



**THE FEDERAL DEMOCRATIC REPUBLIC OF ETHIOPIA
MINISTRY OF WATER RESOURCES**

ETHIOPIAN WATER SECTOR POLICY

2001

INTRODUCTION

The geographical location of Ethiopia and its endowment with favorable climate provides a relatively higher amount of rainfall in the region. Much of the water, however, flows across the borders being carried away by the Transboundary Rivers to the neighboring countries. Although we can not be definite due to lack of researched data as yet, preliminary studies and professional estimates indicate that the country has an annual surface runoff of close to 122 billion cubic meters of water excluding ground water.

The big and main water resources problem in Ethiopia is the uneven spatial and temporal occurrence and distribution. Between 80-90% of Ethiopia's water resources is found in the four river basins namely, Abay (Blue Nile), Tekeze, Baro Akobo, and Omo Gibe in the west and south-western part of Ethiopia where the population is no more than 30 to 40 per cent. On the other hand, the water resources available in the east and central river basins is only 10 to 20 per cent whereas the population in these basins is over 60 per cent.

The figures indicated above attempt to show the spatial uneven water distribution. The temporal distribution poses no lesser trouble. Ethiopia gets plenty of annual rainfall on the aggregate. It falls either ahead of time or comes too late or even stops short in mid-season. The required amount is not available at the right time.

In order to alleviate the problems on agricultural outputs and other water users, sustainable and reliable development and proper use of the water resources of Ethiopia becomes an imperative. Obviously this calls for a priority setting and judicious water resources management policy and associated finance. Development activities carried out so far in the water sector in totality or individually reveal a very low level of performance. The cause for this poor achievement and the dilemma for the failure of the country's water resources to significantly contribute to the overall socio-economic development of the Ethiopian peoples lies mainly in the absence of a well defined coherent policy and the lack of the required huge investment.

Consequently, for all the water development activities achieved so far, the average access to clean and safe water supply is about 17% of the total population of Ethiopia. This can be cited as an example of a very low supply and coverage level even by Sub-Saharan African standards. It must be noted here that the coverage

figures will even reflect much worse situations considering the unreliability and unsustainability of the supply of safe water. This is a clear indication of the vulnerability of the wellbeing and productivity of the peoples of Ethiopia.

On the other hand, irrespective of Ethiopia's endowment with potentially huge irrigable land the area of land under irrigation so far is only about 3 per cent showing that water resources have made little contribution towards the development of irrigated agricultural sector up to now. It can easily be realized, however, in addition to the underdeveloped irrigation, the accelerated population growth and the disparity of rainfall distribution make production of sufficient food and food security almost impossible. On the contrary, a number of studies made in the field confirm that if the country's water resources are developed to cater for irrigation, it would be possible to attain agricultural surplus enough both for domestic consumption as well as for external markets.

The other major natural resource of Ethiopia is the hydropower potential. Many field studies reveal that Ethiopia stands second in hydropower potential next to the Congo. The mountainous feature and hydrological conditions enables the country to generate hydropower at a lower cost. So far, however, the country has utilized only a fraction of this potential. If this resource is developed and utilized properly, the studies show that the hydropower generation will not only be enough to meet the national energy demand but shall also provide surplus power enough to be marketed to neighboring countries earning commensurate foreign exchange.

The lack of a comprehensive water resources management policy in Ethiopia have so far caused adverse impacts among which the following stand out as significant:-

- 1 . The lack of a sustainable and reliable water resources management

- strategy.
- 2 . Lack of efficient utilization of water resources.
 - 3 . Prevalence of unrealistic and unattainable plans and programs
 - 4 . Non-objective oriented programs and projects.
 - 5 . Uncertainties and ambiguities in planning
 - 6 . Prevalence of intensive centralism of management that does not focus on rural development.
 - 7 . Lack of institutional sustainability
 - 8 . Lack of operation and maintenance activities of water schemes.
9. Adhoc development practices lacking coherent objectives and continuity.

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This policy was formulated with the belief that an appropriate water resources management policy for the sector will enhance the development of the country's water resources to make optimum contribution to an accelerated socio-economic growth.

This water resources management policy is based on the constitution of the FDRE Government Macro Economic and Social policies and development strategies as well as objectives accepted by the Federal Democratic Republic of Ethiopia and the principles of water resources development objectives that would enhance the socio-economic development of the peoples of Ethiopia. Furthermore, in consideration of the inclusion of all felt needs and mutual interests of all the peoples of Ethiopia, the policy was discussed in depth and enriched at the grass roots level with representative participants from all Regional States up to Wereda level and relevant bureaus .

Basically, policies are essentially selected options to be used as instruments for achieving intended goals and objectives and as such this policy will serve only as a general and directive principle in a wider scope and therefore does not consist of an elaborated action plan. Consequently it is essential to immediately adapt development strategies, policy implementation methodologies and pertinent action plans to translate the policy into practice. These activities shall be pursued by the MoWR as soon as the policy is approved and endorsed by the government.

1 . **WATER RESOURCES MANAGEMENT POLICY GOALS, OBJECTIVES AND PRINCIPLES**

1 . 1 **GOAL OF WATER RESOURCES MANAGEMENT POLICY**

The overall goal of Water Resources Policy is to enhance and promote all national efforts towards the efficient, equitable and optimum utilization of the available Water Resources of Ethiopia for significant socioeconomic development on sustainable basis.

1.2 GENERAL WATER RESOURCES MANAGEMENT

POLICY OBJECTIVES

The objectives are :-

1. Development of the water resources of the country for economic and social benefits of the people, on equitable and sustainable basis.
- 2 . Allocation and apportionment of water, based on comprehensive and integrated plans and optimum allocation principles that incorporate efficiency of use, equity of access, and sustainability of the resource.
- 3 . Managing and combating drought as well as other associated slow on-set disasters through, **interalia**, efficient allocation, redistribution, transfer, storage and efficient use of water resources.
4. Combating and regulating floods through sustainable mitigation, prevention, rehabilitation and other practical measures.
5. Conserving, protecting and enhancing water resources and the overall aquatic environment on sustainable basis.

