

PROJECT IMPLEMENTATION COORDINATION UNIT

(PICU)

ENGLISH TRANSLATION

OF

**THE MINISTRY OF WATER, ENERGY AND
MINERALS**

**WATER POLICY
1991**

**EYA ENGINEERING COMPANY LIMITED
DAR ES SALAAM.**

DECEMBER, 1995



TABLE OF CONTENTS

	PAGE
CHAPTER ONE	
Introduction	1
The CCM Programme	1
Existing water supply situation in the country	2
Water Policy objectives	4
 CHAPTER TWO	
Water sources, conservation protection and flood control	6
Existing Water Sources	6
Degradation of Water Sources	7
Utilization of Water Sources in general	8
Utilization of Lake Victoria	8
Utilization of other lakes	9
Rainwater Harvesting	9
The Sea, Coast line, and Environment	9
Flood control	9
 CHAPTER THREE	
Various uses, and Water Quality	11
Water uses in Rural Areas	11
. Domestic Water Policy	
. Water for Livestock	
. Water for Institutions	
Urban Water Supply	12
. Domestic Water supply	
. Water supply for industries	
. Water supply for institutions	
. Water supply for irrigation	
. Other water uses	

LIBRARY INTERNATIONAL REFERENCE
CENTRE FOR WATER SUPPLY
The Hague
Tel. 070/81911 ext. 141/142

BARCODE 7541

LO: 824 TZ 95

	PAGE
Water Supply for irrigation	14
Water Quality	15
Legislation Relating to Water Quality	15
Defluoridation	15
Research on other mineral constituents and community Education	16
Water Quality Monitoring	16
Construction of Water Laboratories	16
Roles of Specialised Industries	16
CHAPTER FOUR	
Rural Water Supply Projects	
Planning of Rural Water Supply projects	17
Application of simple technology in the implementation of rural water supply projects	17
Construction of dams and charcos	17
The following important aspects should be observed	17
Simple Technology, Experts and Equipment	18
Bamboo and Wood Technology (Bamboo/Wood)	18
Water master plans (WMP)	19
Operation and Maintenance of Rural Water Supplies	19
Small water supply projects	19
Medium size water supply projects	20
Large water supply projects	20
National Projects	20
Rehabilitation of rural water supply projects	21
Operation and Maintenance of Rural Water Supplies	21
Distribution of responsibilities	21
. Village level	
. District level	
. Regional level	
. National level	
Completion of ongoing water projects	23



CHAPTER FIVE

Urban Water Supply Projects	24
Project planning and strengthening of urban water supply service	24
Rehabilitation and maintenance of urban water supply projects	25
Completion of ongoing projects	25
Urban Water Tariffs	26
Nation Urban Water Authority (NUWA)	26

CHAPTER SIX

Technical personnel and the central services	27
Requirements for technical personnel in the water sector	27
Training programme	27
Rwegarulila water resources institute	28
General services for the water sector	28
Boko, Regional and District Workshops and Maji Central Stores	29

CHAPTER SEVEN

Integrated water supply, environmental sanitation and sewerage and drainage projects	30
Sewerage and drainage systems and environmental Sanitation in Urban areas	30
Sewerage systems	31
Urban stormwater drainage systems	31

CHAPTER EIGHT

Community participation, water funds and donor participation	32
Community participation	32
Water committees	32
Ministry responsible for water	32



	PAGE
Women	32
Water Funds	33
Donors involvement	33

CHAPTER NINE

Responsibilities of various sectors in the implementation of the water policy	35
Responsibilities of "Chama cha Mapinduzi"	35
Responsibilities of the ministry responsible for water	35
Responsibilities of various other ministries	35
Ministry responsible for Health	35
Ministry responsible for Community Development	37
Ministry responsible for Local Government	37
Ministry responsible for Agriculture and Livestock	38
Ministry responsible for Commerce and Industries	38
Ministry responsible for Communication and Works	39
Ministry responsible for Lands, Natural Resources Environment and Tourism	39
Ministries responsible for Education	39
Ministry responsible for Justice	39
Responsibilities at Regional Levels	40
Responsibilities at District Level	40
Responsibilities at Village Levels (Village Governments)	41
Responsibilities of the Private Sector	41
Conclusion	42

E N D

CHAPTER ONE

INTRODUCTION

The CCM Programme

1. Water is one of the basic needs required to sustain human life and consequently essential in uses such as domestic, institutional and also for economic activities such as livestock development, transportation, recreation and tourism, hydropower generation, irrigation, industries etc. Water can bring about development if obtained in good quality and sufficient in quantity and distributed well in space and time near the beneficiaries. Tanzania is endowed with many water sources but these sources are not evenly distributed. In some areas the people depend on groundwater which is not easily obtained and distributed and is sometimes saline or may contain several other minerals in objectionable quantities. Therefore a considerable portion of this country experiences serious water shortage especially in Shinyanga, Coast, Mwanza, Arusha, Mara, Tabora, Dodoma, Singida, Mtwara and Lindi Regions.
2. In general, despite the considerable efforts and achievements that have been recorded in developing the country's water resource, much more has to be done to utilize this important resource for increased productivity in agriculture, industry, etc. and in provision of social services to various institutions such as colleges, schools, hospitals, hotels and camps. Moreover the poor water supply situation is endangering people's health in rural and urban areas.

In the light of the above situation in its programme for 1987 - 2002 the then ruling party "Chama cha Mapinduzi" (CCM) directed that people be provided with clean and safe water within an easy reach of their households.

*CCM's
role
less
prominent.*

In addition the Government was directed to prepare a Water development policy for both rural and urban areas so that by the year 2002 every citizen should have access to clean and safe water. The party emphasised the following:-

- (a) Special areas be allocated for livestock and these be provided with adequate water supply.
- (b) Provision of adequate water supply to industries in order to increase production.
- (c) Effective and sustainable utilization of water sources.



Existing Water Supply Situation in the Country

3. In 1970 the Government proclaimed a twenty - year rural water supply programme (1971 - 1991), being implementation of the Declaration of the Sixteenth TANU General Conference resolutions and the Arusha Declaration.

The objective of the programme was to enable over 90 percent of the population to have access to clean and safe water within a distance of 400 meters from their households. Until December, 1988 a total of 8.15 million people, equivalent to 44% of all 18.43 million people living in rural areas of Tanzania mainland had easy access to water supply. Moreover the situation today is further worsened by the malfunctioning of many completed schemes. There has also been, an increase of private water connections and also on the amount of water supplied to urban population.

4. In addition to a recorded increase in the number of trained indigenous experts, training institutes, laboratories and workshops have been established to strengthen the national capability on expertise, technology and water quality. The Ministry responsible for water in collaboration with foreign consultants and contractors is now capable of carrying out design work for large water schemes in the country. The major achievement recorded so far is that the government programmes planning and implementation are guided by the policy of socialism and self reliance that priority is given to the lives of the people in the rural areas and the services are provided without any discrimination or favour. In spite of the poor economic status situation of the country, the rural and peri-urban areas have continued to enjoy water service at affordable cost.
5. Despite the achievements mentioned, a number of problems still exist which need to be attended to:-
 - (a) The review of the 20 year Water Programme carried out in October 1986, revealed that the programme did not take into consideration water requirements for urban areas as well as those for other economic uses.
 - (b) Current means of obtaining water in rural areas are unreliable. During dry season especially in drought stricken areas women spend long periods of time walking long distances searching for water. In certain occasions they have to purchase water at a very high cost.
 - (c) Nearly 40% of the water schemes are not operating due to old age and breakdown of pumps, lack of tools for repairs, spare parts, fuel or electricity required to run the water pumps. This has necessitated pipes to run dry for quite long in some villages.



- (d) Treatment of rural water supplies is not being given due priority.
 - (e) As it is for the human beings in some places especially in drought stricken Regions, livestock have to walk long distances in search for water, resulting into the following:-
 - (i) Migration of livestock keepers and hence failure to observe good animal husbandry.
 - (ii) Deterioration of the health conditions of the livestock and their keepers.
 - iii) Land degradation caused by livestock
 - (iv) Some of livestock keepers' children fail to attend school.
 - (f) Regarding urban areas the major problem is lack of adequate water supply to meet the demand. There is also a problem of poor distribution system and frequent supply interruptions sometimes without advance notice from relevant authorities.
 - (g) There are large water losses due to leakages from aged pipes or burst pipes, especially when pipes are left unrepaired for a long time. In essence the government spends a lot of money to pump water which is wasted.
6. Major causes of all the above problems include the following:-
- (a) Poor national economy which, reduces the nations ability to provide services.
 - (b) Over dependence on donors in the implementation of water projects and lack of effective coordination of donor support.
 - (c) Poor planning and implementation of projects as well as duplication of work between the Ministry responsible for water, Region and District without following laid down procedures.
 - (d) Lack of beneficiaries involvement in planning and implementation of projects which results in lack of responsibility in maintaining and protecting them .
 - (e) Misappropriation of resources, irresponsibility and thefts which cause loss and wastage of funds and equipment allocated by the public for water supply delivery services.

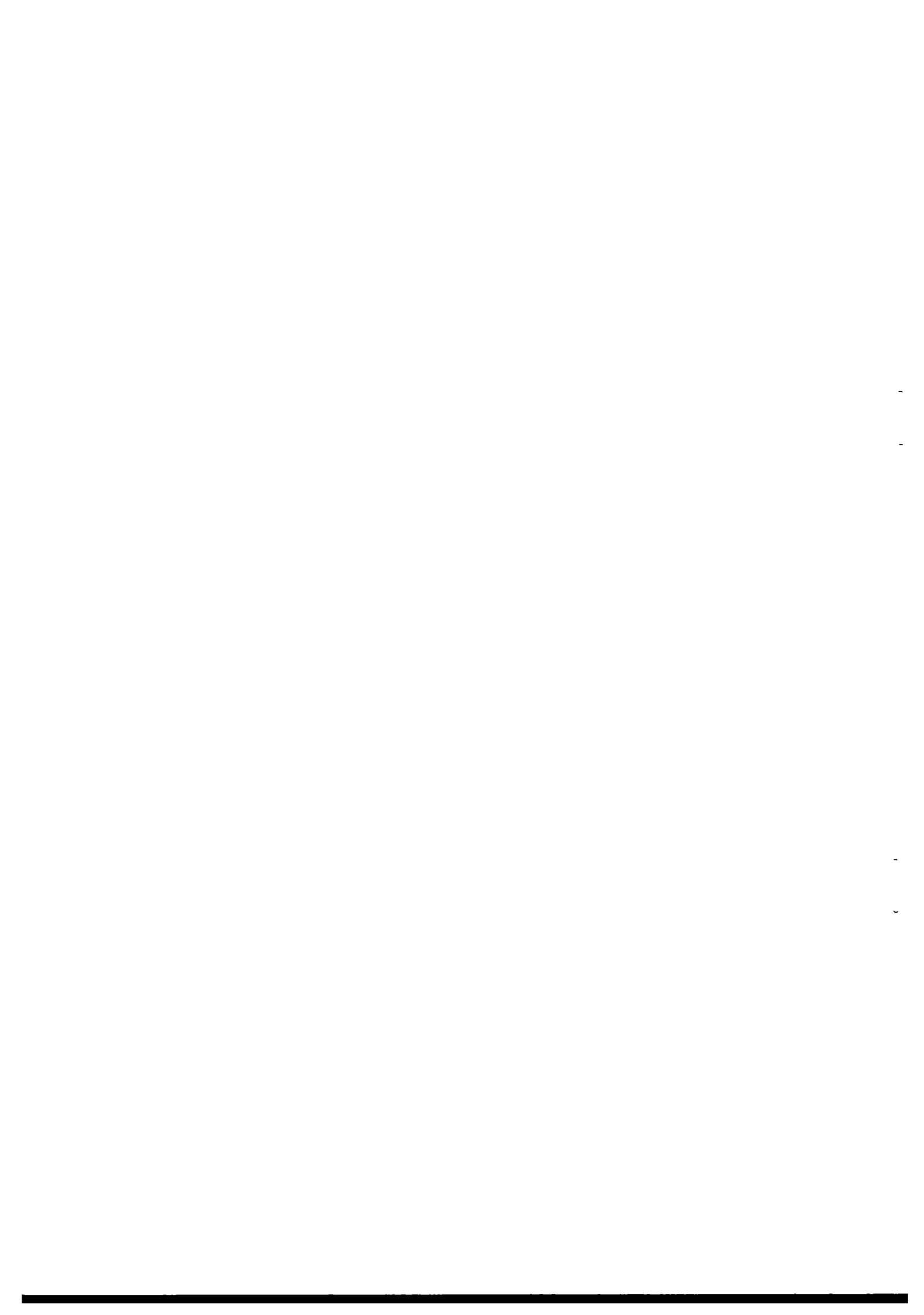
.

