

## POLICY ARENA

# REVERSING THE PARADIGM: QUANTIFICATION, PARTICIPATORY METHODS AND PRO-POOR IMPACT ASSESSMENT

LINDA MAYOUX\* and ROBERT CHAMBERS

---

**Abstract:** Recent debates about integrated impact assessment have tended to treat participatory approaches and methods as a fashionable frill added on to more ‘expert’ quantitative and qualitative investigation. This paper argues that, far from being an optional add-on, participatory approaches, methods and behaviours are essential for the new agendas of pro-poor development and ‘improving practice’. Recent evidence shows that participatory methods can generate accurate quantitative data as well as capturing local priorities, different experiences of poor people and potential for innovation in relation to causality and attribution. They can also be cost-effective for focusing quantitative and qualitative investigation. The main challenge is ensuring that mainstreaming them does not compromise their role in giving poor women and men more voice in development priorities, policies and practice. Copyright © 2005 John Wiley & Sons, Ltd.

---

## 1 INTRODUCTION

‘... impact assessment studies keep donors happy ... we don’t use them very much’ (director of a large Asian microfinance institution that has received substantial amounts of aid-financed IA consultancy and internal IA-capacity building quoted Hulme, 2000)

---

\*Correspondence to: L. Mayoux, Institute for Development Policy and Management, University of Manchester, Harold Hankins Building, The Precinct Centre, Oxford Rd, Manchester, M13 9QH, UK.  
E-mail: l.mayoux@ntlworld.com

'So we find out that such and such a per cent of people have such and such a per cent increase in income. So what? It doesn't tell us what do about it.' (Participant at Micro credit summit meeting New Delhi 2001)

Impact assessment methodologies are currently at a crossroads. On the one hand the underlying agendas of pro-poor development and 'improving practice' necessarily require participation by poor women and men in deciding priorities and identifying strategies. On the other hand the sheer numbers of people involved, the potential conflicts of interest and consequently difficulties of decision-making require rigorous quantification and analysis in order minimize domination by vocal vested interests. In recent years there has been increasing emphasis on 'integrated impact assessment', using varying combinations of survey, qualitative and participatory methods in order to meet these competing demands. Complementarities have been recognized particularly between the depth and detail contributed by qualitative research and the objectivity and statistical robustness contributed by survey research. However in the current impact assessment paradigm,<sup>1</sup> dominated by quantitative surveys, participatory methods have generally continued to be seen as a fashionable and 'politically correct' frill to the more serious task of 'expert' survey and (more rarely) qualitative research. As a result participatory methods have received insufficient investment of training, time and resources to be done well.

This paper discusses new evidence and innovations to argue the case for 'reversing the paradigm' to bring systematic and rigorous use of participatory methods to the centre of most monitoring, evaluation and impact assessment. It argues firstly that the new impact assessment agenda means that simple 'rigorous' measurement of before and after situations for random samples with control group is now rarely sufficient. The new agendas of pro-poor development and improving practice imply new questions, methods and processes to address local priorities, differences between poor people, causality and attribution and to identify and bring about pro-poor change—i.e. the underlying and explicit justification for the large amounts of money spent on impact assessment. Moreover since the early 1990s experiences of quantification using participatory methods have repeatedly shown how when used well, participatory methods generate not only qualitative insights and but also quantitative data which are generally more accurate than those from conventional survey approaches and methods. Participatory methods can also be cost-effective by providing a better basis for targeting and by focusing more expensive forms of quantitative and qualitative investigation on issues and situations which need further investigation.

We argue that the challenges for participatory approaches and methods are not so much assuring rigour and reliability as ensuring that their mainstream use achieves their potential for enabling very poor women and men to have an equal voice in priorities and policies for pro-poor development. This requires enough people with the attitudes, behaviours and skills to conduct and document them well. Although participatory methods can increase the downward accountability of development processes and contribute to empowerment and civil society development, these benefits cannot be taken for granted. Much depends on how they are used and by whom and the levels of political will not only to 'hear the voices of the poor' but also to 'listen' and take action.

<sup>1</sup>The references to different paradigms of impact assessment build on Howes, 1992; and Hulme, 2000.

## 2 QUANTIFICATION AND QUANTITATIVE METHODS: CHALLENGES OF THE NEW AGENDA IN IMPACT ASSESSMENT

Impact assessment, monitoring and evaluation<sup>2</sup> are now established parts of development activity. Impact assessment started to become an established part of development planning in the 1950s as a predictive methodology to assess the likely economic, environmental or social impacts of proposed development programmes in order to approve, adjust or reject them. These were tasks done by external experts drawing largely on variants of cost-benefit analysis. More rarely impact analyses were conducted a number of years after the end of a project. In the 1980s and 1990s however with the increasing number of development research institutes and departments, academic impact studies became common. Many of these were extremely critical of the limited impact of many development interventions. This led a number of donor agencies to initiate debates about impact assessment methodologies and fund a number of prominent impact assessment studies themselves, notably USAID's AIMS project in micro-finance. Donors have also increasingly required the organizations they fund to produce and adhere to some variant of logical framework analysis which sets out a clear hierarchy of inputs, activities and objectives and put these in the context of assumptions about external contextual risks and opportunities (Howes, 1992; Roche, 1999). Progress in achieving these goals is expected to be monitored, often also with impact assessments at the end of the specific project period with specific budgets allocated for this purpose.<sup>3</sup>

As the numbers and importance of impact assessments have increased so have expectations and challenges. The current official international commitment to pro-poor development has significant implications for impact assessment methodologies:

Firstly, although many impact assessments have previously focused only on economic dimensions of poverty, social impact assessment has become increasingly important. In recent years the multidimensionality of poverty, and less quantifiable dimensions like vulnerability and voicelessness have become part of the official poverty framework, as in the analysis and impact of the World Development Report *Attacking Poverty* (World Bank, 2000). This builds on earlier debates about impact assessment in the humanities which called for a more holistic understanding of poverty and complex processes of causality (Marsden and Oakley, 1991; Guba and Lincoln, 1989).

Secondly in view of the often large amounts of money and time devoted to impact assessment (increased rather than decreased by the emphasis on social impact assessment), there has been a growing concern that impact assessment should be more practically useful, moving from a focus on 'proving impact' to 'improving practice' (Hulme, 2000). This demand has come not only from donors, but also particularly from programmes, where there has been understandable resistance to diverting time and resource to what was often perceived as 'donor policing' and out of keeping with the official statements of 'partnership'. The new impact assessment agenda of 'improving practice' means that simple 'rigorous' measurement of before and after situations for random samples with control groups is now rarely sufficient. It requires producing more credible practical recommendations and thinking about how they can be implemented, that is, the policy and practical impact of impact assessment itself.

<sup>2</sup>In this paper impact assessment is used as a shorthand to refer to impact assessment itself and also monitoring and evaluation processes which attempt to collect information on impact.

<sup>3</sup>Exact amounts vary, but in some donor agencies is as much as 10 per cent of the total programme budget.

The new impact assessment agenda of pro-poor development and improving practice therefore implies new questions to include the priorities of very poor people, look in detail at differences between the experience of specific groups of poor people and crucially going from questions about what is happening to whom, to questions of causality and attribution and the implications for future change (See Box 1). Moreover the new agenda requires not only new questions, but new processes and methods because poor people themselves are now central actors at all stages of the assessment process.

### **Box 1. Challenges of the new Impact Assessment agenda**

#### **WHAT IS HAPPENING?**

From simple measurement of pre-determined categories to:

- What are the key priorities for change of poor people themselves?
- How can broad priorities be translated into specific indicators which can then be meaningfully assessed?
- How can different local indicators be compared and aggregated across interest groups and geographical areas?

#### **TO WHOM?**

From simple counting and aggregation to:

- What are the differences in impacts between poor people?
- What are the most significant lines of difference?
- What are the main potential conflicts of interest?

#### **WHY?**

From before-after or sample-control comparisons of linear processes to:

- Understanding complex processes of change
- Understanding the complex interactions between individual strategies, programme interventions and contextual factors

#### **WHAT SHOULD BE DONE?**

- What do people want to do? How does one evaluate trade-offs between different priorities e.g. increased income versus decreased leisure/stress/time with family?
- How can differences and conflicts be negotiated?
- What are the lessons of past experience, ongoing opportunities and challenges for the future?
- Who needs to know what in order to make decisions and act?

These challenges have led to an increasing interest in integrated assessments combining quantitative, qualitative and participatory methods (e.g. Hulme, 2000; Kanbur, 2003; Barnes and Sebstad, 2000; Copestake *et al.*, 1998). Complementarities have been recognized particularly between the depth and detail contributed by qualitative research to understanding of social dimensions and processes and the objectivity and statistical robustness contributed by quantitative research. However, although open acknowledgement of the shortcomings of conventional survey and statistical techniques are common, quantitative methods using questionnaires have tended to be treated as inherently superior to both qualitative and participatory methods in terms of rigour and credibility. A standard

'scientific method' package of structured questionnaires with prespecified indicators applied to a random sample of respondents and analysed using statistical techniques continue to be the main focus of training, time and resources.<sup>4</sup> Where qualitative or participatory methods are used at all, they are relegated to an explanatory and subsidiary role to survey findings rather than an integral part of the investigation and analysis. Participatory methods have generally continued to be seen as a fashionable and 'politically correct' frill to the more serious task of 'expert' quantitative and (more rarely) qualitative research.<sup>5</sup>

It has been commonly assumed that rigorous quantitative data can only be produced by questionnaire surveys and that participatory approaches can only generate qualitative insights—and even these may be inferior to those from qualitative research. A number of critiques of participatory methods (notably Mosse, 1994) pointed to serious concerns about how participatory processes were set up and conducted and consequently the reliability of the diagram products, views and decisions which resulted. Participatory approaches and methods have faced considerable problems because of their rapid and uncritical adoption. As discussed below, good use of participatory methods does not require high levels of formal education, but it does require training, experience, understanding of the issues involved and *especially* appropriate behaviour and attitudes. Many people who did not have these qualifications claimed to be PRA trainers and practitioners. Much practice in consequence has been bad—top-down, routinized, insensitive, unimaginative, unethical and producing data which were unusable and unused. This has reinforced the view that such methods are inherently less reliable and capable only of collecting (in some cases indecipherable) qualitative information and yielding (in some cases misleading) qualitative insights.

