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REPUBLIC OF KENYA

MINISTRY OF WATER RESOURCES

SESSIONAL PAPER NO. 1 OF 1999

ON

**NATIONAL POLICY ON
WATER RESOURCES MANAGEMENT
AND DEVELOPMENT**

April 29, 1999

PRICE—KSh. 200

824-KE99-18207

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FOREWORD

Water is one of the most important resources for man's survival. In recognition of this fact, and in order to fight disease which was one of the three cardinal problems identified at Independence as being a hindrance to the development of the Nation, the Government instituted Water Supply and Sanitation Programmes in various parts of the country to bring water closer to the people. The *National Water Master Plan*, launched in 1974, had the express aim of ensuring that potable water was made available, at a reasonable distance, to all households by the year 2000 through the establishment of water supply schemes, sinking of boreholes, construction of catchment dams and provision of the conveyance infrastructure in the form of pipes and furrows.

Current estimates of the Kenyan water supply situation indicate that about 74 per cent and 50 per cent of the country's urban and rural populations respectively have access to safe drinking water. This has been achieved through provision of some 330 gazetted water sources countrywide, accounting for 80 per cent of the served population; the rest (20 per cent) of the

population is supplied by the non-gazetted schemes.

In terms of individual schemes, there is a total of about 1,800 schemes currently being operated in the sector, with the public sector through the Ministry of Water Resources, Local Authorities and the National Water Conservation and Pipeline Corporation, accounting for about 1,000 schemes. The rest is being run by the Non-Governmental Organisations, Self-Help Groups and the communities.

The water sector has in the recent past attracted a large number of operators such as the Self-Help Groups, Organised Communities and NGOs, who wish to start and operate their schemes. Their efforts have positively impacted on the Sector, which hitherto relied heavily on the public sector for the development and management of the water resources. Indeed, budgetary constraints have been cited as the main bottleneck in the development of the water sector. The problem has been compounded by the water tariff regime in place, which does not cover the cost of services rendered. In a liberalised socio-economic framework, it would not be advisable therefore, to

continue spending public funds on utilities whose operational costs cannot be sustained.

In order to ensure sustainable water schemes, therefore, there is need to apply alternative management options and technologies that are participatory, rather than wholly recipient, in nature. This will require that there exist an enhanced participation in the programmes by the various water users. The Government, on the other hand ensures an enabling environment through appropriate policies and regulations. To achieve this, the ownership and management systems of the already existing water supply schemes and water projects must be clearly defined to conform with the new policy change which encourages more active involvement of the private sector in the development and management of the water resources. This is consistent with the international resolutions including those of the Mar del Plata conference of 1977 and 1992 Rio de Janeiro Earth Summit, which provided for provided for the Agenda 21.

It will be necessary for the Government to embark on a conscious effort to sensitise the recipient communities on the principles of good

management of such projects and equip them with the necessary knowledge and skills for sustainable management. This will ensure successful operation and management of the schemes in future when the assets are finally transferred to various water users.

This scenario inevitably entails a situation where there will be numerous actors in the sector. Their initiatives will need to be co-ordinated to avoid duplication of effort and ensure adequate coverage, both in space and time. Equally crucial will be the need to monitor the environmental factors, which are of fundamental importance in the water sector. The Government will continue to ensure that acceptable standards are adhered to in the whole process of providing and use of water as well as wastewater disposal through the development of properly organised and efficient systems of sanitation.

At the national level the new approach and management of water affairs will support the aspirations of *National Environmental Action Plan (NEAP)* and contribute significantly towards realising the objectives and strategies of the current *National Development Plan*. It will enable the sector to be more buoyant as it endeavours to put

in place a mechanism for efficient mobilisation of resources and controlled use of the same.

The *Sessional Paper* has tackled issues pertaining to Water Resources Management, Water and Sewerage Development, Institutional Framework and Financing of the Sector. In each case an attempt has been made to discuss the problems associated with each area and suggest the appropriate strategies and the desired policies that the Government will put in place to resolve those problems. It should be noted, however, that the strategies being proposed will be relevant and applicable to all stakeholders in the entire Water Sector. Arising from these broad policy statements, clear strategies have been developed in an *Action Plan* (see the Annex).

All the changes contained in this Policy Paper will, of course, need to be supported by an appropriate legal framework. Accordingly, the Water Act, Cap 372, will undergo the necessary amendments to enable it to be consistent with the provisions of this Policy Paper.

In developing this Paper, the Ministry of Water Resources has benefited immensely from the expertise of a number of Government Ministries and Institutions. I wish to thank individuals, groups and organisations whose valuable input contributed to the writing of this *Sessional Paper on the National Water Policy on Water Resources Development and Management*.



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CHAPTER 1

THE CHALLENGES IN THE WATER SECTOR

1.1 Efforts towards the development of the water sector has in the past been based on the fact that water is a basic need and an important catalyst necessary to accelerate both economic and social development in the country. Although there has not been a comprehensive documented framework to guide the development of the water sector, various water development programmes and projects have been formulated and implemented to meet the requirements of various sectors and sub-sectors of the economy. Focus has been placed on provision of water for domestic use, agriculture, livestock development and industrial utilisation with a view to realising the following:-

- An improved social well being of the populace.
- An enhanced performance of the economy, both nationally and regionally, and promotion of national economic development.
- A properly conserved ecosystem.

1.2 Immediately after Independence, the Government realised that provision of water was going to be a major factor in promoting development in all sectors of the economy. It therefore, committed itself to the supply of water to all within a reasonable distance to ensure that water availability does not become a constraint to the country's development. Guided by this realisation, the Water Development Department which operated from various ministries before becoming a fully-fledged Ministry in 1974, embarked on an intensive water programme both in the rural and urban areas. The people themselves also joined hands in the spirit of **Harambee** (pulling together) and initiated a large number of self- help water projects in various parts of the country.

1.3 Around this period the public sector was beginning to play a major role in the provision of water supply services to the people to an extent that it later overshadowed the self-help initiative. This resulted in a systematic trend of taking over Self-Help Water Supplies and County Council Water Supplies believed to be for better management and further development. This was

later to prove to be too big a financial burden for the public sector to bear particularly in the operation and maintenance of the huge network of water supplies all over the country. Although many donors came to the assistance of the Ministry and provided the much-needed financial resources, this was mainly in the development of new schemes and very little attention was being given to the operation and maintenance issues. Non Governmental Organisations' (NGOs) operations increased mainly in support of the community based water supplies. Individuals and private initiatives were also increased.

1.4 With so many actors involved in the provision of water, there was need to co-ordinate these activities by the various players. In pursuance of this necessity, the Government of Kenya with assistance from the Government of Sweden conducted a nation-wide master plan study between 1976 and 1981. This was later updated through the second National Water Master Plan study carried out between 1990 and 1992 with Japanese Government assistance. These two studies in addition to proposing a framework for the future water development also did highlight the

major problems and constraints in the sector among which, was the lack of a comprehensive policy/institutional/legal framework to guide development in the sector.

1.5 One other major finding of these studies was that financial resources were going to be a major constraint in realising the set goals and objectives of supplying potable water to all.

1.6 The study further explored the possible institutional collaboration that is necessary to mobilise resources to augment the dwindling financial resources in the sector. Inadequate financial resources as a constraint was seen to be most critical in the water supply sector. To increase the investment funds, the study found that it was necessary for core agencies concerned with water supply systems such as the Ministry of Water Resources and National Water Conservation and Pipeline Corporation to propose and embark on only viable projects. In addition, they should strive to raise the funds by improving the cost recovery of water supply undertakings through improvement of revenue collection and revision of water tariffs to reduce the

Government's recurrent expenditure for supplementing of new water undertakings. Other agencies such as Ministry of Local Government and local authorities should also exercise similar efforts. The study further recognised efforts by other actors such as co-operative societies and NGOs, which could be helpful in supplementing the efforts of the Government.