- (f) Low level of awareness of some of the beneficiaries which cause environmental degradation and theft of facilities and equipment which facilitate provision of water supply to the very people. This also includes deforestation or burning of forests, polluting the water sources and failure to participate effectively in community development activities.
- (g) Lack of emphasis in rain water harvesting and utilization of rainwater.
- (h) Lack of proper guidelines and clear procedures on:-
 - (i) Demarcation of Responsibilities and limits between the Ministry and other sectors responsible for the provision of water supply thus leaving the entire responsibility to the ministry responsible for water.
 - (ii) Type of energy sources to be emphasized by the nation.
 - iii) Responsibility for protection and conservation of permanent and emergency water sources.

Objectives of the Water Policy

7. The Primary objective of the Water Policy is:-

- (a) To bring about equality and social economic development under the principle of socialism and self reliance through:
 - (i) Supplying of adequate and safe water supply for domestic, livestock, irrigation, industrial and other purposes for the benefit of all the people.
 - (ii) Making use of available lakes as reliable water sources for domestic, industrial and irrigation purposes.
 - iii) By recognizing the drought condition prevailing in the Regions around and neighbouring Lake Victoria, the use of the lake as a reliable water source will be given due consideration.
 - (iv) Using rivers as sources of water for domestic, industrial and irrigation purposes.



- (v) Utilization of rivers with hydropower potential in order to generate the much needed power for use in industries and other social economic purposes.
 - (vi) Monitoring and controlling the quality of water so that it is suitable for the various uses.
 - vii) Flood control and mitigation so as to protect people and their properties.
 - viii) Reclamation and drainage of flood prone areas so that land may be put into use.
 - (ix) Developing water resources so as to contribute to the growth and development of other sectors of the national economy such as transportation, fishing, tourism, recreation and environmental conservation.
- (b) Ensuring that this important resource is efficiently and effectively utilized, investigated and monitored properly developed and conserved for the benefit of the present and future generation by effecting the following:-
- (i) Investigating, developing and protecting the water sources so as to ensure availability of water all the times.
 - (ii) Protecting the sea, lakes, rivers, coastlines, springs, mountains, forests and the environment in general.
- (c) To meet water requirements for the population taking into considering the following uses:-
- (i) Domestic
 - (ii) Wild life and livestock
 - iii) Irrigation
 - (iv) Industrial and hydropower generation
 - (v) Institutional
 - (vi) Recreational and tourism
 - vii) Transportation
 - viii) Fisheries and pisciculture
- (d) To give priority to drought - stricken areas and those with critical water shortage by identifying potential water sources and developing the water supplies.
- (e) To complete construction of on-going water projects.

- (f) To develop and strengthen local capability so as to minimize donor dependence by emphasizing on training, and the use of local professional staff, innovation, manufacturing and use of available local resources.
- (g) To clearly define the roles of the various actors, beneficiaries, Donors, Ministry, Institutions, Authorities and various committees on implementation of water projects through the policy of self reliance.

CHAPTER TWO

WATER SOURCES PROTECTION, CONSERVATION AND FLOOD CONTROL

Existing Water Sources

8. Existing water sources include the following:-

(a) The Sea/Ocean

Tanzania is blessed with being bordered with the Indian Ocean and the nation has the right of ownership and make use of the sea in accordance with existing International Law.

(b) Lakes

There are large and small lakes which are a dependable water source for various uses. Among these lakes are Victoria, Tanganyika, Nyasa, Rukwa, Babati, Duluti and several others which are smaller in size. Some of the lakes such as Manyara, Eyasi and Natron have saline waters.

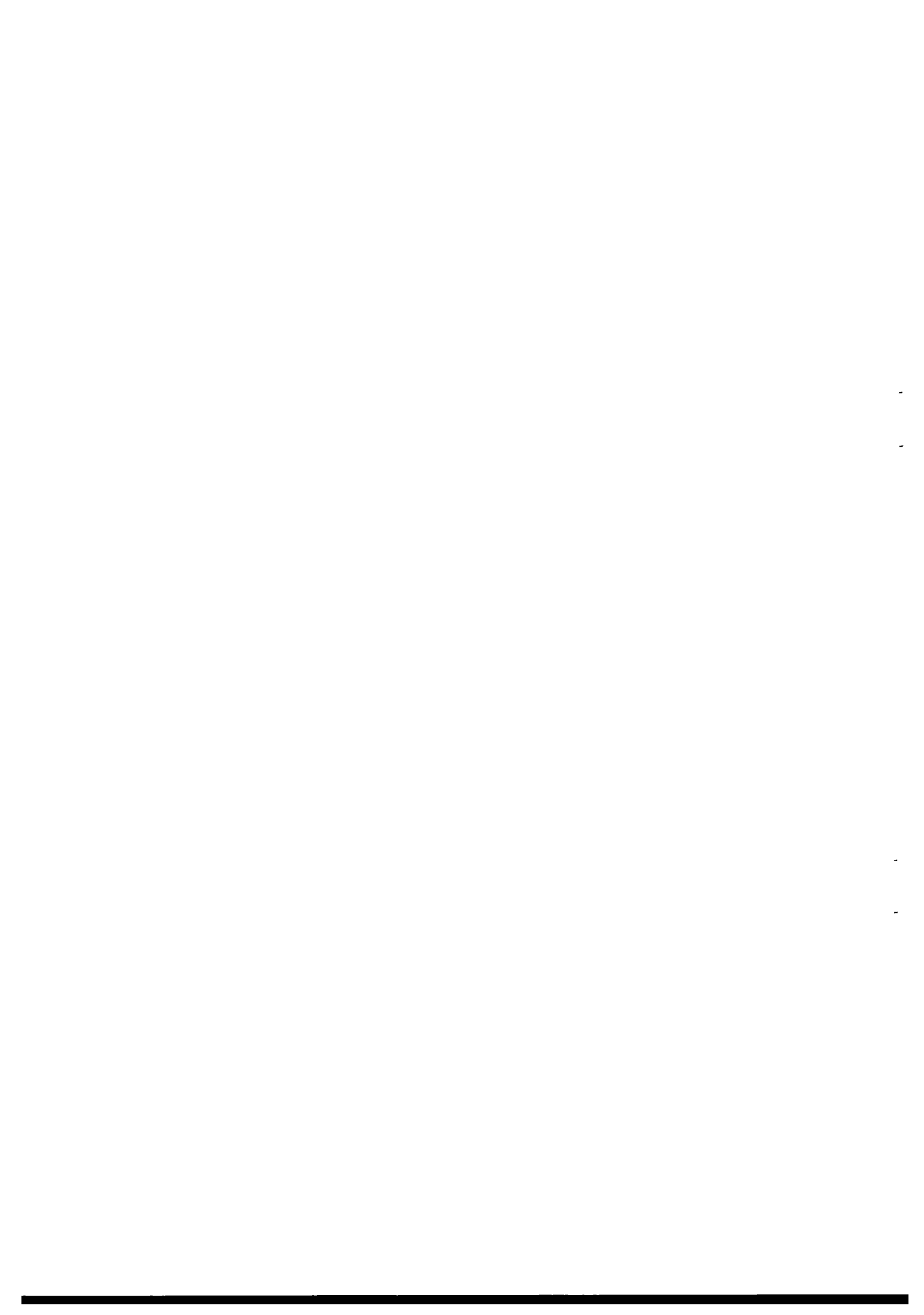
(c) Rivers

There are several rivers some of which are big and perennial, including Rufiji, Pangani, Ruvu, Kagera and Mara. Rivers in some drought stricken areas flow only during the rainy season.

(d) Groundwater

Groundwater constitutes an important source of water which is scattered over a large portion of the country. Groundwater sources are the following:-

- (i) Springs whose water can be supplied by gravity or pumping.
- (ii) Deep boreholes and shallow wells fitted with pumps which can be operated by electricity, diesel engines, wind mills and hand pumps etc.



Utilization of groundwater saves treatment costs and use of chemicals as compared to surface water. In several drought-stricken areas groundwater remains the only dependable source of water supply.

(e) Rainfall

Tanzania is one of the tropical countries, yet vast areas receive less than 1000mm, per year. There are several small areas some of which receive a very small amount of rainfall. Large quantities of rain water are lost unused instead of being utilized for the socio-economic well being of the people.

Degradation of Water Sources:

9. Degradation and Deterioration of water sources is being caused by:

- (a) Human activities due to indiscriminate, farming, bushfires, cutting of trees, causing drying up of springs and stream.
- (b) Indiscriminate discharging of untreated domestic and industrial wastes into water sources. These wastes contribute to a great extent in polluting the environment as well as surface and groundwater water sources. These practices have caused substantial damage to water sources and if left to continue will cause pollution of water sources or drying up of water sources and ultimately resulting into drought and desertification.

10. Special emphasis will therefore be put on protection and conservation and prevention against pollution of water sources by undertaking the following:

- (a) Educating people who live on the vicinity of springs, rivers and reservoirs:-
 - (i) Not to carry out farming, not to cause bush fires and stop indiscriminate felling of trees around water sources.
 - (ii) On the importance of planting trees around water sources.
- (b) Establishing stream gauging stations so as to continuously monitor flows.
- (c) Mobilising and providing new settlements to people who live in hilly areas where springs exist. Collaboration among the Party, Government, Region, District and District Councils is important in the implementation of this exercise.

- (d) Constructing check dams on springs in order to prevent unwanted water flows which could cause erosion.
- (e) Discouraging the planting of trees species which can cause drying up of the sources near springs and water sources.
- (f) Continue to fight bad practices in some regions of starting bush fires in connection with hunting or farming activities.
- (g) Emphasizing collection of industrial and domestic solid wastes and dumping the same in designated places.
- (h) Ensuring that construction of pit latrines in urban and rural areas is done in accordance with procedures in order to avoid pollution of groundwater sources by making sure that:
 - (i) Domestic and industrial effluent is treated to acceptable level before being discharged into receiving water bodies, i.e. rivers or lakes.
 - (ii) The water Law (Control and Regulation Act No.4 of 1974 and its Amendment Act No.10 of 1981) is observed, reviewed and amended regularly commensurate with time.
 - iii) Application of pesticides and fertilizers is done carefully and at required levels.

Utilization of Water Sources in General

11. Concerning the utilization of these water sources the nation will ensure that water from all the sources is effectively utilized to meet all domestic, livestock, agricultural, defence, fisheries, recreational and tourism, industrial, institutional, irrigation, transportation and energy requirements.

Utilization of Lake Victoria

12. With immediate effect the nation will put special emphasis and prepare a Master Plan on utilization of Lake Victoria Waters on the understanding that:-
 - (a) Nearly half the volume of water of lake Victoria which is about 2740 million cubic meters is located in Tanzania and is suitable for domestic, industrial and irrigation purposes.
 - (b) This large water source has not been effectively utilized for many years although its use in our country does not affect the amount required by the downstream countries along the Nile river Basin.



- (c) This is the most reliable long-term source of water for the drought stricken regions of Mwanza, Mara, Tabora, Shinyanga, Singida and Dodoma.

Utilization of other Lakes

13. Other lakes such as Lake Tanganyika, Nyasa, Duluti, Babati, Rukwa etc will be effectively utilized to meet domestic, institutional industrial, transportation, fishing, irrigation and recreation demands. Saline lakes such as Manyara, Eyasi, Natron, Jipe etc. will be studied accordingly to make them useful for various social economic purposes. Furthermore, emphasis will be put at conserving, protecting and preventing pollution of all lakes.

Rainwater Harvesting

14. The nation will also put emphasis on rainwater harvesting by:-
- (a) Constructing dams and charcos especially in drought - prone regions where most of rivers are seasonal.
 - (b) Collecting water from house roofs and storing it in tanks constructed on the surface or under the ground. If properly collected and preserved this water is clean and safe for all domestic uses.
 - (c) Mobilizing and encouraging the people on the use of dams and charcos and rainwater harvesting technology. Furthermore, individuals, institutions, parastatals and industries will be encouraged to harvest rain and use the rain water.
 - (d) Strengthening rainfall data collection.

The Sea, Coast line and Environment

15. The nation will continue to cooperate with other countries in preventing pollution of the sea, coastline and the environment.

Flood Control

16. Tanzania has many large rivers which upon approaching the sea or lake or when passing through flat plains have made these areas suitable valleys for agriculture during dry seasons. However, these areas have a problem of frequent flooding. Such valleys are the Rufiji, Luiche, Ngono, Msimbazi, Songwe and others. In order to effectively make use of these areas the following undertakings are required:-

- (a) Construction of dams or drainage canals in order to have good agricultural land.



