

WORKING PAPER 296

Who Counts? The Quiet Revolution of Participation and Numbers

Robert Chambers
December 2007

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Summary

Participatory approaches and methods can generate quantitative as well as qualitative data. Mainly since the early 1990s, a quiet tide of innovation has developed a rich range of participatory ways, many of them visual and tangible, by which local people themselves produce numbers. The approaches and methods have variously entailed counting, mapping, measuring, estimating, valuing and scoring, and scaling, together with comparing and combinations of these, and have had many applications.

The methodological pioneers in going to scale in the 1990s rarely recognised the significance of what they had been doing. The pioneers of the 2000s have shown ingenuity, skill, patience and courage, sometimes in the face of opposition driven by conventional reflexes. Participatory numbers have been taken to scale most notably through participatory surveys with visuals and tangibles, through aggregation from focus groups and through wealth and wellbeing ranking. There have been breakthroughs in producing national statistics, and also on subjects and with insights inaccessible through questionnaires.

Statistical principles can be applied to participatory numbers.¹ Ways have been found of overcoming the vexing problem of commensurability between communities. As with all ways of finding out, there are trade-offs, in this context notably between participatory open-endedness and standardisation for comparability.

The question 'who counts?' raises issues of ownership and power. Participatory Monitoring and Evaluation (PM and E) has taken many forms, with varied degrees of ownership and empowerment. Whether participatory statistics empower local

1 For a clear and authoritative statement of the application of statistical principles to these processes see Barahona and Levy (2003: 23–41, and 2007). Much can also be found on the website of the Statistical Services Centre at Reading University in the UK (www.reading.ac.uk/ssc).

people is sensitive to official attitudes and acceptance and whether these lead to changes in policy and practice that make a real difference. Questions are raised of the mix and balance of extraction and empowerment, and whether and how the quiet revolution of participatory approaches and methods can get the best of both qualitative and quantitative worlds.

Keywords: empowerment, innovation, methods, participation, statistics, qualitative, quantitative.

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Contents

Summary	3
Keywords, author note	4
Acknowledgements	6
1 Introduction	7
1.1 Gains from quantitative approaches	8
1.2 Beyond conventional qual-quant complementarities	9
1.3 Modes of participatory number-generating	11
1.4 Participatory methods, applications, and activities	12
2 Going to scale with participatory numbers	15
2.1 Participatory surveys	15
2.2 Aggregation from focus groups	16
2.3 Participatory wealth ranking and wellbeing grouping	17
2.4 Poverty: the challenge of comparisons and commensurability	18
2.4.1 Poverty lines from participatory wealth ranking in South Africa	18
2.4.2 Food security in Malawi	18
2.4.3 Destitution in Ethiopia	19
2.4.4 The participatory poverty index in China	20
2.4.5 The stages of progress method	20
2.5 Producing national statistics	21
3 Who counts?	22
3.1 Participatory M and E and empowerment	22
3.2 Participatory statistics, empowerment and policy influence	24
4 The best of all worlds?	26
4.1 Validity and reliability	27
4.2 Insights into sensitive subjects	27
4.3 Unexpected and striking insights for policy	28

4.4 Power, reversals and learning	28
4.5 Alternatives to questionnaires	31
5 Methodological challenges	32
6 The future	33
References	35
Figure	
Figure 1.1 Dimensions of methodology and outcome	10
Tables	
Table 2.1 Household use of health activities	15
Table 2.2 Correlation between receipt of TIP and food security status	19
Table 4.1 Relative importance of main crops by agroecological zone	30
Box	
Box 4.1 Participatory numbers, realities and a power reversal in Eritrea	29

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1 Introduction

This paper is about participatory approaches and methods which generate numbers, participatory numbers for short. It challenges the normal reflex that for numbers we must have questionnaires. It presents evidence which I believe should excite and inspire researchers and those who fund and sponsor research. Participatory numbers with their burgeoning repertoire are part of a quiet revolution, unrecognised in professional mainstreams, which has taken place in the past decade and a half. There is a parallel with Rapid Rural Appraisal in the 1970s. During that decade more and more professionals were quietly innovating with ways of finding out about rural life and conditions which were quicker, better and more cost effective than either traditional questionnaire surveys or the in-depth investigations of social anthropology. They kept their heads down for fear of incurring the criticism of their colleagues, especially statisticians. They had to come together to realise that they were a movement and could raise their heads above the parapet. Similarly, participatory numbers were marginal in the 1990s but are now increasingly facilitated, used and recognised, as RRA came to be, not as a second best but more and more often as a best. It is still, however, little recognised how much participatory numbers can substitute for more conventional methods like questionnaires.

This paper is an attempt to bring up-to-date a review and overview of the state of the field. This has been difficult when so much is happening so fast. The coverage is incomplete and limited by the bounds of my competence and knowledge. There are issues of ethics and empowerment which deserve fuller and more sensitive and informed treatment. Many innovators and writers who have contributed to this swelling stream are not acknowledged. To them I apologise. There is a time to stop collecting and consulting and go to press. If this paper encourages others to do better, and to do more to innovate and share their experiences, it may prove to have been justified.

In writing I have tried to be balanced. Nevertheless, the reader should be warned. I have had such bad experiences with big questionnaires² that I am predisposed to condemn them and to embrace and support almost any alternative. I have caught myself being misled by this. So it was that for this paper I seized gleefully on a diagram comparing proportions by month in 2001/02 and 2002/03 of those who were extremely food insecure in Malawi. Ahha! Here was another case to demonstrate the superiority of participatory numbers over questionnaires. On checking, though, I was chastened. The source was a questionnaire: it was short and simple, not long and complex, but nevertheless a questionnaire (Barahona 2005: 80–1). And I was, as several times in preparing this paper, driven by the evidence to modify my view and to embrace a more eclectic methodological pluralism, albeit one in which participatory numbers usually remain the first and best option, especially, but by no means only, for topics which are sensitive or complex or both.

2 See for example *Rural Development: Putting the Last First* (1983: 49–58) which is, however, followed by a short section on useful surveys.

The question ‘who counts?’ can have two meanings: who is the active agent in generating numbers?; and who matters and whose reality matters? These are two threads which weave through this paper, often implicit rather than explicit. Let me invite the reader when thinking about the examples that follow to imagine the processes and relationships that were central to them, with sequences of activities, and with outsiders (‘us’) as facilitators not enumerators and local people (‘them’) as analysts not respondents; and to reflect on how much more often than in common practice the answer to the question ‘who counts?’ can and should be ‘they do’.

Debates about ways of finding out often concern the contrasts and complementarities between qualitative and quantitative approaches. This was the focus of a conference convened by Ravi Kanbur at Cornell in March 2001 which led to the book *Q-Squared: Qualitative and Quantitative Methods in Poverty Appraisal* (Kanbur 2003). *A Methodological Framework for Combining Quantitative and Qualitative Survey Methods* (Marsland et al. 2000) is of interest as the work of statisticians. It identifies three types of combination:

- Swapping tools and attitudes: merging (e.g. participatory mapping to provide a sampling frame)
- Sequencing (e.g. informal before formal, or formal before informal)
- Concurrent use of tools (e.g. questionnaire and RRA³ in parallel, then compared).

Valid and valuable as mixed methods have been and will continue to be, they have not much engaged with or gained from the quiet revolution in which local people themselves generate numbers.⁴

1.1 Gains from quantitative approaches ⁵

Quantitative approaches usually means research using standard sampling techniques, questionnaires and statistical analysis. They are so widely used because of the many potential benefits from statistics and numbers. It is as well to start by recognising some of those that are more common and better known:

- Time series comparisons to identify trends in whatever dimensions are measured

3 RRA is Rapid Rural Appraisal, approaches and methods for finding out quickly and cost effectively about things in rural contexts. The most authoritative and comprehensive source is still the papers presented at a 1985 conference at the University of Khon Kaen in Thailand (Khon Kaen 1987).

4 Participatory numbers were presented at the Cornell Conference. The Statistical Services Centre at the University of Reading have been outstanding in piloting, pioneering and disseminating statistical rigour and ethical concerns in the generation of participatory numbers (see e.g. Barahona and Levy 2003).