1.7 As can be seen from the findings of the quoted studies above, the issues that affect the sector range from inadequate resources to institutional and policy weaknesses.

1.8 Development expenditure in the water sector has been showing erratic trend over the years. Overall, it shows a declining trend in real terms, from K£ 2,141,000 in 1992 to a peak of K£ 43,098,000 in 1995 before declining to K£ 34,554,000 in 1996/97. This declining trend has continued to the point where the scarcity of financial resources both for development and rehabilitation of the existing water supplies poses the biggest challenge to the Government.

1.9 Though the government has put a lot of effort in developing water supplies countrywide, the coverage is still not satisfactory and, even in the areas where there are water supplies they are in great need of rehabilitation and augmentation. Current estimates of the water supply coverage indicate that 75 per cent of the urban population has access to safe drinking water while only about 50 per cent of the rural population has access to potable water from various schemes including piped water schemes, boreholes, protected springs, pans and dams. However, the available water is inadequate for domestic, industrial and commercial uses. In total there are about 600 water projects operated by the ministry of Water Resources, about 200 for the National Water Conservation and Pipeline Corporation, 400 for Communities, 300 for self-help groups, 200 for local authorities, and 300 for Non Governmental Organisations.

1.10 Experience gained from the existing water supplies shows that many projects have been prepared and implemented in isolation focusing mainly in raising the service coverage levels. Such projects have failed to deliver sustainable supply of

water due to lack of meaningful improvement of the support of these facilities. The water sources have also been neglected with the catchment areas being left unattended resulting in depletion of the water resources.

1.11 In general terms, the problems which have constrained the development of the water sector and need to be addressed include, but are not limited to, the following: -

- Shortage of funds for development, operation and maintenance of water supplies and management of water resources.
- Institutional weaknesses especially the scarcity of qualified manpower and lack of skills of the users to properly operate and maintain water supplies.
- Water resources availability due to its uneven distribution both in space and time.
- Poor choice of technology in water supply and sewerage development, and inconsistent project selection criteria which has resulted in

adoption of technologies and delivery mechanisms which are not well suited to sector development.

- Lack of proper co-ordination of the various actors in the sector
- Lack of proper inter-linkages with other water related sectors.

1.12 To address the above problems it is prudent that a thorough review of both policy and institutional framework be undertaken in the sector to be consistent with the liberalised approaches currently being pursued by various sectors of the economy.

1.13 This Sessional Paper aims at achieving sustainable development and management of the water sector by providing a framework in which the desired targets/goals are set, outlining the necessary measures to guide the entire range of actions and to synchronise all water related activities and actors. It underscores the principle and recognition of the fact that the private sector offers invaluable potential, which has not been fully

harnessed to contribute to sustainable development of the water sector. The basic areas the Paper has addressed itself to include water resources management, water supply and sewerage development, institutional arrangement and financing of the water sector. The following four specific policy objectives covering the four basic areas have been set to guide the sector activities in addressing the challenges outlined above:-

- (i) Preserve, conserve and protect available water resources and allocate it in a sustainable, rational and economical way.
- (ii) Supply water of good quality and in sufficient quantities to meet the various water needs, including poverty alleviation, while ensuring safe disposal of wastewater and environmental protection.
- (iii) Establish an efficient and effective institutional framework to achieve a systematic development and management of the water sector.
- (iv) Develop a sound and sustainable financing system for effective water resources management, water supply and sanitation development.

This sessional paper, therefore, sets out the framework that is intended to bring about a culture that promotes comprehensive water resources management and development with the private sector and community participation as the prime movers in the process to guarantee sustainability.

This strategy would ensure that the Government's role would be largely to provide policy guidelines for the sector.

CHAPTER 2

WATER RESOURCES MANAGEMENT

2.1 Water Resources Availability

2.1.1 Based on the findings of the nation-wide water resources assessment study carried out under the National Water Master Plan Study between 1990 and 1992, it became clear that the surface and groundwater resources are unevenly distributed both in space and time. This is attributed to the variability in rainfall and the diverse climatic and geological conditions. As a result of this, the flow regime of rivers and streams as well as the groundwater flow, vary considerably. Increased human activities, particularly in the water catchment areas, has resulted in the reduction and deterioration of areas under forest and constitute a threat to the country's water resources, not only in respect of siltation, but also as regards the run-off, water balance and groundwater recharge characteristics. The effect of this has been the diminishing of the available water resources, some of which have disappeared or dried up thus complicating further the water availability problem.

2.1.2 The basic solution to these problems lie in the preservation, conservation and development of national water resources in the most feasible manner, while applying national and international acceptable standards, for the benefit of all Kenyans. This calls for an effective river basin management and practices, which takes full recognition of the role which forests and soil conservation measures play in the conservation of water resources. Water catchment areas need therefore, to be identified and delineated and water catchment preservation and protection programmes instituted in collaboration with the relevant ministry in-charge of forestry. In addition, groundwater conservation zones need to be identified to avoid depletion of this resource.

2.1.3 The Government will, therefore, make every effort to conserve water when and where it occurs and its utilisation will be so regulated as to benefit as many people and sectors as possible. Water levies and fees will be introduced where necessary and applicable for utilisation of water from all public watercourses. Such levies/fees will be used in ensuring a healthy state of the nation's water and will include support for research into

technologies suited to our water needs. Particular emphasis will be given to the protection and development of Sea/Brackish/Saline/Non-Conventional Sources.

2.2 Roles and functions at different management levels

2.2.1 For the efficient and effective management of water resources there must exist a system comprising of survey and investigations, monitoring network, data management, assessment, source development, water rights issuance, special courts of law to settle water disputes and an overall institutional linkage. Problems existing in the present water resource organisation are many and varied. They include an over-centralised decision making process, inappropriate and run-down monitoring network, inadequate database, discontinuous assessment programmes, uncoordinated source development, non operative water rights, absence of special courts to arbitrate on water use conflicts and a generally weak institutional set up. Currently water resources management issues are mainly handled at the national level with input from the catchment

level through the Catchment Boards and to a limited extent the district level through the District Water Boards. At the catchment and district levels, there is general lack of adequate facilities and manpower to handle comprehensively all water resources issues.

2.2.2 The solution to these problems lie in having a sound organisational structure for improved water resource management and with the realisation that water resource does not recognise administrative boundaries. In this regard its planning and management should be on drainage or catchment basis to conform to its natural dictates.

2.2.3 The decision making process in respect to water resources management will be decentralised by adopting three water resources management levels (including National, Basin, Sub-basin/Catchment levels) and setting up and or strengthening appropriate institutions clearly defining the role of each and how they relate to each other. Among the roles of these institutions will be to identify vital water catchment areas, including wetlands, and initiate action for the gazettelement for protection purposes.

2.3 Integrated water resources management

2.3.1 Water resources development contributes enormously to economic productivity and social well-being of human populace as both social and economic activities rely heavily on the supply and quality of freshwater. With the increasing growth in population and the subsequent socio-economic pursuits (including urbanisation, industrial production, tourism and agricultural activities) demand for water is increasing rapidly. A stage has been reached where freshwater issues often become the limiting factor for sustainable development and often result in conflicts amongst the various competing sectors.

