



GOVERNMENT OF MAURITIUS

# NATIONAL WATER POLICY

MINISTRY OF ENERGY AND PUBLIC UTILITIES

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## **PREAMBLE**

The Mauritius National Water Policy (NWP) is based on Government socio-economic policies and development strategies, as well as national objectives and targets defined for the water and sanitation sectors. It is also based on national principles of integrated water resources management that would enhance sustainable development of the country.

The NWP stresses the value of a holistic approach which recognizes the extensive and inter-sectoral decision making process about water. An integrated management approach needs to be adopted due to the linkage between the sectoral development goals and management of water resources.

Policies are essentially selected options to be used as instruments for achieving intended governmental goals and objectives. The NWP will serve as a broad framework to promote sustainable development and translate into practice all water development strategies and water and sanitation action plans to meet the water requirements of all sectors of the economy.

The NWP will be reviewed periodically so that it is a useful guide to manage the country's water sector for all the concerned Ministries, Agencies, Departments, local authorities and the private developers as well as those who are assigned the responsibilities for water related services.

## 1.0 BACKGROUND

### 1.1 Country Overview

Mauritius, as the main island of the Republic of Mauritius, comprises an area of 1870 km<sup>2</sup> and surrounded by fringing coral reefs. As a result of its volcanic origin and the high permeability of underlying rocks, most of the rivers and rivulets on the island originate from the central plateau. The second main island is Rodrigues, situated at some 560 km to the east of Mauritius. It is about 18 km long and 6.5 km wide with an area of 110 km<sup>2</sup>.

The climate is a tropical one with only two seasons, winter prevailing from May to October and summer from November to April. The average annual precipitation over the island is 2000 mm, (long term mean over period 1971 to 2000) varying from 1500 mm on the east coast to 4000 mm on the central plateau and 900 mm on the west coast. The wettest month is February and driest month is November. In Mauritius, the replenishment of water resource systems occurs during the summer season, when two thirds of the mean rainfall is harvested, out of which, about 65% emanate from tropical cyclones. However, rainfall events of 300 mm or more can be expected once a year over Mauritius as a result of cyclones in the Indian Ocean. The average annual precipitation in Rodrigues is around 1100 mm.

The Mauritian economy has diversified from a sugar cane monocrop economy in the 1970s to one based on manufacturing (textiles and garments) and tourism in the 1980s. The Republic of Mauritius has set up an ambitious objective to move away from a 'preference based' economy to one which will be globally competitive. Accordingly, it has embarked on a major economic reform programme to encourage and attract investment, know-how and technology as well as the overhauling of the present investment environment through the Business Facilitation Act and the re-structuring of the economy through the re-engineering of existing sectors such as sugar, textile and tourism while encouraging the emergence of new sectors such as financial services, seafood hub, knowledge hub, Information and Communication Technology, Integrated Resort Schemes and Ocean Economy.

In 2013 the population was estimated at 1.25 million, and is estimated to increase at 0.5% per annum. The population density is estimated at 634 inhabitants/km<sup>2</sup>.

In the same year, the GDP grew by 3.2% and the Gross National Income per capita at market prices reached Rs 291,234.

Some 30 years back, the water distribution systems/facilities were limited to a low coverage and limited treatment. To-date 99.6% of the population has access to potable water with a 24 hr supply for 80% of the population during the wet season. This is equivalent to a daily per capita consumption of around 200 litres. The present domestic water demand is met from groundwater (55%), impounding reservoirs and river off-takes (45%). The water quality is compliant with the WHO Guidelines.

The water sector today is facing daunting challenges that need to be addressed in the short, medium and long term, namely, mobilization of additional water resources to meet the sustained increase in demand and the reduction of the Non Revenue Water from the present level of around 50% to an acceptable level of around 20%.

## 1.2 Need for Water Policy

The main strengths of the water sector are good quality water resources, water supply infrastructure and relatively qualified personnel for the management of the water supply infrastructure. The opportunities are availability of Donor's funding for the water sector projects and interest shown by foreign Private Sector Operators in the management of the sector.

Despite its technical achievements, the water sector in Mauritius is characterized by the absence of a well defined NWP resulting in water allocations being guided by precedence rather than priorities, supply-side driven management instead of demand side management, absence of an Integrated Water Resources Management (IWRM) plan leading to low operating efficiency of the water supply systems, old legislations, inadequate surface water storage and inadequate funds for the development of the water infrastructure.

The NWP is required to meet the new challenges such as reduction in average annual rainfall brought about by climate change, sea level rise leading to groundwater quality deterioration near the coast, raw water quality due to low coverage of sanitation facilities and effluent discharge in a more efficient and effective manner as a result of industrial development.