5 This first section draws on ‘Qualitative Approaches: Self-criticism and What Can be Gained from Quantitative Approaches’, in Kanbur (2003) *Q-Squared*: 28–9.

- Cross-section comparisons between different individuals, households, groups and communities, and across regions, countries and continents
- Correlations which identify associations which raise questions of causality and covariant changes
- Estimates of prevalence and distributions within populations and areas
- Triangulations and linkages with qualitative data (Booth *et al.* 1998; Booth 2003)
- The credibility of numbers in influencing policymakers
- The utility to policymakers and policy-influencers of being able to put numbers on trends and other comparisons.

The case argued from the evidence in this paper is that frequently these and other gains can come better from participatory numbers than from questionnaires.

1.2 Beyond conventional qual-quant complementarities

Qualitative research too has its well recognised advantages not least of depth of insight and of being open to the unexpected. The value of qualitative ‘precision in meaning’ tends to be contrasted with the value of quantitative ‘accuracy in measurement’.⁶ In recent years increasing attention has been paid to mixed methods that combine qualitative and quantitative methods in research (e.g. Booth *et al.* 1998; Marsland *et al.* 2000; Kanbur 2003; Kanbur and Shaffer 2006) to gain the best of both worlds.

Complementarities have been recognised between depth and detail from qualitative research and representativeness and statistical robustness from quantitative research. The two also inform, correct and augment each other. Qualitative studies can contribute to the content of questionnaires, their interpretation and correction. Questionnaires can raise issues for probing and explanation. To give just one example, in a study of destitution in Ethiopia, qualitative inquiry showed how a questionnaire was likely to underestimate the impacts of death of an able-bodied adult because it would not recognise the break-up of the household itself that commonly resulted (Sharp 2005: 19). The many benefits of these ‘qual-quant’ or Q-squared interactions are not now seriously in dispute. They can be seen as combinations of the SW (conventional qualitative) and SE (conventional quantitative) quadrants in Figure 1.1.

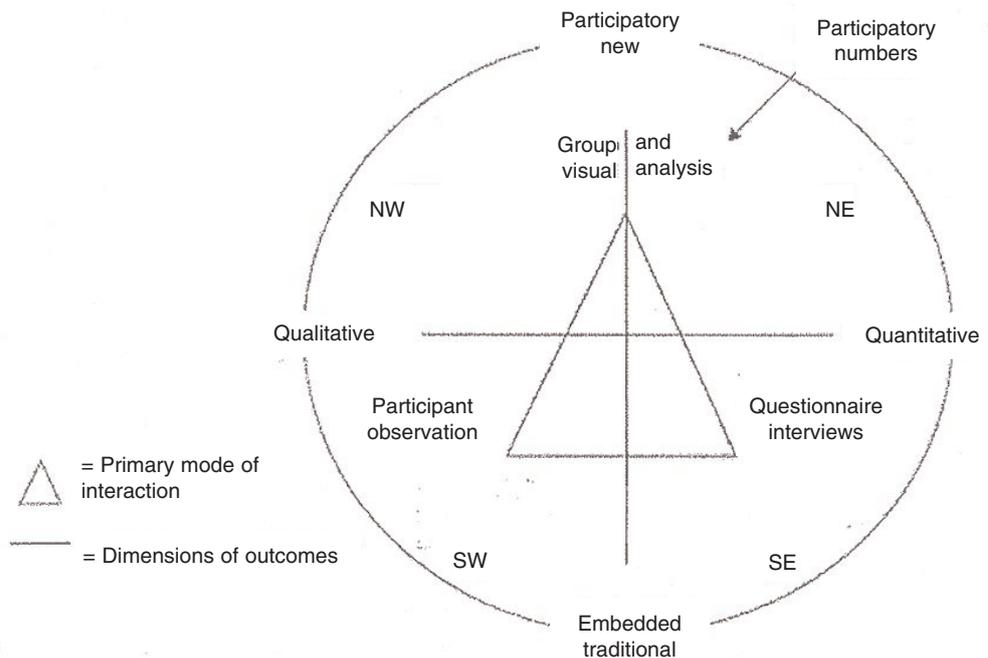
However, qualitative and quantitative have in common that whether separately or together their dominant mode is extractive, that is, they are used to gather and take away data for analysis. Valid and valuable as they can be, either separately or as mixed methods, they have not much engaged with or gained from the revolution in which it is local people themselves who conduct their own appraisals, investigations and research. Linda Mayoux (2005) has asked whether quantitative, qualitative and

6 I have taken these terms from van der Riet (n.d.).

participatory are three different worlds of research and has laid out their contrasts and complementarities, and issues of relevance, reliability and ethics, arguing for optimising combinations for context and purpose. This paper now is about that major part of the participatory where local people generate and to varying degrees own and are empowered by their own numbers.⁷ A minimalist view could be that participatory numbers can be complements or checks to conventional and established methods. The evidence presented in this paper shows that in a wide range of contexts participatory numbers are much more than this: they can in many respects be not only alternatives to conventional methods, but with their own rigour and range, and often better according to accepted criteria.

‘Who counts?’ questions and experiences take us, then, beyond conventional complementarities. Two common linked assumptions are shown to be false: first, that participatory approaches only generate qualitative insights – the NW quadrant in Figure 1.1; and second, that quantitative data can only be produced by questionnaire surveys or scientific measurement – the SE quadrant.

Figure 1.1 Dimensions of methodology and outcome



Numerous experiences now confound and contradict these two assumptions. Largely unrecognised in academic and official government and aid agency mainstreams, a whole new field has opened up. This is represented by the NE

⁷ Participatory numbers were presented at the Cornell Conference. Staff at the Statistical Services Centre at the University of Reading have been outstanding in piloting, pioneering and disseminating statistical rigour and ethical concerns in the generation of participatory numbers (see e.g. Barahona and Levy 2003).

quadrant. This takes us beyond conventional complementarities. Especially since the early 1990s, a tide of innovation has developed a rich range of participatory ways by which local people can themselves produce numbers. The methodological pioneers have rarely recognised the full significance of what they have been doing. This paper sets out to present evidence of what has been pioneered and to discuss implications.

1.3 Modes of participatory number-generating ⁸

Participatory activities can generate numbers in different ways and for different purposes. Four categories of activities and ownership of the numbers can be described.

First, groups of people can be facilitated to put numbers on their characteristics as individuals. This can occur in both local and community contexts, and often through public raising of hands. It can also be private and confidential with voting behind a screen or marking on anonymous slips of paper. As ever, the validity of the numbers depends on context and sensitivity, with public and visible cross-checking in some cases, and anonymity in others. These methods are common in school classes and in participatory workshops (Chambers 2002: 23). In the latter, standing in groups or clusters is often effective, and can quickly identify (and celebrate) characteristics, for example the number of mother tongues in an international group.⁹

In this mode the numbers are either publicly visible to all, or can be shared by whoever counts the numbers which are individually confidential.

Second, there are numbers generated by local people which they retain and use or do not need or bother to keep. These may or may not be shared or needed by others. Examples can be found in participatory monitoring and evaluation (M and E) (see below).

In this mode, the numbers are more 'theirs', that is, they belong to and are used by local people.

Third, in a comparative research mode, there is the analysis of secondary data which have been generated in a participatory manner without pre-standardisation. Deciding categories and allocating to them can be difficult but the results can be significant and persuasive. Karen Brock (1999) gathered findings from participatory research on poverty, and analysed what had come from 58 groups and individuals in 12 countries who had been asked to identify key criteria for poverty, illbeing, or vulnerability. She then used the NUDIST programme to classify and count these by criteria, separated into urban and rural, and men and women, and presented the

8 An increasing number of handbooks include participatory methods that generate numbers, for example Mikkelsen (1995, 2005).

9 The largest number of mother tongues in my experience to date has been 36, in a work shop with 70 graduate students at Reading University, UK, equalled, but by a larger number of students at IDS Sussex and the University of Sussex in October 2007.

results diagrammatically to show frequency of mention as percentages. One striking finding was that water came out as a higher priority for poor people in urban than in rural areas.

