

Rationalize Services and Setting Minimum Standards



Report on Third Tranche Action D - ii

Majority of TMAs Carry out Surveys and Prepare Master Plans for Drinking Water Supply and Sanitation According to Their Administrative and Technical Capacity

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About this Document

Taluka/Town Municipal Administrations (TMAs) were asked to develop comprehensive master plans of their respective taluka, over a time horizon of 20 years (2006-2026). The master plans prepared by the TMAs reflect the development needs of the town, keeping in view their present economic level of development and their development targets and goals.

This document reviews the master plan documents received from the TMAs. The review of master plans has two-fold parts. The trends in the development of the master plans, extent of incorporation of the water and sanitation issues and the provision of data is reviewed critically in the initial part. The second part, at the end of the review, suggests the rational strategy, which is proposed to be adopted, to address the deficiencies and short-comings identified in the review.

1. Summary

Town Municipal Administrations (TMAs) were asked to prepare master plans, in respect of, among others, water and sanitation sectors. The plans were to be prepared for the period of two-decade (2006-2026). Program Support Unit, SDSSP, issued guidelines for the preparation of water and sanitation plans.

Out of 119 TMAs, 92 TMAs submitted their plans. An overview of the master plans submitted, showed that, the TMAs have made fairly good efforts in giving the information on water and sanitation, based on the guidelines issued. Water demand forecast has been made and wastewater generation rates have been estimated. The guidelines issued were predominantly in the shape of “fill-in-the-blanks” exercise. Some TMAs have not filled in the blanks, which show lack of availability of data with TMAs. Stereotype filling of the available data and, absence of any creative and additional work (water treatment, storage, distribution; wastewater collection, treatment and disposal; and hygiene) shows lack of capacity on part of the staff in the field of water and sanitation, to undertake the work independently. Simply following the guidelines shows inability on part of the TMA staff to write reports independently.

A realistic approach towards water and sanitation plans requires an overall broader understanding of aspects, which govern water requirements and wastewater generation. These include, hygienic handling of water, water required to meet fire demand, water required for industries, schools, hospitals, hotels, etc, which are located in the area, and which are likely to be located in the area, during the next two decades. The industrial requirements could leapfrog the water requirements. For example, water requirements for an averaged-sized soda ash factory are, typically, 18,000 gallons/ton. These water demands, then, are to be reflected in the quantity of wastewater, which would be generated. In view of the freshwater scarcity and an increasing stress on water conservation, the TMAs need to

look at the reuse of treated wastewater for irrigation of parks, playground and roadside green belts.

Staff of TMAs needs training to build their capacity to make judicious long-term planning for water and sanitation. Specific training needs, based on the assessment of the master plans received, are:

- Methodology for conducting surveys and for data collection (surface water resources and groundwater);
- Integrated and holistic approach towards water and sanitation, covering a broad range of aspects (water demand estimation, water sampling, water quality, low-cost water treatment technologies, water storage, hygiene and; low-cost and on-site sanitation technologies);
- Linking of water and sanitation sectors to land-use planning;
- Water conservation;
- Basic guidance in handling of industrial wastewater;
- Treated municipal wastewater reuse;
- Ability to jot down observations in a narrative form; and
- Filling-up of the positions of planning officers, laying vacant in the TMAs.

2. Review of Current Master Plans of TMAs

2.1 Introduction

Safe drinking water and hygienic sanitation facilities are a precondition for health and, for success in the fight against poverty, hunger, child deaths and gender inequality. They are also central to the human rights and personal dignity of every woman, man and child on earth. At the United Nations Millennium Summit in September 2000, all 189 heads-of-state adopted the Millennium Development Goals (MDGs), which set clear, numerical, time-bound targets for making real progress, by 2015, in tackling the most pressing issues developing countries face. Among those targets is the Millennium Development Target 10 (as expanded by the 2002 World Summit on Sustainable Development): to cut in half, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation.

The adverse impacts of unsafe water and poor sanitation in Sindh extend well beyond the direct impacts of health. As is common in rural settings in Sindh, people suffering from ill health lose opportunity to work, thereby increasing the poverty levels. Health risks and epidemics in Sindh from waterborne diseases can greatly reduce the output at household level, reducing potential to generate acceptable agricultural activities. The opportunity costs of foregoing economic output can be much greater than the current cost of investments in water and sanitation sectors. People living in villages in Sindh suffer most from deficient environmental sanitation, defined here as “interventions to reduce people's exposure to disease by providing a clean environment in which to live, with measures to break the cycle of disease. This includes hygienic management of excreta, wastewater, solid waste, and the control of disease vectors and provision of washing facilities for personal and domestic hygiene. Environmental sanitation involves both behaviors and facilities, which work in tandem to form a hygienic environment.

