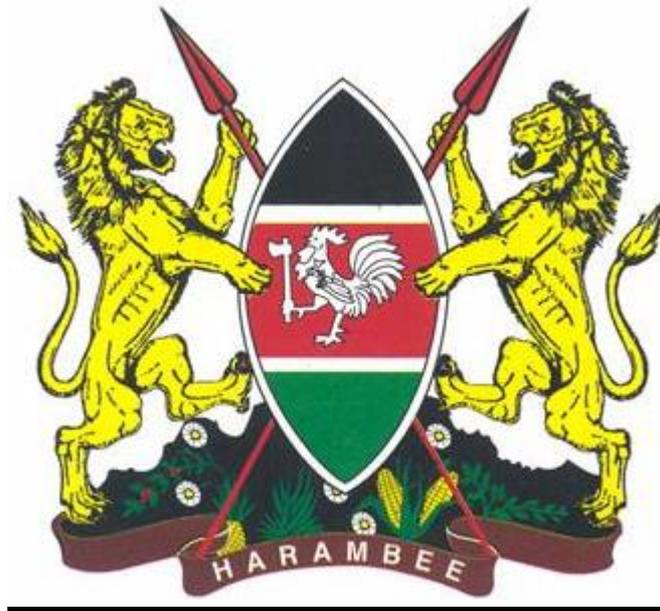


Ministry of Water and Irrigation



The National Water Services Strategy (NWSS)

(2005 – 2007)

December 2004

Forward

Water contributes to economic growth and to the social well being of human populace as both social and economic activities rely heavily on access to adequate quantities of water and of suitable quality. With the increasing growth in population and subsequent socio-economic pursuits (urbanization, industrial production, tourism and irrigated agriculture) demand for water has increased rapidly. In some areas of the country the limited availability of water has become a limiting factor to development. In others the competition for water by the different water users has become so fierce that they have resorted to armed conflict.

Kenya faces serious challenges with regard to water supply and sewage services. Most existing water supply and sewage collection treatment and disposal systems were constructed 20-40 years ago. With inadequate maintenance, non-replacement of obsolete equipment and failure to establish new assets coupled with declining allocations from the exchequer the existing facilities have deteriorated, and currently fail to meet the demand for water, of the ever increasing population. This has resulted in extremely high levels of unaccounted for water reaching as high as 70%. The technical losses are mainly due to leaks developed in the dilapidated infrastructure. Social losses include theft of water, “informal”, unauthorised, and unpaid for connections as well as other mechanisms for obtaining water without paying for it.

Consumption metering is limited or does not exist at all. In Nairobi for example, only 25% of the consumers are properly metered. The un-metered systems create distortions in consumer charges and loss of revenue. Revenue collection too is extremely low. Tariffs are out of line with costs adding to the financial difficulties. The poor are rarely connected as utilities view them as commercially unattractive. It has been estimated that only about 60% of revenue due (of the 20%-50% of the water that reaches the consumer) is actually collected. The largest debtors are GoK departments and public institutions. Furthermore, maintenance is inadequate because the funds generated through water revenue are diverted to other uses other than to support the water system. This is further compounded by the fact that prior to 2002 the provision of water services responsibilities were fragmented amongst several agencies, further resulting into a web of institutions all claiming responsibility of the service provision.

The National Water Services Strategy (NWSS) was prepared in response to the current water supply crisis, which cannot be overstressed. This First National Water Services Strategy provides a clear, accountable, and transparent road map to achieve our vision of assured water supply, sewerage and on site sanitation services for all Kenyans for improved health and job and wealth creation. The NSS is gazetted in accordance with the provisions of the Water Act 2002. It shall remain in force until amended or revised as provided under section 49 of the Water Act 2002. The Strategy shall be reviewed three years after gazetting and subsequently every five years.

Hon. Martha Karua

Minister for Water and Irrigation

The Ministry of Water & Irrigation

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1. Introduction

1.1 Challenges

Kenya with a population of 33 million faces enormous challenge of providing water and sewerage services to the increasing population. Most of the population lives in rural areas (24 million), while 9 million live in urban areas out of which more than half live in informal settlements. Access to safe water is estimated at 68% in urban areas and only 49% in rural areas. The main providers of water services are the Director of Water under the Ministry of Water and Irrigation (MWI), the National Water Conservation and Pipeline Corporation (NWCPC), some Local Authorities, and Self-help schemes. Other actors include local communities, various institutions, and NGOs who operate and maintain their own water supply systems. Overall coverage and access has been, declining in terms of quality and quantity, reliability due to the aging of existing infrastructure. The National Water Master Plan Aftercare Study (1998) reports, that there are close to 1800 water supply systems under the management of various agencies. Table 1 presents the water supply facilities as documented by the study. In addition there are other privately owned boreholes, springs and other surface water schemes that supplement the service providers listed in Table 1.