In this mode, the numbers are 'ours', that is, they are derived and used by the outside analyst.

Fourth, and the main focus of this paper is, the generation of numbers from several or many sources using participatory approaches, methods, and behaviours which are usually to some degree standardised. These practices have evolved and spread quietly, almost unnoticed. Often the methods are visual and tangible (see e.g. Mukherjee 1995 and 2001; Jones 1996; Shah *et al.* 1999; Jayakaran 2002, 2003, 2007; Moser and McIlwaine 2004; Kagugube *et al.* 2007). The activities can be by individuals, but most often they take place in groups: different groups of people do similar things which provide numbers which can be added, averaged, compared, or used as a basis for various calculations. Local people can do calculations themselves at their own level, but in practice it is usually the outside researchers or facilitators who aggregate and calculate beyond the level of the group.

In this mode, ownership and use depend on context and facilitation. Many modes, combinations and processes are possible. Kay Sharp (2007: 275), for instance, included proportional piling in the sequence of a household questionnaire survey in Ethiopia. Her account of the participatory visual and tangible part of the interviews gives a sense of process:

The exact number of 100 beans (pre-counted by the interviewer)¹⁰ was used to facilitate the checking and recording of numbers in the field, and subsequent data entry ... a few people counted the beans, but most estimated the income proportions first roughly allocating smaller or larger handfuls to each circle, then visually comparing the size of the piles, and moving beans around according to discussion and spontaneous pair-wise comparison (e.g. 'didn't we get more from firewood than from eggs?').

(Sharp 2007: 22)

1.4 Participatory methods, applications, and activities

*Methods*¹¹ often used to generate numbers include

- Participatory mapping (ActionAid Nepal 1992; Chambers 1997; Barahona and Levy 2003)
- Participatory modelling (Rambaldi and Callosa-Tarr 2000, 2002)

10 If analysts themselves count out the number of beans, they tend to have a greater sense of ownership of the process.

11 There are many methods and combinations and sequences of methods. The multiplicity is illustrated by the title of Neela Mukherjee's (2001) book *Participatory Learning and Action with 100 Field Methods*.

- Proportional piling (Watson 1994; Jayakaran 2002, 2003, 2007; Sharp 2005: 20–4)
- Card writing, marking, sorting, ordering and positioning (Kagugube *et al.* 2007)
- Matrix ranking and scoring (Abeyasekera 2001)
- Pairwise ranking
- Linkage diagramming (Burn 2000; Galpin *et al.* 2000)
- Pocket voting (van Wijk 2001).

Often in practice there are combinations of visuals and tangibles (maps, models, diagrams, and counters of various sorts (stones, seeds etc)).

These have many common *applications* including social and census mapping, household listing and scoring, wellbeing ranking, trend and change analysis, seasonal diagramming, preference ranking, causal-linkage analysis, and problem trees.

The participatory *activities* which generate numbers are counting, calculating, measuring, estimating, ranking, valuing and scoring. In practice, these are not always distinct and may be combined in the same activity. Comparing things is often involved, giving numbers or scores or positioning cards, to indicate relative degrees, sizes or values.

Examples of *counting* are social and census maps. These tend to be very accurate for identifying and listing households, for headcounts and for household characteristics which are common knowledge. Participants can ‘see what is being said’ and correct and add detail. For community census purposes, the outcomes have proven very accurate indeed, and where there have been discrepancies, community analysts have wanted to check until they reach agreement (Chambers 1997: 143–5).

An example of *calculating* comes from the triggering process of Community-Led Total Sanitation. Evolved in Bangladesh CLTS has been spread to numerous other countries in Asia and Africa. As part of a facilitated appraisal local people calculate the quantities (e.g. cartloads for the whole community) of shit (the crude word is used) produced by their households in a day, multiply out for longer periods, and add up for the whole community, concluding sometimes with community cartloads per annum (Kar 2005; Kar and Pasteur 2005).

Examples of participatory *measuring* can be found with timber stocks, water flows, crop yields, arm circumferences, and land use areas from participatory GIS mapping and modelling (Rambaldi and Callosa-Tarr 2000, 2002; PLA 2006).

Examples of *estimating* are often associated with comparing and relative proportions, as in historical matrices (e.g. Freudenberger 1995; PRAXIS 2001) 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) and health problems (Shah 1999); and as in proportional piling for income and food sources (e.g. Watson 1994; Eldridge 2001; and Stephen Devereux and Henry Lucas pers. comms). There are many applications with variants of methods such as the Ten Seed Technique (Jayakaran 2002) in which ten seeds are allocated between two or more options, or the allocation of 100 seeds, stones, or other counters to give percentages (see Box 4.1).

Examples of *valuing* and *scoring* are preference ranking, matrix ranking and matrix scoring (Jones 1996). Things compared range from crop varieties in Zambia (Drinkwater 1993) and India (Manoharan *et al.* 1993) to contraceptive methods, from markets in Bangladesh (Kar and Datta 1998) to political parties, from girls' preferences for sex-partners in Zambia (Shah 1999) to wild plants collected for winter feeding of goats in Afghanistan (Leyland 1994). The allocation of ten as with the ten seed technique has been used in China with aggregation from household self-monitoring booklets for problems managing a water supply, the ten seeds being allocated between three columns – happy, middle and unhappy respectively (Vernooy *et al.* 2003). Another example is the Pachod Paise Scale from Maharashtra in India (Kapadia-Kundu and Dyalchand 2007). Participants are asked to say how many paise (100 paise to the rupee) they would give to something, as with 'How many paise in a rupee do you feel that a woman should be given more food during pregnancy?'. It has proved versatile and has been used to measure, for example, attitudes, emotions, intention, and client satisfaction. In the UK uses of scoring include comparing health providers in an estate in London and assessing candidates interviewed for a university post.¹²

Comparing is a common feature in these methods and applications. Comparisons are made in many ways, often directly through the numbers. The numbers or scores can also be generated as a second stage of a physical activity of grouping or positioning, often of cards representing households. The best known and most widespread is wealth or wellbeing ranking, where analysts group household cards according to their judgements of personal or household conditions (see below). Placing on a scale is another. In Uganda small groups have placed household cards on a rope symbolising climbing out of poverty, with the best condition at one end, and the worst at the other, leading to scores between 0 and 10 (Kagugube *et al.* 2007) (see below).

Analysis by local people can generate numbers in all the above ways. In practice, this is usually with facilitation by one or more outsiders. Those who take part can be individuals but are more usually groups. Local people can also themselves be facilitators, but outsiders' skills have so far usually been needed where participatory activities occur on a scale which requires later aggregation, with or without statistical analysis. In these situations, some degree of standardisation of process is common to assure comparability and enhance the validity of aggregation.

12 I was a participant in an appointments board which considered five candidates for a post. After interviewing them, we reviewed our criteria, drew a matrix, and scored each box with beans out of five. The scores were easy to debate and change. The process was fun and free of the tensions and conflict which are so common. I think it was much more focused, fast and consensual than it would otherwise have been. The candidate appointed went on to an outstanding career.

2 Going to scale with participatory numbers

There is a prehistory of social anthropological approaches and methods which generate numbers (Pelto and Pelto 1978). However, serious innovation in going to scale with such numbers appears to have begun only in the early 1990s. Three parallel and overlapping methodological streams stand out: participatory surveys; aggregation from focus groups; and wealth ranking.

2.1 Participatory surveys

The earliest case of a large-scale survey with participatory visual analysis and no questionnaire may¹³ have been the 1992 use by ActionAid of PRA methods, mainly mapping, in over 130 villages in Nepal (ActionAid-Nepal 1992). This was a survey of utilisation of services and assets. It covered the whole population in the villages and generated 13 tables. These covered, for example, literacy, children going to school, income generating activities, and health activities (Table 2.1) tabulated variously by area and by ethnic group. The population summed to 35,414.

