

Ministry of Urban Development
Construction and Public Utilities,
Sri Lanka

National Water Supply & Drainage Board
Third Water Supply and Sanitation
(Sector)
Project, ADB Loan No. 1575 SRI (SF)

Guidelines for Cost Sharing, Rural Water Supply Sub- Projects

Final

October 2000

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G/GE/06/E - Final, Ver. 1

PMU

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Guidelines for Cost Sharing, Rural Water Supply Sub-Projects

Final Report

October 2000

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1 Background

The first attempt to establish a concept of cost sharing in community based water supply and sanitation programmes in Sri Lanka was carried out by the Sarvodaya Movement with the collaboration of Helvetas. There are more than 100 gravity water supply schemes constructed in various parts of the country with community participation. But, communities did not convincingly accept the attempt.

In the early 80s, Matale and Polonnaruwa district water supply and sanitation projects funded by DANIDA and, Kandy district water supply and sanitation project funded by FINIDA did not obtain community contribution towards capital cost. This was only reconsidered during the latter part of these projects and the beneficiaries introduced cost sharing by providing free labour on construction work.

The implementation strategy adopted by CWSSP in 1992 was considered the turning point in cost sharing where it was made mandatory that 20% of the cost of sub projects to be borne by the beneficiaries, either by labour or cash or by both labour and cash.

Sharing the cost of projects by the beneficiaries has now become a major requirement for funding by the funding agencies. The Draft National Rural Water Supply Policy has proposed a minimum beneficiary contribution at 20% as the capital cost of sub projects (village schemes / small towns).

This paper discusses a possible model that could be applied for cost sharing in the rural water supply programme to be implemented under this project.

2 Objectives

It has been proved that even though a certain sense of ownership is possible to create through community mobilisation, that alone is inadequate for the long-term sustainability of rural water supply and sanitation projects. Therefore different concepts and models to enhance ownership are introduced. The model is presented considering capital cost sharing as a main feature of the document.

The objectives of introduction of capital cost sharing are;

- to instigate a sense of ownership through capital cost sharing and cash contributions.
- to increase motivation of the beneficiaries to take up management, operation and maintenance facilities.
- to motivate beneficiary communities to assume ownership of facilities once legal aspects have been clarified.

3 Key issues in capital cost sharing

The many socio-economic issues worth drawing attention to, in attempts to share the cost of water and sanitation programmes, associated with cost sharing are:

- at present, widely accepted national community cost contribution in water supply and sanitation projects, considered at a minimum of 20% of the total construction cost. This minimum community contribution should be adhered to in each sub project.
- the project defines cost sharing based on type of facilities, i.e. the technology and service level. Cost and proportion of cost sharing varies from e.g. wells, gravity and pumps etc. Similarly, the cost of the same technology will vary from location to location depending on dry and wet zone areas.
- in a village scheme, if there are disadvantaged unable to take part in such projects, the community development process and community participatory planning process should be in a position to encourage others to assist the disadvantaged with required contributions.
- When project funding is limited, beneficiaries need to bear the required cost over and above the project contribution.
- If there are outside donations/contributions made towards a sub project, this amount should be deducted from the total sub project cost and the community contribution principle will be adhered.

The following parameters are considered in deciding the proportion of the cost to be borne by project beneficiaries.

- social dimensions of project beneficiaries.
- affordability and willingness to pay for improved facilities.
- need for water supply and sanitation facilities
- living conditions of beneficiaries.
- access to, quality and availability of water sources.

4 Levels of service considered for project funding

The basis for cost sharing and the levels of service to be provided by the project are interconnected.

There is no particular minimum level of service decided for implementation under project funding. But the project provides funds to construct facilities based on adequate service level of each technology.

"Adequate minimum service level" does not mean a higher service level. Beneficiaries have the option of selecting the highest possible level of service provided that they are willing to provide funds required over and above the quantum of project funding.

5 Technological Options considered for funding

In an attempt to share the capital cost of a community project, different techniques could be used. Different social strata identified on the basis of income, affordability, need, willingness etc., will undoubtedly form the most realistic basis for cost sharing. But when considered the complexity and practical difficulties in using these criteria, "option used" will be a more workable basis for capital cost sharing.

Project costing will be estimated for the following options in order to determine the size of the project contribution. This does not mean that the facilities should only be designed with stipulated service levels. It only means that the project funding is determined on this basis and any higher level of service can be designed provided the beneficiaries are prepared to bear the additional cost involved.

In a village water supply scheme, responsibility as to the selection of the most suited technical option lies with the technical team. Cost effectiveness, water quality, availability, technical requirements, social dimensions etc., should well comply with prior to taking such decisions. When options are decided, there should not be any room for selection of unsuitable options. Project funding is decided on the basis that the selected technical options are the most suitable and appropriate.