Table 1: Number of Water Supply Facilities (1994) and population served

Provider/Supplier	No.	Pop served (millions)
Director of Water under MWI	579	5.6
National Water Conservation and Pipeline Corporation	188	3.7
Community	339	4.8
Non-Government Organizations	266	
Self-help Schemes	243	
Local Authorities	164	3.9
Total	1,779	18

Source: - Aftercare Study, Final Report 1998

The local authorities are the main actors in the provisions of sewerage services in urban centres. A number of Government institutions operate their own sewerage systems. Sewerage services cover only 14% of the 215 urban centres. Furthermore, the standards of operation of these sewerage facilities are low, and many of them experience severe operation and maintenance problems resulting into poor service delivery.

Table 2: Urban Centres with Sewerage Facilities

Population range (in thousands)	Number of urban centres with sewerage	Number of urban centres without sewerage	Total
Greater than 300	2	0	2
100 – 300	8	0	8
20 - 100	16	8	24
Below 20	4	177	181
Total	30	185	215

Source: After Care Study of the National Water Master Plan

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The National Water Services Strategy – (NWSS)

Most existing water supply and sewerage collection treatment and disposal systems were constructed 20-40 years ago. With inadequate maintenance, non-replacement of obsolete equipment and failure to establish new assets coupled with declining allocations from the exchequer these existing water and sewerage facilities have been deteriorating rapidly, and currently fail to meet water demand in terms of both quantity and quality, of the ever increasing population. This results in extremely high levels of unaccounted for water reaching as high as 40%-70% on the average. This means that of every 100 CM of water produced only 30 CM may be delivered to the beneficiaries. Losses include both technical losses due to leaks and inefficiencies in the physical system of pipes, pumps, treatment plants, valves and meters as well as social losses. Social losses include theft of water, “informal” unauthorised and unpaid for connections as well as other mechanisms for obtaining water without paying for it.

The dilapidated system, with huge unaccounted for water is coupled with an extremely low level of coverage for water supply and especially for sewage services.

Consumption metering is limited or does not exist at all. In Nairobi for example, only 25% of the consumers are properly metered. The un-metered systems create distortions in consumer charges and loss of revenue. Regular meter reading and billing based on actual consumption is rarely practiced.

Investment in innovation and new technology, which would eventually result in cost reduction over time, rarely takes place.

It has been estimated that only about 60% of revenue due (of the 30%-60% of the water that reaches the consumer) is actually collected. The largest debtors are GoK departments and public institutions. Furthermore, maintenance is inadequate because the funds generated through water revenue are diverted to other uses other than to support the water system.

Tariffs are out of line with costs adding to the financial difficulties. The tariff levels do not adequately reflect the true economic cost of future water supplies. The poor are rarely connected as utilities view them as commercially unattractive and those connected are seldom metered, and end-up paying flat monthly rates for water that may serve as many as 20 households (more than 100 people).

There is lack of a clear delineation of regulatory responsibility with extensive role conflicts mainly due to lack of effective and autonomous water institutions. This results in poor management, poor financial skills, and poor operation and maintenance of facilities.

Large numbers of urban households are not connected to public sewage systems disposing their sewage through cesspools, septic tanks or directly to nearby streams, which may contaminate the shallow groundwater from which some of the utilities draw their potable water supply.

Over the last thirty years there has been inadequate funding for rehabilitation, upgrading and expansion of water supply and sewage facilities. In recognition of past neglect the Government has initiated a process of reform for the entire water sector. The sector is now under radical transformation driven by the national policy on separating water resources management and development from water services delivery. This conforms to the Poverty Reduction Strategy Paper, the Economic Strategy for Wealth and Employment Creation and backed up by the Water Act of 2002 in an attempt to meet the Millennium Development Goals.

The National Water Services Strategy – (NWSS)

The main thrust of the reform is to separate water resources management and development from water services delivery focussing the Ministry's role on policy leaving the detailed regulation to a number of parastatal bodies that report to boards, representing different stakeholders' interests. Provision of water services is to be on commercial bases taking into account social concerns, by water service providers both from the private and NGO sectors. Once the reform is complete, service providers will compete for the delivery of services. It will be the responsibility of the newly established institutions, working in concert with Local Authorities, CBOs, NGOs, and the private sector, to ensure the implementation of the strategy.

