

R824 TZMO92

# Water for Health

## MOROGORO

Formulation of the Rural Water  
Supply and Sanitation Programme (RWSP)  
Tanzania

### District Profiles

### VOLUME II

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**DRAFT REPORT**

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## LIST OF ABBREVIATIONS

Afya	Ministry of Health
AMREF	African Medical and Research Foundation
ARDHI	Institute in Dar es Salaam
CDA	Community Development Assistant
DANIDA	Danish Development Cooperation
DED	District Executive Director
DFA	District Field Assistant (under Maji)
DGIS	Directorate General for International Cooperation, The Netherlands
DHV	DHV Consultants, The Netherlands
D-PSU	District Programme Support Units
DPM	District Programme Manager
DWP	Domestic Water Points
EC	Electrical Conductivity
FINNIDA	Finnish Development Cooperation
GTZ	German Development Cooperation
GWS	Groundwater Survey Ltd. Kenya
GoN	Government of The Netherlands
GoT	Government of Tanzania
HESAWA	HEalth and SANitation through WATER development
IRC	International Water and Sanitation Centre
IWP	Improved Water Points
IWS	Improved Water Supply
Maendeleo	Ministry of Community Development
Maji	Ministry of Water, Energy and Minerals
MWEM	Ministry of Water, Energy and Minerals
NEPP-plus	National Environmental Policy Plan 1990-1994, The Netherlands
NORAD	Norwegian Development Cooperation
OOP	Objective Oriented Planning
RC	Regional Commissioner
RDD	Regional Development Director
RNE	Royal Netherlands Embassy
R-PSU	Regional Programme Support Unit
RWSP	Rural Water and Sanitation Programme
SIDA	Swedish Development Cooperation
SWL	Static Water Level
SWN (80)	Handpump used in RWSP
TWSSC	Handpump factory Morogoro
UNDP	United Nations Development Programme
VHA	Village Health Assistants
WSU	Watersector Support Unit

# Brief Summary of Findings

## Draft

### Morogoro Team

#### 1. INTRODUCTION

Anno 1992 after 15 years of assistance to the domestic water supply sector in the Morogoro region, the district water profiles indicate the following:

The data on population covered by improved water supply (IWS) and the available infrastructure for IWS, is as follows:

District	Area km <sup>2</sup>	Pop 92 est.	IWS coverage	available infrastr.
Morogoro	19,250	478,000	26%	44%
Kilosa	14,245	407,000	25%	46%
Kilombero	14,918	227,000	39%	47%
Ulanga	24,560	151,000	29%	47%

In the districts of Morogoro Rural and Kilosa, water shortage is a severe problem. However, this hardly is the case in the two other districts, where save water is the main issue.

Expansion of the programme in the districts of Ulanga and Kilombero should be done by shallow wells and piped supplies where shallow wells are not possible. Alternatives like roof catchments should also be considered. The situation in the districts of Kilosa and Morogoro is different. Virtually all villages where shallow wells are possible, are already included in the programme. For other villages alternatives such as piped supplies, roof catchments, sand dams, subsurface dams and others are to be considered. Reliability, cost and maintenance are the most important selection criteria.

The supply of water does influence the attitude of the target groups of the programme. In Morogoro Rural and Kilosa, the willingness in the villages to contribute to the water fund is for instance better than in Ulanga. In the districts of Kilombero and of Ulanga save water and improved health appear to be the main benefits in introducing IWS and should be the line of approach in the next phase.

The woman's involvement with the management of improved water supply at village level varies and depends to a great extent on how severe the water shortage is. The participation of women at district and division level (administration) is also limited.

## 2. SANITATION

### 2.1 CHOLERA IS EPIDEMIC IN THE MOROGORO REGION

In the district of Kilombero 849 cases were registered in the period Dec '91/Jan '92. Part of the problem is caused by latrine pits collapsing due to high water levels.

### 2.2 STAFFING

In each District there is sufficient HA staff available to expand the programme to other divisions.

### 2.3 THE IMPACT OF THE HYGIENE AND SANITATION EDUCATION IS NOT OPTIMAL

This is due to the following;

- training has been targeted too much to leaders such as ward secretaries, village secretaries and VWSC and not to the final beneficiaries.
- HA's methods of educating villagers is done e.g. by inspecting their houses and latrines. This creates resistance.
- HAs miss skills in communication and community mobilization. Sofar little training is done in the villages with the final users.

### 2.4 HEALTH & SANITATION PROGRAMMES CURRENTLY OPERATING ARE:

- Primary Health Care including Facts for Life
- Child Survival Development
- Rural Water & Sanitation Programme

The three programmes use the same personnel at division level and have nearly the same message where it concerns hygiene and sanitation. In villages in which the 3 programmes are operating, RWSP should offer more than education only. The suggestion is to establish a revolving loan fund for construction of latrine slabs and drainage improvement.

#### 2e Position of Village Health Workers (VHW)

The Village Health Worker is to be instrumental for continuous improvements of the health situation at village level. In the RWSP the VHW is used to promote better sanitation and hygiene practices and she/he is responsible for monitoring/reporting. Currently the position of the VHWs is weak as most of them have:

- not received initial training
- are not receiving any salary

RWSP is to allocate funds for training VHWs of those villages not covered by other programmes. This training has to be the standard 2 month course as indicated in the GOT policy on Primary Health Care. Furthermore to allow for better working conditions at village level, the DWSC is to take care that by-laws for the payments of VHWs by the village government are passed in the district council.

## 2.5 GENDER ISSUES IN RELATION TO HYGIENE AND SANITATION:

- there are hardly any female staff in the preventive health care system in the districts concerned
- gender issues are not considered and gender specific data are not available.
- in the next phase of the project a framework for dealing with gender issues is to be developed.

### 3. COMMUNITY DEVELOPMENT

#### 3.1 SUFFICIENT FIELD STAFF

Sufficient field staff is available in each district and for the new divisions to be covered. Motivation of the CD staff is good. The staff realizes that in the present programme the beneficiaries not reach as the training stops at the level of village government, VWSC and village secretary. For example, the care takers have today not received any training. The same applies for the VHWs who except the training in monitoring, did not receive any training. CD staff together with HA is to be allowed more time in the village to mobilize and train at 10 cell level.

#### 3.2 NEW APPROACHES TO COMMUNITY PARTICIPATION

To do this effectively, the cd staff needs to be trained in new approaches to community participation. Their present method is one of formal education and not of participatory learning. Particularly in this time in which a process of democratization/multiparty system is started, these new skills are very useful.

#### 3.3 MOBILISATION

Mobilisation of the beneficiaries is necessary to further strengthen the aim of water fees being paid for sustainability c.q. cost recovery of the watersupply at village level. This is presently slowly taking shape for example the balance of the O&M fund per village in the Morogoro district is on average Tsh. 26,337, in Kilosa this comes to Tsh. 47,107, in Kilombero Tsh. 17,912 and in Ulanga Tsh. 6,465.

#### 3.4 PERSPECTIVE VILLAGE GOVERNMENT

Although it is the intention to have all IWS in the present programme handed over (with full coverage) to the respective village governments, this aim might not be reached. In Morogoro Rural in 14 out of the 28 villages the IWS will be handed over, in Kilosa this will be 11 out of 27, in Kilombero 20 out of 21 and in Ulanga 12 out of 20. The main reasons for these delays are lack of materials (spare parts), non - availability of transport and the long time it takes for the regional department of Water to design and approve new waterpoints to be developed in the villages. For the fieldstaff these delays affect their work as the villagers loose confidence in them. In terms of the RWSP's step by step approach the main delays occur in steps 4,5 and 11.



When handing over the IWS to the village government, the RWSP gives the village a grading. An A - grade means that the village can sustain the IWS by itself, a B - grade indicates that some assistance from the district is still required. A C - grade indicates that the village will not be able to contribute to the sustaining of the IWS and continuous assistance from the district is required. To date only B grades have been given.

### 3.5 THE CD DEPARTMENTS HAVE IN GENERAL SUFFICIENT FEMALE STAFF

However most of the staff in the RWSP is male. The CSD and the women income generating projects are allocated to the female staff. Steps are to be taken to have more females in the RWSP.

#### **4. GENDER ISSUES**

##### **4.1 GENDER ISSUES ARE BEING DEALT WITH ON A PRACTICAL BASIS**

For example, the staff of the Department of Water will consult women when doing the siting. Within the RWSP nobody is responsible for development of the gender issues. Anyway the RWSP never set objectives for gender development nor does a framework exists in which the issues could be tackled.

##### **4.2 THE ABSENCE OF WOMEN IN MAKING PROCESS**

The study on Womens Involvement in the RWSP shows that the main factor hindering the participation of women is their absence in the village decision making process. Therefore their priorities are not heard. Even the VWSC, as it is functioning currently in most of the districts does not represent women's views, as the female members are not elected on a democratic way and thus miss the back-up of the rest of the women in the village.

##### **4.3 THERE IS HARDLY ANY FEMALE IN THE FIELDSTAFF**

Due to traditional customs it is not easy for a male extension worker to reach women. The experience is that when female extension workers are involved, the participation of women increases. At district level (policy level) there are also only a few female staff involved. Since the RWSP is not clear on what it intends to do to improve the position of women, no action could be expected.

##### **4.4 WOMENS PARTICIPATION IN THE DECISION MAKING PROCESS**

For the RWSP (next phase) the most important issue concerning gender is to strengthen womens participation in the decision making process in the village using water and sanitation as a mean. This of course demands a long term commitment and a clear framework/strategy. It also requires staff to spend more time in the village in order to hear the views of both men and women and to support group formation by women.

##### **4.5 FINANCIAL RESPONSIBILITY OF WATER TOWARDS WOMEN**

Although income generating activities for women are important especially in the African setting in which a wife cannot rely on the income of her husband, these activities are not a main issue in the RWSP. It is to be avoided that men will push even the financial responsibility of water towards women.

The CD efforts to stimulate income generating activities in the villages as a source for the water fund is acceptable as long as these are undertaken on an equal basis by men and women.

#### 4.6 DEVELOPING WITH THE RCDOI

At the start of the next phase a consultant on gender issues in water & sanitation is to be recruited from abroad to develop together with the RCDOI - Morogoro region and the staff of for instance the Ruaha TRD :

- the framework for womens participation in the water & sanitation sector
- training programmes for the staff (CD, HA and FA) to deal with the gender issues

## **5. IMPLEMENTATION CAPACITY IN THE DISTRICT**

District governing and administration, having only started in the mid 80ties, are as can be expected, still in an infant stage. On top of this each district has a weak financial basis. In Ulanga for instance the district council ran out off cash in September 1991 and all the Community Development staff have not been paid any salary since. Of course these aspects affect the implementation of the RWSP.

### **5.1 PLANNING**

Planning of the inputs/outputs of the RWSP is the responsibility of the DPA, who is supposed to be part of the districts planning office. Only in 2 of the districts namely Morogoro Rural and Kilombero, the DPA's are planning officers. These districts do perform better in terms of programme implementation and planning. At district level planning of the water sector is difficult as GOT contributions are uncertain. The district councils have not contributed at all to the developments of the water sector. Thus each district depends for the developments of its rural domestic water supply on the Netherlands input. The plans received for the next phase do not provide an overall picture of the developments in the districts water sector. However these indicate that the districts depend nearly completely on donor input for improved water supply. Without exception the submitted plans are unrealistic, not taking into account the limitations of the districts themselves to absorb the requested inputs. In the next phase objective programme planning for DPA together with the HOD's / District team is to be practised each year.

### **5.2 SUSTAINABILITY**

It is apparent that cost recovery/ sustainability is not yet an issue in the districts. None of the district staff could provide any reasonable answers on this issue. For village level, the sustainability is being discussed by the fieldteams but without the necessary information on what the water system costs in terms of maintenance/repair and replacement. Therefore the financial contributions are set on the amount the villagers are prepared to contribute and not on the requirements of sustainability/cost recovery. The contributions to the O & M funds do indicate that the village population is accepting the fact that one has to pay for improved water supply.

Thus at village level there are developments towards sustainability, although these are not yet based on the correct assumptions. However, for district level the picture is not that clear. Evidently piped water systems depending on district councils inputs such as diesel pumps are not receiving any support.

Taking into consideration the weak financial position of the districts, there is little hope that a system of cost recovery can even survive, as water fees received will not be retained for the water sector but will be used for other pressing needs. Thus in this situation there will be no end to the donor contribution in the near future. It is therefore suggested that in the next phase ample attention is to be provided to define together with the districts an alternative to guarantee sustainability/cost recovery at district level.

### 5.3 ACCOUNTABILITY

Administrative procedures in government and in the district are complicated and bureaucratic. To have programme funds released several forms have to be filled and several signatures are needed. All these rules and regulations make an easy implementation nearly impossible. Another aspect is the "borrowing" of the district, when urgent expenses have to be covered, the DED can order programme funds to be used temporarily. Till the borrowed money is returned to the account, the RWSP can not withdraw funds and implementation comes to a stop. Fieldstaff in particular complain about irregular payments made to them. So far the consultants office has taken care off the supply of materials, spareparts and equipment. However, it is the intention to have part of those responsibilities transferred to the district. Taking into account the already existing problems the move towards more responsibility of district administration will without any doubt lead to further delays in implementations. Particularly the staff of the Department of Water indicated this problem.

### 5.4 TRANSPORT

The extent in which transport is being used for other activities than RWSP vary by district. However, in Kilosa and Ulanga districts which have a weak management, the transport is hardly used by the programme. In particular the performance of the Department of Water is affected as they depend for the transport of materials on the car. The suggestions by programme implementers is to keep the transport e.g. the lorries at the consultants office and have the district hire the transport when construction is to be done. Considering the delays in construction and the present misuse of programme vehicles, this suggestion has to be given serious consideration. The budget estimates has taken this into account.

For fieldstaff to cope with more villages in a bigger area, bicycles are not sufficient. Therefore motorcycles are suggested.

At village level, the VM and VHW are to be supplied with bicycles in property to increase mobilization and to provide an incentive for the work to be done in the Programme.

## 5.5 MANAGEMENT AT DISTRICT LEVEL

In two of the Districts namely Kilosa and Ulanga the DPAs are not from planning office but from the Community Development Department. In both districts the performance of the RWSP is sub standard. Management has to be changed to give the programme a reasonable start in the next phase.

The functioning and thus the impact of the District Water and Sanitation Committee (DWSC) vary per district. For instance in the district of Kilombero the HODs of the departments involved are supportive to the district team and the RWSP in general. Their involvement/contribution is valuable. These HODs are also realistic on the time they can spend on the programme which was mentioned to be not more than 3 days a month. In other districts such as Ulanga and Kilosa the DWSC are more of a token using programme allowances, without providing the necessary support to the programme. Despite these problems with HODs who are less interested in the programme, it will be unwise to introduce the management structure as mentioned in the evaluation report, as this can lead to non cooperation by the HODs and will therefore only hamper the developments in the RWSP. Furthermore by creating a special RWSP management the integration of the programme in the overall district water sector might become difficult.

## 6. ESTIMATES FOR THE DISTRICT BUDGET NEXT PHASE

Each district prepared a programme plan and budget for the next phase 1992 - 97. In these plans the new programme villages are mentioned as well as the improved water supply system concerned (shallow wells or pipe supply). These plans and budgets are taken as a basis for the estimates as provided in the district water profiles. However, the plans and budgets submitted are very unrealistic and did not take into account the contribution of the GOT. Thus the mission had to make several adjustments and at the same time it tried to bring the 4 budgets on the same line.

To be covered by the Netherlands contribution.

- District Adviser 82 days per year, the rest to be covered by GOT contribution
- Local personnel:
  - \* DWSC 48 days per person per year, to undertake one field visit per month and to attend the half year regional steering committee meeting. The rest also to be covered by the GOT. (In general these costs should be completely covered by the GOT as the main task of the DWSC and its regional counterpart is to take care that all developments in the water sector fall together. Thus they do not have special duties for the Netherlands RWSP)
  - \* Districtteam allowances for 10 days per month per person
  - \* Fieldteams allowances for 13 days in the villages and 2 days at district HQ. Thus total of 15 days per person per month.
  - \* Drivers allowances 200 days. According to DPAs it is essential to keep these in the budget otherwise the vehicles will not go to the field except when ordered by the district administration.
  - \* Surveyors, construction/rehabilitation and drawing team, the budgets as proposed by the districts are used. Essential that full time allowance are made available to avoid delays .
- Investment Implementation covers items such as toolboxes for the programme villages, safari equipment for the fieldteams and disinfect for water supplies. Furthermore the replacement of survey/drilling/construction equipment, this was indicated by the DHV office and/or the district budget.
- Investment Transport. This post does not include any vehicles as requested by the districts. The suggestion is to have a pool with the consultancy office.
  - \* motorcycles for all fieldteam members
  - \* bicycles for the village mechanics and the village health workers.
- Transport Running Costs; estimates are based on
  - \* for Toyota Land cruiser and Suzuki 37.500 km each per year, allowance Tsh. 80.-- per km
  - \* for lorry 15.000km per year, allowance Tsh. 100.-- per km (this is for the hiring of a lorry)
  - \* motorcycles 10.000km per motorcycle with allowance of Tsh.20.-- per km

- Materials
  - \* Maji the basis for these estimates are the plans for the next phase. However adjustments are made according to implementation capacity (number of construction teams) and past experience
  - \* Afya the estimates are f. 10.000.-- + f. 2.000.-- yearly to start revolving funds at village level (pilots) for the construction of concrete latrine slabs and improved drainage.
- Training
  - \* for district team and fieldteam staff
  - \* for training of Village Health Workers
  - \* village level training is meant to reach women groups, care takers, village mechanics and ten cell leaders.
  - \* other training includes refresher courses monitoring & reporting, study tours to other districts by fieldteams e.g.

