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## Rural water with community involvement

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## Rural water with community involvement

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THE ASIAN DEVELOPMENT Bank assisted the Third Water Supply & Sanitation Sector Project being implemented in the six districts of Sri Lanka, through community participation by the National Water Supply & Drainage Board.

Monaragala is one of the selected districts under this project and this paper describes the methodology adopted in rural water supply through community participation, the cost sharing model used, experience gathered & lessons learnt, while implementing the first phase of the project in Monaragala district.

The overall project strategies are governed by demand responsiveness & people centered approaches and the important steps of implementation process are:

- Social mobilization & formation of Community Based Organization ( CBO ) in each village cluster.
- Identifying real water needs/demands & preparation of a water supply proposal jointly with user communities, applying appropriate technologies.
- Final concurrence on sub project proposals & confirmation on an agreed community contribution.
- Participatory approaches on sub project implementation, quality control & monitoring.

- Agreement on operation & maintenance through appropriate models.

A team of professionals, which included engineers, hydro geologists, accountants, community development experts etc were actively involved in the implementation work as facilitators. Overall, work was monitored by the Project Management unit (PMU), and Project Implementation Unit (PIU) was set up in each district. Under the PIU, Divisional Implementation Units (DIU) were established for each local administrative area. In addition the project was implemented with the participation of local administrative institutions in the relevant area and selected non governmental organizations. Overall implementation structure is illustrated in Figure 1.

While project staff were fulfilling the facilitator role, partner organizations ( PO's ) were the intermediaries between project staff & CBO's. They are working with the community in the field itself. Non governmental organizations, who had reasonable experience in similar community projects, had the opportunity to work as partner organizations. They were involved in activities such as arranging an awareness programme for the community (in

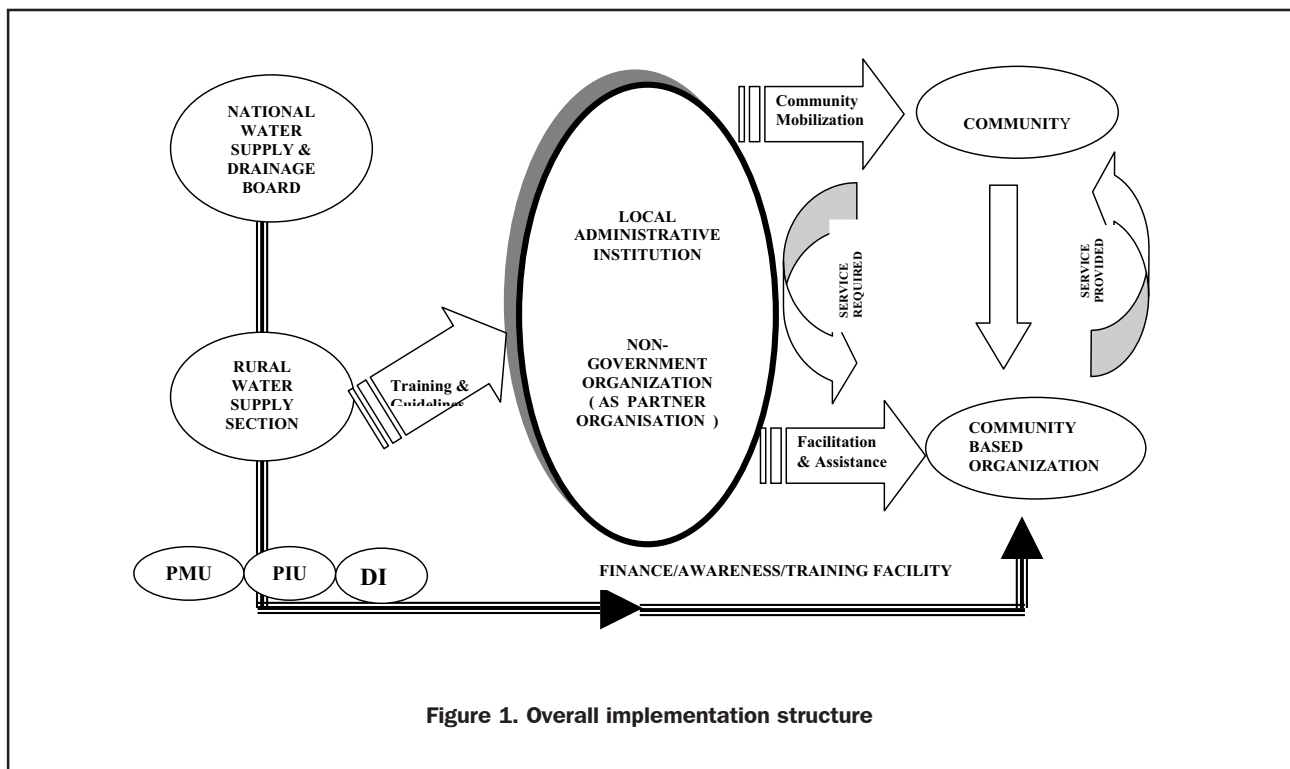


Figure 1. Overall implementation structure

water supply, sanitation, hygiene & environment education), helping to form CBO's, collecting data on existing water & sanitation facilities, helping the community to raise funds, assisting them to prepare project proposals and helping them in project implementation & quality control etc.