This National Water Services Strategy (NWSS) was prepared in response to the current water supply crisis, and appreciating that water supply and sewage services must be elevated and recognized as a national priority, that underpins all of Kenya's social and economic development, and requiring increased investment. The urgency of implementation of the NWSS cannot be overstressed. Key challenges that must be addressed through strategy implementation include:

1. Lack of effective and autonomous water institutions
2. Poor management including poor financial skills
3. Poor operation and maintenance of facilities
4. Inadequate funding for rehabilitation, upgrading and expansion of water supply and sewage facilities

Resulting in:

- Dilapidated water and sewerage infrastructure
- Low level of coverage of water supply and sewage services
- High levels of unaccounted for water
- Low revenue collection; diversion of water revenue to unrelated activities; and non-payment for water services by GoK departments and public institutions

1.2 Policy Direction

1.2.1 Water Policy - Sessional Paper Number 1 of 1999

Sessional Paper Number 1 of 1999 on National Water Policy on Water Resources Management and Development provides the policy direction to overcome the above mentioned challenges. The policy directions include:

- *Preservation, conservation and protection of available water resource*
- *Sustainable, rational and economical allocation of water resources*
- *Supplying adequate amounts of water meeting acceptable standards for the various needs*
- *Ensuring safe wastewater disposal for environmental protection*
- *Developing a sound and sustainable financial system for effective water resources management, water supply and water borne sewage collection, treatment and disposal*

1.2.2 The Kenya Economic Recovery for Wealth and Employment Creation (2003-2007)

The Kenya Economic Recovery for Wealth and Employment Creation (2003-2007) recognizes that the current institutional arrangements are inappropriate and form a bottleneck to achieving the set poverty reduction objectives. It proposes adopting a programme approach to the water sector putting a strong emphasis on providing services to the poor while ensuring adequate water for the various competing demands. It therefore, proposes to undertake comprehensive institutional reform to facilitate “pro-poor water and sanitation programmes”. The key reforms listed include:

- *Establish a Water Services Regulatory Board to be responsible for overseeing water services provision and licensing*
- *Establish Water Services boards to be responsible for water and sanitation services provision and asset development*
- *Transfer government water and sanitation services schemes to Services Boards, communities and other lower level actors*
- *Implement Private Sector Participation in financing and management of water and sanitation services*
- *Develop models for distribution of water and sanitation services to the poor in both rural and urban areas*
- *Establish Water Services Trust to facilitate financing of water development in rural and low income areas of the country*

1.2.3 The PRSP

*The PRSP recognizes that water is a basic need and an important catalyst for both economic and social development of the country. It states that “**access to water for human consumption, agriculture, and livestock use is a major problem in rural area. The water supply situation in rural areas has deteriorated over the years to a point where demand cannot be sustained with current systems. Access to piped water has not increased since 1989 and those accessing other water sources have increased from 14 to 29 percent during the same period.**” The PRSP commits providing water and sanitation to majority of the poor at reasonable distance defined to be 2kms. The proposed strategy is to involve communities and local authorities more actively in the management of water and sewerage services.*

1.2.4 The National Water Services Strategy as defined by the Water Act 2002

The Water Act 2002 in sections 49 and 50 defines the National Water Services Strategy which will have the following objectives:

- to institute arrangements to ensure that at all times there is in every area of Kenya a person capable of providing water supply and
- to design a programme to bring about the progressive extension of sewerage to every centre of population in Kenya.

The National Water Services Strategy is to contain details of:

- existing water services
- the number and location of persons who are not being provided with basic water supply and basic sewerage

- plans for the extension of water services to underserved areas
- the timeframe for the plan
- investment programme

The National Water Services Strategy must also provide for national monitoring and information systems on water services.

1.3 Vision and Mission

The Vision

Assured water supply, sewerage, and on-site sanitation services for all Kenyans for improved health and wealth creation

The Mission

Sustainable access of adequate and affordable water and sewage services to all Kenyans through rehabilitated and expanded water supply and sewage systems and through efficient, responsive institutions

1.4. Principles underlying the National Water Services Strategy

The overall principles adopted in the formulation of this First National Water Services Strategy are:

1. Separation of policy and regulatory functions from service provision
2. Decentralizing of responsibilities and decision making applying the principle of subsidiarity for water services in accordance with the Water Act 2002
3. Water is a social and economic good
4. Establishment of the cost-recovery principle taking into account a pro-poor pricing policy that meets equity, economic and financial and environmental concerns
5. Acceptable standards of levels of service delivery
6. Private sector participation
7. Linkage between water supply and sewerage management and development.
8. Linkage between water services and the economy
9. Environmentally friendly operations of water services

2. Goals of the National Water Services Strategy

The overall goal of the National Water Services Strategy is to meet the water related MDGs by 2015.