1.3 FUNDAMENTAL PRINCIPLES OF WATER RESOURCES MANAGEMENT POLICY

The following are the fundamental policy principles that guide the equitable, sustainable and efficient development, utilization, conservation and protection of water resources in Ethiopia.

1. Water is a natural endowment commonly owned by all the peoples of Ethiopia.
- 2 . As far as conditions permit, every Ethiopian citizen shall have access to sufficient water of acceptable quality, to satisfy basic human needs.
3. In order to significantly contribute to development, water shall be recognized both as an economic and a social good.
4. Water resources development shall be underpinned on rural-centered, decentralized management, participatory approach as well as integrated framework.
5. Management of water resources shall ensure social equity economic efficiency, systems reliability and sustainability norms.
6. Promotion of the participation of all stakeholders, user communities; particularly women's participation in the relevant aspects of water resources management.

2. WATER RESOURCES MANAGEMENT POLICY

2.1 GENERAL WATER RESOURCES MANAGEMENT POLICY

1.1.1 General

The general policies are to:-

- 1 . Enhance the integrated and comprehensive management of water resources, that avoids fragmented approach.

2. Recognize that water resources development, utilization, protection and conservation go hand in hand and ensure that water supply and sanitation, irrigation and drainage as well as hydraulic structures, watershed management and related activities are integrated and addressed in unison.
3. Recognize water as a scarce and vital socio-economic resource and to manage water resources on strategic planning basis with long term visions and sustainable objectives.
4. Ensure the integration of water resources development and utilization with Ethiopia's overall socio economic development framework and be guided by those socio-economic development objectives at the Federal and Regional levels of government.
5. Ensure that water resources management is compatible and integrated with other natural resources as well as river basin development plans and with the goals of other sectoral developments in health, mines, energy, agriculture....etc.
6. Recognize and adopt the hydrologic boundary or "**basin**" as the fundamental planning unit and water resources management domain.
7. Ensure that all planning, studies, programmes and development projects in the water sector include protection and conservation, operation and maintenance as well as replacement activities and budgets.
8. Promote and encourage that conservation of existing water systems and efficient utilization of water is as feasible as development of new schemes.
9. Integrate and institutionalize meteorological and hydrological services at all levels (from the center up to the lowest administrative structure) as well as ensure that the agriculture sector receives the utmost benefit from these services while ensuring that such services are monitored by the appropriate organs of the regional states.
10. As much as conditions permit, ensure that the provision of basic necessities of water at the household level are fulfilled and to ensure that all other allocations of water after the basic needs shall be based on equitable and efficient socio-economic development criteria.
11. As deemed necessary, promote that inter-basin transfer of water is to be one of the basic principles for the development of water resources, in view of the disparity of available water amongst the different basins and the erratic devastations due to the extremities of drought and floods.
 12. Although all water resources development ought to be based on the "**economic value**" of water, the provision of water supply services, to the underprivileged sectors of the population, shall be ensured based on a special "**Social Strategy**".
13. Build and strengthen the necessary capacity in terms of
 - .. Institutions,
 - .. Legislation,
 - .. Facilities,
 - .. Human Resources,
 - .. Finance,
 - ◆ Information systems,
 - ◆ Research and studies,

and the like for better and more efficient management of water resources including capacity building at the decentralized and lowest level.
14. Promote and advocate for institutional stability and continuity in water resources management and ensure smooth transition during times of changes.
 15. Promote and enhance traditional and localized water harvesting techniques in view of the advantages provided by the schemes' dependence on local resources and indigenous skills.

- 16 . Promote the involvement and meaningful participation of the private sector in the management of water resources.

2.1.2 INLAND WATER TRANSPORT POLICY

The policies are to:-

1. Enhance and promote the development of inland water transport to supplement the national economy and to promote passenger as well as cargo transport on sustainable basis and to integrate inland water transport as part of the overall socio-economic development planning in the country.
2. Subject any proposed development of inland waterways that interconnect lakes and rivers to detailed assessment of the feasibility and anticipated ecological and environmental effects and to promote research and studies.

2.1.3 AQUATIC RESOURCES POLICY

The Policies are to:-

1. Establish and adopt water quality standards and proper assessment procedures that enhance preservation and enrichment of aquatic resources.
2. Incorporate aquatic resources development in large scale water resources undertakings.

2.1.4 WATER FOR TOUNISM AND RECREATION POLICY

The policy is:-

1. Encourage inclusion of the development of tourism and recreation resources associated with water in water resources management undertakings.

2.2 POLICY ON CROSS-CUTTING ISSUES

The policies are to:-

2.2.1 Water Allocation and Apportionment

1. Recognize that the basic minimum requirement, as the reserve (basic human and livestock needs, as well as environment reserve) has the highest priority in any water allocation plan.
2. Ensure that water allocation gives highest priority to water supply and sanitation while apportioning the rest for uses and users that result in highest socio-economic benefits.
3. Enhance and encourage water allocation that is based on efficient use of water resources that harmonizes greater economic and social benefits.
4. Ensure that water allocation shall be based on the basin, sub-basin and other hydrological boundaries

and take into consideration the needs of drought prone areas.

5. Adopt the principle that water allocation shall not be made on permanent basis, but rather on an agreed time horizon that fits best with the socioeconomic development plans, especially pertinent to water resources, subjected to appraisals and revisions in light of new developments.

2.2.2 Environment, Watershed Management, Water Resources Protection and Conservation

A. Environment

1. Incorporate environment conservation and protection requirements as integral parts of water resources management.
2. Encourage that Environment Impact Assessment and protection requirements serve as part of the major criteria in all water resources projects.

B. Watershed Management

1. Promote practices of efficient and appropriate watershed management to maximize water yields and quality.
2. Ensure that watershed management practices constitute an integral part of the overall water resources management.