Special training programmes were arranged for PO staff, on a TOT ( Training of Trainers ) basis to achieve better outputs. These training programmes were conducted by experts from PMU & PIU in each step of the project activity. Necessary guidelines, manuals and methodology in the technical & community development field were provided to PO staff, running parallel with project activities.

### Cost sharing model

Use of a cost sharing model is an important feature of this project. This has been introduced to get the community more realistically involved. When sharing part of the cost they feel ownership of the scheme. Therefore there is a high probability for successful completion of the project and sustainability is also ensured. Detailed analysis of data from similar past projects has been carried out, ( these were implemented by the National Water Supply & Drainage Board and other institutions as pilot projects ) in order to design a cost sharing model for different water supply options. They are tabulated below.

### Methodology and selection of appropriate water supply option

Four Local Administrative Areas have been selected for phase I of the project. A number of village clusters were selected in each area and appropriate water supply options were proposed by the community itself with community agreement to a 20% financial contribution. Then the sustainability of the proposal was analysed, with an

appropriate operation & maintenance model. The total project cycle was divided into several phases as explained below and the project staff (a team of technical & community development experts) were involved in the complete process with the active participation of community.

1. Social Mobilization phase : The following processes were completed in this phase.
  - Establishment of the village coordination committee & the selection of village level animators.
  - Formation of an active group & the establishment of a community based organization
  - Organization of the village participatory survey, the collection of self assessment information & a situation analysis report
  - Identification of reliable water sources & preparation of a work plan.

During the above processes careful attention was given to data collection e.g. village maps, population coverage, rainfall pattern, farming information (where available), existing surface water sources, water quality & the yield of existing (deep & shallow) wells. In addition to this, information was given to the community in the catchment development about water pollution & reduction issues, sanitation and hygiene & environmental education.

2. Participatory planning & design phase :
  - Selection of reliable water sources & participatory planning of alternative options for each village cluster.
  - Preparation of tentative estimates for each option including probable O&M costs.
  - Selection of the most suitable option considering technical, financial and O&M viability issues with the concurrence of the community for a 20% ( cash & kind ) contribution .

**Table 1.** Cost sharing model proposed by the project for different water supply technologies

Water supply technology	Total cost per household US \$	Project contribution per house hold US \$	Community contribution per house hold US \$	Project contribution as a percentage of total cost	Community contribution as a percentage of total cost
1 Pipe-borne water	145	116	29	80 %	20 %
a) Gravity	208	166.4	41.6	80 %	20 %
b) Pumping					
2 Shallow well	57	45.6	11.4	80 %	20 %
a) Common	204	102	102	50 %	50 %
b) Individual					
3 Deepbore hole well	133.5	106.8	26.7	80 %	20 %
4 Rainwater harvesting	167	133.6	33.4	80 %	20 %

3. Collection of community contributions & signing of MOU ( Memorandum of Understanding) with the CBO to commence construction work once the community contribution is collected.
4. Construction & supervision phase: Construction work was carried out through community participation. All technical support was given by the project staff. While submitting the project proposals decisions were taken by the community with the help of the project staff to identify which part of the work, was to be carried out to cover the community contribution (cash & kind ).
5. Operation & Maintenance phase: This phase consists of the following processes:
  - Training of CBO personnel in plumbing, pump operation & small scale water treatment plant maintenance.
  - Setting up of technical support units in each local administrative area to support the CBO's whenever necessary. These units will function continuously with the help of Local Administrative Authority in order to ensure the sustainability of the water schemes.

The outcome of the participatory planning process is that a fruitful and different type of water supply options were selected by community for each village cluster, depending on the reliability of source and their affordability. Table 02 gives the selected water supply options in the first phase of the project.

### Conclusion

Different options such as pipe-borne water , shallow well, deep well & rain water harvesting were selected by different

communities depending on the availability of source and their affordability. Project contribution is limited for each option, and a minimum of 20 % is borne by the community itself. Sometimes the project cost exceeds the limited amount in the proposed cost sharing model. On such occasions the balance is also borne by the community in addition to the 20 % community contribution. Table 02 clearly shows such occasions. This is due to scarcity of water in the area and the community understands the importance of a safe & reliable water supply. However most of the community's first choice is to have pipe-borne water if reliable sources are available.

While estimating the total cost of the project, unskilled labour component of each & every item was separated and cost of these were calculated depending on the work norms & day work rates. These works were carried out by the community itself, for instance excavation, backfilling of pipe trenches & well pits and helping to masonry, concreting works etc. Then the cash contribution was decided by deducting the kind contribution amount from the total contribution. Some of the poor community had difficulties in contributing the cash at once, in such instances Rural Banks and Community Development Foundations helped the community by providing concessionary payment loan schemes.