Table 2.1 Household use of health activities

Goan Bikas Samiti	Total households	Drinking water facility	Health care services	Pit latrine	Family planning
Bhotechaur	872	654	785	93	135
Thakani	625	398	273	91	48
Haibung	504	368	109	97	77
Sindhukot	602	331	539	158	74
Bansbari	822	389	NA	185	161
Melamchi	691	472	151	122	80
Ichowk	965	329	389	103	55
Mahankal	860	238	74	89	5
Talamarang	603	419	310	172	34
Total	6,544	3,598	2,630	1,110	689
Percentage	100	55	40.1	17	10.2

Source: ActionAid Nepal (1992: 29).

13 I shall be grateful to anyone who can tell me of any earlier case.

Another remarkable example was a study conducted by SCF (UK) in 20 Districts in three countries – Malawi, Zambia, and Zimbabwe. After pilot testing, it was decided to standardise on 60 rather than 100 for pile sorting. This was then used, together with rankings and other participatory methods for a retrospective study on how individual poor farmers coped with the 1992 drought (Eldridge 1995, 1998 and 2001).

2.2 Aggregation from focus groups

Aggregation of numbers from focus groups appears to have begun, at least in poverty studies, in the mid 1990s.

Participatory Poverty Assessments (PPAs) (Norton *et al.* 2001; Robb 2002) in Kenya and Tanzania led by Deepa Narayan produced statistics by using standardised picture cards in an approach which combined RRA, PRA and SARAR (Srinivasan 1990; Rietbergen-McCracken and Narayan 1996).¹⁴ In the Tanzania PPA, a team of 36 Tanzanian researchers covered 85 villages and interacted with 6,000 men and women, using participatory mapping as an entry activity. Statistical outcomes were derived not least to influence policymakers, and expressed as percentages, for example for the preferred attributes of savings institutions (which came out as interest 27.8 per cent, safety 20.4 per cent, and so on) (Narayan c.1996).

In a Bangladesh PPA (UNDP 1996) led by Dee Jupp and Neela Mukherjee, focus groups of poor urban and rural women and men were convened and facilitated to analyse their priorities for 'doables', practical measures that would make a difference to their lives. These were aggregated by sex and location to produce cumulative prioritised problem indices (cPPIPs) which gave them comparative numerical values. These were then presented in histograms. Among the findings were, for example, that the top priority for rural women was work, and for urban women water (UNDP 1996: 68).

In the later 1990s aggregation from focus groups was applied in remarkable studies of urban violence. Participatory research by Caroline Moser, Cathy McIlwaine and others in Jamaica, Guatemala, and Colombia identified different types of violence, their seriousness, and the importance, positive or negative, of different institutions (Moser and Holland 1997; Moser and McIlwaine 2000a and b; Moser 2003; Moser and McIlwaine 2004). 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 2000b).

Other smaller scale applications were developed in various of the IFPRI-coordinated research on the poverty impacts of the Consultative Group for International Agricultural Research (Adato and Meinzen-Dick 2007). Various participatory techniques were devised to generate numbers. In Western Kenya, for example, 24 focus groups evaluated agroforestry dissemination practices by pile sorting to score with 100 beans or grains of maize, applying this to seven external providers of information, and 10 media used (Adato and Nyasimi 2002).

14 SARAR stands for Self esteem Associative Strength Resourcefulness Action Planning.

In contrast, the study known as *Voices of the Poor* (Narayan *et al.* 2000) is probably the largest to have used aggregation from groups to date. This was undertaken to inform and influence the World Development Report 2000/01 *Attacking Poverty* (World Bank 2000). After field testing various combinations of methods in Bolivia, India, Sri Lanka and Thailand, a Process Guide of partially standardised, partially open-ended, methods was evolved by Meera K. Shah and others (World Bank 1999), teams trained, and focus groups of over 20,000 poor women and men convened and facilitated in over 200 communities in 23 countries. Classification of outcomes and their aggregation generated proportions and percentages for directions of change in violence against women, differentiated by region. These were presented in pie diagrams (Narayan *et al.* 2000: 125). For perceived importance and effectiveness of institutions in poor urban and rural people's lives they were presented in histograms (*ibid.* 201–2).

As is well known, the representativeness of focus groups can be an issue. With groups that convene casually, this can be a problem. How serious this is depends on context and purpose. Some common characteristics in a focus group like gender or age are easy to know and often relatively easy to assure. For social or census mapping of a village on the ground, what is shown may be common knowledge: what matters then may be diversity and breadth of participation to assure coverage and cross-checking. For other topics, purposive selection may be appropriate.¹⁵

2.3 Participatory wealth ranking and wellbeing grouping

An early form of wealth ranking (Grandin 1988) involved separate individuals or groups sorting cards of households into piles according to their wealth. When this was done by several individuals or groups, an averaged score was calculated for each household, leading to a scored rank order by attributed wealth. This method was used initially with pastoralists for whom wealth and livestock were close to synonymous.¹⁶

A pioneering effort in Kenya went to scale using wealth ranking to enable Borana pastoralists to separate out three groups – rich, middle, and poor. 24 rich, 17 middle and 27 poor groups were convened separately and facilitated to play a ranking game for the relative importance of problems. The results were then averaged and revealed sharp differences. As problems, livestock management scored 87 for the rich, for example, but only 7 for the poor (Swift and Umar 1991).

Early in the 1990s wealth was more and more often replaced by wellbeing (RRA Notes 1992), which better expressed the criteria used especially by non-pastoralist people, and grouping replaced ranking. However, the term wealth ranking continued to be used, as it will be here, for what would be more accurately be described as wellbeing grouping. In its most common form this starts with social mapping on the ground to identify households. These are then written on individual cards. Small

15 For further discussion of these issues see Mayoux and Chambers (2005: 282–5).

16 The same word *mali* is used in Swahili by Kenya pastoralists to mean both wealth and live stock.

groups sort the cards into piles according to whatever categories of wellbeing or in most cases of a related concept represented by a local term, they decide upon.

In the early 1990s, ActionAid in Pakistan went to scale, and used wealth ranking for over 12,000 households. Since then other INGOs such as Plan International have used it on a very large scale indeed as a standard practice for programme purposes in many countries, serving as an entry and exploratory activity to identify those who are considered to be worse off in communities.

2.4 Poverty: the challenge of comparisons and commensurability

Comparisons of poverty levels between communities surfaced as a problem in the Kenya PPA in the mid 1990s. There was no equivalent of a poverty line based on a questionnaire survey which notionally at least would have the same cut-off point wherever it was applied. Classical wealth ranking as articulated by Barbara Grandin (1988) produced intra-community scores for each household but these were not valid between communities. With wellbeing grouping, the numbers of groupings (often 3, 4, or 5) were liable to differ, and the cut-off points between the groupings were most unlikely to be identical. But now (2007) ingenious participatory solutions have been found. There may well be others besides those that follow.

2.4.1 Poverty lines from participatory wealth ranking in South Africa

Participatory wealth ranking (Simanowitz and Nkuna 1998; Simanowitz *et al.* 2000) has been evolved and applied to almost 10,000 households to assess the number of poor households and their level of poverty (Hargreaves *et al.* 2007). This combines qualitative and quantitative data to increase comparability across contexts, with local perceptions of poverty used to generate a wealth index of asset indicators. The information generated from a large number of rankings was used to determine indicators that were consistent between rankings. These were then used to classify households into socioeconomic welfare rankings. Because many of the indicators were economic or assets, it was possible to benchmark to national poverty statistics and to assign poverty lines.

2.4.2 Food security in Malawi

Identifying the food insecure with conventional surveys is slow, expensive and inefficient. The Directors- General of IFPRI and ICRISAT wrote in 1997 that 'Most indicators traditionally used to identify food-insecure and undernourished households and individuals are based on the time-consuming process of assessing household consumption (by measuring total expenditures, for example) or the nutritional status of individuals' and pointed to the need of project managers for new more cost-effective indicators, which mixed qualitative and quantitative research had sought to identify (Chung *et al.* 1997). As with the evolution of RRA, inventiveness has been driven by practical need.

In Malawi, the Targeted Inputs Programme sought to provide agricultural inputs to those who were poorer. To answer the question 'Did the intervention succeed in

targeting the poor?’ three categories of households were identified by participatory processes in communities: those who were food secure – having enough to eat throughout the year from harvest to harvest; those who were food insecure – having enough food to last from harvest to Christmas but not between Christmas and the next harvest (in April/May); and those who were extremely food insecure – having a longer period of not having enough to eat. Each household in the villages visited by the study was classified into one of these categories. The study also recorded which households had received the input package or not. The comparison between food security category and receipt or non-receipt of inputs is shown in Table 2.2.

