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**CAPACITY BUILDING FOR
ENVIRONMENTAL MANAGEMENT
IN SINDH**

**DOMESTIC WATER AND SANITATION
POLICY FOR SINDH**

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1 DOMESTIC WATER AND SANITATION POLICY FOR SINDH

2 PREAMBLE

1. The Sindh Domestic¹ Water Supply and Sanitation² Policy is intended to support and guide the Sindh City District Government and Taluka Municipal Administrations (TMA) to frame their own domestic water supply and sanitation strategies, plans and programmes and is the result of stakeholder consultations held at the Taluka and provincial levels.
2. The Sindh Policy has been prepared after extensive consultations, detailed technical assessment in selected urban and rural areas and a process of consensus building. The objective of the process was to ensure participation of stakeholder groups both in (i) identification of issues, and (ii) together with the technical, fiscal and financial assessment carried out by the TA Team, build a consensus on policy response to the identified issues.
3. The first stage of the process involved three principal activities: (1) Consultation meetings with stakeholders in 41 Taluka Municipal Administrations (TMAs); (2) Issues assessment in 6 TMAs; and (3) Meetings at the provincial government level. The outputs of these consultations were analysed in the background of the detailed technical, fiscal, financial and WSS tariff assessments in the 6 selected TMAs. The issues highlighted in the Consultation process, together with reports from the technical and financial assessment conducted by the TA Team, formed the basis for preparing the first draft of the Policy.
4. The second stage of the process involved consensus building on the first draft of the Policy. This included: (1) Circulation of the summary issues statement and first draft of the Policy to a stakeholder group invited to a Consensus Building Meeting held on April 20, 2006. (2) Presentation of the issues assessment carried out in Sindh, the framework of the draft national policies, and the first draft of the Sindh Water Supply and Sanitation Policy. Discussions were held by the group, which included high-level Provincial Government officials, invited representatives from selected local governments who could make commitments on behalf of their organizations, and civic and civil society groups, on the draft of the Policy. (3) Publication of the Draft Policies in national press, with an invitation to the public to send in their comments.
5. The feedback from the meeting of April 20, 2006 on the first draft of the Policy and comments from the public provided the basis for the review and revision and the revised draft contained in this document.

¹ Domestic Water refers to the provision of water to households, offices and commercial establishments primarily for the use of and by people in and for their everyday activities. Also referred to as "municipal" water supply, it excludes the supply of water used as inputs for manufacturing or production (such as large-scale, commercial, agricultural and industrial) processes. "Drinking Water", which forms an important component of domestic water supply, refers to water, treated or untreated, which is intended for human use and consumption and considered to be free of harmful chemicals and disease-causing bacteria, cysts, viruses, or other microorganisms.

² Sanitation is defined by the World Bank as 'Interventions to reduce people's exposure to diseases by providing a clean environment in which to live; with measures to break the cycle of disease. This usually includes disposing of or hygienic management of human and animal excreta, refuse and wastewater, the control of disease vectors and the provision of washing facilities for personal and domestic hygiene. Sanitation involves both behaviors and facilities which work together to form a hygienic environment.' http://www.worldbank.org/html/tpd/water/topics/hsp/hsp_definitions.html and is used here to include open drains, covered drains and underground sewerage systems used to collect and dispose of human wastes.

3 CONTEXT

6. The water supply and sanitation realities related to demographic change, coverage, social issues, the resource dimension, NGO and private sector involvement, capacity and capability of planning agencies and local government departments, given below, have formed the basis for the development of the provisions of the Sindh Water Supply and Sanitation Policy.

3.1 General

7. Sindh's population according to the 1998 Census is 30.44 million. The annual population growth rate is 2.80 per cent which means that the population will double in the next twenty-five years. Urban growth is 3.5 per cent and 48.8 per cent of Sindhis live in urban areas³. This trend is likely to continue.

3.2 Water Supply

8. There is a scarcity of drinking water and water supply coverage is poor. According to one survey, in 2004-05, 87% of households have access to water inside their houses, (up from 81% in 2001-02)⁴ i.e., 45% have taps (up from 30%), 6% have motorized pumps and 36% have hand pumps. In rural areas 81% of the households has access to water inside their houses i.e. 20% have taps (up from 4%), 3% have motorized pumps and 58% have hand-pumps, In urban areas 94% of the households has access to water inside their houses i.e. 71% have taps, 10% have motorized pumps and 13% have hand pumps. However there is virtually no data regarding water quality.
9. Most cities have invested in piped water systems. The old systems have collapsed due to a lack of maintenance and poor design.
10. The water is supplied intermittently. As the water lines are laid adjacent to the sewers/ drains the wastewater is sucked into the water lines. Often water lines have been tapped informally using poor joints and connections, again leading to contamination by sewage.
11. The main source of water for many settlements is the irrigation canal and during canal closures or supply shortages, there is no water available in the canal. The canals are also used as the outflow for untreated sewage. Thus the dumping of sewage by one settlement contaminates the water of others downstream who undertake little or no treatment before supplying it to the households.
12. Household Surveys show that the majority of the population do not have a clear understanding of the relationship between unsafe water and health. As a result, water-borne diseases impoverish them.
13. Government spending for the water and drinking water sector has been poor (0.08 per cent of the GDP for the year 2002-03, and 0.09 and 0.10 per cent for the years 2003-04 and 2004-05 respectively). These allocations are insufficient to meet the Millennium Development Goals and

³ Urban Areas are defined by the Census of Pakistan as "all localities which were either metropolitan corporation, municipal corporation, municipal committee, town committee or cantonment". In this document the term urban areas and cities are used interchangeably. The term "settlements" is used to extend the definition to include smaller agglomerations in "rural" areas.