C. Water Resources Protection

1. Create appropriate mechanisms to protect the water resources of the country from pollution and depletion so as to maintain sustainable development and utilization of water resources.
2. Establish standards and classification for various uses of water in terms of quality and quantity for different scenarios including limits and ranges for desirable and permissible levels.
3. Establish procedures and mechanisms for all actions that are detrimental to water resources including waste discharges, source development, catchments management etc.

D. Water Resources Conservation

1. Conserve water resources through the integration of appropriate measures in the main water use categories.

2.2.3 Technology and Engineering

A. Standards and Design Criteria

1. Formulate and adopt national standards and criteria for the design, installation, construction, operation, maintenance, inspection and other activities in all water resources management undertakings.

B. Consultancy and Contracting:-

1. Adopt the water sector as the responsible authority for issuance of the necessary professional certification, professional permits and licenses for consultancy, contracting, as well as manufacturing and importing related to water resources development.
 - 2 . Ensure that different classes of national and /or foreign consultancy and construction services shall be based on adequate experience, qualifications, equipment and facilities and this needs to be revised and certified every year or so as appropriate.
3. Develop pertinent guidelines and criteria for professional certification, consultancy and contracting services and promote that decisions on renewal of trade permits are made on the basis of professional merits as well as competence criteria.
4. Establish and develop as appropriate, suitable criteria for the evaluation of consultancy and contracting services in the water sector and create conducive atmosphere for awards for excellence, honesty, fairness and dedication in consultancy and construction.

C. Professional Associations and Technical Publications

1. Promote, assist, and provide incentives for the establishment of professional societies as well as for related publications and studies.

D . Ownership, Operation and Maintenance

1. Promote the establishment of integrated operation and maintenance framework that provide reliable and sustainable water supply systems in all the regions.
2. Ensure that all studies and development activities undertaken by External Support Agencies, Loans, Non-Governmental Organizations and Government incorporate self-financing plans and self-supporting budget for reliable operation and maintenance purposes.
3. Develop guidelines and procedures for inspection, preventive, routine and curative maintenance services and for training of technicians as well as develop a network of monitoring systems.
4. Promote the direct involvement of communities, particularly women, in the operation and maintenance of water systems.
5. Promote that operation and maintenance of water systems is based on decentralized approach which enhance sustainability.
6. Ensure that the system of ownership of water supply systems recognizes the local objective realities on the ground, and involvement of the users and other stakeholders, as well as be based on conducive conditions for sustainable management.

E. Wells and Drilling

- 1 . Develop regulations, standards, guidelines and by-laws for manufacture and import of drilling rigs.
- 2 . Promote capacity for the development and operation of shallow wells that can be developed at a local level.
- 3 . Since advanced and indigenous technologies, water pumps, etc, drilling techniques, skilled manpower and energy are the necessary inputs for ground water development and utilization; to promote the initiation of training, research and studies on the same

F. Drainage

1. Integrate drainage issues within the domain of water resources management as appropriate.
2. Establish guidelines and regulations for the development of storm drainage and sewerage in urban areas and field drainage on irrigated farms.

G . Dams and Reservoirs Management and Operation

1. Recognize large hydraulic structures like dams, main canals and the like as part of the overall development infrastructures and develop, administer operate and maintain them with costs to be covered from water sales.
2. Promote involvement of the private sector in water resources infrastructure development and management including irrigation, hydropower, etc. with costs to be covered from the services rendered.
3. Develop a comprehensive and optimum plan for the operation and management of interconnected water systems in a basin.
4. Provide guidelines concerning dams and reservoirs operations and safety procedures as well as promote community participation in the development and management of such schemes.
5. As much as conditions permit, to promote the development of interconnected systems of water reservoirs so as to make optimum distribution of water.

H . Technological Issues

1. Promote regular assessment and inventory of the overall situation related to technology in the water sector and encourage the development of selection criteria for various technologies including systems, equipment and materials. .
2. Promote and develop indigenous technology based on artisans, especially in iron casting, plumbing hand-pumps, and other material uses and spare-parts.
3. Establish and foster a tripartite partnership amongst academic circles, industry and the water sector for the sustainable development of technology.
4. Develop practical strategies for the successful transfer, adaptation and assimilation of internationally recognized technologies to local circumstances.

2.2.4 Water Resources Management Information systems, Monitoring, Assessment and Auditing

A. Management of Water Resources Information

1. Manage and administer water resources information on the basis of project and sector information, management information system, technical information and public information systems.

B . Development of Information Management System

1. Develop a coherent, efficient and streamlined process of information management in the water sector consisting of:-
 - defining and incorporating:- data collection, processing, analysis and dissemination,
 - determining the requirements of:- human, technology, data and financial resources,
 - identifying the users typography, information requirements,
 - defining information requirements of users,
 - identifying sources of information

- 2 . Recognize the link between properly managed water resources and the availability of viable information systems and to develop a practical, coherent, well designed and smoothly functioning Ethiopian Water Resources Information Systems (EWRIS), by establishing the Ethiopian Water Resources Information Center (EWRIC).

2.2.5 Economics of Water:- Water Cost and Pricing

A. Funding for Water Resources

- 1 . Recognize water as an economic good, for its substantive and significant contribution to the country's economy as well as to the annual Gross Domestic Product, through rational development of water resources.
2. Coordinate and promote that all funding in the water sector is based on the country's water resources objectives, policy and strategy.

3. Ensure that the accountability for appropriation and proper utilization of funding and other resources obtained from NGOs for water resources management shall be coordinated, and supervised by communities as well as Federal and Regional agencies as appropriate.
- 4 . Adopt as a principle, that all funding agencies including ESAs, the Government and private sectors, shall include in their funding provisions for water conservation and protection, operation and maintenance, rehabilitation and replacement costs, training and human resources development, adequate information and documentation as well as other means that enhance and ensure sustainability of systems.
- 5 . Promote credit services, by the government, for water resources development undertakings.

