

Rapid and Participatory Rural Appraisal and Remote Sensing

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At first sight, rapid and participatory rural appraisal (PRA) and remote sensing appear poles apart. PRA stresses rural people's knowledge (sometimes known as indigenous technical knowledge (ITK)). It entails investigations, analysis, planning and implementation by rural people themselves as well as by "outsiders" (non-rural dwelling professionals). It is based on learning not just by outsiders from rural people, but learning with and by rural people themselves. A basic tenet is that as far as possible knowledge should be owned and used by rural people, and that the process of PRA should be empowering, enhancing their ability to command and manage their environments, and to make effective demands on services.

In contrast, remote sensing is in at least two senses "high" technology, and also remote. In its more sophisticated forms, with false colour imagery, it may not be easily intelligible to laypersons. Its analytical categories are those of normal science, not those of farmers. The scale of images often covers large areas which do not correspond with the local micro-perceptions of rural inhabitants. Some of its strengths lie in drought and disaster monitoring, in natural resource identification, monitoring and analysis, and in various forms of mapping. Its immediate clients are not farmers as much as officials and commercial interests.

In my seminar I shall try to explain the origins, strengths and weaknesses of PRA as it has developed in the past two years, illustrating this with slides. Some of the main relevant points will be:

- * the supposed ignorance and incapacity of rural people is partly a product of the way outsiders behave, teaching rather than learning, and assuming that "our" knowledge is superior
- * many of the activities we have in the past supposed can only be carried out by outsiders can also, and often better, be carried out by rural people
- * rural people, illiterate as well as literate, have a greater capacity to quantify, rank and score than has been supposed.
- * rural people have more detailed and extensive mental maps than do urban. They see their environments their own way. Their mental maps, for example, rarely have north at the top. Participatory mapping and modelling, done well, can elicit a mass of information quickly and enjoyably.
- * the effectiveness of PRA depends on the methods used, and on the attitudes and behaviour of those outsiders who act as catalysts or facilitators

In practical terms, there are two questions about PRA and remote sensing:

1. can PRA be of use to remote sensing?

The most obvious aspect of this question is whether rural people can help provide ground control. Some who are present will have experience with this, which I do not have. I would expect that if they are approached properly, many rural people would be able to contribute through their detailed local knowledge of natural resources, of seasonal changes, and the like.

There is a mass of evidence that rural people, whether literate or illiterate, have no difficulty interpreting black and white aerial photographs. Aerial photographs are used with and by farmers in countries as diverse as New Zealand, the USA, Nepal, Papua New Guinea, Kenya, Ethiopia and Zimbabwe. Current conventional wisdom is that 1:5000 is the best scale. I would expect rural people to be able readily to take outsiders to particular points on aerial photographs, and to enjoy photo interpretation. I would also expect them to be able to interpret black and white and true colour images without having to visit the ground, where this is familiar to them.

As a commonsense judgement, I would expect them to find true colour aerial photographs a little easier than black and white, and then false colour imagery much more difficult. I will be most interested to learn of participants' experience with these comparisons.

One principle of PRA is to ask who are the local experts for particular topics. With photo and image interpretation, this should help identify those most able and willing to help. Except where they are confined in their movements, women have proved good informants and analysts.

2. Can remote sensing be of use to PRA?

Participatory mapping and modelling (PMM) is largely an Indian discovery, pioneered in the NGO sector by MYRADA, Bangalore, the Aga Khan Rural Support Programme in Gujarat, and now many others. Its potential in rural development was "discovered", or rediscovered partly because aerial photographs were not available as a distraction. PMM has thus been an important and serendipitous finding. Even if aerial photographs were now to become widely and cheaply available, they would be no substitute for PMM, which has its own value. In particular, it expresses people's own view and knowledge of their environments in their own way, and in a form which they own and can use. It can bring the poorer into the process. It is also rapid in eliciting and presenting information for shared analysis.

Where aerial photographs can be obtained, however, there is widespread international, though to my knowledge not yet Indian, evidence that they can be of use in participatory mapping of soils, slopes, land types, land tenure, and boundaries, whether physical, social or political. People draw direct onto the photographs with, for example, chinagraph pencils, or they draw and mark in details onto transparencies pinned over photographs. (For such purposes, black and white may be superior to true colour photographs, as colours and additional lines may show up better on black and white).

Some of the potentials of aerial photographs in rural development, in the PRA mode, include:

- i. the identification of land and usufruct rights, and of boundaries between village spheres of influence. There are obvious applications in the current scramble for the forest, in which in many parts of India village communities are seeking to assert their usufruct rights over forest land, to the exclusion of contractors and of other communities.
- ii. the identification of microenvironments, often artificially created by farmers, which can be of considerable (though often overlooked) significance in farming systems, not least in arid and semi-arid conditions.
- iii. participatory diagramming of spatial relationships such as where women and men go for fodder, fuelwood, other minor forest products and/or water.

For purposes of decentralised planning at the village level, the strengths of aerial photographs and PMM can be compared as follows:

| | Aerial Photographs | Participatory mapping and modelling |
|---|---|---|
| correspondence with people's mental maps | not very close | very close |
| spatial accuracy- | very high | less |
| ease of interpretation | high (true colour and black and white) | very high |
| up-to-dateness | variable | very high |
| detail | the visible only at first | the social and political as well |
| | more complete | selective |
| ease of correction | moderate/low | high, using ground or chalks |
| accessibility to a group of rural people | only a few can see check and analyse together | many can see, check and analyse at a time |
| durability/permanence | high | low, unless on paper |
| enhancing creativity and empowering rural people | moderate | high |
| acceptability to outsider professionals and ease of use by them | high | moderate to high |
| cost | very high | nil or low |
| accessibility | nil or very difficult | universally easy |

For the future, one question is whether aerial photographs will be used in participatory local-level resource planning, development and management. At present, PMM is spreading fast and proving popular and powerful. The lack of aerial photographs is much less of a problem than was originally supposed. All the same, it could be useful to gain more experience comparing the participatory use of aerial photographs and PMM in the Indian context.

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Robert Chambers
Administrative Staff College of India
Bellavista
Hyderabad 500 049

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