Not included are the training programmes for dignitaries as it is suggested to have these covered by contribution of GOT. These training should become the task of the DWSC.

- \* training materials includes special pinboards to be used in the village level training, books etc. The request from the districts to have movie projectors are not considered.

- Stationeries and office equipment
  - \* estimates stationeries are from the budgets of the districts
  - \* in the next phase office equipment for fieldteams is warranted. None of the teams have a place where they can work when they are not in the field.



## 7. TANZANIAN WELLS SERVICE AND SUPPLY COMPANY

This factory was visited on 2/3/92 after an appointment was made. The team witnessed what best can be described as an thriving factory. All different sections were manned and were all clearly very busy on a large order. The factory looked neat and well organised, both the administration side as the production units.

We were received by a confident Mr Kakar who explained us that business was booming. He had many customers (Danida, Norad, Sida, everybody only the Dutch had not returned) and that he was able to meet any order of up to 100 pumps in a couple of weeks. Now the factory was busy with an order of a drilling set and 300 hand pumps for Uganda.

Mr Kakar explained that things had been difficult in the first period after he took over when his relationship with the Dutch turned sourer. But he did not have any hard feeling and that he would like to enter into business again. In the meantime, he also had diversified to other types of hand pumps (notably the Mark III, Unicef's baby). And he told that he was in the process of appointing an agent in Kenya.

The mission got a positive impression of the dealing and wheeling of Mr Kakar and his factory. Nevertheless, it is important that the statements of Mr Kakar are checked against the experience of the donors that were mentioned.

# APPENDICES

**KILOSA DISTRICT**

**MOROGORO**

## 1. BACKGROUND INFORMATION

Kilosa District covers an area of 14.245 km<sup>2</sup>. It is situated in the north-west of the Morogoro Region in Tanzania. It is subdivided into 9 divisions, 36 wards and 132 villages. Only a small part of the area is still covered by dense forest.

Population 1988 (census)	367,000
Population 1992 (projection)	407,000
Population 1997 (projection)	462,000
Population 2002 (projection)	526,000
Growth Rate 78-88	2.6%
Population as % of Morogoro Region is	28%
Population density	24 cap/km <sup>2</sup>

The 1990-census counted 329,948 cattle, 119,768 goats, 35,838 sheep, 23,120 pigs and 351,463 poultry.

Physiographically, the District is characterized by the wide flat valley of the Mkata/Wami River in the east and hills and highlands of the Ukaguru, Usagara Mountains in the west and Nguru Mountains in the north. The highest peaks reach about 2100 m while the plains in the east are at about 350 metres above MSL.

The mountains and foothills consist of metamorphic Pre-Cambrian Basement rocks: acid gneisses and other granitoid rocks, and crystalline limestones. The highlands are mainly covered by forest. Soil fertility is generally low.

The deposits in the downfaulted Mkata/Wami valley are of Upper Tertiary and Quaternary age. They are up to 400 m thick, deposited in fluvial, alluvial fan and swamp environment.

Narrow strips of shallow Quaternary deposits are found along most rivers and streams.

The short rains begin in November and last until December, January and February are dry. The long rains occur in March, April and May.

The main food crops are rice, maize, cassava and all types of beans. The cash crops are sisal, maize, cotton, onions and oil seeds: sunflower, soya beans, groundnuts and simsim.

The health infrastructure can be summarized as follows:

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Hospital	2 (one mission, one GoT)
Health centre	4
Dispensaries	36
Village Health Posts	7

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The plantations and the buildings in Kilosa and Kimamba town indicate that the district must have been prosperous in the past. The district has areas where severe shortage of water occurs regularly and the drought of 1991 has affected food supply. The Irish Development Cooperation programme provides an important support to the District.

## 2. EXISTING WATER SUPPLY

The water supply situation according to the District Water Engineer (DWE) in Morogoro is summarized in the following Table.

	Total	Defect	Operat.
Shallow wells (tube)	460	225	235
Shallow wells (ring)	9	9	0
Piped water schemes (boreholes)	17	12	12
Piped water schemes (rivers gravity)	7	2	5
Piped water schemes (ring well)	1	1	0

Details of the existing water supplies are given in Annex 1.

The population served by domestic water points was calculated on the basis that each domestic water point serves 300 souls. In this way it was estimated that only 25% of the population is actually served while the infrastructure is in place to serve 46%.

DWE DATA	All Water Points			Operational Water Points		
	No.	Pop.	Served	No.	Pop.	Served
Shallow wells	469	141,000	35%	234	70,000	70%
Public Taps	166	50,000	12%	103	31,000	8%
TOTAL	635	190,100	46%	337	101,000	25%

The piped water supply schemes are listed in Annex 2. Six systems draw their water directly from the river. Five of these schemes are operational, 18 systems draw groundwater from boreholes, ring wells or shallow wells. There are 13 non-operational systems.

Most shallow wells are situated in the plains, in the villages along the main road. Piped water supply schemes are found along rivers.

The bacteriological quality of piped water is not known. If it is groundwater then it should be good. If it is river water, then it still comes from catchments with little human encroachment.

Groundwater of good chemical quality is found in most of the District. Saline groundwater is mainly present in five areas: around Gairo, Magole, Kimamba, Nyali and Mikumi where high iron and manganese concentrations are also reported.

The supply of safe water is very urgent as cholera and typhoid are endemic.

The concentrations of the population and the water supplies match rather well as both are concentrated in the plains.

### 3. SANITATION

Shortage of clean, safe water is a major problem. Improved Water Supply (IWS) has a direct impact on the health situation of particularly women and children. The health, hygiene and sanitation situation is improving slowly, but is noticeable in areas with IWS. In programme villages cholera cases are few, 25 for the year 1991. Schistosomiasis occurs mainly with youngsters due to playing in ponds. Diarrhoea and malaria cases increase in the agriculture season as farmers move to the shamba. Through health education villages are now starting to protect traditional sources. Sanitation problems in the villages also occur as women wash clothes near water sources. The collapsing of pit latrines is causing environmental hazards. Lining of the pit by bamboo or other twines is being tried.

The position of the VHW is hindering developments at village level. Most of them did not receive any initial training and the village government is not paying any salary. Thus motivation is low. Often the village authorities do not select the proper person. It is suggested that HA, VWSC and village council agree on the selection of the VHW's who are to be trained. There are 4 centres in the district that can provide training for VHW. CSD and the Irish programme have financed the training of several VHWs. The CSD programme might be expanded this year. From the present RWSP villages 23 VHW's need training. The IDC is training yearly VHW's of 14 villages and is prepared to consider giving priority to RWSP villages (see Annex 7).

In Kilosa, the GOT, Primary Health Care Programme (Facts for Life) the UNICEF-CSD, operate in the field of hygiene and sanitation. They have their own reporting system. As the HA's in the fieldteams deal themselves with these programmes there is little confusion. It will be difficult for the Health Department to place a female HA in the fieldteams. The preventive health care has only recently started to train female HA. Other preventive health care programmes are Primary School Health and the Extended Programme for Immunization.

The training of 10 cell leaders and women groups have lacked behind as much of the training so far was aimed at village leaders, VWSC, Ward and Divisional secretaries. HA do not have sufficient skills to mobilise the community. Training in analysing data and report writing is warranted. Training materials to be used in the village will be helpful.

Gender issues are not being dealt with and data are not gender specific.

#### Training requirements

- At village level, HA together with VHW's to provide regular training to groups of men and women on health and sanitation issues.
- Yearly refresher course for VHW's
- Retraining in monitoring/reporting with special attention to problem solving. Training to include VHW's and divisional HA.

#### 4. WATER DEMAND

A rough estimate of the water demand in the years 1997 and 2002 is given in the following Table:

	1997	2002
	m <sup>3</sup> /day	m <sup>3</sup> /day
Domestic water demand (30l/head/day)	12,500	15,800
Cattle Watering (30l/head/day)	10,500	13,000
Other animals	1,500	2,000
TOTAL demand from humans and animals ca	25,500	31,000

This is only a very small fraction of the available water (section 7). Not the magnitude of the demand but the dispersed areal distribution of the demand and the safety of the sources is the problem.



## 5. LEVEL OF COMMUNITY ORGANIZATION AT VILLAGE LEVEL

The Department of Community Development is dealing with 7 donor funded programmes. These are Planning for Rural Development at Village Level (PRDVL), CSD, UNDPs Household Grain Storage Development, UNICEF's Strategy to Strengthen Women's Economic Activities, ILO's project for Women in Sisal Estates and Women's Participation in Traditional Irrigation, a Programme of the SNV.

The PRDVL programme is implemented in 7 villages, 4 of which are also in the RWSP. According to the coordinator, poverty is felt by villages as being the main problem. Water was never mentioned as a problem. In villages with female animators more women are involved. The CSD programme involves the divisions of Magole and Kimamba, where all RWSP villages are also covered by CSD. For the extension of the CSD, Gairo Division is proposed

Field teams brought mentioned that the training of the community has been neglected, as too much attention was given to mobilising leaders. Appropriate approaches to allow for popular participation are required.

The VWSC are active since they are included in the programme as evidenced by fencing of the IWPI in the 4 villages visited. In the 4 villages visited this was e.g. noticed by the fencing of the IWP. Water-supply problems are identified quickly by the VWSC.

The involvement of women in water and sanitation has improved, although on average only 2 members of the VWSC are women. The RWSP has directed that minimally 2 members must be women.

Division	VWSC Villages	M	F
1. Magole	6	18	12
2. Gairo	3	8	7
3. Kimamba	6	17	13
4. Ulaya	4	12	8
5. Mikumi (2 Villages without VWSC)	7	20	10
6. Magole-sub	1	3	2
<b>TOTAL</b>	<b>27</b>	<b>78</b>	<b>52</b>

The contribution to the O & M fund differ. The CD staff encourages the villages to undertake income generating activities to contribute to the O&M fund. In the division of Gairo for example part of the income from the cattle dip goes to the O & M fund. In Ruaha, shops and local bars have to pay a higher water levy. The contributions are generally made monthly and vary from TShs 20 to Tsh. 50 per household. Take for example the village of Mfulu with 297 households and 6 shallow wells. The contribution per household per month is TShs 20. The total for the village per year is Tsh. 71,280.

This amount covers the O & M for 3 shallow wells. Thus with a TShs 40 per household per month sustainability has to be reached. (According to Evaluation Report TShs 20,000 per shallow well is needed for sustainability). The present balance in their O&M fund is TShs 14.000. The contribution to the O&M fund is set by the village government and VWSC after consultation with the fieldteams. No proper budgeting is done as information on sustainability has not been availed to the field teams. The contributions are in general made by the women.

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The average balance in the O&M funds per division

1. Magole	TShs	29,583.-
2. Gairo	TShs	75,000.-
3. Kimamba	TShs	14,880.-
4. Ulanga	TShs	23,114.-
5. Mikumi*	TShs	134,066.-
6. Magole (sub)	TShs	6,000.-

(\* includes the village of Ruaha with 2085 households and a balance in the O&M of Tsh. 671,581.-)  
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It is expected that 11 of the 27 villages will be handed over before July. The delays are caused by communication problems between district level and fieldteams and by the fact that materials for extension have only arrived last month.

Training requirements:

- village based courses in financial management, planning and bookkeeping. The CDA in the fieldteams encourages the village to start economic activities to contribute to the O&M fund.

## 6. WOMEN IN DEVELOPMENT

In Kilosa the participation of women at various levels in the water, sanitation and health sector is as follows:

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	Total	Male	Female
DWSC	3	3	0
District team	3	2	1 (CD)
Field team (6)	18	17	1 (CD)
VWSC (26)	130	78	52
VHW	50	24	26
VH	26	26	0
TOTAL	230	150	80

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A third of the people directly involved are women. At the implementation and decision making level this is hardly 10%. This is disappointing for a programme that has women as main target group. For the extension of the programme, the Health Department can provide 1 female HA to be based in Masanze Division. Thus the Community Development Department has to provide the other females if the suggestion to have at least one female member in the fieldteams is followed. Of the 20 CD staff at division/ward level 9 are women (see Annex 5).

The role of women in the RWSP was stressed by the water technicians who confirmed that the women's knowledge is used when the village survey to establish water points is being done.

The importance of strengthening women's participation in the decision making bodies at village level is also the conclusion of the report on recent Gender Relations in Traditional Irrigation in Malolo, by E.W. van der Grift. The study shows that the access to new agriculture land is being provided by the village council. In general it is difficult for women to be allocated land as they are hardly represented at that level. The majority of the programme villages has only 1 or 2 women in the village council consisting of 25 members. The villages of Muhenda and Nyali have 5 women in the council. Of the 132 villages in the Kilosa district only 9 have a female chairperson.

There are 46 women groups with economic activities in the District. Lack of capital and management skills are the main problems. Farming, beer brewing and maize milling are the activities undertaken.

Training required:

- At district level to organise a seminar to combine the experience in gender issues and develop a strategy to assist women at village level. To be implemented by RCDOI.
- Village level course to strengthen cooperation between women at the various levels in the villages and equip them with skills to influence decision making.

## **7. AVAILABLE WATER RESOURCES**

### **7.1 GENERAL**

In general, there is no shortage of water. The available resources exceed the demand from humans and animals by far. This demand is in the order of magnitude of only 0.03 % of the rainfall. So, the main problem is not lack of water but the underdevelopment of the resources and the bacteriological contamination of the existing supplies.

### **7.2 RAINFALL**

Mean rainfall varies between 600 mm/year in the plains near the Wami river and rises to 1800 mm/year or more in the Nguru Mountains in the north. In the western mountains, it reaches 1200 mm/year.

Rainfall can be collected for domestic use by means of roof catchments, especially from buildings with large roofs like those of the government.

Notably in places with saline groundwater, this looks an attractive option.

### **7.3 SURFACE WATER**

The District boundary in the East coincides with the Mkata/Wami River. Its dry flood plain covers approximately 30% of the District. All major streams are probably perennial.

The ten piped gravity water supplies have intakes along the perennial rivers in the mountains. Water enters these systems without treatment. Nevertheless, the water is quite safe as significant human encroachment could not be detected.

### **7.4 GROUNDWATER (INCLUDING SPRINGS)**

The total amount of groundwater available in Kilosa District exceeds the domestic demand by far.

It is evenly distributed over most of the plains. Salinity is only a local problem notably in Gairo Division. Locally, iron and manganese pose a problem but chemical analyses found the water to be suitable for domestic purposes. Nevertheless, taste and discolouring of food makes the acceptability a problem.

Groundwater in the plains is present at shallow depths: in the rainy season at approximately 4m and towards the end of the dry season at about 7m below ground surface. There are many springs in the rainy mountains along the northern boundary of the District but only few are being used as a direct source for domestic use.

## 7.5 WATER QUALITY

Groundwater of sufficient chemical quality is found in most in the District. Nevertheless, saline groundwater at shallow depth occurs at many places, e.g. around Gairo, Magole, Kimamba, Nyali and Mikumi.

In the mountains, good quality groundwater emerges at a number of springs and seepage.

The supply of safe water is very urgent as cholera and typhoid are endemic.

## **8. IMPLEMENTATION CAPACITY AT DISTRICT LEVEL**

In the next phase the programme will be extended to two other divisions. Three new fieldteams will be formed as sufficient staff is available. In the Masanza division the fieldteams will be based at ward level as the areas to cover are big.

### **8.1 PLANNING**

Some district reported they can hardly afford to have one of its three planning officers nearly full time involved in the RWSP. The DED does not appreciate the demands of the donors to have planning officers full time assigned to their programmes. Presently the HOD Community Development supervises the Programme. Progress has slowed down since he took over. The links with the Planning Office are weak. For example the PA lacks information on allocations by the Central Government to the water sector. In Ulanga and Kilosa, the support to the water sector has diminished since the DPA's are from outside the planning office. The communication between the DPA and the district team is not satisfactory. The district teams were not involved in the preparation of the proposal for the next phase.

### **8.2 COMMUNITY DEVELOPMENT**

At district level coordination (with both DPA and DCDOI) is a problem. Several activities in community mobilisation are undertaken but there seems to be little integration and mutual support. As the CD field staff encourages income generating activities as part of the community mobilisation, financial management training is needed. For the CD staff a two month course including subjects such as community participation, new approaches, financial management and gender issues is recommended. There should be at least once a year a refresher course for the field staff. Attention should be given to the financial aspect of sustainability at village level. The CD in the fieldteams are motivated and have a good understanding of their role in the RWSP. However, the communication between district and the field staff is not optimal due to the lack of leadership at district level. It has therefore been suggested that both the DCDO and DCDOI are to be withdrawn from the programme.

### **8.3 GENDER ISSUES/WOMEN IN DEVELOPMENT**

In developing a strategy for strengthening women's position in the decision making structure at village level, close cooperation with the other activities aimed at women, is to be established. Initially the Regional Community Development Office is to take the lead as it will be in a better position to coordinate and monitor developments.