This paper presents evidence and details of innovations which challenge this view and argues the case for bringing participatory methods to the centre of most monitoring, evaluation and impact assessment and no longer regarding them as a fringe or optional extra. There are now many examples of deriving numbers from participatory approaches and methods. In the 1990s community participation rose in prominence in the agenda of aid and development. Manuals and tools for participatory research were compiled and produced (e.g. Mikkelsen, 1995; Selener *et al.*, 1999; Shah with Zambezi and Simasiku, 1999; van Wijk-Sijbesma, 2001). Increasingly since the early 1990s, a quiet tide of innovation has developed ways, often visual and tangible, by which local people generate numbers (sometimes known as participatory numbers or 'party numbers').<sup>6</sup>

<sup>4</sup>For discussion and critique of the 'scientific method paradigm' of impact assessment in micro-finance, together with comparison with qualitative and participatory paradigms See Hulme 2000—although some of the assumptions about relative strengths and weaknesses of the participatory paradigm are challenged by evidence presented here.

<sup>5</sup>Prime examples are the series of influential USAID-sponsored AIMS studies of microfinance. Following a long consultative process and examination of different methods, including qualitative and participatory methods and critique of linear causal analysis, the final Guidelines and three core studies focused on quantitative questionnaire survey comparisons of baseline and follow-up data on samples of 750 clients with control group. Extremely interesting earlier qualitative findings shown confidentially to Linda Mayoux (Barnes, 1997) were either omitted altogether or relegated to illustrative Boxes in the final report (Barnes and Keogh, 1999). In the final Guidelines qualitative and participatory methods are only to be used in medium and large scale assessments. It is recommended that small-scale assessments use only questionnaire survey methods (Barnes and Sebstad, 2000).

<sup>6</sup>See for example Neela Mukherjee's latest (2002) book *Participatory Learning and Action with 100 Field methods*.

What characterizes participatory approaches and methods<sup>7</sup> as understood here are the following.

- *Empowerment goal*: a central aim is that the participants should be key beneficiaries from the investigation process, in terms of increased understanding of their situation, improved understanding between different groups in communities and society, equitable participation in the analysis and conclusions reached, better networks for future investigations.
- *Participatory process*: investigations take the form of group discussions, generally but not necessarily, facilitated by outside facilitators: NGO staff, consultants or researchers. Numbers involved vary from small groups of three or four to large participatory workshops. People can do individual diagram exercises interspersed with collective discussion as part of a participatory workshop. Local people, including non-literate people, have been involved in community-led research without significant external facilitation beyond initial training.
- *Accessible tools*: tools are used which enable respondents, including people who are not literate, to participate fully in these discussions and understand the conclusions and outputs. These are commonly diagrams, but may also be oral tools. Many of these have origins in applied anthropology, farming systems research, agro-ecosystem analysis, and participatory action research and activism.<sup>8</sup>

In what follows it is argued that the recent innovations help resolve both many identified shortcomings with participatory methods themselves, and also some of the now well-recognized challenges faced in conventional survey methods. There are now innumerable examples and overwhelming evidence that local people, whether literate or not, have a far greater capacity to generate numbers through counting, calculating, estimating, measuring, ranking, scoring, and making comparisons which express values, than had been supposed (Chambers, 1997, ch. 7; and 2003, p. 7 and Mukherjee, 2002, pp. 1–50 *passim*). As discussed in detail below, further innovation and spread in use of participatory methods for serious quantification and statistical analysis have already taken place on some scale. An important step forward was the workshop for PRA/PLA practitioners on ‘Dealing with data from participatory studies: Bridging the gap between qualitative and quantitative methods’ organized by the International and Rural Development Department and the Statistical Services Centre at the University of Reading in September 2002. Workshops on this theme are now being convened on a regular basis. There are also a number of recent publications such as *Participation and Combined Methods in African Poverty Assessment: Renewing the Agenda* (Booth *et al.*, 1998), a series of publications of the Statistical Services Centre at Reading University,<sup>9</sup> the Cornell March 2001 Qual-Quant Workshop (Kanbur, 2003) and the Swansea July 2002 Conference on Qualitative and Quantitative Methods in Development Research. And this is only part of a burgeoning literature and interest. Participatory

<sup>7</sup>In this chapter the term ‘approach’ is used to refer to underlying philosophies, goals and disciplines, the term ‘tools’ to the practical ways in which information is obtained e.g. diagrams, and ‘processes’ to relational or institutional dimensions e.g. how individuals, groups and organizations are brought together and facilitated. The term ‘method’ is used as a generic term encompassing all three. The term ‘paradigm’ is used to focus on the distinctive logic and interconnectedness between approaches, tools and processes which differentiates the scientific, qualitative and participatory paradigms and broadly follows the paradigm distinctions made in Hulme, 2000.

<sup>8</sup>For history see Chambers, 1997, p. 103ff.

<sup>9</sup>For publications and other information visit [www.reading.ac.uk/ssc/](http://www.reading.ac.uk/ssc/)

**Box 2. Participatory methods: Key characteristics and Tools****EMPOWERMENT GOAL**

- Increase participants' understanding of their situation.
- Improve understanding between participants.
- Equitable participation in the analysis and conclusions reached.
- Strong networks for future investigations.

**PARTICIPATORY PROCESS**

- Focus Group discussions
- Participatory workshops
- Community research

**ACCESSIBLE TOOLS**

- Network Diagrams: trees; flow/causal diagram; Venn/chapatti/circle diagram; Systems diagrams; Pie charts; Histograms; value chain analysis
- Ranking Techniques: preference ranking and scoring; pairwise ranking; direct matrix ranking; ranking by voting; wealth ranking; pile and card sorting; difference diamonds
- Time Trends Analysis: Historical and future (visioning) mapping; Road journeys; Time trends charts, historical matrices; Oral Histories
- Mapping Techniques: resource mapping, mobility mapping; social mapping;
- Calendars: Seasonal calendar; Historical seasonal calendar
- Ethno-Classifications: Proverbs, Stories, Indigenous Categories and Terms, Taxonomies
- Role-play

monitoring and evaluation (Estrella *et al.*, 2000) is spreading. The PALS methodology (See Mayoux and ANANDI, 2005 this volume) is currently being used for macro-level policy analysis in Uganda. Both these are developing ways of quantifying and aggregating information from participatory methods. The latter in particular is also attempting to seriously address issues of attribution and action recommendations.

This is not to say that challenges do not still exist in some areas. Nor that conventional surveys are not still needed for some purposes, as discussed in the final section. However, in the 'reversed paradigm' these should be carefully focused to those purposes where they are really needed rather than being the automatic first port of call. It is participatory methods which should form the linking thread, involving not only rigorous use and statistical analysis of participatory tools but also a participatory and pro-poor ethics underlying the whole assessment process.

### **3 'WHAT QUESTIONS': RELEVANCE OF INDICATORS AND RELIABILITY OF MEASUREMENT**

Part of the attraction of questionnaire surveys is their apparent simplicity and objectivity. However in many cases the reliability of the figures produced is open to question, even if



conducted well. There has for a long time been awareness of the potential lack of reliability of many conventional measures of economic poverty in terms of incomes, assets, expenditure and consumption.<sup>10</sup> All of these are open to significant error because of a catalogue of potential pitfalls: 'smart indicators' may completely miss the most significant questions for respondents, people may not know the answers, lack of respondent recall and/or deliberate falsification by respondents because they resent intrusion by outsiders in their personal affairs.<sup>11</sup> Moreover all responses, even for household-level information, may be highly sensitive to the gender of the respondent and/or interviewer.<sup>12</sup> Poverty estimates based on household-level measurement are likely to be highly inaccurate in estimating poverty at the individual level because of inequalities with the household, not only by gender but also age and other personal factors.<sup>13</sup>

Moreover this focus on conventional economic measures of poverty, although important, fails to capture aspects of peoples' lives which have been shown through qualitative and participatory research to be important to them. Growing recognition of the multidimensional nature of poverty has raised questions of the feasibility and reliability of quantifying economic dimensions of livelihoods like non-market income and services, and social and political dimensions like decision-making, power relations and political participation. Long questionnaires attempting to accurately cover market incomes, economic assets, cash expenditure and consumption still fail to cover important non-market dimensions of poverty: the many foraging activities which women in particular, often perform, unpaid domestic services, e.g. childcare, water collection and so on. The time spent on these measurements also generally means that there is no space for covering impacts on social dimensions of poverty, like control over resources and decision-making. Both positive and negative impacts of programmes on key areas of poverty, essential to people's well-being are then missed.

The issue is not therefore to measure 'complete objective truth', but to establish in a systematic way the most relevant indicators for the question in hand—a process which is inherently subjective and partial. Moreover long questionnaires raise questions which are both ethical, in taking people's time, and concerning reliability. Even if respondents will answer a long stream of questions once, as patiently, politely and as accurately as they can, they may be less willing in subsequent interviews in longitudinal studies. In programmes and villages where repeat assessments are done, respondents increasingly and justifiably ask 'what do I get out of it'. Increasingly interviewers have to resort to tricks and subterfuge to obtain 'reliable' answers.<sup>14</sup>

In the new impact assessment agenda for pro-poor development and 'improving practice' necessarily require participation by poor women and men in deciding priorities and identifying strategies. Participatory methods are powerful, and indeed essential for identifying the most relevant local indicators to be measured. There are numerous

<sup>10</sup>The current USAID process to develop a Poverty Assessment Tool for example is necessary precisely because of evidence of unreliability in existing Tools which focus on one or more of these measures. The gender inaccuracies in these measures have been a particular and longstanding focus of debate See Kabeer and Joeske, 1991; and papers in Beneria and Bisnath (eds) 2001.

<sup>11</sup>Many of these problems have been highlighted in anthropological critiques of development economics. For a very early and cogent critique see Hill 1986. For recent and very detailed research on savings see Lacoste, 2002. See also Mayoux, 2001a.

<sup>12</sup>Cloke, 2001.

<sup>13</sup>See note and Kabeer, 1994; Dwyer and Bruce, 1998, Bolt and Bird, 2003 and Chant, 2003.