- (b) Undertaking river training works at several rivers including Songwe - Mbeya, Mvomero - Morogoro etc. in order to control floods.
17. These measures are expensive to undertake and at present the nation does not have the capability to implement them. Therefore, emphasis would be on:-
- (a) Mobilizing and advising the people to shift from frequently flooded areas, and
 - (b) Enforcing the following measures in order to control flooding:-
 - (i) Prevent indiscriminate cutting of trees and instead encourage planting of trees in catchment areas.
 - (ii) Construct dams by considering storage requirements for various uses and flood control measures.
 - iii) Construction of levees and gabions to prevent flooding in villages and towns respectively.
 - (iv) Construction drainage canals.
 - (v) Undertake river training works where appropriate.
 - (vi) Demarcating dangerous flood prone areas and preventing use of such areas by law-enforcement.
 - vii) Establishment of flood forecasting and warning system.
 - viii) Ensuring that supplying of water to livestock takes into consideration availability of the water and the ability of land to support the livestock. This means that the amount of water to be supplied should be sufficient only for the number of livestock which can be supported in a given area.



CHAPTER THREE**VARIOUS USES, AND WATER QUALITY****Water Use in Rural Areas**

18. The following are various uses of water in rural areas, and the related problems and ways to solve them:-

(a) **Domestic Water Supply in Villages.**

The water which many people drink in the rural areas is not safe and they have to walk long distances to collect it. Taking this problem into consideration it is important to employ different techniques to provide a source of clean and safe water to each household within a walking distance of 400 meters by the year 2002.

Most of the rural water supply systems at present do not have individual house connections, instead, water is collected from Domestic Points which serves 200 to 250 people. This system of providing water to the rural population will continue to receive priority. However taking into consideration the development of the rural areas, especially the construction of modern houses, water supply designs should consider individual house connections for those who need that service.

(b) **Water for Livestock**

Most of the population in the drought stricken regions are livestock keepers and nearly 98 percent of the livestock is found in villages. The average daily livestock water requirement is 50 litres per cattle. In order to ensure that the livestock are provided with water accordingly from various sources, the following must be done:

- (i) Construction of dams and charcos or drilling of deep boreholes and shallow wells near places where livestock keepers live.
- (ii) Design of all rural water supply projects takes into consideration livestock water requirements. W
- iii) Water supply for livestock is in accordance with the number of livestock which can be supported on a given area.
- (iv) To make the water supply service as a means of contribution towards changing the nomadic habit of the livestock keepers into livestock keepers who practice good animal husbandry.



(c) **Water for Institutions in Rural Areas**

Many institutions in the rural areas such as schools, dispensaries, health centres and religious centres do not have satisfactory water supply services despite the fact that they are fitted with in house plumbing facilities. In order to strengthen availability of water for institutions the policy emphasises that:

- (i) Design of rural water supply, should take into account the water demand for such institutions.
- (ii) Wherever possible the village and institutions should have large storage tanks, deep boreholes and shallow wells, dams and charcos or rainwater harvesting and storage facilities with the capacity to store water through out the year.

Urban Water Supplies

19. The following are various uses of water in urban areas, its problems and suggestions for improvement:

(a) **Domestic Water Supply in Urban Areas**

All urban centres in Tanzania have been provided with piped water supply from various water sources such as river, lakes, dams and groundwater. However, the supply is inadequate to meet the demand. In order to meet water requirement for various uses in urban centres the following must be taken into consideration:

- (i) Implementation of water projects should take into consideration planned construction of industries and institutions.
- (ii) Rehabilitation and expansion of urban water supplies so as to meet demand.
- iii) While efforts are being undertaken to improve water in urban areas it is necessary to conserve and distribute the available quantities equally to the whole population. Existing laws on rational utilization of water should be strengthened and enforced.
- (iv) Ensuring that payments of water bills is properly monitored and effected promptly so as to enable the water authorities meet costs for the smooth running as well as capital improvement.



- (v) In cases where lower water Tariffs will be fixed by the government for the benefit of the community against the actual cost of operation and maintenance and capital improvement, the government should subsidise and pay the difference.
- (vi) The Ministry responsible for Water and Urban Water Authorities will be responsible for public kiosks in the urban centres. Further, Water Committees for areas where these kiosks are located see to it that the responsible authorities fulfil their obligations.

(b) Water Supply for Industries

The supplied water to industries in urban areas does not satisfy industrial requirements. Due to this situation most industries operate under capacity and some are frequently closed, for lack of water thus resulting into low productivity and low revenue to the Government thus affecting the national economy. The policy hereby emphasizes that efforts should be made to ensure that these problems are overcome by:

- (i) Rehabilitating and expanding the urban water systems in order to increase the amount of water supplied.
- (ii) Wherever possible industries should be encouraged to develop their own water sources as well as installing storage facilities for emergency situations.
- iii) Setting up of new industries should take into consideration the existing water supply situation.
- (iv) Design of water use in industries should consider recycling.
- (v) Industries should be encouraged to carryout rainwater harvesting for own use.
- (vi) New industries, especially those which use large amounts of water, such as textile industries should be built in areas with reliable water sources.
- (vii) In addition to the above, it is the responsibility of entrepreneurs who own industrial enterprises to involve water authorities at the planning stage of their industrial complexes.



(c) Water Supply for Institution

Many major institutions in this country are located in urban centres and water requirement for these institutions is substantial. Until now supply of water in urban areas does not meet the requirement for these institutions. In order to solve the problem the following should be taken into consideration:

- (i) Urban water supply programme should take into account water requirements of the various institutions.
- (ii) Establishment of new institutions should take into consideration the existing water supply situation.
- iii) Institutions should employ rainwater harvesting technology and also have storage tanks for emergence uses.

Water Supply for Irrigation

20. Agriculture is the backbone of our economy and the country has fertile basins, rivers, lakes and dams. However, our agricultural techniques are very rudimentary and contributes only about 40% of the Gross National Product. One of the major reasons for this situation is failure to make effective use of our water sources for irrigation and instead depend on rainfed agriculture. In order to promote agricultural production through irrigation development, the water sector is responsible for:

- (a) Provision of data related to water requirements for irrigation such as the type of water source and quality of the water.
- (b) Taking into consideration, irrigation requirements during preparation of water master plans. However, water requirement for domestic use will still be given top priority.
- (c) Emphasizing utilization of lakes, rivers, dams and charcos for the purpose of meeting irrigation water requirements.
- (d) Follow up so as to ensure that irrigation projects are started after thorough investigation of the availability of water in sufficient quantity. Irrigation should not be practised haphazardly using water from dams constructed solely for domestic and livestock uses.



Other Water Uses

21. Other water uses include fishery, transport and transportation, communication, recreation and tourism. The water sector will be responsible for ensuring that these other water uses are considered when preparing and when reviewing water master plans.

Water Quality

22. The quality of water varies according to the type of water source. Generally the quality of surface water is not good for direct human consumption. This type of water requires treatment before use. On the other hand ground water is generally safe for direct consumption although it often contains various minerals and salts at high concentrations which may be harmful to human beings.

Legislation Relating to Water Quality

23. Currently there exists two laws in Tanzania which concern water quality and its utilization. These laws are:
 - (a) Water Law (Control and Regulation) Act No.42 of 1974 which mainly concerns water distribution and utilization.
 - (b) Amendment Act No. 10 of 1981 which provides legal powers for application of Tanzania Temporary Domestic Water Quality standards for Rural Water Supply and also Water bodies standards. Furthermore, World Health Organisation Standards are used simultaneously.

This policy emphasizes that existing laws regarding water utilization, water quality standards and Water Bodies Standards are followed in order to ensure that water supplied for domestic uses is clean and safe.

Defluoridation

24. The Ministry responsible for Water in collaboration with the Ministry responsible for Health and other Institutions should undertake research on how to reduce the fluoride content in drinking water to an acceptable level through application of appropriate and least cost technologies.

Research on other mineral constituents and Community Education

25. There are several toxic mineral constituents found in water which are harmful to human beings. There are also other minerals which are present in artificial fertilizers or pesticides which are also harmful to human beings if they are washed into water sources during rainy periods. Therefore, in order to determine the movement and flow characteristics of these minerals the following things should be done:
- (a) Investigation and research should be strengthened.
 - (b) People must continue to be educated on proper application of these chemicals and their potential effect on water sources and ultimately on the health of the human beings.

Water quality monitoring

26. Regular visits to water collection points and water sources for quality monitoring should be made in order to collect water samples for physical, chemical and bacteriological analysis to check water quality variations. Furthermore, bacteriological analysis should be done regularly in accordance with recommended frequencies.

Construction of Water Laboratories

27. By using a strategy of constructing water laboratories when implementing urban water supply programmes:
- (a) All existing water laboratories should be strengthened accordingly.
 - (b) Each Regional Headquarter should have a water quality testing laboratory.

Roles of Specialised Industries

28. Some industries, according to their production line, require water of higher quality standard than that applied for domestic water even when an International standard has been applied. Therefore, such industries should install their own treatment facilities or adjust the quality of the water to meet the required standard. Furthermore, each industry is obliged to treat its wastewater before discharging it into a receiving water source.



CHAPTER FOUR**RURAL WATER SUPPLY PROJECTS****Planning of Rural Water Supply Projects:**

29. The planning of rural water supply projects will be carried out on a three year rolling cycle. In other words, during the first year a project will be surveyed, during the second year it will be designed and during the third year it will be implemented. The objective of this arrangement is to ensure that projects are constructed and completed on schedule. In the planning and implementation of water projects drought stricken regions, areas with serious water problems and those areas with water related infectious diseases would be given priority.

Application of Simple Technology in the Implementation of Rural Water Supply Project:

30. The objective of implementation and operation and maintenance of rural water supply projects is to provide people with safe and clean water within 400 metres of their households. Any water supply project initiated should take into account other sector uses of water such as irrigation, livestock, afforestation etc. Emphasis would be put on implementing projects serving a group of villages, and the trunk main technology would be adopted.

Construction of Dams and Charcos

31. For those areas far away from the "Trunk Main" and those with large number of livestock, other sources of water such as dams and charcos would be constructed. The construction of dams and charcos would be given priority in the drought stricken Regions. In addition a special unit or directorate responsible for construction of dams and charcos would be established within the Ministry responsible for water.

The following important aspects should be observed:

- (a) The objective of constructing dams/charcos should be to store water for domestic use, livestock and flood control.
- (b) In livestock keeping areas, construction of dams/charcos should make provision for special areas for livestock watering in order to control water pollution and soil erosion.
- (c) The community should be educated on how to protect and conserve dams/charcos and the technology of construction of small dams/charcos using their own simple tools.



- (d) In the construction of dams/charcos other sectors such as Natural Resources, Energy, Agriculture etc. should be involved from the project preparation stage.

Simple Technology, Experts and Equipment

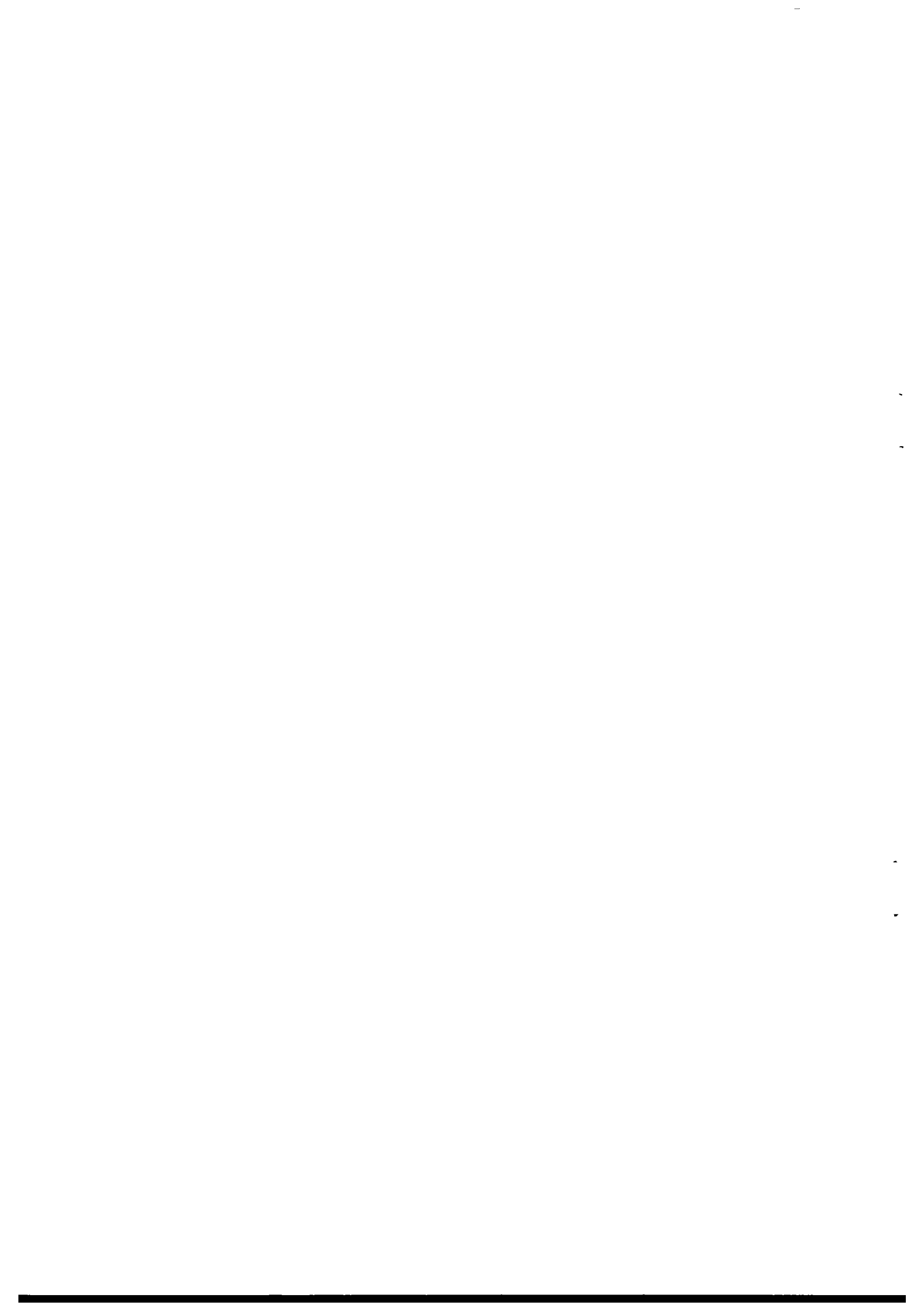
32. Use of either fuel or electrical pumping equipment will only be considered where water cannot flow by gravity, Shallow or deep wells fitted with hand pumps, solar, wind or biogas powered pumps and rainwater harvesting especially from corrugated iron roofs will be given priority.