2.3.2 This is further compounded by the fact that currently water resource management responsibilities are often fragmented amongst sectoral agencies and this has become a major impediment to integrated water resources management. Effective implementation and co-ordination mechanisms are not always very clearly defined.

2.3.3 To overcome these problems, there is need to adopt Integrated Water Resources Management (including the integration of land and water related aspects). In this regard, the linkage between the District Water Boards, Catchment Boards, River Basin Authorities, Water Apportionment Board and the various Land use-based Boards (e.g. Land Control Board, Agricultural Boards etc) will be strengthened and practical operating procedures drawn for solving inter-sectoral issues on water resources at the three water resources management levels, with a view to satisfying the freshwater needs of all the sectors in an integrated water resources management approach. To facilitate the full utilisation of this approach in water development, a National Standing Committee to deal with cross-sectoral issues will be established with representatives from all main water and related sector actors under the guidance of the Ministry in-charge of water affairs. This committee will, among other issues, spearhead the formulation of a consolidated policy on Land, Water and Forests.

2.4 Legal framework

2.4.1 The legal issues touching on the water sector are supposed to be contained in the Water Act Cap 372. There are, however, a total of twenty-six other Acts of Parliament, which have a bearing on issues concerning water. For instance the Agriculture Act, Cap. 318 defines the watercourses and catchment areas in relation to crop production and related activities.

2.4.2 The enforcement of the Water Act has in the past not been adequate due to the lack of resources necessary to monitor the operations of the water users and the inadequacies in the provisions of the Act itself, including the less stiff penalties in the penal code which have not acted as a deterrent to the contravenors of the Act.

2.4.3 The institutional placement of agencies responsible for water resources management, has been a major hindrance to the performance of their activities. One of the main shortcomings in the Water Act is that it does not adequately give the framework for resolving conflicts arising from

users of water from various sectors, between districts or different countries. It is also silent on the conditions of entering into treaties with neighbouring countries and the pursuit of the concepts of absolute territorial sovereignty over the water resources. This places a constraint on water resources development.

2.4.4 It is necessary to have a mechanism for ensuring that legislation and bye-laws concerned with proper utilisation, protection and management of water resources at all levels is regularly reviewed, updated, rationalised, enacted and enforced as appropriate. This requires an appropriate institution with the necessary capacity to enforce the legal framework.

2.4.5 On the international scene, Kenya still has a lot of shared water resources with her neighbours. In the absence of national laws governing the utilisation of these waters, it is necessary to examine the requirements of international treaties on water resources particularly in relation to shared water resources and adopt those that are appropriate to our country's conditions and needs.

2.4.6 The water sector has many actors whose roles and functions may conflict from time to time. In this regard, it is necessary to clearly define the roles for every actor and institute any necessary legislation.

2.4.7 To address the above anomalies, the Water Act will be reviewed to be in harmony with other Acts on water resources management issues. Efforts will be made to strengthen the enforcement of the Act by intensifying collection of the Appropriations-in-Aid chargeable through water board fees to enable the Ministry in charge of water affairs to effectively carry out its functions of inspecting water abstraction points and monitor domestic and industrial effluent discharges to curb pollution of water sources. This is the only way to make the Act the management and regulatory tool for the smooth implementation of the National Water Policy.

2.5 Impact of water resources development on the environment

2.5.1 The construction of major water projects (e.g., dam schemes, irrigated agriculture, flood

control schemes, water transfer schemes etc), while having positive impacts, are also known to have negative effects on the environment and human life. Environmental effects, such as water-logging, soil salinity due to evaporation of irrigation water, alkalisiation, social disruption due to relocation and resettlement, erosion and siltation, and encroachment into river catchment, among other effects, are a common phenomenon associated with the development of such projects.

2.5.2 The solution to these problems lies in adopting a multi-objective approach and incorporating a comprehensive environmental impact statement. Every project's adverse impact on the environment and the necessary measures that need to be taken to mitigate these effects should be clearly defined. In particular, the upstream and downstream environmental impacts of the project should be examined and the results taken into account during the planning and design stage. Options for reducing negative, and for enhancing positive impacts should be considered based on a careful analysis of environmental data. This will ensure that beneficiaries have access to water without unduly polluting the environment.

2.5.3 Water development will be geared towards improving the environment on which its sustenance depends and will not be expected to adversely affect the quality of water resources in particular and the environment in general. An Environmental Impact Assessment Report will, therefore, be made mandatory for all major water developmental activities.

2.6 Water Quality Issues

2.6.1 The long-term objective of the Government is to ensure that all residents in the country are entitled to clean and potable water. This is only possible, however, if our available water resources are protected from pollution. Pollution of surface and ground water resources has become a major problem due to human activities. Land use practices, which have been carried out in total disregard of the need to conserve the water resources, have also had a direct effect not only on the quantity but also the quality of water resources. In other cases, some rivers have been treated as waste carriers or used as dumping ground for both solid and liquid wastes in total

disregard of the water requirements of the people downstream.

2.6.2 To avoid the pollution of our water resources, strict stream effluent discharge standards will be developed for controlling the discharge of wastes into water bodies. It will also be necessary to make water abstraction and disposal permits dynamic and economic instruments for water pollution control.

2.6.3 A process of water quality monitoring of all water bodies and pollution control inspection of potential polluting sources will be put in place. In this regard all factories and other waste water generating concerns will be required to incorporate in their designs the waste water treatment devices.

2.6.4 Discharge of undesirable substances in the water system will, therefore, not be allowed unless prior authority has been sought from the relevant government authorised agency. In this regard, levies on effluent discharges will be introduced based on the quantity of the effluent whose quality must conform to the requirements of the standards in force as per the law.

2.7 Water resources assessment, monitoring and information system

2.7.1 Water resources assessment comprises the continuing determination of sources, extent, dependability and quality of water resources and of the human activities that affect those resources. Thus with the knowledge of demand scenario, assessment should constitute the practical basis for sustainable water resources management and a prerequisite for evaluation of the possibilities of their development. Monitoring of the various hydrologic and hydro-geological parameters is essential for the analysis and forecasting of available surface and groundwater at national, river basin and local levels. The monitoring of water quality parameters provides baseline data for the purposes of pollution control. Similarly the monitoring of water abstraction and water use is necessary for working out naturalised river flows, misuse and over abstraction.

2.7.2 A proper information base is a precondition for the management of water resources. Adequate and reliable rainfall, surface and groundwater

(quantity and quality) data need to be available at all levels for decision making at the local, river basin, national and international levels.

2.7.3 The database and information flow in the water sector is characterised by data gaps due to discontinuous water resource assessment programmes, weak monitoring systems and an inadequate user database. Such a situation could lead to production of unreliable reports, wrong conclusions, and more risks in planning hence inappropriate plans and poor resource utilisation.

2.7.4 The solution to these problems calls for setting up mechanisms for continuous assessment of water resources, which includes strengthening of the institutional capacity of the various agencies responsible for the collection, storage and analysis of water resources data. This should be followed by the establishment of a fully fledged hydrologic, hydro-geologic, water quality, water permits, and socio-economic databases at all the water resources management levels.

2.7.5 The ministry in charge of water affairs will endeavour to establish comprehensive water resources databases, at all the management levels, on self-sustainable basis, for use in the water sector development. These databases will contain updated water resources data at all times and in this regard will put in place water resources assessment and monitoring systems in collaboration with relevant organisations and agencies. An appropriate and cost effective Information System will be established aimed at making relevant information accessible in the form and at the time required to facilitate its use in the country's socio-economic development, environmental protection and in the planning and design and operation of specific water related projects.