Goal 7 of the Millennium Development Goals (MDGs) is to ensure environmental sustainability.

Target 10 of the goal is to “halve, by 2015, the proportion of people without sustainable access to safe drinking water”. This target will be monitored through Indicator 29 that states “proportion of population with sustainable access to improved water source”.

The specific objectives therefore, are:

1. To increase the urban water supply from current coverage estimated at 68% to 84% in line with the MDG Target. This will be based on increasing the available water from 75 litres per person per day (lpd) to 100 lpd for individual house connections; increasing the available water at standpipes from the 33 lpd to 50 lpd; decreasing maximum distance to nearest public standpipe to 100 metres; and compliance with the Kenya drinking water quality standards of KeBS (WHO).
2. To increase the rural water supply from the current coverage estimated at 49% to 74% in line with the MDG Target. This will be based on increasing the available water from 25 lpd to 50 lpd for individual house connections representing 15% of rural homes; increasing the available water at standpipes from the 15 lpd to 25 lpd; decreasing maximum distance to nearest public standpipe to 2000 metres; and compliance with the Kenya drinking water quality standards of KeBS (WHO).
3. To reduce the unaccounted for water due to both technical and social losses from the current estimate of 70% to 25% by 2010 to ensure the MDG Target.
4. To increase the urban water borne sewage collection, treatment and disposal coverage from the current estimate of 28% to 39% in line with the MDG Target.¹ Sewage treatment to be to the Royal UK effluent standards until completion of the Kenyan standard for treated effluent, which is under development.
5. To increase the rural water borne sewage collection, treatment and disposal from rural homes with individual house connections from the current 2.4% to 8.7%, (only 15% of the rural homes is supplied through individual house connections and water borne sewage systems while the rest is supplied through kiosks and standpipes).

Based on the assumption that 50% of the consumers will be served by individual household ¹ connections and only those qualify for water borne sewerage/sanitation.

3. Activities

3.1 Increasing water supply to serving 84% of the urban (11 million people) and 74% of the rural population (23 million people) by 2015

Increasing the urban water supply to serving 84% of the urban and 74% of the rural population by 2015 allowing for higher levels of water consumption and meeting acceptable standards may be achieved through the following:

- (i) Reducing unaccounted for water
- (ii) Rehabilitation of existing schemes
- (iii) Expansion of schemes to areas presently not being served
- (iv) Introducing demand management
- (v) Construction of new water supply schemes

3.1.1 Reduction of unaccounted for water

Reduction of unaccounted for water is the most cost effective way of supplanting the supply of water. The means for reduction of unaccounted for water include physical means for improving the efficiency of the water delivery systems from the water source to the households and reducing leaks through out the network; and means for reducing the technical, management and social losses. This is mainly accomplished by rehabilitation of the dilapidated systems, laying new pipes, standard fittings, detecting and fixing leaks, and installation of pressure control valves, zonal and bulk meters at key points in the system.

The most effective measure for reducing social losses is by making water affordable, available and accessible to the poor. Effective metering (including rural areas) of water delivered to kiosks and households must be coupled with strict enforcement of regulations to prevent damage to meters and pipelines and to enable access to the meters by meter readers.

By 2010 UfW will have been reduced from the current average of 70% to 25% and thereafter maintained at levels not exceeding 25%.

3.1.2 Rehabilitation and expansion of existing schemes.

Most of the current operating urban schemes have long passed their economic life which increases the UfW. Furthermore, the schemes are serving more people than they were initially designed for. Emphasis is on rehabilitation and augmentation of the existing water supplies to increase water production to at least 80% of the design capacities within five years. and to reach a coverage of 84% and 74% in urban and rural populations respectively by 2015.

3.1.3 Demand management

In order to avoid unnecessary investment into augmentation of schemes demand management has to control for the amount of water consumed by different consumer groups.

3.1.4 Construction of new water supply schemes

New and additional water sources are required for some urban centres and rural areas, while other market towns have developed over the years to urban centres requiring urban water supply systems. By 2015 new water supply projects will have been initiated in urban centres and rural areas without water supplies and at least 50% per cent

of those projects are completed and operational providing the specified per capita water requirements to the appropriate standard of water quality.