B. Water Pricing

- 1 . Recognize water is a natural resource with an economic value and ensure that fees are paid for services rendered.
- 2 . Recognize water as a vulnerable and scarce natural resource and ensure and promote that all pricing systems and mechanisms should be geared towards conservation, protection and efficient use of water as well as promote equity of access.
- 3 . Ensure that management of water resources shall be always addressed in conjunction with basic social equity norms.
- 4 . Ensure that the price for water should be neither too high (and discourage water use) nor too low (and encourage abuses and over use of water).
- 5 . Promote that tariff setting shall be site specific, depending on the particulars of the project,

- location, the users, the cost and other characteristics of the schemes.
6. Ensure that the basic human needs of water for disadvantaged rural communities who cannot afford to pay for development of water systems, shall be borne by the government, as appropriate, and in so far as the communities are able and willing to cover the operation and maintenance costs on their own.
 7. Ensure that pricing for urban water supplies shall aim at full cost recovery and develop cross-subsidization strategies and promote credit services.
 8. As willingness to pay by users of water systems is a powerful impetus for financial sustainability of water resources systems, willingness to pay shall be promoted by, inter alia stating the main objectives, instituting fairness in water systems, promoting transparency and communications.

2.2.6 Ground Water Resources

1. Identify the spatial and temporal occurrence and distribution of the country's ground water resources and ensure its utilization for the different water uses. provide special focus for those areas vulnerable to drought and water scarcity.
2. Ensure that the exploitation of ground water shall be based on abstraction of the maximum amount equal to the sustainable yield as determined by competent authorities and establish regulatory norms.
3. Establish and develop norms, standards and general guidelines for sustainable and rechargeable management of ground water .
4. Foster conjunctive use of surface and groundwater as appropriate.
5. Promote implementation of appropriate technologies suitable for water deficient areas in order to mitigate water scarcity problems.

2.2.7 Disasters, Emergencies and Public Safety

1. Recognize and adopt that management of disasters associated with water, shall form an integral part of water resources management.
2. Promote coordinated planning to combat drought and growing desertification through including, long-term water allocation and conservation measures and also rehabilitative actions on catchment management.
3. Ensure and promote the safety of water retaining, transmission and diversion structures like weirs, barrages, dams, reservoirs and pipelines, against natural and man made disasters for the:-
 - protection and conservation of the available water, the structures and all systems and equipment,
 - protection of the environment, human settlements, flora and fauna, socio-economic infrastructures.
4. Develop long term water balances/drought models with different scenarios including interventions like inter-basin water transfer.
5. Establish preparedness and contingency plans 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.
6. Put in place routine and random safety checks on existing systems.

2.2.8 Transboundary Waters

1. Study on sustainable basis Ethiopia's stake and national development interests in the allocation and utilization of transboundary waters.
2. Promote the establishment of an integrated framework for joint utilization and equitable cooperation and agreements on transboundary waters.
3. Ascertain and promote Ethiopia's entitlement and use of transboundary waters based on those accepted international norms and conventions endorsed by Ethiopia.
4. Foster meaningful and mutually fair Regional cooperation and agreements on the joint and efficient use of transboundary waters with Riparian countries based on “**equitable and reasonable**” use principles.
5. Comply with those international covenants adopted by Ethiopia, and manage transboundary waters accordingly.

2.2.9 Stakeholders Issues

1. Ensure the identification of the relevant stakeholders from the outset in any water resources undertakings and create conducive situations for their involvement in the different water resources management activities.
 - 2 . Create fora for discussions and consultations amongst the various stakeholders.
 - 3 . Develop a framework for Community-Government-Private sector-External Support Agencies Partnership.
 - 4 . Promote private sector participation in technology development, construction, and in operation and maintenance of utilities
 - 5 . Support community self initiatives and direct involvement in water resources management.
6. Provide a venue for the provision of information, guidelines and directions for External Support Agencies and Non Governmental Organizations and establish reliable framework for coordinating and monitoring their activities.

2.2.10 Gender Issues

1. Promote the full involvement of women in the planning, implementation, decision making and training as well as empower them to play a leading role in self-reliance initiatives.

2.2.11 Research and Development

- 1 . Facilitate the development of a framework for incorporating and institutionalizing research and development in the water sector.
2. Promote and conduct research and studies on relevant issues in the water sector.

2.2.12 Water Quality Management

- 1 . Develop water quality criteria, guidelines and standards for all recognized uses of water and ensure their implementation.
- 2 . Formulate receiving water quality standards and legal limits for pollutants for the control and protection of indiscriminate discharges of effluents into natural water courses.
- 3 . Develop appropriate water pollution prevention and control strategies pertinent to the Ethiopian context.

2.2.13 Enabling Environment

A . Institutional Framework.

- 1 . Promote appropriate linkage mechanisms for the coordination of water resources management activities between the Federal and Regional Governments.
- 2 . Establish water resources management institutions for sustainable development and management of the water sector.
- 3 . Avoid or minimize institutional instability in order to maintain sufficiently skilled manpower and as appropriate, to enhance a coherent institutional framework that allows the necessary flexibility and accommodates continuity in times of change.
- 4 . Foster the participation of user communities in water resources management by supporting the establishment of appropriate institutional framework from regional to the lowest administrative structure and promote decentralized management.
- 5 . Establish phase-by-phase Basin Authorities, for efficient, successful and sustainable joint management of the water resources of the basins through concerted efforts of the relevant stakeholders.
- 6 . Put in place conducive situations for the establishment and sustainability of appropriate Federal level agencies for study, design, engineering and construction supervision.

- 7 . Create conducive environment for the enhancement of linkages and partnership between the Federal and Regional states on the basis of the constitution for the realization of efficient, sustainable and equitable water resources management.

