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PUBLIC STANDPOSTS
IN
COLOMBO, SRI LANKA

October, 1984

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PUBLIC STANDPOST WATER SUPPLIES PROJECT

PUBLIC STANDPOSTS
IN
COLOMBO, SRI LANKA

A Support Paper
by
Bep. M. Fritschi Consultant

on:

- * Experiences with standposts and mixed systems
- * Current water-charging policy and revenue systems.

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PREFACE

In October 1984 I paid a short visit to Colombo, the city where I had worked with the Slum and Shanty Division of the UDA, from 1979 till the end of 1983.

IRC, who are currently supporting a multi-country* demonstration project on public standpost water supplies, requested me to spend a few days of my stay seeing some of my ex-colleagues, with a view to collect information on their own experiences with standpost projects in Sri Lanka, especially Colombo.

This report strongly reflects my own experience of '79-'83. Consequently, and since my sources for additional information were limited to people I worked with closely during my time with the Slum and Shanty Division, relatively greater attention is given to experiences of that agency.

The report was drafted nine months ago; perhaps some of the information and conclusions no longer hold true. Still I hope that the report may contribute to the further development of public standpost water supply policies and projects in Sri Lanka and perhaps be of interest in other countries.

One organizational change that took place since last year should be mentioned here. The Slum and Shanty Division does not exist any more as a division of the Urban Development Authority. It is now the Urban Housing Division of the National Housing Development Authority.

I would like to thank the following people, with whom I had discussions of varying length and who thereby contributed to this report:

Mr Eswaran Selvarajah, Mr Per Bertilsson and other staff of the SSD; Mr Liyanage of Redd Barna; Mr Sivaprakasem of US Save the Children; Mr Peter Flik of IRDP, Nuwara Eliya and Mr Job Kleyn of BKH Consulting Engineers.

Bep Fritschi

Rotterdam, June 1985

* Sri Lanka is amongst the participating countries of this project, with the National Water Supply and Drainage Board as co-ordinating institution.

SUMMARY OF CONCLUSIONS AND RECOMMENDATIONS

Inter-agency co-operation

Several agencies are active and have experience in the field of public standpost water supply in Sri Lanka. Strong institutionalized inter-agency coordination and cooperation is therefore required:

- to exchange experiences
- to develop a consistent but flexible overall standpost policy and to find ways to fit the various agencies' standpost supplies activities into this policy

Two important issues that need to be included in a standpost systems policy are:

- clear division and/or sharing of construction and maintenance responsibilities between the agencies, with possibilities for contracting agencies and organizations to hand over systems to maintenance agencies;
- coordination in planning activities so that, for instance, standpost systems can be easily converted into mixed systems (with private connections); this may require adaptations in the legal regulations regarding authority over pipes along minor roads, footpaths and slum-passages.
- to develop technical options, designs and standards of standpost systems for different technical circumstances and user-groups*;
- to develop scenarios for operation and maintenance for different circumstances.

The agencies that would need to coordinate efforts to achieve the above objectives are:

WSDB; CMC; SSD (UDA); CAB; NHDA.

Other organizations that could play an important role are the Women's Bureau (water management at household level is mainly a women's affair) and NGO's with standpost supplies experience.

* The public standpost-manual being prepared by Mr P. Bertilsson of SSD/ UNCHS may provide a valuable contribution to this task.

LIST OF ABBREVIATIONS

AGA	Assistant Government Agent
CAB	Common Amenities Board
CDC	Community Development Council
CMC	Colombo Municipal Council
CSP	Community standpost
DDC	District Development Council
GA	Government Agent
GI	Galvanized iron
hh	household
IRDP	Integrated Rural Development Programme
IYSH	International Year of Shelter for the Homeless (1987)
MC	Municipal Council
NGO	Non Governmental Organization
NHDA	National Housing Development Authority
NWSDB	National Water Supply and Drainage Board
PSWS	Public Standpost Water Supplies (Project)
Rs	Sri Lanka Rupees (1 US\$ approximates to R 25)
RSP	Road standpost
SP	Standpost
SSD	Slum and Shanty Division (of the Urban Development Authority)
UC	Urban Council
UDA	Urban Development Authority
UNCHS	United Nations Centre for Human Settlements (Habitat)
USSCF	United States Save the Children Federation
VROM	Netherlands' Ministry of Housing, Spatial Planning and Environment
WD	Waterworks Department (of Municipal or Urban Council)