<sup>14</sup>Feedback from participants following a series of assessments in Zimbabuko Trust Zimbabwe and echoed in complaints to L Mayoux from field evaluators elsewhere.



well-established tools for valuing, ranking and comparing local priorities and indicators. These include preference ranking, matrix ranking and matrix scoring (Jones, 1995) and Difference Diamonds (Mayoux with ANANDI, 2005, this volume). These first enable local people to identify their own criteria, and then to make estimates and judgements according to them. Perhaps the best known and most widespread example is wealth or wellbeing ranking, where analysts group households according to their judgements of personal or household conditions (see e.g. RRA Notes 15, 1992, for an introduction). These have been subject to validation exercises against quantitative methods (see e.g. Grandin, 1988; RRA Notes 15, 1992, especially Mearns *et al.*, Richards *et al.*, 1999; Simanowitz, 1999, 2000; Temu and Due, 2000). Another tool in widespread use is matrix scoring which has been applied to topics as diverse as different crop varieties in Zambia (Drinkwater, 1993) and India (Manoharan *et al.*, 1993), contraceptive methods, markets and political parties in Bangladesh (Kar and Datta, 1998), girls' preferences for sex-partners in Zambia (Shah, 1999, p. 51) and wild plants collected for winter feeding of goats in Afghanistan (Leyland, 1994).

Participatory methods have been reliably used to investigate and quantify sensitive issues like violence and power relations which would have been difficult through questionnaires. A participatory study in India gave the caste-wise breakdown of number of families with addiction to alcohol (PRAXIS, 2001, p. 33). Moser and McIlwaine's work in nine urban communities in Colombia elicited numerous types of violence, and (2000a, p. 24) produced the unexpected finding that 54 per cent of the types of violence identified were economic, as against only 14 per cent political, contrary to the common belief that political violence was the bigger problem (Moser, 2002). Focus groups have undertaken participatory studies of urban violence in Jamaica, Guatemala and Colombia with identification of different types of violence, their seriousness, and the importance, positive or negative, of different institutions (using Venn diagramming) (Moser and Holland, 1997; Moser and McIlwaine, 2000a, 2000b; and Moser, 2002). In the Guatemala study this led, for example, to a table derived from 176 focus group listings which showed the frequency of mention of 22 different strategies for coping with violence (Moser and McIlwaine, 2001, p. 140). Difference diamonds have been used to quantify information on domestic violence and women's empowerment (Mayoux *et al.*, p. 2005 this volume). Even if information or views are sensitive, there are ways in which anonymity can be assured.

A commonly identified challenge for participatory approaches is the inherent tension between local categories and degree of standardization required to enhance the validity of aggregation across different communities or exercises, and particularly increase comparability of findings within and between national contexts. This challenge is often cited as insurmountable and a reason for preference for questionnaire surveys. However this problem is inherent in 'reality' and is in practice avoided in most questionnaire surveys only by largely or totally ignoring local categories and (in the view of the authors) arbitrarily privileging those which are externally derived.<sup>15</sup> In some cases these external indicators are based on extensive piloting which serves also to identify local indicators and/or based on the requirements of specific hypotheses. In many impact assessments however they are based mainly on indicators taken from questionnaires developed for other purposes elsewhere or at programme or donor agency headquarters.

<sup>15</sup>This issue has been a central concern in debates about impact assessments of women's empowerment. See Kabeer, 2001. It was also a central focus of the Voices of the Poor Research.

This potential tension is moreover not a reason for dismissal of participatory approaches. It can be confronted and tackled in a number of ways. The first is simply to preset, as with questionnaires, categories, and so be less participatory and accept that the misfit with people's realities may lead to demotivation, misunderstandings and miscategorizations as a trade-off with ease of aggregation and comparison. The second is to exercise judgement in allocating participatory research findings to common categories. Aggregation has been done through comparative analysis of secondary data from participatory exercises in many different countries.<sup>16</sup> Both approaches were used in the Voices of the Poor research in some 272 communities in 23 countries, conducted in preparation for the World Development Report 2000 (Narayan *et al.*, 2000; World Bank, 2000): the first was used for the characteristics of institutions (Narayan *et al.*, 2000, pp. 199–202), and the second for directions of change in violence against women (World Bank, 2000, p. 184).

A third approach, increasingly practised and found effective in generating reliable insights and statistics, is to conduct extended preliminary investigations, investing resources and taking time to identify commonalities with broad validity between types of people and between communities, and then to use these in the study. This was done for an impact assessment of a government programme for issuing 'starter packs' (of seed and fertilizer) to farmers in Malawi, which came to include farmers' own indicators of sustainability (Cromwell *et al.*, 2001). Again in Malawi, it was followed for the Targeted Inputs Programme: the number of months of food security of households was identified as widely applicable and then used in a standardized way to enable people to separate out three categories of household—food secure, food insecure, and extremely food insecure—in their communities (Levy, 2003). Again, in South Africa, an ingenious standardized method has been evolved for eliciting wealth or wellbeing criteria, scoring these and then applying them to identify three comparable groups—'very poor', 'poor but a bit better off', and 'doing OK' in each community (Simanowitz and Nkuna, 1998; Simanowitz, 1999, 2000; Hargreaves and Howe, 2004). In China, a process has been devised for identifying villages' relative degrees of deprivation, and at the same time their priorities (ADB, 2002; Woldon, 2004; Li and Remenyi in draft). Each household scores itself from 1 to 5 against eight 'village-friendly poverty indicators' which have been found to have a certain universality covering livelihood poverty, infrastructure poverty and human resource poverty. These are aggregated for each community to give relative weights which sum to one. This permits comparisons between communities and the mapping of relative deprivations to assist planning.<sup>17</sup>

The degree of consonance and difference in identification of local indicators between people, geographical regions and across national boundaries is likely to depend largely on the issue under investigation. Even in conventional questionnaire surveys answers to multiple choice questions are weighted and combined. For example housing is likely to be an almost universal criterion of poverty. However the particular form which 'good' or

<sup>16</sup>Karen Brock (1999) gathered findings from participatory research on poverty. She then analysed work with 58 groups and individuals in 12 countries who had been asked to identify key criteria for poverty, ill-being or vulnerability. She then used the NUDIST programme to classify and count these by criteria, separated into urban and rural, and into men and women, and presented the results diagrammatically to show frequency of mention as percentages (Brock, 1999, pp. 9–13).

<sup>17</sup>This has been written up in summary form and can be downloaded from [www.chinadevelopmentbrief.com](http://www.chinadevelopmentbrief.com) and is also in more detail in an ADB document *Preparing a Methodology for Development Planning in Poverty Alleviation under the New Poverty Strategy of PRC*, TA3610-PRC July 2002. The idea is that this methodology will be used in all communities in China that have been identified as poor. There is a write up of this by Jim Woldon at [www.chinadevelopmentbrief.com](http://www.chinadevelopmentbrief.com) [Accessed November 2004]

'bad' housing takes is likely to be locally determined. For many women key indicators are often not only physical characteristics but ownership and vulnerability to eviction in case of marital breakdown.<sup>18</sup> It is perfectly possible to retain 'housing' as an overarching criterion while measuring it in terms of local, or even individual indicators of satisfaction. Extensive and progressive participatory piloting and evolution towards degrees of standardization (see Cromwell *et al.*, 2001, Li and Remenyi in draft, Hargreaves *et al.*, 2004) can reduce the trade-off losses, with successive approximations. It is also possible to combine aggregation for cross-contextual analysis with retention of local categories at local level for local planning purposes, thus avoiding many of the problems of disillusionment with extractive processes identified above.

Participatory methods have been used to quantify trends over time as in historical matrices (e.g. Freudenberger, 1995; PRAXIS, 2001, pp. 98 and 102) which indicate trends and changes; seasonal food calendars which show seasonal variations in things like amount and type of food consumed (e.g. Mukherjee and Jena, 2001, p. 51 and Mayoux *et al.*, 2005, this volume) and health problems (Shah, 1999, p. 61); and as in proportional piling for income and food sources (e.g. Watson, 1994; Eldridge, 2001; Stephen Devereux and Henry Lucas, pers. comms; Sharp, 2003). There are many applications with variants of methods such as the Ten Seed Technique (Jayakaran, 2002) or the use of 100 seeds, stones or other counters to give percentages. A recent innovation is also the Road Journey which plots in detail trends over time at individual or group level (Mayoux and ANANDI, 2005 this volume).

Participatory spatial analysis can be a step towards generating figures for different local categories for areas. The analysis of aerial photographs by local people (Sandford, 1988; Dewees, 1989; Mearns, 1989), drawing their local knowledge on transparent overlays, has proved powerful. It can provide precise location and area data given for different land tenure and uses, soils, soil-vegetation associations and the like. Various forms of participatory GIS have also been explored (Abbott *et al.*, 1999; Jordan, 1999). Perhaps the most remarkable is a series of innovations in the Philippines and which have now been applied also in Vietnam. The participatory process developed enables local people to combine their knowledge with digital contour data to make detailed coloured 3D models. These locate areas under different land uses and provide numerical area data which are considered to be very accurate (Rambaldi and Callosa-Tarr, 2000). The participatory 3D modelling in the Mount Pulag National Park identified discrepancies with satellite data: the 3D model at 1:10 000 had 27 per cent of the area under farmland compared with 0.4 per cent from satellite imagery, and 40 per cent under forest cover compared with 57 per cent. The authors concluded that 'pooled people's knowledge' was more accurate and useful for community-based analysis than information maintained in official circles (Rambaldi and Callosa-Tarr, 2000, pp. 40–41).

A rather separate set of challenges, particularly for participatory diagram methods, is that the very rich and varied information and discussions may be difficult to synthesis and document without distortion. Again this is partly because reality itself is so complex and there is an inherent tension between 'facilitatory direction' and 'participatory flow' in enabling people to fully discuss their often different and even conflicting views and

<sup>18</sup>Ownership of 'own house by woman herself' was a key indicator for women's empowerment in recent participatory research by L. Mayoux and Kashf Foundation in Pakistan, including areas currently under control of Taliban authorities.

experience. In questionnaire surveys this challenge is mainly faced at the data analysis stage where all the individual views are aggregated and differences, discrepancies and trade-offs are externally evaluated. In participatory methods at least part of this analysis and filtering takes place during the data collection phase itself as part of the commitment to immediate feed-back to participants. However when well facilitated, participatory research enables a more systematic discussion of priorities and trade-offs, cross-checking with many individuals, rather than imposing an external interpretation. This potentially increases rather than decreases rigour and objectivity of analysis through decreasing the likelihood of external biases and misinterpretations.

