisations can be studied much as field research in cultural anthropology studies other cultures. We tend to use PRA to understand and communicate with other cultures and organisations but have we ever looked at the organisations within which we work? We welcome follow-up articles of concrete experiences on this theme.

A final methodological innovation from Burkina Faso is described by Irene Guijt on the use of village network diagramming to understand the extent and nature of contact between villages. This proved particularly helpful in Burkina Faso to appreciate the degree of dialogue that is necessary in one village to ensure the successful management of a closure area. It also led to an assessment of the quality of contacts with different villages.

We round off the issue with the now regular Tips for Trainers and Endnotes. Keep the information coming! We depend on your contributions.

<ul style="list-style-type: none"> • Irene Guijt, IIED, 3 Endsleigh Street, London WC1H ODD, UK.

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Correspondence corner

Louise Fortman, Nonthokozo Nabane, Robert Chambers, Selina Adjabeng-Asem,
Chris Roche

· **From: Louise Fortmann and
Nonthokozo Nabane**

In which neophytes are inspired by a talk and rush out to do mapping with no instructions other than to have plenty of leaves for trees!

Participatory mapping of three resources was done with 5 groups of women, 1 group of men and 1 group of elites (men with two 'token' women) in six villages (30-60 households each) comprising a grazing scheme. The resulting maps showed definite locality differences in exploited areas even though the distance between the two end villages was less than 10 kilometers. Women's maps were more likely to begin with individual homesteads while men's maps centred around the location

of grazing areas. Women specified the location of termite mounds which are an important source of firewood. While village leaders emphasize the importance gum woodlots (which they characterize as communal although they are in fact private), these appeared on NONE of the maps except the map drawn by village leaders. Once a present-day map was drawn, we asked them to draw maps for 1970 and 1980. They told us they would draw a map for 1982 because that was when the major changes took place. The steady decrease in tree resources was clearly indicated. Stay tuned for when we redo this with (newly trained-in-sensitivity) Forestry Commission extension workers in attendance to help plan indigenous woodland management and regeneration!



(The forked thing
is the windmill they made)



Women Home-2
Obamatonon Grazing Scheme
February 1992

- **Louise Fortmann and Nonthokozi Nabane**, Centre for Applied Social Sciences, University of Zimbabwe, PO Box MP 167, Mount Pleasant, Harare, Zimbabwe.

- **Robert Chambers, an enthusiastic and active supporter of PRA, was struck by the processes that PRA can stimulate that were described in correspondence to him.**

He received a letter from Meena Bilgi of Aga Khan Rural Support Programme (Choice Premises Swastik Cross Road, Navrangpura, Ahmedabad 380 009, India) who writes:

“... We have been facing a number of problems related to men’s attitudes towards women. In a number of villages, women are demanding time-saving devices such as flour mill, pressure cooker, dal mill etc. but the men are resisting on these improved technologies. They don’t think that 3-4 hours per day in grinding, depounding, dehusking by women etc. increases drudgery and should be of concern. Due to resistance by men, it is becoming difficult to introduce such time saving devices even though women want them. Hence, it became important for us to conduct participatory rural appraisals related to women’s issues with men groups...”

In this letter, I am just informing you that more than a PRA exercise, the whole process turned out to be a ‘sensitization process’. For example, men talked about ‘A day in woman’s life’. At the end of the exercise, when they calculated the total hours spent by women in various activities in a day, they themselves were surprised. They first denied the information which they themselves gave. Later on they became a little defensive, they kept on saying that men’s work is much harder, but women’s work (even though they are spending 17-19 hours in a day) is much softer and does not involve such hardship. Then each woman’s work/activity was taken up separately and discussed. For example, when asked to share the information on what all is involved in collection of fuelwood and cooking on traditional chullah, they came out with lot of problems which women face, such as walking long distances in heat, incidence of snake and

scorpion bites, harassment by forest guard, non-availability of drinking water on the way, getting smoke in the eyes and into the body while cooking etc. It was interesting to note that while men were giving the information, they were thinking and to my mind, they were getting sensitized.

I may be wrong, but my experience tells me that PRA techniques not only give information about villagers to outsiders, but the whole process in itself sensitize (an awareness building?) the villagers also about various issues”.

- **Robert Chambers, IDS, Sussex.**

- **The late Selina Adjabeng-Asem wrote the following to Robert Chambers:**

“...I want to send you some report on the PRA follow up in Nigeria. Prior to the India Workshop, I had not used participating mapping much nor effectively, but the knowledge gained in India has been extremely useful to our field work here. I trained the IDRC Soya bean project group in the use of PRA for monitoring of the project impact in 5 states of the Federation i.e. Kaduna, Niger, Enugu, Anambra and Oyo States of Nigeria. The group of 16 researchers were amazed about how much easier it is to obtain in-depth information through participating mapping in addition to other RRA techniques they have already known. We were able through mapping to obtain all relevant socio-demographic information we required for the project; for example, the number of households in a village, household involved in soyabean production, gender issues in soyabean production, utilization of soyabean, and preference rankings of various soyabean diets.

The map (social map) drawn by the villagers (Dikko village) shows the size and boundaries and the village, the household units represented, the agricultural production patterns, the hectrage devoted to three major crops in the area, cassava, groundnut and soya bean, and the gender division of agricultural labour. Mangoes were in season at the time and were used in addition to cassava chipping, peels, stones, groundnut shells and milk bush

seeds. Wood ash was used to line the map. The most popular crop - cassava was represented by mango seed. Each seed represented 5 hectares of land under cultivation within a household. Groundnut was represented by its shells one each for a hectare of land while soya bean was represented by cassava strips from the grater.

We gathered an incredible amount of information within an hour and a half visit to the village. The researchers have been begging me to give more training in PRA...”

- **Selina Adjabeng-Asem**, Technology Planning and Development Unit, Obafemi Awolowo University, Ile-Ife, Nigeria.

It is with great regret that we heard that Selina passed away in Nigeria. We are sure that those who have been inspired by her will wish their regrets to be expressed to Selina’s family and colleagues. Her words will continue to encourage those who knew her. **From: Chris Roche**

Creating rapport

So let me tell you about PRA,
Its a new approach that’s here to stay,
Its a paradigm shift and that’s OK,
if it can adapt and change day-by-day

Get rapping

Rapid Appraisal Procedures oft called RAP,
Have evolved to let ‘them’ map,
and rank and diagram and all that,
That ‘experts’ did with computer on lap.

Get rapping

The first thing to do is get your attitude right,
and learn to share and listen and stay the night,
‘use your own best judgement’ without fright,
To help the poor understand their plight.

Get rapping

We’ve got to get off that tarmac road,
And stop talking in development code,
Lets listen to those who carry the load,
And not just men in questionnaire mode

Get rapping

We need to probe and use triangulation
Which means cross-checking all information,
This means including improvisation,
flexibility and iteration

Get rapping

Now a lot of methods have been used
To make sure that local knowledge is not abused,
We can conduct semi-structured interviews,
Mapping and ranking and stay amused

Get rapping

Now really crucial is building rapport
Which involves respect for the rural poor,
Lecturing less and listening more,
And spending some nights on a cold hard floor

Get rapping

Participatory mapping is a good ice-breaker,
With the community themselves the best mapmaker,
Houses, diseases and even the baker
Are shown with outsiders learning not being the taker.

Get rapping

Ranking and diagramming are easily done,
And can be a lot of fun,
Priorities emerge for the long-run
And pre-conceptions can be undone.

Get rapping

Knowing the change in seasons and daily life
Must include both husband and wife,
Young and old and those in strife,
As problems differ and aren’t always rife

Get rapping

A walk across different hills and fields
Can give an idea of different yields
As well as how to create the shields
To protect the poor and give them offer to wield

Get rapping

We should try and avoid difficult phrases
 And try to progress in easy stages
 Because in our bellies a fire rages
 To release the poor from oppressive cages

Get rapping

Now PRA won't be good unless,
 We admit to problems we must address
 The solutions to these we can't guess
 So we must be honest about our success

Get rapping

So its bye for now to the R.A.P
 We'll be back soon your minds to tap
 We're going to work and not to nap
 And do something about that poverty trap!

- **Chris Roche**, ACORD, Research and Policy Programme (RAPP), Francis House, Francis Street, London SW1P 1DQ, UK.

• **From: Louise Fortmann**

Paying in our own currency, starring in our own show

This is two topics jammed into one note, both stemming from my recent experiences in Zimbabwe.

The first is about giving villagers credit for their work. It begins in the 1970s when I read a development book which had an acknowledgements section which went something like this. *"I would like to thank my wife who helped me do interviews in the field, typed and catalogued my field notes, undertook much of the archival research, coded and analysed the quantitative data, and typed and commented on my drafts, making many helpful suggestions"*. Why wasn't she the co-author you *&@#!! I thought at the time. And I have thought of that frequently since. During recent research in Zimbabwe, I went out with a group of villagers who in the course of 4 hours collected specimens of 95 species of indigenous trees. Not only did they know the soils on which different species grew, they knew the precise places where individual trees were growing. All I did was

drive the truck. It struck me that it was high time that if all this rhetoric and hoopla about indigenous knowledge is genuine, we should not only pay our workers and village colleagues for their time, we should pay them in our own currency for their knowledge, that is with academic credit. Thus, it was that Chidari et al. was born, an academic publication with the villagers as senior authors. I am an author too, because in the overall process I did more than just drive the truck, but my name is at the end of the list as it was their knowledge that made the publication possible. So let's all give credit where credit is due, not buried deep in the acknowledgements, but up front in the authors list.

My second experience has to do with getting carried away with our own performance, starring in our own shows. I had arranged a participatory village planning exercise with staff from a government agency. The person who was supposed to be the main facilitator cancelled at the very last minute due to family commitments. Another person came who had supposedly been trained in participatory methods. In the middle of things, he decided to abandon the tree matrix we had planned and lead a participatory discussion of the information village researchers were presenting. The result was horrifying! He bounced into the middle of the circle, beamed at everyone and said, *"Right, we have all these experts here, what would you like to ask them?"*. He managed to extract some questions (all from old men who were community elites), bounced about some more, and bounced out. He gave a lovely performance. What struck me about this (aside from my desire to throttle him) was that he probably mistook his own generation of energy (the production of his own show) for participation. And I suspect that I and many others have made similar mistakes in the past. If we can go aquatic for a moment, be a sponge, not a starfish. Whose show?!

- **Louise Fortmann**, Centre for Applied Social Sciences, University of Zimbabwe, PO Box MP 167, Mount Pleasant, Harare, Zimbabwe.

NOTE FROM THE EDITORS

Please send us your thoughts on the limitations and strengths of participatory

methods. With your permission, we will pass them on to other readers.

2

Helicopters at Nhlangwini

Raymond Auerbach

• Introduction

The Nhlangwini Integrated Rural Development Project aims to empower local people to improve their quality of life, by helping them to develop strategies for addressing their basic needs.

The Nhlangwini Ward is situated in southern KwaZulu/Natal, South Africa, 80 km inland from the Indian Ocean, and about 220 km south of Durban. It consists of broken topography, varying in altitude from 300 to 800m above sea level, and including two deeply incised river valleys. Mean annual rainfall is ± 700 mm. The ward has an area of approximately 200 square kilometres, and a population of some 25,000 people, with many of the adult men and some of the adult women living and working away from home, mostly in Durban, Johannesburg, or the gold mines. The actual population is 75% female.

The participants¹ in the workshops were all involved with the Nhlangwini Project, which is run jointly by the University of Natal's Institute of Natural Resources (INR) and the Planned Parenthood Association of South Africa (PPA), a privately funded non-government organisation. The small farm systems research and extension approach has formed the conceptual framework of the

¹ The participants were: Nkalokazi Qoza, KwaDeyi Mazeka, Pungashe Memela, Ndwebu Sibiyi, Pungashe Sosibo, Ndwebu Mtolo, Echibini Dlamini, KwaGubuzi Hadebe, Maria Trost Xesibe, Ndwebu Qoza, Ndwebu Mdiwe, Fodo Caluza. The facilitators were: Michele Friedman, Institute of Natural Resources (designed the workshop); Herman Dlamini, Institute of Natural Resources; M A Hadebe, Planned Parenthood Association; Raymond Auerbach, Institute of Natural Resources.

project, with the emphasis on the involvement of local people in development planning.

The twelve women from the Nhlangwini area are all primary health care workers with the project, each working in her own neighbourhood. They have called themselves *abasizi*, a Zulu word meaning 'helpers'. Their work in the area has contributed towards a significant opening up of attitudes to the discussion of the role of women in society, and has resulted in the involvement of both men and women in an on-going debate on who should take responsibility for contraception and on how couples decide when to have children.

• The workshops

Three workshops were held over a period of three months during 1989. The first examined the development problems in the areas from which the *abasizi* come, the second specifically probed those problems associated with family planning work and the third was a development planning workshop which used some visual techniques, which are described in some detail in this report.

Problems identified in the first workshop included the lack of domestic water, the poor maintenance of those handpumps which had been installed, the lack of creche facilities, the need for facilities for handicapped children, the lack of clinic facilities, poor roads, inadequate schooling facilities, lack of adult education, lack of firewood, insufficient community gardens and the need for organisational skills, especially in the community gardens.

The second workshop concentrated on the way in which the *abasizi* carry out their work and

the problems which they experience. It was agreed that one of the best places to talk about family planning was the local spring, while fetching water or washing clothes. Community gardens were also seen as good venues for discussion. Although some house-to-house visits were carried out, much of the discussion occurred during casual encounters.

The generation gap is a problem, and it was suggested that younger people should be trained, so that they can communicate more easily with the youth (four young women have since been trained, and are making a valuable contribution in this sphere). Care is taken to inform parents about the kind of work which is being done. Although there are some who object to any discussion of sex and contraception, most accept that young people are being helped to make responsible choices.

Initially, men were reluctant to discuss any sexual matters, especially with women, but people seem to have accepted the importance of the work of the *abasizi*, and men have begun to come to the mobile clinics for condoms.

As Zulu society tends to be patriarchal, with women expected to remain silent during public meetings, it was interesting to note that the *abasizi* generally felt that their positions had made them leadership figures in the community. They were sensitive to the implications of their role as 'unelected' representatives, and open to the idea that they should, in fact, be accountable to the local community.

The low level of remuneration which they received (only intended to cover expenses) was not seen as a major problem, although it was acknowledged that more would be welcome, especially if the range of activities was expanded to a more formal commitment. The main additional activities which were considered important were a range of agricultural extension activities including vegetables, fruit trees, field crops and nutrition education.

• Rural development overview

Although the first two workshops were useful in understanding local problems and attitudes, it had proved very difficult to gauge what participants felt were important development priorities; the third workshop therefore concentrated on two activities: resource identification and prioritisation of development needs.

Initially, participants were asked to draw a picture of the resources in their area, as seen by a bird or a helicopter flying overhead. After much hilarity about the alarm with which a helicopter might be greeted by certain people who grow *insango* (marijuana), who might think that a police raid was imminent, there appeared to be general understanding of what was meant by 'resources', and the *abasizi* set to work, each person drawing the resources which she felt were most important in her area.

Some, like Mrs Sibiya, made pictorial lists of the resources (Figure 1). Others like Mrs Qoza (Figure 2) used a more spatial technique. Figure 1 shows a water pump '*owuphukile*' (but it no longer functions). Other resources include Mr Maphumulo who sells goats, Shibase's bus service, the store, the church, the primary school, the dam and the community garden.

Participants were reluctant to draw the resources which they would like to see in place in two years time: "That which is there, we know; how shall we draw things which are not there?"

They were, however, prepared to list '*izinto esizidingayo*' (those things which are desirable). The six most common items were then prioritised as follows:

1. Water;
2. Roads;
3. Schools;
4. Clinics;
5. Creches; and,
6. Firewood.

Figure 1

Figure 2

It was generally agreed that agricultural development was also important, including vegetables, fruit and field crops both for home consumption and for sale. Participants were emphatic that they did not wish to be relegated to subsistence production only: "The great need in the rural areas is for money". The women felt that although decisions about field crops had traditionally been made by men, the men are usually away working in the towns as a result of South Africa's iniquitous migratory labour system, and it is in fact the women who now make these decisions.

• Conclusion

The value of the technique was that it enabled people who had felt unable to discuss the development needs of the area in an abstract way to participate in a planning process designed to help establish project priorities. Based on these results, the whole focus of the project shifted from agriculture to water development. The emphasis shifted from technology transfer to organisation development and an increased awareness among project staff of the importance of the process of developing a vision for the future which is shared by the broadest possible constituency.

A key point in the proceedings was when Michele Friedman took three of the problems identified by the women and suggested that they were all manifestations of a lack of communication, and that they highlighted the need for organisational development. The problems were:

- although handpumps had been installed in the area, there had been inadequate provision for community involvement in their maintenance;
- although several dams had been built by the KwaZulu Department of Agriculture in order to supply water to communal gardens, pipes had not been laid from the dams to the gardens; and,
- a man had consulted Mrs Mazeka about the use of condoms in contraception, and had used one without explaining to his wife what he was doing and why.

The result of all three of these experiences was anger and frustration, which could have been averted by adequate communication.