3.3 Increasing the urban waterborne sewage collection, treatment and disposal coverage to 39% (5 million people)

Increasing the urban water borne sewage collection, treatment and disposal coverage to 5 million people in urban areas includes providing water borne sewage collection, treatment and disposal schemes for 3 million people in formal urban setting and cesspool, septic tanks and other on-site appropriate sewage systems for 2 million people in informal urban settings. This includes:

- (i) Rehabilitation, augmentation and expansion of existing urban sewage collection, treatment and disposal systems
- (ii) Construction of new urban sewage collection, treatment and disposal systems
- (iii) Construction of appropriate on-site water borne sewage systems in informal urban areas
- (iv) Systematically increasing user connections to cover all potential areas

The guidelines for extension of sewage facilities are as follows:

- 1) Existing failing infrastructure will be rehabilitated and upgrade wherever economically feasible before investing in new works
- 2) Residences with water connections shall have conventional sewer connections wherever located in sewered areas
- 3) Residences with water connections in un-sewered areas shall be connected to conventional sewers within five years
- 4) Residences, which are connected to water but, which cannot be served by a conventional sewer shall be required to upgrade cesspits and septic tanks within five years
- 5) Residences that do not have a water connection, but which expect to be connected within five years shall be required to install pour flush toilets with sludge soak-away or flush toilets
- 6) Residences that cannot afford an appropriate sanitation system that accompanies a water connection will not be connected to water and shall rely on standpipes for their water supply. These residences will use improved pit latrines or pour-flush toilets for sanitation.

3.4 Increasing the water borne sewage to 8.7% of the rural population (2.6 million people)

Increasing the water borne sewage solutions to rural population with adequate water supply (house connections) will be mainly through on-site systems such as cess pits, septic tanks and other appropriate technology developed. The target will be to reach 2.6 million rural people by 2015.

In rural areas and informal urban settlements, sanitation is mainly by pit latrines. Coverage is estimated at 40 %. The construction and use of improved pit latrines shall be promoted in rural settlements that are not covered by piped water supply systems.

4. Support mechanisms for implementation of the National Water Services Strategy

4.1. Water Sector Institutions

4.1.1 The role of government

In leading the implementation of the National Water Services Strategy the government shall assume its' responsibilities to ensure:

- 1) Completion of the process of policy development
- 2) Mobilization of resources for strategy implementation
- 3) Coordinate and monitor water sector institutions in the delivery of water services
- 4) Monitor accountability and transparency of funds spent on provision of water

Implementation will include:

- 1) Monitor that realistic plans and forecasts for extension of water services to under-served areas are implemented (including timeframe for completion)
- 2) Completing the establishment of the institutional framework including interim arrangements
- 3) Securing sufficient financial resources and coordinate its effective utilization
- 4) Capacity building at all levels
- 5) Developing and instituting guidelines for PSP/PPP entry to the sector
- 6) Establishing enabling environment for participation of all stakeholders
- 7) Embarking on practical applied research programmes

4.1.2 Water Sector Reform

Implementation of the water sector reform process will comply with the following guiding principles:

1. Separation of regulatory functions from services delivery functions
2. Separation of assets ownership from direct operations
3. Introduction of performance targets and commercial principles
4. Ring fencing water services revenues and hence allowing ploughing back of revenue collected
5. Redeployment of existing staff to the proposed institutions supported by performance based incentive schemes, promotional policies and competitive salaries and benefits to ensure the availability of sufficient numbers of qualified staff of all disciplines required by the sector.

In line with these principles the following activities will be undertaken:

- 1) Establishing and operationalizing the new institutions and restructuring existing institutions in accordance with the Water Act 2002 and developing rules and regulations for their operation with clear responsibilities for actors
- 2) Restructuring the functions within the MWI, NWCP, and other existing water undertakers in accordance with water sector reform
- 3) Undertaking intensive human resources redeployment and retraining

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- 4) Undertaking affirmative action to ensure that women not only participate but are represented as well
- 5) Mobilizing financial resources from local sources and development partners to increase and improve access to water services
- 6) Transferring assets from Director of Water and NWPC to the WSBs and management and operations to WSPs latest by June 2006 in accordance with the Transfer Plan.
- 7) Identifying the actual poor that would benefit from targeted subsidizes water provision latest by July 2006.