A key challenge is always documentation—how much and what of the discussion is to be recorded. Diagrams may be difficult to understand for outsiders without good documentation. Numbers generated may be less credible for those who did not see the process and context in which they were produced. Exactly who participates, in what ways, the questions asked and not asked which are often as important in their interpretation as the diagram product itself. Diagrams require careful recording on the diagram itself, including a key, and systematic reporting of the information required by an external agency. However with good facilitation and careful recording, following clear guidelines, rigorous and reliable quantitative information can be obtained and filled into survey formats in the same way as individual questionnaire surveys. The difference being that the quality and reliability of information going in has been better thought through by participants, tested through peer questioning and the whole process, diagrams and information remains as a collective experience/product with the participants who can themselves take the process forward if they so wish.

There will always be potential trade-offs between the degree of rigidity of preset categories needed for aggregation and comparison, and the diversity of parameters encountered in local conditions which are needed for local accuracy and relevance (Booth, 2003). There will always be trade-offs in documentation between clarity and manageability and potential distortion and omission of details which with hindsight may prove to be significant. One lesson is the importance of allowing space for creativity in evolving approaches, taking time to pilot and modify the methodology from investigation through to documentation. In both survey questionnaires and participatory methods good practice involves pilot testing. The difference with participatory approaches is that the methods and tools themselves are evolved and fitted together more to relate to the realities of local people and conditions. The process is much more than taking a method, equivalent to a questionnaire, off the shelf, and testing it. It is inventing and combining the methods themselves, trying them out, modifying them, and tailoring them to the purpose, people and conditions. With careful and sensitive pilot testing and training, many if not most of the problems associated with participatory methods can be addressed. In particular, trade-offs can be judged and negotiated.

#### **4 ‘WHO QUESTIONS’: REPRESENTATION AND SAMPLING**

A commonly identified problem with participatory methods is that of sampling. Random sampling is not possible. Even with careful preparation, there is much more dependence on people's willingness to turn up and be involved than in the 'captive' interview situation. There may also be logistical problems in identifying a venue and time accessible or conducive for everyone. However, random sampling is not necessarily the best way of

countering bias, much less of ensuring that the voices of very poor people are heard. Particularly with group-based programmes like micro-finance it is feasible to get either complete programme coverage for all participants through using participatory methods within groups, or to conduct a well-designed purposive sampling methodology for identification of those respondents most relevant for the particular issue being investigated. For many purposes, the most important issue is not random sampling, but bringing together the poorest and most vulnerable people to develop and articulate their views, strengthened through participatory discussion (Mayoux, 2001b).

Secondly, the range of issues for which random sampling is the most reliable or cost-effective means of avoiding bias is far less than commonly assumed. In order to produce useful recommendations for pro-poor development it is often more important to understand the detailed differences in experience between different groups of poor people. Such detail is often lost in the process of aggregation, particularly the experience and needs of minority groups. For many purposes more useful and reliable information can be collected through carefully designed purposive samples and key informants. This is essential for detailed coverage of different groups of very poor people, minority groups and/or tracing processes, impacts on value chains and so on where there is no easily accessible list or register from which a random sample can be reliably selected.

Even where random samples are relevant, in many programme level impact assessments, the sample size is too small to reliably draw statistical inferences. It is generally determined by what is feasible within available resources, rather than the statistical requirements of the complexity of the question and the assessment of statistical variation and margin of error.<sup>19</sup> Moreover time and resource constraints frequently mean that samples are not random, with unavailable respondents e.g. migrants, women who have married away being substituted by those most easily available. Importantly also, the types of information required may not be known by all respondents in the random sample and/or there may be insufficient incentive for random and disinterested respondents to spend time to give reliable information. These information errors may be non-random, introducing significant and often unacknowledged or unknown biases into the statistical analysis. Particular groups of people may systematically underestimate e.g. women's work and employment and/or be systematically excluded because of discrimination in the ways in which the lists from which random samples are selected (e.g. exclusion of marginalized populations from voter lists) or because they are difficult to locate (e.g. women who get married, migrants). These sources of error affect macro-level statistical surveys as much as programme-level surveys.

A key advantage of participatory methods is their cost effectiveness in rapidly bringing together information and knowledge from many participants. For some purposes it is possible, through participatory piecing together, comparing and crosschecking to rapidly get reliable information for whole communities and populations. Common methods include social household listing and censuses through social mapping. Poor people have shown a greater ability to facilitate group visual analysis than has been commonly supposed. Non-literate women have facilitated community census maps. There have now been many situations where information from group exercises has been aggregated over a whole area to count the numbers of people utilising services or affected by changes and policies. The earliest case of a large-scale survey with participatory visual analysis and no

<sup>19</sup>In programme-level impact assessments of micro finance for example 200–300 is often advocated as a blueprint 'practicable sample size' without any reference to either stakeholder analysis or the questions being asked.



questionnaire was probably ActionAid's 1992 survey of service utilization for 35,414 in over 130 villages in Nepal using PRA mapping, classifying and counting (ActionAid-Nepal, 1992). Another early example was SCF (UK)'s study in 20 Districts in Malawi, Zambia and Zimbabwe using pile sorting and other participatory methods for a retrospective study on how individual poor farmers coped with the 1992 drought (Eldridge, 1995, 1998, 2001). In both cases the resulting tables were similar to those from a questionnaire survey. Social and census maps have been very accurate for identifying and listing households, for headcounts and for household characteristics which are common knowledge. As early as 1997, seven cases could be cited where these methods had proved more accurate than more conventional ones (Chambers, 1997, pp. 143–7). Another example was village people in Bangladesh calculating, estimating and measuring the number of cartloads of faeces they produce for a community-led total sanitation programme (Kar, 2003). Strong validation also comes from estimations of the rural population of Malawi. The national census recorded 8.5 million, a figure about which there was some scepticism. Participatory mapping to list households in 54 communities, combined with households visits, indicated a figure should have been in the region of 11.5 million (Barahona and Levy, 2003, pp. 4–7).

Although it may be difficult to control who turns up to participatory meetings to 'participate', in many cases it is possible to do reasonably accurate purposive sampling. This is particularly the case where (as in group-based community development or micro-finance programmes) people meet regularly and/or the relevant interest categories live or meet in specific locations e.g. ethnic or caste groups, marketplaces, women's or elders' meetings, schools and so on. Where appropriate sampling groups can be convened, or random participation groups divided into small discussion sub-groups it is possible to obtain reliable disaggregated quantitative and qualitative information. There are a range of methods which can be used in a group meeting to generate numerical data similar to those from survey methods. These include, but are by no means confined to:

- voting by showing of hands with numbers then marked on a diagram;
- an energizer which asks people to group themselves by particular characteristics to encourage them to move and change places as well as be counted;
- people can put marks to represent their own situation on a flip chart diagram going behind a stand turned away from the other participants;
- voting by secret ballot, using symbols and diagrams, can be used for more sensitive issues and/or issues where people may fear individual repercussions; and
- pocket voting (van Wijk-Sebesma, 2001: 130).

It is also possible to use participatory workshops as an opportunity and cost/time-effective means of combining individual questioning, using diagrams (as in PALS training see Mayoux and ANANDI, 2005, this Volume), symbol or written questionnaires, with group discussion and triangulation of findings.

With careful facilitation, participatory methods can elicit and show the different views of different stakeholders, particularly those who are generally marginalized. The SCF study in Southern Africa found that in any year the poor spent more on mealie meal and maize than the rich, had more income-generating activities than the rich, and were especially hit because these non-agricultural activities were reduced during the drought. Some Participatory Poverty Assessments have elicited poor women and poor men's priorities separately, for example Bangladesh (UNDP, 1996) and Tanzania (Narayan, 1997). A participatory study in Malawi of the 'starter pack' [of seeds, fertilizer etc]

programme and of small farmers' ideas of sustainability in 30 villages divided respondents into different categories of farmer. The results were combined in a table of mean values across villages by region (Cromwell *et al.*, 2001). In Malawi in 1999–2002, research studies using participatory methods generated rural population estimates, estimates of the proportion of people in the population with certain characteristics (e.g. the very food insecure) and estimates of the proportion of people who should be targeted by an intervention (Barahona and Levy, 2003; Levy, 2003).

The key requirements are, as always, good facilitation to ensure equal participation. With visual methods there is often a synergy in a group, with cumulative interest, enthusiasm, and adding and crosschecking of information. This may make the information more reliable than that gained by questionnaires because misunderstandings, misinterpretations and conflicting information can be more readily and immediately examined and cross-verified by others. The rigour of triangulation inherent in such processes can be observed by a facilitator. However at every stage of the participatory process facilitators must be aware of (and document) who is attending and participating and which groups may be underrepresented or not openly expressing their views and contributing to discussion. It is important to know which issues can be publicly discussed in front of the other participants and the facilitators without fear of negative repercussions and/or fear of discussions being leaked and having future repercussions. If this is likely to be the case then appropriate measures are needed to ensure confidentiality (e.g. through secret voting or 'turning the Board') and/or appropriate back-up support. Providing these guidelines are followed the information obtained on many topics is likely to be very accurate and reliable. Accuracy and reliability, as well as systematic inclusion and refinement of sampling are most likely where assessment is part of an ongoing learning process rather than a one-off participatory 'exercise'.