5.1 Piped water supply through Gravity

For gravity water supply schemes, project funding is restricted only to the cost of main distribution network excluding the cost of connections. Connection cost from the main line to the yard or to the house will have to be borne by the individual beneficiaries. When transmission and service mains are designed, it is expected that the required capacity be considered including future demand.

5.2 Piped water supply through pumping

Similar to gravity water supply schemes, project funding for pumping water supply is restricted to main distribution network and the transmission mains only. Cost of connections to the yard or house should be excluded from the cost estimates. When cost estimates are made, required capacity based on future demands should be taken care of.

5.3 Hand Dug Wells - Individual

Hand dug wells within private premises are considered a technical option for partial project funding. Standard well with a reasonable depth depending on the terrain will cost differently from location to location. Prior to deciding a well there are a number of conditions such as availability and quality of water, unavailability of other cost effective options etc. should be looked in to.

5.4 Hand dug wells - Common

Common wells (hand dug) are also considered as a technical option eligible for project funding. This is defined as a common facility with minimum of 5 households to share within a maximum radius of 250 m.

5.5 Sealed Hand Dug wells fitted with locally made hand pump - Individual

Hand dug well, with a smaller diameter than the normal well, sealed and fitted with a locally made hand pump is seen in some areas where the water table is not so high. These wells are fully covered. Therefore, possibility of pollution from outside objects is minimal. These are also seen in areas, which go under floods very often. There is an added advantage in having water pumped in to the house under this option.

5.6 Sealed Hand Dug wells fitted with locally made hand pumps - Common

Similar facility described under 5.5 above with provisions for fixing a minimum of five locally made hand pumps for the use of five or more households as a common facility. Benefit of sharing the cost of a well among five or more families is an advantage while having individual pumps fitted to the same well to provide water to the individual premises. Therefore, this is considered a higher service level than that of a common dug well.

5.7 Tube wells – (shallow) Individual

Shallow tube wells are commonly seen in areas where water table is high. PVC down pipe is inserted to the ground through a manual operation and fitted with a locally made hand pump to suck ground water. This is a cost-effective mode using locally available technology. Water can be drawn in to the premises with less effort. This option should be encouraged only if the water quality is acceptable.

5.8 Tube wells – (deep) Common

Tube wells are considered an option for project funding. Minimum of 15 families should share the facility within a radius of max. 250 meters

5.9 Rainwater harvesting

Rainwater harvesting is also considered an option for project funding. Project funding is limited to reasonable upgrading of roof and gutters and construction of storage tanks. The Project attempts to promote this technology in the dry zones.

5.10 Rehabilitation of existing facilities

It is also proposed to expand the horizon for project funding to cover rehabilitation of existing facilities. Mostly the dug wells and tube wells are either abandoned or used with high potential for pollution.

- **Hand dug wells - Individual**

Deepening with or without blasting, half or fully lining etc will be accepted under rehabilitation of private hand dug wells

- **Hand dug wells– Common**

Similar to private hand dug wells, deepening, lining etc will be considered under rehabilitation of common wells.

- **Tube wells – (Deep) Common**

Very often, tube wells are seen abandoned for want of repairs. Therefore project funding is extended for rehabilitation of the same by flushing, replacement of pump or deepening.

Table 5.1 Technological Options considered for project funding

	Technological Option	Extent of work within project funding
1	Piped water supply - Gravity	Contribution towards the cost of supply and distribution mains for a required capacity, for provision of possible future expansions.
2	Piped water supply - Pumping	Contribution towards the cost of supply and distribution mains for a required capacity, for provision of possible future expansions.
3	Hand Dug Wells - Individual	Within premises.
4	Hand Dug Wells - Common	A common facility for minimum of 5 families to share.
5	Sealed Hand Dug Well fitted with locally made hand pump - Individual	Within premises with provision of pump water into the house.
6	Sealed Hand Dug Well fitted with locally made hand pumps - Common	A common well shared by minimum of five families for provision of pump water in to the house.
7	Tube wells – (shallow) Individual	Within premises with provision of pump water in to the house.
8	Tube wells - (deep) Common	Within a radius of 250m – for minimum of 15 families to share.
9	Rain water harvesting - Individual	Within premises
10	Rehabilitation of individual dug wells	Lining, deepening with or without blasting.
11	Rehabilitation of common dug wells	Lining, deepening with or without blasting.
12	Rehabilitation of tube wells	Flushing, replacement of pump, deepening.

6 Affordability and Willingness

In a cost-sharing model, it is important to assure that the proportion of community contribution is within the affordable level of beneficiary households.

Ideal basis for cost sharing in a community project would be, to decide on the quantum of the share of the cost, according to the affordable levels of different individual households. But this is impractical and inapplicable to cater to the affordability level of different individual households in a project of this nature. Therefore, in this exercise of cost sharing, average of district affordability levels only are considered subject to the Draft Rural Water Supply Policy.