With proper goal-setting, appropriate communication structures and a sound strategic plan, the results could have been very different. This collecting together of three diverse local problems, and the highlighting of their common elements lifted the participants out of the concrete realm of local problems, into a more abstract realm where reflection on the nature of development problems could be informed by the real experiences of local people. Methods of developing water-committees which involve the women who are using the resource in the control and development of that resource were discussed.

Agricultural development needs have led to a range of research and extension initiatives, including the use of technology in maize production, research into maize production systems for subsistence, semi-commercial and commercial farmers, vegetable production in the communal gardens and the role of women in agriculture in the area.

• Further reading

The INR has produced several reports which may be useful to those desiring more information about the project and our work on participatory techniques in rural development as well as our sustainable agriculture programme. These are available at a modest charge from:

The Librarian
Institute of Natural Resources
PO Box 375
Pietermaritzburg 3200
South Africa

- **Raymond Auerbach**, Institute of Natural Resources, University of Natal, PO Box 375, Pietermaritzburg 3200, South Africa.

3

Resources flow – Venn diagrams: a two-in-one approach

Rama Gounder with K. Natarajamoorthy, C. Chinnusamy, P. Nasuredeen, R. Ganesan, N. Shanmugavalli, V.A. Sakunthala, Janardhana Rao

- Introduction

Farmers' flow diagrams are good descriptions of important patterns of flow and transformation of resources - money, materials, energy, information, etc. A farmer's strategic choices is best understood by means of decision trees, whilst circles of different sizes and colours have become popular in representing individuals, groups and institutions that have significant bearing on farmer's critical decisions (Ed. commonly known as Venn or chapatti diagrams). In this brief note we describe a recent innovation in method by Rama Gounder, a farmer collaborator, to help researchers learn about mediating variables influencing his decisions on crop selection, decision to purchase or use home grown inputs, and resource allocation decisions (see Figure 1).

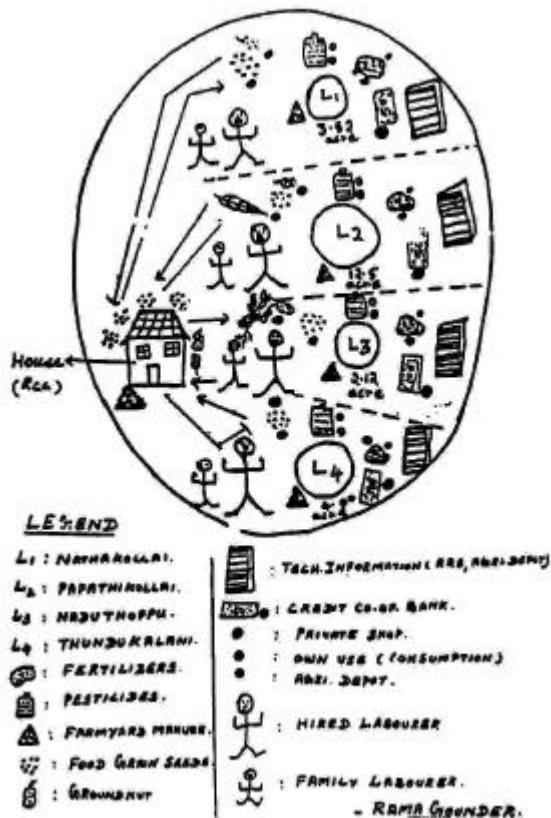
In a recently concluded PRA workshop¹ at Regional Research Station of Tamil Nadu Agricultural University at Paiyur, Rama Gounder and several other farmers - both men and women - acted as village teachers. They were involved in transect walks, mapping/modelling exercises, seasonal analysis, ranking and scoring, and resource flow diagramming - the tools that outsiders have found useful in learning about the villagers' perception and analysis of their environment.

On the fourth day, while we were probing farmers' critical decisions on crop selection

and resource allocation, Rama Gounder proceeded, after his initial explanation, to show his ingenuity in analysing and explaining his decision-making process. Besides using the cards and chapatti circles of different sizes and colours that the researchers had carried to the village, Rama Gounder involved the children to collect specimen of crop plants, leaves, seeds, etc. He also used samples of gypsum block, fertilizer farm yard manure (FYM), currency bills of different denominations, cartons of Azospirillum, pesticide cans and package of recommendation booklets to symbolically represent resources, their flows and transformation in different plots, his resource allocation decisions, and institutions having a significant impact on his decisions.

¹ Full report in *Participatory Rural Appraisal for Agricultural Research, at Paiyur, Tamil Nadu*, Tamil Nadu Agricultural University, Coimbatore and IIED, held in 1992.

Figure 1



• Analysis of process

The different stages of his analysis were as follows:

- He drew a large circle on the ground to represent the village boundary using *rangoli* powders².
- On a large drawing card he drew a symbol of his house and placed it to represent the dwelling place in the village.
- Internal inputs like farmyard manure (FYM), seeds of paddy, pulses, groundnut, etc., were symbolically represented by placing small samples of each input around the house cutout.
- Rama Gounder divided the circle into four parts by drawing thin lines. This represented his four plots, which he identified by writing the plot names on large paper circles. Plots nearer the habitat were shown nearest to the house, while the

farthest plot was put on the top, away from the house.

- Crops grown in different plots were shown by the seeds, leaves or plant specimen.
- Next he placed samples of inputs used in different crops, the sample being proportional to the quantity used. Pesticides cans represented the chemical inputs sprayed on the crops. Gypsum rocks of different sizes exhibited the soil amendments used while, fertilizer samples and FYM heaps were used to explain his nutrient management practices. Currency bills of different denominations emphasized the different credit requirements for raising crop combinations in the plots. A packet of Azospirillum typified the use of bio-fertilizers like Azolla and Azospirillum. Thus, all the resources allocated in the plots were symbolically represented.
- Rama Gounder now addressed himself to the issue of institutions that influence his resource allocation decisions. He used circles of different colours and sizes to indicate agencies such as, private shops input depots run by the State Department of Agriculture, Co-operative bank, Adhiyaman Grama (Rural) bank, Regional Research Station, Paiyur, Extension Office and his own house. The size of circle denoted the significance of different institutions. The circles were placed around the inputs.
- With a little prodding from us, Rama Gounder used cut-outs of human figure of two colours to differentiate between the family and hired labour and placed them on the four plots. Larger cut-outs were used to suggest greater labour requirements.
- Finally, on a large drawing sheet he made the legend.

• Reflections

We were all struck by Rama Gounder's innovativeness with which he analysed his own environment and the decision-making process. Farmers can play an important role in methodology development, provided we the professionals are willing to set aside time to

² Coloured powders, locally used during festivals to make decorative pictures on the floor.

listen to and allow them to teach us what they know and practice best. It was evident that a farmer's decisions on enterprises selection is influenced by the micro-ecological niches available to him and the access to and the assurance of institutional support. Instead of requesting villagers to name the institutions they interact with regularly and then try to understand their spheres of influence, the process we followed starts with farmers mapping out critical decisions and then identifying departments/agencies bearing on such decisions. In the present case, crop enterprise selection and resource allocation decisions were the focal interest. However, the exercise may be relevant for other areas too, such as health, credit, education, etc.

Once the basis of farmers' interactions with different institutions is established, different scenarios of resource management and the required institutional support can also be explored. It will be interesting to examine how a group will handle open-ended exploration.

- **Rama Gounder**, a Farmer from Dharmapuri, Tamil Nadu with **K. Natarajamoorthy**, Tamil Nadu Rice Research Institute, Aduthurai 612 101, India; **C. Chinnusamy**, Regional Research Station, Paiyur 635 112, India; **P. Nasuredeen**, Tamil Nadu Agricultural College, Kumulur, Pallapuram Post, Trichy Dist 621 712, India; **R. Ganesan**, Horticultural College and Research Institute, Periyakulam 626 501, Madurai District, India; **N. Shanmugavalli**, Agr. College and Research Institute, Killikulam, Vallanad Post, Chidambaranar Dist 627 252, India; **V.A. Sakunthala**, Sugarcane Research Station, Melalathur 635 806, India; and **Janardhana Rao**, MYRADA Talavadi Project, Thalamalai (PO) 638 461, India.

4

Measuring agroecosystems properties: adaptation of matrix scoring technique

M. Shanmugam, A. Palchamy, S. Jeeva, A. Kumar and K. C. John in collaboration with Mrs. and Mr. Marappan.

This note is based on the adaptation of the matrix scoring technique to investigate local perceptions of agroecosystem properties, namely productivity, stability, sustainability and equity, in a recently concluded PRA workshop in Paiyur for scientists of Tamil Nadu Agricultural University, India.

• Matrix scoring

Variations of matrix rankings and scoring are used to understand farmers' decision-making processes, comparing preferences for different technological options, land use strategies, etc, between individuals and between different groups, and eliciting decision-criteria. However, the efficacy of matrices in discerning long-term performance of farming systems is yet to be explored systematically. We describe a simple, quick and informative method of exploring trade-offs among systems properties in a drought-prone region.

• Sequencing with other techniques

Informal discussions along the transect walk helped us to understand the indigenous classification of the village ecosystem into several micro-environments, such as: *Manal Kollai* (ecological niche with sandy soil), *Semman* (red soil niche), *Kollamedu* (upland), *Pallam* (lowlying region), *Kutta kollai* (a small intensively cropped land), and *Thoppumedu* (upland grove).

Participatory mapping/modelling exercises with different groups of villagers, i.e. children, women and men not only confirmed the local land type classification but also gave us a

rationale for land use systems in a drought prone village. Seasonal analysis and probing of risk coping mechanisms provided us with a list of local innovators.

Mrs. and Mr. Marappan have been experimenting successfully to build diversity in their farming systems as a risk-hedging device. Diversity is marked by the wide variation in species choice, planting, cultural and harvesting practices and infinite adaptations to seasonal variations in their 7 plots. Their agroforestry system comprises coconut and cotton, coconut and sugarcane, mango and rice, mango and groundnut, four cattle, and annual crops like blackgram, greengram, lab-lab, Indian finger millet, tomato, chilly, rice, groundnut and sugarcane. Their latest experimentation is on integrating cassava into the system.

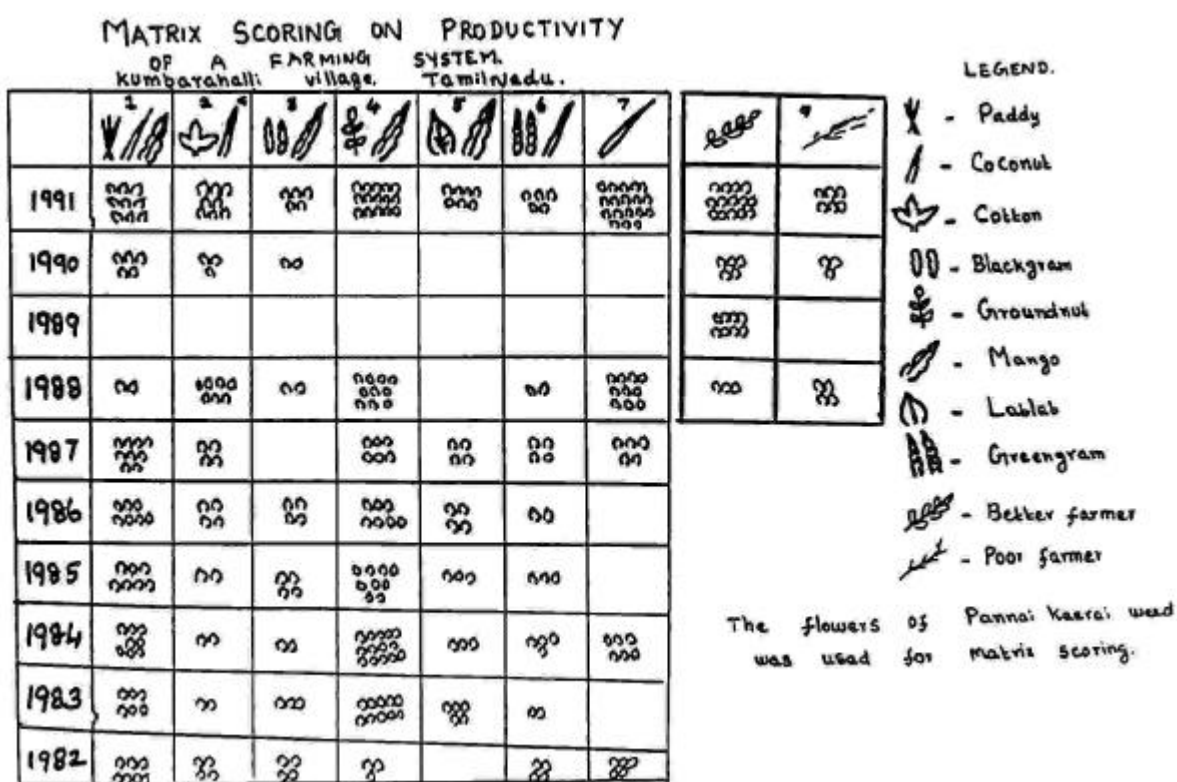
Farm profile, resource flow and nutrient flow maps constructed by the couple enabled us to appreciate their resource endowments, physical facilities, enterprise preferences for different plots' access to institutions for resources such as: technological information, mechanical energy, crop seeds and nutrients, credit and markets for disposal of marketable surplus.

Encouraged by the couple's willingness to share their time in experimenting with various participatory methods, the next day we found ourselves once again on their doorstep. The farm maps were not disturbed. We spent some time trying to understand their views on the virtues and drawbacks of different crops and tree species combination. Subsequently, we tried to assess the long-term performance of crop-tree-livestock systems that the Marappans have developed over the years.

They used leaves of different crops and trees occupying the plots to form columns that identified the seven plots. Years (written on cards) starting from the most recent to distant past, formed the ten rows. A 7 x 10 matrix was constructed with the help of rangoli powder. Flowers of *Pannai keerai* (*Celosia argentea* Linn.), a widely growing weed of which the leaves are used as spinach, from adjacent fields were collected for scoring productivity in 70 cells.

We were all struck by just how easily the Marappans could fill in the cells, row by row, starting from the immediate past, and the sense of satisfaction that they showed on completion of the scoring. Finally, we asked whether similar scoring can be done for comparable plots of a rich and a poor farmer. Mr. Marappan constructed a new matrix, 2 x 4 this time, and confessed that he could not compare realistically over all the years (Figure 1).

Figure 1



• Interviewing the matrices

The focus of interviewing shifted to the two matrices now. We continued exploring climate-induced variability, inter-year, inter-plot and inter-farmer, and risk management strategies employed by different groups of farmers. The emerging analyses were as described below.

Preferred tree-crop species combination

- Mango-groundnut combination was preferred over other combinations because it provided consistently a high cash income, except in the worst year.
- Coconut-mango-paddy combination was second in preference because, besides providing rice and coconut for domestic consumption, it also provided marketable surplus of coconut and mango. That is, it combined personal use and income.
- Coconut-cotton was preferred over the other options evaluated because income is quicker.
- Longer gestation period of coconut compelled the Marappans to experiment with several crop combinations both in the earlier stages of life and later after stable yields were obtained. For instance, in 1982 and 1984, in plot no. 7, they successfully grew sugarcane as an intercrop and thereby received higher income.

The farmer family could not reveal preference among mango-blackgram, mango-greengram and coconut-greengram. The annual rainfed crops that combined personal consumption and cash inflow were also vulnerable to climatic fluctuations.

Coconut, though most profitable, is also most vulnerable to drought conditions. It took three years for the palms to recover from the worst drought of 1989. Mango trees proved hardy and withstood the moisture stress.

Inter-year comparisons

The farm family indicated that 1992 was the best year in the past decade. Other good years

were: 1984, 1986 and 1988. Marappan recollected that 1975 and 1980 were relatively better years in terms of productivity in the last two decades.

The couple agreed with others that 1989 was the worst year. Villagers remembered this year for the acute shortage of drinking water. None of the seven plots provided any income and the Marappans had to draw on their previous savings. Mrs. Marappan's regular salary as a school teacher stood them in good stead.

1982, 1983 and 1985 were moderate years because the farm family could just meet consumption requirements.

The monsoon behaved erratically in the post-drought year, i.e. 1990. The pre-monsoon rains were timely, but withdrew early. Subsequently, the farmer could not complete sowing of annual crops in all the plots.

Inter-plot comparisons

The farmer preferred trees as the pivotal crop to experiment with alternate farming systems. In three plots each mango and coconut were raised as stand-alone trees, while on one plot both the species were combined. Mango (18 x 18 feet) and coconut (30 x 30 feet) trees have sufficient spacing of experimenting with several intercrops successfully.

Plot 7 (coconut alone) was intercropped with sugarcane in 1982 and 1984. Coconut started fruiting in 1987.

Inter-farmer comparisons

The Marappans identified a relatively well-endowed and a poor farmer with plots comparable to their plot no. 2.

Climatic variability affects all the farmers similarly. But coping mechanisms vary according to the managerial ability. For instance, the better farmer coped with the drought years by relying on off-farm activities. He had a fertilizer distribution outlet among other things. The fertiliser purchase decisions are usually made at the time of sowing and hence he could derive sizeable income even in the worst year. In the post-drought year, i.e. 1990, farmers are known to vigorously pursue

production maximisation strategy. Initial good rains enabled the fertiliser dealer to off-load significant quantities of nutrients, though early cessation of rains affected his business.