In the wake of the economic growth, there is an exacerbated risk of pollution of our aquifers, surface water sources and the lagoon. Notwithstanding that Mauritius has already attained the target under Millennium Development Goal (MDG) with regard to providing sanitation facilities, a National Sewerage Programme is being implemented to increase the current level of coverage of the public sewerage system from 25% to 75% by 2040.

The National Water Policy will also ensure that the future water demands are equitably met for all sectors of the economy, in addition to promoting equity in terms of access to and benefit from the water resources potentials for the Republic of Mauritius.

## 2.0 GOALS AND OBJECTIVES OF THE NATIONAL WATER POLICY

### 2.1 Vision

The **vision** guiding the management of the water sector for sustainable development is based on the following:

- nature, water and human life must co-exist in harmony and balance as they are interdependent;
- the efficient and equitable use of water while preserving its environmental, social, cultural and economic values;
- water conservation in all its form through the education of water users and awareness of planners and decisions-makers; and
- involvement of all the stakeholders in partnership within an enabling policy, legal and institutional framework.

### 2.2 Values

The NWP takes into account the following:

- Planning, development and management of water resources must be guided by clear goals, given that water is a prime natural resource and a basic need for survival and human health as well as a precious national economic asset required for sustainable development.
- Planning and implementation of water sector projects should address a number of socio-economic aspects and issues such as environmental sustainability, appropriate resettlement of people affected by the implementation of projects, public health concerns and safety.
- Water demand is inevitably related to growth and expansion of economic activities. Water as a scarce resource, needs to be used and conserved in an efficient manner. Public awareness of the importance of water conservation is primordial.
- An Integrated Management of Water Resources is crucial for effective and efficient development of the resources with the active participation of all stakeholders.
- Management of droughts and floods should be coordinated at the national level.
- Water resources assessment should be revisited every 10 years to update the inventory both in terms of quality and quantity.
- Establishment of new mechanism to identify water use priorities by anticipatory and preventive approaches for the management of the water resources quality and quantity and acknowledgement of the social, economic and environment values of water for sustainable development.

## 2.3 Objectives

The NWP aims at providing a general framework for the water sector to achieve the specific objectives as follows:

- (a) develop water resources of the country for economic and social benefits of the people of the Republic of Mauritius on an equitable and sustainable basis;
- (b) ensure the availability of water to all sectors of the economy including the vulnerable groups taking into account the particular needs of women. The targets are :-
  - 100% access to safe and reliable water supply in the Republic of Mauritius by 2020.
  - extension of the public sewerage infrastructure to achieve 75 % coverage by 2040.
- (c) allocate water on the basis of national priorities and optimum allocation principles to ensure efficient, equitable and sustainable use. Special attention should be given to allocating water for food security;
- (d) improve financial and technical performance of water supply services by applying modern management practices under one water agency. The target is to improve financial soundness of water and sanitation utilities through a better efficiency in their management including the monetary benefits accruing as a result of the reduction in non-revenue water preferably below 20 % by 2040;
- (e) protect, conserve and enhance water resources and the overall aquatic environment and assess their status on an annual basis, through appropriate indicators based on modern monitoring techniques;
- (f) develop a legal and regulatory environment, introduce institutional changes and accelerate the development of sustainable water supply systems with appropriate legal and financial measures and incentives, including delineation of water rights and water pricing; and
- (g) put in place a conducive legal framework that will give due attention to the qualitative aspect of the water resources base including regulation of wastewater and effluent disposal according to 'Polluter-Pay Principle'.

### 3.0 THE NATIONAL WATER POLICY

#### 3.1 General and Sectoral Water Policy Statements

##### 3.1.1 *Water for Socio-Economic Development and Environmental Sustainability.*

***Water is a natural resource and a social and economic good. The limited water resources have to be protected in order to satisfy the needs of various human activities and to sustain the aquatic ecosystems.***

Water resources development contributes to economic productivity and social well-being as all social and economic activities rely heavily on the supply and quality of freshwater. However, population and economic growth result in higher water demand and increased pollution. Therefore, water resources need to be protected in both quantity and quality. The integrated management of freshwater as a finite and vulnerable resource and the integration of sectoral water plans and programmes within the framework of national economic and social policy are of paramount importance for coordinated action between sectors.

***As a social good, water is essential to human dignity, social well-being, public health and safety***

Water supports life and a range of social services. Allocation and access to water must consider the social benefits to people and the environment. It is reckoned that everybody should have access to a minimum amount of safe and reliable water supply at an affordable price.