A survey was conducted by the CWSSP in 1998 on affordability and willingness to pay for improved water supply and sanitation facilities in the six districts. According to this survey, nearly 67% of the sample was willing to contribute Rs. 500 to 750 and, around 13% was willing to contribute Rs. 751 to 1000, for low income groups. (Please refer Appendix 2 for details).

In April 1997, survey findings of WARDROP in the six project districts (please refer Appendix 3 for details) shows that the low and middle income groups are willing to contribute between the range of Rs 600/- to Rs 1650/- for water supply facilities in dry zone areas and Rs 900/- to Rs 2900/- in wet zone areas.

These survey findings in this exercise have been taken into consideration in order to determine a suitable community contribution range.

7 Proposed Technology based Cost Sharing Model

This model considers funding for technological options outlined in chapter 5.

It is proposed to allocate funds of a determined percentage or value under each technological option. Project funding is considered only for **specific levels of service** under these different options. Community contribution is considered the balance between the total project cost and project contribution.

The cost sharing model has been decided on the average cost of construction for (cost of a typical facility) identified levels of service under different technological options.

When the project contribution is decided for a particular level of service, communities requesting higher levels of service will have to bear the incremental cost, over and above the project contribution.

The basic features in this cost-sharing model are:

- Minimum community contribution to be 20% of the cost of a sub-project.
- Maximum project contribution will be limited to 80% of the cost or the maximum limit decided for each technical option whichever is less.
- Model fixes maximum contribution figures for different technological options.
- The project contribution will depend on the technology and the service level.
- Additional cost required for higher levels of service over and above the stipulated amount or percentage, will have to be borne fully by the households requesting such facilities.
- The model accepts differences in cost of construction in dry and wet zones.

8 Conditions applicable to project funding – Rural sub projects

Sharing the cost of water supply schemes between the community and the project should be done subject to following conditions.

1. As shown in tables 9.2 and 9.3, project funding is restricted to fixed maximum project contribution ceiling or to the given percentage ceiling of the actual cost estimate, **which ever is less.**
2. **If the actual cost estimate excluding unskilled labour is less than the fixed project contribution or the applicable percentage as shown in 1 above, then the project contribution will further be reduced to accommodate total unskilled labour costs to be borne by the community.**
3. **Project contribution ceilings are fixed for relatively low levels of service. But beneficiaries have the option in going for higher levels of service. Incremental costs for higher levels should be borne fully by the community requesting for such service levels.**

9 Proposed cost sharing figures

Table 9.1 shows the range of project contribution against technological options.

Details of maximum project contribution figures are shown in tables 9.2 and 9.3

The above two tables represent dry and wet zones respectively. It is recommended that these figures be applied for sub projects proposed under batch one and in second and third batches, the figures need to be updated based on actual costs and experiences gained under batch one.

The costing for typical water supply facilities is shown in table 2.1, in Appendix 2. Costing is made on the basis of district specific cost figures. Cost figures pertaining to different districts are averaged to arrive at dry and wet zonal costs.

9.1 Maximum Project funding Ceilings

Due to available project funding for rural water supply sub projects and also to maintain the required levels of funding to different service categories, it has been necessary to set maximum project contribution ceilings for different options.

The participatory planning process to be carried out in all rural schemes will identify the wishes of the communities as well as the level of contribution they are willing to provide. Often, these two do not match and communities will be forced to compromise their wishes against affordability. As a result of this, the most appropriate option for the individual community is likely to be selected.

In addition to the limitations in available funding, factors such as household cost of the facility, requirement of unskilled labour, service level, required minimum community contribution etc have been considered in fixing the maximum project contribution ceilings.

Table 9.1. Main Technological Options with ranges applicable for project contributions

Main technological option		Project contribution range, Rs. per household	
		Dry zone	Wet zone
1	Dug wells	4,100/= to 9,200/=	4,100/= to 9,200/=
2	Dug wells - Rehabilitation	600/= to 2,300/=	600/= to 2,300/=
3	Tube wells	2800/= to 80% of cost	2600/= to 80% cost
4	Tube wells - Rehabilitation	90 % of cost	90 % of cost
5	Rain water harvesting	12,000/=	12,000/=
6	Piped water supply	10,400/= to 15,000/=	10,400/= to 8,100/=

Table 9.2 Maximum project contributions under different technological options and service levels. For Dry Zone Districts (Hambanthota, Puttalam, Moneragala and Anuradhapura)