Regarding provision of experts and equipment for operation and provision of water supply services special emphasis will be placed on:

- (a) Use of our local experts who will work in collaboration with the beneficiaries.
- (b) Application of locally available tools and equipment.
- (c) To research upon, discover, manufacture and develop, least cost materials such as concrete pipes, wooden pipes, hand pumps, solar and wind pumps, water treatment chemicals and spare parts so as to alleviate their shortage in the country.
- (d) The rural community and institution located in rural areas will be mobilized and educated on the use of simple technology.
- (e) The Ministry responsible for water should collaborate with the ministries responsible for plant engineering, and industries respectively so as to ensure that the activities stipulated in clause 32 (c) above are implemented accordingly.
- (f) In addition, the Ministry responsible for water will assist in collecting and analysing baseline data needed to develop industries which could manufacture water treatment chemicals, spares, pipes and other equipments for water supply services.

Bamboo and Wood Technology: (Bamboo/Wood)

33. It has been established that the application of bamboo pipes, wooden pipes and tanks in water supply is a cheap technology since it utilizes raw material locally available. Thus taking into consideration the conditions associated with it, this technology will be applied in rural drinking water supply, and irrigation by manufacturing and constructing bamboo/wood pipes and wooden



tanks. In order to effectively apply the wood/bamboo technology in water supply in this country the following should be emphasized and implemented:

- (a) Large scale planting of wood and bamboo trees.
- (b) Setting up factories for production of wood/bamboo equipment, pipes, tanks, etc.
- (c) Training of local personnel so as to gain expertise in the manufacture of wood/bamboo equipment.

Water Master Plans (WMP):

34. The drawing of Regional Water Master Plans initiated in 1971 covers rural water supplies only. To date WMP have already been prepared in 16 regions. The remaining four regions without a WMP are Arusha, Singida, Morogoro and Dodoma.

On Water Master Plans, the following will be carried out:

- (a) A review of the Water Master Plans will be conducted every 10 years.
- (b) Preparation of Water Master Plans for the remaining four regions and a review of the completed WMP will be conducted.
- (c) In reviewing the existing Water Master Plans and during the preparation of Water Master Plans for the remaining four regions, water uses other than domestic such as irrigation, industry, livestock, energy and urban water supplies will be taken into account.

Operation and Maintenance of Rural Water Supplies:

35. Emphasis will be placed on involvement of beneficiaries in constructing their schemes, meeting running costs, conserving and operating and maintaining their schemes. However, there will be water projects which are too big to be handled at village level due to the big operation and maintenance costs and expertise involved.

Responsibilities for O&M of water supplies by the beneficiaries have been categorised into three groups as follows:

Small Water Supply Projects

36. Examples of these are shallow wells fitted with hand pumps, beneficiaries will be encouraged to participate through community participation programmes. Such projects, upon completion will be handed over directly to the respective communities through their village government. The mechanism for financing the running of the schemes will



take into account the capability of villages so that the village which is not able to meet the costs is not denied water supply service. The community will be involved in the process of conserving, protecting and operation and maintenance of the their project.

The village government will be responsible for:-

- (a) Ensuring that the wells are working
- (b) Preparing a programme to ensure that the wells are protected and kept in a clean environment.
- (c) Setting by-laws regarding conserving, protecting and ensuring environmental cleanliness of the surroundings of water supply sources.

*Changed in
1995 amendment*

Medium size Water Supply Project

37. These are medium size large projects and those serving one or two villages with population not greater than 3000. These projects will consist of pipelines, domestic water points and diesel or electrical pumps or gravity feed lines. The villagers will contribute towards the costs of:
 - (a) Minor repairs of domestic points, burst pipes, and purchase of minor spares.
 - (b) Remuneration for the scheme attendants.

Large Water Supply Projects:

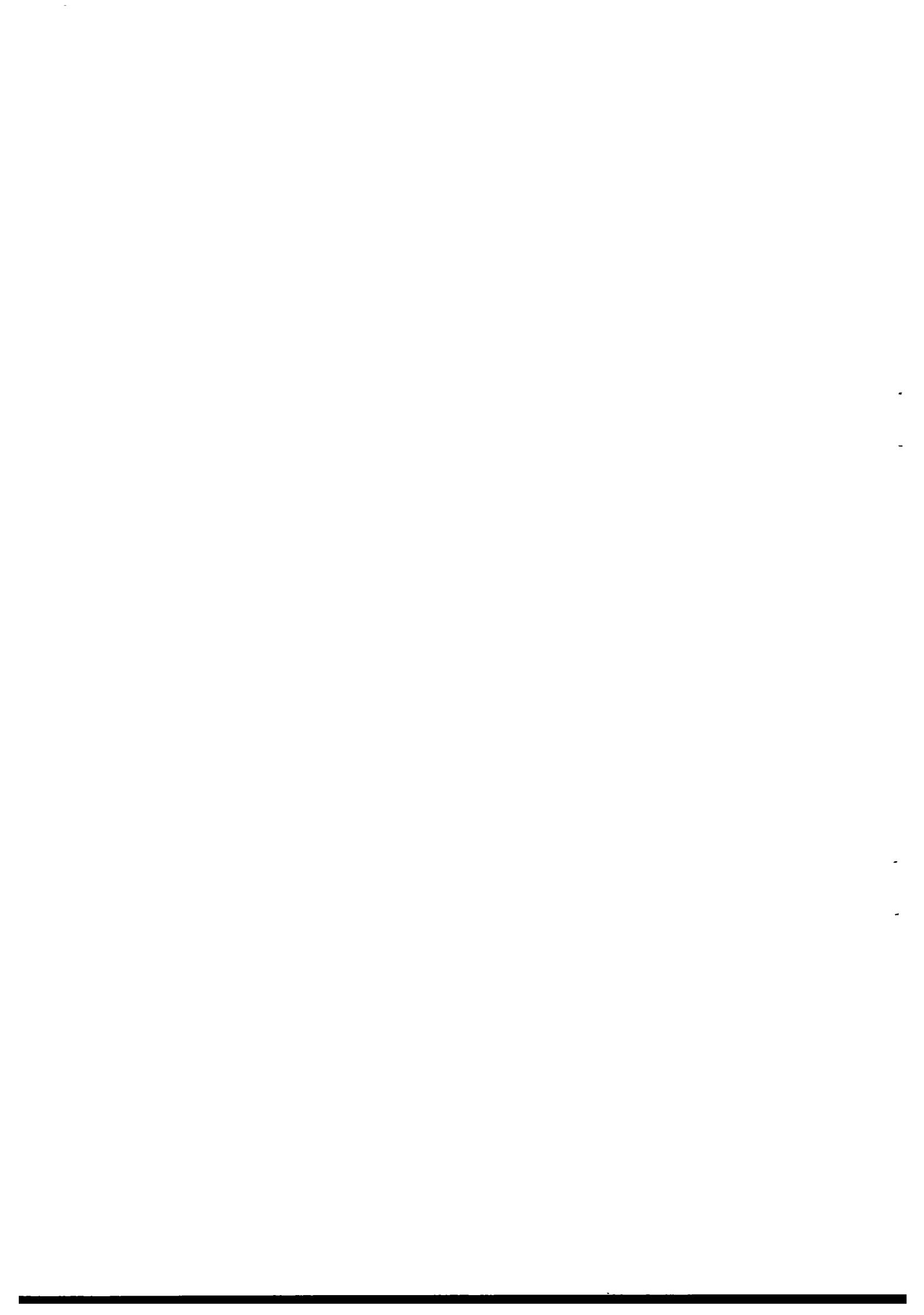
38. These are projects serving more than 3000 people or more than two villages situated in two different Districts. It is the responsibility of the Regional Authorities to look after these projects. However the community and the village government have the responsibility for the security and protection of domestic water points within their villages.

National Projects:

39. These are large schemes requiring substantial capital investment and expertise for supervision and operations and maintenance. Even Regions can not manage them. Such projects will be supervised and operated directly by the Central Government.

Rehabilitation of Rural Water Supply Projects

40. Currently, 40% of the completed water supply schemes are either operating below their design capacity or not functioning at all. Those projects must be rehabilitated.



Since rehabilitation of such projects is very costly, it will not be possible to revamp either all of the projects operating below their designed capacity or those which are not functioning at all at the sametime. The exercise will be carried out in phases. In selecting the projects to undergo rehabilitation the following criteria will be observed:-

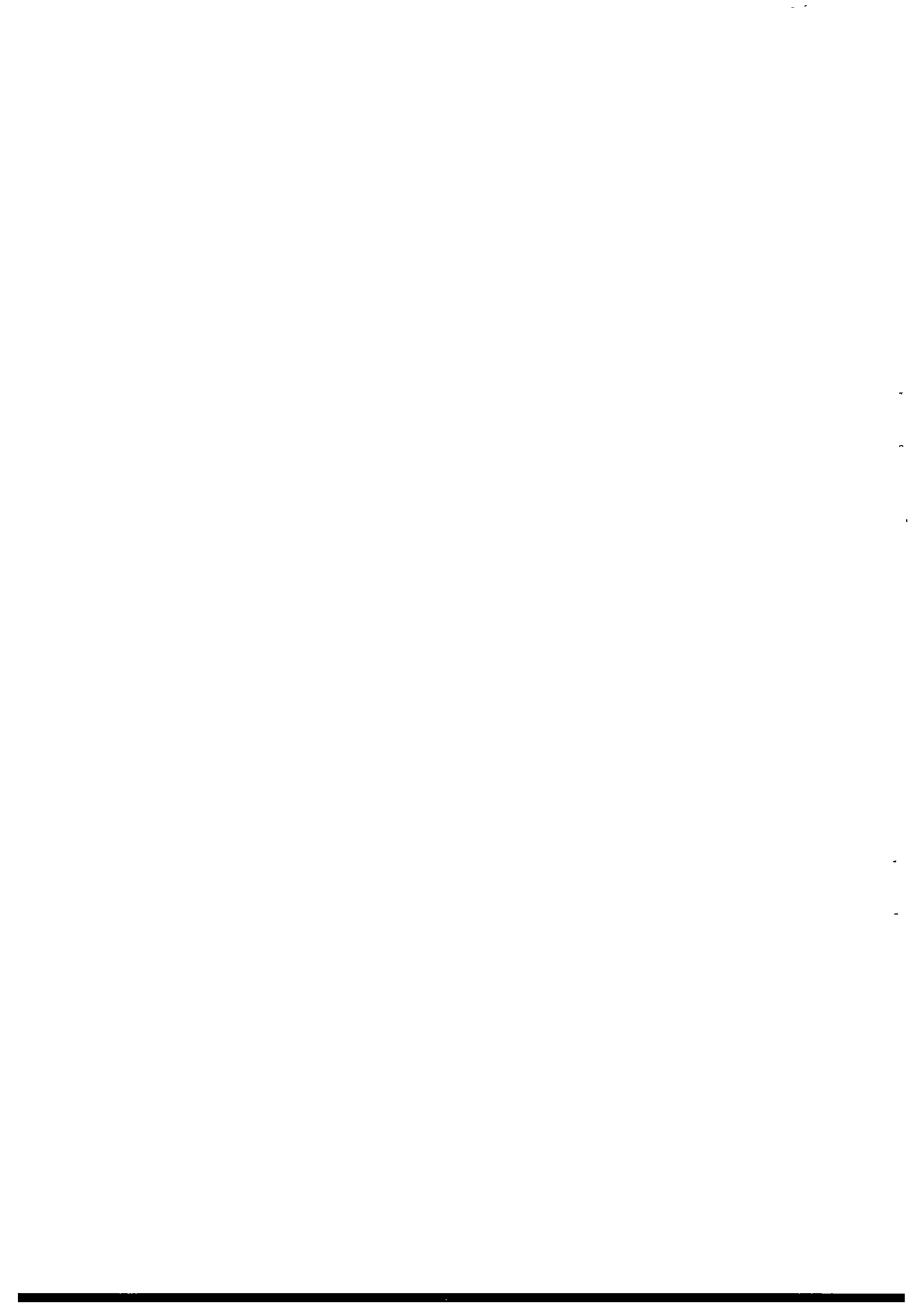
- (a) Areas experiencing drought, chronic water shortages and water borne diseases.
- (b) The cost of rehabilitation of the project in relation to the national economy.
- (c) Water supply sustainability after rehabilitation in relation to the type of applied technology and the cost of operation and maintenance.
- (d) The willingness, ability and readiness of beneficiaries to participate fully in the operation and maintenance, security, preserving and protecting the project. This can be assessed for instance by observing their participation in self help projects, existence of water committees and water funds etc.