Table 2.2 Correlation between receipt of TIP and food security status

Food security status	TIP recipients	Non-recipients	Total
Food secure	21.2	33.5	28.9
Food insecure	38.5	39.7	39.3
Extremely food insecure	40.3	26.8	31.8
Totals	100.0	100.0	100.0

Source: Levy (2003: 22).

Besides generating these numbers, the study was able to shed light on the criteria used by communities to select beneficiaries, inclusion errors related to village power structures, perceived unfairness, and inter-regional and local variations (Barahona and Levy 2007: 336).

2.4.3 Destitution in Ethiopia

A study of destitution in Wollo in Ethiopia used self-assessment of household livelihood viability (Sharp 2005: 10).¹⁷ Destitution was defined in terms of ability to meet subsistence needs, access to livelihood resources, and dependency. Qualitative village studies contributed to the content and analysis of a questionnaire designed for household members in a group situation. This concluded with discussion of a carefully phrased self-assessment question. Other data from the questionnaire were combined using weights derived from principal components analysis to derive a 15 indicator ‘objective destitution index’. The correlation in identifying destitute households was close between the self-assessment and the objective destitution index.

¹⁷ Sharp cites Bevan and Joireman (1997) for an earlier example, the insertion of a personal wealth-ranking question in a questionnaire survey.

2.4.4 The Participatory Poverty Index in China ¹⁸

In China, a clever participatory system was devised in 2000/01 for commensurable comparisons within and between communities. The Participatory Poverty Index (PPI) relies on self-assessment. After preparatory investigations and iterative pilot testing, a team identified eight common indicators representing people's perceptions of how poverty is manifest, in priority order, in their community. In the methodology, each household ranks its priorities and its degree of deprivation. Discussions lead to a consensus relevant to the community as a whole and weights are assigned to each indicator. To ensure comparability across communities, the weights are summed to unity. A composite Participatory Poverty Index is calculated for each community, allowing a comparison of relative perceived deprivation between communities (Li *et al.* 2003; Remenyi 2007; Li and Remenyi forthcoming 2007). The higher the PPI the greater is the incidence of poverty in the village and the deeper the experience of poverty. The methodology was tested and proved robust. Local poverty alleviation offices in China were quick to see the value of the eight poverty indicators, which were widely used as a basis for village poverty reduction planning. However, the PPI has not been adopted on a similar national scale, reflecting institutional commitments and political implications that would follow from the generation of a 'participatory' map of the incidence of poverty across rural China that would be in open competition with extant income-based measures (Remenyi 2007).

2.4.5 The Stages of Progress Method

The Stages of Progress method evolved by Anirudh Krishna (2004, 2005, 2006) stands out as a remarkable achievement. To develop the method took Krishna six months of field research 'including four months experiencing nothing but failure, before a potentially workable methodology started taking shape' (Krishna 2006: 2). Evolved and invented in Rajasthan, it has now been applied in five contexts – in Gujarat and Andhra Pradesh in India, and in Kenya, Uganda and Peru. Representative groups in communities are asked to define stages of progress that poor households typically follow on their pathways out of poverty. These are defined in terms of the sequence of what they spend on, food always coming first. Participatory classification of households according to the stages they are at, and where they were 25 years earlier, combined with household histories, give insights into why some progress and others fall back. Numbers are generated for those that have risen and fallen, and unlike conventional panel data, the reasons for rising or falling are identified. 'Because Stages is easy to apply, enjoyable in practice, and its logic is intuitively clear, it can help community groups undertake analyses by themselves' (*ibid.*: 9). The findings have policy implications. The most striking has been that in all but one context, poor health and health-related expenses have been the most common reason associated with falling into poverty, having been identified as a factor in from 60 to 88 per cent of cases in the five contexts (Krishna 2006: 16).

18 For reasons of space and balance, the account of the methodology given here is compressed and cryptic. For fuller exposition and explanation the reader is referred to the references.

Inventiveness has been manifest in the evolution of all these methods. Typically, they have not been taken off the shelf but developed iteratively with piloting and trial and error, puzzling with problems of finding out, experimenting with processes, and taking weeks or months to evolve. Because they are new, there is much to be learnt from critical evaluation. At the same time, their lack of any methodological fundamentalism, instead relying on eclectic pluralism and an ingenious use of sequences, suggests a huge potential for future innovation.

2.5 Producing national statistics

The most remarkable breakthrough in recent years has been the use for the first time of participatory (PRA) approaches and methods to produce national statistics (Barahona and Levy 2007; Levy 2007). Much of this has been the work of researchers and consultants at, or associated with, the Statistical Services Centre at Reading University (www.reading.ac.uk/ssc) and their collaborating colleagues in Malawi and Uganda. They have applied statistical principles with participatory (PRA) methods. Following the study of food security in Malawi, described above, two further developments have been with the Malawi National Census and the Uganda National Household Survey.

In Malawi, the national census 1998 gave a total rural population of 8.5 million people, in 1.95 households, while a national programme for supplying starter packs for agriculture was working on a the basis of 2.89 million households. To attempt to resolve this discrepancy, statistical principles and PRA methods were combined. Participatory community censuses were facilitated in 54 villages selected using probability methods. Participatory mapping was used to identify households (Barahona and Levy 2003: 4–9). The findings indicated a rural population of the order of 11.5 million, some 35 per cent higher than the official census figure.

More recently, a further breakthrough has been achieved in Uganda, applying a participatory module to a sub-sample of the Uganda National Household Survey (Kagugube *et al.* 2007). The Ugandan team included Government staff with years of experience of participatory approaches and methods in the Uganda Participatory Poverty Assessment Process (UPPAP). They spent much time and effort devising a ‘Qualitative Module’ known as the Rope Technique. In this module, community participants placed household cards on a rope. The top and bottom of the rope represented extreme conditions for seven dimensions – having assets for production, food security, sending children to school, access to medical services, having enough money, having many dependents with few resources, and powerlessness. The top and bottom extremes were described verbally. The rope was then divided equally into ten, and scores from 1 to 10 allocated. The rope scores for each dimension could then be integrated across sites. Questions have been raised, for example concerning major differences between income findings from the UNHS questionnaire and ‘having enough money’ in the qualitative module. The discrepancies are little short of spectacular and cry out for investigation. This method, and possible future variants of it, open up scope for calibrating and cross-checking national questionnaire surveys, and for time series trend data on dimensions like powerlessness previously considered purely qualitative and not comparable between communities.

In sum, the potential is not just producing national statistics; it is producing national statistics that are more accurate, that illuminate domains hitherto inaccessible, and that measure dimensions that are qualitative. A whole new professional field has been opened up for exploration, innovation and application.

3 Who counts?

3.1 Participatory M and E and empowerment

The processes of participation in these examples have tended to be more extractive than empowering, in the sense of outsiders obtaining information rather than local people gaining and using it. Extractive-empowering is not, however, a simple dichotomy but a continuum with nuances, mixes and sequences. Spread out across the range of this continuum are the processes labelled Participatory Monitoring and Evaluation (PM and E), and only quite rarely treated separately as Participatory Monitoring on its own, or Participatory Evaluation on its own.

Practices of PM and E have proliferated, a thousand flowers in a thousand places, and much has been written about them¹⁹ (e.g. Estrella and Gaventa 1997; Guijt 1998, 2000; MacGillivray *et al.* 1998; Estrella *et al.* 2000;). In PM and E processes, the usual questions about power and ownership are raised:

Whose monitoring and evaluation?

Whose indicators and numbers, for whose purpose?

Analysed and used by whom?

Who learns, and who is empowered?

Who gains?

Numbers could be expected to be a common part of PM and E. A drive for participatory numbers often comes from outside the local context. Even so, participants can still gain: insights and numbers can often be of interest and use to community members. To an extent easily overlooked, people 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. A typical observation has been that, 'People participating in the groups seemed to enjoy the discussions and exercises and most stayed for the entire duration' (Adato and Nyasimi 2002).