⁴ Pakistan Social and Living Standard Measurement Survey (2004-05), Statistics Division, Federal Bureau of Statistics, Government of Pakistan

other targets for the sector and most of them are utilised for the water sector rather than drinking water.

14. Vertical programmes (such as the Khushal Pakistan Programme) are organised and implemented in ways that adversely effect the autonomy of the Taluka Municipal Administration (TMA) in preparing the development budget and also undermine local government accountability and operational efficiency.
15. There is considerable evidence to show that in the absence of government and/or NGO support and investments, communities organise to build their drinking water systems on self-help. If this process is supported then the huge investments communities make into this effort would be better utilised and would help to overcome resource constraints.
16. There are a number of Pakistani NGO and government agency programmes and projects that have successfully supported communities in financing and managing the construction of their neighbourhood drinking water infrastructure through self-help. Government-NGO/CBO partnerships have emerged as a result where local government has complimented this work by providing bulk water.
17. In most urban areas and in all rural areas the costs of drinking water are not properly priced and therefore O&M cost for drinking water have to be subsidised from other sources.
18. Land-use and topographic maps and development plans of existing settlements, and the infrastructure that they contain, do not exist for the urban and/or rural areas of Sindh. Institutional capacity and capability for such documentation is almost non-existent. In the absence of such documentation, realistic and cost effective planning cannot take place.
19. There is also inadequate technical capacity and capability in government agencies to plan and implement and an absence of management information systems.
20. Engineering standards followed in Sindh create systems that are expensive to build, operate and maintain. Standards developed by NGO and innovative government programmes have overcome these constraints and are being increasingly applied as solutions.
21. So far there has been an absence of a drinking water policy and an absence of a clear definition of drinking water itself. In addition, roles of the different government agencies responsible for planning and implementation are not clearly defined. There are also a large number of actors involved in drinking water provision and a large number of parallel drinking water related investments and programmes between which there is no coordination and many of which do not come under the preview of local government institutions. Local government and development agencies also lack managerial, administrative and monitoring capacity due to which a lot of ad-hoc decisions and programmes take place.

3.3 Sanitation

22. Sanitation coverage is poor. According to one survey⁵, 16% of Sindh's population has no access to toilet facilities, 5% in urban areas and 27% in rural areas and 32% overall and 56% in rural and 7% in urban have non flush toilets.

⁵ Op cit

23. In the urban areas in Sindh, underground drains serve only 69 per cent of households and in the rural areas 85 per cent of households have no system at all.⁶
24. Most cities have invested in underground sewerage systems. The old systems have collapsed due to a lack of maintenance and poor design and almost all systems dispose untreated sewage into the storm water drains and water bodies. As a result, there is sewage-contaminated stagnant water in streets and lanes, and the heavily contaminated natural water bodies has made their water and fish life unsafe for food and is a major environmental health hazard, since the water in the canals is used untreated by settlements downstream for drinking and for agricultural purposes. In addition, over 50 per cent of Sindh's urban population lives in *katchi abadis* and/or informal settlements and their sanitation plans have not been integrated into the larger city sanitation plans. Treatment plants for the cities do not exist and where they do, they are inappropriately located and hence receive little or no sewage.
25. The vast majority of small towns do not have an underground sewerage system. Most neighbourhoods have open drains installed by the Public Health Engineering Department (PHED) which are often and easily blocked, and the stagnant water becomes a health hazard and a danger to the housing stock.
26. Household Surveys show that the majority of the population of Sindh do not have a clear understanding of the relationship between unsafe excreta disposal and diarrhoea. They also do not know the costs and techniques of installing sanitary latrines. As a result, sanitation related diseases impoverish them.
27. There is an almost total absence of public toilets in cities, towns and transport terminals and transit areas in Sindh. Functioning toilets do not exist in nearly two-thirds of schools in the Province. In addition, water is not always available in the toilets, students and teachers do not know how to use latrines, and staff for maintaining them is not always available since maintenance of toilets is considered to be job of the "lower" castes. Women and girls are the worst sufferers as a result of lack of such sanitation facilities.
28. There is considerable evidence to show that in the absence of government and/or NGO support and investments, communities organise to build their sanitation systems on self-help and dispose their effluent into the natural storm water drains. If this process is supported then the huge investments communities make into this effort would be better utilised and would help to overcome resource constraints.
29. There are a number of Pakistani NGO and government agency programmes and projects that have successfully supported communities in financing and managing the construction of their neighbourhood sanitation infrastructure through self-help. Government-NGO/CBO partnerships have emerged as a result where local government has complimented this work by providing trunk sewers and disposals.