2.7.6 Funding for the procurement and establishment of Water Resources Assessment tools will be stepped up to ensure that modern equipment is obtained.

2.8 Water research and technology

2.8.1 There have been various technologies in use within the water sector. Some of these technologies have proved to be unsustainable in the long run. Many water supply schemes are currently non-operational while others are operating at a very low level. It is quite evident that, among the reasons for this state of affairs is the choice of the wrong technology, which the beneficiaries or those charged with the responsibility of operating the water supplies do not understand. New innovations in technology have been introduced into the sector without prior assessment on their suitability and adaptability at the expense of the local technologies. Some of these technologies have proved to be costly and inappropriate leading in some cases to the abandonment of the schemes. The various available technologies including traditional ones need to be examined critically and selection made of those most relevant to Kenyan situations.

2.8.2 There is need to examine critically the various technologies in use with a view to selecting those that are appropriate to our local

situations. This can only be done if there is an institution charged with this responsibility and which combines the experience and research findings on the performance, adaptability, relevance and durability. This will call for the establishment of an institution to carry out the necessary research, advise on and enforce those facets necessary for the sound management and utilisation of the nations water resources.

2.8.3 Scientific Research in water matters will be promoted as a basis for sustainable development and management of water resources. In this regard, the ministry in-charge of water development will initiate collaboration with the relevant research institutions and also endeavour to establish a fully-fledged research institute on water matters. Financial support will be increased, particularly for problem-oriented research programme aimed at the development of improved water resources, water supply and sanitation management systems according to the priorities set based on sector needs. This programme will be reviewed and updated regularly. Closer contacts will be established between research and practical approaches.

CHAPTER 3

WATER AND SEWERAGE DEVELOPMENT

3.1 Development to meet water demands

3.1.1 It is clear that disparity in the development of the various regions of our country is a direct consequence of the availability or lack of water. Agriculture, livestock, industry and good health of the people will only be sustained and enhanced where water is available in sufficient quantity and acceptable quality. Water, therefore, becomes an essential input in all our development endeavours. The population is increasing rapidly resulting in a rapid increase in the demand for water. As the country develops, the demand for water to support these developing activities will continue rising.

3.1.2 In order to meet the present and the future demands for water and to promote the country's development, systematic development of water facilities cutting across all sectors will be required. The underlying principle should be to remove water availability as a constraint to development.

The following is viewed as the solution to these problems:-

- Identifying and developing adequate and appropriate water supply systems to meet the current and future domestic demands for water both in the urban and rural areas. Special emphasis will be given to the promotion of roof catchment systems in urban and rural areas.
- Identifying and developing adequate and appropriate water supply systems to meet the current and future industrial demands for water. Recycling of industrial water and individual supply systems for industry will be promoted.
- Supporting Food Self Sufficiency Policy by providing water in sufficient quantities to facilitate intensification of agricultural activities for use in irrigation. In this regard, efforts will be made to conserve water where it occurs by constructing appropriate dams.
- Enhancing livestock development by providing and conserving all water available and occurring within livestock rearing areas.

Emphasis should, therefore, be on the development of water sources for use by livestock and in certain cases by wildlife. Rehabilitation of water pans as well as groundwater resources will be promoted.

- Conservation and development of water resources within the National Parks and National Reserves to provide water for wildlife and also for use outside the parks but in a manner that will not compromise the wildlife ecology.
- Encouraging fisheries development in all places where it can flourish. This is in particular where dam schemes are being developed. Design of water impounding structures will take into account the existence of aquatic life.
- Development of hydropower as one of the components of a multi-purpose project.

3.1.3 The provision of adequate water facilities to meet the entire nation's water needs is an enormous task and a big challenge. It requires concerted effort by all the actors. The Government

will continue to play a major role in the development of the water sector while encouraging the full participation of the communities and the private sector. The Government will, therefore, collaborate with the donor community, beneficiary communities, Non Governmental Organisations (NGOs) and the Private Sector in mobilising the necessary human and financial resources required. In this regard, the Government will remain committed to creating an enabling environment for all actors to operate effectively and efficiently and will adopt a diminishing role in the direct implementation of water supply and sanitation projects.

3.1.4 The Government will support the policies and initiatives geared towards the development of appropriate water and sanitation facilities in the rural areas as a means of attracting viable economic activities and improving health.

3.1.5 On groundwater development, the Government will encourage the private sector-led drilling initiatives through competitive tendering procedures. The Ministry in charge of water affairs will however, be expected to retain some capacity

in drilling to allow for specific interventions during emergency. It will also monitor and give guidelines on groundwater extraction and utilisation.

3.1.6 In recognition of the important role of irrigated agriculture and the enormous quantities of water required for this purpose, the Government will make/support efforts to store water where it occurs naturally and in surface water run-off areas for irrigation through non-wasteful practices. It will also continue to encourage, where possible, water re-use technologies.

3.1.7 The Ministry in charge of water affairs will fully support the Government's efforts to attain self-sufficiency in energy production, by facilitating the process aimed at energy production while at the same time ensuring that appropriate conservation measures are in place to realise sufficient quantities of water.

3.2 Water Development for Poverty Alleviation

3.2.1 Access to adequate and reliable supply of clean water is key to stimulating economic growth and improving public health. Results of various studies available, among them the Participatory Poverty Assessment Study, indicate a strong correlation between availability of water and the level of socio-economic status of the people. Income generating projects like poultry keeping, kitchen gardening, zero grazing, etc., which require low capital to operate and are ideal for alleviating poverty in both rural and urban areas, have water as their entry point. To tackle poverty, therefore, there is need to evolve a conscious strategy aimed at providing water to the poor as a basis for promoting other development endeavours that would uplift their living standards.

3.2.2 In urban areas, most slum dwellers, 85% of which fall below the poverty line, depend largely on water vendors and communal water points where water, mostly of low quality, is bought at exorbitant price. The sanitation facilities in these areas are

also of poor standards resulting in high incidence of illness.

3.2.3 In order to ensure supply of water of good quality and sufficient quantity to alleviate poverty in both rural and urban areas, the Government will give emphasis to water programmes that have a direct impact on the vulnerable sections of the society. This will be achieved through: -

- Ensuring that the existing water supply schemes are rehabilitated and put under a sound management involving the beneficiary communities and other stakeholders;
- Harnessing rainwater by constructing appropriate dams and pans in strategic locations and de-silting existing ones to provide water for small scale irrigation, livestock and other income-generating projects;
- Intensifying groundwater exploration and exploitation to provide alternative source to surface water, especially in arid and semi-arid lands; and
- Impounding rivers to build water reservoirs that could provide water for irrigation and other uses.

3.2.4 The strategies spelt out above will be pursued within a participatory framework involving the communities and other water actors in design, construction and management of the water utilities. As a basis for the success of these strategies, the Government will encourage more active involvement of the private sector and Non Governmental Organisations working in partnership with the communities to ensure sustainability of the structures constructed.

3.3 Technology.

3.3.1 The common bottlenecks in the choice of technology have been brought about by the use of conventional technology influenced by training, use of modern sources of energy which are not necessarily renewable, and sophisticated equipment. For instance, the transition from the use of the hydram/wind driven pumps to diesel propelled engines and consequently to electricity driven pumps has been largely due to the desire to change with the times rather than in the inappropriateness of the discarded technology. These problems have resulted in costly

maintenance and in many instances, failure of the services.