The poorer farmer migrated temporarily to the city as wage-labour during 1989, while the Marappans drew on their savings. However, small scale operation enabled the smaller farmer to cultivate his plot intensively in the post-drought year, i.e. 1990, as compared to the Marappans.

• Sustainability analysis

Matrix scoring and its examination led us to sustainability analysis. The farm family has successfully experimented with diversity in agriculture and food habits. The choice of enterprises portfolio has been influenced by personal use and steady flow of cash income.

Inter-year climatic fluctuations led the farm family to experiment with enterprise combinations with different levels of productivity and availability potential but the flowering and fruiting patterns are significantly affected by the climatic variations. Mango has more stable production.

The tree-tree and tree-crop combinations in the farming systems has enabled the farmer to withstand ecological perturbances. The matrix scoring reveals that the system has a high degree of sustainability. The system returned to its high level of equilibrium in the post-drought years. The enterprise combination has also contributed to the stability of the system. Recognising the high water requirement of coconut palms immediately following the drought, the Marappans efficiently utilised the limited water resources by intercropping tree stands with rice, with a basin irrigation system. Thus the farm family has been able to combine crops with trees as the pivot, synergistically.

The output indicators of the farming systems as indicated by the farm family are: produce from a wide range of crops, trees and livestock; by-products such as, groundnut oil cakes that is used both as cattle feed and manure, tree leaves for feed and manure and the farmyard manure. Most of the by-products are recycled within the farm.

The impact indicators of sustainability emerging from the analysis are: ability to cope with the worst drought without resorting to asset depletion or seasonal migration, ability to generate investible surplus, the relatively good standard of living.

• Final reflections

We experimented with the adaptation of matrix scoring to get a handle on agroecosystem properties with an innovator farm family (wife-husband team). It worked well.

The trade-offs among agroecosystem properties in a given recommendation domain can best be evaluated if similar exercises are conducted with different farm families and groups. Groups have the advantage of providing multiple interpretations of scoring and variations in conflict resolutions through arguments and counter arguments. We also need to test whether mixed groups of women and men from different households would provide better insights to conflict resolution mechanisms.

Sequencing of activities and a relaxed approach to collaborative exploration is a prerequisite to understand the reasons behind the behaviour of the farm family. It is tempting for professionals to extract information on what *they* think to be important issues. But such behaviour is often counter-productive and does not enable researchers/extensionist to learn from the farmer. Participants, both agriculturalists and professionals, can learn through the scoring and the subsequent discussions. Besides explicit articulation of preferences and criteria, it also enables to check one's assumptions about the farming system's performance.

Scoring of any kind involves implicit weighting. Inter-year, inter-plot and enterprise combination confounds the issue. It warrants further probing.

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Sorting fact from opinion: the use of a direct matrix to evaluate finger millet varieties

Michael Drinkwater

• Introduction

In September 1991 a workshop on participatory methods of working with farmers was held for the one national and eight provincial teams which comprise the Adaptive Research Planning Team (ARPT) in Zambia. As a training exercise ARPT members were split up into three groups. Each group went to visit one of the village research groups that the Northern Province Adaptive Research Planning Team have now been working with for three seasons. Their purpose was to conduct an evaluation exercise for either the bean or the finger millet varieties that the groups had been testing.

Our group of ten people chose to look at finger millet and to use a direct matrix ranking exercise to evaluate the different varieties with farmers. The exercise turned out to be considerably more stimulating than we had expected, arousing vociferous and intriguing debate amongst the farmers. It became clear during the discussions on different characteristics of the finger millet varieties we were examining, that farmers possessed a range of largely untested, different opinions. Thus key debates during the ranking exercise focused on what 'evidence' speakers could present to back their views and how acceptable the other farmers present felt this to be. As a result, by the end of the session all present, farmers and researchers, had learned a great deal more about finger millet than they knew at the beginning.

• Setting up the matrix

The village research group we visited was in the Mwendwe area of the Central Plateau zone of Northern Province. Finger millet is one of the three main staples found in the area.

Maize, which became dominant during the 1980s, and cassava are the other two. For finger millet, varieties are usually classified into three main categories, white, red and in between. Usually, in a general discussion, farmers will hold the white varieties to be better for making *nshima*, the stiff porridge which is the mainstay of the Zambian diet, and the red varieties to be preferable for beer brewing.

The farmers that we were meeting of the Chumbu research group were no exception to this general rule. When our discussion started, our group of ten people were mixed in with 25 farmers including nine women, around the walls of a large, rectangular *nsaka*, or meeting hut, belonging to the secretary of the research group. After explaining the purpose of the exercise, the first step of the meeting was to find out the main millet varieties which farmers possessed locally. Following this, a 20 to 30 minute discussion focused on identifying the various characteristics which farmers used when making comparisons between the different varieties. Eventually a total of sixteen such characteristics was obtained, and these were listed down the side of a large sheet of paper laid down on the floor of the *nsaka*. Across the top were listed the names of the three main varieties found in the area, with samples of each heaped below the name. One, *mutubila*, was a local white, the second, *mwangwe*, was a local red, and the third IE

2929 (now Lima), was a newly released, reddish variety brought by the Northern Province ARPT.

The member of our group chairing the meeting persuaded two women to come forward to start the ranking exercise. Using beans they had to score each variety between one and five for that particular characteristic. If others disagreed with their ranking there was then a discussion until a consensus finally emerged. The exercise proceeded with other pairs of people coming forward, usually voluntarily, to rank each characteristic in turn.

• **The ranking exercise (see Figure 1)**

The whole ranking exercise took a surprisingly long time, nearly two hours, but interest in the

exercise showed few signs of waning and a vast amount of information on finger millet emerged. There were a few fascinating debates, and some surprising overthrowing of stereotypes.

The major surprise came when the varieties were ranked for taste. The previous indicator had been that of yield. Here a woman had overridden the 1 to 5 ranking by saying that Lima yielded so much that it should be scored 6. This precedent was then followed when two men came to rank the varieties for their taste when used for beer. One man immediately threw down seven beans on the variety most preferred, not one of the two reds, which farmers normally say are best for beer, but the white, *mutubila*. Then for *nshima*, the reddish Lima scored better than the white, again a reversal of the generally stated norm.

Figure 1. The Millet matrix

	Mutubila (white)	Mwangwe (red)	Lima (ie 2929) (reddish)
colour 4	oo oo	oo o	o
early maturity 5	o	oo oo	oo oo
plant height 3	oo o	ooo oo	ooo oo
type of head 4	oo oo	oo oo	oo
yield 6	oo	oo oo	ooo ooo
taste: beer 10	ooo oooo	oo	o
taste: nshima 10	oo o	oo	ooo oo
resistance to bird damage 4	oo oo	oo	oo
threshing 1	oo	oo	ooo oo
grinding 2	oo oo	oo	o
meal quality 6	oo oo	o	oo oo
storage 5	ooo	oo o	oo
medicinal 1/2		oo oo	
marketing: in kitchens 7	oo o	o	oo oo
marketing: locally 7	oo oo	o	oo
range of soils can be grown in 10	o	oo oo	oo oo
Overall	ooo oo (325)	oo o (252%)	oo o (301)

The most interesting debate was on the subject of the relative resistance of the three varieties to bird attack during the period that the grain is ripening. Following a ten minute free for all during which no consensus looked even likely to emerge, the team intervened. The problem was that whilst every farmer had an opinion on this subject, few of them had any definite evidence to back their opinion. Often farmers planted the red varieties before the white, but as these reds were then ripening at a time when few other grain crops were, evidence of attack at this time was ruled out as an unfair test. Other farmers who had planted all the

varieties mixed together had simply not observed very closely the degree to which each variety suffered damage.

In order to resolve the impasse, therefore, several fresh pairs of people were asked to come forward and indicate their ranking. They ranked the varieties as seen in Table 1. None of the first three rankings met with any consensus. Finally one woman got up and provided the fourth ranking, with an argument which was found acceptable by the other farmers..

Table 1. Indicator: resistance to bird damage

Ranking and explanation	Mutubila	Mwangwe	Lima
<i>Ranking 1</i> White varieties are softer and more easily eaten, whilst red varieties have a tougher husk.	0	000	00000
<i>Ranking 2</i> White grains are hidden by the head and are not so badly attacked. Red grains are conspicuous against the head.	00000	0	0
<i>Ranking 3</i> Grains of <i>mwangwe</i> , the reddest of the three varieties, are most conspicuous and if harvesting of this variety is delayed there will be nothing left.	0000	00	0000
<i>Ranking 4</i> Her father mixed the three varieties and they were planted together. When she harvested them she separated out the three varieties and found <i>mutubila</i> to be the least damaged, whilst <i>mwangwe</i> and Lima were equally damaged.	00000	00	00

Once all 16 indicators were scored, an overall ranking for the three varieties was obtained: five for the white *mutubila*, three for the red *mwangwe*, and three for the reddish Lima. As a check, farmers then gave the indicators values ranging from 10 to 1/2. This allowed a total 'score' to be obtained for each variety by multiplying the value of the indicator by the variety's ranking for that indicator, and then summing the total. It was interesting that the total scores obtained were not proportionate with the overall rankings the farmers had agreed upon. For, although *mutubila* led with a score of 325, Lima's 301 was a close second and significantly more than the 252 scored by *mwangwe*, with which it was correlated. The reason for this is that until the ranking exercise most people present had underestimated Lima as a variety, as is discussed below.

• **Argumentation and the respective value of the three varieties**

Some interesting results emerged from the final part of the exercise, the valuation of the indicators. The most significant was which three of the indicators were given a value of ten. The taste of the varieties for beer and nshima could be expected, but the third was a surprise. This was the range of soils that the variety can be grown in. What was being shown here was the importance of the red varieties, despite the overall preference for the white *mutubila*, because of two significant attributes of the reds. One, they can be planted in less fertile soils than the white, and two, they can be planted early, as unlike the whites, their heads will not rot if they are ripening during the rains. This makes the reds extremely important for food security purposes, as was then confirmed in a series of food calendar mapping exercises carried out with farmer research groups in Zambia's Central Province.

Later, I had a discussion with the ARPT agronomist, Peter Reid, who had started work on finger millet in Northern Province by first of all undertaking a collection of some twenty or so local varieties. These had then been screened and the best (in terms of yield) spread to other areas in the province and used as genetic material in a finger millet breeding programme in Zambia (a millet breeder is

based at Kasama). But the knowledge that the red varieties have a special value for food security because they can be germinated with the first rains, and then harvested from late January to fill the hungry months of January to March, had not yet been realised by the agronomists and breeders.

Storage, another food security related indicator, was also ranked highly. The significance here is that of the three principal grains grown in Zambia, maize, millet and sorghum, millet is the only one that stores across seasons. Interestingly, the introduced variety, Lima, was rated as storing the least well.

The direct matrix exercise thus showed the differential advantages of each of the three millet varieties: each complemented the other and together all three formed a finger millet portfolio that was more resilient and had greater benefits than any single variety could provide. This fact was not fully realised by our team of researchers before the meeting, and was probably less than fully realised by most of the farmers. They mixed and broadcast all the varieties together, so that during cultivation, harvesting and utilisation, often little or no separation of the range of varieties they might have was undertaken. This is a satisfying strategy, but masks the different attributes of each variety.

The process of argumentation that was carried out during the direct matrix exercise, revealed - at least potentially so - to all participants the individual strengths and weaknesses of different varieties. This was, however, only partially picked up by many of our team members at the time. They had concluded that Lima was not a popular variety because many of the farmers who had initially been given it to try no longer possessed it. From watching the reactions of the assembled farmers during the meeting my own feeling was different (and the others agreed in our later discussion).

Rather, what had happened is that after the first season most farmers had merely mixed the Lima variety in with their other millet, as is their normal practice, and thereby 'lost' the small amount of it they had. It simply became part of their red millet. However, the one extended family that was consistently

responsible for ranking Lima during the matrix ranking exercise, had appreciated its different virtues from their main red, *mwangwe*, and had therefore kept it as a separate variety. It was from this family (who were hosting the exercise), that the other farmers at the meeting learned that Lima had qualities which distinguished it from their existing varieties, and so made it valuable in its own right.

As people left the meeting many stopped to finger a sample of Lima. They looked at the variety, separated out and contained in its own calabash, as though they were seeing it for the first time.

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Ranking in planning of emergency programme in Angola

Marie-Noelle Vieu

Introduction

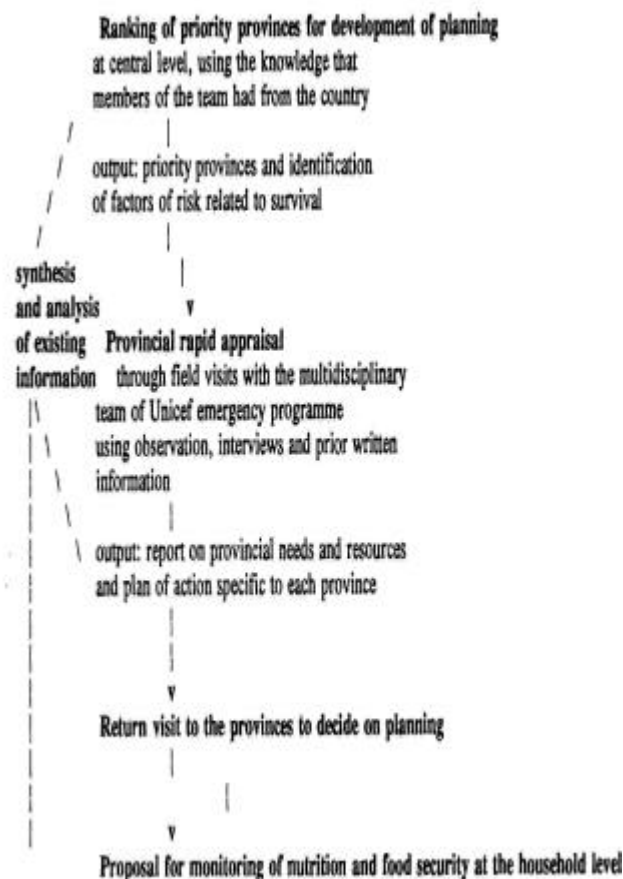
This paper reports a ranking exercise carried out by a UNICEF technical team (a medical doctor, an agronomist and a nutritionist) in Angola. This exercise was part of the planning of the UNICEF relief programme within the UN 'Special Emergency Programme for Angola' (SRPA) launched in October 1991. It took place from December 1991 to June 1992. The author was involved as a nutritionist. The present paper focuses on the methodology itself rather than the impact of the exercise on the decision-making process because the departure of the author before completion of the programme, and because the failure of the peace process prevented any follow up. However, looking at this experience with critical eyes might be useful in planning emergency programmes under the pressure of time and resource constraints.

The author's views do not necessarily represent those of UNICEF. Any faults or misconception in the interpretation of the fieldwork remain the author's own responsibility.

Ranking is defined here as a process of priority ordering, in this case of administrative areas in relation to the need for assistance. It used the knowledge that informants possessed from the country (at a national level) and from the provinces (at provincial level). No quantitative data were used. Whereas data were available from various sources including national statistics, the controversy about their reliability was often solved by looking for/gathering more data and thus increasing the complexity of the data analysis. The methodology used was inspired from the

'Rapid Rural Appraisal' approach¹. The ranking technique was expected to provide a rational framework to deal with time and resource constraints (see Figure 1).

Figure 1. Sequence of the need assessment



¹ Grandin B.E. 1988. *Wealth ranking in Smallholder Communities: a Field Manual*. Intermediate Technology Publications.

• Ranking exercise at central level

This exercise aimed to identify priority provinces for the UNICEF emergency programme from the 9 targeted by the SRPA. The informants were the members of the UNICEF technical team: one was from the country and another had been working there for more than one year. Each member was qualified in complementary sectors: agriculture, health and nutrition.

From a group discussion, 3 criteria were identified to determine the grade of priority of assistance:

- the magnitude of the risk from the point of view of health and food security, to which contributed various factors such as the intensity of the war conflict, the size of the displaced and refugee populations, the impact of the drought and the size of the population of the province;
- the availability of previous information at the national level on local resources and emergency needs; and,
- the feasibility of intervention which depended on the presence of NGOs and the local administrative capability in handling relief operation, and the condition of the infrastructure.

We assumed that priority became higher as the risk increased, logistics became more difficult, information became more scarce and other relief programmes became less active.

The *first step* was to establish a score of *global risk* for each province, based on the severity of the various factors contributing to it (see Table 1). The score was calculated by pooling together the estimated severity of each of the risk factor.

The *second step* was to calculate a *global score*, adding the 3 criteria: the higher the score, the greater the priority. The conditions for intervention (c) were taken into account because UNICEF intervention was supposed to be complementary to that of other agencies and organisations. Because UNICEF had access to specific logistic resources, provinces of difficult access and/or provinces with little outside support would be given priority.

Based on this ranking exercise, visits to 5 priority provinces (Huambo, Moxico, Bie, Benguela and Kwanza Sul) were planned. Later, when information gathered by other organisations began to be pooled together, this quick classification of priorities was confirmed.