4 OBJECTIVES

30. The primary objective of the Sindh Water Supply and Sanitation Policy is to improve the quality of life of the people of Sindh. To achieve this, the

⁶ Pakistan Integrated Household Survey (1998/99-2001/02)

policy has the following sub objectives:

- i) To ensure access to safe drinking water, and the promotion of health and hygiene practices to compliment the primary objectives.
- ii) To ensure an open-defecation-free environment; the safe handling and disposal of liquid waste; and the promotion of health and hygiene practices to compliment the primary objectives.
- iii) To develop guidelines for the evolution of an effective institutional and financial framework to implement the primary objectives.
- iv) To link water supply and sanitation programmes with environment, housing, sanitation and city and regional planning policies and programmes.

5 POLICY PRINCIPLES

31. The following key policy principles will be pursued:

- i) To recognize that access to safe drinking water is the basic human right of every citizen and that it is the responsibility of the state to ensure its provision to all citizens.
- ii) The right to water for drinking takes precedence over rights for water for all other uses such as environment, agriculture, industry etc.
- iii) Health is another fundamental human right and health targets cannot be achieved without sanitation. Therefore, this policy considers sanitation to be a fundamental human right.
- iv) To recognize the role of the broad range of providers in the sector and provide a supportive policy framework that encourages alternate options through private provision, public-private partnerships, the role of NGOs and community organizations.
- v) To fashion the role of the state in a manner which distinguishes between its functions as a service provider and the authority it must exercise as a regulator.
- vi) To ensure that the existing inequities in the provision of safe drinking water are removed and the needs of the more vulnerable and poor are effectively addressed through adequate financial allocations and provisions of suitable technological options.
- vii) There will be an equitable distribution of resources between the richer and poorer sections of human settlements. However, preference will be given to those areas where the environmental and social impact of investments shall be the maximum.
- viii) To recognize the key role that women play in the drinking water sector and ensure their participation in decision-making for the sector at all levels.
- ix) The needs of women and children are to be given priority in all policy, planning and implementation processes.
- x) To recognize the provision of safe water should be undertaken through a community-centred, demand-driven approach in which the community members are given a key role.

32. Development has to be sustainable. To achieve this, it is necessary to:

- i) build on what exists, mobilise local resources, minimize foreign

- loans and develop programmes that are implementable within available resources and enhanced capacities of institutions and communities;
- ii) understand, accept and support the role that communities, NGOs and the formal and informal sector are playing in sanitation provision;
 - iii) accept the component-sharing model for all government programmes and projects so as to ensure financial sustainability and community and private sector involvement in development and subsequent of O&M; and
 - iv) develop and use technologies that are low cost, easy and cost-effective to maintain.
33. The provision of adequate, appropriately and hygienically designed toilets in public spaces and public use buildings will be guaranteed.
34. PC-1s for projects and programmes will only be prepared after the conceptual technical details and Bills of Quantities have been developed and a stakeholder consultation has been held. The feedback from the stakeholder consultation will be reflected in the modified designs and estimates.
35. Recovery of O&M costs will be generated at the local level through a combination of affordable taxes (on a sliding scale) and by assigning O&M responsibilities to community organisations.
36. Water and Sanitation programmes and projects will be coordinated with settlement planning, housing, environment, health and education policy guidelines, programmes and projects.

6 MINIMUM ACCEPTABLE OPTIONS

37. The minimum acceptable option for the provision of **domestic water** is that, water will be provided inside the house, through piped system, to meet the minimum requirement of 50 litres per person per day. In rural settlements water may be provided through communal points to meet the minimum requirement of 25 litres per person per day
38. Where domestic water supply is not of acceptable quality, a provision of at least 4 litres per person per day of drinking water should be provided, such that no household is more than 0.5 km from the point of supply
39. The minimum acceptable **sewerage and drainage** provision is given below.
- i) In settlements of high densities: Flush latrines and/or pour flush latrines in homes (or privately shared) connected to an underground sewerage system terminating in a sewage treatment facility.
 - ii) In low-density settlements: Ventilated pit privies/pour flush latrines connected to a septic tank linked to a waste water disposal and/or collection system.
 - iii) Sewage treatment facilities will be as per EPA standards and guidelines for areas which are located in or near waste land or agricultural regions where the effluent can be used for agricultural purposes.
 - iv) In arid regions, where rain is infrequent, storm water can be combined with sewerage system provided the additional flow can

bypass the treatment plants.

7 TARGETS

40. While each city district government and TMA will pursue its own targets, the overall aim of the Sindh Provincial Government is to facilitate the attainment of the targets specified in the Medium Term Framework and the Millennium Development Goals for the country as a whole. The specific targets entail the following:
- i) To provide safe drinking water to 93% of the population by 2015 thereby raising the current coverage by almost 6% (from 87% at present to 93% in 2015) for the existing population and ensuring that the additional population is also provided access.
 - ii) The extension of sanitation facilities from the present coverage of 51 per cent population (88% urban and 17% rural) to 70 per cent of the total population by 2015 along with the development of waste water treatment units, recycling provisions and conservancy measures in the urban centres up to district level.
 - iii) To provide at least one hand pump or spot source for every 250 persons. In sparsely populated areas the location will have to ensure that it is not more than 0.5kms from the residents.
 - iv) To establish water treatment plants in all urban areas by the year 2015
 - v) To ensure that water quality standards are approved and a system of surveillance, testing, monitoring and disseminating information regarding water quality is initiated by 2007.
 - vi) To ensure that villages having up to 100 households, or 1,000 persons, or more are served with sanitation and drainage schemes by 2015.
 - vii) To ensure that each TMA has a Strategic Development Plan in place by 2007 to meet the above targets, and the financial and institutional framework for its implementation.

