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Participatory quantification in the water and sanitation sector

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Introduction

PLA approaches can enable local people, rural or urban, to undertake their own appraisal, analysis, action, monitoring, and evaluation of water and sanitation services. Additionally, it can empower women, poor people, and disadvantaged people, giving them more control over their lives (PRAXIS, 1997). However, participatory methods can take much time and often generate qualitative information that is difficult to compare and analyse.

For this reason, the Water and Sanitation Program (WSP) of the World Bank and the IRC International Water and Sanitation Centre carried out a global study to design and test a new methodology, the Methodology for Participatory Assessment (MPA). This builds on the advantages of PLA approaches but also allows the results to be quantified, compared, and statistically analysed. Table 1 compares conventional PLA approaches and the MPA.

This article outlines the MPA, its potential usefulness for both community members and organisations providing water services, and some of the concerns and problems associated with its use.

Table 1: Differences between PLA and MPA

PLA	MPA
• Case-specific	• Same set of factors
• May be totally varied	• Comparable data
• Aggregation in mind	• Aggregation in practice
• Duration from short to long	• Duration more or less fixed
• Often qualitative	• Qualitative made quantitative
• No statistical analysis	• Statistical analysis possible

The MPA

The objectives of the WSP and IRC global study were to:

- test whether communities with more participatory, demand-responsive, and gender- and poverty-sensitive projects also have better sustained and used water services;
- develop a methodology, the MPA, that generates quantitative data on qualitative issues for use at both community and higher levels.

For both objectives, the team developed an analytical framework to measure the link between sustainability and:

- the level of democratic and demand-responsive planning;
- the level of equitable division of burdens and benefits between women and men;
- the level of autonomy, equity, and quality of local service management;
- the level of institutional support for community participation and management, and gender and social equity

• the level of policy support.

A set of indicators was identified to assess sustainability, together with a sequence of participatory tools to assess the indicators, and a scoring system to quantify data from the participatory assessments. Participants from all three levels – community, agency, and policy – took part in the assessment.

The use of participatory tools

At community level, separate groups of women and men from better- and worse-off parts of the community assessed the quality of the systems, their functioning, the existing management structures, and hygienic and environmental use. The groups also assessed process indicators such as the level of demand responsiveness and the gender and poverty sensitivity of the planning and implementation processes and the operation and maintenance of the systems. Tools used during the assessment were welfare classification, social mapping, transect walk, review of the existing management structures, pocket voting and matrix voting, rope voting, benefit-cost analysis, and card sorting. The assessment took up to five days.

At agency level, both agency staff and community representatives participated in the assessment. Using various participatory tools, they assessed:

- the enabling organisational system for approaches that are participatory, demand, gender and poverty sensitive; and
- the enabling organisational culture for the implementation of these approaches .

At policy level, the methodology relies mainly on open interview and review of policy documents. The interviews helped determine the extent to which programme policies define sustainability and equity as their goals, and to which strategies are already operational and can be further developed in support of these goals.

Quantification of PLA outcomes

To quantify the results, community members used the outcomes from the respective PLA methods to rank their community on scales of 'mini-scenarios'. This made it possible for community members to transfer the qualitative outcomes of their analysis into statistics. It should be noted that scales cannot be developed by the community members themselves. To be valid and comparable across communities, scales are developed based on a set of theories related to development, sustainability, gender, poverty, and equity. Before their use, they should be validated through statistical analysis.

Social mapping is an important part of the MPA Credit:Nepal Water for Health (NEWAH)

Table 2: Scoring table – payment systems for running the water supply

	Payment system for running the water supply	Score
Scale	Nobody pays	0
	User households pay, but everyone pays the same, irrespective of the actual running costs and household benefits (e.g.consumption,distance)	1
	User households pay, and everyone pays the same, but based on the costs of the service	2
	User households pay according to benefits (e.g. consumption, distance) and running costs	3
	User households pay according to benefits (e.g. consumption, distance) and running costs, but adjustments are made based on payment capacity	4

An example is the equity of payments systems for water supply or sanitation. Using the outcomes of the welfare ranking, the social map (including information on access to the improved water service), and analysis of the use of water, the participants scored their community on a scale of 0 to 4 (see Table 2).

Often, it emerged that payments or subsidies are flat despite substantial differences in welfare, access, and use of the water. However, there may be more equitable arrangements such as payment according to benefits and running costs, or payment according to consumption.