Table 1. Risk ranking

Province	war	displaced population	refugees	drought impact	population size	TOTAL
Benguela	++	+++	0	++	+++	10
Bie	+++	++	0	0	++	7
Cuando Cubango	+	++	0	+	+	5
Kwanza Sul	++	++	0	++	++	
Cunene	0	+	0	+	+	3
Huambo	+++	++	0	++	+++	10
Huila	+	+	0	++	++	6
Moxico	++	++	++	0	+	7
Namibe	0	+	0	+	+	3

0 = absence of the factor, + to +++ as the magnitude of the factor increases

Table 2. Priority ranking

Province	risk intensity (a)	absence of information (b)	of difficulty of intervention (c)	Total (d)
Benguela	10	+	++	13
Bie	7	+++	+++	13
Cuando Cubango	5	+	+++	9
Kwanza Sul	8	++	+	11
Cunene	3	+	+	5
Huambo	10	+++	+++	16
Huíla	6	0	+	7
Namibe	3	+	+	5
Moxico	7	+++	+++	13

• Ranking exercise at provincial level

In 3 provinces among the 5 visited by the UNICEF team, a ranking exercise was carried out with the aim of identifying priority districts for assistance and support to local services. There were a number of reasons for carrying out such an exercise:

- cross-checking the ranking of areas drawn from quantitative data with the one obtained by interviewing a number of provincial informants;
- getting a better understanding of how priorities were defined at provincial level. Ranking was performed without predefined criteria in order to find out which criteria local people were using; and,
- taking into consideration the different perceptions of priority among the main provincial government services.

Unlike the national-level ranking of the provinces, the informants were all based in the province concerned.

The ranking exercise took place in several steps. The first step was a ranking of the districts by priority for assistance which was performed independently by each of the provincial directorates (health, agriculture, social services). Technical staff were involved as well as the provincial directors in order that

views of those with more contact with rural areas be included. When several persons from the same directorate were involved, their individual classifications were pooled together and a score calculated.

The second step consisted of pooling together the classifications done by the various directorates and calculating a global score. The higher the score, the higher the priority.

Finally, this ranking based on local informants was compared with those obtained using specific risk criteria such as: the scale of migration due to the war as estimated by the official data on displaced people; the risk of drought based on the locally perceived rainfall pattern; or the conditions for intervention based on access and availability of partners locally. For only one district in one province was the ranking obtained from local informants the same as that obtained from specific criteria.

• Limitations and potential of the approach

At both the central and the provincial levels, the ranking procedures followed had various defects.

In the central level ranking, there was some overlap among the criteria used for ranking. Furthermore, all criteria were given the same weight whereas their impact on people's survival and consequences for assistance were of different severity. Introducing logistics as

one of the priority criteria created some confusion. According to humanitarian concepts, isolated populations are a priority whereas cost-effectiveness would lead to prioritising areas of easier access and with already some relief organisations. Finally, a bias was introduced by assessing the impact of drought according to the agricultural potential. Therefore semi-arid provinces such as Cunene and Namibe had been attributed a low score for this factor while in these provinces the consequences of drought could also have been assessed from the point of view of the pastoral activity.

The provincial level ranking exercise had no operational outcome for the following reasons. The exercise was not done systematically and was subject to biases because of the lack of diversity of background of the provincial informants. Also foreign agencies showed a lack of faith in the ranking performed by provincial authorities. Third, the concept of priority as used in the ranking did not allow to take into account the diversity of needs within a province.

However a number of outcomes for both the central and provincial level rankings are worth considering. First, the ranking process at the central level provided, in the absence of organised data, a framework to target relief which was independent of quantitative data, thus avoiding the perpetuation of the controversy about the reliability of identification and counting of 'affected people'. Second, outsiders and donors began to be aware of the variability and diversity of the emergency situation throughout the country, thus introducing the concept of province-specific intervention planning.

The provincial level ranking exercise serves to underline a number of points. First, priority as defined by displaced population data, which had been used by the UN agencies, had little in common with the perceived priority at provincial level. It might be that local informants had a better knowledge of the distribution of displaced people but also that other factors such as the local capability to deal with relief work and the severity of the impact of drought were taken into consideration. For instance, in one province, 4 among 7 districts were attributed the same

rank by local informants and by using qualitative information on rainfalls. The provincial level exercise also emphasized the risk of errors in deciding priorities based only on one source of information.

• Conclusions

A ranking process can be a very powerful mechanism for international agencies. It provides a guideline for better management of time and technical resources. In the case of Angola, it was useful for outlining the complexity of the humanitarian issues to which UN agencies had tended to answer with a standardized and predefined set of strategies. However the efficiency of this process depends on the choice of informants. The success of this exercise at national level was mainly due to the multidisciplinary approach and to the knowledge that staff members had of the field conditions. Ranking could be also a very useful approach for the identification of perceived priority at the local level. In the Angolan context, it could have been a helpful vehicle for organising local knowledge and improving ability in managing resources and problems at the local level, given that monitoring systems and official information systems had a limited coverage and encountered many technical difficulties.

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The role of focus group interviews in assessing the primary health care and family planning programme in India

Abusaleh Shariff and Pravin Visaria

Introduction

Primary health and family planning services (FPP) are usually a package consisting of delivery of various drugs, vaccines, diagnostic and surgical services and follow-up measures and advice. They are dependent on an efficient extension of services to the people at the right time and place, and in the right sequence. The success and usefulness of these programmes can be gauged by the extent of coverage and by assessing the quality of service inputs and client satisfaction. Because they are public welfare programmes, it is also necessary to investigate both the direct and the indirect costs incurred by acceptors for obtaining these services. Thus the constraints of supply and demand on the smooth functioning of the primary health (PH), mother child health (MCH) and FP programmes have to be found both at the institution (service centre) and the community level. Research on these issues is normally done through surveys, sometimes supplemented by operations research. The surveys generate a wealth of statistical data often for a representative sample of the population; yet they cannot explore many intricate issues concerning the mechanisms, processes and causal factors. New approaches are necessary to understand, assess, and/or improve the extension, delivery and efficient use of inputs.

Among the available qualitative research methods, anthropological and ethnographical methods are used on a small scale with limited population and geographic area. Although they provide suitable results, such studies are both time-consuming and expensive. The 'Focus-

Group Interview' (FGI), a method of data collection applied for quite some time in marketing research, is a useful alternative in association with other methods. It offers the advantages of sampling, coverage and geographic spread on the one hand, and in-depth and anthropological type of investigation on the other.

FGIs are *ipso facto* group discussions. During the exploratory stage, discussions may be unguided or non-directed and unstructured. Some tentative guidelines for FGIs can be laid down in advance although they cannot be followed too strictly and must be used flexibly. The moderator needs to not only open and introduce the theme of the discussion but also carefully to guide it within a dynamic frame of selected topics. But after some rapport is established, it is possible to guide the discussion to focus on important issues and yet allow for other related discussions to occur freely enough to permit new points to emerge. Our FGIs were focused on various qualitative issues relating to primary health care, FPP and factors influencing child survival.

In this article, we describe certain key features of FGIs based on our experiences during research on the qualitative assessment of the primary health and FPP inputs and performance in Gujarat. Certain procedures can make a FGI easier, more reliable and overall more successful, such as selection of areas, selection of participants, role of the moderator, documentation and analysis.

• Nature of the inquiry

During the research, we contacted a number of providers, and users and non-users of services in selected geographic areas (see Table 1). Various data collection methods were used to elicit both the providers' (programme personnel) and people's (users and non-users of FP methods) points of view:

- secondary data collection on range of inputs;
- formal interviews with key functionaries (the district health officers, the medical officers of health and the female health workers);
- focus group interviews for female health workers;
- focus group interviews of selected acceptors and non-acceptors; and,
- participant observation and informal discussions, including functioning of out-patient and surgical units of the PHCs.

• Selection of districts, PHCs and sub-centres

Ideally, the selection of districts, PHCs and sub-centres should have been based on a *measure of performance* such as the couple protection rate (CPR) or contraceptive prevalence rate. But not always are comparable and full statistics available. In India, estimates of such rates are based on service statistics provided by the Department of Health of the state government and are available up to the district level. Accordingly, two districts with a high CPR and a low CPR and two districts with a medium CPR were selected on the basis of the data as of March 31, 1987. Corresponding estimates are not available at the PHC and sub-centre level due to uncertainties about the population in those areas. The PHCs and sub-centres do not generally coincide with the territorial units of census and population estimates by PHC and sub-centre are difficult. Besides, the geographic areas of the PHCs and sub-centres were revised after 1987. We therefore identified relatively better performing and poorly performing PHC centres, in consultation with district officials and after looking at performance records.

Table 1. Statistics on the focus group interviews conducted

A) Areas selected for study	a) Districts	4
	b) PHCs (2 per district)	8*
	c) sub-centres (2 per PHC)	16*
B) Structured open-ended interviews	a) District officials	4
	b) Medical officers	9
	c) Female health workers	24
C) Focus group interviews of 'providers' (FHWs)	a) No. of interviews	8
	b) No. of participants	59
D) Focus group interviews of the acceptors of sterilizations and the non-acceptors	a) No. of interviews	61*
	b) No. of participants	566
	c) No. of villages from which participants were drawn	59

* One PHC and two SCs were studied for the pre-test; all interviews were conducted between April-Aug 1989.

• Selection and recruitment of participants for the focus group interviews

Once the areas were selected, individuals had to be invited to participate in the FGIs. The behaviour and response of a group will depend on factors including how the group is formed, i.e. spontaneously or through an organised effort, how homogeneous it is, its size and the extent of inter-personal interaction and acquaintance between group members.

We found the manageable size in our interviews to be between 8 and 10 participants. Village level functionaries helped us compile lists of possible participants before they were invited to join a FGI on the basis of socio-economic characteristics such as caste, occupation, and level of living. Also the more limited the inter-group acquaintance, the better the group discussion seemed to go. We brought together members of the dominant but compatible caste groups and occupations, whose knowledge of each other was minimal.

For this purpose, we had tried to draw only two or three participants from each of the three to four neighbouring villages.

The criteria we used to form groups for the interview were: acceptance of FP, mostly sterilizations, literacy status, and sex of participants. The participants were generally between 25-34 years, and had a minimum of three living children (particularly for non-acceptors of FP) with the last living child younger than three years. These criteria meant that the women or men would have had a recent childbirth/child care experience, which was the focus of our discussions. For FP users, the criterion of a minimum of three children was relaxed.

Table 2 shows some characteristics of the participants in the interviews of actual or expected recipients of services and the FHWs (covered by (c) and (d) in Table 1). An interview included 9.3 participants on an average. The average number of interviews per PHC area was close to seven.

Table 2. Distribution of interviews and participants according to key characteristics of participants

Characteristic	No. of Interviews	No. of Participants
a) Women, acceptors of sterilizations	20	189
b) Women, non-acceptors of sterilizations	19	163
c) Women, including both acceptors and non-acceptors	9	79
Sub-total FGIs of women	48*	431
d) Men including both acceptors and non-acceptors	13	135
e) Female Health Workers	8	59
Total FGIs	69	625

* Of the 48 focus groups, 11 included all literate and in another 11, all participants were illiterates; the remaining 26 were mixed.

· **Bringing participants to the venue of focus group interviews**

About half of the contacted persons agreed to participate in the discussion groups. The actual FGI duration was about 2 hours but extra time was required to transport the participants from and to their homes. The critical problem was to gather everybody (mostly women) in a common place. The effort required was much more than is necessary to interview individuals in their homes. The participants had to be persuaded to come out, and to travel and sit together with others who were not personally known to them. Also not all participants knew the meeting place, which had to be reported in advance to the rest of the family and was normally a school, a *panchayat* office or a creche. The researchers were not known to the participants which further made the first contacts difficult.

Different strategies were used to contact participants and persuade them to participate in the FGIs. In relatively smaller but socially homogeneous villages, often the local leaders (not always the formal leaders) either accompanied the investigators or sent their messengers to help. In the larger and heterogeneous villages, it was useful to take the help of the *talati* (the village revenue official), teachers, etc. The presence of health workers elicited a mixed response depending upon their rapport in the village. Sometimes they could easily persuade the participants, but occasionally their presence resulted in outright refusals. The mixed response probably reflected the nature and style of their activities

to promote FP and deliver various services. There was a general feeling that it was a waste of time to participate in FGIs because of the absence of any immediate or deferred benefit; and the non-users of FP were afraid of being forced into sterilizations.

If the waiting period either in their respective homes or at the place of interview was long, the sheer boredom lowered the tempo of participation in FGI. Women who arrived relatively early wanted to leave after a certain time, before the others who had arrived late. It needed considerable effort on the part of the moderator and other investigators to hold the group intact for the duration of the FGI. On a few occasions, the problem was not entirely solved. Nevertheless, a relaxed and informal atmosphere, had to be created by talking generally about the local context, issues relating to rural households and individual introductions. Once a satisfactory rapport was built up, the individual names and other particulars were recorded before the group interview started.

Table 3 shows the distribution of women who participated in FGIs by the time when the FGIs began and the nature of their economic activity, if any. Many participants who were agricultural labourers had to sacrifice a day's wages to participate in the FGIs. Rather surprisingly, about half the women belonged to joint families which are normally presumed to be unwilling to send women out of the home. Evidently, the presence of other adult members in the home had made their participation in the FGI easier.

Table 3. Distribution of female participants by the time when FGI began and the nature of their economic activity

Economic Activity	Starting Time when FGIs Began				All
	Before 10am	10am to noon	Noon to 4pm	After 4pm	
No. of FGIs of Women	4	11	23	10	48
Work on own farm	8	47	48	33	136 (31.5)
Agricultural labourers	10	27	63	14	114 (26.5)
Household workers	30	18	82	51	181 (42.0)
Total	48 (11.1)	92 (21.4)	193 (44.8)	98 (22.7)	431 (100.0)

- **Moderator, documentation and recording**

The moderator who initiates and guides the discussion is the most important person in the conduct of FGIs. Therefore, he/she needs to be well trained, fully aware of the content and context of the issues to be discussed, well versed in the local language or dialect and to some extent in the local customs as well. The moderator has to be both a good talker and a good listener. He or she has to pick up the relevant issues emerging during the discussion and to link them to the main themes of FGI within a limited time to see the discussion through to the end.

A difficult task is to document the discussion as it proceeds. It was done by another assistant who wrote down as much as possible of the discussion. When an issue had been discussed, we noted not only the consensus, but also disagreements, links between issues, and individual experiences. Our documentation improved over time. The interviews were also recorded on a tape. Soon after the end of a FGI, both the moderator and the assistant made separate notes of the points discussed. These notes were the basis of much of the final report.

- **A discussion guide for conducting the focus group interviews**

Our FGIs covered a wide range of issues. To establish rapport, current health problems faced by women and children, decision making regarding health care and sources of health care were discussed first. Then the moderator could tactfully guide the discussion to the main themes of health personnel, family planning, mechanisms of the extension of the services, and quality of care. The discussion guide was used with a certain degree of flexibility to keep the participants as involved as possible.

- **Analyzing focus group interviews and reporting**

Analysis of the focus group interviews has to take account of the nature and form of information collected. The information is documented in the form of narrations in the sequence in which the discussion proceeded. The sequence is not necessarily uniform across interviews although all the relevant issues are covered in each interview. The first step in the analysis is to check the coverage of different themes across FGIs. Common patterns, differences, and likely reasons for this can be identified. Observed differences regarding the group/community characteristics, geographic

factors and the service delivery system can help to generate hypotheses about how the information can be verified.

• **Strengths and limitations of focus group interviews**

Overall, our experience confirms that when used in association with other methods of data collection, FGIs are cost-effective. They highlight the processes and mechanisms, through the responses and opinions of users and non-users, about primary health and family planning services, and about their supply. Thus they also help generate hypotheses for verification through alternative approaches.

The reliability of results can be assessed by evaluating the design and conduct of the FGIs, and the documentation procedures. The possibility of inter-investigator differences in the results of FGIs cannot be ruled out.

The quality of discussion in different interviews tended to vary. Of the 46 focus group interviews of females, we have rated 25 as good, 16 as moderately good and 7 as poor. Our rating is based on several criteria. One was the extent to which the discussion guide could be followed in an interview. In 19 of these interviews we had to change the order in which issues were discussed; this was necessary to improve the quality of discussion in the light of the general reactions of the participants. Most of these 19 interviews are classified as good.

The second criterion was the extent of repetition and probing required. In 16 interviews, additional probing was necessary. In 14 interviews the discussion at times did not flow freely due to interruptions and/or domination by some participants. Eight groups were found not cohesive enough in terms of inter-community interaction to permit satisfactory interviews.

Fortunately, the poor or moderately good FGIs were not concentrated in a few sub-centres. The three or four focus groups interviews conducted in each sub-centre had different ratings and on an average, together with the impressions gathered during field visits, the research team has been able to make a

reasonably valid assessment of each sub-centre. Overall, therefore, we consider our findings to be dependable.

• **Conclusions**

The fact that primary health and family planning programme is a massive social welfare programme poses many difficulties in assessing its functioning. Qualitative studies of the programme inputs and its impact are necessary to judge the use efficiency of massive investments of resources. The FGIs would help in devising measures for assessment. The present study demonstrates the possibility of gathering rich information reflecting upon the quality of the programme.