In principle, the more participatory a process, the more local people will identify their own indicators and then monitor them. The Nepal Utilisation study (ActionAid 1992) stated that 'the monitoring should be a participatory process which involves the community in deciding information to be collected, in collecting and in

19 For selected abstracts see www.ids.ac.uk/ids/particip.

analysing ... and finally using the information for programme improvements.' The indicators can be numbers that are counted, qualities that are scored, quantities that are measured or estimated, and so on.

However, the literature I have reviewed that is directly on PM and E is striking for how rarely it records cases of local people actually using numbers for monitoring of change over any length of time. This is excepting practices of keeping financial accounts in self-help and savings groups, and other local organisations, all of which entail numerical monitoring but which are not considered part of PM and E. One reason for the few cases may be that some of the literature is describing ideas that seem good but have not been implemented. Another may be that periods of observation that get written up in accessible papers tend to be short. Yet another, and perhaps more common, may be low relevance and utility to the people concerned given the time and cost of collection and assessment. There are anecdotes of local people keeping numerical records for a time simply to please or pacify a visitor or official but stopping as soon as they feel they can.²⁰ Overall, the paucity of examples may reflect rational assessments of the costs and benefits of counting or measuring compared with less formal assessments. Numbers may be sought and needed much more by outside agencies and by professionals with trained mathematical backgrounds than by local people who have many other modes of assessment, monitoring and evaluating. Indeed, the more numbers are stressed by outsiders in PM and E, the less participatory the processes may often become.

The most common cases of PM and E with numbers that I have been able to trace are of four types:

- 1 *retrospective assessments* indicating how present conditions differ from those of the past. These are one-off activities often of high interest to participants. They may be evaluative, but they are not ongoing and so not strictly monitoring. For example, in Somaliland, herders most impressively evaluated wells by scoring them before and after improvement according to their own 45 criteria (Sanaag CBO 1999; Joseph *et al.* 1994).
- 2 *short-term intense monitoring* for a short period of acute relevance, as by a farmer or a farmer field school during a crop season, or by a community during a campaign like community-led total sanitation (see Box 4.1).
- 3 *gathering empowering data* especially statistics that a group or community can use as part of their armoury to gain or improve a service, assert their rights, or obtain a better deal.
- 4 *monitoring natural resource management*, for example fisheries (CBCRM 2003) where the indicators may be catches, sizes of fish and so on. In a river in Laos, the number and size of bubbles were taken as indicators of the number and size of fish stocks (pers. comm. Mark Dubois).

²⁰ Polite and prudent maintenance of records for authority is so widespread that it can be regarded as an embedded feature of the modern human condition.

An increasingly widespread use of numbers in PM and E is with Community-Led Total Sanitation (CLTS) (Kar and Pasteur 2005; Kar 2005). Communities that engage with the process of making themselves totally open-defaecation free often make and display maps showing all households, those that have access to latrines, and those that do not, and use these to monitor their own progress, sometimes with symbols or colours to represent different weeks of completion or gaining access. During CLTS campaigns in some sub-districts of Northwest Bangladesh, these figures were regularly reported upwards from hamlet to ward to union to sub district headquarters, and aggregated for monitoring at those higher levels. In Hatibandha Sub district, figures were reported for the numbers of latrines of three categories so that improving standards could also be monitored.

Three-way tensions can arise between the desire of agencies for numbers, the objectives of empowerment and the time of facilitating staff. One example from India is the ILS (Internal Learning System) developed by Helzi Noponen (Noponen 2007) and with her involvement adopted and adapted by two large NGOs – NESAs (the New Entity for Social Action) and Pradan (Professional Assistance for Development Action) in India, and their partners. Its most striking element is visual diaries which poor people keep and use for their own analysis and for recording change. NESAs with its partners has introduced these diaries into some 2,000 villages in South India: women enter scores from 1 to 5, every six months, for aspects of life like degree of satisfaction with equal treatment of their girl and boy children, physical violence against them, how much their husbands share in domestic tasks, and so on (Nagasundari 2007). Pradan has evolved an application with self-help groups and for livelihood planning (Narendranath 2007). With both NESAs and Pradan, there have been issues of optimising combinations and trade-offs between complexity or simplicity, the time of facilitating staff, standardisation, and the remarkable learning and empowerment that can be achieved.

Similar issues have arisen with another family of PM and E approaches, PALS (Participatory Action Learning System) pioneered and propagated by Linda Mayoux (2004, 2007). This is an eclectic and constantly evolving methodology using a set of diagram tools and participatory processes which enable people, including very poor non-literate women, men and children, to collect and analyse the information which they themselves need on an ongoing basis to improve their lives in ways they decide. Though the diagrams are simple and quickly learned, there are balances to be struck between people's gaining confidence and learning on the one hand, and standardisation and making a difference with higher-level decision-makers on the other.

3.2 Participatory statistics, empowerment and policy influence

The potential of participatory statistics to empower local people and groups is an emergent field. CIRAC, the International Reflect Circle, has included an excellent short guide *Alternative Statistics – how PRA techniques can be used to produce local statistics*, as part of its practical resource materials (*Communication and Power*, Archer, Newman *et al.* 2003). These are designed for use by Reflect facilitators and groups. The authors point out that 'Because many of the graphics [produced by Reflect groups] are about recording local reality they are the perfect starting point

to produce statistics', and cite maps, calendars and matrices as examples. The resulting numbers can be used for policy influence. A group in Mozambique used various graphics to collect a diverse range of statistics, including some concerning schooling. In Bangladesh, a Reflect circle used a matrix to track daily wages for different jobs, and different people (men, women and children). They used this as evidence that the national minimum wage was not being met.

Participatory statistics have also supported decentralised and democratic governance. In the Philippines (Nierras 2002) grassroots 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. Remarkably, they identified priority actions which led in a matter of months to a sharp decrease in mortality. Or again, participatory investigation of land holdings in the Philippines led to revisions of figures which doubled local government takings from the land tax, the principal source of revenue. These compelling examples open one's eyes to what appears to be a widespread potential.

Participatory statistics can be persuasive and more credible than those from questionnaire investigations. But they may be discounted when they challenge official statistics and threaten professional reputations. Malawi has one of the poorest and most vulnerable rural populations in the world, demanding special interventions. The professional and statistically rigorous participatory mixed methods study of carefully selected 54 villages reported by Barahona and Levy (2003) indicated a rural population of 11.5 million, 35 per cent higher than the 1998 census figure of 8.5 million! ²¹ The implications were not trivial. But the study findings

... have not been taken seriously by the NSO [National Statistical Office of Malawi], Malawi government policymakers or donors, who continue to uphold the 1998 census. When questions are raised about official population figures, stakeholders should demand further exploration of the data and, if necessary, commission further ground truth studies. If the 1998 census did seriously underestimate the rural population, as our work suggests, this has important consequences for government and donor-funded interventions as well as official figures such as GDP per capita

(*ibid.*: 8)

And they conclude that 'We should not ask communities (or groups within them) to spend time on research if we do not believe the policymakers will take the findings seriously' (*ibid.*: 43).

These experiences are both sobering and inspiring: sobering in the Malawi case, because even though rigorously professional, the participatory statistics were in some quarters not taken seriously; inspiring in the Philippines because they were accepted as superior and made significant differences. For the future, there is much to be learnt: about why responses such as these can be so different; and about the how, what, when, where and in what form to generate and present participatory

21 Reportedly the undercounts were most marked in those areas supporting opposition parties.

statistics so that they empower poor and local people, credibly present truth to power, and make a real difference for the better.