Operation and Maintenance of Rural Water Supplies

- 41. The major reason for the malfunctioning of completed scheme is lack of periodical and preventive maintenance, particularly as the schemes begin to age. Lack of routine maintenance of water supplies results from:
 - (a) In adequate recurrent budget.
 - (b) Reluctance to contribute or inadequate contribution by the beneficiaries.
 - (c) Inadequate technical personnel with adequate qualifications and expertise. *eqq/quick*
 - (d) Inadequate working tools
 - (e) Irresponsible attitude displayed of organizations charged with the task of maintaining water supply projects.

Distribution of Responsibilities:

- 42. In order to enhance operation and maintenance of completed water supply projects there should be a proper distribution of responsibilities identified at each level ranging from village, District, Region to National.



(a) Village level

- (i) To meet operation and maintenance costs of small schemes that are already completed and handed over to the village government. This will however depend entirely on the financial ability of the village.
- (ii) To establish water committees and establish a village water funds.
- iii) The village will collaborate with the District Water Engineer's office on issues pertaining to maintenance of village water supplies.
- (iv) The village will ensure it obtains and own the water right for its water sources.
- (v) Under no circumstances is the village government permitted to make any alterations on the water project without prior permission of the central government albeit the fact that the water project is a property of the village.
- (vi) The village is permitted to carryout maintenance activities that are within its technical capability or employ a technician/craftsman recognized by the Ministry responsible for Water provided that the criteria for design and construction of water projects are maintained accordingly.
- vii) The community should be enlightened and trained in applying simple technologies such as gravity flow systems, rain-water harvesting, construction of shallow wells fitted with hand or wind pumps and construction of small dams, charcos and ways and methods concerning their protection and conservation.

(b) District Level

- (i) Operation of rural water supply projects.
- (ii) All maintenance activities proved to be beyond the village level technical capability.
- iii) To ensure easy availability of fuel and spareparts required for rural water projects.
- (iv) Training of rural technical personnel
- (v) Mobilization of village communities on community participation and establishment and management of the water funds.

changed in 1998
in stead of village
responsibility
was committees/beneficiaries



(vi) In collaboration with the central government the district councils will evaluate the financial ability of the village governments to fund the rural water projects.

(c) **Regional Levels**

- (i) To supervise and coordinate all water supply activities in the region.
- (ii) To operate and coordinate water supply services at both District and Regional headquarters/
- iii) Conduct training.
- (iv) Ensure availability of construction material and spareparts.

(d) **National Level**

The Ministry responsible for water will be the overall incharge of all matters pertaining to operation and maintenance of water supply schemes by preparing guidelines for operation and maintenance of water projects in the country. In addition the Ministry responsible for water will be charged with the following responsibilities:

- (i) To provide technical advise and to finance large scale maintenance of water projects whenever required.
- (ii) To coordinate water activities in the country.
- iii) To implement and operate large water supply schemes.
- (iv) To train engineers, technicians and craftsmen.
- (v) To coordinate availability and distribution of construction equipment, spares and plants.
- (vi) To strengthen, Regional and District workshops.
- vii) To set standards for materials and types of various equipment used in construction of projects, and provision of water supply services for the whole country so as to ensure standardization.

Completion of Ongoing Water Projects

43. From now on the planning and implementation of rural water supply projects will put priority on the completion of construction works on ongoing projects which for various reasons have not been completed.

*changed part.
annexment
Nky 1996*

*change
1995*



CHAPTER FIVE

URBAN WATER SUPPLY PROJECTS

Project planning and strengthening of urban water supply services

44. This policy emphasizes on projects planning and strengthening of urban water supply services along the following lines:
- (a) Plans for operation and maintenance of urban water supplies in the urban centres where feasibility studies have been carried out will be evaluated and respective schemes will be rehabilitated and developed accordingly. These urban centres include Dar es Salaam, Tanga, Arusha, Mwanza, Mbeya, Morogoro, Tabora, Shinyanga, Lindi, Mtwara, Iringa, Musoma, Bukoba and Moshi.
 - (b) The water problems facing the capital city of Dodoma would be given special attention so that the availability of water marches with the expansion of the capital and satisfies its present and future demand.
 - (c) Water supply plans for Regional Headquarters will be reviewed so as to match water supply needs with the present development requirements for every urban centre.
 - (d) Urban areas experiencing acute water shortage for industries and institutions and those experiencing endemic communicable diseases would be given priority.
 - (e) Industries which do not require good quality (clean) water for production activities would be supplied with water from alternative sources.
 - (f) Each house owner and institutions should construct a storage reservoir of storage capacity enough to last for one day to a week at most.
 - (g) Water master plans for all district headquarters will be prepared.
 - (h) In preparing urban water master plans the following would be observed:
 - (i) Establish water resources which could be developed and put into use whenever water demand rises.
 - (ii) Integration of urban water supply plans and programme for sewerage and environmental sanitation.



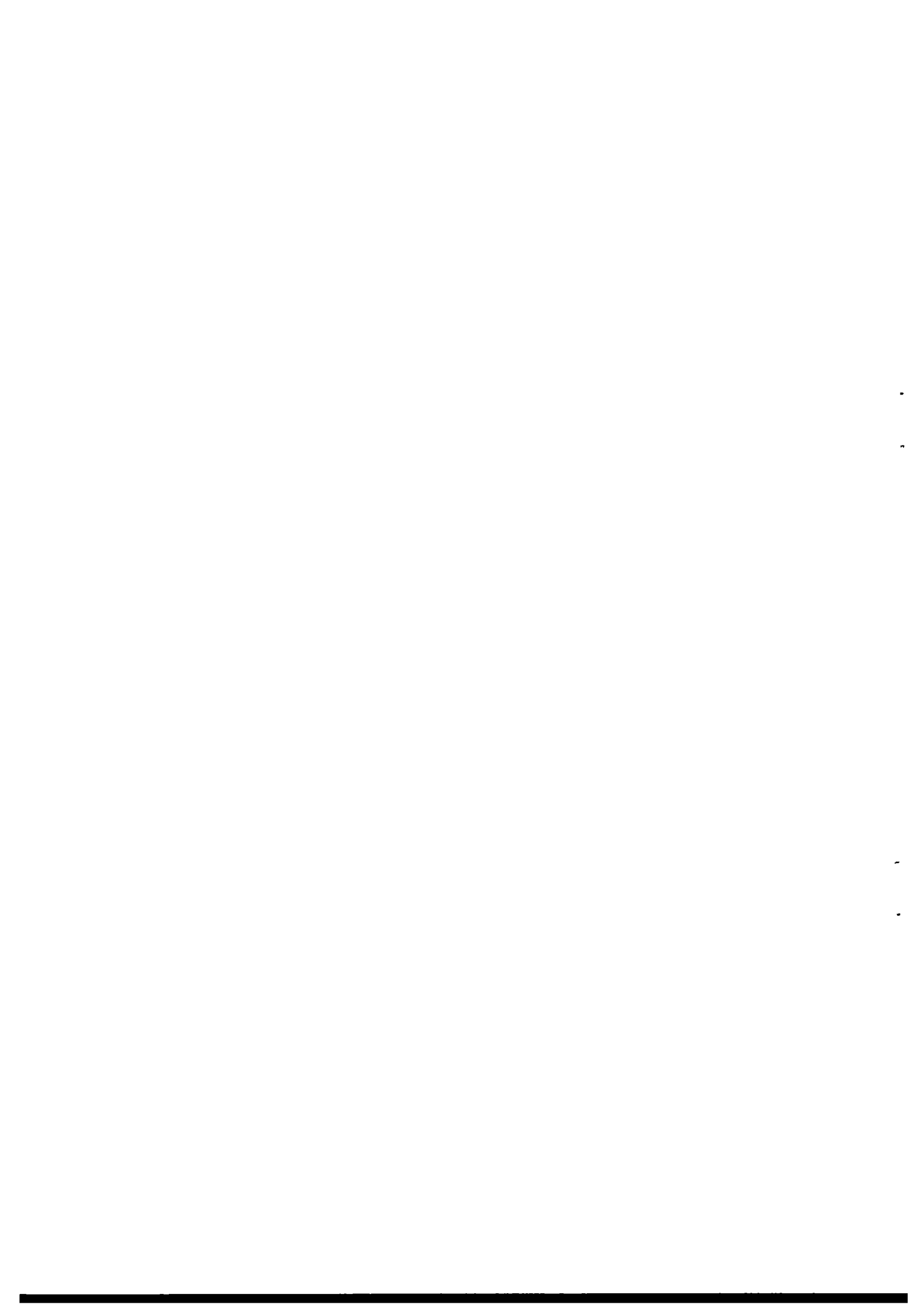
- (i) Water master plans for each urban centre will be prepared with the aim of satisfying demand for the next 20 years.
- (j) Urban water projects would be evaluated at a ten (10) years cycle and the increase in water demand for the next 10 years would be taken into account.
- (k) Implementation of water project usually takes place at least 10 years after inception. Thus before implementation, the projects should be reviewed so as to take note of the changes that have occurred during the very period and the anticipated condition during the next 10 years period.

Rehabilitation and maintenance of urban water projects

- 45. Plants and water distribution systems (pipes) in most urban centres are dilapidated and some are worn - out thus resulting in leakages and lack of or shortages of water in many areas. The main reason for this state of affairs is lack of preventive maintenance, the reasons already stated for rural water supplies.
- 46. Another reason is that the existing urban water master plans were prepared many years back without aiming at satisfying the present demands. From now, the preventive maintenance for plants and pipes will be given due weight.
- 47. All urban water schemes which are either non-operative or operating below designed capacity including the plants and distribution pipes will be rehabilitated. Since this is a costly exercise, implementation will be carried out in phases. Any programme regarding rehabilitation of water projects must take note of all important aspects as follows:
 - (a) The source of water
 - (b) Plants for treatment and pumping
 - (c) Trunk main
 - (d) Water storage tanks
 - (e) Distribution network

Completion of ongoing projects

- 48. From now on, planning and implementation of urban water supplies will give priority to the completion of on-going projects, which for various reasons have not been completed.