8 SINDH PROVINCIAL STRATEGIES

41. The Provincial Strategies outline the various legislative, administrative, financial and technical measures that need to be instituted and implemented over the next few years, in order to move towards the goals of the Sindh Provincial policy for water and sanitation.
42. The Provincial Strategies are also intended to support and guide the Sindh City District Government and Taluka Municipal Administrations (TMA) to frame their own domestic water supply and sanitation strategies, plans and programmes and are the result of stakeholder consultations held at the Taluka and provincial levels.

8.1 Process

43. The Sindh Strategies have been prepared after extensive consultations, detailed technical assessment in selected urban and rural areas and a process of consensus building. The objective of the process was to ensure participation of stakeholder groups both in (i) identification of issues, and (ii) together with the technical, fiscal and financial assessment carried out by the TA Team, build a consensus on strategic response to the identified issues within the framework of the Provincial Policies.

44. The first stage of the process involved three principal activities: (1) Consultation meetings with stakeholders in 41 Taluka Municipal Administrations (TMAs); (2) Issues assessment in 6 TMAs; and (3) Meetings at the provincial government level. The outputs of these consultations were analysed in the background of the detailed technical, fiscal, financial and WSS tariff assessments in the 6 selected TMAs. The issues highlighted in the Consultation process, together with reports from the technical and financial assessment conducted by the TA Team, formed the basis for preparing the first draft of the Strategy.
45. The second stage of the process involved consensus building on the first draft of the Strategy. This included: (1) Circulation of the summary issues statement and first draft of the Strategy included in the interim report to a stakeholder group invited to a Consensus Building Meeting held on April 20, 2006. (2) Presentation of the issues assessment carried out in Sindh, the framework of the draft national policies, and the first draft of the Sindh Water Supply and Sanitation Policies. Discussions were held by the group, which included high-level Provincial Government officials, invited representatives from selected local governments who could make commitments on behalf of their organizations, and civic and civil society groups, on the draft of the strategies.
46. This final draft of the Strategies draws on the above discussions and consultations. Since the detailing and implementation of the strategies through Annual Action Plans and various other measures will be undertaken by the same organisations and institutions at the Taluka, District and even Provincial levels, for water and sanitation, the Provincial strategies have been presented by strategic area rather than by sub-sector, except the technical aspects and actual provision and delivery of services.

8.2 Objectives

47. The objectives of the provincial strategies are to deploy available resources in the most effective way to ensure that it is possible to achieve the longer-term targets of the provincial policies. It allows for a framework within which the annual investment and action plans can make a cumulative and consistent impact, as well as allowing for greater transparency and accountability.
48. The overall objective of the strategies is to provide guidelines to improve health, reduce incidence of disease while conforming to environmental regulatory standards for disposal of liquid waste. At the same time, the Strategies should ensure that all programs are addressed holistically, linking environment, housing, water and sanitation, city and settlement plans, as well as providing linkages to provincial and national initiatives. The Strategies also provide guidelines that will enable the TMA achieve an effective institutional, legal and financial framework for ensuring WATSAN coverage.
49. The Strategies should allow the TMA to move towards a greater degree of sustainability in the provision and delivery of urban services by working towards a full-cost recovery of services provided. In keeping with National and Provincial policies, the users, and especially women, should be fully engaged in the decision-making process, and the private sector should be encouraged to participate in the provision and delivery of services.

8.3 Key Policy Instruments and Strategies

50. A variety of policy instruments and strategies will be used to achieve the objectives of the Domestic Water Supply and Sanitation Policy. The key strategic thrusts of the policy will be as follows:

8.3.1 Targeting Strategy

51. All municipalities will adopt a demand led approach in providing access to safe water and sanitation to ensure that scarce resources are properly utilized and ownership and sustainability of schemes is ensured over the long-term.
52. Priority for water supply and sanitation will be accorded to un-served, under-served areas, and disadvantaged areas.
53. Priority for water supply will be given to brackish water zones, coastal zones and those areas where there is shortage of sweet water in the underground aquifers. Those areas will be especially targeted where women have to walk more than 0.5 kilometres to acquire access to safe drinking water.

8.3.2 Gender Strategy

54. Ensure the representation of female councillors in all review and decision making forums regarding drinking water supply and sanitation at the district, Taluka and tiers.
55. All provider-agencies, particularly the TMAs in rural areas, will make special efforts to ensure that both men and women are consulted in scheme identification, implementation and operation and maintenance.
56. Place special focus on gender training programs for all tiers of local government staff, TMAs, Local Government Staff and EPA so that they are able to respond in a sensitive manner to the gender differentiated needs in the drinking water and sanitation sector.
57. Make special efforts to recruit and induct women in TMAs, EPA and other relevant agencies to ensure that the needs of women clients are addressed.

8.3.3 Legislative Strategy

58. Respect and follow the constitutional roles and responsibilities for the water and sanitation sector, and institutional roles and responsibilities will be consistent with the provisions of the Local Government Ordinance 2001 and the devolution framework, in ensuring access to safe drinking water and sanitation.
59. Frame a broad policy framework at the provincial level which encourages and supports city district and Taluka governments to design and implement policy which is in-keeping with the existing capacities and strengths of institutions.
60. Develop a framework that allows the participation of the private sector, and encourages public-private partnerships, and the role of NGOs in the sector.
61. Develop a realistic framework for community participation in the sector and ensure that their inclusion helps to build more effective scheme identification, implementation, operations and maintenance systems.