Research and investigation

There are numerous subjects that should be studied extensively before attempting to design and finalize policies. A few suggestions:

- inventarization and mapping of all existing standposts in Colombo, (with a description of problems and peculiarities) by:
- location (road standpost (RSP) or community standpost (CSP));
- implementing and maintaining agency or community;
- design (post, tap, basin and drainage),
- user studies: interviews with users (women, men and children) could bring to light their requirements, opinions and preferences regarding standposts, basins, taps, related services such as laundry and bathing facilities, waiting space and security, and maintenance. Moreover study and observation of user practices in handling water at the standpost and from the standpost home may provide input for health education programmes;
- technical study of taps: their appropriateness for different technical circumstances (e.g. pressure), their quality, durability, cost and maintenance requirements;
- studies on possible maintenance systems for RSP's and CSP's: user willingness and ability to pay for or to contribute time/effort to maintenance and care; maintenance committees; possible responsibilities for Community Development Council (CDC's).

Projects of special interest

Apart from the IRC sponsored PSWS schemes in rural areas, two ongoing projects are recommended to be followed closely. The experiences may provide inputs for the recommended development of policies and designs.

These two projects are:

- Maligakanda Inner City Slum Improvement Project, undertaken by the Slum and Shanty Division of the UDA (a IYSH Demonstration Project);
- Mannar Town Water Supply Project, undertaken by the Water Supply and Drainage Board, with BKH Consulting Engineers.

1 PUBLIC STANDPOSTS

1.1 Planning and construction of standposts: who is involved?

There are various agencies and organizations in Sri Lanka involved in the planning and/or construction of public water standposts in urban areas. The following overview may not even be complete:

a. National Water Supply and Drainage Board (NWSDB)

The NWSDB is the agency that is, or rather is to be, responsible for all matters regarding standpost water supplies. This would include overall planning, plus implementation in some cases and support and guidance for implementing agencies in others.

So far the only apparent institutionalized links between the NWSDB and implementing agencies exist with the Colombo Municipal Council and other urban and municipal councils. However, these links have not yet resulted in a "standpost policy".

b. Colombo Municipal Council, Waterworks Department and other urban and municipal councils

Urban and municipal councils have constructed and construct numerous standposts, mainly along roads and streets, (immediate connections with the main).

All other agencies and organizations need to approach the councils if they wish to connect standposts to the municipal mains. The procedure for requests for standpost connections is similar to that for domestic connections.

c. The Common Amenities Board (CAB)

The CAB's main task is to provide and maintain common amenities (toilets and taps) in slum gardens' vested with the government. The CAB renews and constructs standposts in slum-gardens in Colombo and, to a lesser degree, in shanty (squatter) areas and in district-towns.

The CAB works together with UNICEF.

The CAB also acts as implementing agency for a number of projects of the Slum and Shanty Division (SSD).

d. The Slum and Shanty Division (SSD) of the Urban Development Authority

The SSD undertakes slum and shanty improvement projects and sites and services projects in Colombo and in other urban and semi-urban areas.

Provision or improvement of communal water supply is always part of its projects, which also include all or some of the following components:

- legal housing plot-tenure
- surface drainage
- toilet facilities
- bathing facilities
- facilities for garbage disposal
- roads and footpaths
- streetlights
- housing assistance
- community development support

If piped water supply is available at, or close to the project area, the SSD always provides water supply through standposts. Domestic connections are never included as a component of SSD improvement projects, but are sometimes already present in a number of households of a project-area, especially in slum areas (see also Chapter 2, mixed systems).

e. The National Housing Development Authority (NHDA)

The NHDA has recently started a number of urban "sites and services" projects. It is not known to the author whether the NHDA provides standpost, domestic or mixed systems, but it is very likely that standposts are included.

f. Non Governmental Organizations (NGO's)

NGO's such as Redd Barna, US Save the Children, and Shanty Development Committees, often provide, or assist communities in obtaining water supply. In such cases these organizations work with or through government agencies such as SSD, CMC and CAB.