4.1.3 Engagement of other stakeholders (NGOs, CBOs)

In order to encourage and provide an enabling environment for non-governmental organizations and communities to actively participate in development and provision of water services the following activities are proposed:

- 1) Update survey of all the actors/stakeholders in water services management
- 2) Draw guidelines for stakeholders' participation at all levels and promote and facilitate public participation in water services
- 3) Undertake coordination, sensitization and networking of actors/stakeholders in the sector
- 4) Institute incentives to address participation in terms of gender and disadvantaged groups

4.1.4 Private sector participation

The strategy for attracting the private sector for improvement in service delivery and efficiency for the benefit of water shall include the following activities:

- 1) Carry out economic viability assessment to provide efficient scale of operations at lowest cost. This may entail syndication of utilities where there is potential to achieve economies of scale
- 2) Establishing guidelines and clear entry points
- 3) Establishing an effective, transparent and autonomous regulatory mechanism
- 4) Establish an enabling environment for private sector participation by
 - (i.) Enhancing competition through transparent and effective criteria
 - (ii.) Preparing performance criteria and means to ensure compliance
 - (iii.) Promoting local private sector participation by requiring franchising or local incorporation arrangements
 - (iv.) Promote the integration of small scale independent water services providers
 - (v.) Encouraging and promoting local companies to engage in private sector participation
 - (vi.) Publish and enforce regulations against illegal activities

4.2 Financial mechanisms

4.2.1 General

The strategy for financing of water and sewerage services sector shall promote:

1. Establishing mechanisms for self-financing of management, operation and maintenance of existing and new water supply and sewage collection, treatment and disposal systems

2. Attracting funding from development partners, the private sector, and others for rehabilitation, upgrading, improving and extending of large scale existing water and sewage services
3. Attracting donor assistance for new urban and rural water and sewage service systems
4. Ensuring financial autonomy for water and sewage schemes
5. Increase the government expenditure to support investment in water services to 1.0% of the GDP
6. Introduce full cost recovering water tariffs by 2015

4.2.2 Self-financing mechanisms

The strategy for promoting mechanisms for self-financing of operations in the water and sewage services sector includes the following activities

1. Prioritize internal cash generation and cost savings as primary source of financing for the operation of the sector
2. Establish and implement financing arrangements to allow low-income households access to water supply and sanitation,
3. Ensure that Government departments/institutions pay for water and sewage services
4. Develop financial incentives for establishing legal metered connections coupled with strict enforcement of laws against illegal connections and tampering with meters.
5. Carry out historical data analysis to verify and determine collectable debt levels
6. Establish financial mechanisms for collection of large outstanding debts coupled with cancellation of debt for smallholders conditional upon acceptance of metering
7. Raise awareness of the connection between water services and health
8. Promote sustainability of services through metering of all consumers
9. Enforce legal action against illegal connections and re-sale of water from un-metered connections

4.2.3 Restructuring of financial mechanisms

The strategy for restructuring of financial mechanisms in the water and sewage services sector shall include the following activities:

- 1) Promote funding through established Water Services Trust Fund
- 2) Prepare business and operational plans as the basis for sourcing of funds for capital development
- 3) Encourage introduction of new funding mechanisms including micro other credit instruments
- 4) Develop clear mechanisms for funding of community projects

4.2.4 Attracting investment

The strategy for attracting investments for upgrading, improving and extending the water and sewage services shall include the following activities:

1. Ensure optimal and sustainable investments by use of appropriate technology
2. Ensure integration of the planning for sewerage services with water supply
3. Promote the use of correct on-site sanitation where technically viable and economically more attractive than conventional sewerage systems
4. Ensure a transparent and reliable investment framework including clear rules and guidelines for entering into water services provision

4.2.5 Establishing financial autonomy of water and sewage boards

The strategy for ensuring the financial autonomy of the Water Services Boards shall include the following activities:

- 1) Preparation of realistic strategic plans for efficient, affordable and sustainable water services
- 2) Select a realistic tariff structure
- 3) Ensure the careful selection of water services providers, determining their technical and financial capability to provide the services and perform the functions authorised by the license
- 4) Establish realistic performance targets and enforce compliance

4.2.6 Restructuring of water tariffs

The strategy for restructuring of water tariffs shall include the following activities:

- 1) Complete a water pricing study
- 2) Establish and operationalize pricing policy that meets objectives of cost recovery, equity, and environmental protection
- 3) Classify schemes according to commercial and technical requirements and determine appropriate water tariffs for non viable schemes

4.3 Operationalization and Capacity building for new Sector Set-up

The strategies for the provision of adequate number of personnel for management of the new institutions under the water sector reforms shall:

- a) Finalize staffing norm studies, job descriptions, and specifications for the new institutions
- b) Identify and recruit suitable staff
- c) Rationalize and re-deploy personnel to their new roles
- d) Complete training needs assessment and develop a comprehensive training program for sector personnel
- e) Identify sources of funding
- f) Develop a competitive remuneration and incentive structure for the organizations
- g) Develop management plans that entail equipment and adequate logistical support in line with responsibilities to be carried out.
- h) Promote user participation in community water supplies,
- i) Ensure that Local Authorities and communities understand their new roles within the framework of the Water Act 2002
- j) Develop and implement human rights, and gender/affirmative action is recognized in the water and sewage services sector