Technological option		Service level	Maximum project contribution per	
			Rs	% of the cost
1	Piped water supply – Gravity	Stand posts, Yard taps, house connections	10,400/=	80
2	Piped water supply - Pumping	Stand posts, Yard taps, house connections	15,000/=	80
3	Hand Dug Wells – Individual	Half lined , Fully lined, Fixed with electric pumps, Fixed with hand pumps or any higher service level	9,200/=	50
4	Hand Dug Wells - Common – shared by min. 5 families	Half lined , Fully lined, Fixed with electric pumps. Fixed with hand pumps or any higher service level	4,100/=	80
5	Sealed Hand Dug Well fitted with locally made hand pump – Individual	Half lined, Fully lined, Fixed with hand pumps, Fixed with electric pumps	8,100/=	50
6	Sealed Hand Dug Well fitted with locally made hand pumps – Common – shared by min. 5 families	Half lined, Fully lined, Fixed with hand pumps, Fixed with electric pumps	6,500/=	80
7	Tube wells – (Shallow) Individual	Fixed with locally made hand pump, Fixed with electric pump	2,800/=	50
8	Tube wells - (Deep) Common	Fixed with hand pump, Fixed with electric pump or any higher service level	80 % of the cost excluding initial cost irre-	
9	Rain water harvesting - Individual	Upgrading of roof, 5 m3 Brick tank, 2m3 HDPE tank, 5m3 Ferro cement tank, Fixed to pipe lines	12,000/=	80
10	Rehabilitation of Dug Wells – Individual	Lining, Deepening , Deepening with blasting,	2,300/=	50
11	Rehabilitation of Dug Wells – Common	Lining, Deepening , Deepening with blasting,	600/=	80
12	Rehabilitation of Tube wells (Deep) Common	Flushing, Replacement of pump, Deepening etc.	90% of the cost Community contributes 20%. Out of this 50% to the O&M fund.	

Table 9.3 Maximum project contributions under different technological options and service levels. For Wet Zone Districts (Kalutara and Kegalle)

Technological option		Service level	Maximum project contribution per	
			Rs	% of the cost
1	Piped water supply – Gravity	Stand posts, Yard taps, house connections	10,400/=	80
2	Piped water supply - Pumping	Stand posts, Yard taps, house connections	8,100/=	80
3	Hand Dug Wells – Individual	Half lined , Fully lined, Fixed with electric pumps, Fixed with hand pumps or any higher service level	9,200/=	50
4	Hand Dug Wells - Common - shared by min. 5 families	Half lined , Fully lined, Fixed with electric pumps, Fixed with hand pumps or any higher service level	4,100/=	80
5	Sealed Hand Dug Well fitted with locally made hand pump - Individual	Half lined, Fully lined, Fixed with hand pumps, Fixed with electric pumps	8,100/=	50
6	Sealed Hand Dug Well fitted with locally made hand pumps – Common – shared by min. 5 families	Half lined, Fully lined, Fixed with hand pumps, Fixed with electric pumps	6,500/=	80
7	Tube wells – (Shallow) Individual	Fixed with locally made hand pump, Fixed with electric pump	2,600/=	50
8	Tube wells - (Deep) Common	Fixed with hand pump, Fixed with electric pump or any higher service level	80 % of the cost excluding initial cost irre-	
9	Rain water harvesting - Individual	Upgrading of roof, 5 m3 Brick tank, 2m3 HDPE tank, 5m3 Ferro cement tank, Fixed to pipe lines	12,000/=	80
10	Rehabilitation of Dug Wells – Individual	Lining, Deepening , Deepening with blasting,	2,300/=	50
11	Rehabilitation of Dug Wells – Common	Lining, Deepening , Deepening with blasting,	600/=	80
12	Rehabilitation of Tube wells (Deep) Common	Flushing, Replacement of pump, Deepening etc.	90% of the cost Community contributes 20% Out of this 50% to the O&M fund	

9.2 Application of model to technological options

9.2.1 Piped water supply schemes through Gravity

The project will fund for gravity water supply schemes in rural areas. The Project contribution is restricted to 80% of the capital cost of construction. Requirement of unskilled labour for construction of these facilities is fairly high. Therefore, maximum subsidy ceiling has been reduced to absorb the full quota of unskilled labour and a nominal part of cash contribution as well.

Costing of piped borne water supply under gravity is done on the basis of the construction cost up to and including the main distribution network only. When planning and designing is done for piped schemes, future requirement based on population increase and other factors need to be considered. Similarly, costing should be done accordingly. In addition to the community contribution for the construction of above components, beneficiary households should bear the cost of house connections, water meters, valves and other construction within the premises.

Maximum project contribution for gravity water supply schemes in both dry and wet zones is fixed at RS.10, 400/= per household. or to the given percentage of the actual cost.

9.2.2 Piped water supply schemes through Pumping

Similar to Gravity schemes, costing of pumping schemes is done with provision for future demand. Designed capacity of a pumping scheme will include the cost of pumping storage and transmission mains and distribution net work only. Cost of house connections, yard taps or stand post need to be born by the community.

Maximum project contribution for pumping water supply schemes is fixed at Rs. 15,000/= for Dry zone and Rs 8,100/= for Wet zone per household or 80% of the actual cost which ever is less..