The total population of project area selected in first phase was 77,600 . From these only 7 % had existing water supply facilities, a further 81.5 % of the population has been covered by the project. While implementing the project our target was to cover a minimum of 75 % of the total population. However, we were able to cover more due to active participation of the community and the excellent contribution of the project staff.

Appropriate low cost water treatment techniques were adopted depending on the water quality. High iron content & fluoride problems were found in some of the ground water sources and treatment techniques were adopted

**Table 2.** Selected technology of water supply (options)in the first phase of the project.

Selected technology	Number of schemes	Water served population	Percentage coverage in project area	Average project contribution per household US \$	Community contribution per household		Community contribution in percentage of total cost
					Cash US \$	Kind US \$	
1. Pipe-borne water							
a) Gravity	06	4295	5.5 %	115	7 to 18	40 to 50	27 to 35 %
b) Pumping	22	18650	24.0 %	166	10 to20	30 to 70	20 to 32 %
2. Shallow Well							
a) common	752	14935	19.0 %	45	5 to20	33 to 55	35 to 55 %
b) individual	3472	17360	22.0 %	102	50 to 60	40 to 83	50 to 56 %
3.Deep borehole Well	154	4020	5.0 %	106.8	6.7	20	20 %
4.Rainwater harvesting	954	4770	6.0 %	133.6	Nil	33.4	20 %

accordingly. When introducing the treatment techniques the technical experts paid careful attention to minimizing the costs by introducing ferro cement structures for tanks and up flow roughing filters etc.

The project is implemented with a demand responsive approach. From the mobilization phase opportunities were given to women participants to make decisions about project activities. Their participation in decision making is important, as they are the providers, users and managers of water at household level. So the project staff showed respect for the knowledge of women on water sources particularly in quality, quantity and reliability. During the ad-hoc discussions with women & discussions with women's societies (where they already exist), the need for female representation at CBO level was highlighted. This effort ensured a reasonable percentage of women participants were involved in project activities. This is also one reason for the successful completion of the project.

Advantages of community involvement in rural water supply projects are as follows:

- Community has the freedom to choose the sustainable option depending on their affordability & willingness to co-operate in O&M procedure. They understood the complete project cycle including the knowledge of future benefits, O&M costs and the sustainability of the selected option. So they are the key players in deciding the most suitable option by considering above factors.
  - Involvement of the community in technical work such as pipe laying, construction and the O&M activities of the water schemes as well as financial management & auditing work.
  - Improvements in appropriate & indigenous low cost water treatment techniques.
  - Involvement of the community in household water treatment techniques such as fluoride, iron removal filters etc.
  - Involvement of the community in water resource pollution control and catchment protection activities. As they are the direct beneficiaries from this project, they know the importance of above activities to ensure the sustainability of the water schemes.
  - Sustainability is ensured due to community involvement, maintenance by them & community development through team work.
  - Knowledge of new techniques such as rain water harvesting and further improvement of micro irrigation systems and provision of employment for CBO personnel in O&M activity.
- Some of the CBO's did not perform well, this was reflected in their progress continuously throughout the project cycle. This was due to the inactivity of the core members of the CBO. So this has to be addressed by the community, when selecting the core members of CBO's in the 2nd phase.
  - Though financial management training were given to CBO's, it has not been followed properly. Therefore it is suggested that a community auditing system is developed with the help of the local administrative unit in the area. Initial frameworks are completed now and will be developed during the 2nd phase.
  - Effective participation of the local administrative staff is essential, however it is not so in some areas. Hence more attention should be given to this issue. Local or national level policy decisions should be taken to get this kind of involvement in RWS activities. Initial frameworks are continuing and will be implemented prior to the 2nd phase.
  - Local NGO's (working as PO's) who are handling small scale community work at present are performing better than the national level NGO's. The reason for this is national level NGO's are handling a number of community projects at the same time in different fields. Therefore more opportunities will be given to local NGO's in the 2nd phase who performed well in the 1st phase.
  - Communities prefer field training & site visits (to similar sites which have been successfully completed as pilot projects earlier) rather than in-house training, so more attention will be given to this in the 2nd phase.
  - Water rights & land issues are the major problems, which need to be finalized prior to beginning the construction work. Local & indigenous technology, if any, which is already being used by the community should be adopted wherever possible.

Finally to conclude, in the field of demand responsive rural water supply, similar methodology could be followed in developing countries. Though the process shows the time taken by community mobilization and a participatory approach, the results are fruitful if it is implemented with the proper guidance to community. An added benefit is that this approach ensures sustainability, and continuous functioning of the technical support units in each administrative areas.

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Though the project is successfully implemented, there are some key learning points where more attention is needed during the 2nd phase of the project.