#### 8.4 HEALTH AND SANITATION

There is presently no HOD assigned to the programme. The HA in the fieldteams see training in communication and community mobilisation skills as a necessity to improve their own performance. Educational material for village level is needed. At village level implementation of health & sanitation education is hampered by the lack of knowledge with the VHW's. In Kilosa training of VHW's is organised by CSD and IDC, the contribution of RWSP is to be providing the follow-up, necessary to keep VHW's motivated. (the Annex lists villages in which VHW's have been trained by IDC).

#### 8.5 SURVEY AND CONSTRUCTION

The construction team for piped water supply is strong enough with four members. But the survey team lacks trained personnel. The corresponding teams for shallow wells only count one team member each and must be reinforced. It is felt by the District that new team members can be drawn from the pool of technicians who only need on-the-job training.

If all the teams are operational, then the annual implementation capacity is available for construction of 25 shallow wells and rehabilitation of the same number. In addition, construction of one pipe supply and rehabilitation of another is possible.

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Section	Qualified Personnel	Trained Personnel	Equipments Available	No. of Operational Teams
Survey	2	0	Available but bad condition	0
Piped Supply Construction	1	4	Available but bad condition	1
Piped Supply Survey	1	1	one survey set	0
Shallow Wells Construction	1	1	one construction set	0
Shallow Wells				

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#### 8.6 OPERATION AND MAINTENANCE

The step by step approach is well accepted. For implementation of step 5 and 6 the district team and field staff need information and training on the substance of sustainability at village level. The sustainability of the present system at village level and possible alternatives are to be discussed. A similar exercise for the district administration can start a process of discussing alternatives for future development.

## 8.7 CAPABILITY OF MONITORING

Further training is needed in data analysis and reporting. Even more important is that field and district staff sit together regularly to discuss how problems are to be solved and under whose responsibility.

## 8.8 TRANSPORT

Vehicles are obviously used for other purposes than the RWSP. The district is to be made aware that rules have to be enforced to limit the misuse of programme transport. It is apparent that programme implementation is seriously hampered by transport being borrowed by the District Administration. This causes disruption in the programme planning. It happens that the programme is not able to use the Toyota landcruiser for several weeks and visits to villages have to be cancelled.

Having other transport, such as the lorry requested, handed to the district will face the same problems and will affect the implementation capacity. It is therefore suggested that transport (lorries and landcruiser) will be available on hire basis with the programme District budget allocations.

At division/ward level faster transport is required. Thus the request for motorcycles. Kilosa will have 9 fieldteams.

At village level. Field teams suggested that VHW and VM be provided with bicycles to improve mobility in the village.

## 8.9 FINANCIAL CAPACITY

At village level the financial contributions are forthcoming, showing the priority given to improved water supply and the prospects for sustainability. The District Council does not contribute much to the water sector in its development budget or in its recurrent budget. The total development budget for 1991/92 is:

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Contribution GOT	TShs 14,300,000
District Council	TShs 6,361,000
TOTAL	TShs 20,661,000
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At District level sustainability will not be reached, not even in the far future. Alternative options such as the establishment of a water corporation is to be looked into. At least a structure with limited dependency on district administration and in the end on donor input, is to be developed.



## 9. WATER DEVELOPMENT OPTIONS

### 9.1 SHALLOW WELLS - HAND DUG LARGE DIAMETER (RING WELLS)

There are 64 ring wells equipped with hand pumps in Kilosa District, 5 are non-operational when the hand pumps broke down and spares were not available. Hand pumps were removed in most of them. Afterwards, they were used for bucket lift but got contaminated in the process.

Ring wells are suitable for the lowlands with alluvial or colluvial cover, and in the mountains in the alluvial strips along rivers, and in alluvial fans. The major disadvantage of this kind of well is that they are dug by people, and that therefore digging has to stop just below the water table. If the water table drops the wells have to be deepened. Another disadvantage is that these wells can easily be contaminated if not protected properly.

### 9.2 SHALLOW WELLS - HAND AUGURED TUBE WELLS

By far most wells constructed in Kilosa District are of this type. They are suitable for the lowlands with alluvial or colluvial cover where the water table is not too deep. Their total number amounts to 412 according to the DWE.

These wells have all the advantages and none of the disadvantages of ring wells and should be the preferred technological choice for Rural Water Supply Points in the plains.

### 9.3 MACHINE DRILLED DEEP WELLS

Such wells are expensive but the high costs could be justified for a large number of taps in piped water supply. However, most piped water supplies are non-operational: two because of mechanical breakdowns and the remaining one because of lack of fuel. One has a collapsed borehole (Rudewa Gongoni)

### 9.4 SURFACE WATER - RIVERS

Surface water is underdeveloped as the head-waters of the rivers are all covered by dense forest. Water is tapped directly from those rivers. However, those forested head-waters then must be protected from deforestation and human settlement.

## 9.5 SPRINGS

There are probably many springs in the mountains. There seems to be ample scope to develop them. However, a systematic survey was never done.

The fact that most rivers draining those areas do not dry up during the dry seasons proves the presence of many perennial springs.

## 9.6 ROOF CATCHMENTS

The biggest buildings in Kilosa are those built by the government. They are the ones which seems to be most suitable to function as roof catchments. However, option of water supply by shallow wells and springs seems preferable. Only where this is not possible roof catchment should be considered.

## 9.7 ROCK CATCHMENTS

Not suitable for Kilosa as bare rock is usually found in areas with high rainfall.

## 9.8 SAND & SUB-SURFACE DAMS

Could be an interesting option in those parts of the foothills of the Mkata/Wami River where perennial rivers are absent. Impermeable clay can probably be found in the crystalline limestone Basement Rocks.

## 9.9 EARTH DAMS, CHARCOS AND PANS

Same comment as sand and sub-surface dams. Charcos dam is being considered for water supply for cattle in Gairo.

## 9.10 HAFIRS (VALLEY TANKS)

One hafir was observed in Kilosa District: a large rectangular excavation made for the construction of the Kilosa-Morogoro road.

**10. INPUTS BY OTHER AGENCIES**

GOT development inputs to watersupply

1990/91 Twatwatwa village TShs 1.400.000

1991/92 Kidoma village TShs 1.800.000

No development contribution to water supply by the Kilosa District Council.

Inputs, development budgets respectively to CSD and PRDVL by:

	GOT	District Council
1990/91	TShs 1.000.000	TShs 2.700.000
1991/92	TShs 1.000.000	TShs 750.000

The Irish Development Corporation IDC supports construction of 2 shallow wells in Kimamba.

## **11. WATER RESOURCES DEVELOPMENT PLANNING**

After discussions, the future direction of the Rural Water Supply programme for the next five years were formulated. It was proposed to construct annually one pipe water supply with about ten domestic water points to serve about 3,000 people and also 25 shallow wells to serve 7,500 people. In addition the district has capacity to rehabilitate one pipe water supply and 25 shallow wells per year.

This implementation rate is about the same as the population growth.

A list of the villages proposed to be included in the programme is attached in the Annex .4

## **ANNEXES**

- Annex 1** Rural Water Supply Points (RWSP)
- Annex 2** Piped Water Supply Schemes
- Annex 3** Present Programme Villages.
- Annex 4** Programme Villages New Phase
- Annex 5** Present Programme Village Representation of Women in  
VWSC and Village Council
- Annex 6** Villages with trained VHW
- Annex 7** Comments of DED on evaluation report.

## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Ring wells	Tube wells	Not working		Water Qty	Dist	VWSC Present
						Ring wells	Tube wells			
1 Berega	EP	3441	2621		10		7	Good	KLS	
2 Chabima		603			1		1	Sat	KLS	
3 Chagongwe		2152							KLS	
4 Chakwale	G	5678	5678		6		5	Sat	KLS	
5 Changarawe	EP	3118	1556						KLS	
6 Chanjale		2223							KLS	
7 Chanzuru	EP	2534	2467		9		6	Good	KLS	
8 Chogonli		1784							KLS	
9 Chonwe		2346							KLS	
10 Dodoma		1709	300		3		2	Good	KLS	
11 Dumila	EP	4458	2874		4		2	Sat	KLS	*
12 Gairo	G	10377	10377						KLS	
13 Idibo		3874	300		5		4	Sat	KLS	
14 Ibindo		1681	300		4		3	Sat	KLS	
15 Ibingu		1430			2		2	Good	KLS	
16 Ibuti		2240							KLS	
17 Ifunde		462							KLS	
18 Ihenje		2109	300		1		0	Sat	KLS	
19 Ihombwe		441							KLS	
20 Ikwamba		2538							KLS	
21 Ilakala		1982	900		3		0	Sat	KLS	*
22 Ilonga	DP	8099	6149	1	7	1	6	Good	KLS	
23 Italagwe		3542	600		4		2	Sat	KLS	
24 Iwenba		1521	1521		6			Good	KLS	*
25 Iyogwe		3774	900		10		7	Sat	KLS	
26 Kasiki		5661	600	1	5	1	3		KLS	
27 Kibedya	G	6538	6538		1		1	Sat	KLS	
28 Kidete		3607	300		7		6	Good	KLS	
29 Kidogobasi		2317	2100	1	7	1		Good	KLS	*
30 Kidoma	G	2393	2393		3		1	Sat	KLS	
31 Kiduhi	DP	838							KLS	
32 Kifinga		1922	1500		8		3	Good	KLS	
33 Kigunga		1171	300		1				KLS	*
34 Kihelezo		2048							KLS	
35 Kilama		1213			1		1		KLS	
36 Kilangali	DP	1957	1879		3		1	Sat	KLS	
37 Kilombero II		5784	900		10		7	Good	KLS	
38 Kinamba A	EP	5355	5190		2		0	Good	KLS	
39 Kinamba B		3825	900		5		2		KLS	
40 Kinyolisi		949			3		3	Sat	KLS	
41 Kisanga		3113	300		2		1	Good	KLS	
42 Kisitwi	G	2745	500						KLS	*
43 Kisongwe		2128							KLS	
44 Kitaita		986			2		2	Sat	KLS	
45 Kitange I		1653	300		3		2	Sat	KLS	
46 Kitange II		3012			3		3		KLS	
47 Kitete	DP	1459	745		5				KLS	*
48 Kitete Msindazi		2121	2121	1	10	1	2	Good	KLS	*
49 Kivungu	EP	4188	4188		5		3	Sat	KLS	
50 Kondoa		1419	1200		7		4	Good	KLS	

## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Not working		Water Qty	Dist	VWSC Present		
				Ring wells	Tube wells					
51 Kugea		2159			1	1	Good	KLS		
52 Kumbulu		2087						KLS		
53 Kwipipa	G	1660	600					KLS		
54 Leshata		2192	1200		7	3	Sat	KLS		
55 Ligunga		1197						KLS		
56 Lufikiri		1539						KLS		
57 Luhembe		3487	1200		7	3	Good	KLS		
58 Luhwaji	G	1662	600					KLS		
59 Lumango		1197			1	1	Good	KLS		
60 Lumbiji		2220						KLS		
61 Lumuna		2262	600	1	7	1	5	Good	KLS	
62 Luwemba		1392						KLS		
63 Mabana	EP	1611	8006					KLS		
64 Mabula		1599	300		4	3	Sat	KLS		
65 Machatu		1252						KLS		
66 Madege		2817			1	1	Sat	KLS		
67 Madisini		1381	300		3	2	Good	KLS		
68 Madoto		2078	2078	1	10	1	1	Sat	KLS	
69 Madudu		1537	900	1	3	1		Sat	KLS	*
70 Madudumizi		2338	900		5	2		Sat	KLS	
71 Magela		1900	300		4	3		Sat	KLS	
72 Magole	EP	4992	2546					KLS		*
73 Magomeni		8761	4281	1	12	1	4	Good	KLS	
74 Magubike	EP	3745	3673		6	4		Good	KLS	*
75 Maguha	DP	2500	2500		4	3		Good	KLS	
76 Majawanga	G	1406	1406		2	2		Sat	KLS	
77 Makuyu		2768	300		4	3		Good	KLS	
78 Makwambe		1077						KLS		
79 Malangali		4513	2400		14	6		Sat	KLS	
80 Malolo		4433	300		4	3		Good	KLS	
81 Malui		4178	2100		14	7		Good	KLS	
82 Mamboya		1184	300		3	2		Good	KLS	
83 Mamoyo		3970	1800		14	8		Good	KLS	
84 Mandege		215						KLS		
85 Mandela	EP	2262	1131		1	1		KLS		
86 Masenge		3426						KLS		
87 Mbamba		1749	300		5	4		Sat	KLS	
88 Mbigiri	EP	2712	1356					KLS		
89 Mbili		1217						KLS		
90 Mbumi		3966						KLS		
91 Mbwade		1068	1500		5			Sat	KLS	*
92 Meshugi	DP	2020	1310					Sat	KLS	
93 Mfulu		1754	1793		6			Good	KLS	*
94 Ngogozi Chabi		2332	600		6	4		Good	KLS	
95 Muhenda		3178	1500		5			Sat	KLS	*
96 Mikumi Mjini	G	5239	5239		3	1		Sat	KLS	
97 Mkalama	G	1904	500					KLS		
98 Mkata		386						KLS		
99 Mkobwe		1920						KLS		
100 Mkundi		770	770		5	0		Sat	KLS	*

## Villages in MOROGORO REGION and water supply systems. - MAJI / MWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Not working				Water Qty	Dist	VWSC Present
				Ring wells	Tube wells	Ring wells	Tube wells			
101 Mkung'hulu		1786	600		5		3	Good	KLS	
102 Mkwatani		6992	4396		7		5	Good	KLS	
103 Mlumba		1000							KLS	
104 Msawa		1756						Good	KLS	
105 Msimba		1944	1500		7		2	Sat	KLS	
106 Msingisi	G	2613	500						KLS	
107 Msolwa		2348		1	1	1	1	Good	KLS	
108 Msowero		2519	1660				0	Sat	KLS	*
109 Msowero		1467	1467		5			Good	KLS	
110 Msowero	EP	7215	5108					Good	KLS	
111 Mtega		2267							KLS	
112 Mtumbatu	DP	2971	1486						KLS	
113 Munisagara		1639	600		4		2	Good	KLS	
114 Muungano		2649	300		5		4	Good	KLS	
115 Mvumi	EP	5357	2979		1		1	Good	KLS	
116 Mwandi		2118	900		11		8	Sat	KLS	
117 Mzaganza		1234	300		4		3	Good	KLS	
118 Ndogomi		1156			2		2	Sat	KLS	
119 Nguyami		2442	1200		5		2	Sat	KLS	
120 Njungwa		2443							KLS	
121 Nongwe		1891							KLS	
122 Nyali		1515	1200		4		0	Sat	KLS	*
123 Nyaneni		2343			1		1	Sat	KLS	
124 Nyangala		941			2		2	Sat	KLS	
125 Peapea		1839	1500		5		0	Good	KLS	*
126 Ruaha		8201	1200		10		6	Good	KLS	*
127 Rubeho	G	3857	1800						KLS	*
128 Rudewa Batini		3257	3329		11		1	Good	KLS	*
129 Rudewa Gongoni	EP	2874							KLS	*
130 Rudewa Mbuyuni		2817	2700		10		1	Good	KLS	*
131 Tindiga		5835	1200		11		7	Good	KLS	
132 Tundu		2336	600		6		4	Good	KLS	
133 Twatwatwa	DP	255	255						KLS	
134 Udung'hu		3362							KLS	
135 Ukwamani	G	2825	2825						KLS	
136 Ulaya	DP	2363	1182						KLS	
137 Ulaya Mbuyuni	DP	966	966		1			Sat	KLS	
138 Uleling'ombe		1889	1500		5			Good	KLS	
139 Unone		1358			2				KLS	
140 Uponela		2579							KLS	
141 Vidunda		2280							KLS	
142 Zombo Lumbo	EP	2016	1008		1		1	Sat	KLS	
143 Mndeta									KLS	*
144 Ruhembe		3412	1500		10		5		KLS	*
SUB TOTAL KILOSA		376657	167647	9	460	9	225			



PIPED WATER SUPPLY SCHEMES  
KILOSA DISTRICT

Village	System	Total Pop.	Served Pop.	Domestic waterpoint	Shallow well	Water Qty	VWSC Present
1 Berega	DP	3441	2621	8	3	Good	
2 Chakwale	G	5678	5678	3	8	Sat	
3 Changarawe	EP	3118	1556	8			
4 Chanzuru	EP	2534	2467	6	4	Good	
5 Dumila	EP	4547	2874	13	2	Sat	*
6 Gairo	G	10377	10377	8			
7 Ilonga	DP	8099	6149	3	7	Good	
8 Kibedya	G	6538	6538	2	1	Sat	
9 Kidoma	G	2393	2393	3	3	Sat	
10 Kilangali	DP	1957	1879	3	3	Sat	
11 Kimamba A	EP	5355	5190	3	2	Good	
12 Kisitwi/Gairo	G	2745	2745	3			*
14 Kivungu	EP	4188	4188	2	5	Sat	
15 Mabana	EP	1611	1611	2			
17 Magole	EP	5091	2546	13			*
19 Magubike	DP	3745	3673	14	6	Good	*
20 Maguha	DP	2500	2500	1	4	Good	
21 Majawanga	G	1406	1406	2	2	Sat	
22 Mandela	EP	2262	1131	7			
23 Mbigiri/Mandela	EP	2712	1356	2			
24 Meshugi	DP	2020	1310	3	1	Sat	
25 Mikuni Mjini	G	5239	5239		1	Sat	
27 Msingisi/Gairo	G	2613	2613	2			
28 Msowero	EP	2519	1660	8	2	Sat	*
30 Mtumbatu	DP	2971	1486	2			
31 Mvumi	EP	5357	2979	6	1	Good	
33 Rubeho	G	3759	3759	6			*
35 Twatwatwa	DP	255	255	3			
36 Ukwamani/Gairo	G	2825	2825	2			
37 Ulaya	DP	2363	1182	2			
38 Ulaya/Mbuyuni	DP	966	966	1	3	Sat	
39 Zombo Lumbo	DP	2016	1008	5	0	Sat	
40 Rudewa/Gongoni	EP	2874		8			Out of order
Subtotal Kilosa district		113200	94160	146	58		

