

METHODS FOR ANALYSIS BY FARMERS: THE PROFESSIONAL CHALLENGE

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Contents

Abstract	1
Perspective	2
Whose analysis?	2
Two Streams of Innovation: FPR and PRA	5
Verbal Analysis: Discussing and Observing	7
Visual Analysis: Making and Discussing Diagrams	7
1. participatory mapping and modelling	7
2. analysis of aerial photographs	8
3. matrix scoring and ranking	9
4. farmers' flow, linkage and causal diagramming	10
5. seasonal analysis	11
6. trend analysis	12
Verbal and Visual Compared	12
Three challenges	14
Concluding: Who analyses? Who learns? Who facilitates?	14
Abbreviations	16
References	17
Table 1: Research and Extension: Some Dominant Beliefs and Modes 1950-2000	3
Table 2: Two Modes of Intervention	5
Table 3: Contrasts between Dominant Modes in FPR and PRA	6
Table 4: Some contrasts between the verbal and the visual	12

Note: In this paper "we" and "us" refer to non-farming professionals such as scientists and extensionists, at all levels, and "they" and "them" refer to farmers as professionals, especially in the South. To any reader who is both and feels schizoid, I apologise.

Abstract

Until recent years, professional attention has concentrated on improving "our" analysis of farming systems. The challenge now is to document and explore the scope for methods for enhancing farmers' own analysis. Scientists and extensionists have informally been developing and using such methods. Farmer participatory research (FPR) and participatory rural appraisal (PRA) are complementary and overlapping sources of experience. FPR methods are more verbal and observational, while PRA methods are more visual. PRA methods include participatory mapping, analysis of aerial photographs, matrix scoring and ranking, flow and linkage diagramming, seasonal analysis, and trend diagramming. Visual methods have strengths. Farmers have a greater capacity to diagram and analyse than most outsiders have supposed, and farmers are proving good facilitators of analysis by other farmers. The professional challenge is further to develop, spread, test and improve farmers' analysis through these and other methods. The question is how. What are the next steps?

Table 3: Contrasts between Dominant Modes in FPR and PRA

	<u>FPR</u>	<u>PRA</u>
Scope	agriculture only	natural resources, health community planning, agriculture, poverty programmes etc
Main activities	on-farm research and trials	appraisal and diagnosis
Mode of interaction	more verbal	more visual
Analysis often through	dialogue	diagramming
Assessments often using	absolute measurements	relative comparisons

But FPR and PRA share much. PRA methods have been used in an FPR context (e.g. Pretty 1990; IIED and FARM Africa 1991; Guijt and Pretty 1992). It makes no sense to strain at contrasts; and FPR and PRA could share more. The menu of methods which follows draws on both, but more on PRA; and it invites comments and additions from other practitioners.

Approaches and Methods for Farmers' Own Analysis

A new literature review to follow that of Kojo Amanor (1989) would elicit much more than can be presented here. In PRA, and perhaps also in FPR, there is currently an explosion of innovation much of which passes unreported, or exists in the greyest of grey literature, and which makes it impossible to keep up. What follows has the limitations of a personal review of some evidence and experience that has come my way. Let me request readers for corrections and further information.

Most of these methods have been developed to enable rural people to present and share information with "us", rather than to enhance their own analysis. Only gradually has the extent to which the methods provide them with analytical tools been recognised. Even when the outsider's objective is to extract information, people themselves learn in the process. The potential for them to use them entirely on their own is, it seems, only just beginning to be explored.

For purposes of presentation, approaches and methods can be described as falling into two clusters, one more verbal and the other more visual. In the more verbal mode, analysis and communication are through discussion, often supported by observation and demonstration. In the more visual mode, analysis and communication are also based on participatory diagramming. The more verbal and observational approaches have a longer history, and are associated more with FPR. The more visual approaches with diagramming appear to have a shorter history (though saying this invites contradiction) and are associated especially with PRA.

It remains to be seen how widespread this, and similar, methods will become. They appear not only to enhance farmers' analysis, to provoke revealing debate, and to provide an agenda for discussion, but also to provide an accessible means for farmers to communicate their priorities to extensionists and scientists.