***As an economic good which supports national economic integration and development water shall be conserved, developed and managed to provide economic benefits***

The management of water resources should recognize the contribution and value of water to economic development. Water should be used efficiently, with a pricing policy and other mechanisms to encourage water allocation to higher value uses in order to optimise its net economic and social benefits.

***As a finite and vulnerable resource, water is a fundamental asset of the nation Water allocation between sectors and users shall consider, among other things, the economic benefits balanced with social obligations and environmental requirements***

Sectoral water allocation should take into account the economic development potential associated with water use by promoting the efficient use of water with due regard to social development and food security. This implies the implementation of appropriate water pricing mechanism to reflect its economic and social value and to provide economic incentives for its efficient use.

##### 3.1.2 *Water for Drinking and Sanitation.*

***Government shall have a social and economic responsibility to ensure sustainable access to safe water supply for basic human needs.***

Access to safe water supply helps to eliminate health and socio-economic hazards such as sickness from waterborne diseases.

**Government will prioritise the allocation, access and utilisation of water resources for basic human needs over any other allocation, access and utilisation.**

Sustainable access to potable water will be a priority when allocating water resources under competing water demands.

**Government will ensure that the poor have access to safe water and sanitation facilities which are considered as basic human rights. To ensure sustainability of water supply and sanitation services to all areas, cost recovery will underpin all infrastructural developments and operation, that is, beneficiaries will pay an appropriate amount towards the cost for providing the services taking into account Government's social responsibilities to the poor.**

Government will decide on level of subsidies to support the poor and vulnerable groups. Cost recovery does not negate the provision of grants or subsidies to poorer segments of society. The challenge is to design effective measures to ensure that all users contribute their share to ensure sustainable services.

**Government will ensure that provision of sanitation services is integrated into the provision of water supply for basic human needs.**

Provision of water supply alone is not sufficient to improve public health. Most waterborne and water-based diseases are the result of poor sanitation. The implementation of the National Sewerage Program will be ensured to reach an island wide coverage within a reasonable time frame.

### 3.1.3 Water for Agriculture and Food Security

**Government will promote the attainment of food security through national self-sufficiency by developing those areas which have comparative advantage for rain-fed and irrigated agriculture.**

Water allocation and utilisation are key considerations for food security and reduction of economic asymmetries. The planning and development of the water resources should support the objectives of food security.

**Water resources development for irrigation in commercial agriculture should be planned in coordination with other sectors in an integrated manner.**

In the past, irrigation developments were not planned in an integrated manner in collaboration with other sectors. This has led to single purpose dams and inefficient allocation of water resources. Future irrigation requirements shall be met on IWRM principle.

***As a vehicle for promoting reliable food production and enhancing food security, sustainable irrigated agriculture and aquaculture will be promoted by Government.***

With the seasonal rainfall and variable flows in rivers, non-reliable water supply poses a threat to food production. Irrigated agriculture, if properly planned and well managed, would lead to more sustainable mechanisms for food production and higher productivity. Aquaculture is recognized as a vital source for healthy food production and hence, mechanisms for its promotion shall be formulated and implemented.

***Government will promote affordable and sustainable techniques for small-scale irrigation as a measure to increase production of food and cash crops for sustainable livelihoods.***

The absence of alternative sources of water supply for agricultural purposes leads to loss of revenue especially for the vulnerable groups. Opportunities will be provided to farmers for crop diversification with a view to enhancing production which would generate revenue and promote economic growth.

***Government will promote measures to increase water use efficiency in agriculture. Pricing of irrigation water shall be consistent with the need to provide economic incentives for efficient use on the one hand and the capacity to pay by the farmers on the other hand.***

High water losses in irrigation systems are unsustainable and can deprive other higher economic value users of scarce water resources. Efforts shall be made to promote efficient technologies in irrigation with appropriate technical and financial supports as well as awareness of the planting community.

***Government will promote re-use of treated effluent for agricultural purpose.***

Treated effluents will be used for irrigation purposes in regions where wastewater tertiary treatment plants are in operation. The treated effluent shall meet the relevant standards for the intended use.

### **3.1.4 Water for Energy Development**

***Government will, in the context of the Maurice Ile Durable, optimize the use of hydro-electricity generation so as to provide cheaper, environmental friendly and green source of energy.***

Hydro-electric schemes are environmentally friendly options to limit to the extent possible the use of conventional sources of energy. Studies will be carried out for the rehabilitation of existing hydro-electric schemes and development of other mini/micro schemes.

***Government will encourage the use of state-of-the-art technologies that are efficient in terms of water use for the cooling on industrial processes and thermal electric generation stations.***

The adoption of water-efficient technologies and practices will be encouraged in all 'wet' industries and thermal power plants with a view to optimising water use for cooling purposes.