B . Capacity Building

1. Provide sustainable and objective oriented training on the relevant areas of water resources management as well as develop and implement effective means in order to efficiently utilize and sustainably retain trained manpower.
2. Device appropriate strategies for the development and enhancement of local capacity in consultancy and construction through different incentive mechanisms.
3. Provide the necessary capacity building, as much as conditions permit, to the regions, with special emphasis to the underdeveloped regional states, for efficient and equitable water resources management.
4. Build policy review, reform and implementation capacity on sustainable basis.

C . Legislative Framework

1. Water being the common property of all Ethiopians, to formulate water resources legislation

that allows all citizens to have access for water based on the rules and regulations of the government.

2. Provide the legal basis for active and meaningful participation of all stakeholders, including water users' associations, the community and particularly for women to play the central role in water resources management activities.
3. Provide the necessary legal framework for penalties commensurate with the violation of legal provisions relating to water resources in order to produce deterrent effects.

2.3 POLICY ON SECTORAL ISSUES

2.3.1 WATER SUPPLY AND SANITATION POLICY

INTRODUCTION

In this policy document, the term water supply includes water supply for human as well as animal consumption, industrial and other uses outside irrigation and hydropower.

As far as water supply for human consumption is concerned, it is to be noted that over 85% of Ethiopians' livelihood is based on farming and livestock agriculture. This has consequently resulted in subsistence level of economic life and thinly spread out settlement so that providing reliable and safe water at minimum cost becomes very difficult. Hence over 90% of the population living in rural Ethiopia have no access to potable water. People have to travel long distances for many hours and fetch unsafe and unreliable water from rivers and other undeveloped sources. Even in urban centers where services are apparently better in relative terms, the supply and quality of water is inadequate and unreliable compared to the demand.

These shortcomings will have to be solved sooner than later to achieve rapid socio economic development through better health care and productivity of the Ethiopian peoples. In order to attain sustainable and equitable solutions to these problems due attention has been accorded by the FDRE government to find policy options.

As for the livestock water supply, as mentioned earlier, the majority of Ethiopian people engaged in farming and pasteurization are forced to drive the livestock long distances, both in the highland and lowland areas, in search of water and pasture. In so doing, the lowland community in particular, faces frequent socio-economic and security hazards.

While herding their cattle from place to place in search of water and green pasture following the rainfall, they move away from centers of social services like health care, clean water, education.... etc provided by the state and are not even as privileged as the farmers.

As far as the economic problems are concerned, the long distance movement of the livestock in search of water and pasture resulting in low yields and poor health has a negative impact on the economy.

On the security aspect again the livestock wandering from place to place in search of water and pasture will compete for the limited grazing area and water resources which subsequently result in ethnic strife. Hence, the water sector will have to formulate appropriate policies and devise implementing strategies for the supply of water for livestock both in the highland and lowland areas. This policy gives emphasis to the inclusion of livestock water supply in every water development plan and activity in ways and means deemed necessary.

Water supply for the industrial sector is a recent development in the Ethiopian context. Agriculture – based industrial development is the core element in the Federal economic development strategy. Those types of agro- industries are characterized by their immense intake requirement of water and huge wastewater discharge. Regions and bigger towns willing to create attractive environs for investors need to make arrangements to supply sufficient industrial water and waste water treatment services at nominal price. Water resources development plans and programmes should anticipate and include in their undertakings water supply and wastewater treatment plants for future industries.

Thus, this water supply and sanitation policy is developed to provide impetus for the development of water supply for human and animal consumption, for industrial and other uses in terms of coverage, quantity, reliability and acceptable quality taking the existing and future realities of the country into consideration.

2.3.1.1 Overall Objective of Water Supply and Sanitation Policy

The overall objective of water supply and sanitation policy is to enhance the well-being and productivity of the Ethiopian people through provision of adequate, reliable and clean water supply and sanitation services and to foster its tangible contribution to the economy by providing water supply services that meet the livestock, industry and other water users' demands.

2.3.1.2 Detail Objectives of Water Supply and Sanitation Policy

The Objectives are :-

- 1 . Provision of, as much as conditions permit, sustainable and sufficient water supply services to all the peoples of Ethiopia.
2. Satisfying water supply requirements for livestock, industries and other users as much as conditions permit.
3. Carry out operation and maintenance of all water supply and sanitation services in a sustainable and efficient manner.

4. Promoting sustainable conservation and utilization of the water resources through protection of water sources, efficiency in the use of water as well as control of wastage and pollution.
5. Creating sustainable capacity building in terms of the enabling environment, including institutions, human resources development, legislation and regulatory framework for water supply and sanitation.
6. Enhancing the well being and productivity of the people by creating conducive environment for the promotion of appropriate sanitation services.

2.3.1.3 General Policies

The policies are to:-

A. Water Supply

1. Recognize that water supply is an integral part of the overall water resources management and incorporate water supply planning in the domain of comprehensive water resources management undertakings.
2. Promote the development of water supply on participation driven and responsive approaches without compromising social-equity norms.
3. Integrate and co-ordinate the development of water supply with other sector development objectives including irrigation, hydro-power...etc.
4. Create and promote a sense of awareness in communities of the ownership and their responsibilities for operation and maintenance of water supply systems and develop participatory management practices.
5. Enhance the development of different indigenous water sources being used by communities to improve rural water supply.
6. Ensure that rural drinking water and livestock water supply undertakings shall be integral part of the overall socio-economic development, centered on self-reliance, community participation and management.

3 . 1 . 1 . 1 Policies Details

A. Drinking Water Supply Policy

Planning Parameters and Standards (Engineering Issues)

1. Develop the appropriate water supply planning parameters, design criteria and standards along with acceptable, desirable and permissible ranges and limits.