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NOTE

Other members of the research team were: Ms. Darshana Vyas, Ms. Sejal Sheth, Mr. Prakash Nayak. This article is a summary of the full report entitled: *Family Planning Programme in Gujarat: A Qualitative Assessment of Inputs and Impact*, November 1991. It is available from the Gujarat Institute of Development Research.

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The Gujarat Institute of Development Research has produced several reports on how RRA was used in a range of research activities. One of these is written by B.L. Kumar and S. Iyengar and is called *Understanding Problems of Agriculture through Informal Survey Technique - A Case of Kachchh District in Gujarat, India*.

8

Comparison of RRA and intensive residential study: the case of Marit, Plateau state, Nigeria

RRA Workshop Participants (Marit Team) and Newcastle University Expedition

• Introduction

The advantages of RRA as compared with conventional survey have become widely accepted over the past decade. There now seems little doubt that RRA can quickly generate adequate information for rural development planning. However, the promotion of this methodology has not been accompanied by much critical examination. Little attempt has been made to crosscheck the results of RRA's with those of other methods, which though less rapid could prove more reliable. In an attempt to tentatively address this issue, the results of an exploratory RRA are compared here with those of an intensive residential study in the same area.

The aims of this article are to: crosscheck the results of the RRA, assess the extent to which the purpose of the RRA was fulfilled, and consider any implications for RRA methodology.

• Background

Marit is a village in the Barakin Ladi Local Government Area of Plateau State, Nigeria. This village is located in the tin-mining region of the temperate High Plateau, about 60km S.S.E. of Jos, the State Capital. Marit comprises the main settlement of the same name, the former mining camp of Buka Bakwai and six small hamlets. The total village area is approximately 25km² and the estimated population of 2,112 (calculated from PADP, 1990) gives a population density of about 84 persons/km². The population mainly comprises Ron or Challa people who originated from Bokkos some 20km to the

south. Significant minorities of Hausa, Fulani, Birom and Mwachaval also live in the village.

The main economic activities in Marit are agriculture, livestock husbandry and small-scale tin-mining. The people of Marit are locally renowned for their skill in rain-fed farming. Maize and Irish potatoes are the main crops grown, with smaller amounts of *acca* (the small-grain cereal *Digitaria exilis*), beans and sweet potatoes. During the dry-season (November to April), Irish potatoes, maize and tomatoes are produced by small-scale irrigation. Livestock husbandry involves cattle-rearing, mainly by settled and migrant Fulani, and the production of goats, sheep, chickens and pigs. Small-scale tin-mining provides a readily available extra source of cash income, though few people are full-time miners.

Marit was selected as one of two villages for pilot-project activities under the Jos Plateau Environmental Resources Development Programme (JPERDP), which is executed jointly by Durham University (U.K.) and the University of Jos (Nigeria).

• The RRA in Marit and Buka Bakwai

The approach adopted was based on that of Conway *et al.* (1987) and Kabutha and Ford (1988). The RRA included staff of Barakin Ladi Local Government, State-level organisations (including DFRRI, MAMSER and 'Better Life') and the University of Jos. Co-ordination and training was provided by the Durham Fellows (Andrew Kidd and Kevin Phillips-Howard), with the latter also serving as Marit Team Leader. The RRA occurred in

September 1990 and involved use of the following six instruments in Marit main settlement and Buka Bakwai: mapping, village transects, historical profiles, seasonal calendars, trend lines and organisation (Venn) diagrams.

These instruments were applied through direct observation and semi-structured interviews in task groups. The RRA culminated in a village meeting at which the results were presented. These results, are described in detail in the Marit Village Report (RRA Workshop Participants (Marit Team), 1991).

- **The intensive residential study (IRS)**

The Newcastle University Expedition visited the Jos Plateau from early July to late September 1991 under the auspices of JPERDP. The Expedition team in Marit comprised three students of geography (Fergus Lyon, Heather Laycock and Chasca Twyman) and one of social studies (Barney Wells); they stayed in the village continuously from July 17th-31st, 1991. During this period the team 'came close to the villagers', gained their confidence and, through 100 or more interviews, gathered much detailed and reliable information.

The aim of the Expedition was to carry out an intensive comparative study of three villages, one of which was Marit. In Marit the Expedition focused on knowledge and use of fertilizers, gender roles in household economic organisation and water-related health problems. The methods used included direct observation, questionnaires, semi-structured interviews and group meetings.

- **The 'key issues'**

Qualifications to the 'key issues' of the RRA discovered during the IRS are outlined below.

Soil fertility

Soil fertility was confirmed as a key issue. The observation that the soils have 'become used to chemical fertiliser' and less responsive to traditional manure was also reiterated. However, the role of cattle in the economy and

their manure as a widely-used traditional fertiliser seems to have been understated. This probably resulted from insufficient attention to the Fulani, who manage most of the cattle in the village. Since no Fulani were included in the second round of interviews, when the key issues were clarified, the role of cattle manure was not revealed by the RRA. The IRS found that cattle manure is in fact widely used, albeit in a secondary role to chemical fertiliser. However, it also discovered that women 'hate' cattle manure because it generates many weeds that they must remove.

It appears that some economic aspects of soil fertility were not adequately clarified by the RRA. In particular, the point that the issue is seen as a shortage of cash to buy fertiliser was not grasped. During the IRS some women indicated that they solve the problem themselves, by tin-mining to earn the necessary cash. An important cultural consideration missed by the RRA was that, in Marit, a farmer's prestige depends on the extent to which his or her farm is visually impressive, i.e. flourishing with highly productive dark green crops. The appearance of a man's farm is also assessed when considering his suitability for marriage.

Water use

Water quality was a particular concern of the IRS and was confirmed as a 'key issue'. However, the drinking-water situation was found to be worse in the small hamlets than in the settlements covered in the RRA since several of them apparently had no wells at all. The main reason for this was the high cost of well construction. Nevertheless, this issue was not emphasised, possibly because it was less of a concern at the time of the IRS (in the middle of the rainy-season). Alternatively, its lack of emphasis, in Marit main settlement at least, could have been due to the fact that a project was already underway to improve the spring. Similarly, the fact that the feasibility of fixing a broken pipe (for use in irrigation) was being investigated may explain why it was not mentioned during the IRS. With regard to irrigation the issue was again expressed in terms of a lack of cash, in this case to buy pump-engines. It was discovered that, in the absence of engines, women used calabashes to irrigate small dry-season farms.

Income

Income emerged as a critical 'key issue', especially with regard to the youth. Traditional agriculture is not attractive to many youths, though they are derided if they refuse to farm. Tin-mining is considered among the Challa (but not among non-indigens) as 'lazy man's work'; it is socially acceptable as a means of gaining cash to solve an immediate problem, but not as a main source of income. It was discovered that a man who does not farm is regarded as 'a man in name only'. Yet, according to the village chief, 'an industry' or some other modern sector, non-farm, source of employment is very much sought for the village; though how realistic an aspiration this is remains uncertain. These concerns were not shared by the cattle-rearing Fulani who apparently had no employment problem.

Electricity

Electricity supply appears not to be a widely held priority, although it is important to the Chief who wants Marit to be connected to the sub-station 2km away. This issue was also mentioned by a women's group, at the beginning of the IRS, among a list of benefits which it was hoped that the Newcastle Expedition may be able to help bring to Marit.

Clinics

Clinics were apparently no longer a key issue, at least in Marit main settlement, probably because circumstances changed in the nine months between the RRA and the IRS. No mention was made of the village health committee, perhaps because its primary aim (the launching of the maternity clinic project) had already been achieved. Also a private clinic had opened and a previously established dispensary had resumed the sale of drugs.

Organisations

Organisations were not systematically studied in the IRS (and not at all in Buka Bakwai or the hamlets), but a number of useful discoveries were made about them in Marit. The Young Farmers' Club (YFC) allegedly collapsed because of fiscal mismanagement by members of its committee. Now the Club exists, but has no members. The committee

allegedly hires tractors through the Club to plough their own farms. Fiscal mismanagement also led to the dissolution of the Village Development Committee, but it was soon to be reformed through the election of new Officers.

There are in fact more organizations in Marit than was discovered in the RRA. The additional ones include Boys' and Girls' Brigades, the Baptist Womens' Fellowship, the COCIN Youth Church Movement and the Baptist Convention Farm. Of these, only the last post-dated the RRA. A 'Better Life for Rural Women' group has formed in the village, since the RRA, with the assistance of the JPERDP.

Protection

Regarding protection of crops from livestock, live-fencing with Euphorbia cactus is not liked because it prevents the villagers from seeing each others' farms.

Mineland use

The issue and the observations of the RRA were confirmed and it was discovered that many people want pump-engines to enable them to take up irrigated farming on former mineland. A visitor from Bokkos indicated that he intended to start fish-farming in Marit.

Acca

This issue was apparently misconceived in the RRA. Although *acca* is much liked, people do not actually want to produce more because of the high labour requirement, the low yield, its unimpressive appearance (to Marit people), and the indication it gives that the farmer cannot afford fertiliser. However, when asked if they would grow more *acca* if they had a mechanical thresher, informants answered affirmatively.

Agricultural development

In addition to the problems identified in the RRA, a shortage of labour, the high price of labour, the lack of tractors and transport for crops were also discovered. The IRS also contacted the village extension agent (VEA) to the village, who indicated that she was not

able to visit the village regularly because of transport difficulties.

Other issues

Sanitation emerged as an issue mainly because there was no latrine available for the Expedition and this embarrassed the village leaders. However, as the Expedition adjusted to using the bush, both the embarrassment and the issue faded. Some villagers did independently raise the issue of sanitation and its effects on health. Moreover, an attempt was made to promote the construction of pit latrines in the past, but with no success.

Issues which were identified but not elaborated by the IRS include inadequate nutrition, matrimonial problems, overdrinking and the sexual division of labour. These issues were raised by women, in discussions with the women on the Expedition team - after a familiar relationship had been established between them. The IRS also discovered a Mwaghaval minority with a ward head and an elder on the village committee which had eluded the RRA.

• 'Best Bet' projects

On the basis of the 'key issues' identified in the RRA, the following 'best bet' projects (elaborated in RRA Workshop Participants (Marit Team), 1991) were identified:

- Well improvement in Buka Bakwai;
- Assistance to the development of irrigated farming;
- Promotion of small livestock and poultry production;
- Legume production;
- Agricultural advice and training;
- Food processing;
- Gaining electricity supply;
- Improvement of the Buka Bakwai road; and,
- Better drinking-water supply in Marit.

The relevance of each of these projects was confirmed, but extra information was gathered that could have implications for their potential viability. For example, with regard to No. 2, it was discovered that the specialist knowledge about irrigated farming held among the

migrant Hausas, is not generally shared with other people. Similarly, regarding No. 3, there is a large prestige element to possessing greater numbers of livestock in Marit; though feeding and keeping them can be both difficult and risky.

• Conclusion and implications

This comparison has enabled the results of the RRA in Marit to be crosschecked. But, since the IRS did not coincide exactly with the RRA, spatially, temporally or in topical coverage, the comparison was neither comprehensive nor clearcut. Nevertheless, the IRD did largely overlap the RRA and helpfully reveal the following points:

- The RRA was generally successful in rapidly identifying the 'key issues' in the village, though some issues (clinics, electricity and *acca*) were not re-confirmed by the IRS. However, certain issues of particular concern to women (inadequate nutrition, matrimonial problems, overdrinking and sexual division of labour) were overlooked by the RRA, despite efforts to include female interviewers and village women in both rounds of interviews and the final village meeting.
- Most of the 'best bet' projects identified by the RRA were confirmed by the IRS without qualification, but with extra information. In this respect the IRS made little difference to project implementation. However, the IRS did discover socio-cultural and political considerations (significance of farm appearance, prestige aspects of economic activity, cases of embezzlement and intrigue) with important implications for project viability. It is doubtful whether these considerations could have been discovered, even in topical RRA's without the relationships of trust and familiarity developed by living in the village.
- With regard to the effect of relationships on the information provided. The IRS found that the problems articulated by some informants changed with time as their preconceptions about what benefits

the researchers could bring them were amended. The 'kawo (bring) – solvable' problems (Phillips-Howard and Kidd, 1990), such as fertiliser, seeds and electricity, were articulated initially, whereas those which could not be solved through inputs by outsiders (eg mismanagement of funds) emerged later.

- The IRS particularly drew attention to the significance of culture, especially values, in decisions about 'key issues' and 'best bet' projects. On reflection, the pro-modernisation values strong among the educated male elites apparently influenced the characterisation of certain issues and projects during the RRA (e.g. pro-tractors, irrigation pumps and electricity), whereas those of the women (e.g. greater independence and respect from men, matrimonial happiness and better nutrition) were less evident. In other cases the values of some outsiders became incorporated, both in the RRA (e.g. support for traditional crops (*acca*) and organic farming techniques?) and the IRS (improved sanitation).

Some implications of these findings are that:

- greater effort should be made to ensure that the views of women and minority groups (e.g. the Fulani) are included, especially at the stage of issue clarification; this might best be achieved by interviewing such groups separately;
- appropriate means should be sought for improving relationships so as to access critical information that may not be forthcoming under RRA conditions; IRS involving a period of continuous residence in the village is one such means;
- means should be found to distinguish problems articulated in 'kawo' (bring) terms from those which, though not obviously 'kawo-solvable', could equally form the basis of viable participatory projects. Again, IRS involving continuous residence in the village is one such means;
- given that decisions about 'key issues' and '-bets' appear to be strongly influenced by culture and values, explicit consideration should be given to these influences, both among the appraised and

the appraisers. Perhaps through specific interviews on them with independent key informants and inclusion of self-awareness exercises for RRA trainees.

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NOTE

One of the members of this team, Fergus Lyon, is currently writing a report for the Royal Geographical Society of London on *Rapid Appraisal for Research Expeditions*.

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9

Women's PRA in Hindupur

Eva Robinson

• Introduction

A new kind of PRA workshop was held at Kethagani Cheruvu village, near Hindupur on November 19-21, 1991. This was a first in the HIDA/MYRADA Agroforestry Network, and, I believe, a first in the PRA experience in South India for which only women participants were invited to attend. All, except one of the resource people were women as well.

The reason for calling an all-women PRA is because it has been difficult to get women participants from NGOs in previous workshops. Those women who did come, confessed that they were inhibited to interact freely in the presence of men, many of whom are actually their superiors from the same organization. They also did not have any previous opportunity to practice skills and guide the interviews. The other important reason for such a PRA is that it can create a chance to focus on issues of special interest to women, like health, nutrition, labour and migration, childbirth practices etc.

• Short-term impact

The PRA was a huge success from the point of view of numbers. Thirty seven village women attended for 3 days, with only 4 resource people. Several *sangha*¹ members also came, which was a new experience for the HIDA forestry NGOs. There was a great deal of resulting enthusiasm, participation and eagerness for further similar workshops. The workshop was also effective in spreading the methodology. The women seriously practised the skills involved in the different exercises

and learnt from each other. All participants were able to take an active part in some exercise and sharpen their skills. Issues specially related to women were discussed during the exercises, but due to lack of time and/or expertise of the participants, we could not explore all the topics adequately. Much more work needs to be done in this area.

• Highlights

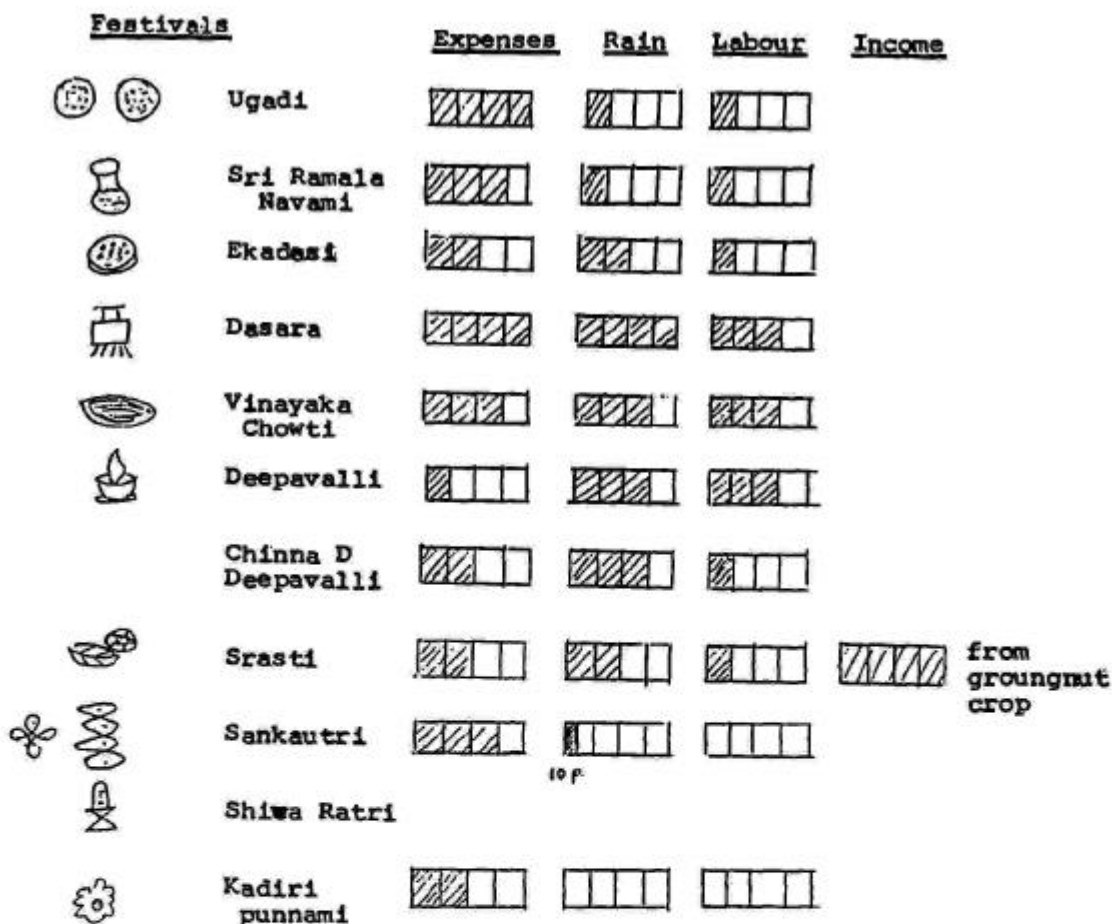
Some observations were made about ways in which a PRA for and with women is different from our previous experiences when men were present.

