STRATEGIES FOR SUSTAINABLE

WATER SUPPLY DEVELOPMENT

IN LINE WITH

MAHINDA CHINTANA

THE EMERGING WONDER OF ASIA

Policy and Planning Division
National Water Supply & Drainage Board

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1.0 Background:

The present pipe borne water supply coverage in Sri Lanka is 39% . NWSDB schemes account for 31% while approx. 8% are local authority and small community water supplies managed by CBO's. Hand pump tube wells are utilized by 8% of the population. 32% of the population obtain their water from dug wells. Other sources such as rainwater harvesting, safe natural springs etc. account for 2%. Accordingly the safe drinking water supply coverage is 81%.

As per the 'Mahinda Chinthana – The Emerging Wonder of Asia' it is required to achieve 94% safe drinking water supply by 2015 and 100% by 2020.This document clearly indicates the expected growth targets for NWSB Schemes, Rural Schemes and Individual Point Sources on a provincial basis.

As at present, with the exception of a few in the North, all Municipal and Urban Council areas are covered with pipe borne facilities. Water Supply Schemes have also been established in some of the small towns. In typical rural areas, people obtain water mainly from hand pumps and dug wells.

It is considered necessary to develop strategies in order to achieve the targets set under the 'Mahinda Chinthana – The Emerging Wonder of Asia' in a sustainable manner.

2.0 Development Strategies

In the recent past, almost all of the major development works have been based on surface water sources. In determining the service areas in some projects, fair extents of low density rural areas have also been included. This has resulted in enhanced system capacities and also increased lengths of pipelines in transmission and distribution. The investment cost per beneficiary household has increased to the order of Rs.250,000 to 350,000, which is very high. Often due to funding constraints, the distribution systems have been pruned down, thus reducing the number of beneficiaries and affecting the project viability further. It has also been observed that in certain rural areas where piped water supplies have been provided only a small percentage of households have opted for a service connection, especially in areas where the well water is satisfactory.

For future development works, guidelines have been set on the following basis.

- Area selection to be based on Grama Niladari Division (GND's)

- Areas where population densities are less than 500 persons/km2 are not considered feasible for pipe borne water supply.

- Recommended service coverage percentages based on the population density for the respective GND have been specified.

- In terms of affordability and willingness to pay, to consider that households with a monthly income less than Rs.6,000 will not be willing to pay connection charges and for water consumption if they have an acceptable alternative source.

- Areas (GND'S) that have over 65% Samurdhi (Government Social Welfare Scheme) beneficiaries are considered as low priority for pipe borne water supplies, if they have a considerable number of acceptable dug wells.

- Areas having less than 65% household electricity connections are considered as low priority for pipe borne water supplies.

- Due consideration be given in the planning process to other criteria such as quality of groundwater, lack of alternative sources etc.

Eventually, in a particular district, the urban centers and surrounds, some small towns etc. will have to be covered with conventional surface water based water supplies. The rest of the areas will have to be largely groundwater based. It could be a system based on production boreholes for small townships, hand pumps or protected dug wells for low density rural areas. In addition, there could be surface water based water supply systems for small communities. An appropriate form of community participation will have to be adopted for the smaller and common water supply systems. These systems will have to be designed adopting technologies that are easy to maintain and incur low operating costs, such as simple chlorination systems, solar powered pumps etc. The level of investment will be around Rs. 80,000 per beneficiary household.

Water supplies in areas where the groundwater cannot be treated using conventional treatment processes should be surface water based. However, it will not be feasible to extend these supplies to the low density rural communities. The strategy to supply safe drinking water to these communities would be to develop a means of providing a supply of treated water exclusively for drinking and cooking purposes. A per capita supply of 5 – 6 lpd is considered adequate.

Groundwater could be treated using the appropriate advanced treatment technologies. From the water treatment center, water tanks could be deployed to supply community tanks within a radius of approx. 10 km. The capacity of the tanks will be based on a filling being done twice a month. Typically a 1500 liters tank will be adequate for four(04) houses. The capital cost would be approx. R.11,000 per beneficiary household. The monthly recurrent cost will be within Rs.300 per household. Use of harvested rainwater for drinking and cooking purposes could also be adopted in areas where it is feasible. In most areas a 2000 liters capacity storage tank would suffice for a family size of five.

The RSC's would be required to translate the 'Mahinda Chintana' targets on a district basis. This will enable to assess the development needs in the three categories, NWSDB Schemes, Rural Schemes and Individual Point Sources. Based on such information, the development plans for the respective districts should be prepared.

The development projects should be prioritized for the different categories, district-wise and provincial-wise. The overall priority order could be decided in consultation with the Ministry and NPD.

Projects to be implemented on a 5-year progression should be prepared to match with the investment envisaged in the 'Mahinda Chinthana'.

3.0 Groundwater Development

It should be recognized that development and utilization of groundwater resources would be very significant in terms of extending the coverage and achieving the set targets.

In order to accomplish effective utilization of the ground water resource, the following areas need to be addressed.

- Initiate action to rehabilitate/repair the hand pumps which are non functional. Institute a viable O&M system for hand pumps. (Already action has been initiated in this regard with the My/Local Govt. & Provincial Councils.)

- Take necessary action to ensure the quality of construction of tube wells.

- Draw up district-wise programs for groundwater development considering the needs of un-served and under-served populations.

- Determine the resources required by the Groundwater Section and the Regional Groundwater Units to undertake the development programs.

- Develop guidelines for operation and maintenance of groundwater systems.

- Seek necessary funding resources from the government and donor agencies on a priority basis.

It may be noted that a concept paper "Meeting the MDG's with Equity-Accelerated Ground Water Development" , was prepared in consultation with UNICEF. They have consented to play a facilitation role during program implementation. The Board has already approved this concept paper vide BP No. S/70/2011-752 of 29th July 2011.

4.0 Funding Strategy

As per the 'Mahinda Chinthana' the planned investment through governmental funding, for the water supply and sewerage sector is Rs. 37 Bn. in 2011 increasing to Rs. 54 Bn. in 2015. These would include multilateral/bilateral funding, funding through Exim Banks etc.

In addition private investment of Rs. 3 Bn. in 2011 increasing to Rs. 9 Bn. in 2015 is envisaged.

The expected development in small towns and the rural water supply sector will have to be covered within this investment.

As a policy, it would be appropriate to allocate a sum equivalent to 5% of the project cost towards development/improvement of rural water supplies in the respective district.

According to NPD, a project size of approx. Rs. 5 Bn. is preferred for multilateral and bilateral aid. On borrowings through Exim Banks, concessionary terms could be obtained on projects up to Rs. 1100 Mn. (EURO 7.5 Mn.). For larger projects, more commercial type borrowings may have to be resorted to.

In addition, State Banks also have expressed willingness to fund medium scale projects in the order of Rs. 2 billion. Augmentations, extensions, distribution systems etc. may be implemented with such funding.

In terms of financial sustainability, it would be appropriate to review NWSDB's debt commitments on a continuous basis and ensure that it is kept within 30% of the projected revenue.