### **3.1.5 Water for Industrial Development**

**Government shall allocate water for industrial requirements (manufacturing and agro industry) at economic value of the resource.**

Water is recognized as an economic factor of production in many industrial activities including manufacturing, agro-industries, and tourism. Economic pricing of water will not only encourage efficient water use but also allow the water resources and the water supply agency to collect sufficient revenue with a view to ensuring its financial sustainability.

### **3.1.6 Water for Tourism Development**

**Government, with the participation of the private sector, shall ensure water availability to cope with the expansion of the tourism sector.**

Given that paramount importance of the tourism industry in the overall economic growth, water resources will be mobilised to meet the increasing demand of the sector, including water related activities.

### **3.1.7 Water for Sports and Recreation**

**Water resources allocation shall consider allocating water for sports and recreation.**

Allocation of water resources shall consider water requirements for sports and recreational activities. In most cases, except for the irrigation of golf lawns, the water requirements for sports and recreation are non-consumptive and may be included in in-stream use.

### **3.1.8 Water and the Environment**

**Water is one of the vital components of the environment. All necessary actions and measures need to be taken to ensure a sustainable management of our environment. to meet the ecological requirements so as to maintain ecosystem integrity and biodiversity including marine and estuary life.**

The Environment Protection Act 2002 provides for the protection and management of the environmental assets of the Republic of Mauritius and foster harmony between quality of life, environment protection and sustainable development.

Surface water and groundwater management should form part of the environment strategies so as to protect and sustain the ecosystem, estuaries and wet lands. An 'environmentally sustainable water use' will be set to balance water use with the protection of the resource in such a way that the resources are not overused or degraded beyond recovery.

## 3.2 Water Resources Development Policy

### 3.2.1 Dam Development and Management

**Government will promote Integrated planning, development and management of dams so as to maximise the benefiton use of water resources by taking into consideration both positive and negative externalities of the upstream and downstream areas.**

Although Mauritius receives abundant rainfall, particularly during the wet season, it is a fact that water supply is affected by various factors such as:

- uneven pattern of rainfall over the island;
- decreasing trend in the annual rainfall over the years;
- shortage of water in the dry season;
- inadequate mobilization of available water resources;
- groundwater exploitation reaching the maximum sustainable level; and
- increasing water demand as a result of economic development, change in land use, population growth and higher standard of living.

Therefore, the construction of new dams to increase surface storage capacity will be based on an integrated and comprehensive approach. In future, the potential for multi-functionality of dams should be considered so as to, promote integrated water resources development and management. Dams should contribute to **regulate** seasonal flows as well as flood flows so as to provide **reliable** supply all-year.

Moreover, dam safety considerations will be enhanced through development of appropriate safety guidelines, and the establishment of institutional capacities for enforcement of such guidelines.

**Government shall encourage the participation of all stakeholders in decision-making processes for dam development.**

Dams have significant impacts on the environment and society. Consequently, the requirements of all stakeholders will be considered in the decision making process for dam projects.

### 3.2.2 Alternative Sources of Water Supply

**Government will promote harnessing of alternative water resources such as rainwater harvesting, desalination, re-use of water and recycling of wastewater.**

Rainwater harvesting, re-use of water and use of treated effluents should be encouraged wherever technically and economically feasible for irrigation with a view to increasing agricultural yields. Technology improvement and use of solar energy to desalinate seawater could, in the future, be a competitive resource in the coastal areas.

### **3.2.3 Rehabilitation and maintenance of water and wastewater infrastructure**

***All existing water and wastewater infrastructure will be rehabilitated and maintained in good working conditions.***

As a result of the massive capital investment required for water and wastewater infrastructure, it is imperative to rehabilitate and maintain existing infrastructure not only for proper operation but also to enhance the lifespan of the infrastructure.

Regular maintenance protocols will be put in place for water infrastructure such as dams, feeder canals, water supply networks, and wastewater infrastructure such as treatment plants and sewers.

## **3.3 Water Resources Management Policy**

### **3.3.1 Water Resources Management**

***Government shall be responsible for overall regulation and management of water resources. Since water is a valuable resource that should be protected in the public interest, the State has an obligation to ensure a fair, equitable, and sustainable allocation among all legitimate water users.***

Government will ensure that the exploitation of surface water and ground water is based on abstractions compatible with the sustainable yield as determined by competent public authorities, and established regulatory norms. Appropriate consultative mechanisms will be created to protect the water resources of the country from pollution and depletion so as to maintain sustainable development and utilization of water resources.

### **3.3.2 Integrated Water Resources Management**

***Planning, development and management of water resources will be based on the principles of IWRM and shall take full cognizance of the cross-cutting nature of water.***

Integrated Water Resources Management and water efficiency plans will be developed, as appropriate, in line with national priorities and objectives.