- Women embraced new ideas easily with fewer intellectual hangups. There were fewer sceptics and objections.
- There was generally less theorizing and arguing over useless points.
- There was more cooperation with the schedule and programme, with a corresponding seriousness.
- Women did not need as many tea and smoke breaks.
- There was an awareness that this is a special opportunity for them to get together with other women and they really took maximum advantage of it by talking about many other issues.
- The level of sharing was more personal and got to a deeper level quickly.
- Women tended to discuss method more than content. How the exercise was done was seen to be as important as the content or the information gathered.

• ¹A *sangha* is a local group.

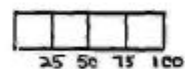
- Participants developed warmth and rapport with each other quickly and there was a good spirit of participation.

Figure 1



Kethagani Cheruvu village

The 60 year old woman suggested this way of measuring.



Her perception of the rainfall is related to the tank, good rains mean that the tank is full (100%), so-so rain means half (50%), three quarters (75%) or a quarter (25%). She expressed it in terms of one rupee, 75 paise, 50 paise etc. Full labour is measured by when everyone is employed. Full expenditure is measured by the highest expenditure month, which is for the festival of Ugadi.

- Group I
- S. Meenakshi
 - G. Devamma
 - Gangamma
 - D. Navareethamma

- The topics covered in the exercises had more subjects dealing with women's problems.
- Even though the interviewers were all women, both men and women from the village freely participated. However, we were able to draw out more women to be interviewed.
- Participants also discussed the strengths and weaknesses of women in general in a SWOT² exercise.
- Many of the women staff were community organizers and field workers, and they adapted to village conditions and tasks readily with much less of a barrier.

• **New things tried**

Most of the villagers worked outside the village so the PRA exercises had to be done between 6 and 9 in the morning. On the first day, the trainees arrived at the village at 6 am and took part in the morning village tasks before doing the exercises.

Many diagrams and other methods were used because not all the women were literate and it was difficult to introduce anything which required reading, writing or pen and paper. For example:

- role plays were used to bring out the DO's and DONT's of interviewing;
- seasonality and daily work of a woman was done pictorially (see Figure 1);
- group discussions were used to review the previous day instead of writing a diary of reflections.

Insert Figure 1

Two sets of notes were made simultaneously, one in English and one in Telugu, and charts were transcribed on the same day. Presentations were done in the evening, once at the village, and once at a training centre a short distance away. Interested farmers could easily take part without the noise and confusion in the village. At both occasions, the presentations were followed by stick dancing.

- ²Strengths, Weaknesses, Opportunities and Threats

Due to the language problems (different kind of Telugu spoken by the resource people and participants), there were much fewer directives than in previous PRAs. Much of the learning was from each other and their own experience, with minimal direction from the resource people.

Although the food was cooked by a local family hired for the occasion, the women served each other, so no villagers were spending their time serving the participants.

- | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> • Eva Robinson, previously of HIDA/MYRADA, 2 Service Road, Domlur Layout, Bangalore, Karnataka, India, now at 318 Ninth Avenue, New Westminster, B.C., V3L 2A1 Canada. |
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10

Examples of Participatory Rural Appraisal (PRA) in wetland development in Guinea Bissau

Koos Neefjes

• Introduction

Small parts of the swampy areas along estuaries in West Africa that are covered with mangrove forests have been reclaimed and developed for rice cultivation by farmers for centuries. They build small dikes and dams to stop the tidal seawater from inundating the lands and to capture the fresh water runoff from the higher areas. Wooden tide gates are installed in the dikes to drain the excess fresh water in the rainy season. In Guinea Bissau such traditional polders are called ‘*bolanhas*’.

The ‘*Serviços de Hidráulica Agrícola e Solos*’ (SHAS) in the northwest of Guinea Bissau is a service that aims to improve the physical infrastructure and develop human resources in *bolanhas*. SHAS deals with many aspects of the problems in traditional and ‘modern’ polders, and in some of its activities Participatory Rural Appraisal methodologies have been applied. In the first example participatory mapping with the use of aerial photographs was used in the communication with farmers about future construction plans in a polder and the management of the present drainage system. In the second case farmers from two different ethnic groups have a long standing dispute for control over newly reclaimed lands. A participatory mapping exercise with the use of aerial photographs was initiated in order to facilitate the registration of the users’ rights. The third example shows ranking exercises of weeds that help identify the potential for rice cultivation according to farmers’ perceptions. The presence of weeds can help in assessing the feasibility of land use options.

• Mapping of hydrological features

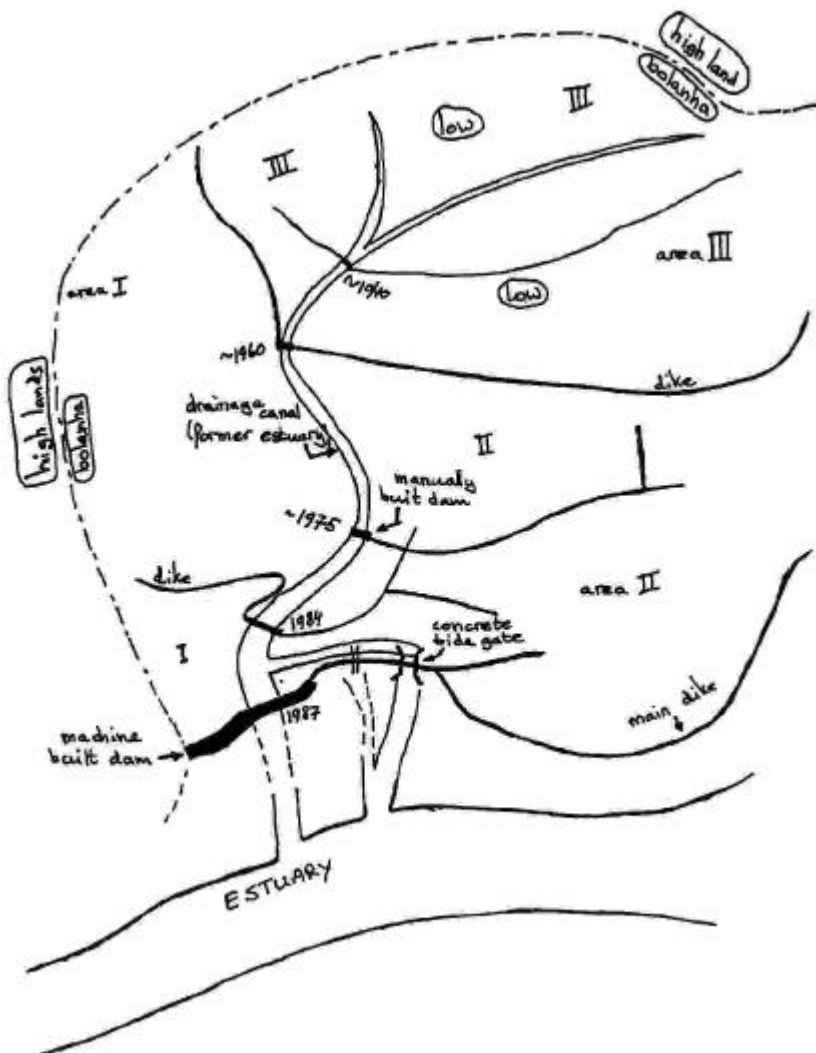
The *bolanha* of Quide-Com is 70 ha, including canals and dikes. In 1987 farmers paid a private company to dam an estuary with machines, and thereby enlarged their *bolanha*. Most of the mangrove is cleared and it is divided in plots by bunds and small dikes. The dam is in good condition, but the farmers had to install a large tide gate to be able to drain excess fresh water during the rainy season. Heavy downstream erosion of the outlet canal and the dike in which the gate was installed led to breakage of the dike, and salt water entered the *bolanha* in the cropping season of 1989. In 1990 SHAS and the farmers constructed a concrete tide gate with reasonable downstream protection and reinforced the surrounding dikes. The objective of the mapping exercise was to facilitate a discussion about future management and construction plans based on a farmer-made map of the *bolanha*.

Preparation and mapping

A map of 1:50,000 from the 1950s and an aerial photograph of 1989 (scale 1:30,000) were available and taken to the village close to the *bolanha*, where a meeting was organised. A magnifying glass was not taken.

The farmers located, correctly and with great enthusiasm, paths, houses and different parts of the *bolanha* on the photographs. They drew the main canal in the *bolanha* (the former estuary). Although the bends in the canal they had drawn could be matched easily with the photo, some dikes and small dams they drew were not traceable (see Figure 1). Meanwhile they had put the photo aside.

Figure 1. Hydrological situation in the bolanha of Quidé-Com



Of the five little dams drawn inside the *bolanha* only the two most recent ones still exist. The sequence shows the gradual enlargement of the *bolanha* over the last 50 years. With the dams and dikes indicating this history the farmers divided the *bolanha* in three hydrological units: two along each bank of the former estuary close to the gate, and one lower lying area far away from the gate.

They proposed to raise the small dikes around areas I and II, so that fresh water would be retained while opening the tide gate to drain area III. They explained that farmers in area III should start cultivation earlier in the season than the rest, since a developed crop can sustain deeper inundation. They showed that in area III the landownership is limited to

members of only one of the two villages, which have people working lands in the *bolanha*. In area I, an area with few drainage problems, mostly farmers from the smaller village have their plots. Many farmers who were supposed to cooperate with the new timing have land in both area III and in area I and II, so drainage interests are well divided. The management options proposed by the farmers are exactly the same as promoted by engineers: make a few more or less independent units with different water levels and with different crop timing within a polder, and use the central drain for quick drainage.

• Mapping of land distribution

The *bolanha* of C6-Timate was reclaimed after the construction with machines of a dam in an estuary. The area is 280 ha, including 60 ha of water surface. After the closing of the estuary, the lands were not divided by either the government or the population. There were continuing conflicts between groups of Balantas and Mancanhas¹ who participated in the construction and the maintenance of primary dikes, and/or paid some money for the construction.

In 1990 in the presence of government representatives, the population took the decision that "... *those who cleared lands will have the first right on that part ...*". After this SHAS was to help mark the plots and register the land use rights. The work could not be finished that year due to difficulty of access in the rainy season.

To confirm the demarcation of the first plots, and to try to speed up the process, farmers were asked to participate in a mapping exercise. The idea was that if they would mark those who cleared land on a self-made map that was comprehensible for SHAS staff, fieldwork could be checked and future fieldwork would be much easier and quicker.

Preparation and mapping

A map with scale 1:5,000 was available. It was made before the mangrove was cleared and shows some major estuaries and contour lines. Also available were aerial photographs (from before clearing the mangrove and after) on a scale of 1:30,000. This material, and a magnifying glass, were taken to the *bolanha* where farmers from all communities had gathered.

Farmers first studied the photographs, with and without the magnifying glass. They had no trouble in identifying roads, paths and housing areas and were very excited to recognize their environment on the photographs. The canals visible from the mapping site were easily located on the photographs.

One man who often fishes in the *bolanha* canals drew its major former estuaries in the sand, but many others participated in the exercise. The shapes and bends matched reasonably well with the map, but the farmers started to put in all the little creeks they found on the photographs and announced after some time that it would take them too much time to make a map with all the details.

Afterwards they started again and drew only the major canals, indicating some farmers' plots with little circles (see Figure 2a). After some discussion they started a third time, now showing some narrow rectangular plots more or less perpendicular to the main canals, the way plots are normally oriented in *bolanhas* (see Figure 2b). A fourth fresh attempt resulted in details of the land division on another part of the map, actually indicating plot boundaries in relation to minor canals. This part of the map was drawn on a bigger scale than the earlier part (see Figure 2c).

SHAS staff listed the names of the indicated plot-users and verified the map in the sand with the results of the demarcation of plots in the field. The map showed the bends in canals in a recognizable way and confirmed the registration of the surveyors. However, the farmers refused to continue drawing the rest of the *bolanha* and to show the boundaries of the cleared, but not yet marked, plots. This proved to be too sensitive an issue (see Conclusions).

¹ Balantas and Mancanhas are two ethnic groups in Guinea Bissau.

Figure 2a. Land use map in bolanha of Co-Timate – second version

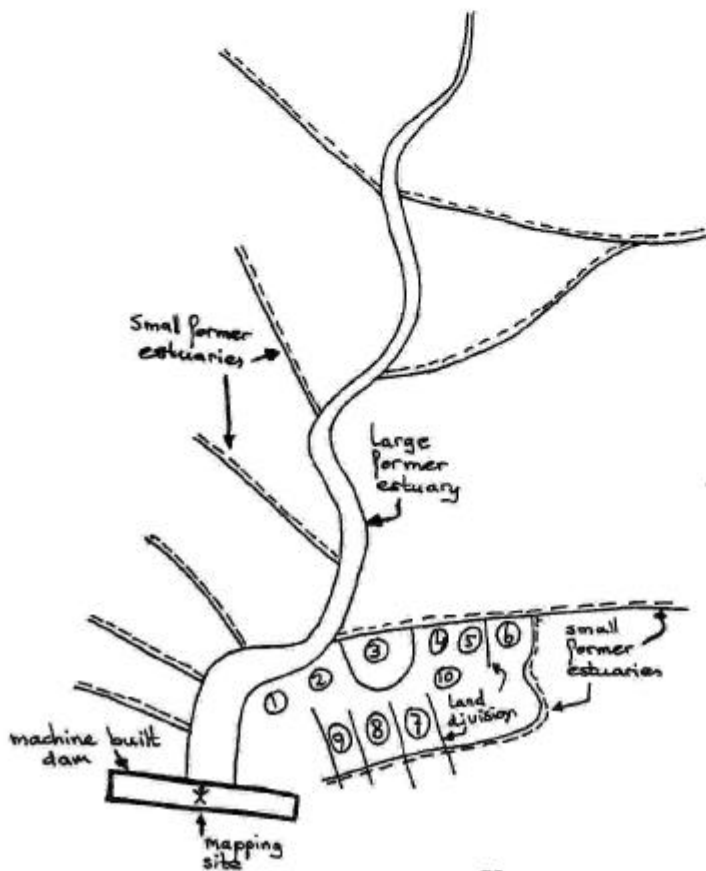
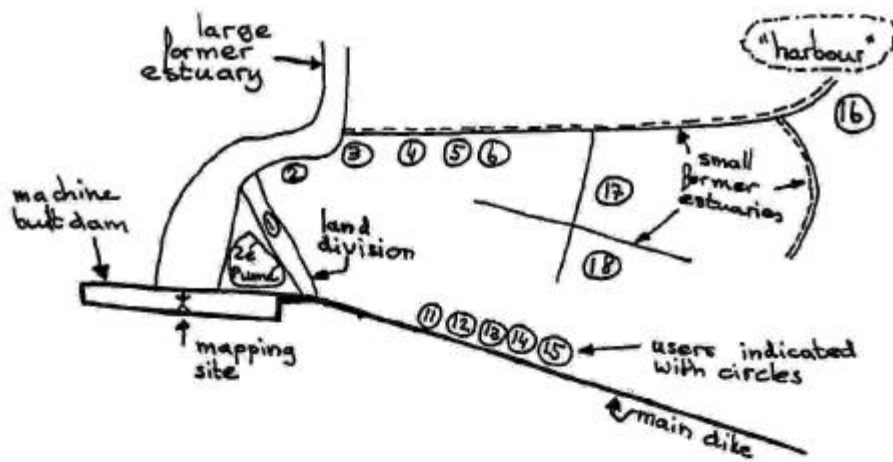
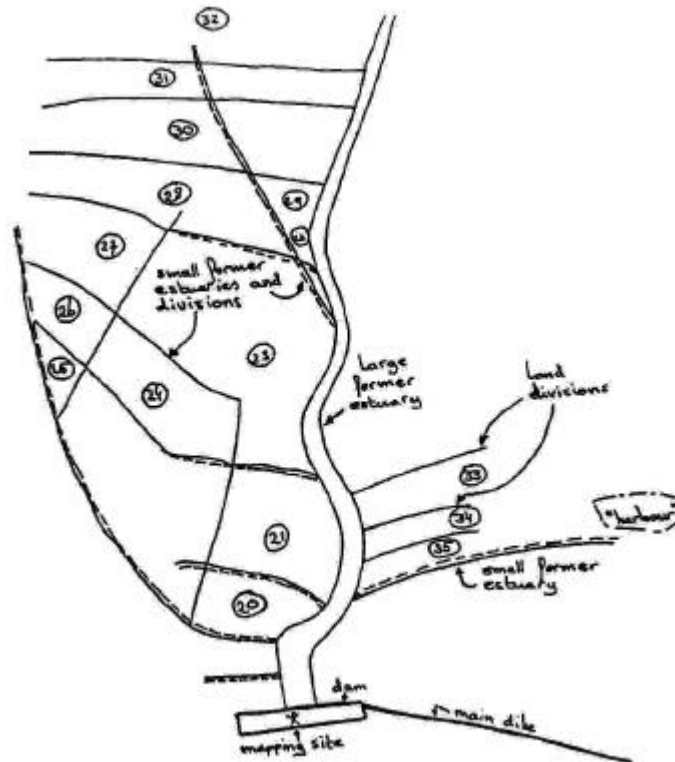


Figure 2b. Land use map in bolanha of Co-Timate – third version

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Figure 3. Land use map in Bolanha of Co-Timate – fourth version



• Ranking of weeds to indicate land suitability

In undertaking this exercise we assumed that farmers working in *bolanhas* have some sort of collective knowledge about valuing pieces of land in terms of the potential for rice cultivation. One of the visible aspects that play a role in their judgements is the presence of different types of weeds.