g. Community Based Organizations

Community Development Councils, Community Welfare Societies and non-formal community groups are often active in urban low income areas. The author believes that in some cases groups like these have succeeded in getting standposts provided, through their "wardmember" or directly from the Water Department of Colombo Municipal Council.

h. Individual and small groups in the community

When the official channels for obtaining water supply are not known, or when an urgent demand requires an immediate solution, individuals or small groups of people often construct their own "standpost" by tapping the main or the branch-pipes. There are quite a number of these improvised taps in Colombo. They vary from pieces of PVC pipe sticking out of the ground, providing a continuous supply, to fairly decent posts of PVC or galvanised iron with brass bib taps.

i. District Development Councils (DDC's), Government Agents (GA'S) and Assistant Government Agents (AGA's) Offices, Integrated Rural Development Programmes

Though these agencies and programmes have a responsibility in the rural districts only, they need to be mentioned in this overview of "urban organizations".

Often semi-urban outskirts of towns in Sri Lanka fall outside the municipal boundaries and are therefore part of the rural administration. Examples of this situation: Malkaduwwa in the Kurunegala District and communities around Batticaloa. In these cases communities, or improvement agencies such as the Slum and Shanty Division, work with or through the DDC's and GA's and AGA's offices.

1.2 Two categories of standposts

In Colombo there are two kinds of standposts that are fundamentally different in terms of their users and locations.

1.2.1 Road standposts (RSP)

Most of the standposts along Colombo's roads and mainstreets were constructed by the Colombo Municipal Council. They are connected to the municipal mains. The location of road standposts is mostly close to "shanty pockets" along the street, or in the vicinity of larger shanty areas.

The users of RSP's are:

- shanty dwellers living along or close to the road, who have no other source of piped water;
- shanty dwellers who do have other source(s) of piped water, but who use the RSP because of low pressure or other problems (such as no or poor supply, or queues) with their "own" standpost;
- (semi) commercial users, such as small building contractors, taxi drivers washing their vehicles;
- thirsty passers-by

The fact that RSP's are used by so many different users must be taken into account when deciding about maintenance and water charging policies!

1.2.2 Community standposts (CSP)

Community standposts are:

- located within low income residential areas;
- connected to the mains through a branch pipe. One or more CSP's may be connected through this branch-pipe;
- meant for exclusive use by members of the community

Various agencies, groups and individuals construct CSP's (see 1.1).

1.3 Quantitative standards for standposts

There is no uniformity in standards. The number of standposts per number of households or inhabitants varies. This variation is coincidental and does not appear to be based on planning principles.

The following overview may serve as an illustration:

- . There may be a standard for municipal RSP's per ward. However, it looks as though RSP's were constructed close to shanty areas, without taking into account the exact number of users; one RSP may serve a group of 5, 25 or 100 shanties.
- . The Slum and Shanty Division applies a standard of 1 CSP for about 10 plots or houses. Walking distances also play a role in the determination of the number of CSP's in a project (see also 1.4.3 for "user units").
- . US Save the Children provided one CSP per 15 plots in its project in Kirilapone.
- . Redd Barna provided very few CSP's in the Aluthmawatha Project, but a standard of about 1 standpost to 10 plots has been achieved, if taps in toiletblocks and bathrooms are counted.
- . The Integrated Rural Development Programme in Nuwara Eliya has a standard of one standpost per 5 dwelling units, for tea-estates. However, this is a flexible standard and depending on the circumstances and technical solutions (e.g. cistern tank with taps instead of standposts distributed over the area), the number of taps may vary.

So far, it does not look as if agencies take into account water-pressure and water availability at different times of the day, when deciding about the number of standposts.

1.4 Designs and locations of standposts

1.4.1 Taps

The different agencies use various types of taps for their standposts. Choice of tap could be based on matters such as water-pressure, user's preference, frequency of use, method of maintenance. This happens in some cases, but not yet as a matter of routine. It would be useful to develop criteria for choice of taps in different circumstances.

Taps presently in use, according to the author's knowledge:

- brass bip tap: used by all agencies. Regular replacement of washer required. Often stolen from standposts, especially if not well-fixed;
- Jayson small tap, chromium plated (made in India): used by the Slum and Shanty Division in Kolonnawa, Henamulla, Summitpura and by IRDP Nuwara Eliya on estates;
- imitation Jayson tap, chromium plated (made in Sri Lanka): the author was told these taps exist, but did not see any. Apparently of low quality;
- Jayson big tap, cast iron*: Used by SSD in Henamulla, Vauxhall Street, Kandy, etc.; used on estates by IRDP, Nuwara Eliya.