3.3.2 The basic solutions to the problems in the choice of technology lie in better training and information regarding alternative technologies and their corresponding management needs and costs. This will call for a careful identification of feasible technological alternatives through research to suit the needs and the ability of both the Government and communities in different parts of the country. Special attention will be given to those types of technology that are relevant to the needs of the communities- especially women- which they are meant for.

3.3.3 The Government will remain committed to the use of appropriate technology that users fully understand and comprehend. Efforts will, therefore, be made to vet the technologies being introduced in the water sector in a manner that will not obstruct the introduction of technological breakthroughs in the field of water development. Use of traditional technologies will be encouraged with modifications, if necessary.

3.4 Monitoring system

3.4.1 The Ministry in-charge of water affairs has the express mandate to facilitate formulation of the policy framework to guide the water sector activities.

In addition to this, it has also the mandate to regulate the water sector activities. A lot of activities have been taking place in the water sector. Some of these activities have not been properly documented and this, in most cases, result in loss of valuable information and experiences. What is needed is a well-planned monitoring system to cover all the activities of the water sector actors. This will make it possible to document experiences and challenges on a regular basis and, by so doing, gather information for both policy formulation and regulatory process.

3.4.1 The Ministry in-charge of water affairs, in collaboration with other actors, will develop a comprehensive water sector monitoring system, including Country Level Collaboration (CLC), in order to have access to reliable socio-economic, institutional, technical and financial data and, hence provide itself with information and data to support the policy formulation and regulatory process.

3.5 Operation and Maintenance issues

3.5.1 Operation and maintenance of water supplies has recently become one of the major problems within the water sector. This has mainly been due to a multiplicity of factors touching on planning, design, implementation and operation and maintenance. Many schemes have been developed without addressing the above issues comprehensively. This has resulted in water supply systems, which have become unsustainable in terms of operation and maintenance.

3.5.2 Involvement of the beneficiaries at all stages of the water supply development process prepares them for eventual taking over of the same for operation and maintenance. The basic solution to the problems in operation and maintenance of water supply schemes, therefore, lies in the full involvement of the users.

3.5.3 In line with Government Policy of Cost Sharing, the Ministry in-charge of water affairs will fully encourage active participation of beneficiaries in development and operation of water supplies. In

this regard, the Government will continue to promote the development of water systems that are self-sustaining and where the beneficiaries themselves are encouraged to take the full responsibility for operating and maintaining such systems. To ensure a controlled withdrawal mechanism, the Government will undertake to train the communities on issues related to operations and maintenance of water projects and have them assume the management of the projects systematically to prevent disruption of services.

3.6 Wastewater disposal systems

3.6.1 One of the by-products of the water development initiative is the wastewater. The wastewater so generated is discharged into water bodies resulting in the deterioration of the water quality. This renders the water unsafe for certain uses without applying treatment. With the rapid socio-economic development, wastewater production is increasing at an alarming rate while the investment in water treatment facilities has been declining. This poses serious water quality problems, which need to be addressed. The basic

solution to this problem lies in the clear understanding that one cannot separate wastewater disposal from water supply provision.

3.6.2 Development of water supplies in the urban areas will, therefore, be accompanied by corresponding sewerage development systems to handle wastewater. In particular, wastewater from industrial establishments will be properly treated before discharging it into natural river courses. Strict water quality standards will be established to protect all water bodies receiving wastewater. In urban areas sanitation systems will be developed concurrently with water supply systems aimed at protecting peoples health and water resources from pollution. In rural areas on-site sanitation, which is economically and technically sound, will be developed.

3.6.3 To ensure strict compliance with the standards highlighted above, the Ministry in charge of Water Affairs will, in collaboration with the relevant institutions, ensure that appropriate and comprehensive policy on sanitation is developed and enforced.

CHAPTER 4

INSTITUTIONAL FRAMEWORK

4.1 Organisational Set-Up

4.1.1 There are many organisations involved in water resource management and development of water supplies in the country. These organisations include the Ministry in charge of water affairs, other Government Ministries, State Corporations, Local Authorities and Private Organisations. These organisations have not been very successful in the management of water affairs due to some institutional weaknesses, which have been identified (including poor organisational structure, inadequate funds, lack of skilled personnel and shortage of essential facilities). The sector has undergone fundamental changes both in the approach and the roles of the players. However, the institutions charged with various roles have not been adapting themselves to these changes. The performance of the sector, therefore, has not been as per the expectations.

4.1.2 The solution to this problem calls for a re-evaluation of the roles of the key actors in the sector with a view to proposing new and appropriate roles that are dictated by the needs of the sector. An objective analysis of the sector situation in addition to experiences elsewhere lead to the conclusion that an organisational restructuring of the sector institutions is needed for the water sector.

4.1.3 The role of the government in the water sector will be redefined with emphasis on regulatory and enabling functions as opposed to direct service provision. In this regard, the organisation structure of all the actors in the sector needs to be reviewed to be in consonance with the shift in policy. This will be accompanied by institutional reforms that promote integrated approach, including changes in procedures, attitudes and behaviour and ensuring gender balance in participation at all levels in sector institutions.

4.1.4 The government will support private sector participation and community management of services backed by measures to strengthen local

institutions in implementing and sustaining water and sanitation programmes. In this regard the government in collaboration with relevant training institutions will develop an institutional capacity building policy for the entire water sector which will continuously guide the sector to build, strengthen and maintain the required institutional capacities.

4.2 Co-ordination

4.2.1 The ministry in-charge of water affairs is responsible for co-ordination of all development activities and actors in the water sector. This requires that responsibilities, mandate and roles of each actor be established and monitored by the Ministry. This is necessary to avoid duplication of efforts and the resultant mis-allocation of resources. However, duplication of efforts, competition and conflicts and mis-allocation of resources have been noticed due to inadequacies in the monitoring process put in place by the Government. This situation is more glaring in the case of the Non-Governmental Organisations, which currently number over 300 in the sector.

4.2.2 The co-ordination mechanisms require to be reviewed including, structure of the institutions, procedures, plans, information systems and co-ordination meetings. These mechanisms are necessary for control, monitoring and evaluation of water sector activities. For this to be done there should be a clear definition of the roles of all the actors based on their capabilities.

4.2.3 The Ministry in-charge of water affairs will clearly define the roles for all actors in the water sector according to their capabilities and establish mechanisms for monitoring role performance and define performance indicators for all actors in the water sector. In this regard, all water sector actors will be required to register themselves with the ministry.

4.3 Legislation

4.3.1 The existing Water Act (Cap 372) supersedes all other acts related to water. In this regard, the Act should comprehensively address all the issues relating to water development and management. However, there are many areas and issues, which have not been adequately

addressed by the current Water Act. With the changing circumstances and situation within the sector, there is urgent need to give them legal basis.

4.3.2 The Water Act should be broad enough to address all water-related issues while also being detailed enough to give specific direction adequately. This will require a critical evaluation of the legislative provision in the current Act and set the basis for its review to harmonise it with other existing related acts.

4.3.3 The Water Act will be reviewed and updated to comprehensively address all the legislative water issues. Of major concern will be the legislation as regards transfer of water facilities from one institution to another. Where necessary, new legislation will be introduced to give various institutions legal mandate to perform certain specific roles in water development and also provide mechanisms for regulating their performance.

4.4 Community Participation

4.4.1 The common practice in the water sector has been that the communities are marginally involved in the entire development process. However, in the changing economic conditions, it has become inevitable that the community should be involved at all stages of water projects development (including water resources investigations planning, implementation and operation and maintenance).