Project contribution is purposely reduced to a lower ceiling to discourage pumping water supply schemes in wet zone. It is expected that the communities opt for other low cost options or pumping schemes with gravity elevated towers etc, wherever possible.

9.2.3 Hand Dug Wells - Individual

This option should be kept open to people who can afford to contribute in excess of the amounts given in the affordability study. Considering that the private well is a higher service level compared to other common facilities, the project contribution ceiling is fixed at Rs. 9,200/= for both dry and wet zones. These ceiling is further restricted to a maximum of 50% of the actual cost, which ever is less.

According to typical cost estimates, beneficiaries who opt for private dug wells, need to contribute a substantial amount over and above the unskilled labour component

By fixing a maximum contribution of 50% of the total cost, it is expected to discourage beneficiary households going in for private dug wells even when other low cost options are available.

9.2.4 Hand Dug Well – Common

Common hand dug wells are another option made available for beneficiary households. A minimum of five households should share a common well within a radius of max. 250. m

Maximum project contribution per household has been fixed at Rs. 4,100/= This will be further restricted to a condition of maximum project contribution of 80% of the total capital cost.

Project contribution ceilings for common wells are fixed mainly based on average costing of half lined wells. Cost of any improvement such as fully lining, fixing motors, hand pumps etc. will have to be borne by the respective households.

9.2.5 Sealed Hand Dug wells fitted with locally made hand pump – Individual

Project proposes to fund this option in order to streamline the use these facilities in areas where these facilities have become popular.

Under this option, costing is done on the basis of half or fully lined with concrete seal and fitted with the locally made hand pump only. Cost of extending the pumping to any overhead tank and / or pipelines within the house will have to be fully borne by the household.

Project funding is considered on the basis of creation of a private asset with restriction to a 50% of the actual cost or Rs. 8,100/= per household, whichever is less, irrespective of the dry and wet zones.

9.2.6 Sealed Hand Dug wells fitted with locally made hand pumps – Common

This option is almost the same as of 9.2.5 above, but designed as a common facility extended for minimum of five families located within a thickly populated area. All users are provided with locally made hand pumps.

Expanding the pipe lines to an overhead tank and internal laying of pipes etc. are considered higher service level and the cost should be borne by the individual households.

Costing for the purpose of project funding is done on the basis of half lined, fully lined and the concrete seal with the pump fitted.

project funding is fixed at Rs. 6,500/= or 80% of the actual cost of the facility per household , whichever is less.

9.2.7 Tube wells (Shallow) Individual

This is another individual facility for households living in areas where the ground water level is low as described in chapter 5. Costing of this facility includes hand drilling to fix a down pipe of 3" diameter, fitted to a locally made hand pump.

Fixing of an electric pump and pumping to an overhead tank or / and internal laying of pipelines, are considered higher service levels. Cost involved for higher service levels should be fully borne by the individual household

Project contribution ceiling for this option is fixed at Rs.2,800/ for dry zone and rs.2,600/= for wet zone or 50% of the actual cost of the facility , which ever is less.

9.2.8 Tube wells – (Deep) Common

Tube well is a common facility to be shared by minimum 15 households within a radius of max. 250 m. This is considered a minimum service level compared to other available options. Therefore, it is suggested that the less affordable people to be protected by subsidising to the highest possible level.

After careful consideration of all relevant factors and finally decided on a tube well, out of other options that could be offered to a particular community group, sometimes it may not be possible to stick to the generally required minimum number of households to provide with a tube well. In such a situation, project may consider financing a tube well irrespective of the minimum required number of households.

Costing on tube wells includes drilling fixing of hand pump and erecting the apron only. Ground Water Division has stipulated the fixed cost of a tube well irrespective of the location, as an average cost. Out of this, 80% of the cost will be borne by the project as its contribution. Yet, 20% of the cost should be collected from the community

Any additional possible expenditure of fixing a electric pump, pumping to a overhead tank and laying pipe lines to individual houses etc, if desired by the community , these additional costs should be fully born by the community.

Details of computation of capital cost and the community contribution are shown in Appendix 5:

9.2.9 Rain water harvesting - Individual

Rainwater harvesting is usually considered the last resort for water supply in most difficult pockets where i) there is no other water supply options and ii) where the available water quality is unacceptable.

Continued limitations in water resources and increasing high risks of pollution in available ground water, has made it necessary to encourage rainwater harvesting

Beneficiaries deciding for rainwater harvesting may have to contribute over and above the unskilled labour. In order to make it affordable, project contribution ceilings have been fixed to a maximum of Rs. 12,000/= for both dry and wet zones or 80% of the actual cost whichever is less.