* The SSD introduced this tap in its projects a few years ago, not so much because it is a "no waste tap", but because it appeared to be a sturdy tap, requiring little maintenance. Most Jayson taps installed by SSD in 1981-82 are still going strong. However, people have found several ways to "fix" the taps, and to make them run continuously, without holding the tap as intended. A lot of Jayson taps are missing. It would be interesting to investigate whether they were stolen, removed after trouble with the tap, or broken due to high water-pressure; according to IRDP Nuwara Eliya, Jayson taps break when water-pressure is very high, though otherwise IRDP's experience with Jayson taps is excellent.

- iron push tap: Difficult to operate, almost impossible for small children. The author has not seen any of these taps for a long time;
- brass push-tap. Only one seen on a CMC road standpost. Difficult to operate, easy to "fix";
- tap with PVC or GI spout; used by CMC. The (brass) tap is fixed halfway in the post, sunk into the brickwork or concrete. The water comes out of a spout fixed on top of the standpost;
- plastic tap (made in India): Author has not seen any of these for a long time. Formerly used by CAB (Steuart Street);
- cast iron tap with handle: Old British make. Not seen in Colombo, but in districts such as Galle, along main roads. Extremely sturdy, no wastage, no maintenance required.

Pictures of some of the above mentioned taps are included in the Annex.

1.4.2 Designs of post and basin

Designs differ widely from one agency to the other, and within agencies:

- 9" square brickwork post, small, mostly square basin: CMC; CAB; SSD;
- concrete post, concrete basin: SSD; road taps in districts; IRDP Nuwara Eliya;
- double standposts (two taps on one post): SSD in Henamulla;
- post of GI pipe: CMC (?); improvised standposts;
- hard stone in basin under tap, to avoid quick deterioration: SSD in Dematugoda Passage, and in recently revised SSD type plans,
- extra apron for laundry: US Save the Children in Kirilapone;

- 3' high walls around the standpost: USSCF in Kirilapone; SSD in some slum projects;
- cistern tank (400 gallons) with taps instead of standposts, wherever feasible: IRDP Nuwara Eliya, on estates and in villages. IRDP changed its approach from mainly standposts to mainly cistern tanks to limit drain and pipe-length. Other advantages are the storage possibility and the opportunity for "social contacts" (much appreciated by communities).

See the Annexe for illustrations of some of the above designs.

The height of standposts is more or less uniform (2½ to 3 ft. or 750 to 900 mm). In areas with low pressure, lower posts would appear more feasible; in Kew Lane (SSD) people have broken posts, or fixed taps at lower points. This example illustrates the need for the development of criteria for choice of standpost-design for different circumstances.

Also the design of basins, aprons and drains requires a lot of attention; space and facility for laundry, for bathing in areas without bathrooms; waiting space and facilities for standposts with large numbers of users, and so on.

1.4.3 Locations

As mentioned before, CMC roadtaps are mostly located close to shanty pockets and larger shanty areas. Sometimes the standposts or the activities around it obstruct sidewalks or even the roads. Of course the latter situation is dangerous for the standpost-users. The location of CSP's in the densely built slum-areas is often attached to or close to the common toiletblocks. In case of improvement projects by SSD or CAB the location of new CSP's is in most cases discussed with inhabitants.

In shanty-areas the SSD has located CSP's in such a manner as to achieve, with the standard of '1 to 10', an even distribution with reasonable walking distances and with minimum pipe length.

The disadvantage of this approach is that it is not clear which plots "belong to" which CSP. This makes community involvement in care and maintenance activities almost impossible.

Presently the SSD is developing the idea of "user units": the location of a CSP would be determined mainly on the basis of its accessibility to households that will use it.

To achieve this situation is relatively simple in existing shanty areas to be newly developed.

The "user unit approach" may be a prerequisite for a future water charging policy for CSP's especially if water charging is to be based on actual (metered) usage.

1.4.4 Design manual for community water supply systems

All the issues dealt with above such as standards, designs and locations are presently being discussed within the SSD.