**ANNEX 2b**  
**PIPED WATER SUPPLIES**  
**KILOSA DISTRICT**

<b>Operational</b>	<b>Name</b>	<b>Source</b>	<b>Method</b>	<b>DWP</b>	<b>DWP</b>
1.	Berega	Borehole	Diesel Pump	6	0
2.	Chakwale	River	Gravity	5	5
3.	Chanzuru	Borehole	Electric Pump	6	0
4.	Dumila	Borehole	Electric Pump	13	13
5.	Gairo	River	Gravity	5	5
6.	Ilonga	Borehole	Diesel Pump	3	0
7.	Kilangali	Borehole	Diesel Pump	4	0
8.	Kimamba A	Borehole	Electric Pump	5	5
9.	Kisitwi	River	Gravity	3	3
10.	Kitete	Borehole	Diesel Pump	2	0
11.	Kizunguzi	River	Gravity	4	0
12.	Magole	Borehole	Electric Pump	13	13
13.	Mandela	Borehole	Electric Pump	7	0
14.	Meshugi	Borehole	Diesel Pump	3	0
15.	Mikumi	River	Gravity	10	10
16.	Msingisi	River	Gravity	3	3
17.	Msowero	Borehole	Electric Pump	9	0
18.	Mtumbatu	Borehole	Diesel Pump	2	0
19.	Mvumi	Borehole	Electric Pump	6	6
20.	Nagubike	Borehole	Electric Pump	14	14
21.	Naguha	Borehole	Diesel Pump	2	0
22.	Ruaha	River	Gravity	to be constructed.	
23.	Twatwatwa	Borehole	Diesel Pump	3	0
24.	Ulaya	Ring Well	Diesel Pump	2	0
25.	ZomboLumbo	Borehole	Electric Pump	5	0

**Extensions:**

Kibedya	River	Gravity	2	2
Ukwamani	River	Gravity	2	2
Rubeho	River	Gravity	6	6
Kidoma	River	Gravity	3	3
Ulaya Mbuyuni	Ring Well	Diesel Pump	1	0
Rudewa Gongoni	Sh. Well	Electric Pump	8	8
Kivungu	Borehole	Electric Pump	4	0
Mbigiri	Borehole	Electric Pump	2	2
Mandela Mabana	Borehole	Electric Pump	3	3

---

**T O T A L** **41** **26**  
Domestic Water Points per supply 3.4

List of PROGRAMME villages  
KILOSA DISTRICT

Nr.	Villagename	Pop.	Nr. of SWells	Nr. of RWells	Nr. of DWP's	Current step in O&M setup
1	Magole	6672			13	8
2	Madudu	1546	3			11
3	Mfulu	1908	6			11
4	Kitete	1283	5			11
5	Mkundi	676	5			8
6	Dumila	4211	4		13	8
7	Rubeho	3491			6	4
8	Kisitwi	2523			3	4
9	Kwipipa	1571			2	2
10	Rudewa Gongoni	2730			8	2
11	Rudewa Nbuyuni	2670	10			8
12	Rudewa Batini	3100	11			14
13	Peapea	1690	5			11
14	Mbwade	989	5			16
15	Madoto	1960	10			14
16	Muhenda	2248	5			11
17	Ilakala	1460	3			13
18	Kigunga	1036	1			8
19	Nyali	1808	4			8
20	Ruhembe	3450	10			11
21	Iwemba	1524	6			11
22	Msimba	1947	7			8
23	Msowero	1400	5			11
24	Kitete Msindazi	2207	10			7
25	Kidogobasi	2810	7			11
26	Ruaha	8174	10			3
27	Magubike	3936	6		14	4
		69020	138	0	59	

NEW PROGRAMME VILLAGES  
KILOSA DISTRICT

DIVISION	VILLAGE	POPULATION		
		MALE	FEMALE	TOTAL
MAGOLE	1. Mvumi	2500	2460	4960
	2. Msovero	3459	3222	6681
	3. Mtumbatu	1377	1374	2751
	4. Mandera	1033	1061	2094
	5. Mwandi	1000	961	1961
	6. Beraga	1508	1678	3186
ULAYA	7. Ulaya Kibaoni	1094	1094	2188
	8. Zombo Lumbo	926	941	1867
GAIRO	10. Kwipipa	696	875	1571
	11. Msingisi	1096	1323	2419
	12. Ruhwaji	702	837	1539
	13. Meshugi	928	942	1870
MIKUMI	14. Ruaha	4098	3586	7684
	15. Tundu	1076	1087	2163
	16. Kifinga	894	887	1780
	17. Lumango	587	521	1108
	18. Malolo	2214	1891	4105
KIMAMBA	19. Rudewa Gongoni	1380	1348	2728
	20. Chanzuro	1224	1122	2346
MASANZE	21. Chabima	320	238	558
	22. Dodoma	855	727	1582
	23. Changarawe	1547	1320	2867
	24. Mbamba	793	825	1619
	25. Kivungu	1958	1920	3878
	26. Kilangali	932	880	1812
	27. Kidohi	386	390	776
	28. Kondoa	666	648	1314
	29. Mamoyo	1830	1846	3676
	30. Muungano	1226	1227	2453
	31. Malangali	2211	1968	4179
	32. Tindinga	2557	2848	5403
	33. Maloi	1893	1976	3869
KIDETE	34. Kidete	1708	1632	3340
	35. Mwasa	833	793	1626
	36. Mzanganza	598	545	1143
	37. Msoveros	1181	1152	2333
	38. Lumoma (Idole)	1044	1050	2094
	39. Mkung'olo	839	815	1654
	40. Ibungu	689	635	1324
	T O T A L	51858	50644	102501

ANNEX 5 - NILOSA PROPOSED BUDGET - 2019 - FORMULATION MISSION

(in Tsh 1000)

	NILOSA	Year 1	Year 2-5	TOTAL
10-4330	District Advisor 1. Allowances 62 d 2. Transport 1000 km. 3. Stationery	215 1,400 450		
		2,015	2,015	10,075
10-4311	Local Personnel 1. DKSC (3 HD0) 48 days 2. District fees 120 days 3. Fieldfees - 84E x 9 4. Drivers (3) 200 days 5. Surveyors 2 6. Construction team and mens. 5W 7. Drawing team (pipe)	418 864 5,832 102 1,152 3,457 1,720		
		13,551	13,551	67,755
10-4907	Investment Implementation Surve. & drill equip. Toolboxes: Villages 20 x Tsh. 50,000/- HG toolboxes Safety equipment Disinfect - 400 x Tsh. 40,000/-	9,215 3,380 180 7,000 800		
		19,575		12,777
10-4931	Investment - transport 13. Motorcycles 30 x Tsh. 500,000 14. Bicycles 114 x Tsh. 50,000/-	15,500 6,000		15,600
		21,500		21,600
10	Transport running costs Programme vehicles 2 50,000 km per yr x Tsh. 500 Lorry 15,000 km x 100	5,000 2,500		
		5,000		72,500
	Motorcycles - District - Field 10 teams 10 x 3 = 30,000 x Tsh.	14,500	14,500	

ANNEX 5 - KILOSA PROPOSED BUDGET - BY SSE - FORMULATION MISSION

(in Ten 1000)

KILOSA	Year 1	Year 2-5	TOTAL
20 Materials - Maji			
(i) SW - rehab + construction	7,500		
(iii) Pipe supply rehab + constr.	30,000		
	37,500	37,500	187,500
40 Materials Afya			
Improved latrine slabs			
Cement + chicken wire Tsh.2,200 per slab	1,300	1,300	
(Sh. 10,000 per year per district)			
10 Drainage	260	260	
Tsh.7,000.- per slab - en. 2,000			
	1,560	1,560	7,800
Training			
a.1 Staff training			
Community Development		1,000	4,000
Yearly - 2 week refresher			
F.F.Tsh. 50,000 = 4 tutors x 1			
Two month course year 1	4,000		4,000
10 Health			
Yearly - Tsh. 50,000 = 100 tutors		1,000	4,000
One month course - yearly	4,000		4,000
a.2 Water			
Yearly - Tsh. 50,000 per	1,400	1,400	7,000
Fieldteam & district Officers 140			
a.4 Other training	800	800	4,000
a.5 VHW training			
Training costs per VHW = 140,000			
Year 1 = 20			
Year 2 = 20			
Year 3 = 20			
		NOT APPL BY 100/000	
1 Village level training			
Refresher courses Monitoring & Reporting			
For new programs village	1,800	1,800	14,400
Study tour to successful village			
1 Training materials	5,800	4,000	21,500
10 Stationeries Maps Pins & Handwritten	1,500	1,500	8,400
Office equipment fuels staff	800		
	3200		

ANNEX 6

Present programme village representation of women in VWSC and village council

Division	Village	Women in VWSC	Women in Village Council
Magole	Magole	2	4
	Madudu	2	3
	Mfulu	2	1
	Kidete	2	2
	Mkundi	2	1
	Dumila	2	1
	Gairo	Rubeho	2
Kisitwi		2	2
Kwipipa		2	1
Kimamba	Rudewa Gongoni	2	3
	Rudewa Mbuyuni	2	1
	Rudewa Batini	2	4
	Peapea	2	1
	Mbwade	3	4
	Madoto	2	3
Ulaya	Muhenda	2	5
	Ilakala	2	3
	Kigunga	2	2
	Nyali	2	5
Mikumi	Ruhembe	1	1
	Iwemba	2	1
	Msimba	-	-
	Kitete Msindazi	2	2
	Kidogobasi	2	1
	Ruaha	1	1
Magole Sub	Magubike	2	1

VWSC consists of 5 members

Village Council consists of 25 members

ANNEX 7

Villages with VHW - Kilosa

- |               |                     |
|---------------|---------------------|
| 1. Meshugi    | 18. Kimamba A       |
| 2. Kibediya   | 19. Kimamba B       |
| 3. Ihenje     | 20. Msowe           |
| 4. Gairo      | 21. Ilakala         |
| 5. Chakwale   | 22. Madudumizi      |
| 6. Ndogoni    | 23. Madizini        |
| 7. Kitaita    | 24. Chadi           |
| 8. Lesata     | 25. Kitete Msindazi |
| 9. Nguyani    | 26. Kidogobasi      |
| 10. Madege    | 27. Ruhembe         |
| 11. Kilama    | 28. Kihelazo        |
| 12. Kinyorisi | 29. Ihombwa         |
| 13. Kibitwi   |                     |
| 14. Mandela   | VHW trained by OSD  |
| 15. Mabana    | 30. Magole          |
| 16. Mbigiri   | 31. Madudu          |
| 17. Madudu    | 32. Mfulu           |
|               | 33. Kitete          |
|               | 34. Mkundi          |
|               | 35. Dumi            |
|               | 36. Rudewa Gungoni  |
|               | 37. Rudewa Batisi   |
|               | 38. Rudewa Mbuyuni  |
|               | 39. Peapea          |
|               | 40. Mbwade          |
|               | 41. Madoti          |



COMMENTS ON EVALUATION OF THE RURAL  
WATER AND SANITATION PROGRAMMES

1. Many people are involved in Co-ordination and consultation but no one is ultimately responsible for the RWSP. There is a need to pin down one department (Maendeleo) to be ultimately responsible for the Co-ordination and consultation of D W S P.
2. Since the programme management and control is with the District Councils, there is a need for the District Councils to be more involved in the control and management of the Programme. The District Councils should initiate projects plan and with consultation with the donor should decide on how best to utilize funds and all equipments provided by the donor, Councils and the central government. The District Councils too should be fully involved in the control of the implementation of the programme inclusive of the control of the funds. The control of implementation and monitoring of the D W S P should not be different from that of other programmes in the District. Physical and financial implementation and reporting should follow the District Council procedures i.e. the respective Council Committees should be involved in scrutinizing the reports before such reports are intergrated with the reports of other projects and be brought before Finance and Planning Committee and ultimately be discussed by the full Council.
3. The Institutional structure and role of each department involved in the programme at the District Level should be re examined and defined in accordance with the local Government Departmental structures and functions, rather than with the present one which follows the central government structures. At present the District structure is a replace of the structure at the National and regional level.
  - 3.1 At the District level the programme should have few departments involved in order to avoid complexity of functional relationship within the structure. Some of the functions can be performed by the same department. The role of a Co-ordinator and advisor can be done by the same department. Maendeleo is better placed to do such role. At present the department of Maendeleo is de-facto the planning department at ward and village levels in the absence of personnel of the planning department at those levels.

The planning department at the District level does the role of Co-ordinating the District plan. Co-ordination of projects implimented by one department or programmes implimented by one, two or even more departments but responsible to the same Council Committee should be Co-ordinated by the relevant department before the programme is incorporated into the District Plan. District Water Supply Programme is under the Social Welfare Committee of the District Council whose departments are Afya Maji and Maendeleo.

Of those departments Maendeleo is better placed to Co-ordinate the programme and give advice to the Chief executive (DED) and the committee of the Council.

Maendeleo should be strengthened in terms of personnel at all levels to enable it to play the roles of Co-ordination and advisory as well as the animation and planning at the grass root level (village) in this programme and other District Projects and programmes.

3.2: The role of consultancy in the DWSP should not, though important, be over exaggerated. There is no need to employ an outside and be fully paid either by R W S P or the Council because this makes the programme un-sustainable. The Programme Co-ordinator who should be a competent person from Maendeleo should give advice to his head of department and the functional manager of Maendeleo (Head of Department) is the Programme advisor to the DED and the Council.

3.3: The Roles of the District and Regional WSP should be clearly distinguished and defined, Rural Water and Sanitation Programmes are basically District and village implimented programmes. Therefore the onus of implimenting the programmes lies with the District ward and villages. The region should play mainly an advisory role.

The District should operate the shallow wells as well as the piped water supply schemes. The region and the donor should help the District to build and strengthen implimentation capacity in order for the District to be able to cope with the responsibility. Most of the functions recommended in the report to be carried out at the regional level will make the programme unviable and unsustainable besides not being cost effective if those functions are not in the long run done by the District.

3.4: The recommendations of 1987 evaluation mission are still valid and important and should be fully implimented especially those which even during the time of the 1990 evalutation mission were not implimented or partially done. Out of twelve recommendation only three had been done by February 1991 when the second evaluation mission came.

4. Funding, budgeting and disbursement procedures.

The funds allocated for the RWSP especially the donors contribution is relatively big but there is a need to give priority to areas in which such funds should be used. The target is the village or villages. Therefore greater share of the budget should be spent at the village level for :-

- (a) Building up village technical and managerial capacity to sustain the programme (training and supply of spare parts).  
At present more money is spent on paying allowances for District team than any other item in the project. Training - gets very little priority and field staff at ward and village level get too little motivation.
- (b) To ensure future sustainability of the project R W S P should financially aim at local self reliance at District, w and village level. The District and village water committees should systematically build up financial capacity to run the RWSP in future without much dependancy from outside. This is in conformity with the Ministry's policy of water committees in the Country. The donor, Tanzanian government, the RDD and DED should work out a plan how to build up the District, village R W S P sustainable funding system.
- (c) The quarterly disbursement should be made on the base of the approved/agreed annual budget allocations after the submissic of quarterly financial and physical reports.

M.S. NDIKWEGE  
DISTRICT EXECUTIVE DIRECTOR  
KILOSA

**ULANGA DISTRICT**

**MOROGORO**

## 1. BACKGROUND INFORMATION:

Ulanga District covers an area of 24,600 km<sup>2</sup> and is the biggest district in the Morogoro Region. It is situated in the south of the Morogoro Region in Tanzania. It is subdivided into 5 divisions, 24 wards and 61 villages. Around 3/4 of the area is covered by dense forest including game reserves.

Population 1988 (census)	138,887
Population 1992 (projection)	151,000
Population 1997 (projection)	167,000
Population 2002 (projection)	186,000
Growth Rate 78-88	2.1%
Population density 1992	6 per km <sup>2</sup>
Population as % of Morogoro Region	12%

The 1990-census counted 12,778 cattle, 1,865 goats, 1,885 sheep, 1,754 pigs and around 130,000 poultry.

Physiographically, the District is characterized by the wide flat valley of the Kilombero River in the north and hills and highlands in the south.

The hills and highlands consist of metamorphic Pre-Cambrian Basement rocks west of Mahenge: gneisses and other granitoid rocks, and crystalline limestones at Mahenge. To the east, the area is underlain by continental sandstones, siltstones and mudstones. The highlands are mainly covered by forest. Its soil fertility is generally low.

The Kilombero Valley is flooded annually and as a result covered by heavy clays in its central parts. Here, the main crops are rice and sugar cane. The flanks are covered by numerous alluvial fans.

The short rains begin in November and last until December. January and February are dry. The long rains begin in March and continue until the end of May.

The main crops are rice, maize, cassava and all types of beans. The cash crops are cotton and oil seeds: sunflower, soya beans, groundnuts and simsim.