Project costing is done on the basis of a 3m³ brick tank and partial upgrading of the roof. But beneficiaries have the option to go for higher service levels such as grounded or elevated Ferro-cement tanks, HPDE tanks coupled with pipelines with house connections, provided they bare the full additional cost

9.2.10 Rehabilitation of existing facilities

Rehabilitation of Hand Dug wells - Individual

Rehabilitation of hand dug wells is also considered for funding. It is commonly found that many private wells are either abandoned or used seasonally due to lack of water during the dry season. Therefore, it is suggested that funding be arranged for lining, deepening with or without blasting if necessary

Project contribution is fixed at Rs. 2,300/= or 50% of the actual cost of the rehabilitation work, whichever is less, irrespective of dry and wet zones.

Rehabilitation of Hand Dug Wells - Common

Rehabilitation of common wells is also considered for project funding. Similar to the individual dug wells, lining, deepening with or without blasting can be considered up to a maximum of Rs. 600/= per household or 80% of the actual cost, whichever is less, irrespective of the dry and wet zones.

Rehabilitation of Tube Wells (Deep) - Common

Many tube wells constructed under previous programs are not in operation and badly in need of costly repairs. Due to high cost of repairs, users low-income levels, etc. have contributed to leaving these wells unattended.

It has been decided that the project will provide assistance to rehabilitate these tube wells. The project will fund up to 90% of the total rehabilitation cost.

Unskilled community labour may not require for the rehabilitation of tube wells. The 90% maximum project contribution will be calculated against the rehabilitation cost and yet, the users will be required to contribute 20% of the rehabilitation cost.

Out of the 20% of the community contribution 50% (half) has to be deposited to the O&M fund and the balance 10% to be credited towards the capital cost.

10 Cost Sharing - Small Town water supply projects

Project funding is also extended for providing water supply facilities in small towns.

Water supply schemes providing water and sanitation for a population between 2000 to 6000 is considered a "Small town water supply and sanitation scheme".

A small town water supply scheme is basically a piped water supply scheme either fed by gravity or pumping. This may or may not have water treatment depending on the quality of water.

Project costing is calculated for pumping or gravity feeding to towers elevated or grounded with transmission and main distribution network only. Cost of connections to Stand posts, Yard taps, individual houses etc should be considered additional and these costs should be born by the individual households.

Table 10.1 Project contribution ceilings- Small Town

Facility	Amount of Project contribution per household	% of the project contribution per household
Piped water supply through Gravity / Pumping with or without treatment	17,300/=	80% *

Project contribution is limited to Rs. 17,300/= per household or 80% of the capital cost or whichever is less. The beneficiary households are expected to contribute required unskilled labour and cash contributions depending on the total cost estimates of the scheme.

Construction of rainwater harvesting measures should be encouraged as a supplement to the traditional technology. This would decrease cost, both capital and recurrent

10.1 Conditions for project funding - Small Town

Similar to funding for rural water supply schemes, following conditions are applicable to project funding for Small Town water supply schemes as well.

1. As shown in table 10.1 above, project funding is restricted to fixed maximum project contribution ceiling or to the given percentage ceiling of the actual cost estimate, **which ever is less.**
2. If the actual cost estimate (per household) excluding the unskilled labour is less than the fixed project contribution or the applicable percentage as shown in 1 above, then the project contribution will be further reduced to accommodate total unskilled labour costs to be borne by the community.

11 Provision of Fluoride Filters

There is an acute problem of having excess fluoride in drinking water in some parts of the project area. This situation has contributed adversely on the aim of providing safe drinking water to the beneficiary community. Therefore it is suggested that the project provide the beneficiaries in fluoride risk areas with separate fluoride filters.

11.1 Selection of needy households

Project is expected to carry out water quality tests in areas earmarked as fluoride rich areas. Subsequently, those households covered by different water supply options should be listed for provision of fluoride filters.

Provision of fluoride filters is considered a social benefit extended to the needy project beneficiaries. Therefore, maximum benefit should be granted to the beneficiaries in order to encourage them to make use of the facility.

Low-income beneficiaries identified by a committee comprising the GN, Samurdhi Officers, VCC, DIU and the PO will be provided with these filters by charging a very nominal fee. Similarly, other beneficiaries are also given the benefit of having fluoride filters at a subsidised cost.

11.2 Cost Sharing for Fluoride filters

Fluoride filters are supplied to the beneficiaries under the following two categories as described above.

Table 11.1 Project contribution ceilings -- Fluoride filters

No	Target group	Total cost of the filter Rs.	Project contribution	
			Rs.	%
1	Low income households	2000/=	1800/=	90
2	Others	2000/=	1500/=	75

Appendix 1

Table 11 Proposed project contribution ceilings – Dry zone Districts. (Hambanthota, Puttalam, Moneragala and Amuradhapura)