Mr Per Bertilsson, infrastructure consultant, is writing a manual for community water supply systems. Different technical solutions for different circumstances will be included in this manual, which should be completed by around April 1985.

1.5 Maintenance of standposts and standpost-systems

And this is where the trouble starts. The author does not think that there are many standposts in Colombo that enjoy regular check-ups, either by the agencies that constructed the posts, or by the user-communities (see Annexe.)

The SSD, USSCF, Redd Barna and possibly also CAB make attempts at the establishment of maintenance committees or groups. USSCF and Redd Barna have been fairly successful, but only because the NGO is present in the project area and keeps motivating and pressing the community to take care of the services, which also include toilets and drains. The maintenance committee or group is responsible for collecting a small amount of money (1 Rupee per month in Kirilapone) from each household. This money is then used to pay labourers who clean toilets and drains. The community of Kirilapone at one stage made more money for the maintenance fund by organizing video-shows for community members. Though initially successful, these activities were stopped because of "trouble".

An officer of Redd Barna mentioned that without continuous pressure from this organization all maintenance activities would stop and people would start using the CMC road-taps if their own taps were to break down.

SSD has no maintenance success stories, but the agency keeps trying, by involving communities very early in the planning process, and by trying to apply technical solutions that require little maintenance.

Through various communication and information activities the UNCHS/VROM/SSD project tries to raise communities' interest and awareness in matters relating to maintenance of services. A videofilm on community involvement and water-wastage in Maligakande was made by this project.

The increased emphasis on community involvement in maintenance activities is mainly a result of the realized inability of agencies to take care of maintenance of community standposts themselves. The above examples indicate that community responsibility alone may not be the answer either (see also suggestions for water charging policy, 3.2.2.).

The maintenance of CMC road standposts is another matter altogether. Looking at the variety of users of this kind of taps, it is clear that major maintenance responsibility by the user-community would be unrealistic. Clearly here the agency (CMC) must play the major role in maintenance and repair (see also suggestions for water charging policy, 3.2.2.).

1.6 Recovery of construction cost of community standpost-systems

NGO's such as Redd Barna and US Save the Children provide water supply systems free of charge to the communities.

During implementation unskilled and semi-skilled labour of the community is employed, but this labour is paid for according to rates only slightly below official government rates, and can therefore not be considered as a contribution from the community towards the cost of the system.

The SSD has involved the community in construction in some of its projects but never without pay. Until recently the SSD hoped to recover at least some of the cost of projects (of which water supply is part) by charging lease-rents. This has turned out to be impossible for administrative and political reasons. At the moment the SSD's policy is: provision of communal services free, any financial housing assistance to be paid back. Though this pragmatic approach appears to be the only one feasible at the moment, it contributes to the maintenance problems; the communities expect the agency to maintain the services provided.

1.7 Health education

1.7.1 Agencies and organization with experience

Various governmental and non-governmental organizations have experience with health education programmes in low income urban areas: Medical Officer of Health Departments of municipal and urban councils, Common Amenities Board with UNICEF, numerous big and small NGO's such as US Save the Children, Redd Barna, La Sallean Educational Services, and so on. The SSD does not have its own health education programmes linked to its physical improvement projects, but tries to involve NGO's in some of its project areas. A wealth of experience with health education also exists in rural and semi-rural areas (e.g. IRDP's, Sarvodaya, Women's Bureau).

Health Education is a field where experiences of the various organizations and agencies could be studied and used for policy development, education methods, material used, human resources requirements, and, of course, results. Brother Emmanuel of La Sallean Educational Services believes that the education and medical care programme, combined with the SSD-improved water and sanitation conditions in Henamulla have led to a measurable improvement of the health situation.

1.7.2 Water quality

Health education, whereby people are made aware of the importance of keeping the water clean during transport and home-storage is generally based on the assumption that water is un-polluted when it comes out of the tap.

Unfortunately this is not always the case in Colombo. Those who can afford it boil their drinking water. This is out of the question in the low-income areas due to the high costs.

SSD intends to carry out water quality tests in some of its project areas, during different seasons. Tests carried out in Henamulla in 1981 showed that both bathing well and standpost-water were equally badly polluted (E. coli), even after the old deteriorated GI pipe system in the area had been replaced by a PVC system.