Preparation

A Manjaco² farmer was requested to indicate weeds that, according to his knowledge, could be found in *bolanhas*, using photographs found in Terry, 1986. He did so and also described some of their properties. With this first idea of what to look for, he was invited to participate in the ranking exercises with some Balanta farmers. Nine weeds were selected in one *bolanha* by SHAS staff.

The ranking exercises

After explaining the purpose of the visit and lining up the weeds to start the pair-wise comparison for the first interview, farmers fetched a tenth weed. This was considered the worst one they knew. The question used in the pair-wise comparison and ranking can be translated as “if you had to chose to start cultivating rice either in a plot infested with this or with that weed, which plot would you prefer to use?”. This question hides the fact that a few plants present of one species may be as bad as a field completely covered by the other. The question may also make people respond referring to the physical potential as well as, for instance, to the work needed to plough the fields.

While comparing the weeds in this way with all other weeds and keeping the score in a table, farmers were also asked to give some characteristics of each, to answer the question “why are they good or bad?”. Some properties given by farmers, local names and likely scientific names are summarised in Table 1. The results of 3 repetitions of this ranking exercise are quite consistent, as is

² Manjacos are an ethnic group of Guinea Bissau.

shown in Table 2. The results of ranking the resistance of weeds and their seeds against salt water, and the workload they provoke to

plough the land (manually) is shown in Table 3.

Table 1. Names and properties of weeds

Weed number/ name/ Balanta name	Manjaco name/family	Probable Latin	Some Key Properties
1. bsi-el/Mbubua		<u>Euphorbia heterphylla</u> L. (Euphorbiaceae)	no danger ³ ; easy to pull out; in fresh parts of <i>bolanha</i>
2. umpinnapin/Boseh		unknown, looks like weed number 5	no danger; hardly obstructs ploughing; seeds are not fertile
3. petakka/Nratat		<u>Cynodon dactylon</u> (L.) Pers. Gramineae	good if worked into the soil and decomposing, but reproduction by roots, no seeds
4. piam/Thuleh		<u>Cyperus difformis</u> L. (Cyperaceae)	sharp leaves; some liquid comes out that intoxicates the <i>bolanha</i> ; without weeding no rice; with little salt water the plant dies, but seeds survive
5. umbintin/Boseh		unknown, looks like weed number 2	no danger; hardly obstructs ploughing
6. Mbi-ef/Nfendeh		(Gramineae)	in higher fresh parts of the <i>bolanha</i> ; many seeds of this weed suppress the growth of no.10; good if worked into the soil and decomposing; laborious to plough the land; many seeds survive even if weeds in <i>bolanha</i> are burned in the dry season
7. piam-pkas/Bdiheh		<u>Cyperus esculentus</u> L. (Cyperaceae)	threatening for rice; found in parts inundated with fresh water; with a little salt water the plant dies, but the seeds survive
8. pnok-pi-im/Bdiheh		<u>Cyperus</u>	one rarely finds fields completely covered with this weed
9. ptak-blek/Bdiheh		<u>Cyperus difformis</u> L. (Cyperaceae)	dangerous; with little salt water the plant dies, but seeds survive
10. pnok/Mboron		<u>Cyperus</u>	the worst, some red, sometimes blue liquid comes out, looks like oil on the water, that intoxicates the <i>bolanha</i> ; no seeds, reproduction by roots; only disappears after years with salt water inundation and mangrove has come back to the <i>bolanha</i>

³ Danger refers to potential to (severely) limit rice cultivation.

Table 2. Results of ranking the best weeds in relation to the potential for rice cultivation

Potential for rice	Interview 1	Interview 2	Interview 3	Overall ranking	Manjaco name
favourable	6	5	5	5	umbintin
favourable	3	6	2	6	Mbi-ef
favourable	5	3	3	3	petakka
no danger	2	8	6	2	umpinnapin
no danger	1	9	1	1	bsi-el
some danger	9	4	7	8	pnok-pi-im
some danger	7	2	8	9	ptak-blek
some danger	8	1	9	7	piam-pkas
dangerous	4	7	4	4	piam
dangerous	10	10	10	10	pnok

Note:

1. The numbers refer to the weeds in Table 1.
2. The overall ranking is the average of the "place numbers" of the weeds in the 3 interviews?
3. The weeds in the last two groups, Nos. 4, 7, 8, 9 and 10 all belong to the family *Cyperaceae*.

Table 3. Ranking of some specific properties of the weeds

	plant resistance against salt water	seed resistance against salt water	workload while ploughing the field (manually)
low resistance/ low workload	1		5
	7	4	2
	8	1	9
	9	9	8
	4	8	1
	6	7	7
	5	6	10
	2		6
very resistant/ high workload	10		4
	3		3

Notes:

1. The numbers refer to the weeds in Table 1.
2. Some weeds do not produce seeds.

• Conclusions

The first example shows that the farmers are well able to interpret the small scale aerial photographs, but they didn't seriously use them while drawing the map. It remains a question whether studying the photographs was of influence so that the drawing matched reality better. But the map was a very good communication tool and showed the history of the polder in relation to the present situation. This was not asked of the farmers, but is highly relevant for the understanding of the hydrological problems and plans.

The objective of the second exercise, to advance with the actual fieldwork of land registration on the basis of a map drawn by members of the population, was not reached. The division of land is too sensitive to be able to start the registration without actually marking it in the field. But the people have shown that they can draw maps quite accurately and detailed, confirming the work already done by surveyors. The quality and usefulness of the map improved considerably after some initial attempts. The small scale aerial photographs may have influenced the farmers in the sense that they started to draw many details. But the photos may also have influenced their drawing of the bends in and size of canals, and therefore may have

facilitated the matching of their map with others.

The detail on large scale photos is greater, so the initial confusion caused by the 1:30,000 photos may be expected to be worse when using a scale of 1:5,000 or even 1:2,000. But the ease with which farmers locate features on the photos suggests that instead of drawing maps in sand, farmers could make thematic maps on paper copies on larger scales. This is confirmed by experiences in Nepal (Carson, 1987), Ethiopia (Sandford, 1989) and Kenya (Mearns, 1989). Enlarging an existing aerial photograph of 1:30,000 to 1:5,000 and printing it on tracing paper (to be used for reproduction) is reported to cost, in Guinea Bissau, about US\$175 per photo (KLM aerocarto). This will, however, not show up invisible features, such as the former dams.

The following can be concluded from the third exercise:

- Photographs of plants in a book with scientific descriptions are very helpful in discussing weed problems with farmers.
- Simple ranking exercises with only a few people quickly leads to a wealth of practical information about the potential of *bolanhas*.
- Important characteristics of weeds, on which farmers judge the potential of a field for rice cultivation are the workload to plough the land, the resistance of the weeds and seeds against salt water and burning, and 'liquids coming out of the plants', i.e. toxic substances that are associated with the presence of the plants.
- If *Cyperaceae* occurs in the fields, then this indicates serious limitations for rice cultivation.

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11

Rapid appraisal of organisational cultures: a challenge for field work

Uwe Kievelitz and Rolf-Dieter Reineke

Deficits in organisational culture research

The study of organisations as an object of knowledge from a cultural point of view is not new, but it has long been neglected. The reason for the sudden awakening of interest in this approach lies partly in studies of the success of Japanese and especially American enterprises (see Pascale and Athos, 1982; Peters and Waterman, 1982), and partly in reflections about the consequences of the 'changing values' observed in the Western world (Staffelback, 1988; Rosenstiel et al, 1987; Klages, 1984). Although the importance of the concept to the development of theories and the success of the enterprises is frequently acknowledged, the organisational culture approach is often the subject of critical discussion. This criticism may be summarised as follows (Sandner, 1987; Seidel, 1987; Hofstede, 1986):

- Many of the concepts developed are lacking in methodological meticulousness. In particular, they often lack of explanation of their particular situation so that the concepts put forward seem to become patent recipes. It is also striking that the anthropological fundamentals of the organisational culture approach rarely form an explicit subject of the study.
- The extent of empirical research in this field is very small in relation to the wealth of theory. One reason for this is no doubt that it is very difficult to research such a complex subject. However, it would also seem that in the past not enough attention has been devoted to the question of how and with what methods an organisational culture is to be explored and what

possibilities and limitations exist in this field.

Culture and organisational culture

Before we can tackle the question of exploring organisational cultures, we need to clarify what is by *culture* means, otherwise it remains unclear what phenomena are to be studied (Drumm, 1988; Helmers, 1990).

Starting with management research on a comparative cultural basis, which at least in the USA has a long tradition and investigates the influence of overall societal culture on companies in particular, research assumes that a specific culture in each individual organisation exists. Thus in a macro-culture whose boundaries are determined by a society, a nation or a people, totally different organisational cultures often exist side by side (Bleicher, 1984). These microcultures, however, are frequently considerably influenced by the macro-culture. Viewing an organisation as a kind of mini-society, means that organisational culture is conveniently based on society's concept of culture.

Recent approaches combine different cultural perspectives in an integrated system. This approach attaches considerable importance to the cultural anthropology basis of organisational culture research, and at the same time looks at the practical value of such concepts. We inevitably come to the conclusion that, while it is in principle possible to influence an organisational culture, such influence is only controllable to a limited extent and always represents a lengthy process. Against this background the problems involved in surveys are discussed below.

Field research and 'rapid organisational appraisal'

As all approaches to empirical surveys of organisational cultures are limited (see Reineke, 1989), it is often necessary to use as many measuring methods as possible in parallel to cater for the complexity of the existing phenomenon (Dierkes, 1988). Such a procedure is very problematical as it lacks a theoretical basis. The question also arises as to whether the effort and expense involved is justified in every case. Both for comparative empirical studies on a large scale and for practical problems where the organisational culture factor may be only one of a number of aspects, there is a need to search for types of study that produce theoretically satisfactory output with a reasonable input. We examine the possibility of using the approaches and tools developed in cultural anthropology to understand organisational cultures.

Field research as a basic method has proved to be a major component of cultural anthropology research, even if its importance varies from case to case. During field research a number of different methods are used, each yielding different results, but together leading to a more exact understanding of the actual situation: the problem under investigation - in this case the understanding of an organisational culture - is described in increasingly concrete terms in a step-by-step procedure. Here progress is achieved by systematic observation in connection with questions that can be answered with the aid of dialogues and interviews or by studying suitable sources (e.g. organisation charts, annual reports). Conversely, the study of sources may itself raise questions that can be clarified through observations by the

researcher and/or dialogue with the members of the culture, i.e. the employees of an organisation.

An important element here would appear to be the active experiencing of everyday working life, which in turn forms the basis for an intensive dialogue with the members of the culture. On the basis of this 'interpretative paradigm' (Osterloh, 1988) and with the aid of the de-objectivised role of the researcher, who thus increasingly becomes a partner in dialogue with the members of the organisation, it is possible to arrive at an understanding of the organisational culture.

Owing to the complex set of facts that are to be surveyed in a field research study, the time frame for such a study is usually 6-12 months. This kind of procedure is useful in principle for organisational cultures as well, as in institutions such as companies or public authorities different activities are characteristic of everyday working life at different times of the year (e.g. annual financial statements, preparation of (annual) plans). The 'classical' method of field research thus has the disadvantage that the survey takes a relatively long time.

The ratio of research input to results may be too unfavourable and may not justify such a long-term approach. The same is true of questions where nothing is yet known about an organisational culture and where the first need is to develop a rough research grid, a first concrete cultural model. In such cases a method based on classical field research, that of 'Rapid Organisational Appraisal' (ROA), suggests itself. The characteristics of approach are summarised in Table 1. The approach proposed here is based on the 'Rapid (Rural) Appraisal' (RRA) method.

Table 1. Characteristics of a 'rapid organisational appraisal'

Use of a team of researchers (usually 4-8 persons)
Interdisciplinary orientation (business economists, psychologists, sociologists, ethnologists)
Duration of survey: 2-4 weeks
Study usually limited number of "face-to-face groups"
Predominantly heuristic approach to understanding the organisational culture in question
Approach determined by intensive dialogue with the members of the organisation
Qualitative data collection predominates
Use of observation, dialogue and source interpretation (triangulation) in the context of the field research method
Daily systematised evaluation and coordination discussions by researcher team

The RRA method was originally developed for problems of project work in developing countries, where the important thing was to obtain, under severe time constraints and with a limited input of resources. RRA has usually been carried out by a research group of interdisciplinary composition, not by a single person. This permits, and requires, an intensive systematic dialogue between the members of the research group, which is intended to lead to more valid findings.

The most important aspect here is a multidisciplinary team approach which for reasons of group dynamics can best be achieved with 4 - 8 people. Two to four weeks have proven to be a practical research period, each day including survey evaluation/discussion. In the survey phase, the focus is on qualitative data collection using the triangulation approach, with teams of two people.

In the daily evaluations, first the group reports on, records (e.g. using visualisation methods, sociograms etc) and discusses the information obtained, which leads to further questions or hypotheses. Then the main tasks for the next day and any changes to the methodology are identified. In this way a research-guiding question is defined in specific terms and increasingly narrowed down to the central objects of knowledge, so that even after a short time extensive qualitative findings are available about the organisational culture studied.

• **Problems with the field research concept**

Both in classical field research and in a 'Rapid Organisational Appraisal' a number of fundamental problems arise when they are applied to organisations but there are ways to overcome them (Perey, 1989).

Research ethics

The problem of ethical justifiability of research arises with any study. In the case we are exploring, it occurs principally at two levels: regarding the interests of the organisation under investigation and the protection of the individual rights of members of the organisation (Perey, 1989).

Size of organisation

The size of the organisation or the research interest in question may require the research field to be narrowed down. This can be done in spatial terms or on the basis of hierarchical levels.

Interpretation grid

The subjectivity of the researcher is important when using field research methods, since the emphasis is on qualitative survey with the aim of understanding an organisational culture. This is necessarily a highly individualised method. This disadvantage can however be minimised by:

- triangulation i.e. using several different data collection steps;
- an interdisciplinary research team; and,
- third-party checking of the findings, in which all prior assumptions, theoretical frameworks and working steps must be made explicit.

Role definition

Role definition by the researcher at the beginning of field research is crucial to find a uniform and generally accepted role vis-a-vis all members of the organisation with whom he/she comes into contact. It is sensible to choose a role that also leads to active participation in day-to-day business and increased contact with the organisation's members. In this way the researcher(s) will be more successful in becoming familiar with the work context and understanding unfamiliar behavioural norms, values and social relationships. It should be noted here that the role chosen in each case has a crucial influence on the communication dynamics with the members of the culture (Berger and Luckmann, 1982).

Culture shock

After entering the organisation in question, it is possible to encounter the phenomenon of culture shock. Culture shock means emotional pressure and feelings of insecurity which may even lead to temporary incapacity to function properly, that an individual experiences during the initial period of direct interaction with an unknown culture (Lundstedt, 1963). Basically, Pery's view (1989) may be accepted that culture shock does not present a major problem in the analysis of organisational cultures. This is particularly because the researcher, sees a strange organisation only to a limited extent as an unknown social system; what is more, s/he is only exposing her/himself to it for a limited period and with a limited degree of personal involvement.

Language

The problem of language is akin to the problems that arise on entering a different culture. It is generally necessary to familiarise oneself with the technical language of the individual organisation and the jargon spoken

by its employees. At the same time this is an integral part of the research, since the specific organisation language permits conclusions to be drawn about values, norms and other cultural attributes. In most cases, therefore, linguistic information will form part of the data collected.