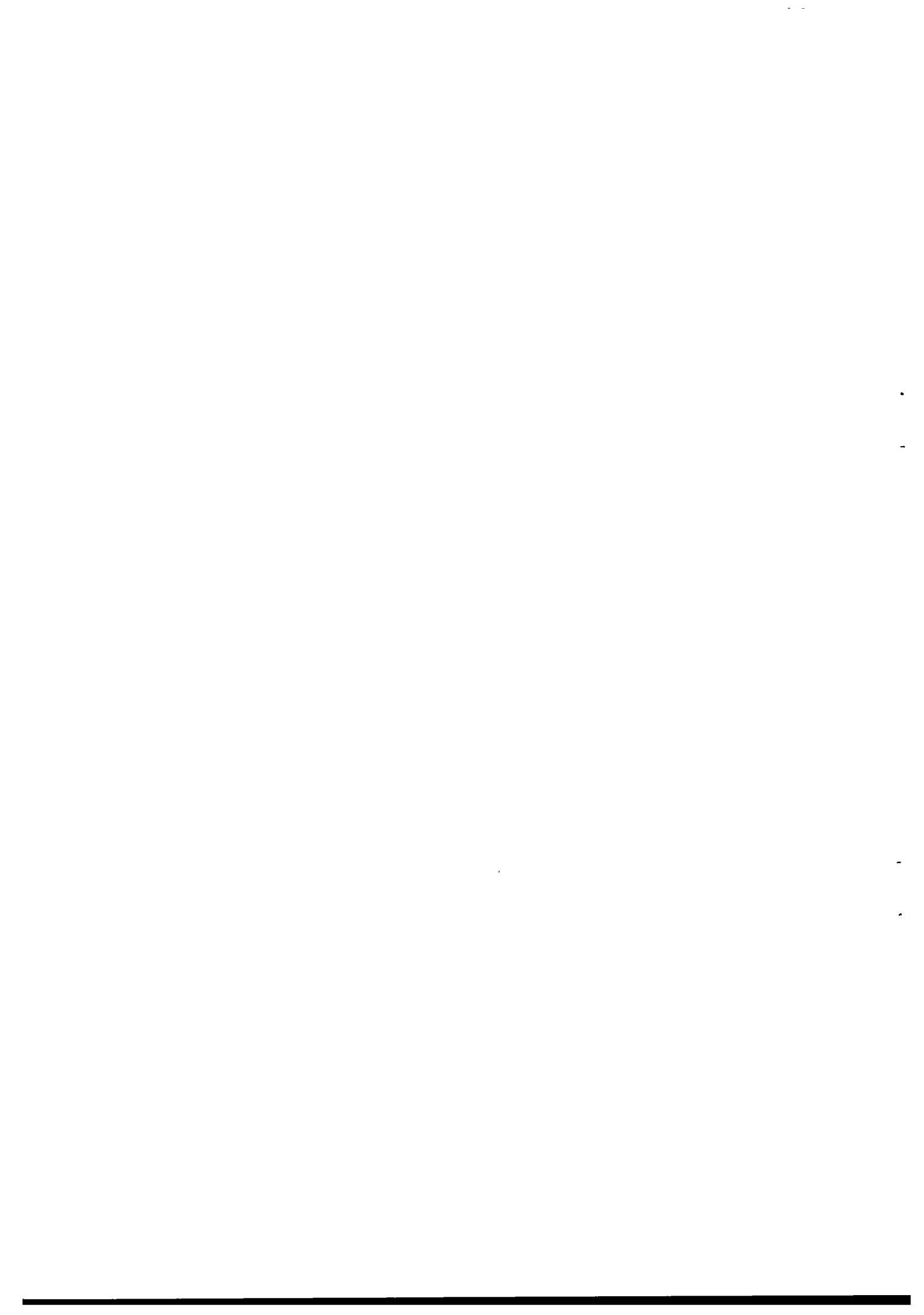
Urban Water Tariffs

49. One of the major problems in the provision of water services is inadequate funds, operations and maintenance of the schemes and subsequently the Capital investment. Thus the emphasis to strengthen urban water supply services shall include efforts to ensure that the water bills are commensurate to the services rendered. Customers using large amount of water for commercial purposes will pay much more than those using water for domestic purposes.

National Urban Water Authority (NUWA)

50. (The National Urban Water Authority (NUWA) was established in 1981 with the aim of (consolidating) strengthening and sustaining water supply services in urban areas. Due to NUWA's infancy it was decided that NUWA starts its activities with the Dar es Salaam city water supply then step by step depending on the experience gained, NUWA would assume the responsibility of supervising activities and development of water supply services in other urban centres in the country. Since NUWA had inherited various problems of the Dar es Salaam Water Corporation such as lack of equipment, working tools, funds and dilapidated plants and distribution pipe network it has been unable to extend its operations to the other urban centres. Thus:

- (a) NUWA activities will be evaluated with the aim of strengthening urban water services.
- (b) At the moment NUWA should continue to provide services in Dar es Salaam city.
- (c) Regional Water Engineers will operate and manage water supplies at Regional and District Headquarters in their respective regions.



CHAPTER SIX**TECHNICAL PERSONNEL AND CENTRAL SERVICES****Requirements for Technical Personnel in the Water Sector**

51. In meeting its objective of providing all people with clean water by the year 2002, the technical personnel requirement in the water sector is approximately 900 engineers, 4390 technicians and 22000 craftsmen. The aim is to provide one expert for 1,300 - 2000 people supplied with water by the year 2002. At present the technical staff is inadequate and therefore the following measures will be taken:
- (a) The number of technical personnel will be increased so as to meet the internationally acceptable proportion of 1:5:25 that is one engineer assigned to 5 technicians and 25 craftsmen.
 - (b) The Regional offices will be given mandate to take decisions in planning, preparation, design construction and operation of projects and plants, as well as provisions of hydrological and hydrogeological services.
 - (c) It will be ensured that each district is assigned one engineer who will be responsible for planning, control, construction and operation of projects implemented at district level.
52. Other requirements for engineers, experts and technicians of various levels will be in accordance with the implementation of the water programme. All water sector experts will, technically be under the ministry responsible for water although they may be employed by other organizations such as the urban and district councils or the central government. Thus the ministry will be involved in preparation of training programmes and coordination of their technical conduct.

Training Programmes

53. Training programmes will be prepared accordingly taking the following into consideration:
- (a) Assessment of the present manpower strength vis-a-vis actual requirements and constraints facing the water sector and the result so obtained will form a basis for preparation of the training programmes.
 - (b) Training programmes will emphasize both on the training for existing experts and supporting staff and the training of new ones.



- (c) The Water Resources Institute curricula will be reviewed so as to emphasize on practical rather than theoretical training.
- (d) The ministry responsible for water will cooperate more closely with the University of Dar es Salaam so as to train and acquire a sufficient number of Engineers and other water experts.
- (e) The training programme for water scheme attendants nominated by village government will be prepared and conducted in accordance with the rural water projects implementation requirements and the community will be enlightened on the importance of operation and maintainance of their water schemes.

Rwegarulila Water Resources Institute

54. The Rwegarulila water resources institute will be strengthened by carrying out the following:
- (a) Providing it with experts, equipment and necessary facilities such as laboratories, workshops, classrooms, teaching aids, books etc.
 - (b) Training and motivating the teachers so as to enhance their skills enthusiasm and competence in planning and implementing training programmes and strategies and in proving the curricula.
 - (c) To collaborate with colleges and others institutions in carrying out research, evaluation and exchange of knowledge and skills.

General services for the water sector

55. The general services are concerned with collection, analysis and application of data, construction of dams and wells, MAJI Central workshop, Regional and District workshop and the Water Resources Institute. For a long time these services have been to a large extent adversely affected by dilapidated and lack of equipment and inadequacy of both local and foreign funds. As regards the general services, the following will be emphasized and implemented:
- (a) To enhance cooperation with our neighbouring countries in data collection, water utilization, control of rivers and lakes pollution and environmental degradation.

- (b) Utilization of water as a natural resource for the development and benefit of the Tanzanian citizens. International Co-operation will be pursued especially where it is likely to boost our ability to utilize our waters for the benefit of Tanzanians.

Boko, Regional and District Workshops and Maji Central Stores

56. Boko Central Workshop and the Regional and District Workshops will be strengthened accordingly. Fabrication of various spare parts aimed at self sufficiency will be developed by further training of engineers and technicians at these workshops. MAJI Central stores is the backbone of proper construction and operation and maintenance of water projects, but at present its ability is low and inadequate. Emphasis will be focused on strengthening the central store and both the Regional and District stores so that they can satisfy the needs of the water sector.



CHAPTER SEVEN**INTEGRATED WATER SUPPLY, ENVIRONMENTAL SANITATION,
SEWERAGE AND DRAINAGE PROJECTS**

57. Integrated rural water supply and environmental sanitation projects were started during the 1980s. The aim of these projects is to ensure that construction of rural water supply projects is implemented along side sanitation projects especially construction of latrines and that villagers are mobilized to keep their environments clean through self help. For successful implementation of these projects in rural areas the Ministries responsible for Water, Health and Community Development will undertake the following:-
- (a) Continue to place emphasis on community health education so as to enable the beneficiaries to understand the relationship between faecal contamination, wastewater, environmental pollution and communicable diseases.
 - (b) Ensure that environmental sanitation projects, especially construction of pit latrines in the rural areas are implemented alongside water supply projects.
58. The party will assist in mobilizing the beneficiaries to keep their environments clean and to participate in construction of projects through the spirit of community participation.

**Sewerage and Drainage Systems and Environmental Sanitation
in Urban Areas**

59. Supervision of environmental sanitation and sewerage and drainage activities in urban areas of our country is unsatisfactory. As a result, many parts of urban areas are breeding grounds for various disease spreading insects. In order to redress this situation, Town, Municipal and City councils will be required to undertake the following:
- (a) Take responsibility in all matters related to operation and maintenance of equipment, open drains and all sewerage and drainage systems.
 - (b) Establishment of a department responsible for sewerage and drainage, and environmental sanitation in the urban centres



Sewerage Systems:

60. Regarding sewerage the following have to be emphasized and implemented accordingly:
- (a) Sewerage systems are expensive to establish and hence should only be implemented in the following areas:
 - (i) Sections of urban areas where adequate infrastructure development has taken place.
 - (ii) Institutions where due to high population other less costly alternatives are not appropriate.
 - (b) Oxidation ponds and sewerage lagoons should be used in medium and low density areas.
 - (c) In high density areas where no sewerage and drainage systems exist, Ventilated Improved Pit (VIP) Latrines should be adopted regardless of whether the areas in question are surveyed or not.
 - (d) All institutions responsible for manufacture and importation be required to abide with manufacturing or importation of flush toilets from now onwards with the standard 6 litres flush capacity units instead of those with 9 - 13 litres flushing capacity.
 - (e) Where institutions and industries have effluent which can be harmful, the respective industries should make necessary pre-treatment prior to disposal into urban wastewater treatment plants.
 - (f) Low cost technologies capable of treating wastewater to an acceptable International Standards should be adopted.
 - (g) Use of low cost VIP latrines be emphasized everywhere.

Urban Storm Water Drainage Systems

61. The Ministry responsible for water will continue with the construction of storm water drains. The Central Government and Local Governments are responsible for the construction of roads in urban areas. During construction of urban roads these institutions should ensure that construction of the associated stormwater drains is undertaken simultaneously.



CHAPTER EIGHT
COMMUNITY PARTICIPATION, WATER FUNDS AND
DONORS PARTICIPATION

Community Participation

62. In order to create a sense of ownership towards water supply schemes, the beneficiaries must be involved and motivated throughout the project cycle from initiation, planning, construction, operation, maintenance and protection of schemes according to their ability.

Water Committees

63. In order to provide the beneficiaries with full responsibility of supervising their water supply schemes and other related services water committees will be established at the following levels:
- (a) Village Water Committees
 - (b) Water sub-committees in urban areas
 - (c) Urban Water Committees for each Urban centre
 - (d) District Water Steering Committees
 - (e) Regional Water Steering Committees

Ministry responsible for water

64. The Ministry responsible for water shall prepare guidelines which shall elaborate on:

The organisational structure of the water committees and procedures of nominating committee members with due regard of involving all related sectors and institutions such as the Party, other related Ministries etc:
 Committee meetings and functions of each committee at each level.

this has been changed in 1995-

Women

65. Women are the main bearers of the burden for searching water and are the ones affected most by the problems of shortage of water and poor water supply in rural areas. In the implementation of this policy, the issue of women involvement in water development programmes will be accorded due priority.

Women will be fully involved in the Water Committees and at all forums dealing with planning and preparation of water projects. Training programmes for women in simple



technologies in rural areas will be formulated and properly supervised. However, during the process of women involvement in activities which demand the use of physical energy, care will be taken to ensure that women are not overburdened.

Water Funds

66. The underlying principle in the implementation of this policy is "self reliance", whereby the village Governments and the villagers themselves, by using their own resources will construct, operate and maintain their own small rural water supply schemes as stipulated in this policy. In order to achieve this, all villages with water supply schemes or intending to have one, shall establish Water Funds which shall be kept in a special and separate bank account. The intended benefits of such a Fund are:

- (a) The creation of an understanding that water supply is not a free service although the Central Government still has the responsibility of contributing towards provision of this basic service.
- (b) To enable the beneficiaries to adequately contribute materials, cash and in kind in national building activities towards construction, operation and maintenance of their water supply schemes.
- (c) To enable the beneficiaries to own, operate and maintain water supply schemes in their respective villages.

Donors Involvement

67. Approximately 70% of all rural water supply projects and a major part of urban water supply projects is funded either by external donors or Foreign loans. Due to lack of a clear water policy, most donors are implementing water programmes without proper guidelines. One of the main drawback is the importation of equipment and plant of which spares are difficult to obtain or manufacture locally. Moreover, there has been differences in design criteria used and hence lack of standardization in construction equipment and plants from one region to another. In order to minimize this drawback, the following steps shall be undertaken:-

- (a) The Ministry responsible for water will coordinate all donor implemented water supply activities in the country. The Ministry will also coordinate all foreign water experts working in Government or non-government implemented projects.