2 MIXED SYSTEMS

Colombo as a whole, and all other urban and municipal councils are "mixed systems" of domestic connections, road-standposts and community standposts.

Within cities and towns there are areas of "domestic connections only" (e.g. parts of Colombo 3), of "standposts only" (e.g. Henamulla, Summitpura) and "mixed systems" (most slum-gardens).

2.1 Maligakanda inner city slum

Experiences in slum-gardens with mixed systems, such as Kew Lane and Maligakanda inner city slum may very well generate ideas and possible solutions for whole cities, and for present "standpost only" areas such as Summitpura, that will undoubtedly change into "mixed systems" in the future.

Especially Maligakanda, where the SSD, with support from the information/ communication project of UNCHS, undertakes an improvement project, is interesting in this respect. Maligakanda, with its variety of land-uses, of population and income-groups reflected in quality of housing and services, with its conflicting interests, is a "microcosm", a miniature version of a complete city.

Few lessons have been learned as yet, since the project is in a very early stage.

The author would like to recommend that the NWSDB takes a keen interest in the water supply component of this project.

2.2 Inter-agency cooperation and coordination

Inter-agency cooperation and coordination is a prerequisite for mixed systems in slum areas such as Maligakanda. No municipal mains run through these areas, of which the public space (streets, footpaths) are vested with the government, but over which the Colombo Municipal Council has no authority, nor responsibility. The

consequence of this situation is that all connections within the slum area, both domestic and public (for a system of standposts) are obtained from the municipal mains along the bordering street or road. In some areas numerous pipes run parallel through a narrow slum-passage: one for the public system, the rest for domestic connections.

Of course the solution is simple: the "public pipe" in the slum area could have a number of connection-points from which future requests for domestic connections could be granted. The SSD has not yet implemented such a public pipe with standposts and connection-points. As the situation is now, the CMC would consider a branch-system constructed by SSD or CAB as a private system, over which it has no authority. Domestic connections would still be made from the mains therefore, resulting in unnecessary pipelength, and breaking-up of newly provided pavement. One possibility would be that agencies such as CAB and SSD could hand over to the municipal council branch-systems constructed by them. Other solutions are also possible.

The present situation, however, is not conducive to rational and efficient mixed systems in slum-gardens, and creates scattered maintenance responsibilities (see illustration of Maligakanda in the Annexe).

2.3. The Mannar Water Supply Project

Presently the NWSDB is undertaking a major project for the improvement of water supply to the town of Mannar.

Though it is understood that, apart from already existing domestic and standpost-connections, more standposts need to be constructed, no clear ideas have developed yet.

The Mannar Project gives an excellent opportunity to carefully investigate and plan "standpost issues"; locations (along roads? within communities? both?), designs, maintenance and water charging, community involvement and participation, including participation of women.

3. WATER CHARGING POLICY

3.1 Metering of domestic connections

The National Water Supply and Drainage Board of Sri Lanka is presently implementing the shift in policy from "free water for all" to "water should be paid for".

Watermeters have been and are being installed at all existing registered domestic connections. The watermeters are installed free of charge, though for new connections a fee of Rs 1,000.- is charged. This amount may be more than the actual administrative and technical cost of the instalment of the meter. The author does not know whether the amount is partly meant to contribute to the cost of the meter itself or not.

The installation of meters and the subsequent billing and charging systems appear to be a fairly straightforward and well-implemented process. The author did not look into the matter of domestic metered connections any further and devoted most of the limited time available to issues related to public water standposts. However, a few interesting cases, encountered during the 10 days' stay in Colombo are worth mentioning:

- a. Unregistered domestic taps are apparently not metered. A (broken) tap in a private garden was running and could not be closed. The author commented that this would undoubtedly result in extremely high waterbills. This was not the case, since this tap, and its connection to the main, were separate from the metered connection (kitchen and bathrooms).
- b. Two people known to the author had received totally unrealistic waterbills, of Rs 25,000.-- and Rs 40,000.-- (US\$ 1,000.-- and 1,600.-- respectively). This was explained as a mistake of the computer and normal bills were sent after complaints.
- c. There is a general complaint that the meter also takes account of air. In other words, air in the pipes would make the meter register flow.