Gem stones are found in the mountains around Mahenge where they can be sold to a number of gem shops. However, data are not available to assess the economic significance of the gem trade.

Health infrastructure is as follows:

-----  
2 district hospitals (1 belonging to the mission)  
3 rural health centres  
27 dispensaries (12 of the mission)  
9 village health posts  
-----

There are regular outbreaks of cholera. A health education programme on cholera prevention has just started.

The position of the District Council is extremely weak. It has not convened for nearly one year and is thus hardly involved in development efforts. The development levy is Tsh. 500.- per able adult. Staff employed by the District Council e.g. Community Development has not received any salary since September 1991.

Traditional customs are still strong and these prevent women to participate in public discussions, and thus affect their input in decision making.

## 2. EXISTING WATER SUPPLY

The water supply situation according to the District Water Engineer (DWE) and the DHV database in Morogoro is summarized in the following Table:

	Total No.	Defect No.	Operational No
Shallow wells (tube)	122	5	117
Shallow wells (ring)	43	29	14
Piped water schemes (pumped, ring well)	9	0	0
Piped water schemes (gravity)	4	0	4

The data specifying for each village the type of water supply, the total population, the served population and the water quantity are given in Annex 1. The villages served by piped water schemes are listed in Annex 2A while the piped water supply schemes themselves are listed in Annex 2B. Nine systems draw their water from wide-diameter ring wells dug in the river beds. None of the schemes is currently operational: in seven cases because of mechanical problems while there is no money for fuel for the two which are mechanically in order.

The population served by domestic water points was estimated on the basis that each domestic water point serves 300 souls. In this way it was calculated that only 29% of the population is actually served while the infrastructure is in place to serve 47% of the population

	All Water Points			Operational Water Points		
	No.	Population Served		No.	Population Served	
Shallow Wells	122	36,600	24%	117	35,100	23%
Public Taps	115	12,900	23%	28	8,400	6%
TOTAL	237	49,500	47%	145	43,500	29%

Most shallow wells are situated in the plains, in the villages along the main roads. The piped water supply schemes are found along rivers.

The bacteriological quality of piped water is not known but should be reasonably good as it comes from shallow wells dug in the river banks. In this way, the surface water is filtered through a couple of meters of sand and silt. Water enters the pipes untreated.

Groundwater of good chemical quality is present throughout the District. But in 24 (according to the DWE) of the 157 wells, people complain about high iron and manganese content. As a result, bananas turn black during cooking and white turns a bit orange. Samples were analyzed but the water was found suitable for human consumption.

The supply of safe water is very urgent as cholera and typhoid are endemic.

The concentrations of the population and the water supplies match rather well as both are centred along the main roads.



### **3. SANITATION**

Shortage of clean and safe water is the main problem. The period July.-Sept. 1991 shows the following cases of water-borne diseases: Malaria 10,197. Diarrhoea 1,026, schistosomiasis 140, cholera 171 and dysentery 3. The incidence of cholera indicates a poor level of sanitation. Even in RWSP villages, unprotected water sources are used when distances to the IWP are too large, notably during the agriculture season when farmers move to the fields. Due to high water levels in the plains pit latrines collapse. Too short drainage channels at the IWP and the absence of washing slabs are mentioned as contributing to sanitation problems.

For hygiene and sanitation improvement at village level the following programmes are implemented:

- Primary Health Care (PHC) by GOT
- Child Survival Development (CSD) by UNICEF
- Rural Water and Sanitation Programme (RWSP)

Nine (9) of the RWSP villages are also within the CSD programme. In the hygiene and sanitation education the 2 programmes hardly differ. They use the same personnel at village and division level. Particularly in villages where the 3 programmes are operating, the RWSP can add little to the existing efforts in education. Although at village level improved latrines are not felt to be a high priority, the frequent cholera outbreaks warrants an approach that goes beyond education only. The RWSP could for instance, by establishing a revolving fund at village level for constructing latrine-slabs, contribute to a real improvement in sanitation facilities.

The position of the VHW's is one of concern. Being directed to implement two or three different programmes often without proper payment does not contribute to effective performance. The VHW's in villages with the CSD programme have been trained and received a bicycle. The VHW's in programme villages with RSWP only should receive similar training. A few of the programme villages contribute out of O&M fund to the salaries of the VHW's.

The HA's efforts to improve hygiene and sanitation consists in general of educating village leaders, VWSC and VHW's. Their relation with the villagers consists of inspecting their houses and latrines. This is not really a satisfactory way of dealing with the target groups. The HA's indicated that they miss the skills in communication and community mobilisation to approach the villagers.

Little attention is given to gender issues. Only one of the HA staff in the field teams is a women. Data are not gender specific. In the next phase of the project a framework to incorporate gender issues should be developed.

**Training requirements:**

- **New techniques/approaches to strengthen awareness raising and improve education message. Training for DHOI and HA's should include e.g. community mobilisation, communication techniques and gender issues.**
- **More emphasis to be given to village based training for 10 cell leaders, care takers and women groups as they proved to be the most effective sources for dissemination of information**
- **Two months training for VHW's in RWSP villages not covered by CSD.**

#### 4. WATER DEMAND

A rough estimate of the water demand for the years 1997 and 2002 is given in the following Table.

		1987	2002
		m <sup>3</sup> /day	m <sup>3</sup> /day
Domestic water demand	(30 l/head/day)	5100	5600
Cattle Watering	(30 l/head/day)	500	700
Other animals		500	500
TOTAL demand of humans and animals		6100	6800

This is only a very small fraction of the available water (Section 7). Not the magnitude of the demand but the dispersed areal distribution of the demand and the safety of the water sources are the main problems.

## 5. LEVEL OF COMMUNITY ORGANISATION AT VILLAGE LEVEL

The community development activities in the district are limited and rely on inputs from donors which presently come from the RWSP, the CSD and the Danish Volunteer Service.

CD activities in the RWSP are to a large extent directed to mobilise support for the programme at various administrative/decision making levels. Seminars for ward and division secretaries, district council members, village secretaries and others have been conducted. The impact of these in terms of financial or even policy support by the District Council or the village government, has so far been limited. Community mobilisation activities in the villages proved to be more successful. By doing this at 10-cell level, the programme manages to get as near to the final users as possible. Particularly at this level women are reached. For the next phase the mobilisation of decision makers (e.g. officials in Party and administrative structure) should become the responsibility of the HOD's with financial support of the District Council. The programme is to concentrate on training the final beneficiaries.

The VWSC's function reasonable well. Lack of support by the village government, the misuse of water funds by the village government do affect the performance of the VWSC. Due to traditional customs, which are only slowly disappearing, the participation of women in the VWSC is weak. The VWSC will have 2, but their involvement is not optimal. This could be improved when training at 10 cell level receives more attention.

The contributions to the O & M funds are not high. Misuse of funds by leaders make villagers hesitant to contribute. In a few villages contributions are collected when money is needed.

This average balance in the O&M fund per division is:

1. Mwaya	Tsh. 5,038
2. Lupiro	Tsh. 3,375
3. Mtimbira	Tsh. 7,925
4. Malinyi	Tsh. 9,523

The field staff does not receive instructions from the District HQ on the level of contribution expected from the village. This is decided by the VWSC, the village chairman and secretary. Sustainability is never discussed.

In a few cases the field staff are not allowed any more to return to the villages without the materials for the IWP where the IWP were already promised such a long time ago.

Except for 2 village in Mtimbira division, all programme villages have reached step 11 till 15. The bottle-neck at the moment is the construction of IWP and as the agricultural season has started, handing over before July is not expected. The delay in construction has affected the interest of the communities.

**Training requirements:**

- To strengthen community participation more emphasis should be placed on training of 10 cell leaders, care takers and women groups.
- Leadership training for women to increase their participation in the RWSP
- Study tours within the districts for VWSC, VM, VHM and village leaders to more successful villages.

## 6. WOMEN IN DEVELOPMENT

In Ulanga the participation of women at the various level of implementation is as follows:

	TOTAL	MALE	FEMALE
DWSC	6	6	
District team	3	2	1
Field teams (4)	12	11	1
VWSC (20)	100	60	40
VHW	40	20	20
VM	20	20	0
<b>TOTAL</b>	<b>181</b>	<b>119</b>	<b>62</b>

Nearly a third of the people directly involved are women. Most of them are part of the VWSC. Their influence in protecting women's interest is limited. The suggestion by the district team to have 3 female members in the VWSC should first be discussed thoroughly with the women at village level (see Annex 5).

In the field teams only the HA of the Lupiro division is female. For the next programme phase each team should have at least one female member. This can be done by transferring two CDA's to divisional level, by including one more female HA and one female DFA.

There are 23 women groups with economic activities, 8 of which are UWT groups. DVS and CDTF have provided grants to 7 and 4 groups respectively. The activities are in farming, animal husbandry, maize milling, weaving and sewing. The main problems are weak management and the financial demands made by village leaders. The villages having women activities are: Iringa, Ruaha, Mtimbira, Kwirow, Malinyi, Uponda, Mahenge, Mwaya and Isonge

Women are best served by RWSP when they are involved in the early stage of intervention at village level. Therefore fieldteams should be trained in dealing with gender issues relating to water and sanitation. More time should be spent in step one to mobilise the women and men for hearing their opinions. For the next phase a framework should be established for the gender issues. The aim of the programme to that theme should be the strengthening of women's decision making power at village level using water and sanitation as a mean.

## **7. AVAILABLE WATER RESOURCES**

### **7.1 GENERAL**

In general, there is no shortage of water. The available resources exceed the demand by far: the demand is in the order of magnitude of 0.01% of the rainfall. The main problem is the bacteriological contamination of the existing sources and the underdevelopment of water resources.

### **7.2 RAINFALL**

Rainfall is high. Mean rainfall varies between 1000 m/year in the plains near the Kilombero river and 2500 m/year in the mountainous area south of Mahenge.

Rainfall can be collected for domestic use by means of roof catchments, especially from buildings with large roofs like those of the government. Notably Mahenge with its high rainfall could be a suitable place for this method to harvest rainwater.

### **7.3 SURFACE WATER**

The District boundary in the north coincides with the Kilombero River. Its flood plain covers approximately 25% of the District. It is flooded almost every year during the months of April and May. All major streams are probably perennial.

Nine piped water supplies have intakes along the perennial rivers. Water enters these systems without treatment.

### **7.4 GROUNDWATER (INCLUDING SPRINGS)**

The total amount of groundwater available in Ulanga District exceeds the domestic demand by far.

It is evenly distributed over the area. Salinity seems not to be a problem. According to the DWE, iron and manganese pose a problem in 24 wells but chemical analyses found the water to be suitable for domestic purposes. Groundwater in the plains is present at shallow depths. In the Mahenge highlands and elsewhere in the mountains, there are many springs but only few are being used as a direct source for domestic use.

## **7.5 WATER QUALITY**

**Groundwater of good chemical quality is found almost everywhere in the District.**

**In the mountains, good quality groundwater emerges in numerous springs and seepages**

**The supply of safe water is very urgent as cholera and typhoid are endemic.**



## **8. IMPLEMENTATION CAPACITY AT DISTRICT LEVEL**

With a non-functional District Council, an acting DED and an acting Head of the Planning Office the situation in Ulanga can be called problematic. Staff is available for the expansion of the programme to the 5th division and by providing faster transport to all the field teams they will be able to cope with the new villages.

Assessment of the implementation capacity:

### **8.1 PLANNING**

Management and planning is a major problem in the last two years. The present DA has a CD training and lacks the necessary planning skills. The planning office is not taking sufficient responsibility for the programme. Furthermore the relation between the DWSC and the field staff is strained. Allowances for field staff are reduced without any explanation. The field staff have to wait for several days at the district HQ to receive their salaries and allowances. Thus working conditions are not supported. The financial position of the District Council is problematic and staff employed by the Council (e.g. Community Development) have not been paid any salary since September 1991.

For the next phase the programme should insist of having a DPA from the Planning Office. The present DPA should not be involved any more in the programme as there is lack of trust between him and the field team.

The contributions of the HOD's of Health Water, and Community Development to the RWSP are limited. However, by introducing a project manager with direct links to District implementors as proposed by the evaluation mission, the attitude of disinterest may change into one of obstruction. All together the RWSP is missing the necessary support within the districts decision making structure.

### **8.2 COMMUNITY DEVELOPMENT**

The staff assigned to the programme, DCOI and CDA's have a good understanding of their role in RWSP. For CDO/CDA's a two months course including e.g. approaches to strengthen community participation, management skills, and gender issues is recommended. A yearly refresher course should be conducted. In the training attention should be given to the financial aspects of sustainability at village level.

### **8.3 GENDER ISSUES/WOMEN IN DEVELOPMENT.**

The field staff deals on practical basis with these issues. A strategy to strengthen women's positions at village level using Water & Sanitation as a mean, should be developed.

#### 8.4 SANITATION AND HYGIENE

The health staff had their professional training years ago without any refresher courses since. Suggestions for training are to conduct a tailor-made course to improve communication and community mobilisation skills, to be followed each year by short 2 weeks courses covering a specific theme. Educational materials produced by the Ministry of Health can be used in the RWSP. A study tour for DHOI and HA field staff to Kilombero district to visit the STIFL project on improved pit latrines.

For the hygiene and sanitation education which is a continuous process in the village, the position of the VHW is important. A standard two month course is developed by the Ministry of Health. In 2 divisions VHW's have been trained through the CSD programme. For the remaining 3 divisions 46 VHW's are to be trained. The same counts for the new villages to be included in the programme.

#### 8.5 SURVEY AND CONSTRUCTION ACTIVITIES

The survey and construction teams for both shallow wells and piped water supplies are strong enough. Most are trained. They should be able to construct annually about 25 shallow wells and to rehabilitate the same number. In addition, they should be able to construct one piped supply and to rehabilitate another. The construction team can easily be made operational by training one extra team member. But they need refresher courses.

Section	Qualified Untrained Personnel	Trained Personnel	Equipment Available	No. of Operational Teams
Survey	0	2	old	1
Piped Supplies Construction	1	3	old	0
Piped Supplies Survey				
Shallow Wells Construction	0	2	1 set	1
Shallow Wells	1	3	1 set	1

#### 8.6 MONITORING/REPORTING

The monitoring & reporting system takes an average of a week per month of the field teams time. Faster transport and/or a more efficient division of work are to be introduced. Follow-up training at all levels is required. Field teams should be trained together with the district team in analysing, reporting and problem solving.

## 8.7 TRANSPORT

At district level the available transport seems adequate for the coming 5 years. The only one-and-a-half years old Toyota landcruiser has been used extensively for non programme purposes. It has already covered more than 125.000 km. A lorry is requested. The option suggested is to make funds available for the District to hire a lorry from the vehicle pool of the Programme at regional level. Placing the lorry at the District will be of no use to the programme, as the district administration will use it for its own benefits.

At divisional level. With the expansion of the programme the distances to cover become larger. Seventeen (17) motorcycles are required (15 for the field, 2 for the district HW). Various models should be compared and the one that is most suitable for women should be chosen. To provide the motorcycles on loan basis is not effective as staff when being transferred take the transport with them and cease to pay the loan. Thus another system should be developed.

At village level field teams suggested that VHW and VM be provided with bicycles to improve mobility in the village.

## 8.8 FACILITIES AND EQUIPMENT

An division level working conditions can be improved by providing 1 table, 3 chairs, a small cabinet and a pinboard. The request for an office for the PA is not very urgent.

## 8.9 FINANCIAL CAPACITY

The present financial position of the district has its effect on the programme, as funds are being "borrowed" to cover non-programme expenses. Thus the PA is not able to provide an overview of expenses to the programme office. Therefore activities are limited. It furthermore explains why the allowances for the field staff have been reduced. Little should be expected of the District Council. The development budget of the District Council in 1990/91 was Tsh 744,000 and for 1991/92 nil. Thus for the near future the contribution of the District Council to RWSP will be limited and sustainability at this level is not be expected. Thus other alternatives by which the water sector is less depend on the District Council should be looked into in order to reduce donor dependency

## 9. WATER DEVELOPMENT OPTIONS

### 9.1 SHALLOW WELLS - HAND DUG LARGE DIAMETER (RING WELLS)

There are 44 ring wells equipped with hand pumps in Ulanga District. In addition there are nine ring wells dug in river-beds for the piped water supplies. All nine are non-operational.

Ring wells are suitable for the lowlands with alluvial or colluvial cover. The major disadvantage of this kind of well is that they are dug by people, and that therefore digging has to stop just below the water table. If the water table drops the wells have to be deepened. Another disadvantage is that these wells can easily be contaminated.

### 9.2 SHALLOW WELLS - HAND AUGURED TUBE WELLS

By far most wells constructed in Ulanga District are of this type. They are suitable for the lowlands with alluvial or colluvial cover where the water table is not too deep. Their total number amounts to approximately 121.

These wells have all the advantages and none of the disadvantages of ring wells and should be the preferred technological choice for Rural Water Supply Points in the plains.

### 9.3 MACHINE DRILLED DEEP WELLS

Too expensive while the use of electrical or diesel pumps is risky

### 9.4 SURFACE WATER - RIVERS

Surface water is underdeveloped as the head-waters of the rivers are all covered with dense forest. Water is tapped directly from those rivers. However, those forested head-waters then must be protected from deforestation and human settlement.

All piped supplies pumping water from ring wells in the river beds are non-operational because of lack of spares or fuel. Therefore, this technology should not be used. It is simply impossible to maintain them within the Tanzanian context.