4.4.2 Institutional steps need to be taken to facilitate and support community involvement in water supply. This can be done through the establishment of support units for water supply and sanitation at the District level. Training community workers in low-cost water supply and sanitation technology, hygiene promotion and community participation also need to be done.

4.4.3 Community involvement will be part and parcel of project formulation. The Government in collaboration with the training institutions will make every effort to appropriately train the communities to equip them with the appropriate knowledge and

skills for this purpose. In this regard Community Based Water Committees with clearly defined roles will be established at the district level.

4.4.4 The Government will continue to recognise and appreciate the gender aspects of water use and management especially the key role played by women and children. In this regard, the training envisaged for the communities will require that there is gender balance to allow for the gender factors to be reflected in the ownership and management of the various water schemes operated by the communities.

4.5 Handing - Over Existing Water Supplies

4.5.1 Proper operation and maintenance of water supply can only be achieved when there is ownership of the facility. Lack of proper operation and maintenance in water supply facilities is observed in cases where ownership is not clear.

4.5.2 Ownership of a water supply facility encourages one to apply proper operation and maintenance procedures of water supply facility. This then calls for the handing-over of water supply

facilities to the agencies charged with the responsibility of operation and maintenance.

4.5.3 The Government will endeavour to hand over Urban Water Supplies and Sanitation facilities to autonomous departments within the Local Authorities and Rural Water Supplies to the communities. In this regard, the community and the Local Authorities will be assessed on their abilities and preparedness to manage a scheme. If found wanting, they will be trained adequately so that they can manage them. However, the Government will assist the communities and the Local Authorities with technical matters through deployment of qualified staff as situations demand.

CHAPTER 5

FINANCING OF WATER SECTOR

5.1 Sector Funding

5.1.1 Financial resources for the development and management of the water resources have been getting scarce due to decrease in donor funding, inadequate and declining development budget allocation by the Central Government and increasing costs due to global economic recession. This has constrained the development and operations and maintenance of water supplies while at the same time the demand for water has been increasing.

5.1.2 For budgetary allocations, the Government should look at water as a catalyst to the development of other economic sectors and thus allocate adequate development funds through the Treasury. At the same time, the Ministry in-charge of water affairs should enhance cost effectiveness in investments and operations through proper staffing levels and the utilisation of total design capacities by rehabilitating existing projects instead of starting new ones.

5.1.3 The Government recognises the central role water development takes in the overall development of the country. In this regard, it will make the necessary efforts to mobilise local financial resources for water resources management and development. In addition, it will continue to solicit for external donor funding to complement the local financial resources where necessary.

5.2 Water Revenue

5.2.1 Traditionally, water has been perceived as a service commodity to be supplied freely. It has, therefore, not been regarded as a major source of revenue. In light of this, water revenue has been inadequate basically due to limited revenue base, ineffective revenue collection mechanisms and low levels of water tariffs.

5.2.2 The Government Policy on cost sharing in the water sector has been in place since the 1974-78 Development Plan period. Subsequent plans and Sessional Paper No. 1 of 1986 also endorsed the policy. In all these policy documents, it has been made clear that all consumers should pay for

water. The solution, therefore, lies in broadening the revenue base.

5.2.3 As recognised in the documents cited above, Water should be considered as an economic good. All water consumers should pay for water on the basis of the user-pays principle. In this regard, water supplies will be gazetted for this purpose and appropriate tariffs set in such a manner that the scheme will be self-sustaining at all times.

5.2.4 Water abstraction in its natural form will be charged a fee commensurate with the amount of water abstracted and the funds so generated will be used for the assessing, monitoring, conservation and management of water resources and related research.

5.2.5 Whereas commercial water tariffs should embody real economic cost of water supply, it should be appreciated that their universal application both in rural and urban areas is likely to have adverse effect on the more vulnerable sections of the populace. To address this, the Government in close liaison with the various water

undertakers will develop a tariff structure that both ensures adequate cost recovery on the water supplies and protects the rural poor.

5.2.6 Effluent discharge levies will be introduced. The level of the levy will be commensurate with the amount and the nature of the effluent discharged and cost of treatment required based on the Polluter-Pays' principle.

5.3 Management of Financial Resources

5.3.1 Improved financial resources management can be achieved by instituting effective financial monitoring system supported by data collection and management to assist in effective decision-making. The Ministry should ensure efficient management of financial resources through, strict adherence to budget rationalisation policy, following the laid down financial procedures and regulations, and motivation and training of staff.

5.3.2 Management of the financial resources used in the water sector will continue to be as per the Government's laid down regulations. The Ministry in charge of water affairs will co-ordinate

the activities of the donor agencies and the Non-Governmental Organisations to ensure that funds are channelled to areas where they are most needed and planned so that they can effectively supplement local financial resources.

5.3.3 All sources and quality of bottled water and water-vending operations will be closely monitored and regulated. In this regard, appropriate tariffs and licensing procedures will be formulated for this purpose by the ministry in charge of water affairs in liaison with other relevant agencies.

ACTION PLAN ON THE NATIONAL WATER POLICY

POLICY STATEMENT	STRATEGY	TIME FRAME
<p>Water Availability</p> <p><i>All efforts will be made to conserve water when and where it occurs and its utilisation will be so regulated as to benefit as many people and sectors as possible. Water levies and fees will be introduced where necessary and applicable for utilisation of water from all public water courses. Such levies/fees will be used in ensuring a healthy state of the nation's water and will include support for research into technologies suited to our water needs. Particular emphasis will be given to the protection and development of Sea/ Brackish/ Saline/Non-Conventional Sources.</i></p>	<p>Formulate a National Water Conservation Programme to promote water conservation, with an inbuilt mechanism for payment of fees and levies for water utilisation to avail finance for water conservation activities which will, include but not limited to, the following:-</p> <ul style="list-style-type: none"> • Water catchment and source protection and conservation. • Construction of reservoirs for impounding surface run-off and for regulating river flows to synchronise them with the water demand patterns. • Artificial ground water recharge as a means of conserving surface run-off. • Identification and development of retarding basin, where possible, for the control and management of flood waters. 	<p>To be fully operational by July 2000</p>
<p>Roles and functions at different management levels</p> <p><i>The decision making process in respect to water resources management will be decentralised by adopting three water resources management levels (including National, Basin, Sub-basin/Catchment levels) and setting up appropriate institutions clearly defining the role of each and how they relate to each other. Among the roles of these institutions will be to identify vital water catchment areas, including wetlands and initiate action for gazetteement for protection purposes.</i></p>	<p>Setting up and or strengthening of the existing institutions at the national, basin and catchment levels with clearly defined roles to promote and implement agreed water resources management principles at the national, basin and catchment levels. The results of the recently concluded Water Sector Actors Survey will be a major input towards this end. The following is a breakdown of the stepwise approach to the decentralisation process.</p> <ul style="list-style-type: none"> • Setting up/strengthening national institutions. • Setting up/strengthening basin level institutions. • Setting up/strengthening sub-basin/ catchment level institutions. 	<p>To be implemented between June 1999 and December 2000</p>