- (b) All donors will be required to abide with design criteria and the various guidelines which will be issued from time to time by the Ministry responsible for water.
 - (c) New guidelines will be issued and existing ones will be reviewed regularly.
68. Emphasis will be placed on the utilization of few important expatriates provided by donors who will work hand in hand with local counterparts with the aim of building the capacities of the latter. Engagement of external consultants should be done only when indigenous experts are not capable of carrying out the tasks in question or when conditions attached by the financial supporting agency in the construction of project so demand.
69. Immediately after completion of projects, it has been a tendency that donors leave the operation and maintenance responsibilities to the Government. The practice now will be that after completion of such projects and handing over, there will be a minimum guarantee period of six months during which donors will continue to oversee the running of the schemes and rectify all identified problems during the period.

It is also emphasized that the donor assistance is properly utilized particularly in enhancing the local capabilities of the institutions entrusted with the implementation of the water supply programme. Furthermore, donor support should be directed towards training and strengthening the local capabilities in local manufacture and fabrication of water supply facilities not locally available and strengthening of the research capabilities on water related activities.



CHAPTER NINE

RESPONSIBILITIES OF VARIOUS SECTORS IN THE IMPLEMENTATION
OF THE WATER POLICY

Responsibilities of "Chama cha Mapinduzi"

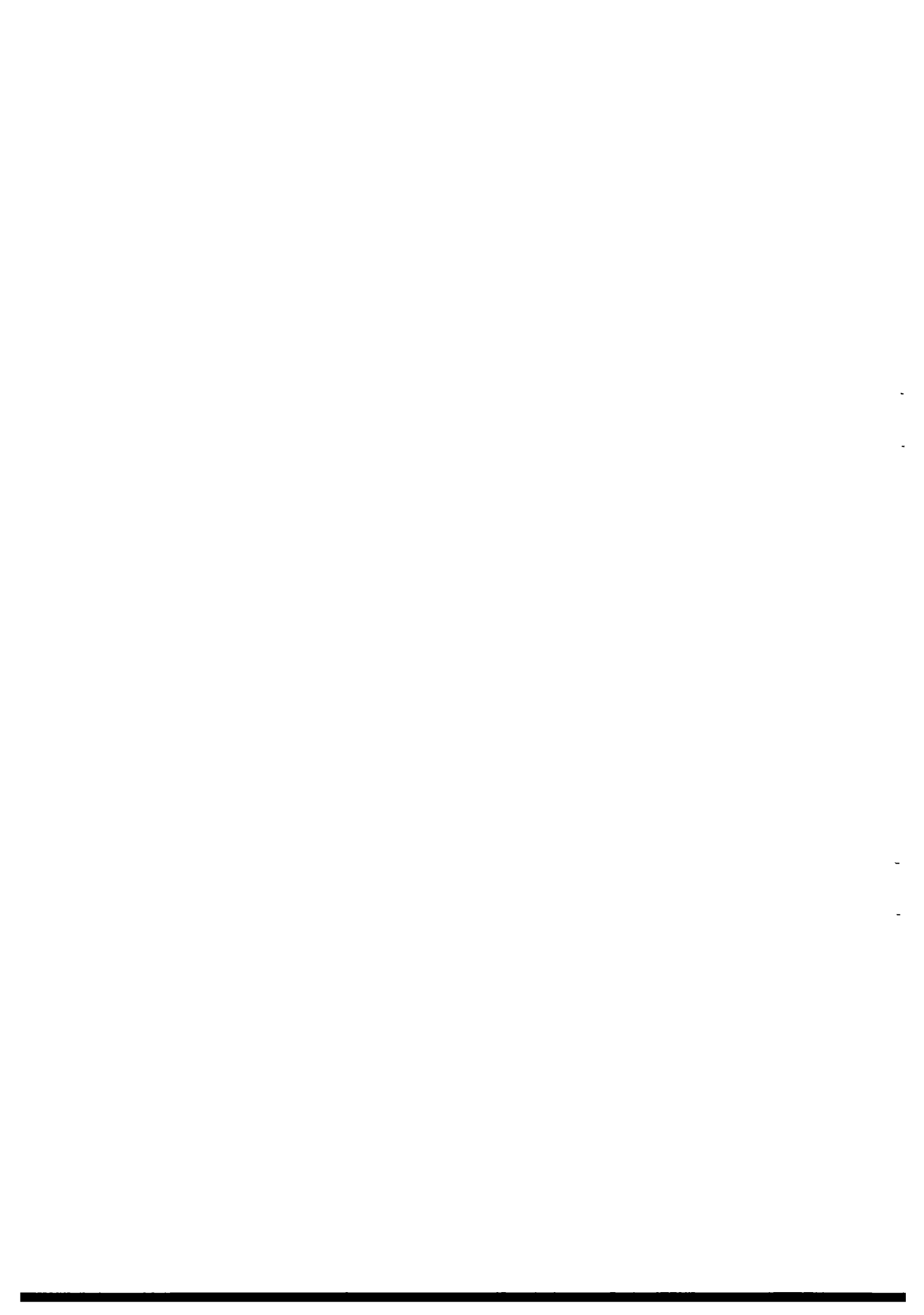
70. Responsibilities of "Chama cha Mapinduzi" (CCM) are:

- (a) Mobilization of rural and urban beneficiaries so that they participate effectively in the implementation and operation and maintenance of their water projects and let them realize that water supply is costly and thus they are supposed to contribute towards this service.
- (b) To educate the beneficiaries so that they realise the importance of economical water usage, caring for water supply facilities and reporting to relevant authorities whenever damage occurs.
- (c) To educate the beneficiaries on protection of water sources and to avoid bush fires, cultivation or deforestation and dumping industrial wastes in the vicinity of water sources. Furthermore to educate the beneficiaries on careful usage of pesticides and fertilizers.
- (d) The party at all levels shall make a follow up and monitor the water availability for various purposes and frequently provide guidelines so that objectives and guidelines contained in the CCM programme (1987 - 2002) are attained.
- (e) The party will assist in motivating the people to maintain a clean environment and to participate in construction of projects through community participation.

Responsibilities of the Ministry responsible for water

71. In addition to all other responsibilities already identified in this policy, the Ministry responsible for water will also be responsible for the following:

- (a) To develop and supervise the implementation of the water policy.
- (b) To be responsible for:
 - (i) Sewerage, wastewater and storm water drainage
 - (ii) Floods and Development of River Basins
 - iii) Water Quality and pollution control.
- (c) To prepare and supervise water development budgets as well as to prepare and review water tariffs.



- (d) To supervise the utilization of water development budgets and to prepare and review water tariffs.
- (e) To formulate strategies for integration of water programmes with National Development Plans.
- (f) To develop design criteria and standards required in the implementation of Water Supply Projects.
- (g) To provide guidelines and technical advise to Regional and District Offices in planning preparation, construction, operation and maintenance of projects.
- (h) To issue water rights.
- (i) To design, construct and operate water projects which require expertise and technological know how that is beyond regional capability.
- (j) To research and develop pilot projects aimed at improving performance and quality of work and service.
- (k) To supervise and provide central services such as Hydrology, Hydrogeology, Drilling and Construction of soil and Water Laboratories.
- (l) Implementation of special responsibilities in Regions where lack of expertise and tools exists.
- (m) To supervise and coordinate donor assisted projects.
- (n) Running of MAJI Central Stores and Workshop services.
- (o) Formation of teams to monitor progress of water supply projects.
- (p) To collaborate with Ministries and other Institutions in order to make use of available equipment and tools for water supply activities, for example equipment owned by the Ministry of Communication and Works for construction of roads which could be used in construction of dams.

Responsibilities of various other Ministries

Ministry responsible for Health:

72.

The objective of providing water to the people, incorporates provision of better Health services. Thus the Ministry responsible for Health shall deal with the following issues:

- (a) Community Health Education in utilization of water supplies.



- (b) Procedures for maintaining a clear and healthy environment in rural and urban areas.
- (c) Construction of latrines.
- (d) Training on Health aspects, cleanliness of water and environmental sanitation.
- (e) Coordinating drinking water quality monitoring activities. In addition the Ministry responsible for Health will participate at all levels of water programme implementation.

Ministry responsible for Community Development

73.

The government objective is that the Ministry responsible for Community Development will deal with the following:

- (a) To formulate strategies in all issues pertaining to community mobilization in planning, construction and maintenance of water supply projects.
- (b) To conduct training on mobilization for the community and workers of the Ministry of Water.

Ministry responsible for Local Governments

74.

The objective of the policy is that District Councils should implement and operate Rural Water Supply projects through involvement of village Governments. In order to attain this objective, the Ministry responsible for Local Governments will be responsible for the following:-

- (a) To give priority to contribution towards costs for implementation and operation of water supply services in Districts.
- (b) To submit requirements for engineers, technicians and craftsmen to the Ministry responsible for water.
- (c) In collaboration with the Ministry responsible for water to employ all technical personnel required in the districts with exception of experts in Hydrology, Hydrogeology, Drilling and Water Laboratory Technology.
- (d) To collaborate with the Ministry responsible for Water and other Ministries in mobilizing the rural population to participate in the implementation, operation and maintenance of their water supply projects.



Ministry responsible for Agriculture and Livestock

75. The objective of the policy is that the Ministry responsible for Agriculture and Livestock shall be responsible for the following:
- (a) Development of water for irrigation purposes.
 - (b) Control and proper use of all waters utilized in irrigation in addition to ensuring ownership of water rights for all irrigation projects.
 - (c) Provision of accurate data on livestock and water requirements in the operation of the livestock sector.
 - (d) To educate and encourage the community and owners of big estates such as sisal and coffee to observe the legislation regarding pollution and destruction of water sources during execution of their various activities.
 - (e) To ensure proper and safe utilization of pesticides and fertilizers.

Ministry responsible for Commerce and Industries

76. The objective of the policy is that the Ministry responsible for commerce and industries shall deal with the following:-
- (a) To strengthen the existing industries so as to satisfy the requirements for equipments plants and water treatment chemicals in the country.
 - (b) In collaboration with the Ministry responsible for water to convince all prospective investors to establish industries for production of equipment, plants and water treatment chemicals in the country.
 - (c) To establish a system that will ensure that industries innovate and manufacture tools and equipment powered by wind, solar energy and biogas in supplying water to the people. In addition, to manufacture equipment which will simplify the distribution and collection of water and rainwater harvesting.
 - (d) To collaborate with the Ministry responsible for water in ensuring that the establishment of new industries takes into consideration the availability of adequate water supply.
 - (e) To collaborate with the ministry responsible for energy in emphasizing rural and urban electrification of areas yet to be covered so that electricity replaces diesel in running water pumps.



Ministry responsible for Communication and Works

77. The objective of the policy is that the Ministry responsible for Communication and Works through its Meteorological Department shall collaborate with the Ministry responsible for Water in:-
- (a) Collection of Meteorological Data and provision of equipment required in the collection of such data.
 - (b) Utilization of various construction tools in the completion of water supply project.

Ministry responsible for Lands, Natural Resources, Environment and Tourism

78. The objective of the policy is that the Ministries responsible for Lands, Natural Resources, Environment and Tourist will deal with the following:-

- (a) To emphasize preservation of the environment, water sources, trees and proper utilization of land, forests and water resources.
- (b) Formulating and execution of legislation and training principles in proper utilization and preservation of the environment as well as controlling environmental pollution.

Ministries responsible for Education

79. The objective of the policy is that the Ministries responsible for Education will deal with the following:-
- (a) The Ministries should emphasize on education in environmental and water sources preservation and proper utilization of water resources particularly at primary and secondary school levels.
 - (b) To continue ensuring that the education trend emphasizes the increase of Water Engineers with the aim of increasing the number of local water experts and to enable the water sector attain technical self sufficiency.

Ministry responsible for Justice

80. In collaboration with the Ministry responsible for Water, the ministry responsible for Justice should ensure that the existing regulations regarding proper water utilization are regularly reviewed and updated.

Responsible at Regional Levels

81. Regional Water Offices or Regional Water Engineers' should be responsible for the following task:-
- (a) Implementation of the programme regarding the water sector in the respective regions.
 - (b) To supervise the implementation of the Policy and the water programme in the region.
 - (c) To collaborate with other sectors in the Region in the preparation of Regional Development Plans.
 - (d) To supervise and provide central services such as Hydrology, Hydrogeology, Drilling and Water Laboratories.
 - (e) To prepare and conduct training course for craftsmen in the Region and at the District.
 - (f) Investigation, surveys, design and supervision of construction of all water supply projects in the region.
 - (h) To ensure that the Regional Water Committee is functional.