## 9.5 SPRINGS

Springs are underdeveloped. There seems to be ample scope to develop them in the Mountains. However, a systematic survey are never done.

The fact that most rivers draining those areas do not dry up during the dry seasons proves the presence of numerous perennial springs.

## 9.6 ROOF CATCHMENTS

The biggest buildings Mahenge are those built by the mission and the government, and they are the ones which seems to be most suitable to function as roof catchments. However, the option of water supply by springs seems preferable.

## 9.7 OTHER OPTIONS.

Rock catchments, Sand and sub-surface Dams, Earth Dams, Charcos, Pans and Hafirs. Not (yet) appropriate for Ulanga District as the options discussed in 9.1 to 9.6 are adequate for the foreseeable future.

## 10. INPUTS BY OTHER AGENCIES

Inputs by GOT, development projects	
i) 1990/91 Rural Water Supply	TShs 1,600,000
ii) RWSP (used for repair of old landcruiser)	TShs 500,000
iii) CSD	TShs 1,000,000
Inputs GOT - 1991/92 for Rural Water + RWSP	TShs 1,770,000

## 11. WATER RESOURCES DEVELOPMENT PLANNING

The future direction of the Rural Water Supply Programme for the next five years, as proposed by the District involved consist of:

	Cost (TShs)
- rehabilitation of two piped water supplies	15 mln
- rehabilitation of four piped water supplies	
(estimates only)	30 mln
- construction of 116 shallow wells in 19 villages with a total of 29000 inhabitants	58 mln
- construction of 3 piped gravity water supplies & survey of 2 piped gravity water supplies, 5 villages, 17000 inhabitants	83 mln
	-----
<b>TOTAL</b>	<b>186 mln</b>

This equals an investment in water development of approximately Tsh 1200 per capita for the next five years.

A list of the villages proposed to be included in the programme is attached in the Annex

## **ANNEXES**

- Annex 1** Rural Water Supply Points (RWSP)
- Annex 2A** Piped Water Supply - Villages
- Annex 2B** Piped Water Supply Schemes.
- Annex 3** Programme Villages 1987 - 1992
- Annex 4** Proposed Programme Villages
- Annex 5** Present Programme Villages Representation of Women in VWSC and Village Council.



## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Not working		Water Qty	Dist	VWSC Present	
				Ring wells	Tube wells				
1 Biro		1811	1200	1	4	1	Good	ULG	
2 Chigandugandu		3448	2100	2	7	2	Good	ULG	*
3 Chikuti		796	600	2	2		Sat	ULG	
4 Chilombora	G	2556	2556	1		1	Sat	ULG	
5 Kbuyu		2136						ULG	
6 Kpanko		2305		1		1		ULG	
7 Kuga		1498	300	1			Sat	ULG	
8 Gombe		729		1		1	Sat	ULG	
9 Idunda		1658		1		1	Sat	ULG	
10 Igawa		2580	2580	1	9	1	Good	ULG	*
11 Igota		1286	1200		5		Good	ULG	*
12 Igumbiro		2271	300		1		Sat	ULG	
13 Ihowanja	DP	3096	1543					ULG	
14 Iputi		3945		1		1	Sat	ULG	
15 Iragua	DP	2743	1671	2		2	Good	ULG	
16 Isongo	G	3152	3152					ULG	
17 Isyanga		1753		1		1	Sat	ULG	
18 Kalengakero		3068	3068	9	2		Good	ULG	
19 Ketaketa		3428		1		1	Sat	ULG	
20 Kichangani		2835		1		1	Sat	ULG	
21 Kidugale		1261						ULG	
22 Kilosa Mpepo		1180						ULG	
23 Kipenyo		759		1		1	Sat	ULG	
24 Kipingo	DP	3807	3300			11	Good	ULG	*
25 Kiwago		1096		1		1	Sat	ULG	
26 Kituti		1456						ULG	
27 Kivukoni		3398	2700		9		Good	ULG	
28 Lugala	DP	1567	1567		5		Good	ULG	
29 Luhombero		3588	3588	1	13	1	Good	ULG	*
30 Lukande		969		1		1	Sat	ULG	
31 Lupiro	DP	2794	1547	1		1	Sat	ULG	
32 Mabanda		782		1		1	Sat	ULG	
33 Madibira	DP	3448	1114					ULG	
34 Mahenge Mjini	G	5405	5405					ULG	
35 Makanga	G	2340	2340					ULG	
36 Malinyi	DP	4344	4141		12		Sat	ULG	*
37 Mavimba	DP	2184	1966		8		Good	ULG	
38 Mbagula		1257						ULG	
39 Mbalinyi		1132	300	1	1	1	Good	ULG	
40 Mbuga		2249		1		1	Sat	ULG	*
41 Mdingo		796						ULG	
42 Mgole		1570						ULG	
43 Milola		984		1		1	Sat	ULG	
44 Minazini (Itete)	DP	4895	4895		3		Sat	ULG	
45 Minepa	DP	1256	1256		1		Good	ULG	
46 Misegese		2124	2124	1	7		Good	ULG	
47 Msongezi		2738						ULG	
48 Mtimbira	DP	3347	2295		7		Sat	ULG	*
49 Munga	DP	1945	1945	1	3	1	Good	ULG	*
50 Mwaya	DP	5461	2880	1			Sat	ULG	

## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Ring wells	Tube wells	Not working		Water Qty	Dist	VWSC Present
						Ring wells	Tube wells			
51 Mzelezi	G	1938	1938	1				Sat	ULG	
52 Nakafulu		702		1			1	Sat	ULG	
53 Nawenge	G	2164	2164						ULG	
54 Ngoelanga		2453		1			1	Sat	ULG	
55 Ngombo		1157			1		1	Sat	ULG	
56 Nkonko		1329							ULG	
57 Ruaha	G	4531	4531						ULG	
58 Sali	G	1618	1618						ULG	
59 Sofi Majiji		3099		1			1	Sat	ULG	
60 Sofi Mission	Priv	996	996						ULG	Private
61 Tanga		1338		1			1		ULG	
62 Uponera		2138	600			2		Good	ULG	
63 Usangule	DP	3861	2700			9		Good	ULG	
64 Vigoi	G	2865	2865						ULG	
Subtotal Ulanga		147415	81045	43	122	29	5			
MOROGORO REGION GRAND TOTAL		1148033	512458	67	1116	47	345			

PIPED WATER SUPPLY SCHEMES  
ULANGA DISTRICT

Village	System	Total Pop.	Served Pop.	Domestic waterpoint	Shallow well	Water Qty	VWSC Present
1 Ihowanja	DP	3096	1543	5			
2 Iragua	DP	2743	2100	7	2	Good	
3 Isongo	G	3152	600	6			
4 Lupiro	DP	2794	1547	7	1	Sat	
5 Madibira	DP	2228	1114	2			
6 Mahenge Mjini	G	5405	5405				
7 Makanga	G	2340	2340	6			
8 Malinyi/Kipingo/Luga	DP	8151	8151	23	12	Sat	*
9 Mavimba	DP	1966	1966	6	8	Good	
10 Minazini (Itete)	DP	4895	4895		3	Sat	
11 Minepa	DP	1256		11	9	Good	Out of order
12 Mtimbira	DP	2790	2295	5	7	Sat	*
13 Munga/Mtimbira	DP	1945	1945	6	3		
14 Mwaya	DP	5461	2880	13	1	Sat	
15 Mzelezi	G	1938			1	Sat	in process
16 Nawenge	G	2164	2164				
17 Ruaha	G	4531	4531	9			
18 Sali	G	1618	1618	5			
19 Sofi Mission	Private	996	996				
20 Usangule/Mtimbira	DP	3861	1500	3	9		
21 Vigoi	G	2865	2865				
Subtotal Ulanga District		66195	50455	114	56		
GRAND TOTAL MOROGORO REGION		401855	324336	760	203		

**ANNEX 2B  
PIPED WATER SUPPLIES  
ULANGA DISTRICT**

	<b>Name</b>	<b>Source</b>	<b>Method</b>	<b>No DWP</b>	<b>Operational DWP</b>	
1	Mwaya	RW in riverbed	Diesel Pump	13	0	
2	Ruaha	river	gravity	9	9	
3	Sali	river	gravity	5	5	
4	Mtimbira	RW in riverbed	Diesel Pump	16	0	
5	Ihowanja	RW in riverbed	Diesel Pump	5	0	
6	Malinyi	RW in riverbed	Diesel Pump	23	0	
7	Isonga	river	gravity	8	8	
8	Makanga	river	gravity	6	6	
9	Iragua	RW in riverbed	Diesel Pump	7	0	
10	Lupiro	RW in riverbed	Diesel Pump	6	0	
11	Mavimba	RW in riverbed	Diesel Pump	6	0	
12	Minepa	RW in riverbed	Diesel Pump	11	0	
13	Itete	RW in riverbed	Diesel Pump	0	0	Private
<b>T O T A L</b>				<b>115</b>	<b>28</b>	
Domestic Water Points per supply				9.6		

RW = ring well

Mtimbira Water Supply is extended to Madibira, Munga and Usangule

Malinyi Water Supply is extended to Misegese, Lugala and Kipingo

List of PROGRAMME villages  
ULANGA DISTRICT

Nr.	Villagename	Pop.	Nr. of SWells	Nr. of RWells	Nr. of DWP's	Current step in O&M setup
1	Luhombero	3588	13	1		15
2	Chigandugandu	3448	7	2		11
3	Mbuga	2249		1		11
4	Igota	1286	4	1		15
5	Nakafulu	702		1		11
6	Igumbiro	2271	1			11
7	Milola	984		1		11
8	Mavimba	2184	8		6	15
9	Kivukoni	3398	10			11
10	Mtimbira	3347	7		5	1
11	Madibira	3448			2	3
12	Munga	1945	3	1	6	11
13	Usangule	3861	9	1	3	15
14	Kalengakero	3068	2	2		11
15	Malinyi	4344	12		15	11
16	Misegese	2124	7	1	1	11
17	Igawa	2580	9	1		15
18	Lugala	1567	5		1	11
19	Kipingo	3807	11		5	15
20	Biro	1811	4	1		11
		52012	112	14	44	

## Annex 4

NEW PROGRAMME VILLAGES  
ULANGA DISTRICT

DIVISION	VILLAGE	POPULATION		
		MALE	FEMALE	TOTAL
VIGOI	1. Uponera	1051	919	1980
	2. Isongo	1433	1485	2918
	3. Makanga	1079	1087	2166
MWAYA	4. Nkongo	590	641	1231
	5. Chirombola	1125	1244	2369
	6. Gombe	350	315	675
	7. Lukande	477	420	897
	8. Iputi	1709	1944	3653
	9. Ketaketa	1087	1161	2248
	10. Euga	686	701	1387
	11. Ebuyu	966	1012	1978
MALINYI	12. Mbalinyi	527	521	1048
	13. Ngoheranga	1042	1229	2271
	14. Mabanda	346	378	724
	15. Tanga	532	547	1079
	16. Kilosa kwa Mpepo	538	554	1092
MTIMBIRA	17. Sofi Majiji	1353	1506	2859
	18. Kiswango	444	571	1015
	19. Njiwa	2118	2199	4317
	20. Minazini	2200	2332	4532
	21. Kipenyo	323	380	703
LUPIRO	22. Idunda	788	747	1535
	23. Kichangani	1209	1416	2625
	24. Mdindo	343	396	739
	25. Maongozi	1253	1286	2539
	26. Chikoti	264	373	637
	T O T A L	23923	24864	48787

## ANNEX 5 - ULANSA PROPOSED BUDGET - BY PARE - FORMULATION MISSION

(in Tsh 1000)

ULANSA		Year 1	Year 2-5	TOTAL
	District Adviser			
10-4332	1. Allowances 82 d	215		
	2. Transport 1000 km.	1,400		
	3. Stationery	400		
		2,015	2,015	10,075
	Local Personnel			
10-4311	11. DWSC (3 HOD) 48 days	418		
	12. District teams 120 days	864		
	13. Fieldteams - Tsh.216,000	3,240		
	14. Drivers (3) 200 days	108		
	15. Surveyors 2	576		
	16. Construction team/Rehab 5/W	1,340		
	Construction/Rehab. pipe	2,016		
		8,562	8,562	42,910
20-4927	Investment Implementation			
	Survey + drilling	7,215		
	Toolboxes: Villages 25 x Tsh. 84,000.-	2,200		
	Safari equipmt: Tsh. 150,000.-	968		
	Disinfect - 400 x Tsh. 400.-	960	300	10,707
		3,988		
10-4931	Investment - transport			
	13. Motorcycles 17 x Tshs.520.-	8,840		3,240
	14. Bicycles 114 x Tsh. 52,000.-	4,004		4,004
		12,844		
10	Transport running costs			
	Programme vehicles 2	6,000		
	50,000 km ply. x Tsh. 50.-	2,500		
	Lorry 15,000 km x 100			
	Motorcycles, District Team	4,000		
	10,000 x Tsh 20.-			
	Food - 5 x 10,000 Tsh.100.-			
		12,500	12,500	62,500

ANNEX 5 - ULANGA PROPOSED BUDGET - BY PRE - FORMULATION MISSION

(in Tsh 1000)

ULANGA		Year 1	Year 2-5	TOTAL
20	Materials - Maji			
	(i) SW - rehab + construction	8,000		
	(ii) Pipe supply rehab + constr.	30,000		
		38,000	38,000	190,000
40	Materials Afya			
	Improved latrine slabs	1,300	1,300	6,500
	Cement + chicken wire (Tsh.2,200 per slab)			
	(Sh. 10,000 per year per district)			
10	Drainage	260	260	1,300
	Tsh.7,000.- per slab - sh. 2,000			
	Training			
	(a) Staff training			
a.1	Community Development			
	Yearly - 2 weeks refresher		500	2,000
	Two month course year 2			
	Rusha TRB	4,000		4,000
a.2	Health			
	Yearly		500	2,000
	One month course - 2 year	2,000		2,000
				<del>2,000</del>
a.3	Water			
	Yearly - Tsh. 50,000 pp			
	(Fieldteam & district Officers 1/0	700	700	3,500
a.4	Other training	<del>4,000</del> 400	<del>4,000</del> 400	2,000
a.5	VHW training			
	Training costs per VHW - 140,000			
	Year 1 = 25	3,300		
	Year 2 = 25			
	Year 3 = 25 x 4			14,000
	Year 4 = 25			
b	Village level training	2,000	2,000	10,000
c.1	Training materials	4,000	3,000	16,000
10	Stationeries + office equipment	<del>4,500</del>	<del>2,000</del>	<del>20,000</del>
	Stationeries Maji, Afya & Handiles	1,000	1,000	5,000
	Office equipment field staff	200		

Note: Budget is in 1992 prices

The Budget for the next phase as proposed by the district is available



## PRESENT PROGRAMME VILLAGES REPRESENTATION OF

WOMEN IN VWSC AND VILLAGE COUNCIL

ULANGA DISTRICT.

DIVISION	VILLAGE	WOMEN IN	
		V W.S.C.	VILLAGE COUNCIL
MWAYA	Luhembere	2	3
	Chigandugandu	2	1
	Mbuga	2	3
LUPIRO	Igoko	2	5
	Nakafulu	2	3
	Igumbiro	2	1
	Milola	2	2
	Mauimba	2	4
	Kivukoni	2	3
MTIMBIRA	Mtimbira	2	4
	Madibira	2	2
	Munga	2	3
	Usangule	2	5
	Kalengakero	2	2
MALINI	Malinye	2	3
	Misegese	2	2
	Igawa	2	1
	Lugala	2	1
	Kipingo	2	2
	Biro	2	1

\* VWSC consists of 5 members

+ Village Council consists of 25 members

**KILOMBERO  
DISTRICT**

**MOROGORO**

## 1. BACKGROUND INFORMATION

Kilombero District covers an area of 14,918 km<sup>2</sup>. It is situated in the south-west of the Morogoro Region in Tanzania. It is subdivided into 5 divisions, 19 wards and 46 villages. Around 20% of the area is covered by thick forest including game reserves.

Population 1988 (census)	187,026
Population as % of Morogoro region	15%
Population growth rate	5%
Population 1992 (projection)	227,000
Population 1997 (projection)	290,000
Population 2002 (projection)	370,000

The population density grew from 1988 to 1992 from 13 to 15.6/km<sup>2</sup>

The 1990-census counted 19,863 cattle, 2,730 goats, 2,616 sheep 827 pigs and 137,773 poultry.

Physiographically, the District is dominated by the wide flat valleys of the Kilombero River with its SW-NE orientation which joins the valley of the Great Ruaha River in the north-eastern part of the District. The valley is bordered by a narrow strip of hills and highlands in the north-west the Udzungwa Mountains and Usagara Mountains.

The hills and highlands consist of metamorphic Precambrian Basement rocks: mainly gneisses and other granitoid rocks. The highlands are mainly covered by forest. Soil fertility is generally low.

The Kilombero Valley is flooded annually and as a result covered by heavy clays in its central parts. Here, the main crops are rice and sugar cane. The flanks are covered by numerous alluvial fans.

The area in between the Great Ruaha River and the Kilombero River is underlain by strips of Pleistocene deposits, biotitic Basement rocks and the sand and siltstone of the Karroo Formation.

The short rains begin in November and last until December. January and February are dry. The long rains starts in March and continue until the end of May.