2.2 Importance of Water and Sanitation Interventions

Water, sanitation and hygiene have important impacts on both health and disease. Water-related diseases kill a child every 8 seconds, and are responsible for 80 per cent of all illnesses and deaths in the developing world. Water-related diseases kill more than 5 million people every year, more than ten times the number killed in wars.

Studies have found that adequate water supply and sanitation could reduce infection rates by 77 per cent. Trachoma is an eye infection spread mainly through poor hygiene caused by lack of adequate water supplies and unsafe environmental sanitation conditions. About 6 million people are blind today because of trachoma. It affects women two to three times more than men. Children are also especially vulnerable to trachoma. Studies have found that providing adequate water supplies could reduce infection rates by 25 per cent. Typhoid fever is a bacterial infection caused by ingesting contaminated food or water. Symptoms are characterized by headaches, nausea and loss of appetite. About 12 million people are affected by typhoid every year.

2.3 Background

Prior to devolution, the water supply and sewerage schemes in the Sindh province were handled by the then Public Health Engineering Department (PHED), whose head office was located in Hyderabad. The sewerage schemes were mistakenly called as drainage schemes. Technically speaking, all those schemes, which provide for the treatment of wastewater and, its conveyance to the final disposal point, are called sewerage schemes; those schemes, which convey storm-water of a town to a final disposal point, are called drainage schemes. Since, PHED had relatively qualified and trained staff, within their setup, the department was able to formulate water supply and sewerage schemes. After conceiving the schemes, the PC-I of the schemes was prepared for approval of the provincial Planning and Development Department. The execution work was taken in hand, once the Government of Sindh approved the scheme.

Earlier the Public Health Engineering Department had the sole responsibility of managing and operating the water supply and drainage through its offices at divisional, district and sub-divisional levels. However, after the devolution the water and sanitation related functions were devolved to the TMAs and the scope of the PHE as a department was reduced to the office of a Director General (Technical) in the administrative ambit of the local government department. As an arrangement for providing institutional support to the TMAs, the government has created PHE as a Wing in the Local government department with regional offices at Hyderabad, Sukkur, Mirpurkhas and Larkana headed by an officer of BS-19. Likewise it now has district support units at every district (headed by executive engineers) to provide technical assistance / sanction to the TMAs in planning and execution of the WSS schemes.

2.4 Overview of Master Plans

Realizing the importance of water and sanitation situation in Sindh, the TMAs were asked to develop a two-decade (2006-2026) master plan (sector plan, as is otherwise called), to guide the development of water and sanitation, to meet the basic needs of rural and peri-urban populations. Water and sanitation improve livelihoods and enhance incomes through time-saving and cost-savings, achieved through improved health. Water and sanitation projects also restore natural environment through water conservation and, energy savings, such as from boiling water to improve its quality. People's access to reliable water and sanitation services is an indicator of well-beings, as aspect well recognized in cultural background of Sindh.

Out of a total of 119 TMAs, 92 TMAs submitted the master plans. In other words, over 80 per cent of TMAs submitted the master plans, which is fairly encouraging, keeping in view the fact that, this was a relatively new experience for TMAs to develop master plans.

2.5 Conventional Approaches

Quite often, the PHED adopted the typical conventional approach in addressing the problems of water and sanitation in Sindh. As related to water and urban environmental sanitation, the approach has been the one in which planners and engineers defined the needs of the poor, and then decide what type of infrastructure and service will be provided. Sector professionals then translated hypothetical demand into project designs based on sewerage and treatment technologies commonly used in industrial cities. Such supply-driven approaches have seldom been appropriate in the developing country context as many examples illustrate. In many of the cases of sewerage systems, which have more or less good coverage, only few have functioning treatment plants (e.g., Hyderabad). In other towns of Sindh, the water and sanitation coverage has been deficient.

2.6 Preparation of Master Plans

The master plans for water and sanitation sectors were prepared by the TMAs, on the basis of guidelines, prepared by the Program Support Unit, Sindh Devolved Social Services Program. This is clear from the set and fixed pattern of reporting on water and sanitation, adopted in the plans. There is no additional information from the TMAs' side, in the plans. This gives a feeling of stereotype reading of the water and sanitation plans and, tends to give the reader a feeling that, the document is not quite reliable, as is clear from an earlier assessment. In fact, the TMAs have done a fairly good job, in filling out the information, as given in the guidelines, though in some cases, the blanks have not been filled, obviously pointing out to the lack of capacity, or lack of availability of data.

The guidelines, given to the TMAs, gave two options on the water supply side. Option 1 related to the location of the town, relative to surface water resources, and the availability of groundwater. The second option, given in the "fill-in-the-blanks" form, pertains to the conveyance of raw water from the surface water source to the point of use.