No	Technological Option	Total HH cost, Rs.	Fixed max. project contribution Rs.	Cost sharing %	
				Project	Community
1	Piped water supply – Gravity	13000	10400	80	20
2	Piped water supply - Pumping	18700	15000	80	20
3	Hand Dug Wells – Individual	18400	9200	50	50
4	Hand Dug Wells - Common – shared by min. 5 families	5100	4100	80	20
5	Sealed Hand Dug Well fitted with locally made hand pump – Individual	16100	8100	50	50
6	Sealed Hand Dug Well fitted with locally made hand pumps – Common – shared by min. 5 families	8100	6500	80	20
7	Tube wells – (Shallow) Individual	5600	2800	50	50
8	Tube wells - (Deep) Common	96100 T. cost	80 % of the cost excluding initial cost irrespective of the number of HHH		
9	Rain water harvesting - Individual	15000	12000	80	20
10	Rehabilitation of Hand Dug Wells – Individual	4600	2300	50	50
11	Rehabilitation of Hand Dug Wells – Common	800	600	80	20
12	Rehabilitation of Tube wells (Deep) Common	90% of the cost - Community contributes 20% - Out of this 10% to the O&M fund			

Costing is done based on each typical facility. Actual cost estimates may vary depending on locations. Then, percentage applies.

Table 1.2 Proposed project contribution ceilings – Wet zone Districts (Kegalle and Kalutara)

No	Technological Option	Total HH cost Rs	Fixed max. project contribution Rs	Cost sharing %	
				Project	Community
1	Piped water supply – Gravity	13000	10400/=	80	20
2	Piped water supply - Pumping	10100	8100	80	20
3	Hand Dug Wells – Individual	18400	9,200/=	50	50
4	Hand Dug Wells - Common - shared by min. 5 families	5100	4,100/=	80	20
5	Sealed Hand Dug Well fitted with locally made hand pump - Individual	16100	8,100/=	50	50
6	Sealed Hand Dug Well fitted with locally made hand pumps – Common – shared by min. 5 families	8100	6,500/=	80	20
7	Tube wells – (Shallow) Individual	5100	2,600/=	50	50
8	Tube wells - (Deep) Common	T. Cost 96100	80 % of the cost excluding initial cost irrespective of the number of HHH		
9	Rain water harvesting - Individual	15000	12,000/=	80	20
10	Rehabilitation of Dug Wells – Individual	4600	2,300/=	50	50
11	Rehabilitation of Dug Wells – Common	800	600/=	80	20
12	Rehabilitation of Tube wells (Deep) Common	90% of the cost Community contributes 20% Out of this 10% to the O&M fund			

Costing is done based on each typical facility. Actual cost estimates may vary depending on locations. Then, percentage applies

Appendix 2

Table 2.1 Estimated Total Unit Costs in Rs. per HH Typical water supply facilities - Dry and wet zone Districts

No	Technological Option	Basis / Assumption	Per HH cost Rs. (total construction costs)	
			Dry zone	Wet zone
1	Piped water supply - Gravity	Typical gravity scheme with transmission and distribution network	13000	13000
2	Piped water supply - Pumping	Typical pumping scheme with transmission and distribution network	18700	10100
3	Hand Dug Wells - Individual	1m. diameter with 5m to 7m depth - half lined	18400	18400
4	Hand Dug Wells - Common - shared by min. 5 families	1.5m diameter with 5 m to 7m depth - half lined	5100	5100
5	Sealed Hand Dug Well fitted with locally made hand pump - Individual	1m diameter with 5m to 7m depth - Sealed - fitted with local hand pump	16100	16100
6	Sealed Hand Dug Well fitted with locally made hand pumps - Common - shared by min. 5 families	1.5m diameter with 5m to 7m depth - Sealed - fitted with 5 local hand pumps	8100	8100
7	Tube wells - (Shallow) Individual	Manually drilled inserted with down pipe 20ft fitted with local hand pump	5600	5100
8	Tube wells - (Deep) Common	50m deep drilled and fitted with hand pump and apron	96100 T. cost	96100 T. cost
9	Rain water harvesting - Individual	3m ³ brick tank grounded and partial upgrading of roof	15000	15000
10	Rehabilitation of Dug Wells - Individual	Lining, deepening with or without blasting	4600	4600
11	Rehabilitation of Dug Wells - Common	Lining, deepening with or without blasting	800	800
12	Rehabilitation of Tube wells (Deep) Common	Flushing, deepening, replacement of pump	Actual cost	

Costing is done based on each typical facility on moderate level of service.

Appendix 3

Findings of survey on affordability and willingness to contribute for water supply - conducted by CWSPU in 1998,

Two field studies have been conducted for this purpose. Data collected by Samurdi Animators in 3800 GNDs and findings of the participatory planning sessions carried out in 36 rural GNDs in nine districts have been used for these studies.

Data collected on monthly income and employment patterns among rural communities have provided reasonable evidence on their capacity and affordability to pay.

Sample was taken as government, business or private sector skilled laborers and farmers. Out of these beneficiaries, 32% and 28% were unskilled laborers and farmers respectively. Another 8% was unemployed. Around 60% of the sample consisted of low-income earners in general.