2. Finance and Tariff

2.1 Finance

1. Promote self financing of programmes and projects at the local level.
 2. Provide subsidies to communities who can not afford to pay for basic services on capital costs only; based on established criteria and phase out subsidy gradually.
 3. Enhance self-financed and total cost recovery programmes in urban water supplies.
 - 4 . Ensure that all water supply undertakings will adequately address costs associated with operation and maintenance and be based on "cost-recovery" principles.
 - 5 . Ensure transparency and fairness in the management of water supply services so as to enhance readiness to pay and participation by the users and communities in the financial management of systems.
 - 6 . Ensure responsibility and financial accountability in the management of water supply services
7. Promote the participation of local banks, other investors as well as popular and traditional self-help social associations (Idirs, rural credit services ...etc) in the development of water supply through appropriate incentive mechanisms.

2.2 Tariff

- 1 . Ensure that Tariff structures are site-specific and determined according to local circumstances,
- 2 . Insure that rural tariff settings are based on the objective of recovering operation and maintenance costs while urban tariff structures are based on the basis of full cost recovery.
- 3 . Ensure that tariff structures in water supply systems are based on equitable and practical guidelines and criteria.
- 4 . Establish a "**Social Tariff**" that enables poor communities to cover operation and maintenance costs.
- 5 . Establish progressive tariff rates, in urban water supplies, tied to consumption rates.
6. Develop flat rate tariffs for communal services like hand pumps and public stand posts.

3. Research and Technical Issues

1. Promote the development of appropriate and affordable hand pumps and other technologies including Village Level Operation and Maintenance (VLOM) systems.
2. Develop standards and criteria for the design, quality control, materials and technologies in water supply and for operation and maintenance procedures..
3. Develop appropriate standards for water investigations technology.
4. Foster studies and research on appropriate and traditional water supply technologies.
5. Regulate, guide and manage the import of water supply technologies and materials.

4. Enabling Environment

4.1 Institutions and Stakeholders

- 1 . Ensure that the management of water supply systems to be at the lowest and most efficient level of institutional set up, which provides for the full participation of users and to promote effective decision making at the lowest practical level.
- 2 . Develop coherent and streamlined institutional frameworks for the management of water supply at the Federal, Regional, Zonal, Woreda and Kebele levels and clearly define the relationships and interactions among them.
- 3 . Develop coherent and appropriate guidelines, standards, principles and norms for streamlining the intervention of ESAs, NGOs loans, grants and other donations.
- 4 . Develop a framework for the sustainable and effective collaboration amongst all stakeholders including the public sector, donors, communities and the private sector at all levels as well as create and legalize forum for the participation of all stakeholders.
5. Define and implement the respective roles of the various institutions and stakeholders at all levels including Federal, Regional governments, ESAs, NGOs, private sector, etc.

4.2 Capacity Building

1. Build technical capacity in terms of water source investigation, design, engineering, water quality control , operation and maintenance, construction technology and facilities.
2. Develop streamlined and coherent legislation and regulatory framework for improving water supply as well as to control pollution, degradation and depletion of water sources.
3. Promote objective oriented training with special emphasis on trades-level training, community participation, administration and finance, and operation and maintenance.
4. Assist in the establishment and strengthening of water users associations.
5. Equip water supply organizations with the necessary facilities.

B. Livestock Water Supply Policy

- 1 . Recognize that livestock water supply is an integral part of the overall water sector and incorporate its development plans with comprehensive water resources management undertakings.
- 2 . Promote the availability of water nearer to pastoralists as much as possible by providing livestock water supply to all the regions, particularly to the lowland areas.
3. Foster efficient and sustainable development, operation and maintenance of livestock water supply systems.
4. Harmonize and promote the "**User pays**" principle with the willingness and ability to pay for livestock water supply.

C. Water Supply for Industry and Other Users Policy

1. Promote the "**User Pays**" principle in the supply of water for industrial and other users.
2. Recognize that industrial and other water uses are integral parts of the water sector and incorporate industrial and other users' water supply plans with comprehensive water resources management undertakings.

3. Ensure that industrial water demand forecast is based on the future industrial development plans.
4. Ensure that when industries develop their own water supply systems, they will be accountable for the water supply services costs only.
- 5 . Control and ensure that water bodies are protected from pollution by waste water and other wastes indiscriminately discharged by industries and other institutions.

D. Sanitation Policy

1. Define and implement acceptable minimum sanitation facilities differentiated in urban and rural scenarios.
2. Develop a collaborative and cooperative framework for the development of sanitation systems through definition of the responsibilities of the different governmental and other major stakeholders in sanitation at all levels.
 3. Develop and promote guidelines, rules and regulations, for the study, design, operation and maintenance for efficient, appropriate and sustainable sanitation services as well as foster appropriate water saving sanitation services and utilization norms.
 - 4 . Foster culturally and socially acceptable methods and facilities for sanitation
 - 5 . Promote the formulation of a housing construction and urban development policy that incorporates sanitation services.
 - 6 . Promote the involvement of non-governmental organizations, external support agencies and the private sector in sustainable sanitation programmes.
7. Develop standards for different types and levels of sanitation systems including both on - site and off- site, non-water dependent and water- dependent systems.
8. Promote research and development on low cost and suitable sanitation alternatives and enhance users participation in the development of sanitation systems.
9. Manage the import of wastewater treatment technologies and materials through pertinent institutions.
10. Build capacity in terms of engineering, design, construction, operation and maintenance etc, of sanitation systems.
11. Promote that sanitation services are based on participation-driven and -responsive principles without compromising social equity.

E. Integrated Water Supply and Sanitation Policy

1. Recognize that water supply and sanitation services are inseparable and integrate the same at all levels through sustainable and coherent framework.
2. Promote the "User Pays" principle for urban water supply and sanitation services.
3. Promote as far as possible, that the development as well as the operation and maintenance of water supply and sanitation systems are carried out at decentralized and appropriate body.
 - 4 . Ensure efficient and sustainable management of water supply and sanitation system by avoiding fragmented management on one hand and at the same time by avoiding over-centralization of management.
5. Create conducive situations for the participation of all stakeholders in integrated water supply

and sanitation activities and legalize the same.