The scales helped community members visualise where they are and where they might want to go. Programme staff and managers could also see which type of financing systems the various communities had planned or used. On the basis of this, they could draw conclusions on adequacy and equity, and determine what this meant for programme

The MPA emphasises the importance of including women's perspectives as well as men's
Credit: Corine Otte

support. In the same way, quantitative data on other qualitative aspects, such as existing functioning of management structures and the level of gender and equity in these structures, can be produced through the use of scales.

Gender and poverty in process and data

The MPA mainstreams gender and poverty approaches in process and data. Poor men and women cannot easily attend meetings for practical reasons such as workload and lack of transport. Cultural and socio psychological factors also play a role. Without good moderation, the better-off and the men will take the lead. For this reason, the MPA includes training for facilitators in gender and social inequalities, and how to handle these in practice. Gender and social equity are also part of the scales. Situations with greater gender and/or social equality receive a higher score than situations that are less so.

Lessons learned so far

In the global study, the MPA was tested with data from 88 communities in 18 countries. In Flores, Indonesia the MPA has been retested in 63 communities. In both studies the MPA was used to examine the linkage between demand, poverty- and gender-sensitive approaches, and sustainability (see van Wijk, 2001; Gross et al., 2001). The main lessons learned can be summarised as follows:

- **Decision making**: The number and democratic nature of local planning decisions are important ingredients for sustained services. Participation of men and women community members (rather than just agencies, local leaders, or male community members) in planning decisions and the number of decisions taken are significantly related to the performance of these water services.
- **Quality of management**: An important impact on the sustainability and effective use of the services is the presence of locally developed rules and functioning management structures that are accountable and transparent, and recognised by authorities.
- **Capacity building**: The findings of both studies confirmed that capable management organisations, with representatives of women and the poor, are essential for community-managed water services. This is good reason to pay sufficient attention to capacity building of poor and rich, and women and men in community management.
- **Gender**: Women's more equal representation in community organisations that manage the water services and their perceived influence (indicating that representation is not tokenism) are encouraging.
- **Poverty aspects**: Key concerns related to poverty are the composition of water management committees, the opportunities to use domestic water productively within households, and the adjustment of tariffs to differential use, benefits, and capacity to pay.

The potential of the MPA

Since its design and testing, the MPA has mainly been used for external evaluation. However, experiences have proved that the methodology can also be used to empower local people and agencies to make community-managed water and sanitation services more sustainable and equitable. The use of the MPA as a management tool for monitoring and improving existing services and planning new and expanded services is therefore to be preferred over its use for final evaluations (van Wijk, 2001).

Within the context of the decentralisation of water supply and sanitation to local government level, district authorities will have an increasingly important task. They will

Equal representation and participation by women contributes to the success of community-managed water services Credit: Corine Otte

need to maintain an overview of coverage, sustainability, and use in the projects, programmes, and services in their areas. They will need data to plan their own support and monitor the impacts of interventions. However, higher level authorities and donors also want data, often on different aspects and in different forms.

The MPA combines the collection of planning and management data with gender and poverty sensitivity in its indicators and processes. The data collected with the MPA gives district level staff a simple, yet comparable and gender-and poverty-sensitive database on how well-sustained and used completed systems are and what planning and training processes go on in implementation projects. They can use the database, which consists of simple spreadsheets, for tailor-made upward reporting as well as support planning to communities.

The MPA can also help local communities plan and manage their local services. It not only allows them to plan and manage their systems in a participatory way, but also generates data, which are accessible and valuable for their situation analysis and problem solving. Using the same set of data as the district authorities, community members and members of local water and sanitation committees can analyse processes and results, and plan their own improvements, as well as negotiate support on aspects beyond their capabilities.

Based on the potential of the MPA to serve as a methodology, which would be beneficial for both district staff as well as community members, the focus is now on adjusting the indicators, tools, and scoring for sanitation, hygiene, and watershed management. Pilot projects are being developed to test and investigate the strengths and weaknesses of using MPA data in combination with computer-based tools such as GIS and MIS at district level to monitor and improve coverage, access, and sustainability of water services. The challenge lies in limiting the data collection to the key indicators and establishing and maintaining gender- and poverty-sensitive processes, rather than going for more data and doing away with the qualitative and process characteristics.