## 5 'WHY QUESTIONS': CAUSALITY AND ATTRIBUTION

A key problem in all impact assessment is moving from measurement of change, however accurate, to causality attribution, that is establishing why things have changed and how much any observed change is due to an intervention. These questions are of central importance in improving practice. The standard 'scientific method' approach of 'before and after' measurement using random sampling and control groups faces well-recognized problems in both regards. Common shortcomings and problems include complex and hidden chains of multiple causality and unquestioned assumptions about directions of causation (Hulme, 2000; Kirkpatrick *et al.*, 2001). There may be 'missing factors' that are not considered, as for example with assertions that micro-finance has increased peoples' incomes when it was people who were already better-off who received preferential treatment in access to loans, or when there have been self-selecting factors in the treatment group not allowed for in the control such as entrepreneurial spirit, contacts, non-economic resources and so on.<sup>20</sup> Some of these shortcomings could feasibly be

<sup>20</sup>A key example of problems of relying on quantitative surveys with a pre-determined design is the Chen and Snodgrass 1999 and 2001 Baseline and follow-up study of SEWA Bank. This found no impact of SEWA's savings and credit programme based on comparison of borrowers with a control sample. The authors were very puzzled by this finding which they could only explain by the fact that SEWA as an organization has had an impact from a range of activities, of which savings and credit is only one, on a much wider population than its immediate borrowers.



addressed by adding further questions to a survey design and/or (if sample sizes are large enough) better statistical analysis. Less tractable are the many issues where it is essential to untangle very complex 'webs of causation'—often required in macro-level assessments as well as rigorous programme-level assessments.

Participatory methods offer some ways of investigating causality and attribution. Participatory causal and linkage diagramming is one tool for identifying causality. Participants list causes and effects, diagram these as systems, and add, subtract and debate relationships. Diagrams of the causes and effects of poverty generated in the Voices of the Poor (Narayan *et al.*, 2000) were counted and aggregated (Brock, 1999b). Methodological and especially statistical issues in aggregation and analysis of causal diagrams have been explored by R.W. Burn (2000). Tools currently being developed in PALS like Road Journeys and Trees (described in detail in Mayoux, 2003; and Mayoux and ANANDI, 2005, this volume) are being adapted to both capture the different factors which lead to change, the specific ways in which interventions are used and/or factors of change which they affect and the numbers of people for whom this is the case. These diagrams are initially drawn at individual level and then aggregated, discussed and compared in detail in group sessions. Full details and findings or pilots in a number of locations should be available by the end of 2005.<sup>21</sup>

Causality and attribution are however undoubtedly areas where further innovation is needed, particularly how different causal and attribution patterns can be aggregated and statistically analysed to reach robust and generalizable conclusions about patterns of change and intervention impacts. It is also an area where there is considerable potential for integrating methods, for example using participatory methods to generate more reliable and relevant models and hypotheses which can then be converted into questions in quantitative surveys. For many purposes participatory tools may be more cost-effective and useful than qualitative methods in generating contextually relevant discussion and highlighting alternative explanations and models.

## 6 'HOW TO IMPROVE QUESTIONS': RECOMMENDATIONS AND IMPLEMENTATION

Finally merely measuring what is happening, or even understanding to whom and why it is happening, is often far from sufficient for drawing conclusions about what can or should be done. Moving from 'measuring impacts' to 'improving practice' requires not only looking at 'what is' or even 'why it is as it is', but also the less clear areas of 'what could be'. Whatever the robustness of the findings of an assessment about the types of impacts occurring, practical conclusions are often based at best on insights derived outside the quantitative survey study. At worst they are based mainly on the preconceptions of investigators who made a priori decisions about the indicators and how the various statistical correlations should be interpreted in terms of causal relations and their practical implications. Rarely are questions about peoples' recommendations systematically included in questionnaires as an integral part of the study.

Participatory methods have proved strong in generating insights with policy implications. Such methods include preference and matrix ranking and scoring, causal and

<sup>21</sup>References, details and links to piloting programmes will be available on L. Mayoux website [www.lindas-webs.info](http://www.lindas-webs.info)

linkage diagramming, road journeys, diamonds and problem and solution trees. Ranking, scoring and giving comparisons numerical values are well established and widespread (See Mukherjee, 2002, pp. 1–50 *passim*). A pioneering effort in Kenya used a wealth ranking game to enable pastoralists to identify and quantify the differing priorities of rich, middle, and poor groups (Swift and Umar, 1991, p. 56). Poverty diamonds have been used by community groups in Uganda and India to not only identify relative poverty levels, but also to identify what can be done in order to include them in micro finance and community groups (See Mayoux and ANANDI, 2005, this volume).

Information from all these tools can be counted, weighted for comparison between groups and aggregated. Aggregation of ranking exercises by groups has been quite common.<sup>22</sup> It demands care and the application of sound statistical principles. An example can be found in Volume 3 *Poor People's Perspectives* of the UNDP 1996 *Report on Human Development in Bangladesh*. This was based on 159 sessions with focus groups of poor people who identified and ranked their priorities for 'doables'. The first priorities of poor urban women was, perhaps not surprisingly, water, but then their second was private places where they could wash, and their third that something should be done about dowry (UNDP, 1996, p. 68). A final ranking and scoring, attempting to summarize the 'under-view' of poor people, used a statistical technique described as a Prioritized Problem Index of Poor Communities (UNDP, 1996, pp. 36–37). Another example is the Starter Pack study in Malawi (Cromwell, 2001) which found that farmers short of crops and varieties, keenly seeking new sources of seeds, and unlikely to follow the current recommendations for agroforestry. Brock's comparative analysis of participatory studies of poverty found that inadequate access to water was mentioned frequently in urban conditions, and dramatically more often in urban than in rural (Brock, 1999, p. 10). Participatory techniques were used with 24 focus groups in Western Kenya to evaluate agroforestry dissemination practices. Pile sorting to score with 100 beans or grains of maize was used to evaluate the usefulness of, for example, seven external providers of information, and ten media used (Adato and Nyasimi, 2002). Similar methods have been used in other countries as part of poverty impact research coordinated by IFPRI for the Consultative Group for International Agricultural Research, with implications for the future conduct of agricultural research.

How findings from participatory approaches and methods can influence and change policy and practice remains a major frontier. The comparative advantage of such findings can be the quality of their authenticity in representing the realities and expressed priorities of poor people. Their comparative disadvantage is the extent to which they may be dismissed on grounds of lacking conventional rigour. As we have argued and illustrated, participation and statistics can be combined powerfully to generate findings with high degrees of validity. There is, then, a case, for their much more extensive development and use to exploit their potential for enhancing the relevance and effectiveness of development interventions which are designed to be pro-poor.

## 7 REVERSING THE PARADIGM? IN SEARCH OF THE BEST OF ALL WORLDS

The argument and evidence in this paper support a case for 'reversing the paradigm' for impact assessment from one where quantitative survey based on individual questionnaires

<sup>22</sup>For detailed discussion of how scores in matrices can and cannot be interpreted and used see Maxwell and Duff, 1995; Fielding *et al.*, 1999; Fielding and Riley, 2000; and a recent full treatment in Abeyasekera, 2001.

is the first (and often only) method considered to one where participatory processes form the linking thread for use of participatory methods, complemented where necessary by qualitative and survey methods (See Figure 1).<sup>23</sup> This does not require compromise on the rigour of quantification but a shift in focus of skills, time and resources, a shift in the focus of innovation and above all a shift in attitudes and ethics underlying the use of all forms of investigation. Questionnaire surveys would then be reserved for use where information collected by participatory means was deemed for some reason to be particularly suspect. The insights from the prior participatory and qualitative research would give these surveys

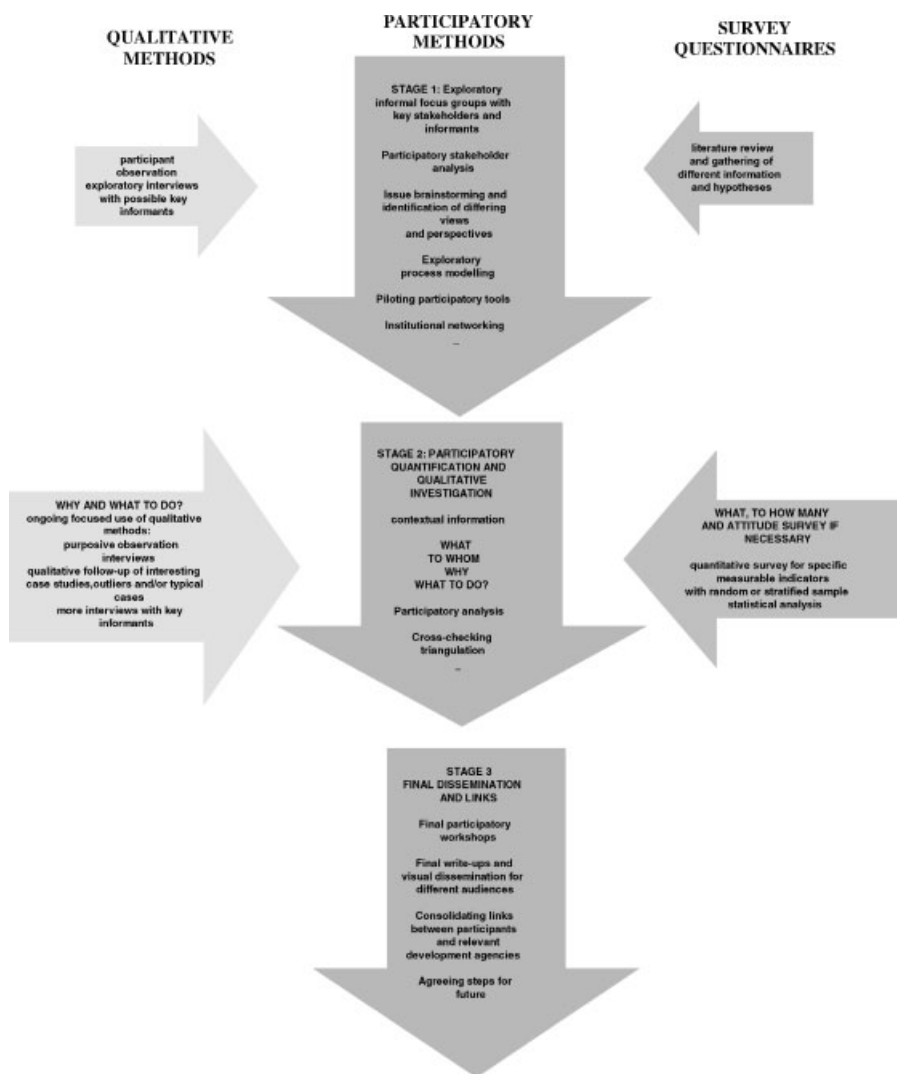


Figure 1. Integrated participatory action learning process

<sup>23</sup>This is indeed the conclusion reached by Hulme (2000) in relation to small-scale assessments of micro-finance and Hopkins (2000) in relation to Fair Trade. However here we would argue that participatory methods can both be extremely rigorous and used also as the focal method for larger scale assessments.

greater validity and relevance to identification of measurable indicators, sampling frame and interpretation of the findings.

