Policies That Work for Sustainable Agriculture and Regenerated Rural Economies

A Collaborative Research Project

Order from chaos?
Making local data relevant for policy audiences

S. Rengasamy, P. Bala Murugan, John Devavaram and Simon Croxton

Introduction

One of the greatest challenges facing anyone attempting to use information gained from large numbers of people is narrowing down a dauntingly broad amount of data. Participatory methods are frequently extremely good at helping us gather huge amounts of information but are often less helpful with the question of how to deal with this jumble. The task can appear both difficult and confusing. This article relates some methods that we used to try and deal with just this problem in India.
Our challenge

As part of a research project that sought to identify policy successes in supporting sustainable agricultural systems in rural India , SPEECH (Society for People's Education and Economic Change - a small field-based NGO) generated large amounts of information from a range of sources: farmers, traders, NGO staff members, and government agency officials. The objectives of the research were to identify 'success' stories in sustainable agriculture; to understand key factors in the broader policy environment that were supporting (or constraining) these 'islands of success'; and from these make policy recommendations. The primary audience was policy makers and decision makers in both government and NGOs, particularly in India.

Participatory methods were used extensively in this work because policy making is a process in which discussion plays a pivotal role. Such a process works well only for those groups whose perspectives are incorporated in the discussion - frequently the most politically powerful. Using participatory methods for investigation allows marginalised perspectives to be heard in the policy-making process, particularly when investigation is linked to opportunities for dialogue between these different interest groups - which was an integral part of our research process.

Collecting this information was itself a time-consuming and exhausting task. Yet it was only the beginning of the process of analysis. In the data collection processes, much analysis also took place but we will focus here on what happened once the basic data were available. Three major tasks had to be accomplished:
? transforming the raw data into a format that was easy to analyse;
? validating the information;
? drawing out the implications of the information for policy makers.

The process we followed is too long to describe here in detail. However, a simplified example illustrates how we unravelled a confusing bundle of data and opinions.
? Narrowing down

When looking at a topic as vast as 'sustainable agriculture', it is important to try to limit the fieldwork in some way from the start. Many PRA manuals will include a section on 'identifying your checklist'. We followed a different process.

At the beginning of the fieldwork, we used a list of criteria for sustainable agriculture that was drawn up by researchers at the outset of the research programme (see Table 1). This list was compiled at an initial planning workshop that did not draw on direct inputs from farmers. Thus, we knew that this definition would need to supplemented and elaborated by drawing on farmers' own perceptions. The list represents an important element of 'analysis' as we were determining the scope of the information that we would consider.

Table 1. Indicators of sustainable agriculture that guided the fieldwork

• **incorporates biological processes such as nutrient cycling and pest-predator relationships**
• **optimises the use of external and non-renewable inputs**
• **encourages full participation of producers and consumers in problem solving and innovation**
• **ensures more equitable access to entitlements**
• **makes full use of local knowledge**
• **diversifies the production system**
• **increases self-reliance**
• **strong links to local rural economy**

With this basis, the researchers set about obtaining the relevant information. However, while they were working they recognised that understanding farmers' own perceptions of what constitutes 'sustainable agriculture' was going to be one of the very first tasks. Participatory methods provide an excellent means of eliciting such information. We chose to focus on transect walks, semi-structured interviews and group discussions.

As we mentioned, one of the advantages of participatory methods is also a major drawback - the very wealth of information that is generated. Figure 1 shows the complex web of information that emerged from discussions with farmers on just one aspect of agricultural practice - ploughing with oxen. It is an example of the complexity of information that lies behind just one aspect of the sustainable agriculture indicators that we were researching – and we had many indicators.

Thus the initial framework – the list of criteria – had helped us focus the fieldwork around a limited set of questions. Nevertheless, early discussions with farmers soon showed that they described sustainable agriculture in a more practical way than the ‘intellectual’ researchers. In groups, farmers tended to talk about it in terms of the kind of activities that supported it. Much of this initial information was obtained by

drawing up spider webs such as the one shown here on ploughing (Figure 1). This is just one of several similar webs that were constructed, on subjects such seeds, fertiliser, soil erosion, pesticides, etc..