To attain the objectives of IWRM, a ‘top-down’ strategy will be adopted to ensure the participation of all stakeholders, including delegation of management responsibilities to water user’s association for management within the set framework of IWRM.

An inter-ministerial High Level Committee will meet regularly to review and take appropriate measures under different water situation scenarios.

### 3.3.3 Water Quality Management

**All necessary measures shall be adopted to preserve both surface and groundwater quality**

The activities associated with industrial development, agriculture and tourism have led to risks of pollution to both surface water and ground water. The preservation of the water resources requires an integrated approach to wastewater management. The concept of the 'Polluter-Pay Principle' will be adopted to control pollution and mitigate its impact on economic activities such as eco tourism. The Government will set and enforce standards for raw water quality and discharge into water bodies.

**The national water quality monitoring system shall be strengthened with improved monitoring networks, laboratories, effective databases and indicators.**

The water supply infrastructure will have to be maintained properly to meet the water quality performance indicators island wide. Moreover, water quality monitoring will be carried out by accredited laboratories.

Water quality monitoring and assessment will have to be undertaken systematically in order to identify extent and status of the quality of the water resources so that problems are detected at an early stage to allow for timely remedial actions. Surveillance of raw water quality in all reservoirs and feeder canals will be enhanced. Standards for in-stream flow, industrial effluents and other wastewater discharges will be enforced.

A public awareness campaign on the protection of water resources against pollution will be carried out on a regular basis.

### 3.3.4 Conservation and Protection of Water Resources

**Water conservation shall be implemented in line with measures identified in the National Development Strategy and the National Forest Policy**

All forms of water resources shall be protected. Pollution shall be mitigated in order to protect and maintain the water resource base particularly for potable water supply. Forests and wetlands shall be conserved and protected to regulate run off and reduce erosion. Watersheds which have an essential role to sustain water sources shall also be protected.

The quality of groundwater shall be monitored given its important contribution to the domestic water supply system. Promotion of water conservation will also form part of broader efforts to promote sustainable production and consumption.

### 3.3.5 Water Demand Management

**When planning the development of water infrastructure and services, Government shall systematically apply a demand- driven approach and shall aim at utilizing existing capacities more efficiently as part of the process of augmenting water supply. Measures will be**

***introduced to improve the efficiency of water infrastructure to reduce losses and increase recycling of water.***

Inefficient water use is not sustainable especially in a water scarcity situation and, more importantly, imposes significant additional costs to the economy. This underscores the dire need to carry out an option analysis prior to embarking on infrastructural development projects such as construction of dams and water transfer schemes.

In Mauritius, there are inefficiencies of water use in irrigation, industrial and household usage as well as high percentages of non-revenue water. Water audits shall be undertaken to improve efficiency so as to optimize water use from existing sources. This will involve a wide range of measures, including changing the behavior of customers, disseminating water efficient technologies, introducing efficiency-inducing pricing structures, reducing non revenue water in the water supply system and improving operating rules.

The reallocation of water inter and intra sectoral (for example by shifting from growing low-value, high water-demand crops to high-value, low water-demand crops) are important strategies for making better use of existing water resources before deciding on investment to expand supply capacities.

Water demand management principles shall be encouraged / implemented to complement any supply expansion. Rain water harvesting shall be implemented as an option to supplement water needs, particularly, during the dry season.

### **3.3.6 Water Allocation and Apportionment**

***The planning, development and management of water resources should consider use of surface and ground water, the reuse of water and treated effluent, water quality management and environmental requirements in an integrated manner***

Water for basic human needs, drinking and sanitation, shall be the priority under situation of insufficient water resources both in terms of quantity and quality.

A National Water Resources Committee comprising representatives from major stakeholders shall coordinate the allocation and use of water among the bulk water users.

The general priority ranking shall be as follows:

- Domestic
- Industrial
- Tourism
- Irrigation
- Hydropower
- Other uses

***Government will ensure that major water users will be regulated***

Regulation of water use, through licensing, is important as it serves the basis for planning, monitoring and optimizing the utilization of water. Appropriate regulatory mechanisms shall be implemented in a transparent manner and in a spirit of fairness.

The water rights shall be rationalized to ensure that any water right granted is used for that particular purpose on the principle that the water rights should provide the users with the water they need and not the water they want. Therefore, permanent monitoring of water rights shall be exercised.

All abstractions from water bodies shall be subject to a 'water use permit' to be issued for a specific period of time against payment of appropriate charges.