As we have illustrated, for many purposes participatory methods can be reliable and rigorous alternatives to survey questionnaires. When well conducted, participatory approaches and methods can generate data, numbers and tables similar to outputs from questionnaires. Not only can participatory approaches and methods complement existing practices, they can calibrate them, as in the case of the Malawi census. Experience indicates that participatory approaches are particularly effective for rapidly collecting:

- Information which is common knowledge and visually cross-checked in a group process, for example population size, household size, ethnicity, or female headed-households etc. Here mapping techniques have proved very reliable.
- Information where different people have 'bits of the jigsaw': market analysis, value chains analysis where numbers of people/values/prices at each level of the value chain can be estimated and counted, net value at each level estimated and so on. These can be monitored over time or recall information discussed more reliably than on an individual level.

With group-visual methods the information is typically immediately accessible to everybody present in a form which can be understood both by illiterate people and by outsiders who do not speak the local language. They are as effective as quantitative methods, and often more so, for:

- collecting information where some individuals may wish to give false information or where some information may be disputed e.g. poverty assessments of households in communities. Wealth and wellbeing ranking, however, are again and again found to be less sensitive than outsiders to communities suppose, especially in communities where what is expressed is common knowledge.

Participatory analysis of findings and identification of practical implications can be integrated into the data collection process itself as discussed above and/or systematically conducted in follow-up building on the knowledge and networks generated during data collection.

We do not wish to in any way minimize the challenges which participatory methods face. As acknowledged above, their rapid and uncritical adoption has led to much bad practice—top-down, routinized, insensitive, unimaginative, unethical and producing data which were unusable and unused. Participatory approaches require carefully trained facilitators. This is especially stressed, for example, for the South African wealth ranking (Hargreaves *et al.*, 2004). Not only is there a need to understand how to produce diagrams, but also skill in facilitating the participatory process in a balanced, equitable and ethical manner. Open-ended questioning, the use of techniques such as pauses and probes and knowing when and how to move into new topic areas, require a degree of expertise typically not possessed by untrained interviewers. Outsiders' skills (and crucially time and resources) are usually needed where participatory activities occur on a scale which requires aggregation, with or without statistical analysis. They may also be needed to ensure universally accessible documentation, particularly for government and development agencies themselves.

Many of the tensions and trade-offs identified for conventional survey methods will also need to be addressed by participatory methods. Technical, often statistical, questions arise concerning rigour, validity and trustworthiness, and how numbers can be generated or

derived, and then analysed and used, just as they do with conventional survey methods. Indeed good statistical analysis complements the use of participatory methods and is essential in macro-level strategic impact assessment. Further innovation is needed to systematically capture and quantify complex chains of causality and attribution. Increasing the rigour of participatory methods requires looking at both the participatory process and the types of diagram and tools used and particularly the ways in which both are recorded and interpreted and fed into decision-making.

The authors fully recognize that, for all their versatility and promise, participatory approaches, methods and behaviours cannot do everything:

- in some contexts participatory processes may be impossible or make participants too vulnerable (though arguably similar problems would also be faced by many other systematic quantitative investigations);
- there may also be circumstances where representation in participatory processes proves highly skewed despite following established guidelines for reaching the poorest and most vulnerable;
- for personally sensitive issues it may be necessary to conduct individual qualitative interviews because certain things cannot be discussed in public;
- standard surveys may also be needed where the wider generalizability of sensitive qualitative questions needs to be ascertained and the qualitative investigation has not served to remove this sensitivity or indicated ways it can be addressed;
- for some purposes statistical correlations may be needed for situations or questions where, mapping or other means of total population coverage are not possible; and
- we consider it likely that in the foreseeable future a case will remain for some large-scale questionnaire-based research, particularly for monitoring national trends.

The longer-term challenge and opportunity is to explore how far more participatory substitutes can be evolved and introduced. In the shorter term, an immediate need is to gain recognition for what can be achieved in a participatory mode. Most professionals do not recognize the potential. Professional training, institutional inertia and prejudice, and power relations within universities, governments and civil society organizations all reproduce conventional approaches, methods and mindsets which find it difficult to see what participatory approaches, methods and behaviours can and could achieve. Yet they have already shown that they can meet multiple objectives, both generating good insights and data, both quantitative and qualitative, and at the same time enabling to poor women and men to have more voice in defining priorities and influencing policies.

In the movement to scale it is the empowerment dimension rather than rigour which is potentially most problematic. When well facilitated people generally enjoy and learn from the processes of analysis and sharing of knowledge, values and priorities, and feel good at discovering what they can show and express, and having their views heard.<sup>24</sup> In good PRA practice there is a tradition that the data—the maps, matrices and diagrams—belong to those who created them. There are also encouraging pointers that participatory numbers

<sup>24</sup> A typical observation is that 'People participating in the groups seemed to enjoy the discussions and exercises and most stayed for the entire duration' (Adato and Nyasimi, 2002, p. 6). In the PALS processes facilitated by L. Mayoux in Indian, Uganda, Sudan and Pakistan in the face of detail probing to identify potential problems, the more or less universal response has been that the use of PALS diagrams and processes have helped facilitate much more open discussion than was previously possible, and that people have been able to record and hence remember discussions so that they can be properly built on in future discussions. Many of the exercises have also had immediate and practical outcomes for the individuals and groups.

resonate with and support decentralized and democratic governance and local empowerment. For example in Philippines grass roots health workers made their own classifications and disease maps, conducted their own analyses, and produced village figures at variance with official statistics, but which officials came to accept. Moreover, they identified priority actions which led in a matter of months to a sharp decrease in mortality (Nierras, 2002). Participatory investigation of land holdings in the Philippines led to revisions of figures which doubled local government takings from the land tax which was the principal source of revenue.

Nevertheless it cannot be assumed that participants will necessarily benefit. Participatory methods may be more cost-effective for researchers, but more time-consuming for participants. Blocks of people's time are taken. These have opportunity costs. At some seasons (e.g. when weeding is needed) these may be very high indeed. Much PRA practice is extractive more than empowering and data is often removed for analysis outside with little left in the community itself. Expectations are liable to be raised. Participatory approaches are vulnerable because of the interest and enthusiasm often generated. People may participate from a mixture of politeness, curiosity, social pressure or expectations of benefits. With PRA/PLA generally it is lamentably common for expectations to be raised and then disappointed. In the enthusiasm of a process people may reveal information which is sensitive or exposes them or others to danger. Children are vulnerable to 'giving away' information damaging to others, such as their parents. Women may not be able to express their real feelings for fear of these being reported to husbands and in-laws—on occasion they have even been physically dragged from meetings.

In the rush for increased scale and rigour the number of trade-offs must be repeatedly considered and negotiated. Critical questions must be asked of participatory numbers, as much as more conventional methods, about is who is empowered, whose views should be prioritized, who owns the data, how it can be shared and disseminated and to whom. Within development agencies there are also serious questions to be asked about whose voices are to be taken seriously: those of poor people or external 'experts', whose interests are served by impact assessment: donors or assumed 'intervention beneficiaries' and how impact assessments are used: sitting on a desk in head office or as a guide for lobbying and action in villages and community centres. In the new paradigm these questions must be asked of every process, and again and again and not only of the relative power of the investigators and the commissioners of the assessment versus participants, but also between different participants and grassroots stakeholders themselves.<sup>25</sup>

'Reversing the paradigm' means more than just changing the sequencing of assessment methods. If it is to further the agenda for pro-poor development it must clearly prioritize the voices, views and interests of poor women, men and children, particularly those who are poorest and most vulnerable. It must involve them throughout the process of impact assessment—in identifying indicators, participating in assessment, engaging in analysis, making recommendations, and continuous monitoring and evaluation. For facilitators, this demands responsible behaviours which restrain demands on people's time, which enable them to learn and gain more control over their lives, which empower them and give them voice, which do not make them vulnerable, and which influence policy and practice so that they and other poor people gain. These principles must also be followed during use of

<sup>25</sup>A draft Code of Conduct is being finalized by Jeremy Holland [j.d.holland@swansea.ac.uk](mailto:j.d.holland@swansea.ac.uk) and [jholland@worldbank.org](mailto:jholland@worldbank.org)



complementary conventional methods. Questionnaires and qualitative interviews can, if so designed, also increase peoples' understanding of their situation and help them think through ways forward. Diagram tools can be used in individual interviews to increase accessibility for non-literate people and their control over the interview situation (See Mayoux, 2003a,b).

Finally, even identifying potentially realizable recommendations for improving practice is no guarantee that desirable changes will be implemented—this requires effective dissemination of information to the right people and negotiation of often competing or conflicting interests to bring about the required change. It requires not only dissemination and involvement of powerful stakeholders and those in key positions in governments and aid agencies. This alone is unlikely to bring about the necessary changes in attitudes, behaviour and policies. For pro-poor development to become a reality, poor people themselves must be involved not only as respondents, but also have access to the information generated, a role in its analysis and in identifying the practical implications for change. They must be seen not as unpaid informants for an extractive process, but active participants in learning and teaching for their own development. In the new paradigm the assessment process itself must prioritize the building of peoples' skills, knowledge and networks to participate equally in the definitions, priorities and policies of the development agenda. Unless people themselves are fully involved in articulating and presenting their own perspectives and ideas for the future on an ongoing basis, it is unlikely that their voices will become strong enough to persuade those with the necessary power and influence to really listen and take action.

### **Box 3. The New Paradigm: Key Principles**

- Prioritizes the voices views and interests of poor women and men, particularly the poorest and most vulnerable
- Involves these people throughout the process of impact assessment from indicators, to representation in sampling to analysis and recommendations
- Ensures that the vulnerability of those most vulnerable is not increased
- Increases the skills, knowledge and networks of poor people and communities as part of the assessment process

## **ACKNOWLEDGEMENT**

Linda Mayoux is an international consultant and as consultant for WISE Dot Ltd has been principal researcher for the DFID-funded website Enterprise Development Impact Assessment Information Service (EDIAIS) since 1999. Robert Chambers is a research associate at the Institute of Development Studies, University of Sussex, UK.