Informants

'Key individuals' can provide information about the organisational culture in question. Since each employee can only represent a section of the overall culture there are likely to be risks of the reconstructed overall picture being distorted if only a few are consulted. This is even more true where the selected main or key informants represent organisation-specific marginal positions. Therefore it is necessary, to compare their statements with other observations or views. This applies even after specific interest groups have been identified.

Interpretation frame

The methodological problems in the interpretation of the data collected are well known (Osterloh, 1988; Drumm, 1988). Four main problem areas can be identified:

- drawing conclusions from indicators about underlying value systems;
- value systems obtained by questioning compared with 'real' ones;
- individual case studies without the possibility of indicator-guided cultural comparison; and,
- homogenisation of cultural picture.

To a certain degree, the first three methodological problems can be overcome by using a methodology based on the 'interpretative paradigm', i.e. on understanding. What is sought here is not a direct conclusion drawn from an indicator about a value system, but an overall evaluation of all data from observations, interviews and source interpretation, combined with validating dialogues with the members of the culture. From this holistic, and interactive analysis it is possible to differentiate:

- internal and external views of a culture; and,

- cultural norms/values and the way people actually act.

It is quite possible to link a qualitative interpretative approach of this kind with quantitative methods, especially with structured interviews or questionnaires (see Table 2).

The problem of homogenisation relates to neglecting, in the process of analysis, interpretation and portrayal, any deviant observations that are at variance with a recognised basic structure. Especially in an organisational culture, individual employees, groups or facts will be found that, for example, do not tally with a demonstrated general value orientation in the organisation. It is of great importance to avoid the compulsion to produce a homogeneous picture and neglect such cases. On the contrary, they should be analysed and documented. This increases the accuracy of the findings.

Time frame

It is necessary to aim for an optimal research input. Generally speaking, a long-term presence in an organisation is useful to permit a realistic interpretation of the organisational culture. However, if a research group is

allocated to a study and if the field research is primarily to serve heuristic purposes, it is possible to fall back on the ROA as described above. Care should be taken to include research at particularly important and relevant phases in the annual cycle of an organisation.

• **Concluding remarks**

The study has shown the broad applicability of field research methods for surveying organisational cultures. An alternative to 'classical' field studies which, as a rule take 6-12 months, is 'Rapid Organisational Analysis' (ROA). This method, which permits the surveying of an organisation in a relatively short period (2-4 weeks) can not be used for cases of organisational culture research. Where research interest is focused on the exact registration of the organisational culture, intensive field work extending over several months is indispensable. This often follows automatically from the changes in everyday working life during the various phases of an annual cycle. Even for such complex projects, however, ROA may represent an important first step. ROA makes it possible to draw up research-guiding questions in the sense of a heuristic approach.

Table 2. Methodological phases for surveying an organisational culture

Phase	Activities
1. Triangulation	Field research or ROA with observation-dialogue-interpretation of sources
2. "Understanding"	Holistic interpretation of data, including links between indicators and value attitudes
3. Developing type/model	Developing a model or a typology of the entire organisational culture
4. Validation	Testing the model or typology by means of dialogue with the members of the organisation
5. Quantification	Applying quantitative methods, eg. with the aid of narrative interviews

Solving the methodological problem of recording of organisational cultures is probably of crucial importance for the further development and the acceptance of the suggested approach. This makes it all the more surprising to note the continuing relative lack of discussion on this subject. Against this background an intensive interdisciplinary debate on this problem is desirable.

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12

Methodological innovations in Burkina Faso with village network mapping

Irene Guijt

In October 1992 IIED conducted a PRA training¹ for PATECORE and partners in Burkina Faso. PATECORE (*Projet d'Aménagement de Terroirs et Conservation de Ressources/Land Management and Resource Conservation Project*) has worked in Bam Province, Burkina Faso since 1988, receiving funding from German Technical Assistance. Their approach to land use management is widely known for its innovation and success. During the final evaluation, they made it clear that PRA could be very useful in many stages of the land use management activities.

Two co-trainers were Matthieu Ouedraogo (*Projet Agro-Forestier*, Oxfam, Yatenga) and Moussa Ouedraogo (PNGT - *Projet National de Gestion des Terroirs*) provided the basis for a methodological innovation. In a previous training exercise, they had produced a so-called *Diagramme de Polarisation d'Echange* to describe inter-village relations, drawing it themselves from interviews. This time round we decided to ask the villagers to make these diagrams themselves (see Figure 1). These diagrams seem to be a valuable methodological addition as they allow communication links between villages to become clear and could provide insights into farmer-to-farmer extension strategies. They are a type of elaborate village-level mobility 'mapping' (although not geographically accurate) and could usefully explore rural-urban links.

From Figure 1, constructed by a large group of men in Bayend Foulgo, we learnt the extent of

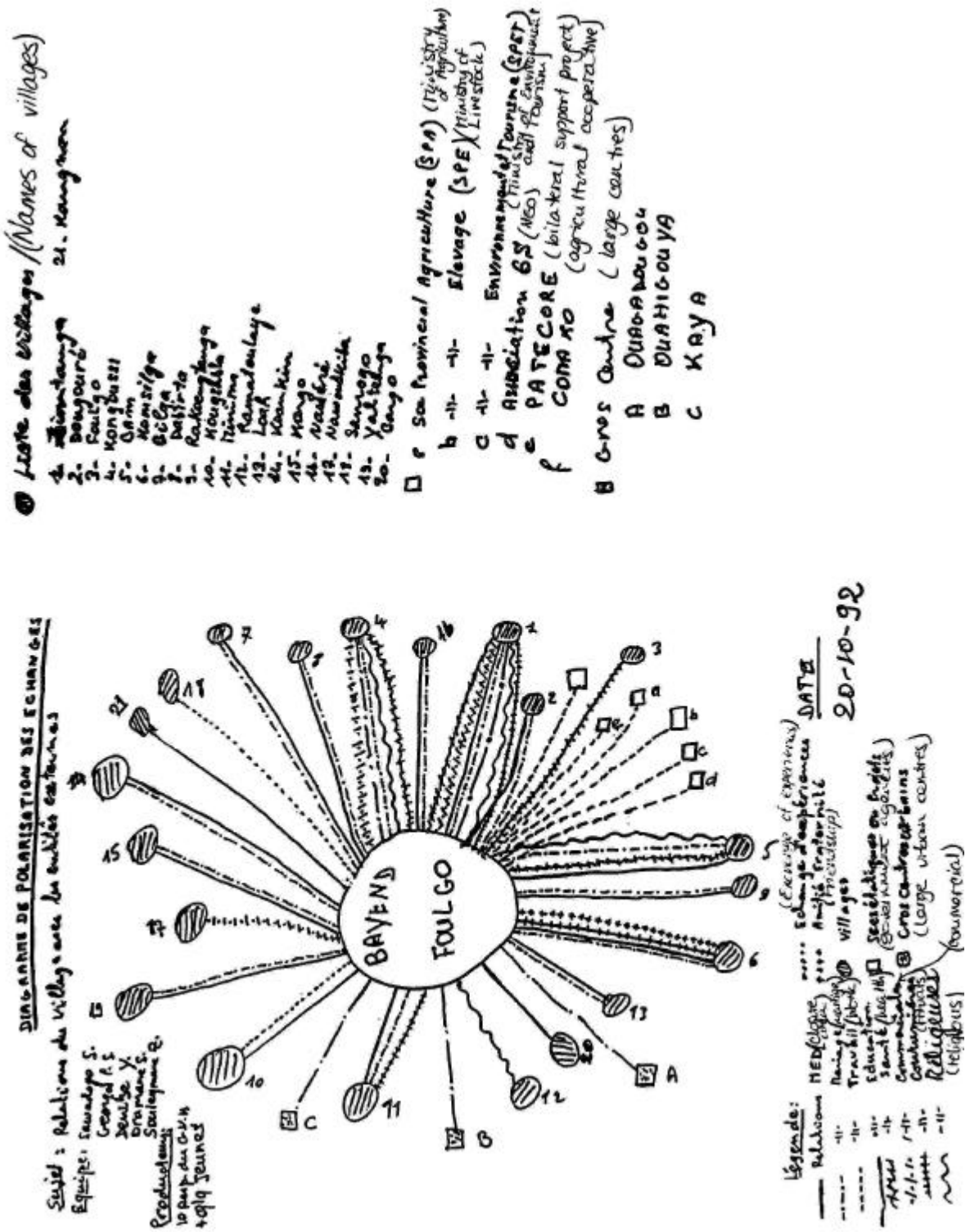
inter-village management and exchange required for the management of a closure area. Although entirely located on Bayend Foulgo's lands, consultation and agreement was apparently required with 11 other villages to ensure the closure would be respected. From this we developed a type of composite Venn/Inter-village diagram (see Figure 2). The participants of the training were interested to see if there was any correlation between the strength of marriage ties and degree of collaboration with the management of the closure area. Marriage ties are commonly considered to be a good indicator of the quality of inter-village relationships. First the villagers indicated with which villages women had been exchanged in marriages. Then they showed the type of involvement of each of these (and two additional) villages in management of the closure area. Although no clear correlation between the two criteria was established, the combination of the two variables in one diagram of this type provides much scope for further experimentation to understand better the complexity of inter-village relations.

Another interesting development was the use of Venn diagrams to understand the concentration of power within the village (see Figure 3). After identifying members of the village committee, their membership of other village level groups was explored. This could prove interesting if used in combination with social mapping to see if there is a concentration of power within a particular family or neighbourhood.

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¹ A report of this training will soon be available through IIED or PATECORE.

Figure 1. Inter-village network diagram of Bayend Foulgo, Burkina Faso (drawn by men)



Source: RRA Notes (1993), Issue 17, pp.64-66, IIED London

Figure 2. Inter-village Venn diagram of marriage ties and collaboration of closure area management

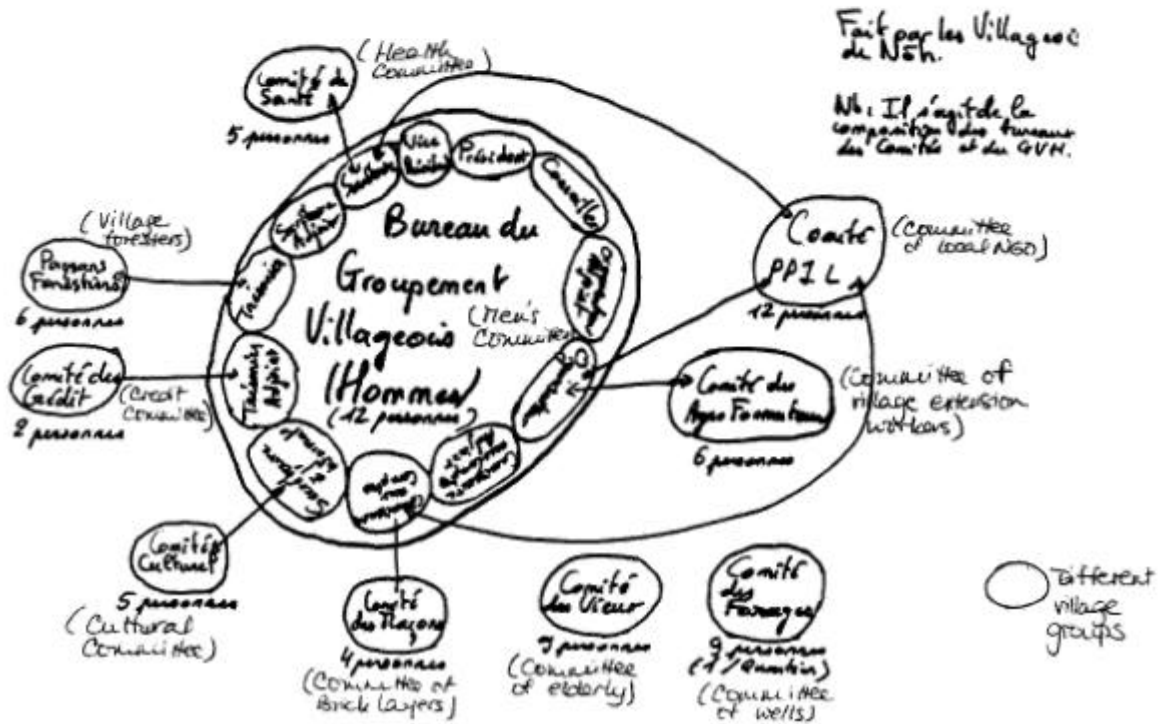
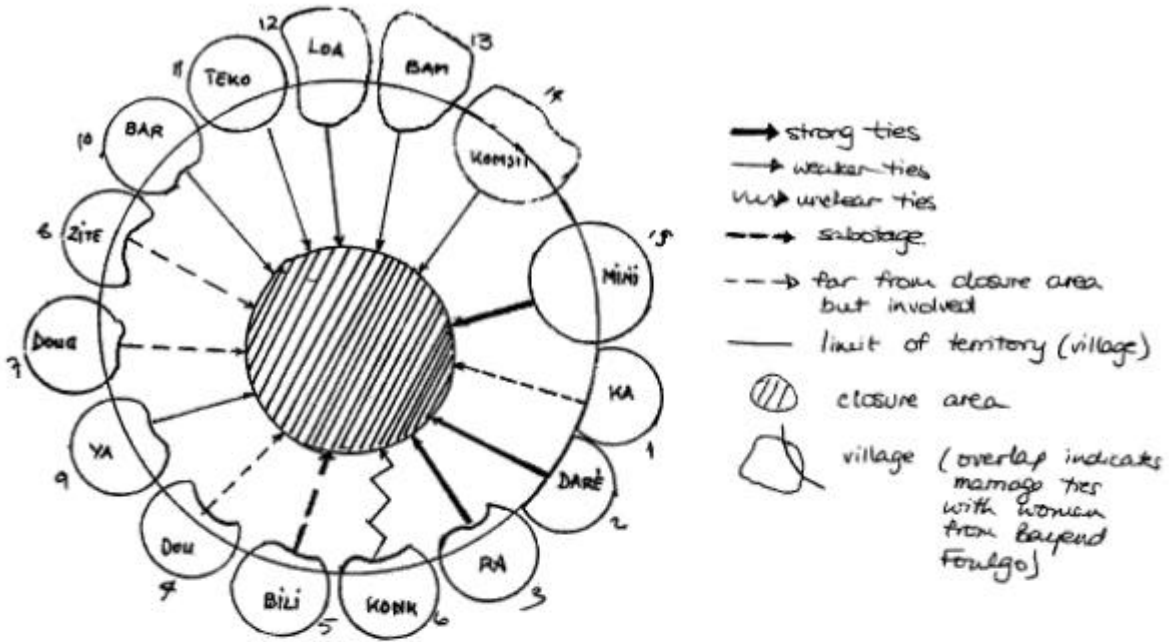


Figure 3. Diagram of village group membership of Noh, Burkina Faso

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Tips for trainers

Alan Margolis

• 45. The Margolis wheel

Objectives

- To give individuals the opportunity to discuss real problems they face or will face and to generate potential solutions;
- To emphasise equality in power and authority with the group;
- To encourage participants to share problems and actively seek experiences and suggestions from each other; and,
- To highlight that we all have relevant and valuable experiences.

Materials

Five or six chairs arranged in reach of two concentric circles, the inside ones facing the outside.

A watch or electronic timer to time each round. Object to make a noise, e.g. cup and spoon, bell.

Time

45 minutes.

Procedure

1. Ask participants to reflect on particular problems they will face or have faced. This can be focused to the session you have just been conducting and could be:
 - Problems in training for participatory inquiry; and,
 - Problems in carrying out a participatory inquiry;

- Problem/difficulties likely to be faced when returning to your own institution.

Figure 39

2. Then ask participants to sit in any seat. Instruct them that those sitting in the outside circle will be the consultants or solution suggesters. Those sitting on the inside facing out will be the clients or problem-presenters. Explain that each pair has three minutes to discuss problems and potential solutions.
3. After 3 minutes, the outside circle rotates by one chair, bringing a new consultant to face each client.
4. Give another 3 minutes for discussion. This continues for all 5 or 6 people in the circles.
5. Then give 2 minutes for all clients and consultants to write down a summary of problems and solutions.
6. After this is complete the clients and consultants change circles and reverse roles. The exercise is repeated. If there are more than 10-12 participants (i.e. more than one set of circles, then arrange for the consultants to switch circles after the first round so that a new source of potential solutions can be brought to each circle).

Comments

Inform participants that they may discuss private as well as public problems. No one but the consultants will get to hear of them, as there is no presentation after the exercise.

However, this exercise is best used when there has been prior discussion of problems and constraints. For example, participants may have been with colleagues from the same institution, programme or department discussing what should happen after the workshop. Break the discussion by using the Margolis Wheel, as this will permit participants to discuss private as well as public problems.

This exercise almost always generates highly animated discussion. It is important that individuals do write down a summary of the problems and potential solutions. These can then be used in a follow up discussion, such as in the elaboration of detailed implementation or action plans.

An extra learning point can be made if participants are asked to choose one problem to present to each consultant. During the debriefing you can discuss how the problem presented initially changed as the client became more aware of the real issues after each consultation.

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