	<ul style="list-style-type: none"> • Decentralise decision making to basin level institutions. • Decentralise decision making to sub-basin/ catchment level institutions. • Gazettment of all vital water catchments. 	
Integrated water resources management <i>Water development will require an integrated approach. In order to facilitate the full utilisation of this approach in water development, a National Standing Committee to deal with cross-sectoral issues will be established with representatives from all main water and related sector actors under the guidance of the Ministry in-charge of water affairs. This committee will among other issues spearhead the formulation of a consolidated policy on Land, Water and Forests.</i>	Set up a National Standing Committee to deal with water related cross-sectoral issues and to among other issues, spearhead the formulation of a consolidated policy on Land, Water and Forests.	By June 2000
Legal Framework <i>The Water Act will be reviewed to be in harmony with other Acts. Efforts will be made to strengthen the enforcement of the Water Act. It will be reviewed to incorporate the internationally shared water resources to enable it to guide the utilisation and management of the same.</i>	<ul style="list-style-type: none"> • Review of the Water Act Cap 372 in view of this policy and harmonise it with other acts. This review to cover also existing treaties on international shared water resources. • Enhance the Ministry's capacity to enforce the Act by reviewing the water user fees as A.I.A. 	To be completed by December 1999
Impact of water resources development on environment <i>Water development will be geared towards improving the environment and will not be expected to adversely affect the quality of water resources in particular and the environment in general.</i>	Develop environmental guidelines for water sector which integrate environmental impact assessment with water development planning process taking into account the requirements of initiatives by other ministries aimed at ensuring environmental harmony.	By June 2000

<p>Water quality issues</p> <p><i>Water is a basic need for human survival and its quality should therefore be protected. In this regard, discharge of undesirable elements in the water system is illegal and will not be permitted unless prior authority has been sought from the relevant government authorised agency. Levies on effluent discharges will be introduced based on the quantity of the effluent whose quality must conform to prescribed requirements of the standards in force.</i></p>	<p>Formulate standards and guidelines for the disposal of undesirable elements in water and introduce legislation to ban/regulate their discharge into water bodies with appropriate fines/tariffs. The national water quality monitoring programme to be strengthened for monitoring performance.</p>	<p>By December 1999</p>
<p>Water resources assessment, monitoring & information system</p> <p><i>The ministry in charge of water affairs will endeavour to establish comprehensive water resources databases, at all the management levels, on self-sustainable basis, for use in the water sector development. These databases will contain updated water resources data at all times and in this regard will put in place water resources assessment and monitoring systems in collaboration with relevant organisations and agencies. An Information System will be established with the appropriate charging system aimed at making relevant information accessible in the form and at the time required to facilitate its use in the country's socio-economic development, environmental protection and in the planning and design and operation of specific water related projects</i></p>	<ul style="list-style-type: none"> • Develop/strengthen a National Water Resources Assessment and Monitoring System that is connected to Basin/Sub-Basin systems with appropriate data and information dissemination system. Updated Databases to be established and maintained at the national, basin and sub-basin levels • Initiate a regular annual publication of key water resources data and information for public consumption. 	<p>By December 2000</p> <p>To be continuous with first publication appearing by December 1999</p>
<p>Water research and technology</p> <p><i>Scientific Research in water matters will be promoted as a basis for sustainable development and management of water resources. In this regard, the ministry in-charge of water development will initiate collaboration with the relevant research institutions and also</i></p>	<ul style="list-style-type: none"> ▪ Initiate contacts and collaboration with relevant Research Institutes both locally and abroad as a means of sharing research experiences and results. 	<p>By December 1999</p>

<p><i>endeavour to establish a fully fledged research institute on water matters. Financial support will be increased, particularly for problem-oriented research programme aimed at the development of improved water resources, water supply and sanitation management systems according to the priorities set based on sector needs. This programme will be reviewed and updated regularly. Closer contacts will be established between research and practical approaches.</i></p>	<ul style="list-style-type: none"> • Carry out a study to determine the most appropriate system/mechanism to be adopted for identifying the research needs for the water sector • Implement the accepted recommendations of the above study and publish the first edition of the water sector research needs and priorities. • Support the development of the Applied Water Research Branch to a fully-fledged Research Institute for water matters. 	<p>By June 2000</p> <p>By December 2001</p> <p>By July 2002</p>
<p>Development to meet water demands</p> <p><i>The provision of adequate water facilities to meet all the nations water needs is an enormous task and a big challenge. It requires concerted effort by all the actors. The Government will continue to play a major role in the development of the water sector while continuing to encourage the full participation of the community and the private sector. The Government will, therefore, collaborate with the donor community, beneficiary communities, Non Governmental Organisations (NGOs) and the Private Sector in mobilising the necessary human and financial resources required. In this regard, the Government will remain committed to creating an enabling environment for all actors to operate effectively and efficiently and will adopt a diminishing role in the direct implementation of water supply and sanitation projects.</i></p> <p><i>The Government will continue to promote the development of appropriate water and sanitation facilities in the rural areas as a means of attracting viable economic activities.</i></p>	<ul style="list-style-type: none"> • The Government to review water undertakership rules in order to encourage other actors to apply for water undertakership and thereafter progressively withdraw from O&M activities and only retain intervention capacity. The Government to intensify Regulatory and Monitoring Roles of Water Undertakers and encourage enhanced participation in development activities by other stakeholders. • The Government sets collaborative mechanism between Donors, NGOs, Private Sector and communities for the purpose of mobilising resources for the sector Development with particular reference to the rural areas and disadvantaged areas. • Publish a manual on the development and management of appropriate water and sanitation facilities in the rural areas involving communities in order to stimulate rural development. 	<p>By January 2000</p> <p>By July 2000</p> <p>By December 1999</p>

<p><i>The important role of irrigated agriculture and the enormous quantities of water required is noted. Efforts will, therefore, be made to store water where it occurs naturally and in surface water run off areas for use for this purpose through non-wasteful irrigation practices.</i></p> <p><i>The Ministry in-charge of water affairs will fully support the Government's efforts to attain self-sufficiency in energy production, by facilitating the availability of water in sufficient quantities where feasible.</i></p>	<ul style="list-style-type: none"> • Publish a manual on water harvesting (surface run off water) techniques as part of the national initiative to promote water conservation for use in agricultural development. • Link up hydropower production with the National Water Conservation Programme 	<p>By December 1999</p> <p>By July 2000</p>
<p>Development for Poverty Alleviation</p> <p><i>To tackle poverty, there is need to evolve a strategy aimed at providing to the poor as a basis for promoting other development endeavours that would uplift their living standards. In this regard, the Government will give emphasis to water programmes that have a direct impact on the vulnerable sections of the society.</i></p>	<ul style="list-style-type: none"> ▪ Rehabilitate water supplies schemes and ensure sound community based management. ▪ Identify appropriate sites and construct dams and pans for irrigation and other uses. ▪ Carry out groundwater exploration and drill boreholes/wells in ASAL areas. ▪ Impound rivers to provide reservoirs. 	<p>By December 2002</p> <p>By July 2002</p> <p>By July 2002</p>
<p>Technology</p> <p><i>The Government will remain committed to the use of appropriate technology that users fully understand and comprehend. Efforts will, therefore, be made to vet the technologies being introduced in the water sector in a manner that will not obstruct the introduction of technological breakthroughs in the field of water development. Use of traditional technologies will be encouraged with modifications if necessary.</i></p>	<p>Set up a national technology vetting mechanism to vet incoming technologies and Publish a Journal on Appropriate technology on a regular yearly basis. This will also include water treatment chemicals</p>	<p>By July 2000</p>
<p>Monitoring system</p> <p><i>The Ministry in-charge of water affairs, in collaboration with other actors, will develop a comprehensive water sector monitoring system, including Country Level</i></p>	<p>The Ministry sets up a comprehensive water sector monitoring system that includes country level collaboration within the region.</p>	<p>By June 2000</p>