### **3.4 Water Security Policy**

#### **3.4.1 Climate Change**

***Government shall conduct research on the impact of climate change on the water resources and formulate and implement strategies for the mitigation of any adverse impact***

Global warming and the resulting extreme climatic events are predicted to impact on the hydrological cycle and the global annual rainfall distribution as well as rising sea level.

Small Island Developing States (SIDS) such as the Republic of Mauritius are vulnerable to climate change. Rainfall is showing a decreasing trend and change in pattern over the island whereas air temperature is rising. The increasing sea level may reduce ground water availability in coastal aquifers. Some IPCC models are forecasting a possible long term decrease of mean annual rainfalls in the region by 50 to 200 mm/year on average. Management of water resources is facing unprecedented challenges as a result of changing climate.

Research shall be conducted to assess the future impact of climate change on water resources and appropriate adaptation strategies developed to abate these impacts.

#### **3.4.2 Protection from Floods and Droughts**

***Government shall, to the extent possible, protect the population from water-related disasters and formulate adaptation strategies against climate change so as to reduce the risk of impact of such disasters***

Mauritius is prone to yearly occurrences of extreme climatic events such as tropical cyclones and torrential rains. Measures such as construction of appropriate drainage network, regular cleaning of rivers and drains and protection of all coastal wetlands are necessary to safeguard the population against floods.

Uneven distribution of rainfall in space and time over the islands is bringing new challenges in the management of water supply especially during dry spells. Droughts may occur more frequently due to climate change. Global warming is exacerbating water-related natural disasters which in turn impact on public health, food security, energy security and the economy of the country.

Appropriate strategies shall be formulated to mitigate impact of such natural disasters in consultation with the Meteorological services, National Disaster Risk Reduction and Management

Centre, Local Authorities and other stakeholders. One of the measures to mitigate the impact of drought would involve clear guidelines for water allocation.

### **3.4.3 Disaster Planning and Mitigation**

***Management of disasters associated with water is an integral part of water resources management. Government shall be committed to improve national capacity in predicting water-related disasters associated with floods and droughts through strategies for the development of warning systems.***

Advance notification of floods and droughts are essential for the effective management and mitigation of such extreme events impacting on safety of human life, the economy, food security and well-being of the nation.

Programmes will be developed to mitigate the effects of extreme water-related events, in particular, preparedness and contingency plans will be established for disasters and emergencies, in terms of:

- provision and continuation of services during and after emergencies;
- plans for rehabilitation and repair of water systems;
- protection of water bodies and water systems from pollution and depletion.

Guidelines shall be developed to mitigate the impacts of floods and droughts. New legislation would contribute towards disaster mitigation. Capacity building in preparedness, risk management and mitigation against the disaster impact would be implemented.

## **3.5 Water Knowledge and Information Policy**

### **3.5.1 Water Resources Information Management**

***A Water Resources Information Management system will be established to enhance water resources management in an effective and efficient manner***

Sound management of water resources requires a comprehensive information/data base. Therefore, all stakeholders in the water sector should cooperate in the establishment of an efficient water resources/watersupply network for sharing of information.

Data collection and management should be viewed as a continuous activity for proper planning and coordination of the development of water resources. A compatible system for data and information acquisition management should be adopted by all stakeholders. Periodic reports on sector performance will be issued.

### **3.5.2 Information Sharing among Stakeholders**

***All stakeholders shall be encouraged to sign a Memorandum of Understanding on the sharing of data/information on water resources***

Management and utilization of water resources in an equitable, sustainable and integrated manner can only be achieved by proper communication and sharing of information among all the stakeholders. A "Water Observatory" will be set up to disseminate all information/data on the water sector.

## 3.6 WATER CAPACITIES DEVELOPMENT POLICY

### 3.6.1 Human Resources Development

***Government shall develop and implement a human resources development plan based on the needs to be identified to implement the present policy***

For efficient management and development of water resources, adequate human resources, skills and knowledge are required. Therefore, a human resources plan to develop and to enhance capacity of planners, managers, operators and users associations shall be an integral part of the institutional capacity building measures.

The policy is to provide sustainable and objective oriented training in the relevant areas of water sector management as well as to develop and to implement effective means to efficiently utilize and retain trained manpower.

### 3.6.2 Stakeholder Participation in Capacity Building

***Water resources development and management at all levels shall be based on a participatory approach, with effective involvement of all stakeholders including the private sector, NGOs and civil society organizations***

Participation of stakeholders in water resources development and management is a fundamental principle of the Integrated Water Resources Management. The private sector, NGOs and civil society organizations shall be invited to provide their inputs in the water development and management process.