Box 1: An experience with the MPA

Nepal Water for Health (NEWAH), an NGO in Nepal, decided in 2002 to use the MPA to evaluate its Gender and Poverty approach (GAP), which was piloted in five projects. NEWAH chose the MPA because it assessed the sustainability of services, used participatory methods, had a gender and poverty focus, and allowed quantitative aggregation of qualitative data. After a two-week training and field test, staff felt that the assessment provided valuable information for planning corrective action.However, they also found it to be time consuming for them and for the communities, and it created high expectations. The staff felt that the MPA had to be simplified and streamlined for ease of application in the field, analysis of data, and interpretation of results. As a result, NEWAH decided to reduce the duration to two to three days, and revise and condense the MPA which will allow NEWAH to assess also specific GAP interventions, processes, and impacts. NEWAH plans to use the assessment in its project cycle, i.e. during the baseline, monitoring and evaluation, and for facilitating corrective action with communities and supporting rehabilitation where necessary in the long term.
Source: Paudyal,L.,Moffat,M. & James, V. (2002)

Good facilitation is vital if good quality information is to be generated
Credit: Nepal Water for Health (NEWAH)

Concerns and problems associated with the use of the MPA

There are a number of key problems and concerns associated the MPA[1]:

- **Length of the MPA**. In the global study, this was five to six days, which is a big input from communities. However, if the MPA is used in project implementation it can be adapted and spread over the total project implementation and thus be less of a burden for both the community and field workers.
- **Poor implementation due to lack of understanding**. The methodology is complex and not easy to adjust to contexts outside the water and sanitation sector. The lack of insight and or understanding of the methodology among practitioners and/or lack of willingness to adhere to a certain set of principles when developing new scales increases the chances of poor replication.
- **Poor implementation due to lack of skills**. Good facilitation skills are needed to avoid the better-off and men taking the lead and biasing the outcomes. The MPA also requires computer and analytical skills that may not always be present in the organisation, which will hamper full and correct use of the data.
- **Deliberate generation of invalid information**. The validity of the data depends heavily on the quality of the underlying work, but can also be influenced deliberately, especially if community members are not allowed to score themselves and where there is a lack of peer review. Reasons could be the pressure to give a rosier presentation than reality, but also community members can generate invalid data, either to get additional funds and projects for their community or to cover social inequalities and problems.
- **Deliberate misuse of the information**. A problem with quantification is that statistics look truer, but are they valid? As Ronnie Kasrils, Minister of Water Affairs and Forestry, South Africa stated, 'There are lies, damn lies and statistics, and there are people who deliberately lie with statistics…'. The possible misuse of information is especially a concern at national and district levels. It seems likely that power over use of the information is with the person who controls the database and generates figures from the data. The data can be (mis)used to cover the failures of projects rather than to improve sustainability and access to water for the poor. Furthermore, lack of availability of both qualitative and quantitative information can lead to wrong interpretations and explanations of the collected information.

A bit of both or the best of both?

Ideally, the MPA takes the best of qualitative and quantitative methods and provides benefits for all, including the most disadvantaged groups in local communities. Although first results are positive, there is a need for additional experiences to decide whether the combination will be as strong as it promises.

[1] This section is partly based on input from participants at a one-day seminar at IIED in London, UK on 16 June 2003, which discussed quantification in PLA (parti numbers), scaling up, and quality issues.

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REFERENCES
Cornwall, A., Musyoki, S. & Pratt, P. (2001). 'In search of a new impetus: practitioners' reflections on PRA and participation in Kenya'. *IDS Working Paper* 131. Brighton: Institute of Development Studies, University of Sussex.
Paudyal, L., Moffat, M. and James, V. (2002) 'Linking demand, gender and poverty for sustainability'. 28th WEDC Conference, Kolkata, India, 2002.
PRAXIS (1997). *PRA Reflections from the Field and Practitioners*. Patna, India: PRAXIS – Institute for Participatory Practices.
van Wijk-Sijbesma, C. (2001) *The best of two worlds? Methodology for participatory assessment of community water services*. Technical paper series no. 38 Delft: IRC International Water and Sanitation Centre and Washington DC: World Bank Water and Sanitation Program.
Gross, B., van Wijk, C. & Mukherjee, N. (2001) *Linking sustainability with demand, gender and poverty: a study in community-managed water supply projects in 15 countries.* Washington DC: World Bank Water and Sanitation Program. Available at: http://www.worldbank.org/gender/resources/briefing/watersanitation.pdf.