6. Develop national standards, guidelines and procedures on the different aspects of water supply and sanitation.
7. Work in partnership with all concerned for water supply, drainage and wastewater master plans in major urban areas and prepare water supply and sanitation strategies in rural and other urban centers.
8. Ensure that water supply and sanitation financing is based on established set of criteria that incorporate the relevant factors and prioritizes them.

2.3.2 IRRIGATION POLICY

INTRODUCTION

In general, Ethiopia has an annual rainfall apparently adequate for food crop production and pasture for livestock. The spatial and temporal distribution of the rainfall, however, is too uneven.

Much of the eastern part of Ethiopia receives very little rain while the western part, the highland areas in particular, enjoy adequate rainfall. Reliable food supply is almost impossible due to the temporal imbalance in the distribution of rainfall and the consequential no availability of the required water at the required period. This is a frequent phenomenon in Ethiopia. Sometimes even the western highlands of the country suffer from food shortages owing to discrepancies in rainfall distribution.

The National Economic Development Strategy places heavier emphasis on the agricultural sector to enhance food-self-sufficiency and ensure food security at the household level and to develop an agriculture-based industrial development in the long run. This strategic approach can be achieved through the

augmentation of agricultural productivity which calls for mitigating water shortage problems as a pre-condition.

Water can be made to contribute to the national economy through the development of the country's water resources and expanding irrigation schemes so that agricultural production is improved by solving the problem of water shortage caused by the unpredictability of the rainfall. This is what this policy intends to achieve.

The area of irrigated agriculture cultivated so far is insignificant compared to the irrigable potential. Sufficient food has to be produced to meet the requirements of the fast growing population and ensure food security for eventualities at household level. Furthermore, small, medium and large scale irrigation schemes will have to be developed in order to enhance reliable agricultural development in Ethiopia to cater for externally marketable surplus that would earn the country foreign exchange and at the same time provide raw material inputs for industries.

Irrigation being a development activity requiring huge capital investment, large and convenient infrastructure and trained human resources; this policy has been formulated to foster the realization of reliable and sustainable irrigation development which is harmonious with the capabilities and realities of the country and the development strategies designed.

2.3.2.1 Overall Objective of Irrigation Policy

The overall objective of irrigation policy is to develop the huge irrigated agriculture potential for the production of food crops and raw materials needed for agro industries, on efficient, and sustainable basis and without degrading the fertility of the production fields and water resources base.

2.3.2.2 Detail Objectives

The objectives are:-

1. Development and enhancement of small scale irrigated agriculture and grazing lands for food self-sufficiency at the household level.
- 2 . Development and enhancement of small-, medium- and large - scale irrigated agriculture for food security and food self – sufficiency at national level including export earnings and to satisfy local agro-industrial demands.
- 3 . Promotion of irrigation study, planning and implementation on economically viable, socially equitable, technically efficient, environmentally sound basis as well as development of sustainable, productive and affordable irrigation farms.
- 4 . Promotion of water use efficiency, control of wastage, protection of irrigation structures and appropriate drainage systems.
- 5 . Ensuring that small-, medium- and large-scale irrigation potential projects are studied and designed to a stage ready for immediate implementation by private and/or the government at any time.

2.3.2.3 Policies

The Policies are to:-

A . General Policies

1. Ensure the full integration of irrigation with the overall framework of the country's socio-economic development plans, and more particularly with the Agricultural Development Led Industrialization (ADLI) Strategy.
2. Promote the development of irrigation on two- pronged approaches of :-
 - strategic planning for achieving socio-economic goals and
 - participatory- driven approach for promoting efficiency and sustainability .
3. Recognize that irrigation is an integral part of the water sector and consequently develop irrigation within the domain and framework of overall water resources management.
4. Earmark a reasonable percentage of the GDP as committed resource towards the development of irrigated agriculture, especially in capacity building and infrastructures.
5. Promote decentralization and users-based-management of irrigation systems taking account of the special needs of rural women in particular.
6. Develop a hierarchy of priority schemes based on food requirements, needs of the national

economy and requirements of raw materials and other needs.

7. Support and enhance traditional irrigation schemes by improving water abstraction, transport systems and water use efficiency.
8. Ensure the prevention and mitigation of degradation of irrigated water and maintain acceptable water quality standards for irrigation.
9. Establish water allocation and priority setting criteria based on harmonization of social equity, economic efficiency and environmental sustainability requirements.
10. Integrate the provision of appropriate drainage facilities in all irrigated agriculture schemes.
11. Enhance greater participation by the Regional and Federal Governments in the development of large scale irrigated farms in high water potential basins but with low population density.

B. Stakeholders:-

1. Promote full and meaningful participation of individual farmers, cooperatives and all other stakeholders in all phases of the planning, studies, implementation and operation and maintenance of small, medium and large scale irrigation farms.
2. Promote the involvement of Government at different levels and NGOs, in the provision of support for bulk water storage and transfer schemes and other relevant structures..
3. Promote fairness and transparency in the management of irrigated agriculture.
4. Develop systems for the harmonious co-existence of indigenous peoples and irrigation projects.

C. Economics and Finance

1. Establish norms and procedures for financial sustainability and viability of irrigated schemes.
2. Promote credit facilities and bank loans for the development of irrigation schemes.
3. Develop the appropriate cost recovery systems and mechanisms for all irrigation schemes.

D. Technical Issues

1. Develop appropriate and affordable technologies for the design, construction, implementation, operation and maintenance of irrigated schemes.
2. Adopt improved and affordable systems and tools for water abstraction equipment, for reducing seepage losses in canals, for water control systems and measurement structures.
3. Develop the necessary technical guidelines and framework for mechanisms, systems, materials and technologies for water use efficiency in irrigated agriculture.
4. Develop guidelines, manuals and procedures for the sustainable operation and maintenance of irrigated systems.