### 3.6.3 Capacity Building and Training

***The water sector shall develop adequate capacity to carry out its mandate efficiently and effectively***

There is a need to develop the capacity of water sector professionals and institutions through innovative approaches to meet future challenges.

Capacity building in water regulation and water management shall be organised within MEPU. On the other hand, governance of the water utility will be strengthened by enhancing the financial and operational management capacities and by improving productivity by adapting modern management practices.

For outer Islands, in particular Rodrigues, technical assistance and capacity building will be provided to enhance the decentralized delivery of water and sanitation services and bring it progressively at the same level of service to that on the main island of Mauritius.

### 3.6.4 Technology Transfer and Applied Research

***Research and technology development and application of appropriate technology focusing on the challenges in the water sector will be promoted.***

Sharing of water related information, technology transfer and development of a common understanding between the stakeholders are vital to achieve an integrated approach in the implementation of the water sector policies.

For effective and economic management of resources and also to keep up with the changing environment and development, constant efforts shall be made to carry out applied research in the fields of water conservation, management and development including raw and potable water quality.

## 3.7 WATER FINANCING AND PRICING POLICY

### 3.7.1 *Financial Sustainability*

***Government shall ensure that adequate financial resources are earmarked for water sector development and management***

Water supply is a key factor for sustained economic development. Increased financial resources would be needed in the national budget for infrastructure development, capacity building, and institutional development as well as for research and technology transfer.

***For water resources development and management to be financially sustainable, Government shall strive to apply full cost recovery while taking into consideration the special need of the poor and the vulnerable groups.***

The introduction of full cost recovery, to the extent possible, in respect of water sector services, shall not only lead to an increase in revenue for the sector institutions but also improve the efficiency of water allocation. However, water pricing should consider the specific requirements of the poor and the vulnerable groups.

Though full-cost recovery would be the ultimate goal, there will be options for water pricing that would enable sustainable cost recovery for the operation and maintenance and renewal of water sector assets. Cross-sectoral subsidization and affordability would be explored to satisfy the requirement of vulnerable groups.

### 3.7.2 *Funding of water sector infrastructure*

***Government will prepare detailed water sector investment plans as part of its national development planning and budgeting process and develop a resource mobilization strategy encompassing multiple financing sources***

Relevant authorities shall be granted powers, as appropriate, to mobilize complementary resources for investment in the water sector. Financial management at the level of the authorities will be strengthened as well as their capacities to develop bankable water sector project proposals.

***Government will coordinate and ensure that all funding in the water sector is based on the country's water sector objectives, policy and strategies.***

For all water sector development and management initiatives, Government shall ensure that projects are planned in line with the present water policy by making use of funds allocated in the national budget and other resources obtained from external funding.

The policy is to ensure that all Development Partners, Government and the private sector, shall provide funding for water conservation and protection, operation and maintenance, rehabilitation and renewal of existing assets as well as capacity building.

### **3.7.3 Private Sector participation**

***Partnerships between public and private sector should be considered where these could contribute to efficient management of resources, the delivery of services and lead to higher inflow of investment capital to the sector. Public consultation in all matters pertaining to large-scale private sector involvement will be ensured.***

Public Private Partnership provides an opportunity to leverage private sector technical and managerial expertise, as well as finance for the development and management of the water sector and associated services. However, this requires establishment of an appropriate and effective regulatory and management framework so as to ensure adequate performance based service delivery, maintenance, rehabilitation and extension works.

### **3.7.4 Water Pricing Policy**

***The policy is to recognize water as a natural resource with an economic value and ensure that fees are paid for services rendered and that pricing is reasonable according to the level of service rendered to end users and sufficient for recovery of costs.***

This policy recognizes water as a vulnerable and scarce natural resource and ensures that all pricing mechanisms should be geared towards conservation, protection and efficient use of water as well as promoting equity of access.

Economic tools shall be used for water demand management and to promote environmentally sustainable practices. Use of water resources that entails pollution shall be regulated and the cost of pollution mitigation measures shall be borne by the polluter.

Management of water resources shall always be addressed in conjunction with basic social equity norms and level of service.

The price for water services shall take into account full cost recovery and the affordability criteria.

***Subsidies should be targeted to the vulnerable groups through public awareness on the full cost of water delivery.***

Customers will be sensitized on the total costs of both water and sanitation services. The costs for the mobilization and management of the water resources, (dams, and groundwater pumping treatment and distribution), and costs of collection and treatment of waste-waters, shall be provided to customers. Tariffs shall be adjusted as appropriate to achieve greater cost recovery.