Contributions by Mayoux bring together conclusions from her work for EDIAIS 1999–2004 particularly Mayoux 2001a,b, 2002 and 2003a–c and recent work developing Participatory Action Learning Systems (PALS) (Mayoux *et al.*, 2005, this volume). This paper is also based on a paper presented by Chambers at the EDIAIS Conference on 'New Directions in Impact Assessment for Development: Methods and Practice' University of Manchester, UK 24–25 November 2003. This in turn was based on



Chambers 2003. The authors are grateful for referees' critical comments on an earlier draft for EDIAIS which have led to substantial revisions to clarify and substantiate our argument.

## REFERENCES

- Abbot J, *et al.* 1999. Participatory GIS: opportunity or oxymoron?. *PLA Notes* **33**: 27–33, International Institute for Environment and Development, London.
- Abeyasekera S. 2001. Analysis approaches in participatory work involving ranks or scores, statistical guides series, Statistical Services Centre, University of Reading: Reading. [www.ssc.reading.ac.uk](http://www.ssc.reading.ac.uk) [Accessed November 2004].
- Abisalom E, *et al.* 1995. Participatory methods and approaches: sharing our concerns and looking to the future. *PLA Notes* **22**: 5–10.
- ActionAid-Nepal. 1992. Participatory Rural Appraisal Utilization Survey Report Part 1: Rural Development Area Sindhupalchowk, Monitoring and Evaluation Unit, ActionAid-Nepal: Kathmandu.
- Adato M, Nyasimi M. 2002. Combining qualitative and quantitative techniques in PRA to evaluate Agroforestry Dissemination Practices in Western Kenya (Draft). International Food Policy Research Institute: Washington, DC.
- ADB. 2002. Preparing a Methodology for development planning in poverty alleviation under the new poverty strategy of PRC. TA3610-PRC July.
- Barahona C, Levy S. 2003. How to generate statistics and influence policy using participatory methods in research: reflections on work in Malawi 1999–2002. *IDS Working Paper* 212. IDS: Sussex.
- Barnes C. 1997. Empowering women and coping with financial crises. Management Systems International: Washington.
- Barnes C, Morris G, Gaile G. 1998. An assessment of the impact of microfinance services in Uganda: baseline findings. MSI AIMS: Washington, DC.
- Barnes C, Keogh E. 1999. An assessment of the impact of Zambuko's microenterprise program in Zimbabwe: baseline findings. Management Systems International: Washington, DC.
- Barnes C, Sebstad J. 2000. Guidelines for microfinance impact assessments. Paper for discussion at CGAP 3 virtual meeting 1999. CGAP: Washington. <http://www.cgap.org/assets/images/Cgap3.pdf> [Accessed November 2004].
- Beneria L, Bisnath S. 2001. *Gender and Development: Theoretical, Empirical and Practical Approaches* (2 Vols). Edward Elgar: Cheltenham, UK and Northampton, MA, USA.
- Bolt VJ, Bird K. 2003. The intrahousehold disadvantages framework: a framework for the analysis on intra-household difference and inequality. Chronic Poverty Research Centre, Institute for Development Policy Management: Manchester.
- Booth D, Holland J, Hentschel J, Lanjouw P, Herbert A. 1998. Participation and combined methods in African poverty assessment: renewing the agenda. Report commissioned by DFID for the Working Group on Social Policy, Special Program of Assistance for Africa.
- Booth D. 2003. Towards a better combination of the quantitative and the qualitative: some design issues from Pakistan's Participatory Poverty Assessment. In *Qual-Quant*, Kanbur R (ed.).
- Brock K. 1999. It's not only wealth that matters—it's peace of mind too': a Review of Participatory Work on Poverty and Illbeing, Consultations with the Poor. Prepared for Global Synthesis Workshop 22–23 September 1999, Poverty Group, PREM, Washington, DC: World Bank.
- Brock K. 1999. (unpublished) Analysis of consultations with the poor wellbeing ranking and causal diagramming data. Participation Group, Institute of Development Studies, University of Sussex, UK.

- Burn RW. 2000. Quantifying and combining causal diagrams. *Statistical guides series*, statistical Services Centre. University of Reading: Reading. [www.reading.ac.uk/ssc/](http://www.reading.ac.uk/ssc/)
- Chambers R. 1997. *Whose Reality Counts? Putting the First Last*. Intermediate Technology Publications: London.
- Chambers R. 2003. Participation and numbers. *PLA Notes* **47**: 6–12.
- Chant S. 2003. New contributions to the analysis of poverty: methodological and conceptual challenges to understanding poverty from a gender perspective, *Mujer y desarrollo*. Santiago, CEPAL, Women and Development Unit, United Nations: Chile.
- Chen MA, Snodgrass D. 1999. An assessment of the impact of SEWA bank in india: baseline findings. Management Systems International: Washington, DC.
- Chen M, Snodgrass D. 2001. Managing resources, activities and risk in urban India: the Impact of SEWA Bank. Management Systems International AIMS project: Washington, DC.
- Cloke J. 2001. The gendered household: who really knows what's going on? In mimeo. University of Loughborough. Available through Microfinance Gateway.
- Conway G. 1985. Agroecosystem Analysis. *Agricultural Administration* **20**: 21–55.
- Cromwell E, Kambewa P, Mwanza R, Chirwa R, with KWERA Development Centre. 2001. Impact Assessment Using Participatory Approaches: 'Starter Pack' and Sustainable Agriculture in Malawi. *Network Paper No 112*. Agricultural Research and Extension Network, Overseas Development Institute: London, January.
- Deweese P. 1989. Aerial photography and household studies in Kenya. *RRA Notes* **7**: 9–12.
- Drinkwater M. 1993. Sorting fact from opinion: the use of a direct matrix to evaluate finger millet varieties. *RRA Notes* **17**: 24–28.
- Dwyer D, Bruce J. 1998. *A Home Divided*. Stanford University Press: Stanford.
- Eldridge 1995. Methodological notes, instructions to facilitators, household responses to drought study in Malawi, Zambia and Zimbabwe. Save the Children: UK.
- Eldridge C. 1998. Summary of the Main Findings of a PRA Study on the 1992 Drought in Zimbabwe. Save the Children: UK.
- Eldridge C. 2001. Investigating change and relationships in the livelihoods of the poor using an adaptation of proportional piling. Save the Children: UK.
- Estrella M, Blauert J, Campilan D, Gaventa J, Gonsalves J, Guijt I, Johnson D, Ricafort R (eds). 2000. *Learning from Change: Issues and Experiences in Participatory Monitoring and Evaluation*. Intermediate Technology Publications: London.
- Fielding WJ, Riley J, Oyejola BA. 1998. Ranks are statistics: some advice on their interpretation. *PLA Notes* **33**: 35–39.
- Fielding WJ, Riley J. 2000. Preference ranking: a cautionary tale from Papua New Guinea. *PLA Notes* **37**: 113–117.
- Freudenberger K, Schoonmaker. 1995. The historical matrix—breaking away from static analysis. *Forests, Trees and People Newsletter* **26/27**: 78–79.
- Gill GJ. 1993. OK, *The Data's Lousy, But It's All We've Got (Being a Critique of Conventional Methods)*. Gatekeeper Series 38, IIED: London.
- Gladwin CH, Peterson JS, Mwale AC. 2002. The quality of science in participatory research: a case study from Eastern Zambia. *World Development* **30**(4): 523–543.
- Grandin B. 1988. *Wealth Ranking in Smallholder Communities: A Field Manual*. Intermediate Technology Publications: London.
- Guijt I. 2000. Methodological issues in participatory monitoring and evaluation. In *Learning from Change*, Estrella with others (eds); 201–216.
- Hargreaves JR, Morison LA, Gear JSS, Porter JDH, Makhubele MB, Kim JC, Busza J, Watts C, Pronyk PM. 2004. Hearing the Voices of the Poor: Assigning poverty lines on the basis of local

- perceptions of poverty; a quantitative analysis of qualitative data from participatory wealth ranking in rural South Africa. Paper for Q-Squared in Practice: a Conference on Experiences in Combining Qualitative and Quantitative Methods in Poverty Appraisal, Centre for International Studies, Toronto, May [www.people.cornell.edu/pages/sk145](http://www.people.cornell.edu/pages/sk145) [Accessed November 2004].
- Hill P. 1986. *Development Economics on Trial: The Anthropological Case for a Prosecution*. Cambridge University Press: Cambridge.
- Hopkins R. 2000. Impact assessment study of Oxfam fair trade. Oxfam: Oxford.
- Howe G, McKay A. 2004. Combining quantitative and qualitative methods in assessing chronic poverty: the case of Rwanda. Paper for Q-Squared in Practice: a Conference on Experiences in Combining Qualitative and Quantitative Methods in Poverty Appraisal, Centre for International Studies, Toronto, May [www.people.cornell.edu/pages/sk145](http://www.people.cornell.edu/pages/sk145) [Accessed November 2004].
- Howes M. 1992. Linking paradigms and practice: key issues in the appraisal, monitoring and evaluation of British NGO projects. *Journal of International Development* **4**(4).
- Hulme D. 2000. Impact assessment methodologies for microfinance: theory, experience and better practice. *World Development* **28**(1): 79–88.
- Jayakaran R. 2002. The ten seed technique. World Vision: China, [[ravi\\_jayakaran@wvi.org](mailto:ravi_jayakaran@wvi.org)]
- Jones C. 1995. Matrices, ranking and scoring: participatory appraisal 'methods' paper. Participation Group, IDS, University of Sussex.
- Jordan G. 1999. Public participation and GIS: report back. *PLA Notes* **34**: 16–17.
- Kabeer N, Joeques S. 1991. Researching the household: methodological and empirical issues. *IDS Bulletin*. Brighton: IDS.
- Kabeer N. 1994. *Reversed Realities*. Verso: London.
- Kabeer N. 2001. Conflicts over credit: re-evaluating the empowerment potential of loans to women in rural Bangladesh. *World Development* **29**(1): 63–84.
- Kanbur R (ed.). 2003. *Qual-Quant: Qualitative and Quantitative Poverty Appraisal: Complementarities, Tensions and the Way Forward*. Permanent Black: Delhi.
- Kar K. 2003. Subsidy or self-respect? Participatory total community sanitation in Bangladesh. *IDS Working Paper* 184. IDS, Sussex, September.
- Kar K, Datta D. 1998. Understanding market mobility: perceptions of smallholder farmers in Bangladesh. *PLA Notes* **33**: 54–58.
- Khon K. 1987. Proceedings of the 1985 international conference on rapid rural appraisal. University of Khon Kaen, Thailand.
- Kirkpatrick C, Hulme D, Mayoux L, Pinder C, Gavin T, George C. 2001. Basic impact assessment at project level: EDIAIS Core Text. EDIAIS <http://www.enterprise-impact.org.uk/word-files/CoreText2.doc> [Accessed November 2004].
- Lacoste J-P. 2002. Livelihood strategies of poor women in Zimbabwe. Graduate Institute of Development Studies. University of Geneva: Geneva.
- Levy S. 1999. Are we targeting the poor? Lessons from Malawi. *PLA Notes* **47**: 19–24.
- Leyland T. 1994. Planning a community animal health care programme in Afghanistan. *RRA Notes* **20**: 48–50.
- Li X, Remenyi J. Whose poverty? Making poverty mapping and monitoring participatory (draft).
- Manoharan M, Velayudham K, Shunmugavalli N. 1993. PRA: an approach to find felt needs of crop varieties. *RRA Notes* **18**: 66–68.
- Marsland N, Wilson IM, Abeyasekera S, Kleih UK. 2000. A methodological framework for combining quantitative and qualitative survey methods. Statistical Guide, Statistical Services Centre, University of Reading: Reading. [www.reading.ac.uk/ssc/](http://www.reading.ac.uk/ssc/) [Accessed November 2004].
- Maxwell S, Duff B. 1995. Beyond ranking: exploring relative preferences in P/RRR. *PLA Notes* **22**: 28–35.