Based on the forecast of population figures, starting from the base figures available in 1998, the population was estimated for the years 2006, 2016 and 2026. Since, the units of water quantity (liters/capita per day; cubic meters/day) are not quite clear, the water demand for the period 2006-2026, is somewhat confusing. Similar is the case with the sewerage sector, as the confusion caused by units, give unclear wastewater generation rates.

There is nothing beyond in the report from the water demand forecast and the wastewater generation rates. Aspects of water treatment, storage and distribution have not been dealt with. Likewise, wastewater collection, treatment, reuse and disposal plans have not been discussed.

The guidelines for development of plans for water and sanitation are given in a separate companion volume.

3. Strategy for Providing Technical Assistance to TMAs in Master Planning

3.1 Role of Planning Officers

Positions of Planning Officers exist in the schedule of establishment of all TMAs. Planning officers have a key role in addressing key issues, pertaining to planning, and formulate the time-bound development program, keeping in view the TMAs' development requirements. Planning officers would also be instrumental and helpful, based on their qualification and experience, in drafting out a well-conceived master plan.

3.2 Training Needs' Requirements

Staff of TMAs needs to be trained to build their capacity, for making long-term planning for water and sanitation. Specific training needs, based on the assessment of the master plans received, are:

- Methodology for conducting surveys and for data collection (surface water resources and groundwater);
- Integrated and holistic approach towards water and sanitation, covering a broad range of aspects (water demand estimation, water sampling, water quality, low-cost water treatment technologies, water storage, hygiene and; low-cost and on-site sanitation technologies);
- Linking water and sanitation to land-use planning;
- Water conservation;
- Basic guidance for handling of industrial wastewater;
- Treated municipal wastewater reuse; and
- Ability to jot down observations in a narrative form.

4. Capacity Building of TMAs

Appropriate capacity building of TMAs is essential for the rational planning and implementation of development programs and projects. Preliminary reviews of the working of TMAs reveal some deficiency in data collection, analysis, presentation, management, comprehension of administrative and technical issues and, ability to document the issues and activities.

The government, recognizing the problems of deficiencies in the TMAs' smooth handling of technical works, took certain appropriate measures. The local government department devolved key support staff from BS-1 to BS-15 to the TMAs. Officers of grade 16 and above were posted in TMAs as TMOs/Town Officers for guiding and supervising the development process and other activities. Mapping of the staff currently working in TMAs as TMOs and TOs (I&S) (Annexure-A) is indicative of the government resolve to equip the TMAs with adequate technical support. Recently, to further provide technical assistance to the TMAs, the government has created District Support Units (DSUs) headed by a grade-18 officer at every district and offices headed by a grade-19 officer at Hyderabad, Sukkur, Mirpurkhas and Larkana. These officers will assist TMAs in the planning and execution of works of water and sanitation. This will be further supported by posting of grade-18 officers (mid-level managers) in all major towns of Sindh.

4.1 Local Government and SDSSP Initiative

Local Government Department and SDSSP plan to initiate capacity building programs in the field of water, sanitation, solid waste management and environment. Currently, two-fold strategy is in the pipeline. One, a series of workshops would be held, to identify the problems and analyze the existing situation and sensitize the TMAs of the issues involved in the related technical fields, such as safe water supply, scientific disposal of liquid and solid waste, identification and development of landfill sites, garbage transfer stations, etc. This would be supported by distributing technical material and possibly training modules. Second, local educational institutions will be contacted (these are located in Karachi, Hyderabad and Nawabshah), who would, at a cost, conduct 3 to 4 weeks' shortcourses in the field of water, sanitation solid waste and environment. The shortcourse would train the TMAs' staff in the areas like planning of scheme, design of scheme, operation and maintenance of the scheme. This is expected to improve significantly the capacities of TMAs to handle the basic service sectors, and improve the master plans of water supply and sanitation, already prepared by the TMAs.

5. Conclusions

The TMAs have made fairly good efforts in giving the information on water and sanitation, based on the guidelines, issued by the Program Support Unit, SDSSP. Leaving some blanks unfilled shows lack of availability of data with TMAs, for which TMAs are not to be blamed. Stereotype filling of the available data and, absence of any creative and additional work (water treatment, storage, distribution; wastewater collection, treatment and disposal) shows lack of capacity of the staff in the field of water and sanitation, to undertake the work independently.

A realistic approach towards water and sanitation plans requires an overall broader understanding of aspects, which would require water and generate wastewater. These include, hygienic handling of water, water required to meet fire demand, water required for industries, schools, hospitals, hotels, etc, which are located in the area, and more may be located in the area, during the next two decades. The industrial requirements could leapfrog the water requirements. For example, averaged-sized soda ash factory water requirements are, typically, 18,000 gallons/ton. These water demands, then, are to be reflected in the quantity of wastewater generated. In view of the freshwater scarcity and an increasing stress on water conservation, the TMAs needs to look at the reuse of treated wastewater for irrigation of parks, playground and roadside green belts.