4. farmers' flow, linkage and causal diagramming

Perhaps the most striking development has been linkage diagrams. These are diagrams drawn on the ground or on paper which show flows, causal relationships or other connections. Such diagrams, drawn by "us", are part of the toolbox of agroecosystem analysis, from which so much participatory diagramming comes. But it has been only gradually that we have come to realise the capacity that rural people have not just to understand, but to make and use linkage diagrams. A varied and impressive collection of such diagrams is to be found in the IIED report Participatory Rural Appraisal for Farmer Participatory Research in Punjab, Pakistan (Guijt and Pretty 1992), reporting on a training workshop held in February.

The classic case of participatory causal systems diagramming is the analysis of farmers' problems in Eastern Visayas in the Philippines, where farmers were helped to develop and analyse systems diagrams for factors affecting the central problem of the cogon weed (Imperata cylindrica) (Lightfoot, de Guia, Aliman and Ocado 1989). Diagramming was used to indicate the relative importance of different factors, and to focus discussion on alternative actions.

The participatory diagramming of bio-resource flows has been pioneered by farmers and ICLARM in countries as diverse as Bangladesh, India, Malawi and Vietnam (Lightfoot 1990) and is the subject of an ICLARM video Pictorial modelling: a farmer-participatory method for modelling bioresource flows in farming systems starring farmers in Malawi (Lightfoot, Noble and Morales 1991).

Participatory causal diagramming has also shown impacts of a change. In March 1991, Savasi Bhura, a farmer at Gadechi village, Surendranagar District, Gujarat, drew an impact diagram in a matter of about 25 minutes. This showed the effects of irrigation which had come to his village three years earlier, including physical, biological and social effects, and such aspects as impact on school enrolments.

Linkage diagramming of farming systems (Lightfoot, Feldman and Abedin 1991) appears to have potential. The ability shown of farmers, whether literate or illiterate, to draw such diagrams has been remarkable. In the PRA for FPR training at Aroop in Pakistan in February 1992 (Guijt and Pretty 1992) three groups of non-literate women drew farm profile and systems diagrams,

In sum, forms of participatory linkage diagramming known to date include:

- * bioresource flow modelling, especially for aquaculture
- * causal diagramming
- * impact diagramming
- * farm profile and systems diagrams, including internal and external farm linkages

It is important, though, to maintain critical awareness and a balanced judgement. Three cautions are in order. First, facility with diagramming is not a universal ability just waiting to be released. For instance, R. Edwards and M. Hosain reported of a facilitation in Pakistan that "It was difficult to get farmers to understand the flow diagram concept (though ranking was very easily picked up)" (Guijt and Pretty 1992:116). Second, much depends on context, rapport, and the behaviour and attitudes of the facilitator. In PRA, behaviour and attitudes are now considered more important than the methods. Indeed, in methodological R and D, approaches and methods for enabling outsiders to change their behaviour and attitudes are of at least as high priority as approaches and methods to enhance farmers' analysis. Third, a recurrent problem with visual diagramming is that the outsider is so startled and pleased at the creation of the map, matrix, linkage diagram, or whatever, that she or he simply copies it rather than facilitating further analysis.

That said, it is striking how popular and powerful these visual methods can be, either singly, or more so in sequence. Again and again, people say that they enjoy the experience and learn from it. Again and again, participants have been asked if they are getting tired, and have replied that they are not. Again and again people have lost themselves in creative analysis and presentation for a matter of hours, often on their own. Near Francistown in Botswana in June, farmers reflected that they had learnt that they could draw maps which they thought they could not do. They had also taken the characteristics of trees for granted, but as a result of a tree matrix they learnt what they knew about the characteristics of trees, and also that fuelwood could be planted. In South India, Shanmugan et al (1992) record how Mrs and Mr Marappan, of Kumbrahalli Village, Dharmapuri Village, Tamil Nadu, matrix scored 70 cells for different plots of land, and that "We were all struck by just how easily the Marappans could fill up the cells and the sense of satisfaction that they showed on completion of the scoring." Visual diagramming is, besides useful, often fun.

Three challenges

Against this background, there are three sets of methodological challenge. It is the first with which this paper is concerned, but the other two are mentioned for completeness.

The first is the further development of methods for farmers' own analysis. This may now be more rapid, especially if practitioners can recognise the interest and importance of what may seem small and even inconsequential innovations and experiences, and find ways of sharing these with colleagues.