- Mayoux L. 2001a. What do we want to know? Selecting indicators, EDIAIS. <http://www.enterprise-impact.org.uk/informationresources/toolbox/selectingindicators.shtml>
- Mayoux L. 2001b. Whom do we talk to? Issues in Sampling, EDIAIS. <http://www.enterprise-impact.org.uk/informationresources/toolbox/sampling.shtml>
- Mayoux L. 2002. From impact assessment to sustainable strategic learning, EDIAIS. <http://www.enterprise-impact.org.uk/overview/index.shtml#Strategic>
- Mayoux L. 2003a. Thinking it through: using diagrams in impact assessment, EDIAIS. <http://www.enterprise-impact.org.uk/informationresources/toolbox/thinkingitthrough-usingdiagramsinIA.shtml>
- Mayoux L. 2003b. Empowering enquiry: a new approach to investigation, EDIAIS. <http://www.enterprise-impact.org.uk/informationresources/toolbox/empoweringenquiry.shtml>
- Mayoux L. 2003c. Grassroots learning, EDIAIS. <http://www.enterprise-impact.org.uk/informationresources/toolbox/grassrootsactionlearning.shtml>
- Mayoux L. with ANANDI. 2005. Participatory action learning in practice: experience of Anandi, India. *Journal of International Development* **8** (this volume).
- Mayoux L. 2005. Quantitative, qualitative or participatory? Which method, for what and when? In *Doing Development Research*, Potter R, Desai V (eds). Sage: London.
- Mearns R. 1989. Aerial photographs in rapid land resource appraisal, Papua New Guinea. *RRA Notes* **7**: 12–14.
- Mearns R, Shombodon D, Narangarel G, Turul U, others. 1992. Direct and Indirect Uses of Wealth Ranking in Mongolia. *RRA Notes* **15**: 29–38.
- Mikkelsen B. 1995. *Methods for Development Work and Research: A Guide for Practitioners*. Sage Publications: Delhi, Thousand Oaks, London.
- Moser C. 2003. Apt Illustration or Anecdotal Information? Can Qualitative Data be Representative or Robust?. In *Qual-Quant*, Kanbur R (ed.).
- Moser C, Holland J. 1997. Urban poverty and violence in Jamaica, World Bank Latin American and Caribbean studies viewpoints. World Bank: Washington, DC.
- Moser C, McIlwaine C. 2000a. Urban poor perceptions of violence and exclusion in Colombia, Latin American and Caribbean Region, environmentally and Socially Sustainable Development Sector Management unit. World Bank: Washington, DC.
- Moser C, McIlwaine C. 2000b. Violence in a post-conflict world: urban poor perceptions from Guatemala, Latin America and Caribbean Region, Environmentally and Socially Sustainable Development Sector Management Unit. World Bank: Washington, DC.
- Mosse D. 1994. Authority, gender and knowledge: theoretical reflections on the practice of participatory rural appraisal. *Development and Change* **25**(3): 497–526.
- Mukherjee N. 1995. *Participatory Rural Appraisal and Questionnaire Survey: Comparative Field Experience and Methodological Innovations*. Concept Publishing: New Delhi.
- Mukherjee N. 2001. *Participatory Learning and Action, with 100 Field Methods*. Concept Publishing: New Delhi.
- Mukherjee N, Jena B (eds). 2001. *Learning to Share: Experiences and Reflections on PRA and Other Participatory Approaches*, Vol. 2. Concept Publishing: New Delhi.
- Mukherjee N, van Wijk C (eds). 2003. Sustainability planning and monitoring in community water supply and sanitation, a guide on the methodology for participatory assessment (MPA) for community-driven development programs. The World Bank, Washington DC and IRC International Water and Sanitation Centre, The Netherlands.
- Mustafa MK. 2004. The use of qualitative and quantitative indicators for local-level poverty assessment: the experience of a pilot survey in Bangladesh. Paper for Q-Squared in Practice: a Conference on Experiences in Combining Qualitative and Quantitative Methods in

- Poverty Appraisal, Centre for International Studies, Toronto. [www.people.cornell.edu/pages/sk145](http://www.people.cornell.edu/pages/sk145) [Accessed November 2004]
- Narayan D. 1997. *Voices of the Poor: Poverty and Social Capital in Tanzania*. Environmentally and Socially Sustainable Development Network: World Bank.
- Narayan D, Chambers R, Shah MK, Petesch P. 2000. *Voices of the Poor: Crying Out for Change*. Oxford University Press for the World Bank: New York.
- Nierras RM. 2002. Generating numbers with local governments in the Philippines. Working Draft, IDS, Sussex.
- NRI, SSC. 2001. Combining quantitative and qualitative survey work: methodological framework, practical issues, and case studies. *NRI Report No 2591*, Natural Resources Institute, DFID, and Statistical Services Centre, University of Reading, March.
- PRAXIS. 1997. *PRA Reflections from the Field and Practitioners*. Institute for Participatory Practices: Patna, India.
- PRAXIS. 2001. *The Politics of Poverty: A Tale of The Living Dead in Bolangir*. Books for Change Bangalore.
- Rambaldi G, Callosa-Tarr J. 2000. *Manual on Participatory 3-Dimensional Modelling for Natural Resource Management, Essentials of Protected Area Management in the Philippines*, Vol. 7. NIPAP, PAWB-DENR: Philippines.
- Richards M, Davies J, Cavendish W. 1999. Can PRA methods be used to collect economic data? A non-timber forest product case study from Zimbabwe. *PLA Notes* **36**: 34–40.
- Roche C. 1999. *Impact Assessment for Development Agencies: Learning to Value Change*. Oxfam Novib: Oxford.
- RRA Notes*. 1992. Special Issue on Applications of Wealth Ranking, Vol. 15. International Institute for Environment and Development: London.
- Sandford D. 1988. A note on the use of aerial photographs for land use planning on a settlement site in Ethiopia. *RRA Notes* **6**: 18–19.
- Selener D, Endara N, Carvajal J. 1999. Participatory rural appraisal and planning. International Institute of Rural Reconstruction: Philippines, Kenya, Ecuador and USA.
- Shah MK. 1999. A step-by step guide to popular PLA tools and techniques. In *Embracing Participation in Development*, Shah *et al.* (eds); 31–78.
- Shah MK, Kambou SD, Monahan B (eds). 1999. *Embracing Participation in Development: Worldwide Experience from CARE's Reproductive Health Programs*. CARE: Georgia.
- Shah MK, Zambezi R, Simasiku M. 1999. *Listening to Young Voices: Facilitating Participatory Appraisals on Reproductive Health with Adolescents*. CARE International: Zambia.
- Sharp K. 2003. Measuring destitution: integrating qualitative and quantitative approaches in the analysis of survey data. *IDS working Paper 217*. IDS: Sussex.
- Simanowitz A, Nkuna B. 1998. *Wealth Ranking Operational Manual*. Small Enterprise Foundation: Tzaneen.
- Simanowitz A. 1999. Pushing the limits of mapping and wealth ranking. *PLA Notes* **34**: 4–8.
- Simanowitz A. 2000. Targeting the poor—comparing visual and participatory methods. *Small Enterprise Development* **11**(1): 29–39.
- Swift J, Noor Umar A. 1991. Participatory pastoral development in Isiolo district, socio-economic research in the Isiolo Livestock Development Project. Final Report, EMI ASAL Programme, Kenya.
- Temu A, Due J. 2000. Participatory appraisal approaches versus sample survey data collection: a case of smallholder farmers wellbeing ranking in Njombe District, Tanzania. *Journal of African Economies* **9**(1): 444–462.

- UNDP, Bangladesh. 1996. UNDP's 1996. *Report on Human Development in Bangladesh: Poor People's Perspectives*, Vol. 3. UNDP: Dhaka.
- Van Wijk-Sijbesma C. 2001. The best of two worlds? Methodology for participatory assessment of community water services. Ageningen Agricultural University and IRC International Water and Sanitation Centre, The Netherlands.
- Watson K. 1994. Proportional piling in Turkana: a case study. *RRA Notes* **20**: 131–132.
- Woldon J. 2004. at [www.chinadevelopmentbrief.com](http://www.chinadevelopmentbrief.com)
- World Bank. 1999. Consultations with the poor: process guide for the 20 country study for the *World Development Report 2000*, 01. Poverty Group, PREM Network, The World Bank: Washington, DC.
- World Bank. 2000. *World Development Report 2000/2001: Attacking Poverty*. Oxford University Press for the World Bank: New York.