62. Regularly review and update the legislative framework after every five years or when required, by a committee constituted specially for the purpose of reviewing the implementation of its guidelines, their efficacy and continued relevance to the changing situation in the country.
63. Enact appropriate legislation to ensure compliance with the Pakistan Drinking Water Quality Standards and to affix appropriate penalties for any institution or individual not adhering to the standards.

8.3.4 Institutional Strategy

64. Focus on the role of the Government, as both a service provider and regulator, to ensure that water quality and sanitation standards are properly articulated, maintained and enforced.
65. The Sindh Provincial and Local Governments will be responsible for establishing policy guidelines and legislation for the domestic water and sanitation sector at the provincial level and be responsible for special initiatives and allocation of special funds to ensure coverage in underserved and disadvantaged areas.
66. Sindh Provincial and Local Governments will develop medium term strategic plans for the domestic water and sanitation sector in keeping with the Medium-Term Development Framework and the Millennium Development Goals in conjunction with relevant municipal authorities to guide and steer the future developments in the sector.
67. The TMAs will be encouraged to make use of the SLGO (2001) provision that allows for a variety of “contracting in” and “contracting out” arrangements for more effective service provision through the civil society and private sector organizations using performance-based contracts. These arrangements can, potentially, be used for design and implementation, testing, operation and maintenance, collection of charges, awareness building, etc.
68. The TMAs will be encouraged to adopt a service-provider orientation to its clientele. It will develop an approach which integrates community engagement, demand assessment and service provision and marketing in order to effectively enhance its professional credibility and meet the needs of the people within its jurisdiction.
69. Capacity Building programmes will be designed to strengthen institutions which are lacking in capacity such as the Town and Taluka Municipal Administrations, the Sindh Environmental Protection Agency, the Local Government and Rural Development Departments, etc.
70. The planning, design, implementation and operations of water and sanitation systems will ensure a decision-making role of the intended beneficiaries, who should be treated as partners rather than passive recipients of development.
71. Ensure that the planning, implementation technological choices and supply specifications are determined through close participation with the users and community organizations, especially in rural areas where the participation of women is critical to ensure effective use and sustainability of water supply and sanitation systems.
72. High-performing municipalities will be given special acknowledgement by instituting a system of performance grants and rewards for the institutions and the individuals.

8.3.5 Technical Strategy

73. Promote effective rehabilitation and efficiency improvements in existing water supply and sanitation systems, through justifiable investments, significant reductions in non-revenue water, increased water-metering, user-charges and other initiatives.
74. Technical assistance will be provided to the provincial and area governments for the preparation of appropriate technical guidelines which can be subsequently disseminated to all TMAs and other water and sanitation sector agencies.
75. Standard operating procedures (SOPs) will be developed for planning, design, implementation and operations and maintenance for the various categories of water supply and sanitation schemes. This will ensure adherence to technical standards and eliminate the huge concerns with regards to poor and inadequate water supply and sanitation networks.
76. Appropriate and cost-effective technology will be used to ensure that the local government resources are used optimally and that the systems are easy to design and build and easy to maintain by the local communities and/or the concerned local governments.
77. Special care should be taken to use materials and parts of good quality in constructing drinking water and sanitation. Lifetime, rather than only initial-cost comparisons should be made when considering alternative systems or tenders. Special attention will be made to ensure that pipes and equipment with standard specification will be used.
78. Wherever possible, preference should be given to rehabilitate existing schemes (functioning or not) over the construction of new schemes, unless there are special reasons to justify otherwise.
79. The design and layout of water supply pipes, storage tanks etc should ensure that there is no contamination by sewerage systems, for example by maintaining a minimum distance between the two systems.
80. Low cost technological options should be developed and promoted to provide affordable water and sewage treatment, in both urban and rural areas.

8.3.6 Operation and Maintenance Strategy

81. The responsibility for the operations and maintenance of all drinking water and sanitation schemes will be with the Taluka Municipal Administrations except in the case of large urban areas, where a specialised Water and Sanitation Agency may be established.
82. However, the community should be given responsibility for monitoring and surveillance of the schemes, especially in the rural areas and small settlements. Where appropriate, the responsibility for the operations and maintenance of small schemes may be devolved to the intended beneficiaries. These communities will be responsible for routine maintenance and operations. However, in case of a major breakdown of the scheme, the TMA will be responsible for scheme rehabilitation.
83. Women will be especially consulted when determining the operations and management arrangements for schemes.
84. Capacity building programs for community organizations will be implemented (in collaboration with NGOs where appropriate) for

improving the local level capacity for operation and maintenance of schemes.

8.3.7 Cross-Sectoral Issues

85. Water and sanitation issues are closely related to larger environment, housing, city and regional planning, health and education, gender, drainage and industrial effluent, and regulations, programmes and projects. A process of coordination at the provincial, district and TMA level will be established between these different sectors.