4.4 Applied research

The promotion of applied research and the dissemination of findings in support of sound water services management enabling implementation of the National Water Services Strategy include the following activities:

- 1) Determine research needs
- 2) Develop a comprehensive national research programme to support sustainable water and sewage services
- 3) Develop collaboration with relevant research institutes both locally and abroad as a means of sharing research experience and results
- 4) Modernize and update data gathering, processing, analysis, archiving and dissemination of techniques
- 5) Set up a database capable of networking with other research institutes.
- 6) Set up pilot projects and trials on selected technologies

4.5 Monitoring and Information

Monitoring progress, promotion of information systems and the dissemination of information in support of sound water services management enabling implementation of the National Water Services Strategy include the following activities:

4.5.1 Monitoring

- 1) Establish a national level information, monitoring and evaluation system.
- 2) Review and update data gathering, analysis and dissemination of information on water and sewage services
- 3) Facilitate information sharing through an inter-sectoral national forum

4.5.2 Information

- 1) Prepare communication action plans for the institutions in the sector based on the National Water Sector Communication Strategy to increase public awareness on water services and water sector reform
- 2) Building of consensus and support from government and key stakeholders on the need and urgency of water sector reforms
- 3) Ensure continuous communication with sector stakeholders to regularly update sector strategies
- 4) Collecting, collating, processing and publishing the national water situation report and disseminating water services information for public consumption.

5. Costs and Investment programme

5.1. Construction cost estimates

The following points are taken into consideration in the establishment of the cost estimates:

1. Many current water production systems have exceeded their economic life and require urgent rehabilitation
2. Unaccounted for water due to both technical and social losses are excessive and require urgent attention
3. Some water production capacities exceed distribution capacities

4. A significant share of the future urban population will live in informal settlement, where low cost WS service should be provided
5. Many sewage treatment capacities exceed sewage collection capacities
6. Most sewage treatment plants are dysfunctional requiring rehabilitation or redesigning
7. Many large rural water distribution systems are non-sustainable
8. Enhanced introduction of water harvesting techniques to rural ASAL areas

With few investment projects being planned (and implemented) since 2000 only limited implementation can be expected during 2005 and 2006. To meet the MDGs a huge annual investment program has to be implemented in the years 2007 to 2015. It is considered that starting in 2005 a 10 year rehabilitation program has to be implemented to replace about 80% of the existing water and sewerage infrastructure. The estimated investment costs of 235 Billion Kenya Shillings by 2015 to achieve the MDGs (based on 2004 prices) are presented in Table 9 below:

Table 9: Construction Cost Estimates for Water Supply and Sewerage Development to Year 2015

	2005-15	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015
Total	234,630	13,436	13,698	13,969	14,878	17,171	21,066	25,441	28,590	30,259	30,175	25,947
Rural	155,709	8,117	8,262	8,412	9,075	10,853	13,909	17,331	19,742	20,949	20,743	18,316
Water Supply	96,397	6,181	6,276	6,373	6,686	7,463	8,775	10,240	11,285	11,828	11,783	9,507
Rehabilitation	63,113	5,191	5,259	5,329	5,413	5,541	5,744	6,025	6,353	6,696	7,014	4,549
Extension	33,285	990	1,017	1,045	1,272	1,922	3,032	4,216	4,931	5,133	4,770	4,958
Sewerage	59,311	1,936	1,987	2,039	2,390	3,389	5,134	7,090	8,457	9,121	8,959	8,809
Rehabilitation	23,899	1,453	1,486	1,521	1,575	1,689	1,904	2,228	2,617	3,024	3,395	3,007
Extension	35,412	483	500	518	814	1,701	3,230	4,862	5,840	6,097	5,564	5,803
Urban	78,922	5,319	5,436	5,558	5,803	6,319	7,156	8,110	8,848	9,311	9,433	7,631
Water Supply	23,449	1,688	1,724	1,761	1,826	1,951	2,146	2,368	2,542	2,657	2,697	2,089
Rehabilitation	16,181	1,349	1,373	1,397	1,424	1,457	1,500	1,554	1,616	1,681	1,744	1,088
Extension	7,268	339	351	364	402	494	646	814	926	976	953	1,002
Sewerage	55,473	3,631	3,712	3,796	3,977	4,368	5,010	5,742	6,306	6,654	6,736	5,542
Rehabilitation	35,548	2,878	2,930	2,984	3,046	3,129	3,246	3,402	3,584	3,776	3,961	2,614
Extension	19,925	753	782	812	931	1,239	1,764	2,340	2,722	2,878	2,775	2,928

Source: Ministry of Water and Irrigation calculations, 2004

As the rehabilitation program will be finalized in 2014, funding requirements drop significantly and full coverage can be achieved by 2025. To achieve full cost recovery (including depreciation and financing costs) by 2015 after many years of constant tariffs, considerable tariff adjustments are necessary. This will be combined with targeted pro-poor strategies to make water available and accessible to all groups of Kenyan society.