Responsibilities at District Level

82. District/Town councils through the district Water Engineer should be responsible for:
- (a) Planning and Developing Rural Water Supply Projects in collaboration with village communities.
 - (b) Provision of technical advise to the District Council regarding development of the Water Sector.
 - (c) Construction of low cost water projects such as rainwater harvesting, charcos and shallow wells fitted with handpumps.
 - (d) Operation of selected District Water Schemes.
 - (e) Supervision of policy and district Water Programmes through the District Water Committee.
 - (f) Ensuring local availability of spares and equipment so as to enable easy procurement by the villages.
 - (g) Assisting the villages to maintain their plants or pumps.
-



- (h) Supervision of establishment and utilization of the Water Fund.
- (i) Seeing to it that villages owning Water Projects possess Water Rights.
- (j) To ensure that Urban water sub-committees and Village Water Committees are functional

Responsibilities at Village Level (Village Government)

83. Village Governments will be responsible for the following:-

- (a) To participate in planning, selecting, constructing, maintaining and operating of Rural Water Supply Projects.
- (b) Ownership of Rural Water Supply Projects. / *Beneficiaries*
- (c) Protection and maintenance of existing and potential water supply sources.
- (d) Provision of essential data such as human and livestock population, and requirement for irrigation which will be useful in the preparation of water supply programmes.
- (e) To ensure that the village water committee is functional.
- (f) Preparation, development and operation of their water projects.
- (g) Legal ownership of water sources and their corresponding village water supply projects.
- (h) Formulation of by laws aiming to control proper utilization of water, maintenance of equipment and water sources.

Responsibilities of the private sector

84. The private sector will be involved in provision of water supply services in areas where the government is not capable of doing so. The implementation shall be in accordance with the Water Utilization Act. No.42 of 1974. Such projects should be technically supervised by an Engineer approved by the Ministry responsible for water.

*has changed
(revised)*



CONCLUSION

85. The implementation of this policy, which is expected to eliminate the existing water supply problems is supposed to be in line with the implementation of various existing policies which include: Agriculture, Livestock, Fisheries, Science and Technology, Women Development, Food and Nutrition, Health, etc., the success of its implementation will largely depend on responsibility, concerted efforts and collaboration between Ministries and various sectors and institutions as elaborated in this policy. "Chama cha Mapinduzi" and the Government as leading organs must ensure that there is close supervision and control in order to guarantee the realization of the objectives.

*The role of CCIT is not
so strong and may be
not formalized anymore.
1995/96*



MINISTRY OF WATER, ENERGY AND MINERALS

Telegrams: "MAJ"
Telephone: 31433-5.
In reply please quote:

SOKOINE DRIVE/MKWBFU,
P.O. Box 9153,
DAR ES SALAAM.

MWEM/OP.136/16
Ref. No.

1/09/1995



REF. AMENDMENT OF THE WATER POLICY ON OPERATION AND DEVELOPMENT OF LARGE RURAL WATER SUPPLY SCHEMES

The Ministry of Water, Energy and Minerals has been preparing workable strategies on operation and development of water supply schemes. For small rural water supply schemes which include shallow wells, gravity schemes and others serving one village, according to the Water Policy are operated by village governments through water committees and village water funds. For large water supply schemes, the Water Policy had directed that such schemes be operated and developed by the government (Chapter Four paragraph 42 Section 42d (iii)).

In implementing the Water Policy it had been realized that the government is unable to shoulder the full costs of operation and development of large rural water supply schemes, secondly the beneficiaries have shown enthusiasm to manage and to meet the operational costs of the water supply schemes. Due to this situation, the Ministry recommended changes to the above mentioned section of the Water Policy in order that large water supply schemes be handed over to the beneficiaries. The beneficiaries will be responsible for their management, operation and development through management legal bodies which would be formed with their approval.

Following these changes, the new division of responsibilities on management, operation and development of rural water supply services will be as indicated in the annex.

The purpose of this letter is to inform you of those changes and also to request you to start implementing the government directive by identifying the respective water supply schemes in your regions. After which in collaboration with the Ministry, preparations should be made to form beneficiaries management bodies which will manage operate and develop the water supply schemes as directed.

R.O.S. Mollé
PRINCIPAL SECRETARY

c.c. Principal Secretary,
President's Office.

c.c. Principal Secretary,
Planning Commission.

-- Principal Secretary,
Prime Minister's and First Vice
President's Office.

-- Regional Water
Engineers.

-- Principal Secretary,
Treasury.



3.0 AMENDMENT OF THE WATER POLICY ON MANAGEMENT, DEVELOPMENT AND OPERATION OF LARGE RURAL WATER SUPPLY SCHEMES - CABINET PAPER NO. 33/1995

The cabinet had discussed the cabinet paper No.33/1995 and had agreed to advise the President that:-

- 3.1 In order to put special emphasis on sustainable development on water services to the rural population which is being served by large water schemes, amendments need to be done in Chapter 42 (d) (iii) of the 1991 Water Policy so as to read as follows "Large Rural Water Supply Schemes should be handed over to beneficiaries in order to enable them to manage, develop and operate and maintain them through legally recognized institutions which would be formed with the beneficiaries consent".
- 3.2 Bodies which would be given the responsibility of operating and maintaining large rural water supply schemes should not be commercial. Following that decision the bodies established will be expected to collect from the beneficiaries enough funds which will only meet the running and maintenance costs of the water services.
- 3.3 After those water supply schemes have been handed over to the beneficiaries the government should continue with the following responsibilities:-
- 3.3.1 Management and protection of water sources in collaboration with operational bodies which will be formed.
- 3.3.2 Operation of water data stations, collection and analysis of the data.
- 3.3.3 To monitor and evaluate the quantity and quality of water within the project areas.
- 3.3.4 To manage and issue water rights.
- 3.3.5 Construction and rehabilitation of large water schemes.
- 3.3.6 To coordinate and develop training programmes for the water personnel.
- 3.3.7 To strengthen district and village governments so that they can effectively coordinate water issues.
- 3.3.8 During the transition period the government should continue to pay the salaries of the water personnel of the projects which will be handed over to the beneficiaries.



3.3.9 To disseminate new water technology.

3.3.10 To ensure that the accounting books of water projects are audited by relevant authorities.

3.4 In order to enhance better operation and maintenance of completed water supply projects, distribution of responsibilities at Village, District, Regional and National level should be as follows:-

3.4.1 Village level

3.4.1.1 To meet operation and maintenance costs of small schemes that are already completed and handed over to the village governments. This will however depend entirely on the financial capability of the village.

3.4.1.2 To establish water committees and establish a village water funds.

3.4.1.3 The village will collaborate with the District Water Engineer's office on issues pertaining to maintenance of village water schemes.

3.4.1.4 The village will ensure it obtains and owns the water rights for its water sources.

3.4.1.5 Under no circumstances is the village government permitted to make any alterations on the water projects without prior permission of the Central Government albeit the fact that the water project being is property of the village.

3.4.1.6 The community should be enlightened and trained in applying simple technologies such as gravity flow systems lines, rain water harvesting, construction of shallow wells fitted with hand or wind pumps and construction of small dams, charcos and the made of concerning and protecting the same.

3.4.2 District level

3.4.2.1 Operation of rural water supply projects.

3.4.2.2 All maintenance activities proved to be beyond the village level technical capability.

3.4.2.3 To ensure availability of fuel and spareparts required for rural water projects.

3.4.2.4 Training of rural technical personnel

11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100 101 102 103 104 105 106 107 108 109 110 111 112 113 114 115 116 117 118 119 120 121 122 123 124 125 126 127 128 129 130 131 132 133 134 135 136 137 138 139 140 141 142 143 144 145 146 147 148 149 150 151 152 153 154 155 156 157 158 159 160 161 162 163 164 165 166 167 168 169 170 171 172 173 174 175 176 177 178 179 180 181 182 183 184 185 186 187 188 189 190 191 192 193 194 195 196 197 198 199 200 201 202 203 204 205 206 207 208 209 210 211 212 213 214 215 216 217 218 219 220 221 222 223 224 225 226 227 228 229 230 231 232 233 234 235 236 237 238 239 240 241 242 243 244 245 246 247 248 249 250 251 252 253 254 255 256 257 258 259 260 261 262 263 264 265 266 267 268 269 270 271 272 273 274 275 276 277 278 279 280 281 282 283 284 285 286 287 288 289 290 291 292 293 294 295 296 297 298 299 300 301 302 303 304 305 306 307 308 309 310 311 312 313 314 315 316 317 318 319 320 321 322 323 324 325 326 327 328 329 330 331 332 333 334 335 336 337 338 339 340 341 342 343 344 345 346 347 348 349 350 351 352 353 354 355 356 357 358 359 360 361 362 363 364 365 366 367 368 369 370 371 372 373 374 375 376 377 378 379 380 381 382 383 384 385 386 387 388 389 390 391 392 393 394 395 396 397 398 399 400 401 402 403 404 405 406 407 408 409 410 411 412 413 414 415 416 417 418 419 420 421 422 423 424 425 426 427 428 429 430 431 432 433 434 435 436 437 438 439 440 441 442 443 444 445 446 447 448 449 450 451 452 453 454 455 456 457 458 459 460 461 462 463 464 465 466 467 468 469 470 471 472 473 474 475 476 477 478 479 480 481 482 483 484 485 486 487 488 489 490 491 492 493 494 495 496 497 498 499 500 501 502 503 504 505 506 507 508 509 510 511 512 513 514 515 516 517 518 519 520 521 522 523 524 525 526 527 528 529 530 531 532 533 534 535 536 537 538 539 540 541 542 543 544 545 546 547 548 549 550 551 552 553 554 555 556 557 558 559 560 561 562 563 564 565 566 567 568 569 570 571 572 573 574 575 576 577 578 579 580 581 582 583 584 585 586 587 588 589 590 591 592 593 594 595 596 597 598 599 600 601 602 603 604 605 606 607 608 609 610 611 612 613 614 615 616 617 618 619 620 621 622 623 624 625 626 627 628 629 630 631 632 633 634 635 636 637 638 639 640 641 642 643 644 645 646 647 648 649 650 651 652 653 654 655 656 657 658 659 660 661 662 663 664 665 666 667 668 669 670 671 672 673 674 675 676 677 678 679 680 681 682 683 684 685 686 687 688 689 690 691 692 693 694 695 696 697 698 699 700 701 702 703 704 705 706 707 708 709 710 711 712 713 714 715 716 717 718 719 720 721 722 723 724 725 726 727 728 729 730 731 732 733 734 735 736 737 738 739 740 741 742 743 744 745 746 747 748 749 750 751 752 753 754 755 756 757 758 759 760 761 762 763 764 765 766 767 768 769 770 771 772 773 774 775 776 777 778 779 780 781 782 783 784 785 786 787 788 789 790 791 792 793 794 795 796 797 798 799 800 801 802 803 804 805 806 807 808 809 810 811 812 813 814 815 816 817 818 819 820 821 822 823 824 825 826 827 828 829 830 831 832 833 834 835 836 837 838 839 840 841 842 843 844 845 846 847 848 849 850 851 852 853 854 855 856 857 858 859 860 861 862 863 864 865 866 867 868 869 870 871 872 873 874 875 876 877 878 879 880 881 882 883 884 885 886 887 888 889 890 891 892 893 894 895 896 897 898 899 900 901 902 903 904 905 906 907 908 909 910 911 912 913 914 915 916 917 918 919 920 921 922 923 924 925 926 927 928 929 930 931 932 933 934 935 936 937 938 939 940 941 942 943 944 945 946 947 948 949 950 951 952 953 954 955 956 957 958 959 960 961 962 963 964 965 966 967 968 969 970 971 972 973 974 975 976 977 978 979 980 981 982 983 984 985 986 987 988 989 990 991 992 993 994 995 996 997 998 999 1000

3.4.2.5 Mobilization of village communities on community participation and establishment and management of the water funds.

3.4.1.6 In collaboration with the central government the district councils will evaluate the financial ability of the village governments to fund the rural water projects.

3.4.3 Regional Level

3.4.3.1 To supervise and coordinate all water supply activities in the region

3.4.3.2 To operate and coordinate water supply services at both District and Regional headquarters.

3.4.3.3 Conduct training

3.4.3.4 Ensure local availability of construction material and spareparts.

3.4.4 National Level

The Ministry responsible for Water will be the overall incharge of all matters pertaining to operation and maintenance of water supply schemes projects by preparing guidelines on operation and maintenance of water projects in the country. In addition the Ministry responsible for water will be charged with the following responsibilities:

3.4.4.1 To provide technical advise and finance of large scale maintenance of water projects whenever required.

3.4.4.2 To coordinate water activities in the country.

3.4.4.3 To train engineers, technicians and craftsmen.

3.4.4.4 To coordinate availability and distribution of construction equipment, spares and plants.

3.4.4.5 To strengthen materials, Regional and District workshops.

3.4.4.6 To relate and set standards of various equipment employed in construction of projects, water supply so as to ensure standardization.

The President has given his approval and has directed the advice be implemented.