3.2 Water-charging policy for public standposts; present situation

So far no water-charging policy for public standposts exists. When the policy of meters for domestic connections was introduced, there was a feeling within the NWSDB and within the Municipal Waterworks Department that public standposts also had to be metered. However, no clear ideas seem to have developed as to how to charge the users. If ideas did develop, the information did not reach agencies such as the SSD.

According to Mr. P. Bertilsson (UNCHS, SSD), a water-charging policy for public standposts has been forgotten by the water-agencies, at least for the time being.

However, he mentioned that there is a general idea that standposts should be metered, either at the standpost itself and/or (in the case of a system of several standposts) at the connection with the main-supply line.

In the long run a metered system might be the basis for a charging-policy. For the moment, however, the metering of standposts would be done only to investigate water-use (and wastage) through public standposts; nobody appears to know how much water is consumed through standposts. In fact, nobody appears to know how many standposts, official and unofficial, exist in Colombo.

The SSD intends to carry out an experiment of metering standposts and to record use, in cooperation with the NWSDB.

3.3 Some considerations on possible water charging systems

3.3.1 Combination of RSP's and CSP's

Road standposts are used by communities and by other users (see 1.2.1). Moreover, they are located in very public locations and community control over use is difficult and impossible at night. Herein lies the basic problem regarding charging for water use from road standposts; one cannot bill a community for the use of a tap accessible to many.

If community bills for water use and/or a shared agency/community responsibility for care and maintenance are envisaged, community standposts, located within communities are the only answer. However, if free RSP's continue to exist, another problem will arise; rather than paying for water and rather than repairing broken CSP's, people will walk to the closest RSP and get their water free. A considerable decrease in the number of RSP's, or their abolition altogether could be the answer.

The above considerations illustrate the necessity to take into account both CSP's and RSP's when thinking of standpost-charging systems. Some charging combinations of RSP's and CSP's are more realistic than others and some combinations are impossible or at least not advisable. In the following schedule (Table 1) various charging possibilities for CSP's and RSP's are included.

The schedule indicates the feasibility of the various combinations. Please note that "IMPOSSIBLE" or "POSSIBLE" refer only to the feasibility of charging-combinations. Whether the options are feasible in themselves will be dealt with in section 3.3.2.

With the comparison of options and charging combinations it is assumed that all standposts will be properly maintained by agencies and/or communities and that water losses due to faulty taps and other technical problems are minimal.

3.3.2 Possible combinations and their consequences

Concluding from the schedule it appears that there are a number of "very well possible" combinations. This does not mean that they could be implemented without any problems. Consequences for cost, maintenance, collection of water payments etc. need to be taken into account before making final choices. A few considerations on the most realistic RSP/CSP combinations follow:

- limited number of free RSP's and free CSP's for all communities:
 - . contrary to present policy thinking (no reason not to consider it however)
 - . cost: water use through SP's fully subsidized; may turn out expensive, even when water losses are kept to a minimum

TABLE 1 CHARGING POSSIBILITIES FOR COMMUNAL AND ROADSIDE STANDPOST COMBINATIONS

	CSP's in some communities, many communities depending on RSP's. Water free; (present situation)	CSP's in all communities, water free	CSP's in all communities; water charging by metered use (meter per Standpost or per area-system)	CSP's in all communities; water charging through flat rate (watertax)
large number of RSP's used by communities and others; (present situation)	POSSIBLE, but with the well known problems; waterlosses, dangerous locations RSP's, ill feelings among house-connection-holders	POSSIBLE, but expensive No more need for large number of RSP's.	NOT ADVISABLE; people will use free RSP's; expensive: no need for large no. of RSP's.	POSSIBLE, but no need for large no. of RSP's
large number of RSP's as at present used by communities and others; water charging at RSP, by attendants	IMPOSSIBLE; Unequal and unacceptable situation	POSSIBLE, but expensive, see above	POSSIBLE, but no need for large no. of RSP's	POSSIBLE, but, see above
limited number of RSP's, water free	POSSIBLE but not ideal; with the well known problems, to a lesser extent	VERY WELL POSSIBLE; RSP's mainly for 'other users'.	POSSIBLE, if RSP's are not located close to communities. Otherwise not advisable.	VERY WELL POSSIBLE
limited number of RSP's; water-charging by attendants	IMPOSSIBLE; Unequal and unacceptable situation	VERY WELL POSSIBLE	VERY WELL POSSIBLE	VERY WELL POSSIBLE
no RSP's for community use (i.e. abolish RSP's)	IMPOSSIBLE (not enough SP's)	VERY WELL POSSIBLE	VERY WELL POSSIBLE	VERY WELL POSSIBLE
		If say 1 waterfacility per ward is created for carwashing etc.		