Enough is already known, though, to move forward. Sarah Levy (2007) has presented 'a vision for the twentyfirst century' with locally owned information systems. She writes of

... the need to rebuild the information systems that exist in developing countries, incorporating new indicators and new methods of data collection and management which better respond to the needs of development in the 21st century. The current system and approaches are based on methods that were seen as modern 60 years ago, but are no longer in tune with our information requirements' (*ibid.*: 145)

She argues that for decentralisation, empowerment at the local level, policy influence, and achievement of the Millennium Development Goals, information should be collected and analysed at the level of a village, a set of villages and their urban and semi-urban equivalents. To inform and influence both local and higher level action the information would include, for example, indicators of poverty and hunger; enrolments in primary and secondary education (by gender); data on child mortality and maternal and other aspects of health. She concludes that locally owned and managed information systems, feeding into higher level statistics

gives us an opportunity to reform out-of-date over-centralized information collection systems. The development challenges of the 21st century – among them meeting the MDGs – require new approaches to the production and ownership of information. If we want to empower poor people to take part in reducing poverty and promoting development, we must end the monopoly of information by central governments. The development of participatory methods capable of producing local as well as national statistics means that the potential now exists, even in remote and marginalized communities, for people to produce their own information. The results have the potential to be more reliable than those produced by outsiders. To governments and donors I would say: this is an opportunity that should not be missed.

(*ibid.*: 149)

4 The best of all worlds?

Apart from vested interests tied to professional conservatism and inertia, the potentials from participatory numbers appear to be win-win, with promise of the best of both worlds, qualitative and quantitative. In assessing potentials, even erring on the side of caution, the power and potential of participatory numbers are still striking. Not only are there dimensions of empowerment, but four other overlapping strengths stand out: validity and reliability; insights into sensitive subjects; unexpected findings with policy implications; and power and learning.

4.1 Validity and reliability

Dimensions of validity and reliability have been repeatedly illustrated and confirmed. Group visual synergy (Chambers 1997: 160) has proved a powerful source of cross-checking, successive approximation, and bringing out additional information and insights. Its trustworthiness and rigour are confirmable by observation of the group process and by the relevance to participants of the analysis which assures their commitment and engagement. The extreme accuracy of most social mapping in a census mode has been repeatedly confirmed (Chambers 1997: 144–7; Barahona and Levy 2003: 6), especially when there is triangulation between groups from the same community. In an Indian village four groups met separately and came up with populations of 239, 239, 242 and 247. When villagers checked, they found that 242 had three cases of double-counting, and 247, made by a small group on the edge of the village, included a family of eight who were in dispute with the rest of the village (pers comm. Jules Pretty). So there was highly credible cross-checked consensus: a population of 239 without the family of eight, or 247 with it.

4.2 Insights into sensitive subjects

Well thought out and facilitated participatory processes have shown a remarkable capacity for opening up and giving numbers and proportions to subjects so sensitive that they are usually hidden. The limitations of verbal responses to sensitive subjects are well known. We now know that, contrary to some professional belief, approaches which involve groups as well as individuals, and elements which are visual and tangible, can encourage and enable people to express and analyse aspects of life and conditions which they most likely would not otherwise reveal. Here are some illustrations:

- In China, the balance of power between male and female in whether to use a condom (Jayakaran 2003: 132) using the ten seed technique. The outcome was 9 male, 1 female.²²
- In Tamil Nadu, the identification and location within a village of abusive and drunken husbands (pers. comm. John Devavaram and Sheelu Francis 1991).
- In Orissa, a participatory study gave the caste-wise breakdown of a number of families with addiction to alcohol and a matrix by caste showing who consumed alcohol, frequency, variety, expenditure, and domestic violence (PRAXIS 2001: 33).
- In Malawi (see above) the major divergences between those meant to receive starter packs and those who did were revealed (Levy 2003).
- In Zambia, an astonishing range of information was brought out about pre-pubertal and adolescent sexual behaviour, including ranking and scoring matrices for girls' typologies of sex partners and preferences (Shah *et al.* 1999:

22 For other applications to sensitive topics with similar methods see Jayakaran (2007).

45–6), and using an anonymous paper slips method, for both girls and boys (in separate groups) the age of first sex and number of sexual partners they had had (*ibid.*: 63–4).

4.3 Unexpected and striking insights for policy

Participatory numbers throw up striking insights with policy implications, and do this in a statistical form (for detailed reports of which the reader is referred to the sources cited). The credibly established 35 per cent undercount in the Malawi rural population census already mentioned (Barahona and Levy 2003) is an instance with huge implications for government policy and even for calculations of per capita GDP. Other illustrations are:

- The SCF study of responses to drought, by putting numbers to them, showed how remittances declined for the poor but were slightly up for the better-off, how the poor spent more on food than the rich, and how income reductions were greater among the poor because they were more dependent on natural resources (Eldridge 1995,1998).
- Moser and McIlwaine's work in nine urban communities in Colombia elicited numerous types of violence, and produced the unexpected finding that 54 per cent of the types of violence identified were economic (related to drugs, insecurity, robbery, gangs etc) as against only 14 per cent political (related to police abuse, war, paramilitaries, assassinations etc) contrary to the common belief that political violence was the bigger problem (Moser and McIlwaine 2004: 62).
- The Bangladesh PPA (UNDP 1996) found that the second and third 'doable' priorities for poor urban women (their first was water) were a private place for washing, and action on dowry.
- The Starter Pack study in Malawi used pairwise ranking across villages to generate scores for 15 indicators of sustainability that farmers themselves had identified during piloting. These placed crop diversification and access to seeds top, and remarkably (since this conflicted with professional views) put agro-forestry and fallow at the bottom, suggesting an overriding short-term priority given to adequate food (Cromwell *et al.* 2001: 6).

4.4 Power, reversals and learning

Power and learning are a bottom line. The better forms of PM and E hold out a promise of win-win solutions which combine local learning and empowerment with the supply of numbers useful to outsiders and their organisations. It need not be only, or even mainly, the outsiders who gain useful knowledge. Chung *et al.* (1997: 60) reported that 'Some villagers were astonished by their own food charts; they had not imagined they ate so many kinds of foods. Some spontaneously asked 'Are we eating OK? What should we eat?'

PRA with good facilitation softens and even reverses power relations. This is illustrated by an afternoon in Eritrea which generated some potent numbers.

chalk and enthusiasm they drew a large map on the mud floor, and then, at our request, redrew it on paper, showing six zones. Discussion turned to crops again. The facilitator asked the farmers to count out a hundred maize seeds and draw a matrix on the only suitable surface, the bottom of an upturned pan. This had agro-ecological zones down the side and main crops across the top. With much debate, and changes in the scores, the farmers placed the seeds in the matrix. They said they were scoring for importance – a composite score for the crop and zone (Table 4.1). This showed tangibly and visually how a farmer needed land in different zones.

Table 4.1 Relative importance of main crops by agro-ecological zone— Adi-ktekla village, Mendefgra, Eritrea

	Maize	Barley	Teff	Wheat	Sorghum	Finger millet	Beans and peas	Total
Gedena	3	3	5					11
Member		15	8	6			6	35
Zagiena		4		4			4	12
Tsebaria					9	5		14
Waleha			7		6		6	19
Huza						4	5	9
Total	3	22	20	10	15	9	21	100

Method: Listing after mapping then scoring with 100 maize grains on a matrix drawn with chalk

Analysts: HabtemariaxxWeldai, Gebru Zerehun, Aberash T/ Maimanot



When they had done this, and the spread of scores across the crops and zones could be seen by everyone, the head of the village turned to the official from the Land Commission and said:

‘Now you can see why your policy won’t work!’

The map and matrix were later debated in policy circles in Asmara.

4.5 Alternatives to questionnaires

The cumulative experience and evidence, some of it presented above, builds a case for much more widespread use of participatory numbers in development practice and research. In many contexts and for many purposes, processes generating participatory numbers appear better than traditional questionnaires. This has been becoming evident since the early 1990s (see e.g. Shah 1993). For entities which are visible, known about and be counted, like people, they can produce highly cross-checked and accurate numbers, as with the Malawi census; they can put numbers on qualitative dimensions; and they can provide 'numerical data on complex issues about which questionnaire surveys are not able to produce reliable statistics, such as community poverty targeting' (Barahona and Levy 2007: 338). Conducted well, they promise win-wins with more valid numbers, better insights, and gains for local people in their own knowledge and understanding.