### **3.8 WATER REGULATION POLICY**

#### **3.8.1 Reform of the legal framework**

***Setting the appropriate legal framework is fundamental for effective implementation of the water policy. The water policy shall be captured under a Water Act encoding specific provisions of the water with a view to facilitating implementation.***

The ownership of water is vested in the State. Government reserves the right to allocate water with a view to ensuring equitable distribution, efficient development and use and to alleviate poverty. Government can redirect available water resources during periods of droughts, floods, cyclones, and other natural and man-made disasters, such as contamination of groundwater aquifers that threaten public health and the ecological integrity.

The legal framework shall provide for active and meaningful participation of all relevant stakeholders. The legal provisions that have an impact on water resource management shall be reviewed as and when required so that changes and amendments can be brought for efficient water and wastewater services. Moreover, a new Water Legislation shall be enacted to consolidate all legislations governing ownership, development, appropriation, utilisation, conservation, and protection of water resources.

#### **3.8.2 Water use authorization**

***Government, on the basis of the new Water Legislation, shall establish standards and classify water use authorization.***

Allocation guidelines in the Water legislation shall be the formal mechanism to decide on the authorization for water use and volume required.

Guidelines shall be developed for in-stream needs (ecological, water quality, salinity control, fisheries and navigation); off-stream withdrawal (irrigation, municipal and industrial, power) and for groundwater recharge and abstraction during low-flow periods.

### 3.8.3 Enforcement

***Government shall provide the necessary means to an appropriate institution for the enforcement of the new legislation.***

## 3.9 WATER SECTOR GOVERNANCE POLICY

### 3.9.1 Participation of all Stakeholders

***The participation of stakeholders in any water resources initiative shall be encouraged to ensure a sound management of the water resources.***

Management of water resources is becoming more and more complex and subject to potential conflict among stakeholders due to scarcity. Only a participatory approach in the management of water resources can avoid or limit conflicts and ensure sustainable solutions to any dispute.

The policy is to:

- create a forum for discussions and consultations amongst the various stakeholders;
- support decentralized initiatives and involvement in water resources management.

### 3.9.2 Water Sector Institutional Framework

***To implement the Mauritius National Water Policy, Government shall bring appropriate institutional changes aiming at a sustainable, equitable, efficient and effective development and management of the water sector.***

The policy is to:

- promote appropriate linkage mechanisms for the coordination of water sector activities between the Central Government and other Authorities;
- establish clear functional and legal provisions for water sector service providers.
- enhance, as appropriate, a coherent institutional framework that allows for flexibility and accommodates continuity
- foster the participation of stakeholders and user communities in water sector management by supporting the establishment of appropriate participatory framework from national and regional administrative structure and promote decentralized management, as appropriate.

### **3.9.3 Monitoring and Evaluation**

***Government shall strengthen the monitoring and assessment of water resources through maximising the use and enhancing existing capacity within the water sector.***

Monitoring and provision of reliable information on water use by stakeholders is essential for assessment of available resources. Availability of information shall be ensured by proper mechanism and with the cooperation of all water users.

Government shall ensure adequate national capacity for monitoring progress based on Key Performance Indicators and information will be made available for review and use by all stakeholders.

## 4.0 STRATEGIC PRIORITIES FOR THE WATER SECTOR

4.1 The water resources management strategies are the medium to long-term actions that will pave the way for the implementation of the water-related policies and achieve the developmental goals for the water sector. The developmental goals shall focus on:

- the provision of safe water supply to the growing population;
- food security;
- the preservation and protection of eco systems; and
- a proper balance in the 'supply –demand' nexus for the different sectors of the economy.

Besides setting up the landscape for the management of this vital resource in accordance with the goals set and the national policy objectives, the strategic options will also test the reasonableness and implementability of the water policies. The water policy and strategies embrace a new concept of water sector management which may in the medium to long-term time frame call for fundamental changes in the population mind set and culture.

4.2 The strategic priorities for the water sector aim at addressing the country's water challenges in ways that are economically viable, socially equitable and environmentally sustainable. These strategies can be categorized in three main areas as follows:

- Legal and institutional;
- Studies; and
- Projects.

It is important that, public participation be adopted so that the concerns of all stakeholders are incorporated in the decision making process. The implementation of the strategic options identified would also require a change in the policy instruments.

## **5.0 CONCLUSION**

The challenges facing the water sector call for a new approach to water management based on economic efficiency, equity, social justice and environmental sustainability.

This National Water Policy of the Republic of Mauritius will enable the attainment of the above goals while protecting our environment for the benefit of future generations. It will also provide Government with the appropriate framework to fulfill its role as custodian of the precious and limited water resources and to achieve the national development objectives set for the different sectors.

The implementation of the different policy instruments through the identified strategies will require the concerted effort of each and every stakeholder at all levels and call for radical changes in the culture and mind set of the population with regard to water use.