8.3.8 Government's Vertical Programmes

86. Funding from government's vertical programmes and from IFIs and bilateral agencies will be a part of a larger investment plan prepared by the provincial government and managed by the city district government and the TMAs

8.3.9 Adoption of the Component-Sharing Model

87. The component-sharing model will be adopted for all TMA schemes, whereby different aspects and components are handled by different organisations and entities. The model has been successfully deployed in cities across the Province and there is considerable experience and expertise available. There are a number of ways that component-sharing could be done, for example,
 - i) Water supply: local government could be responsible for the provision of bulk water supply (appropriately treated water from canals or underground sources) to private or community contractors who would be responsible for its distribution to households.
 - ii) Sanitation: households could be helped in financing and building their latrines, while communities and/or developers, housing societies etc. take on the responsibility for lane and collector sewers and local government builds trunk sewers and disposal systems.. Sewage and waste water treatment facilities will be provided by the developers for large schemes where connections to local government developed disposal is not available.
88. Incentives to communities and households will be provided to take up the component sharing model alternative, such as local government paving lanes where communities have built their sanitation systems.

8.3.10 Public-Private Partnerships

89. Currently, the private sector is engaged in the sector primarily to fill the gaps left in the public systems. Rather than seeing these as "temporary" arrangements tolerated by the public sector, these should be supported and formally incorporated into the system. The private sector will be encouraged to participate in the supply and delivery of water and collection and disposal of sewage, either as part of the component-sharing model, or through any variety of contracting arrangements.
90. Formal sector real estate development is creating townships and housing estates all over Sindh. Bye-laws will be developed by the provincial government and implemented by the TMAs for developing water supply, sewerage systems and sewage treatment facilities for different sizes of developer-promoted schemes. Communities in informally developed housing areas will be provided incentives and disposal points by the TMAs if they build an underground sewerage system.

8.3.11 Urban Sanitation

91. City governments and TMAs will develop their capability and capacity to document existing settlements and for identifying the existing sanitation and drainage related infrastructure and its condition. On the basis of this documentation, a programme for the rehabilitation of damaged infrastructure (as opposed to its rejection and/or duplication) will be developed and implemented.
92. An overall sanitation plan will be developed for all urban settlements by city governments and the TMAs (or WASAs which have not been devolved) in coordination with all other agencies involved in sanitation. The plan will focus mainly on the details of the trunk sewers and disposals and secondary collection. All other sanitation related agencies (cantonments boards, railways, etc) will develop their plans in accordance with the overall plan.
93. Wherever existing sewerage systems dispose untreated sewage in storm water drains or irrigation canals it should be treated before discharging, and may be used for agricultural purposes or converted into lakes and ponds as part of recreational areas, in accordance with EPA guidelines.
94. Gravity flow systems will be used for sewage schemes (unless not feasible) so as to avoid pumping and O&M costs. Where these systems cannot be self-cleansing, a one chamber septic tank will be built between the toilet and the lane sewer so as to avoid solids from entering the system and clogging it.

8.3.12 Public Toilets

95. Public toilets will be adequately provided (keeping in view the different requirements of men, women and children) and maintained as a priority for all public-use open spaces (such as markets, parks, playgrounds) and public-use buildings. The toilet requirements and specifications will be built into the bye laws of all urban areas and TMAs. Where feasible, the construction, maintenance and operation of these toilets can be sublet to the private sector on a BOT basis.

8.3.13 Rural Sanitation

96. The component sharing model (latrines and lane sewers built by the community with technical advice from NGOs/TMAs and trunk sewers and disposals built by local government) for rural sanitation which is being applied in the villages in southern Punjab will be adopted for all villages of 1,000 and above population.
97. A programme for motivation and technical advice will be initiated in TMAs for the construction of latrines and safe disposal of waste water. The use of waste water for agricultural purposes will be encouraged and designs for its collection and use in accordance with EPA guidelines will be provided to households and communities.
98. The motivation programme for latrines will also educate people on the health problems associated with handling of animal dung and the health hazards of keeping animals within homes. Alternatives to the present conditions will be developed in association with the governments livestock departments.

8.3.14 Consultations

99. City district government and TMAs will hold public consultations at the conceptual design of the development plan, schemes and projects. Modifications in the designs will be carried out to accommodate the concerns of the stakeholders. The PC-1 will be prepared only after such a process has been carried out. Taluka Council Monitoring Committees will oversee the programme/project/scheme. Accounts of the projects shall be made available to the public and made available to the media as stipulated by the SLGO (2001).

8.3.15 Communication and Dissemination Strategy

100. The Environment Protection Agency will be responsible for disseminating information on drinking water, wastewater disposal standards, through articles in the press, leaflets, newsletters and dissemination of information to schools, through NGOs, civil society organizations, Community Citizens Boards and community organizations, etc.
101. The approved Domestic Water Supply and Sanitation Policy will be widely disseminated to municipal institutions, civil society, community organizations and users. In order to undertake this effectively, consideration may be given to putting in place a coordinating and steering mechanism with the participation of key stakeholders.
102. Regular policy dialogue will be facilitated between all tiers of government and key stakeholders on key issues and challenges, awareness building, experience sharing and dissemination of good practices.
103. A proper system of dissemination of the information of the water quality of all sources will be developed by the providing agency. The provincial government and EPA will be responsible for coordinating and developing a system of information dissemination.
104. Each water source and water facility from which people are drawing water for drinking purposes will be marked to indicate whether its water quality conforms to the physical, chemical and bacteriological standards prescribed for drinking.
105. A system of colour-coding will be devised, indicating clearly through a colour code if the water is fit for human or animal consumption or not. The green code will indicate water which is fit for drinking and the red code will indicate its unfitness for human consumption.
106. Civil society organizations and community activists will participate in information dissemination and raising awareness about water and sanitation sector issues, water testing and quality issues.
107. Best Practices regarding successful initiatives in the water and sanitation sector will be widely disseminated and shared and will be used to enhance the performance in the sector.