5.2 Investment programme

The approach to investment in the water services sub-sector will include:

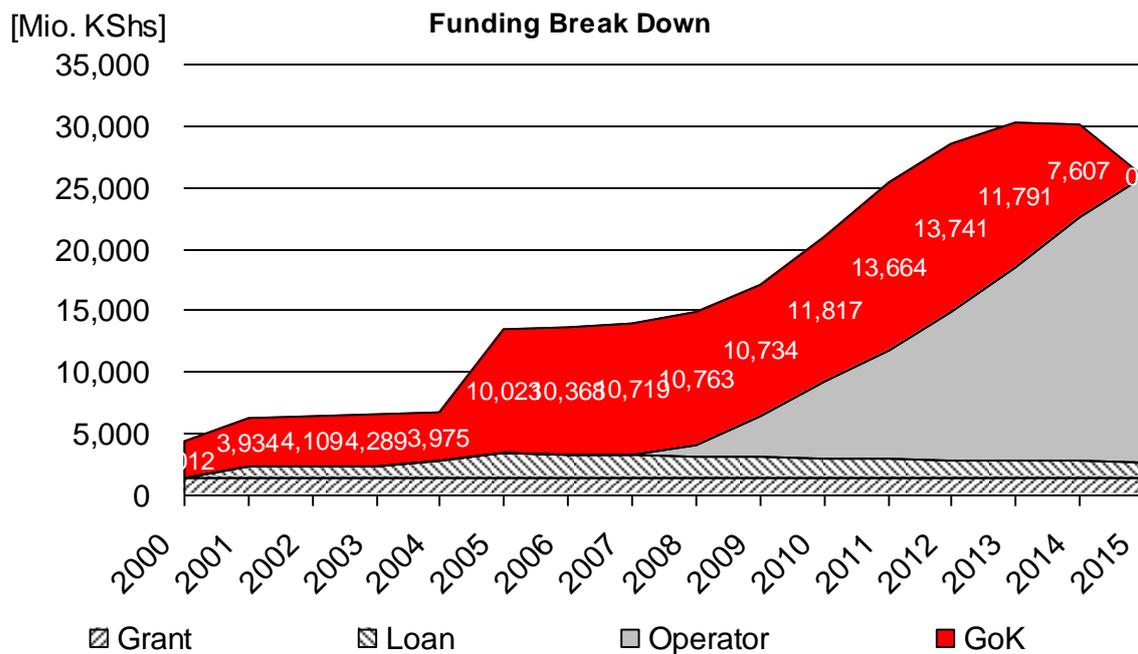
1. Commercialization of water services provision
2. Promote private sector participation for all urban areas with more than 300,000 inhabitants.
3. Clustering of medium towns, small towns and large scale rural water supplies into viable syndicates

The National Water Services Strategy – (NWSS)

4. Enhanced local private sector participation in small rural piped schemes including those operated by communities
5. Creating pro-poor business opportunities through micro credit to establish small scale independent providers
6. Considerable increase of billing efficiency and necessary tariff adjustments (accompanied by targeted pro-poor strategies)

With well designed tariff adjustments in place it is anticipated that a considerable share of the investment funds will be contributed from internal revenues of the schemes.

Table 9: Investment Break Down Rural and Urban Water Supply and Sewerage



Source: Ministry of Water and Irrigation calculations, 2004

The newly established Water Service Boards (WSB) will be assisted in preparing time-bound Strategic and Business Plans for their respective areas. The Plans shall, among others, provide for extension of services coverage, rehabilitation and expansion of existing infrastructure, development of new infrastructure and other assets complete with forecasts on revenues, investments, performance levels and coverage. These Plans shall become inputs for the preparation of a National Investment Plan (NIP) to represent the overall investment needs and projected performance of the water services sub-sector.

Development Partners shall be encouraged to support the sub-sector on the requirements of NIP at the macro level that is linked to Strategic and Business Plans of WSBs at micro level. Support shall be extended directly to WSBs subject to the standard Government Protocols.