The total amount of information we ended up with was far more than the knowledge of any single informant or group of informants. Furthermore, we had interacted with many different stakeholders in the process. To what extent, then, was the information, such as that shown in Figure 1, a realistic impression of any single person's views, let alone a group opinion, or an overall consensus? Our next task, therefore, was to find a way to narrow down this mass of opinions to a smaller summary of the overall priority problems that could be used in discussion with policy makers and other researchers.

Interpreting the information

In the interpretation stage, participation reduced to the core group of researchers. The raw `spider-web' data was not easy to use in widespread discussion. Presenting so much information to people who had not been directly involved in drawing up the spider-webs would have been difficult for them to digest. It also did not yet provide enough focus for further investigation, discussion and analysis. What was needed was a short, simpler list of key issues. Would it be possible for a smaller group of people to take this away, sort it, and make it more understandable?

Figure 1. A spider's web: farmers' perceptions about oxen and tractor ploughing (NB: this figure will be added when available)

At this stage farmers had little interest in the effort required, as the research agenda was still more the researchers' than the farmers'. If anyone was to attempt to present the information in a different way, the researchers had to do this. If they were successful, farmers might engage again in the interesting (and simpler) task of analysing key issues.

Armed with several spider-webs and copious notes, a small and motivated group of researchers set out to identify the 'key issues' that were emerging. They decided to attempt to produce a list of key indicators, by aggregating the multitude of varying opinions per topic into a smaller number of overarching factors.

Where possible, the research team collapsed a number of indicators into one indicator. This reduced the overall list of indicators while still capturing the key elements of the many indicators that appeared in the spider diagrams. As this was a process that did not include farmers, it was important that the analysis was verified with them. Through a series of meetings and interviews, the short list of indicators was presented back to farmers and other stakeholders for their comment. The end result was a list of eighteen indicators for sustainable agriculture with which farmers, including different classes of farmers, and researchers were happy (Table 2.)

Table 2. Farmers' indicators of sustainable agriculture

Indicators	Ranking[1]			Expected adoption rate[1]		
	Big	Med	Small	Big	Med	Small
1. Adhering to monsoonal cycles						
2. Summer ploughing						
3. Application of natural manure						
4. Selecting varieties suitable for a particular time						
5. Adhering to the timeliness of sowing						
6. Selecting varieties suitable for a particular soil type						
7. Following the production technique of a particular crop						
8. Storing and treatment of seeds						
9. Availability of labour and active participation of the entire household						
10.Keeping the land fertile by preventing soil erosion and levelling						
11.Crop rotation						
12.Getting good yields						
13.More income with less expenditure						
14.Good market and good prices						
15.Regular visit to the field/good supervision						
16.Not keeping the land as fallow						
17.Community control against grazing and theft						
18.Co-operation from other farmers						

1 for big, medium and small farmers

Making it relevant for a policy audience

Our third task was to understand the local perceptions and definitions of sustainable agriculture with the policy initiatives of the government, and to analyse the extent to which they overlapped. The government programmes were first identified by researchers through investigation and discussions. Table 3 provides a simplified example of how the indictors were linked to government-sponsored programmes.

At feedback workshops and meetings, government officers from a range of agencies (agriculture, forestry, health, and education) were asked to think about both the sustainable agriculture indicators that farmers had identified and the programmes that may be relevant for each of these indicator areas. They were then asked to use their 'insider' knowledge to comment on how successful these programmes were at meeting their objectives of supporting more sustainable forms of agricultural practice.

Table 3. The impact of various programmes on farmer's indicators of sustainable agriculture