The second is the development and spread of methods to help us change our behaviour and attitudes. Many methods are being developed and adopted in PRA training. These include "do-it-yourself" (being taught tasks by farmers), "what-would-you-do-if" discussions covering typical problem situations, team contracts in which members agree how they will behave, shoulder tapping (Shah 1991) where team members tap the shoulder of any colleague who lectures or puts forward his or her own ideas instead of eliciting those of farmers first, replaying videos of interactions with farmers, and a growing repertoire of participatory games.

Guijt, Irene and Jules N. Pretty, 1992, Participatory Rural Appraisal for Farmer Participatory Research in Punjab, Pakistan, Report of a Training Workshop, Pakistan-Swiss Potato Development Project, Gujranwala, Punjab Province, Pakistan, IIED, London, June

Gupta, Anil K. and IDS Workshop, 1989, "Maps drawn by farmers and extensionists", in Chambers, Pacey and Thrupp Farmer First pp 86-92

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Lightfoot, Clive, Olimpio de Guia Jr, Aniceto Aliman and Francisco Ocado, 1989, "Systems diagrams to help farmers decide in on-farm research" in Chambers, Pacey and Thrupp eds Farmer First pp 93-100

Lightfoot, Clive, 1990, "Participatory Methods for Ecologically Sound Agriculture", in Rhoades, Sandoval and Bagalanon eds Asian Training of Trainers on Farm Household Diagnostic Skills pp 16-31

Lightfoot, Clive, Reg Noble and Regina Morales, 1991, Training Resource Book on a Participatory Method for Modelling Bioresource Flows, ICLARM, Philippines

Lightfoot, Clive, Shelley Feldman and M. Zainul Abedin, 1991, Households, Agroecosystems and Rural Resources Management: a guidebook for broadening the concepts of gender and farming systems, Bangladesh Agricultural Research Institute and ICLARM

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Mearns, Robin, 1989, "Aerial photographs in rapid land resource appraisal, Papua New Guinea", RRA Notes 7, IIED, pp 12-15

Norman, D., D. Baker, G. Heinrich, C. Jonas, S. Maskiara and F. Worman, 1989, "Farmer Groups for Technology Development: Experience in Botswana", in Chambers, Pacey and Thrupp eds Farmer First pp 136-146

Pretty, Jules, 1990, Rapid Catchment Analysis: notes on the 1990 Kericho Training Workshop for the Ministry of Agriculture, Kenya, IIED, 1990

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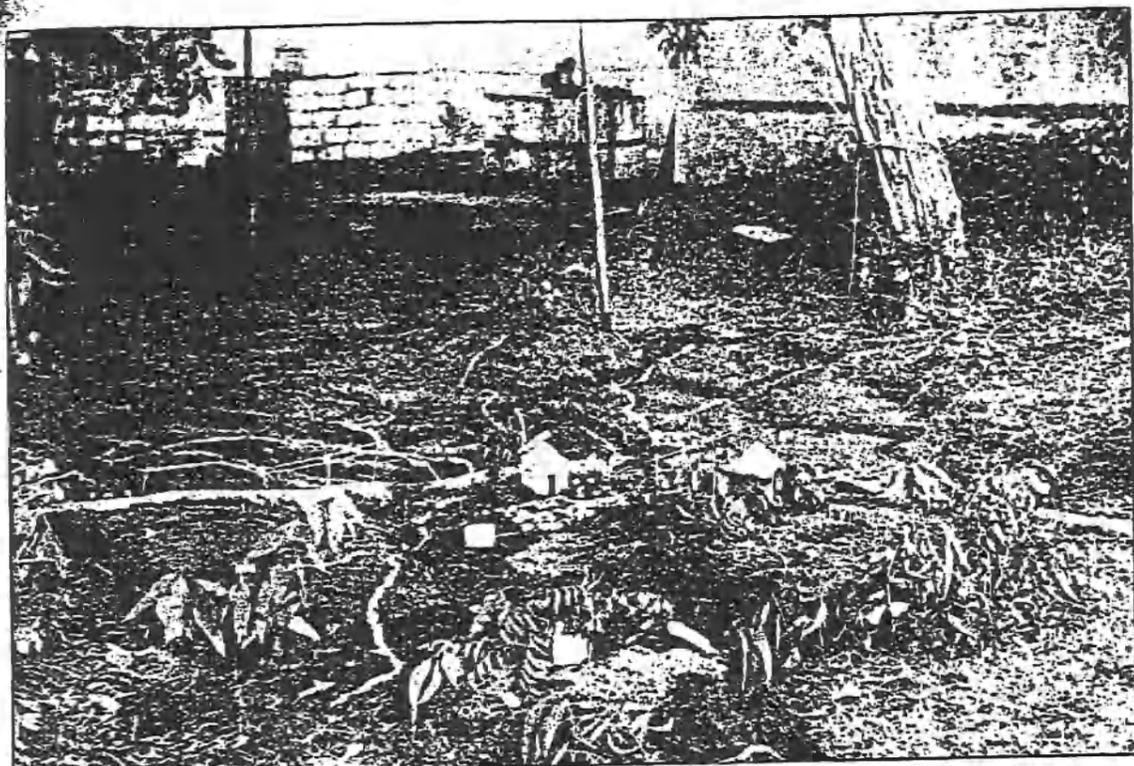