E. Environmental Issues

1. Minimize and mitigate as much as possible, the negative environmental impacts associated with irrigation development.

F. Institutions and Capacity

- 1 . Promote the development of appropriate institutional structures for the management of irrigated agriculture.
2. Develop capacity in human resources development, new technologies, engineering and financial management.
3. Improve and upgrade the production capacity of existing schemes.

2.3.3 HYDROPOWER POLICY

INTRODUCTION

Ethiopia is a country endowed with large hydropower potential. According to studies made in river basins, the hydropower resource is estimated to have a potential in the

order of 161,000 Gwh/year. So far, however, only a fraction of this tremendous potential has been harnessed for any meaningful contribution to the socio-economic development of the country.

This is because the previous regimes had not given due attention to the development of the water sector, like other sectors and did not have the awareness that the development of the sector was not only a precondition for the acceleration of the development of other sectors but also a foreign exchange earning economic resource.

Ethiopia's physiographical nature and her endowment in water resources are natural assets which facilitate the generation of power with a relatively lower production cost. The energy to be generated will not only cater for the increasingly growing demand for energy in the country but will have surplus production to be marketed to neighboring countries. This will earn the Gross National Economy substantial foreign exchange perhaps not less than other exportable commodities.

It is with these overall objectives that due emphasis has been provided to the sector and this policy has been formulated accordingly.

2.3.3.1 Overall Objective of Hydropower Policy

The overall objective of the policy is to enhance efficient and sustainable development of the water resources and meet the national energy demands as well as cater for external markets to earn foreign exchange.

2.3.3.2 Detail Objectives

The objectives are:-

1. Ensuring that small, medium and large hydropower candidate projects are studied and designed to a stage ready for immediate implementation at any one time.
2. Ensuring that a short, medium and long-term hydropower generation programme is worked out well ahead of time.
3. Ensuring that hydropower development projects are studied, designed, constructed, operated and utilized on economically viable basis to an acceptable technical, environmental and safety standards.
4. Ensuring that the negative environmental impacts of hydropower are mitigated to the extent possible and that the positive environmental impacts are exploited as far as possible.
5. Strengthening local humanpower capacity for hydropower development, project study, design construction and operation.
6. Promoting that hydropower development on trans-regional rivers is effected on the basis of mutual understanding and co-operation amongst Federal and Regional concerned parties.
7. Encouraging involvement of the private sector in the development of hydropower.

2.3.3.3 Policies

The policies are to:-

1. Ensure that hydropower development is an integral part of the multipurpose uses of water.
- 2 . Ensure that hydropower development is affordable and development is in phases.
- 3 . Subject hydropower development schemes to strict environmental and stakeholder considerations as well as meeting economic criteria.
- 4 . Ensure that the development sequence for of hydropower should be in the priority order of short term, medium term and long term.
- 5 . Establish code of practice for study and design of hydropower development schemes adequately addressing technical, economic, environmental and stakeholders' issues.
- 6 . Create conducive environment for export of hydropower in due course in keeping with the national interest.
- 7 . Promote local capacity building for professionals, consultants and contractors involved in hydropower development.
- 8 . Promote local industries to play increasing roles in the supply of material and equipment for hydropower development.
- 9 . Develop local capacity for activities extending from reconnaissance to supervision of implementation of hydropower projects.
- 10 . Encourage the involvement of domestic investors in the development of hydropower resources.
- 11 . Ensure that all processes of project preparation including survey, reconnaissance, feasibility studies upto detail design of medium and large-scale hydropower projects shall be the responsibility of the water sector.

GLOSSARY

1. **Water Resources Management (WRM):-** Water resources development, utilization, conservation, protection and control that incorporates physical, social, economic as well as environmental interdependence,
2. **Comprehensive Water Resources Management:-** involves treating all the activities that use water (water supply, irrigation, hydropower, etc.) irrespective of whose mandate it is.
3. **Integrated Water Resources Management:-** addresses the interdependence of the different uses and users of water resources.
4. **Regional State:-** A state through or along which a portion of an interstate river flows or a common water body lies on.
5. **Riparian Country /Countries:-** A Country/countries through or along which portion of a transboundary river flows or a common water body lies on.
6. **River Basin:-** A geographical area described by the watershed limits of a water system including surface and underground water flowing into a common terminus.
7. **Sanitation:-** In this policy document, sanitation represents issues related to water resources management including both on-site and off-site water dependent sanitation systems.

8. **Stakeholder:-** Organization group or individual that is concerned with or has an interest in water resources and that would be affected by decisions about water resources management.
9. **Strategies:-** are tools developed for the implementation of policies and to meet objectives. These constitute the general framework of activities to be undertaken through time to meet previously defined objectives and endorsed policies.
10. **Unaccounted for water:-** The difference between the volume of water delivered to a supply system and the volume of water accounted for by legitimate consumption.
11. **Water Demand Management (WDM):-** The use of pricing and non-pricing instruments, to efficiently and rationally use the available water resources.
12. **Water Resources Assessment (WRA):-** An assessment of the aspects of the supply and demand for water resources.
13. **Water Resources Development (WRD):-** Physical activities to improve the beneficial use of water for different uses.
14. **Water Resources Planning (WRP):** Planning of the development, protection, conservation, control and allocation of a scarce resource (sectoral and intersectoral), matching water availability and demand, taking into account the national objectives and constraints and the interests of stakeholders.

15. **Watershed Management:-** A process of formulating and implementing a course of action that involves a region's natural and human resources taking into account social, political, economic, environmental and institutional factors operating within a watershed, the surrounding river basin, and other relevant regions to achieve desired social objectives.
16. **Water Supply:-** For the purpose of this policy, water supply implies human uses of water such as drinking water, water for livestock use, water for industrial use, and water for municipal use.
17. **Wet Lands:-** Areas of marsh, fen, peat and, or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt including areas of marine water less than six meters deep at low tide.
18. **Transboundary waters:-** International rivers traversing adjacent countries or water bodies shared by riparian neighboring states.

19. Water Services Fee (charge):- Fees charged for water supply services only.

Ethiopian Water Resources Management Policy