For special studies, participatory numbers can now be considered such a strong option that they should be considered first. Again and again the verdict of the 1991 Nepal survey conducted through participatory village mapping has been confirmed: 'The participatory method for information collection, compared to the conventional one is proved to be more effective and convenient' (ActionAid-Nepal 1992: 23).

Comparisons of costs and accuracy of questionnaires and participatory numbers have been decisively in favour of the latter (Chambers 1997: 122–5). A reasonable rule of thumb is that conventional questionnaires should be used only if no participatory alternative can be devised, or should be used only in a light and quick manner for confirmation and triangulation with other methods. There is a reversal here of mental set and reflex. When numbers are needed, participatory approaches, methods, and behaviours replace questionnaires as the standard approach that first comes to mind.

The case for continuing long-term time series, like the National Sample Survey in India and some Living Standards Measurement Surveys may appear strong, at least in the short and medium term. Flawed though they may be, they do provide materials for comparisons over time and between contexts. All the same, the recent innovations by professional statisticians using PRA methods to generate national statistics in Malawi (Barahona and Levy 2007), together with the participatory module in the Uganda National Household Survey (Kagugube *et al.* 2007), reinforce the already strong case for exploring and piloting not just complements but alternatives. At the very least, these innovations make further methodological research a priority.

Because this field is so largely unexplored, its potential is difficult to assess. The normal professional reflex from many economists, statisticians and others, will be to reject this suggestion out of hand. But enough has now been learnt, as evidenced above, to make the case for innovation and piloting to learn more about what can be done. The unknown potential may be big. If so, it could be professionally transformative and lead to better understanding of realities, better numbers, and better policies and practices.

There will always remain issues for innovation and research. These include, for different contexts and purposes, updating and analysing evidence and experience,

comparing different participatory and other approaches for their relative costs and relative benefits. But enough has been known for over ten years to justify decisive innovation and change. Many who are mentally and physically cocooned in citadels of professional power may not want to know, but the evidence and the signposts are clear. Much more of the future lies with the inventiveness, relevance and creativity associated with participatory numbers than they may be able or willing to recognise.

5 Methodological challenges

The methodological challenges are, however, not trivial. The pioneers of participatory numbers and statistics have had to show ingenuity, skill, patience and courage in the face of conventional reflexes. Some of the issues concern applying statistical principles.²³ Others entail optimising trade-offs, for example:

- *Standardised, closed and commensurable versus open, diverse and empowering:* trade-offs between the rigidity of preset categories and the diversity of categories likely to result from open-ended participatory processes. David Booth has expressed concern that the exploratory, responsive, and reflexive nature of enquiries will be sacrificed through standardisation to permit aggregation upwards (Booth 2003). The issue is serious and likely to be a perennial. To date, a partial solution has been progressive participatory piloting and evolution towards degrees of standardisation as in the first Malawi starter pack study (Cromwell *et al.* 2001). The more standardised the process, the more extractive and less empowering and accommodating of local priorities and realities it is likely to be. The less standardised it is, the harder the outcomes are to analyse.
- *Scale, quality, time, resources, and ethics:* the issues here are far from simple. Smaller scale, more time, and more resources can allow for higher quality and better ethics but loss of representativeness; and vice versa. And if there are gains to local people through awareness and empowerment, wider scale with lower gains may mean greater gains overall.
- *Quality of facilitation versus speed, scale and cost of implementation.* In these approaches, the quality of facilitation is critical (Nandago 2007). To achieve good facilitation requires time and resources devoted to careful selection of facilitators, their training and then their supervision in the field. This may add to costs and slow implementation and limit its scale, even if the outcomes are still highly cost-effective compared with alternatives. An adequate number and availability of skilled facilitators may be the most serious constraint on the widespread adoption of participatory numbers.

23 For a clear and authoritative statement of the application of statistical principles to these processes see Barahona and Levy (2003: 23–41, and 2007). Much can also be found on the website of the Statistical Services Centre at Reading University in the UK www.reading.ac.uk/ssc

- Ease and spontaneity of convening groups versus representativeness. Where groups are involved, and as is well known with focus groups generally, those who are most easily convened may be unrepresentative or dominated by one or a few people, or by one sort of person (for example, men in a mixed group of men and women). Care in selection, in judging size of group, and observation and facilitation of process can offset these dangers but takes time and effort and can entail a loss of spontaneity.

6 The future

The evidence presented in this paper is only the tip of an iceberg. More and more cases and examples of participatory numbers are coming to light. We have come a long way from the time when rapid and participatory approaches were seen in discord with statistics. The potentials of the NE quadrant – participatory numbers – in Figure 1.1 are gradually being recognised but with nothing like the attention and intensity they deserve. The question now is how with spread to establish good practices, both methodologically and ethically.

Conditions can be compared with the early days of Rapid Rural Appraisal (RRA) in the late 1970s (Khon Kaen 1987), and Participatory Rural Appraisal (PRA) in the late 1980s and early 1990s (Chambers 1997), when it was becoming clear that something was about to happen on a wide scale. Both RRA and PRA challenged and presented alternatives to professionally embedded methodologies. With both there was some excellent and inspiring good practice as they spread. But there are dire warnings. Both RRA and PRA became fashionable labels, demanded by donors and promised by consultants. With rapid spread and heavy demand, many who claimed to be RRA or PRA trainers and practitioners had top-down attitudes and behaviour, and lacked practical experience. Much practice was abusive – imposed, routinised, insensitive, unimaginative, exploitative, and unethical. People were alienated, data were unusable and unused, and the approaches misleadingly discredited.

Three differences from those early experiences with RRA and PRA give grounds for hope.

The first is the serious professional and academic interest in qualitative-quantitative issues and going to scale, including the application of group-visual methods. This is evident in publications such as *Participation and Combined Methods in African Poverty Assessment: Renewing the Agenda* (Booth et al. 1998), publications of the Statistical Services Centre at Reading University, the Cornell March 2001 Qualitative-Quantitative Workshop (Kanbur 2003), and the Swansea July 2002 Conference on Qualitative and Quantitative Methods in Development Research. Since 2002, the International and Rural Development Department and the Statistical Services Centre at the University of Reading have convened workshops for participatory practitioners on 'Dealing with data from participatory studies: bridging the gap between qualitative and quantitative methods', combining statistical professionalism with participatory practice and ethics.

The second difference is that the application of participatory numbers approaches requires more serious preparation than PRA. Almost anyone can do almost

anything participatory and call it PRA. To generate numbers, however, requires more thought, preparation, pilot testing, and discipline. It has been the repeated experience of pioneers like Carlos Barahona, Sarah Levy and their colleagues at Reading, and Anirudh Krishna who after four months of field experimentation was on the verge of despair, that evolving a methodology can take time, patience and creativity. This characteristic should to some degree exercise a built-in discipline.

The third ground for hope is that much has been learnt from the RRA and PRA experiences. We, the collective development professional, have been here before. RRA and more so PRA taught us above all the crucial importance of the personal dimension, often summarised as behaviour and attitudes, to which now can be added mindsets. What we are able to learn, and its quality, depends not just on what methods we use, but on what sort of people we are, how creative and inventive we are, how we relate to others, and how open we are to learning.

This paper has focused on examples, experiences and evidence. These point to potentials. They are many. They are for those in power to be better and more realistically informed and more persuasively influenced. They are for those who are marginalised and misunderstood to express their realities in ways which are convincing: through counting to count more.

For these potentials to be realised, professionals, especially bureaucrats and researchers, have to examine and challenge their conditioning, habits and mindsets. The evidence and argument in this paper support rethinking that will often lead to the adoption of participatory processes in place of others of current convention, especially questionnaires. The implications are radical: for university and college curricula, for textbooks, for teachers, for statistical organisations, for research institutes, for professional training, and for development professionals generally. The challenge is greatest in those organisations – universities, funding agencies, and governments – trapped by inertia, repetition, and tradition, and where power lies with senior people who are out of touch and out of date. The progress of the quiet revolution to date has been scattered and sporadic, at times evanescent. Momentum is building here and there but in eddies on the fringe, not yet in mainstreams of professional practice. Why do so few recognise and enter this new world, or make space for others to do so? Will future generations of development professionals look back and wonder why we were so slow to see what had opened up, and to change?

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