Plate 9. Watershed model, Kalmandargi, Gulbarga District, Karnataka.

Photo: Robert Chambers

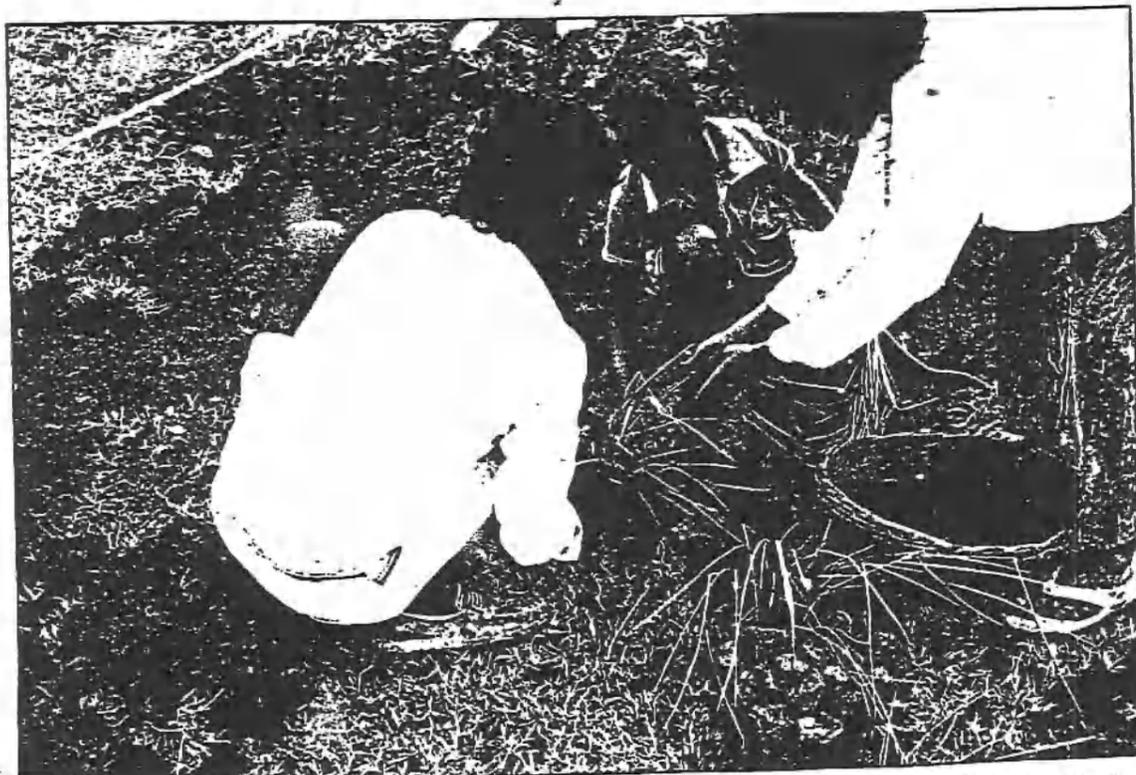


Plate 10. Watershed model (silt traps), Limbu watershed, Gulbarga District, Karnataka.