The main food crops are rice, maize, cassava and all type of beans. The cash crops are sugar cane, cotton and oil seeds such as sunflower, soya beans, groundnuts and simsim.

The health infrastructure can be summarized as follows:

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hospitals	2	dispensaries	25
health centres	2	village health posts	12

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There are regular cholera outbreaks. Programmes with the Swiss Tropical Institute (STIFL), the GoT, UNICEF and the Netherlands Government aim at improving environmental sanitation. The District Council's interest for water and sanitation is increasing. The development levy is Tsh 700.- per able adult per year, exempted are women depending on a husband.

## 2. EXISTING WATER SUPPLIES

The water supply situation according to the District Water Engineer (DWE) and the DHV database in Morogoro is summarized in the following Table:

	Total No.	Defect No.	Operational No
Shallow wells (tube)	163	17	146
Shallow wells (ring)	23	18	5
Piped water schemes (boreholes)	3	2	1
Piped water schemes (river,gravity)	10	10	10

Details of the shallow wells as received from the database in Morogoro are given in Annex I after corrections made by the District. The database counts 186 shallow wells.

The villages served by piped water schemes are listed in Annex 2a while the schemes themselves are listed in Annex 2b. Ten systems draw their water directly from the rivers. All these schemes are operational. Three systems draw ground water from boreholes. They are all non-operational because of mechanical problems in two cases or lack of fuel in one.

The population served by domestic water points was estimated on the basis that each domestic water point serves 300 souls. In this way it was calculated that 39% of the population is actually served by water and that the infrastructure is in place to serve 47% of the population.

	All water Points		Operational Water Points			
	No	Pop.	Served	No	Pop.	Served
Shallow wells	186	55,800	25%	151	45,300	20%
Public Taps	164	49,200	22%	145	43,500	19%
TOTAL	350	105,000	47%	296	88,800	39%

Most shallow wells are situated in the plains, in the villages along the main road. The piped water supply schemes are found along rivers.

The bacteriological quality of piped water is not known but should be reasonably good as it comes from protected forest reserves. There is no habitation in these areas.

Groundwater of good chemical quality is present throughout the District. But in a few cases people complain about high iron and manganese content. Samples were analyzed but the water was found suitable for human consumption in all cases.

The supply of safe water is very urgent as cholera and typhoid are endemic  
The concentrations of the population and the water supplies match rather well as both are centred along the main road.

### 3. SANITATION

There is in general no water shortage in Kilombero. Consequently improved water supply does not have the highest priority. Considerable awareness raising is needed on the relation safe/clean water to health issues. In an 8-month period in 1991, from January until August, 849 cases of cholera were registered. A district cholera campaign was launched last year. Villagers were informed about preventive measures to take and households were checked on the latrines used. Due to high water table unlined latrines collapse during the rainy season. In at least 7 of the programme villages, cholera did occur.

Malaria, diarrhoea and schistosomiasis and worms are the water-borne and water-related diseases with the highest incidence.

Preventive health care programmes in relation to water and sanitation are:

- CSD (Child Survival Development) being implemented in 12 of the RWSP villages. The VHW within CSD have received a two months training. Follow-up training focused on preventive measures particularly related to disease. Extension of the programme with 29 villages will be decided coming March.
- CDC (integrated Communicable Diseases Control) started in 1989 with a construction programme for improved pit latrines. It is concentrated in 6 villages with high prevalence of schistosomiasis. Four of these villages are in RWSP. Per latrine CDC contributes 2 bags of cement and mesh wire. The pit latrine owner takes care of bricks and labour. Programme is supported by GoT and STIFL.
- Facts for Life - a UNESCO, UNICEF, WHO and GOT Programme to strengthen primary health care. Training/awareness raising is provided to P.H.C. committee's at various levels. Educational material (3 books) in Swahili have been produced. However distribution is limited.

DHOI and the HA's in the fieldteams deal with the above three programmes as well as with RWSP on district, division and village level.

The position of VHW (Village Health Worker). All but one RWSP villages have 2 VHW (one male, one female). Twenty four VHW's (12 villages) were trained through CSD and received a bicycle on completion. The district is in the process of establishing by-laws for payment of the VHW by the village government. VHW's working in villages with CSP, RSWP and PHC have to deal with 3 reporting systems.

Gender issues in relation to health and sanitation are not being dealt with in the RWSP. On district level health data don't reflect gender. The health team in the RSWP has only one female based in the Ifakara division. There are no female HA in the other divisions. It seems that the GOT only started recently to train female HA for preventive health care.

**Training requirements:**

- New techniques/approaches to strengthen the present efforts in health and sanitation education is needed. The DHOI and HA's miss skills in communication and community mobilisation.
- Village based training for 10 cell leaders and caretakers as they proved to be the most effective source for dissemination of information.
- Standard government training of 2 months for VHWs in RSWP villages not covered by CDS.

The construction of washing slabs, improvement of the drainage system and the construction of concrete latrine slabs are other means to improve sanitation.



#### 4. WATER DEMAND

Rough estimates of the water demand for the year 1997 and 2002 given in the following Table:

	1997	2002
	m <sup>3</sup> /day	m <sup>3</sup> /day
Domestic Water demand (30 l/head/day)	8,750	11,100
Cattle Watering (30 l/head)	700	1,000
Other animals	1,000	1,000
TOTAL DEMAND		
OF HUMANS AND ANIMALS	ca 10,500	13,000

This is only a very small fraction of the available water (Section 7). Not the magnitude of the demand but the dispersed areal distribution of the demand and the safety of the water sources are the main problems.

## 5. LEVEL OF COMMUNITY ORGANISATION AT VILLAGE LEVEL

Community Development deals currently with 9 donor funded programmes implemented together with other departments' Health, Maji and Agriculture.

According to the field staff there is no noticeable difference in performance of villages with only RWSP and those with both RWSP and CSD. Of the 21 RWSP villages, 12 are also within CSD. On division/ward level the female CDA deals with CSD and the male CDA with RWSP.

In the process of awareness raising, a very important group namely the 10-cell leaders were not included. Misunderstanding and therefore lack of interest with villagers could have been avoided if 10 cell leaders were included from the start. In general the seminars for secretaries (e.g. village chairman - secretaries, ward secretaries etc.) have not created the expected support for the programme. Therefore the continuation of these seminars should become GOT-contribution to the RWSP while the programme will concentrate its efforts to mobilise the people on village level.

The VWSC works reasonably to very well in most villages. In several cases more than more than two woman are members of the VWSC.

Division	No. Programme Villages	VWSC	
		M	F
1. Mang'ula	9	17	28
2. Ifakara	8	23	17
3. Kidatu	4	9	11
<b>TOTAL</b>	<b>21</b>	<b>49</b>	<b>56</b>

The contribution to the O&M fund differ and is in general low The amount to be contributed is based on what the village is willing to pay and not on requirements of sustainability. According to the CD staff there has never been proper instructions to this end. No water levy is charged for non domestic water use such as beer brewing. In average household contribution is less than TShs 50 per month. For example in Mbasia with 14 IWP (9 shallow wells and 5 DWP), the contribution per IWP is TShs 200 per month. Total number of households per IWP is 40. This means a contribution of TShs 5 per household per month. To increase the contribution clear directions from the District Council are needed. Furthermore, steps must be taken to ensure that the funds cannot be misused.

Average amount in O & M fund per division.

1. Mang'ula	TShs	14,033
2. Ifakara	TShs	26,028
3. Kidatu	TShs	13,676

Some villages have started income generating activities to contribute to the water fund. This is being promoted by the CDA's.

In the Mangula division, eight villages are in step 12, one is on step 4. In Ifakara all 8 villages are on step 12 or 13. In Kidatu division, three are still on 9 and one is on step 4 (design). In several villages the survey for extension has not been undertaken yet. Therefore, it is hard to predict how many of the villages will be handed over before July'92 with full coverage being reached. Two villages were recently handed over. These received an indication B meaning that further district council assistance is still needed.

Training requirements:

- More emphasis is to be given to training 10 cell leaders and village caretakers to secure the necessary support of the villagers.
- Study tours within the districts for VWSC, Village leaders VM and VHW to more successful villages.

## 6. WOMEN IN DEVELOPMENT

In Kilombero, the participation of women at the various levels of water, sanitation and health sector is as follows.

	Total	Male	Female
DWS - Steering Comm.	6	6	0
District team	3	3	0
Fieldteams (3)	9	7	2
VWSC (21)	105	49	56
VHW	41	21	20
VM	37	36	1
<b>TOTAL</b>	<b>201</b>	<b>122</b>	<b>79</b>

Nearly 40% of the people directly involved are women. However at district level, where the decisions on programme implementation are made, no females are involved. The District should make sure that each field team will have at least one female officer in the next phase (see Annex 5).

In the VWSC more than half of the members are women. This should allow a more direct and active involvement of women in the planning and implementation at village level.

With high migration traditional customs tend to disappear. For women this often means that more freedom is acquired. Furthermore people migrate in search of better economic opportunities. Economic activities undertaken by women are supported by the following organisations:

- DVS - provides tools & equipment. With the repayments a revolving loan fund is being established. Around 18 activities have been supported in fields such as agriculture, weaving and sewing
- CDFT - has provided loans for 9 villages to purchase farming inputs and/or sewing machines.
- CRDB - Australian Women Fund - provided loans for 2 women groups to buy maize milling machines.
- NBC has recently started their women desk and provide loans for individual women as well as women groups. Seven (7) women have received assistance.

The main problems identified are lack of technical skills and financial management. Management advisory services could assist to strengthen these women activities and prevent disappointments. It is doubtful if the CD department should provide those services. Other institutions like IDM are better equipped to do so. The District Council has budgeted funds to assist women groups with training.

The District and field staff do not have a clear picture on how to deal with gender issues. This is understandable as the programme has so far provided very little attention to these issues.

Training requirement for RSWP concerning women in development:

For programme implementers:

- Awareness raising on gender issues in water and sanitation. Using the programme as a means to improve women's position in decision making in village affairs.
- Include data on gender issues in the basis line study (step 1) to be done by participatory action research involving the male and female population.

For village women:

- Mobilisation and group formation are ways to influence the decision making process from household, 10 cell to village government level as part of water and sanitation improvements.
- Training in management and bookkeeping for women in the VWSC, the VHW, female caretakers and women groups in RWSP villages.

## **7. AVAILABLE WATER RESOURCES**

### **7.1 GENERAL**

In general, there is no shortage of water. The available resources exceed the demand from humans and animals by far. This demand is in the order of magnitude of only 0.02 % of the rainfall. So, the main problem is not lack of water but the underdevelopment of the resources and the bacteriological contamination of the existing supplies.

### **7.2 RAINFALL**

Rainfall is moderate to high. Mean annual rainfall varies between 1000 mm in the plains near the Kilombero river and rises to 2500 mm or more in the mountains in the north.

Rainfall can seasonally be collected for domestic use by means of roof catchments, especially from buildings with large roofs like those of the government.

### **7.3 SURFACE WATER**

The District boundary in the south coincides with the Kilombero River while part of the northern boundary coincides with the Great Ruaha River. Their flood plains cover approximately 75% of the District. It is flooded almost every year during the month of April and May. All major streams are probably perennial.

Ten piped gravity water supplies have intakes along the perennial rivers. Water enters these systems without treatment.

### **7.4 GROUNDWATER (INCLUDING SPRINGS)**

The total amount of groundwater available in Kilombero District exceeds the domestic demand by far.

It is evenly distributed over the area. Salinity is not a problem. Locally, iron and manganese pose a problem but chemical analyses found the water to be suitable for domestic purposes.

Groundwater in the plains is present at shallow depths: in the rainy season at 0.5 - 1.0 m and towards the end of the dry season at 3-4 m below ground surface. There are many springs in the rainy mountains areas along the northern boundary of the District but only few are being used as a direct source for domestic use.

## 7.5 WATER QUALITY

Groundwater of good chemical quality is found almost everywhere in the District.

In the mountains, good quality groundwater emerges at numerous springs and seepage

The supply of safe water is very urgent as cholera and typhoid are endemic.

## **8. IMPLEMENTATION CAPACITY AT DISTRICT LEVEL**

The district has been able to fill the staff positions required for the programme and in general each department involved has good leadership supportive to the RWSP.

Assessment of the implementation capacity:

### **8.1 PLANNING.**

The DPA is a planning officer directly involved in the policy and planning of the water sector. Planning on district level is a thankless task. Central Government allocation are often late and reduced without proper consultations. Planning the District Council contribution is nearly impossible as it depends on revenue collected and other pressing expenses such as salaries of Community Development staff. The only budget that can be planned is the one of the donor resulting in the attitude to ask to much. For the next phase improved objective programme planning is to be stressed in which due attention is provided to sustainability and the contributions needed from GOT and the District Council.

### **8.2 COMMUNITY DEVELOPMENT**

CD has good leadership. The HOD spent in average 3 days a month on RWSP. Community Development can meet the suggestion of having one female in each field team. In 1990/91 staff training included monitoring/reporting and team work. Training for CD staff is needed in new approaches to community participation, management (financial) and bookkeeping skills. Teaching and training materials are lacking. The CDOI has limited experience with the gender issues related to water and sanitation. The CD staff in the fieldteams combine all their CD tasks when visiting the villages. This is possible and avoids confusion.

### **8.3 GENDER ISSUES/WOMEN IN DEVELOPMENT**

The field staff deals on practical basis with these issues. However, the opportunity of using the RWSP to strengthen women position within the village decision making structure has not been thought through. The report of the study on Women Involvement in the RWSP has not been received. A translation in Kiswahili is recommended. Training to introduce a framework and a strategy for gender issues is proposed.



#### 8.4 SANITATION AND HYGIENE

The DHOI is responsible for the preventive health care in the district. Together with the District Coordinator for MCH he implements the training for VHWs. The health staff lack communication and community mobilisation skills. Most of the HA had their professional training years ago without any refresher course since. One month training focusing on communication/community mobilisation skills, identifying causes for water-borne diseases, problem solving, updating general preventive health care knowledge, is suggested. This should be followed by yearly refresher courses. Within the training gender issues related to water and sanitation is to be dealt with.

The performance of the VHW has been weak and could in the long run constrain the improvement of hygiene and sanitation at village level. It is suggested that the RWSP assists in training those VHW who are not trained by the CSD.

#### 8.5 SURVEY AND CONSTRUCTION ACTIVITIES.

The District has operational teams for the survey and construction of 25 shallow wells per year. In addition it has the capacity to rehabilitate 25 more shallow wells. There is no operational team for survey of piped supplies. Staff is available for the construction but the equipment must be borrowed from the Region.

Section	Qualified Untrained Personnel	Trained Personnel	Equipments Available	Operational Teams
Survey Piped Supplies Construction	1	0	Theodolite, Dump level in bad condition	0
Piped Supplies Survey	2	5	NIL	0
Shallow Wells Construction	2	3	1 survey set (incomplete)	1
Shallow Wells	3	3	1 construction set (incomplete)	1

#### 8.6 OPERATION AND MAINTENANCE

The step by step approach is well accepted. Although the implementation of step 5,6 and 8 in relation to the financial contributions by various sources is not clear. Improvement in step 6 is needed through training of the field staff and by better communication between PA, district team and field team. Currently neither the district team or the fieldteams have sufficient information on sustainability at village level.

## 8.7 MONITORING AND REPORTING

More training in analysing the data and report writing is requested. The purpose of monitoring namely that action is being taken to solve problems is to receive more attention.

## 8.8 TRANSPORT

At district level the present transport available should be adequate for the coming 5 years. With strict rules on the use of the cars, 35,000 km. per year per car should be sufficient. For transport of materials and equipment a lorry is requested. However, the option suggested is to make funds available to the district to hire a lorry from the vehicle pool of the programme at regional level.

At divisional level with the expansion of the programme the distances to be covered by the field teams become larger. Motor cycles are therefore recommended for all fieldteams. Various models should be compared and the one that is also suitable for women should be chosen.

At village level field teams suggested that VHW and VM be provided with bicycles to improve their mobility in the village.

## 8.9. FACILITIES AND EQUIPMENT

On divisional level working conditions can be improved by providing 1 table, 3 chairs, a small cabinet and a pinboard. Office space will be made available or programme containers can be used.

## 8.10 FINANCIAL CAPACITY

Except for the salaries of the Community Development staff, the contribution of the District Council is uncertain. However together with Government support several activities in improving water supply have and are still being undertaken. (see Inputs by other agencies). There is little indication that the District Council can sustain the water sector in the near future. Other management alternatives have to be looked into during the next phase to start a process that can lead to reduced donor dependency.

## **9. WATER DEVELOPMENT OPTIONS**

### **9.1 SHALLOW WELLS - HAND DUG LARGE DIAMETER (RING WELLS)**

There are 21 ring wells equipped with hand pumps in Kilombero District, 18 are non-operational when the hand pumps broke down and spares were not available. Hand pumps were removed in most of them. Afterwards, they were used for bucket lift but got contaminated in the process.

Ring wells are suitable for the lowlands with alluvial or colluvial cover. The major disadvantage of this kind of well is that they are dug by people, and that therefore digging has to stop just below the water table. If the water table drops the wells have to be deepened. Another disadvantage is that these wells can easily be contaminated.

### **9.2 SHALLOW WELLS - HAND AUGURED TUBE WELLS**

By far most wells constructed in Kilombero District are of this type. They are suitable for the lowlands with alluvial or colluvial cover where the water table is not too deep. Their total number amounts to 161 according to the District.