<p><i>Collaboration (CLC), in order to have access to reliable socio-economic, institutional, technical and financial data and hence provide itself with information and data to support the policy formulation and regulatory process.</i></p>		
<p>Operation and maintenance</p> <p><i>In line with Government Policy of Cost Sharing, the Ministry in-charge of water affairs will fully encourage active participation of beneficiaries in development and operation of water supplies. In this regard, the Government will continue to promote the development of water systems that are self sustaining and where the beneficiaries themselves are encouraged to take the full responsibility for operating and maintaining such systems.</i></p>	<ul style="list-style-type: none"> • Develop a criteria for selection of projects for hand-over to beneficiaries and stakeholders. • Assist Communities to form Water Users Associations. • Initiate an intensive capacity building at the district/ community/Local levels and within the private sector for eventual take-over of all currently government run schemes. 	<p>Already developed</p> <p>Ongoing exercise</p> <p>1999 - 2010</p>
<p>Waste water disposal systems</p> <p><i>Development of water supplies in the urban areas will be accompanied by corresponding sewerage development systems to handle waste water. In particular, wastewater from industrial establishments will be properly treated before discharging it into natural river courses. Strict water quality standards will be established to protect all water bodies receiving wastewater. In Urban/Minor Urban areas sanitation systems will be developed concurrently with water supply systems aimed at protecting peoples health and water resources from pollution. In Rural Areas on site sanitation will be developed where economically and technically viable.</i></p>	<p>Review of Water Undertakership to incorporate sewerage systems to encourage the concurrent development and management of water supply and sewerage/wastewater utilities.</p>	<p>By March 2000</p>
<p>Institutional set-up</p> <p><i>The role of the government in the water sector will be redefined with emphasis on regulatory and enabling functions as opposed to direct service provision. In this regard, the organisation structure of the ministry</i></p>	<ul style="list-style-type: none"> • Strengthen the Ministry's core functions of regulatory and monitoring roles. • Develop an institutional capacity building policy for the water sector. 	<p>By June 2000</p> <p>By July 2000</p>

<p><i>in-charge of water affairs and the other actor institutions will be reviewed. This will be accompanied by institutional reforms that promote integrated approach including changes in procedures, attitudes and behaviour and the full participation of women at all levels in sector institutions.</i></p> <p>The government will support community management of services, backed by measures to strengthen local institutions in implementing and sustaining water and sanitation programmes. In this regard the government in collaboration with relevant training institutions will develop an institutional capacity building policy for the entire water sector which will continuously guide the sector to build, strengthen and maintain the required institutional capacities.</p>	<ul style="list-style-type: none"> • Re-organise the key institutions in the water sector in line with the new roles necessitated by this policy 	<p>By December 2000</p>
<p>Coordination</p> <p><i>The Ministry in-charge of water development and management will clearly define the roles for all actors in the water sector according to their capabilities and establish mechanisms for monitoring role performance and define performance indicators for all actors in the water sector. In this regard, all water sector actors will be required to register themselves with the Ministry.</i></p>	<ul style="list-style-type: none"> • Carry out a Water Sector Actors Survey. • Define the roles of the actors based on the results of the survey. • Define mechanism for registration of water Sector Actors with the Ministry in charge of water affairs. 	<p>Already undertaken</p> <p>By December 1999</p> <p>By December 1999</p>
<p>Legislation</p> <p><i>The Water Act will be reviewed and updated to comprehensively address all the legislative water issues. Of major concern will be the legislation as regards transfer of the management of water facilities from one institution to another. Where necessary, new legislation will be introduced to give various institutions legal mandate to perform certain specific roles in water development and also provide mechanisms for regulating their performance.</i></p>	<ul style="list-style-type: none"> • Provide the necessary information for the review of the Water Act to include the legal aspects of transfer of the management of water facilities. • Enact the appropriate Legislation to give institutions the necessary legal mandate for performing their roles. 	<p>By June 1999</p> <p>By July 2000</p>

<p>Community Participation</p> <p><i>Community involvement will be part and parcel of project formulation. Every effort will be made to appropriately train the communities to equip them with the appropriate knowledge for this purpose. In this regard Community Based Water Committees with clearly defined roles will be established at the district level.</i></p>	<ul style="list-style-type: none"> • Prepare curriculum for Community training courses to equip them with knowledge on project management. • Institutionalise Community training at KEWI. • Commence training courses for communities • Form Community Based Water Committees at the local level. 	<p>By July 2000</p> <p>By December 2000</p> <p>By January 2001</p> <p>To start by January 2000 in selected priority areas.</p>
<p>Gender Concerns</p> <p><i>The Government will continue to recognise and appreciate the gender aspects of water use and management especially the key role played by women and children. In this regard, the training envisaged for the communities will require that there is gender balance to allow for the gender factors to be reflected in the ownership and management of the various water schemes operated by the communities.</i></p>	<ul style="list-style-type: none"> • Carry out a study to determine key gender aspects of water use and management and thereafter make recommendations on how best gender concerns can be incorporated in water development and management at the community level. • Develop a manual on the application of gender concerns in the management of water utilities. 	<p>By March 2000</p> <p>By September 2000</p>
<p>Handing - Over Water Supplies</p> <p><i>The Government will endeavour to hand over Urban Water Supplies and Sanitation to the Local Authorities and Rural Water Supplies to the communities. In this regard, the community and the Local Authorities will be assessed on their abilities and preparedness to manage a scheme and if not, they will be trained adequately so that they can manage them. However, the Government will assist the communities and the Local Authorities with technical matters through deployment of qualified staff as situations demand.</i></p>	<ul style="list-style-type: none"> • Assess capability of Local Authorities to run Urban Water Supply and Sewerage and communities to run rural water supplies. • Develop a capacity building programme for potential water undertakers both in urban and rural areas and initiate training at KEWI. • Commence progressive handing-over process. 	<p>By June 2000</p> <p>By January 2001</p> <p>By September 2000</p>

<p>Financial resources</p> <p><i>The Government takes note of the central role water development takes in the overall development of the country. In this regard, it will make the necessary efforts to mobilise local financial resources for water resources management and development. In addition, it will continue to solicit for external donor funding to complement the local financial resources where necessary.</i></p>	<ul style="list-style-type: none"> • Hold a workshop to deliberate on ways and means of mobilising Local Resources for the water sector development and prepare a report on appropriate financial mechanism. • Implement recommendation on Mobilisation of Local financial resources for water sector development. • Identify areas of deficiency that will require external donor funding for the Government to take appropriate action 	<p>By December 1999</p> <p>By July 2000</p> <p>By July 2000</p>
<p>Revenue base</p> <p><i>Water should be considered as an economic good. All water consumers will pay for water on the basis of the user pays principle. In this regard, water supplies will be gazetted for this purpose and appropriate tariffs set in such a manner that the scheme will be self-sustaining at all times.</i></p> <p><i>Water abstraction in its natural form will be charged a fee commensurate with the amount of water abstracted and the funds so generated will be used for the assessing, monitoring, conservation and management of water resources and related research.</i></p> <p><i>Effluent discharge levies will be introduced. The level of the levy will be commensurate with the amount and the nature of the effluent discharged and cost of treatment required based on the 'Polluter-Pays' principle.</i></p>	<ul style="list-style-type: none"> • Gazettment of all water supplies and liberalising tariff setting. • Introduce a Water Resource tariff for all water uses for funding water resources assessment, monitoring and research. • Develop a mechanism for channelling Water Resources Tariff to monitoring, conservation and research activities. • Introduce an effluent discharge levy. 	<p>To start by December 1999 and be continuous activity.</p> <p>By March 2000</p> <p>By July 2000</p> <p>By January 2000</p>