74% of sample house hold beneficiaries were willing to contribute the required cash and unskilled labor component. 10% of the beneficiary households were willing to contribute 50% of the required contribution while the balance 16% was not willing to contribute at all

Though the calculated cash contribution for the water supply schemes planned during the field study was at average level, the responses of the beneficiaries were satisfactory. 20% of the beneficiary households were willing to contribute Rs. 1001/= or more. 13% of the households were willing to pay within a range of Rs. 751/= to 1000/=. Nearly 67% of the households were willing to contribute within the range of Rs. 500/= to 750/=.

The income data indicated that 49% of beneficiary house holds earn less than Rs.2500/= per month, which is less than officially declared minimum wage rate in the country. Data indicated that 26% of households earn between Rs. 5000/= to Rs. 7000/= a month. It was also revealed that only 25% of the households earn more than Rs. 7500/= a month.

This situation could be further verified by analysing the response of house holds on contribution for operation and maintenance of facilities provided.

In the survey, willingness to undertake operation was assessed and found that 19.8% of beneficiaries were willing to contribute Rs. 41/= or more. 79.4% of the households have indicated that they could contribute Rs. 40/= or less per month. 1.8% of the households were not willing to contribute at all for any operation and maintenance.

Appendix 4

**Findings of Affordability Surveys conducted by WARDROP for Project Districts.
Findings are categorised as of High, Mid and Low income groups**

Table 1. Willingness to pay – Kegalle District

Willingness to contribute		High	Mid	Low
Labour	Yes		13	25
	No	1		1
	May be		1	1
Material	Yes		6	8
	No	1	4	10
	May be		1	8
Towards cost of Improved water (Rs)			1700	900
Monthly maintenance for water (Rs)			45	49

Table 2. Willingness to pay – Anuradhapura District.

Willingness to contribute		High	Mid	Low
Labour	Yes	5	13	25
	No			
	May be	1		3
Material	Yes	2	3	5
	No	1	5	10
	May be	2	5	12
Towards cost of Improved water (Rs)		1200	1400	1320
Monthly maintenance for water (Rs)		35	57	31

Table 3. Willingness to pay – Hambanthota District.

Willing to contribute		High	Mid	Low
Labour	Yes	8	21	20
	No	1		
	May be			
Material	Yes	8	21	20
	No	1		
	May be			
Towards cost of Improved water (Rs)		830	950	785
Monthly maintenance for water (Rs)		-	-	-

Table 4. Willingness to pay – Kalutara District.

Willingness to contribute		High	Mid	Low
Labour	Yes	5	7	17
	No	2	1	
	May be	1	2	5
Material .	Yes	5	4	7
	No	1	1	2
	May be	2	1	14
Towards cost of Improved water (Rs)		2600	2900	1200
Monthly maintenance for water		83.3	91.7	66.7

Table 5. Willingness to pay - Puttalam District.

Willingness to contribute		High	Mid	Low
Labour	Yes	4	9	20
	No		1	
	May be	1		5
Material	Yes	4	7	15
	No		2	3
	May be	1		7
Towards cost of Improved water (Rs)		1250	1650	925
Monthly maintenance for water		93	95	57

Table 6. Willingness to pay - Moneragala District.

Willingness to contribute		High	Mid	Low
Labour	Yes	3	20	22
	No			
	May be			
Material	Yes	3	20	15
	No			7
	May be			
Towards cost of Improved water		2330	1340	600
Monthly maintenance for water		-	-	-

Appendix 5

Community Contribution for Tube wells (Deep) – common - with Hand Pump

ADB 3rd Project Area.

1	Initial cost			
	Feasibility cost	Rs. 5000.00		
	Construction od 50mwell	Rs. 73000.00		
	Sup. And Inst. of Hand pump	Rs 36000.00		
	Total	-	Rs. 114000.00	Rs. 114000.00
2	Add			
	Land value	Rs. 5000.00		
	Apron value	Rs. 5000.00		
	Total	-	Rs 10000.00	Rs 10000.00
	Total			Rs. 124000.00
3	Less			
	Invest. study	Rs. 5000.00		
	Unforeseen cost	Rs. 5841.00		
	Minor repairs	Rs. 7230.00		
	Water sample an.	Rs. 1800.00		
	Mobilisation	Rs. 8062.00		
	Total	-	Rs. 27933.00	Rs. 27933.00
4	Total cost for tube well			Rs. 96067.00
5	20% of the cost			Rs. 19213.40
6	Consists of			
	Land value	Rs. 5000.00		
	Apron value	Rs. 5000.00		
	Unskilled labour -drilling	Rs. 750.00		
	Unskilled labour -caretaker	Rs. 600.00		
	Unskilled labour - install	Rs. 300.00		
	Total	-	Rs. 11650.00	Rs. 11650.00
	Required cash contribution			Rs. 7563.40

Source; Memo by DGM (RWS) under ref. RWS/ADB/SS/MT/10