8.3.16 Awareness and Education

108. Provincial and local government programmes will be developed to advise and collaborate with the media, especially TV and radio channels, to promote sanitation related messages in their entertainment programmes and to develop special programmes related to sanitation and its relationship between civic responsibility, health and education.
109. Awareness raising and education programmes will be developed focusing on safe drinking water, usage of toilet, intended to improve public

understanding of the links between safe hygienic practices and public health. All educational institutions (schools and colleges), and teachers training institutions and local government department and agencies will be involved in the process. Healthcare centres will also be targeted with messages relating specifically to Healthcare waste.

8.3.17 Financial Strategy

110. The TMAs will consider a differentiated approach which will include full cost recovery, partial cost recovery, subsidization and cross-subsidization to achieve financial sustainability in the sector. The tariff system should ensure appropriate subsidies to poorer communities.
111. The TMAs will ensure that drinking water schemes will be given the highest priority in the allocation of funds to the Citizen Community Boards at the local level.
112. The TMAs will introduce a system for operations and maintenance on full-cost recovery to maintain the water supply system in a sustainable way. However the cost for major breakdown will be paid by the providing public sector authority. The current tariff for both residential and commercial users will be revised to ensure that the operational costs of the municipal entities are fully met.
113. The providers will be encouraged to promote metering of water consumption to discourage the indiscriminate use of water. This may be done by individual, collective or bulk metering as appropriate.
114. The implementation of professional systems for billing and collection will be encouraged through options such as strengthening the TMAs, outsourcing to the private sector, community-based system of collection, etc.
115. Systems of performance grants will be encouraged to reward those institutions and individuals who have been able to meet performance milestones and achieve the specified targets.
116. The capacity of service providers in the area of financial management, budgeting, audit and accounting, revenue collections will be strengthened.

8.3.18 Monitoring and Evaluation Strategy

117. The Local Government Department will be responsible for monitoring the coverage of water supply and sanitation.
118. The TMAs will initiate the establishment of internal as well as external systems for monitoring and evaluations. They will follow professional protocols for annual work planning, identify key progress indicators and conduct effective monitoring and evaluation functions on a regular basis.
119. The coverage and specific targets and achievements of TMAs will be displayed on bulletin boards outside their offices to inform the public of proposed plans and achievements. In addition, the TMAs will encourage forums in which citizens and community members can participate to provide regular feedback on TMA performance.
120. The Government of Sindh will conduct third party surveys with provincial and district level resolution to assess the coverage to safe water and sanitation, conduct water quality surveys and assess the extent to which treatment and disposal facilities have been provided and are being operated.

8.3.19 Protection of Water Sources

121. Regularly monitor water sources to ensure their protection.
122. Preserve and protect surface (rivers, lakes, wetlands) and groundwater resources which offer sustainable sources of supply for local communities in both urban and rural areas.
123. Encourage and support rainfall harvesting schemes (including the use of 'tanka' and weir dams) for augmenting municipal water supply.

8.3.20 Water Quality Monitoring and Surveillance

124. The responsibility for monitoring and surveillance of water quality for water at the source and transportation will rest primarily with the Sindh Environmental Protection Agency. The Government of Sindh will establish a monitoring and surveillance framework and system guidelines to ensure that drinking water quality conforms with required standards.
125. The specialised agencies responsible for drinking water supply like the WASA's and the Taluka Municipal Administrations will be responsible for ensuring that the water quality adheres to the prescribed standards.
126. Any private vendor of water, including bottled, will be responsible for ensuring that the water supplied for drinking purposes adheres to the approved water quality standards.
127. Random testing and surveillance of water quality will be undertaken of water from different sources including government schemes in urban areas, wells, hand pumps in rural areas, bottled water, private vendors, etc to determine the quality of water from different sources.
128. Water-testing laboratories will be established at the District level by the government where private sector facilities are not available.
129. Community activists will be involved in water surveillance and monitoring and will be trained in the use of water testing kits and will be provided kits for each scheme.

8.3.21 Effluent Quality Monitoring

130. TMAs will be responsible for coordination with the provincial Environmental Protection Agencies to assist them in the monitoring of the effluents of the municipalities in accordance with the NEQS System.

8.3.22 Capacity Building

131. TMAs will be encouraged to identify the training needs of their professional, technical, administrative staff and elected representatives to better fulfil their mandate.
132. Projects and programmes considered as good practices will be converted into training centres for government officials, TMA staff, community activists, representatives and technicians; and elected representatives. Training will be provided to groups in which all stakeholders are present together.
133. At the union council (UC) level, a team of community technicians will be trained in surveying, mapping, estimating and supervision of construction work so as to provide technical support to the UC. Salaries for this technical team will be provided through an endowment meant exclusively for this purpose. The technical team will also be responsible for training community members in the skills the technical team possesses.