Available Support Programmes: ⇨ Farmers' Indicators of Sustainable Agriculture: ⇩	Seed provision	Tree seedling provision	Crop protection extension	Sub-sidised fertiliser	Tractor hire service
1. Adhering to monsoon cycles	0	0	0	0	0
2. Summer ploughing	N.A	N.A	N.A	N.A	0
3. Application of natural manure	N.A	N.A	N.A	N.A	N.A
4. Selecting varieties suitable for a particular time	0	N.A	X	0	N.A
5. Adhering to timeliness of sowing	X	N.A	X	0	0
6. Selecting varieties suitable for a particular soil type	X	X	XX	X	N.A
7. Following the production technique of a particular crop	X	X	XXX	XX	0
8. Correct storage and treatment of seeds	N.A	N.A	X	N.A	N.A
9. Availability of labour & active participation of the entire household	N.A	N.A	N.A	N.A	N.A
10. Keeping the land fertile by preventing soil erosion	N.A	X	N.A	N.A	N.A
11. Crop rotation	X	N.A	X	X	N.A
12. Getting good yields	XX	X	XX	XX	N.A
13. More income with less expenditure	XX	X	X	XX	N.A
14. Good market and good prices	N.A	N.A	N.A	N.A	N.A
15. Regular visits to the field/Direct Supervision	N.A	N.A	N.A	N.A	N.A
16. Not keeping land as unmanaged fallow	N.A	X	N.A	N.A	N.A
17. Community control against grazing and theft	N.A	N.A	N.A	N.A	N.A
18. Co-operation with other farmers	N.A	N.A	N.A	N.A	N.A

Key: 0 = not supportive; x = a little support; xx = some support; xxx = very supportive; N. A. Not applicable

For example, a programme that provided good quality seeds at subsidised prices may appear to support the following farmers' indicators:

- selecting varieties suitable for a particular time (4);
- adhering to the timeliness of sowing (5);
- selecting varieties suitable for a particular soil type (6);
- crop rotation (11);
- getting good yields (12); and
- more income with less expenditure (13).

This would appear to be good news. However, their 'insider knowledge' allowed them to tell researchers that, in fact, this programme fails to match up to its promises. For example, due to funding problems, the seeds rarely arrive on time and even when they do, there are rarely sufficient seeds to meet demand. The matrix was a useful tool that helped participants, in this case the government officers, to visualise the relationships between farmers' indicators and government programmes. However even when completed, the matrix only really identified those programmes that had the potential to support some of the farmers' indicators. Anyone with a couple of hours, and a basic knowledge of agriculture, would probably have come up with similar scoring on the matrix. Was this the sole benefit of getting people together? Certainly not. The real benefit was that the matrix provided the opening for a broader discussion on the quality of the programmes. In this way it was possible to gain a real understanding of some of the dynamics of 'policy in practice', how existing policies are succeeding or failing in farmers fields. This information was then written up by researchers, and compared with information provided by farmers when they were asked to do a similar exercise. A see-saw of information creation and exchange was set up that allowed for comparison and refinement of ideas and data.

Conclusions

A key step in our process was the phasing of a variety of methods, so that information from one source aided the interpretation of information from other sources. Diagrams (Venn diagrams for stakeholder analysis, spider-webs for structuring raw data, and matrices for presenting summaries and taking the analysis one stage further) had been useful tools for collecting the initial information. These also proved to be useful tools to assist in disaggregating raw data, presenting it back to key informants, identifying key themes and finally identifying policy options.

Through collapsing numerous categories into smaller numbers of indicators, order emerged from apparent chaos. In addition, making explicit plans for an iterative process of discussion and feedback/ review of the emerging results was critical for validating the research results. The researchers' key role was to develop an initial rough draft of the interpretation of the results - something farmers have little time or interest in doing - and then to present these back to farmers for their opinion. The type of analysis process that we followed has two advantages. First, it means that policy recommendations be made to improve existing policies/programmes. Second, it allows researchers to pose sensitive questions, such as the value of continuing/supporting such programmes when funding (or other) problems do not permit them to work as originally planned, and whether such programmes were useful ways to allocate scarce resources. Other evidence presented by the research had shown that some farmers were having considerable success with sustainable agricultural programmes but this now appears to be in spite of the programme designed to deliver seeds rather than because of it. What alternative programmes then could conceivably support farmers' efforts in more constructive ways?

S. Rengasamy, Chair Person SPEECH, P. Bala Murugan, Research Wing Co-ordinator, SPEECH, 2/43 Jeyaraja Illam, Manoranjitham Street, Ezhil Nagar, Madurai, Tamil Nadu 625-014, South India. Email: speech@md3.vsnl.net.in John Devavaram, Senior Training Advisor, RIPS, Tanzania Email: RIPS.LINDI@TWIGA.COM and Simon Croxton, IIED, 3 Endsleigh Street, London, WC1H ODD, UK.