Photo: Robert Chambers

Source: Mascarenhas et al 1991

A7 1

MATRIX SCORING OF FIVE VARIETIES
OF SORGHUM
PLUS A NEW "WISH" VARIETY

7 Feb 92

	CH 59	KESAM	AWAL-TURI	MHS 51	CHS-5	"WISH"
TASTE	2	5	3	9	6	6
YIELD	4	3	2	9	6	6
EARLY HARVEST	3	5	5	2	4	7
GOOD PRICE	4	3	3	8	5	6
FODDER	3	5	5	3	5	5
DISEASE RESIST.	4	5	5	3	3	5
RATOONING	4	-	-	8	2	4
MANY FOOD USES	3	6	-	5	3	4
GOOD FOR HEALTH	4	5	2	5	3	4
LOW INPUT COST	2	3	4	3	2	3
						50

Analyst:
G.B. Kamama
Kabana halli village,
Zalur Taluk
Mataka, India

Scoring out of 10 with tamarind seeds
50 seeds only were given for the
'wish variety'.

The analyst was one of the less poor
farmers in a very poor village in the semi-arid
tropics. The criteria were all his, not 'ours'.

Please write with comments, experiences, ideas to
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SEASONAL VIKRANTIMANO

A 11

Source:
Mascarenhas
et al. 1991



WOMEN'S
LABOUR
IN
AGRICULTURE
MAX 10

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

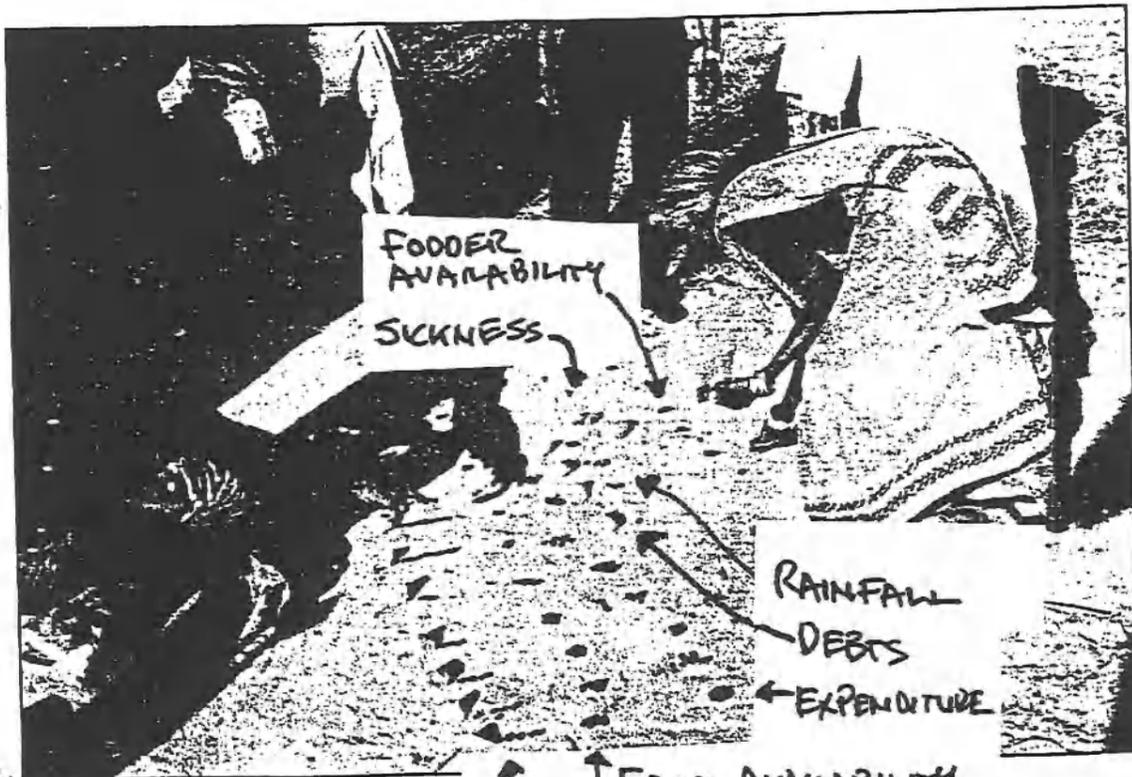


Plate 16. Seasonal calendar, Hazaribagh District.

FOOD
AVAILABILITY
SICKNESS

RAINFALL
DEBTS

EXPENDITURE

↑ FOOD AVAILABILITY
WOMEN'S AG. LABOUR