134. The capacity of all levels of government will be developed to ensure public consultations and self-monitoring and documentation of their work.
135. Professional academic and research institutions will be involved in the capacity building process and as a result build their own capacities through interaction with grass root realities.

8.3.23 Research Strategy

136. Special efforts will be undertaken to pilot test new approaches and innovative ideas and arrangements in the water and sanitation sector, especially those which help to improve access, efficiency, effectiveness and sustainability.
137. Where these experiments are successful they will be widely disseminated and plans will be made to up scale and replicate them at the national level.

9 Roles and Responsibilities of Stakeholders

9.1 Government Institutions

9.1.1 Roles and Responsibilities under SLGO 2001

138. All provincial, district, Taluka and UC level legislative bodies and government departments and agencies will fulfil their roles strictly in keeping with the provisions of the Sindh Local Government Ordinance 2001.
139. The Government of Sindh, in coordination with the district governments, will remove all anomalies, lack of regulations and procedures, conflict of interests between government institutions, to make it possible for different tiers of government and agencies to fulfil their assigned roles.
140. The Government of Sindh will take steps to increase the capacity and capability of all water and sanitation related agencies and departments in accordance with the measures spelt out in this document.

9.1.2 Additional Roles

141. Provincial, district, Taluka (town) and UC elected representatives and administration will identify NGOs and CBOs and private sector (formal and informal) good practices and convert them into training centres for their staff with the help of NGOs, CBOs and/or private sector/entrepreneurs and replicate these practices in other locations within their jurisdiction through the formation of stakeholder partnerships.
142. A system of feedback, consultation and coordination will be established at the provincial, district and TMA level between all agencies (such as Environment Protection Agency, Health, Education, and Urban and Regional Planning Departments and institutions) dealing with water and sanitation issues.
143. The process for the establishment of a management information system will be initiated at the provincial, district and TMA level, in order to enable the planning and development of water supply and sanitation. The information and data from all monitoring and research agencies will be consolidated, and made freely available to the public through a policy of data sharing (through IT technology) within and amongst all water supply and sanitation related organisations.
144. Each city government and TMA will prepare a comprehensive mapping and Taluka database which will be linked to the proposed management

information system. On the basis of this the TMA will prepare spatial and medium term plans which will guide and steer the future development in the sector and on the basis of which appropriate water supply and sanitation investment plans can be prepared at the federal, provincial, Taluka and UC level.

145. The TMA will provide technical support to NGOs and CBOs working on water supply and sanitation related issues on the self-help component sharing model or other community initiatives.

9.1.3 NGOs and CBOs

146. NGOs and CBOs will be encouraged to assist communities in mobilising for water and sanitation related programmes and projects and will assist the district city government/TMAs/UCs in the planning, funding and development of community-based water infrastructure and for the safe disposal of liquid waste.
147. NGOs and CBOs will be encouraged to help in the formation of Citizen Community Boards (CCBs) and to guide them in formulating water and sanitation projects.

9.1.4 Community Responsibilities

148. Through the process of mobilisation of communities envisaged in this policy and through public consultation and media programmes, communities will be encouraged to maintain a safe and pleasant physical environment in their settlement, participate in the provision of drinking water and sanitation infrastructure and its management at the neighbourhood level.

9.1.5 Individual Households

149. Through the process of mobilisation and media programmes, individual households will be encouraged to cooperate with the union administration and with their neighbours to form community organisations that can promote water and sanitation related programmes and projects.

10 Mechanisms for Implementation and Monitoring

10.1 Implementation Strategy

150. The policy will be implemented by the Government of Sindh, local governments, and government agencies in accordance with the guidelines, principles and measures spelt out in this document.
151. Communities, NGOs and the private sector will be supported and their involvement encouraged in accordance with the provisions of the Domestic Water Supply and Sanitation Policy.
152. Existing water and sanitation related policies and their regulations and procedures should be reviewed and, where necessary, modified so as to fulfil the requirements of the Sindh Water Supply and Sanitation Policy.
153. A policy and regulatory framework for coordination between the various sectors involved in water and sanitation related issues will be put in place at the provincial, district and TMA level.
154. The component-sharing model for the provision of sanitation will be adopted and the procedures and regulations for its implementation will be developed.

155. A programme for the upgrading of informal settlements will be instituted on lines similar to that of the katchi abadi improvement and upgrading programmes.
156. A legislation regarding the construction of toilets along with their specifications shall be developed by the provincial government and implemented by the city governments and TMAs.
157. Local government will raise funds for the O&M of sanitation systems and/or hand over O&M responsibilities to communities and the private sector so as to make O&M sustainable.
158. The Higher Education Commission will be requested to make it compulsory to link professional education in medicine, engineering, architecture, planning and social work to grass root realities.
159. The Sindh government will support the National government in its efforts to honour its international agreements and obligations which include the Millennium Development Goals, the recommendations of the World Summit on Sustainable Development and the UN Istanbul Declaration.

10.2 Monitoring

160. Monitoring of programmes and projects in the TMA will be done by the Taluka Monitoring Committees. They will also provide the necessary feedback, as required, to the provincial level on the implementation of the policy.
161. The Sindh Government will monitor the implementation of the policy and programmes within the province and provide necessary feedback and liaise with federal government on the wider issues related to drinking water and sanitation.