- . since water is free, community care for CSP systems to avoid wastage may be expected to be minimal; therefore maintenance would have to be mainly an agency matter and avoidance of water losses due to improper use such as leaving taps running, would require raising communities' awareness and responsibility regarding water wastage. Difficult. Community Development Councils (CDC's) would have to play an important role.
 - . free (unattended) RSP's require very frequent maintenance and extremely sturdy design.
- limited number of charged RSP's and free CSP's for all communities
 - . first three points same as above
 - . RSP's would require attendants, who could take care of maintenance at the same time. Charging could take place per occasion of use, per bucket or container, or with fixed amounts for different kinds of use (a bath, carwash, bucketfull etc.). A 'high tech' solution, not advised for consideration, would be "slotmachines" at RSP's.
- limited number of charged RSP's and CSP's in all communities with charges for metered use.
 - . for RSP's see previous combination.
 - . if each CSP would have its own meter, charging would be completely "fair". This is only possible with a limited number of userhouse-holds per CSP (say 5-10). Conflicts over use and wastage would have to be solved among the users by themselves. Collection of dues may be extremely difficult. In case of default the tap could be closed off, but this is hardly a solution; present practices show that people know perfectly well how to dig up a pipe and obtain a continuous free supply. Another problem with individual CSP meters: a lot of community toilet/bathing blocks used by many more than 5-10 households have taps; difficult to charge for.
 - . another way to charge for metered use is to record use of an entire area-system at the connection with the main; the water bill would have to be shared by all residents of the area. Conflicts between users would have to be settled by CDC's.

Collection of dues, and control over misuse and wastage could also be CDC-responsibilities. Action in case of default is problematic. Closing of SP's used by defaulters is of no use since they will use another SP or find less elegant solutions.

Both metering options no not appear to be very feasible.

- CSP's in all communities; charging flate rate (water tax), in combination with free or charged RSP's.
 - . for RSP's see previous combinations
 - . to author charging a flat rate from all city residents who depend on PSWS appears the best solution. However, difficulties with collection and sanctions in case of default remain. Moreover, since the amounts to be collected per household are bound to be small, cost of collection may prove to be prohibitive; in case this would indeed be so, there is a case for considering free water from well maintained standposts CDC's could play a role in collection, but some CDC's are more active and efficient than others and there are areas without CDC's altogether. Best chances lie in collection of water tax in combination with other dues or rates if any, such as lease rents or contributions to CDC's for other purposes.

During dry periods with scanty or no supply RSP's (which generally have better supply than SP's connected to branches) should be made free and water tax decreased or abollished.

A point that should be considered with all CSP charging options is the variation in household size: should large households pay more?

- Abolishing RSP's.

If and when all communities have their own CSP's there's hardly any further need for RSP's. Abolishing them altogether is worth considering. In case of emergency (no CSP supply during dry periods) temporary RSP's could be created and supervised continually. The "other users" of RSP's (see 1.2) would perhaps require one well designed water facility per ward.

3.3.3. Conclusion

Knowledge of cost of facilities and maintenance, resources and preferences of agencies and communities and expected revenues are needed as a basis for firm recommendations regarding charging systems. In spite of the fact that this basis is not yet available, the author has a rather intuitive preference for a set-up with the following characteristics:

- gradual increase of the number of CSP's, until all communities have their own CSP('s), located within the communities;
- gradual decrease of the number of RSP's, resulting in very limited numbers of RSP's or in just one attended and charged public water facility per ward for all other uses apart from community water supply;
- charges for water by applying flat rate (water tax) for all households who do not possess a domestic connection and who depend on CSP water supply;
- collection of water tax through Community Development Councils preferably in combination with other dues or rates;
- part of the water tax to be kept in the community (CDC) to pay for CSP caretakers (preferably women) and for minor repairs which can be executed without assistance from agencies;
- provision of temporary RSP's, run and attended by agency staff in case of emergency situations such as no or too limited CSP supply.