These wells have all the advantages and none of the disadvantages of rings wells and should be the preferred technological choice for Rural Water Supply Points in the plains.

### **9.3 MACHINE DRILLED DEEP WELLS**

Such wells are expensive but the high costs can be justified if a large number of taps is proposed in piped water supply. However, all three piped water supplies are non-operational: two because of mechanical breakdowns and the remaining one because of lack of fuel.

### **9.4 SURFACE WATER - RIVERS**

Surface water is underdeveloped as the head-waters of the rivers are all covered by dense forest. Water is tapped directly from those rivers. However, those forested head-waters then must be protected from deforestation and human settlement.

### **9.5 SPRINGS**

There are probably many springs in the mountains. There seems to be ample scope to develop them. However, a systematic survey was never done.

The fact that most rivers draining those areas do not dry up during the dry seasons proves the presence of numerous perennial springs.

## 9.6 ROOF CATCHMENTS

The biggest buildings in Ifakara are those built by the mission and the government, and they are the ones which seems to be most suitable to function as roof catchments. However, most roofs are not in a good condition. Nevertheless, it is advisable to make roofs suitable as drinking water catchment in the design of future public buildings, especially where shallow wells are problematic because of water quality problems.

## 9.7 OTHER OPTIONS

Rock catchments, sand & sub-surface dams, earth dams, charcos, pans and hafirs (valley tanks). Not yet appropriate for Kilombero as the options discussed in sections 91 and 96 are adequate for the foreseeable future.

## 10. INPUTS BY OTHER AGENCIES

Inputs by GOT and District Council towards the development projects in the water & sanitation sector.

- For 1990/91 - development projects

Shallow wells construction in Mkangawalo and Lipangalala - 2 wells

GOT	T Shs.	1,300,000
District Council	T Shs.	325,000

Shallow wells survey and construction Mlimba and Marere - In Merere 4 shallow wells constructed

GOT	T Shs.	1,835,000
District Council	T Shs.	385,000

RWSP - Government contribution to meet part of local personnel allowances

GOT	T Shs	500,000
District Council	T Shs	500,000

CDS. Child Survival Development

GOT	T Shs	800,000
District Council	T Shs	1,800,000

- For 1991/92 - development projects

To construct a total of 4 wells in Mofu, Chisaro, Mpanga and Ngalimila villages.

GOT	T Shs	148,000
District Council	T Shs	185,000

Extend the Kilama - Kikwawila water supply scheme to Ifakara township

GOT	T Shs	48,000,000
District Council	T Shs	12,000,000

To rehabilitate the water intakes of Mang'ula A&B and Ichonde and Kisawasawa

District Council	T Shs	185,000
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Payment of allowances to local personnel directly engaged in the RWSP

GOT	T Shs	1,000,000
District Council	T Shs	1,250,000

- Other donor agencies:

Swiss Government through STIFL is implementing programmes concerning health, hygiene and sanitation (see para 3).

## **11. WATER RESOURCES DEVELOPMENT PLANNING**

A water resources development planning was *not* submitted.

Taking into account the absence of operational teams for piped supplies and the favourable situation for more shallow wells, the last mentioned technology choice should be favoured at the expense of piped supplies.

A list of the villages proposed to be included in the programme is attached in the Annex.

## **ANNEXES**

- Annex 1** Rural Water Supply Points (RWSP)
- Annex 2a** Piped Water Supply Villages
- Annex 2b** Piped Water Supply Schemes
- Annex 3** Programme villages
- Annex 4** Proposed Programme Villages
- Annex 5** Present Programme Villages, representation of women in VWSC and Village Council

## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Not working		Water Qty	Dist	VWSC Present
				Ring wells	Tube wells			
1 Chisano		1015	600		2		Good	KLB
2 Chitu	G	5462	5462					KLB
3 Ichonde	G	1109	1109					KLB *
4 Idete		5006	300		2	1	Saline	KLB
5 Ifakara Mjini	EP	11963	1200		26	11	Good	KLB
6 Kalengalo		3027	300		1			KLB
7 Kamwene		4992	300		1		Good	KLB
8 Katindiuka		1620	1620		7		Good	KLB *
9 Katurukila		1851	1851	6	3	6	Sat	KLB *
10 KDC	P	7757	7757					KLB Private
11 Kibaoni	EP	4409	2355		1		Good	KLB
12 Kiberege	G	4510	4510	2	11		Sat	KLB *
13 Kidatu	G	4923	2000					KLB *
14 Kikwawila/Kapolo	G	4726	4726	2	2	2	Good	KLB *
15 Kining'ina		2077	1800		6		Good	KLB *
16 Kisawasawa	G	2095	2095		4		Good	KLB *
17 Kitete		602						KLB
18 Lipangalala		8120	3000		13	3	Good	KLB
19 Lugala		518						KLB
20 Lumemo	EP	3733	3733		15		Good	KLB *
21 Mahutanga		2008	1200		4		Good	KLB *
22 Mang'ula A	G	3378	3378					KLB *
23 Mang'ula B	G	3787	3787					KLB *
24 Mbasa		2720	2720		11		Good	KLB *
25 Mbingu		4748	2700		9		Good	KLB
26 Mchombe	G	4483	4483	2		2		KLB
27 Merera		3452						KLB
28 Mgudeni	G	1252	1252					KLB *
29 Michenga		3678	2400		8		Good	KLB *
30 Mkamba	G	9651	4000					KLB *
31 Mkangawalo		4727	1200	2	4	2	Good	KLB
32 Mkasu		1118		1		1		KLB
33 Mkula	G	2214	2214					KLB
34 Mlabani		4150	2100		9	2	Good	KLB
35 Mngeta	G	2753	2753		1		Good	KLB
36 Mofu		3458		2		2		KLB
37 Mpanga		1514	600		2		Good	KLB
38 Msolwa Station	G	5878	5878				Good	KLB *
39 Msolwa Ujamaa	G	1625	1625					KLB *
40 Mlimba	G	7438	7438				Good	KLB
41 Mwaya	G	4964	3155				Good	KLB *
42 Namawala	DP	1825	1535				Good	KLB *
43 Ngaumila		1058	600		2		Good	KLB
44 Sanje	G	4303	4303					KLB
45 Sonjo	G	1998	1998					KLB
46 Tanesco	G	1552	1502					KLB
47 Tanganyika		2052						KLB
48 Taweta		3250		1		1		KLB
49 Uchindile		527	527	1	2	1	Good	KLB
50 Uchindile Chini		1035	600	1	2	1		KLB



## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Ring wells	Tube wells	Not working		Water Qty	Dist	VWSC Present
						Ring wells	Tube wells			
51 Utengule		1192	300	1					KLB	
52 Viwanja Sitini		5363	600		2			Good	KLB	
53 Zignali		1909	1909	2	13				KLB	*
Subtotal Kilombero		184575	111475	23	163	18	17			

PIPED WATER SUPPLY SCHEMES  
KILIMBERO DISTRICT

Village	System	Total Pop.	Served Pop.	Domestic waterpoint	Shallow well	Water Qty	VWSC Present
1 Chita	G	5462	5462	12			
2 Ichonde	G	1407	1407	6			*
3 Ifakara Mjini	EP	11963	1200	13	4	Good	
4 KDC	P	7757	7757				
5 Kibaoni/Mbase	EP	4409	2355	6	1	Good	
6 Kiberege	G	5708	5708	7	2	Sat	*
7 Kidatu	G	4923	4923	10			*
8 Kikwawila/Kapolo	G	4726	4726	12	3	Good	*
9 Kisawasawa	G	3112	3112	4	4	Good	*
10 Lumemo	EP	4572	4086	12	15	Good	*
11 Mahutanga	EP	2008	900	6			
12 Mang'ula A	G	4080	4080	10			*
13 Mang'ula B	G	4738	4738	10			*
14 Mchombe	G	4483	4483	4			
15 Mgudeni	G	1252	1252	7			
16 Mkamba	G	9651	9651	11			*
17 Mkula	G	2214	2214	6			
18 Mngeta	G	2753	2753	4	1	Good	
19 Msolwa Station	G	8508	8508	13	2	Good	*
20 Msolwa Ujamaa	G	2528	2528	12			*
21 Mwaya	G	6009	3155	12	1	Good	*
22 Namawala	DP	2769	1535	6	1	Good	*
23 Sanje	G	4303	4303	7			
24 Sonjo	G	1998	1998	4			
25 Tanesco	G	1552	1502				Private *
Subtotal		112885	94336	194	34		

**ANNEX 2b  
PIPED WATER SUPPLIES  
KILOMBERO DISTRICT**

<b>No</b>	<b>Village Name</b>	<b>Sources</b>	<b>Method</b>	<b>No DWP</b>	<b>Operational DWP</b>
1	Msolwa Ujama	River	Gravity	12	12
	Msolwa Station	Gravity		13	13
2	Mkamba	River	Gravity	11	11
	Kidatu			10	10
3	Sanje	River	Gravity	7	7
4	Muhta/Sonjo	River	Gravity	6	6
	Sonjo			4	4
5	Mang'ula	River	Gravity	10	10
	Mang'ula			10	10
	Mgudeni			7	7
6	Ichonde	River	Gravity	6	6
	Kisawasawa			4	4
	Kiberege			7	7
7	Kikwawila	River	Gravity	10	10
	Kapolo			2	2
8	Kibaono	BH	Electric Pump	6	6
9	Ifakara Mjini	BH	Electric Pump	13	0
10	Namamala	BH	Diesel pump	6	0
11	Mugeta	River	Gravity	4	4
	Mchombe			4	4
12	Chita	River	Gravity	12	12
<b>T O T A L</b>				<b>164</b>	<b>145</b>
Domestic Water Points per supply				14	

List of PROGRAMME villages  
KILIMBERO DISTRICT

Nr.	Villagename	Pop.	Nr. of SWells	Nr. of RWells	Nr. of DWP's	Current step in O&M setup
1	Kiberege	4510	11	2	7	12
2	Kisawasawa	2095	4		4	12
3	Ichonde	1109			6	12
4	Mang'ula A	3378			10	4
5	Mang'ula B	3787			10	12
6	Kwaya	4964			12	12
7	Mgudeni	1252			7	12
8	Katurukila	1851	3	6		12
9	Zignali	1909	12	2		12
10	Katindiuka	1620	7			13
11	Mbasa	2720	11		3	13
12	Kining'ina	2077	6			12
13	Michenga	3678	8			12
14	Mahutanga	1859	3		5	12
15	Lunemo	3733	15		12	12
16	Kikwawila	2667	3	2	12	12
17	Nanawala	1825			6	12
18	Mkamba	4085			11	9
19	Kidatu	3980			10	9
20	Msolwa Station	5878	1		13	9
21	Msolwa Ujamaa	1625			8	12
		60602	84	12	136	

## Annex 4

## KILOMBERO NEW PROGRAMME VILLAGES

DIVISION	VILLAGE	TOTAL POPULATION
KIDATU	1. Sanje	4303
MANG'ULA	2. Sonjo	1998
	3. Mkula	2214
	4. Mkasu	1118
IFAKARA	5. Idete	5006
	6. Kibaoni	4409
	7. Ifakara	11963
MOETA	8. Mbingu	4748
	9. Mgeta	2753
	10. Mkangawalo	4727
	11. Merera	3452
	12. Chita	5462
	13. Mofu	3458
MLIMBA	14. Chisano	1015
	15. Kalengalake	3027
	16. Mlimba	7438
	17. Kamwene	4992
	18. Mpanga	1514
	19. Utengule	1190
	20. Ngalimira	1058
	21. Taweta	3250
	22. Masagati (Tanganyika)	2052
	23. Uchindile	527
	24. Mlimba	7438
	T O T A L	89114

## ANNEX 5 - KILOMBERO PROPOSED BUDGET - SY PRE - FORMULATION MISSION

(In Tsh. x 1000)

KILOMBERO		Year 1	Year 2-5	TOTAL
10-4302	District Advisor			
	1. Allowances 22 d	215		
	2. Transport 1000 km.	1,400		
	3. Stationery	400		
		2,015	2,015	10,075
10-4311	Local Personnel			
	1. DWSC (3 HOD) 45 days	418		
	2. District teams 120 days	864		
	3. Fieldteams - Tsh. 215,000	3,240		
	4. Drivers (3) 200 days	108		
	5. Surveyors 2	1,440		
	6. Construction team	5,112		
	7. Drawing team (paper)	360		
		11,542	11,542	57,710
20-4927	Investment Implementation			
	Drill - survey equip	5,755		
	Topoboxes: Villages 20 x Tsh. 50,000.-	2,197		
		180		
	Safari equipat: Tsh. 160,000.-	725		
	Disinfect - 400 x Tsh. 400.-	800		
		9,567	800	11,367
10-4931	Investment - transport			
	3. Motorcycles 17 x Tsh. 520.-	8,840		8,840
	4. Bicycles 114 x Tsh. 52,000.-	5,908		5,908
10	Transport running costs			
	Programme vehicles 2	6,000		
	50,000 km p.y. x Tsh. 50.-	2,500		
	Lorry 15,000 km x 100			
	Motorcycles, District Team and	4,000		
	Fieldteam 3 x T. 10,000 x Tsh. 20.-	4,000		
		12,500	12,500	21,500
20	Materials - Main			
	(1) 5W - rehab - construction	8,000		
	(11) Pipe supply rehab - constr.	30,000		
		38,000	32,000	190,000
40	Materials after			
	Improved istrene slabs	1,300	1,300	8,500
	Cement + chicken wire Tsh. 2,200 per slab			
	Tsh. 10,000 per year per district			

## ANNEX 5 - MILOMBERO PROPOSED BUDGET - BY FRE - FORMULATION MISSION

(in Tsh. x 1000)

MILOMBERO	Year 1	Year 2-5	TOTAL
Brainage (cement) Tsh.7,000.- per slab - sh. 2,000	250	250	1,300
10 Training			
(a) Staff training			
a.1 Community Development			
Yearly - 2 week refresher	500	500	2,000
Two month course year 1	4,000		4,000
a.2 Health			
Yearly - (10)		500	2,000
One month course - 1 year per district to be organized by the region	2,000		2,000
a.3 Water			
Yearly - Tsh. 50,000 op Fieldstaff & district Officers 100	700	700	3,500
a.4 Other training	400	400	2,000
a.5 VHW training			
Training costs per VHW - 140,000			
Year 1 = 25	3,500		
Year 2 = 25		3,500	
Year 3 = 25 x 5			10,500
c Village level training			
1. Refresher courses Monitoring & Reporting	2,000	2,000	10,000
2. For new programme village			
3. Study tour to successful village			
d Training materials	4,000	3,000	18,000
10 Stationery & Office Equipment			
1. Stationeries Maji, Afya & Maendeleo	1,000	1,000	5,200
2. Office equipment fieldstaff	200		

PRESENT PROGRAMME VILLAGES REPRESENTATION OF  
WOMEN IN VWSC AND VILLAGE COUNCIL  
KILOMBERO DISTRICT.

DIVISION	VILLAGE	WOMEN IN V.W.S.C.	WOMEN IN VILLAGE COUNCIL
MANG'UWA	Kiberege	2	4
	Kisawasawa	4	3
	Ichonde	3	4
	Mang'ulo A	3	5
	mang'ulo B	4	2
	Mwaya	4	4
	mgudeni	2	3
	Katurukila	3	3
	Zignali	3	3
IFAKARA	Katindiuka	3	5
	mbasa	2	4
	Kining'ina	2	5
	Michenga	2	5
	Makutanga	2	4
	Lumemo	3	4
	Kikwausila	NIL	2
	Namawala	3	4
KIDATU	mkamba	4	4
	Kidatu	3	4
	Msolwa Station	2	3
	Msolwa Ujamaa	2	2

\*VWSC consists of 5 members  
 + Village Council consists of 25 members.



**MOROGORO  
RURAL DISTRICT**

**MOROGORO**

## 1. BACKGROUND INFORMATION

Morogoro Rural District covers an area of 19,250 km<sup>2</sup>. It is situated in the north-east of the Morogoro Region in Tanzania. It is subdivided into 10 divisions, 43 wards and 215 villages. Only a small part of the area is still covered by forest.

Population 1988 (census)	431,975
Population 1992 (projection)	478,000
Population 1997 (projection)	544,000
Population 2002 (projection)	619,000
Growth Rate 78-88	2.6 %
Population as % of Morogoro Region	35%
Population Density	22 per km <sup>2</sup>

The 1991-census counted 165,036 cattle, 91,727 goats, 34,570 sheep, 11,650 pigs and around 500,000 poultry.

Physiographically, the District is dominated by a central mountain range, the Uluguru Mountains surrounded by foothills and plains, and the Nguru mountains in the north. The wide flat valley of the Mkata/Wami River forms the western boundary of the District while the Great Ruaha River forms part of the southern border. The plains and hills of the Mgeta, Ruvu and Ngerengere Rivers form the eastern boundary of the District. The highest peaks of the Uluguru Mountains reach about 2600 m while the plains in the east are as low as 200 metres above MSL.

The mountains and foothills consist of metamorphic Pre-Cambrian Basement rocks: acid gneisses and other granitoid rocks, and crystalline limestones. The highlands are deforested. The soils are thin and fertility is generally low.

The deposits in the downfaulted Mkata/Wami Valley are of Upper Tertiary and Quaternary age. They are up to 400 m thick, deposited in fluvial, alluvial fan and swamp environment. Elsewhere, the plains are dominated by Tertiary and Quaternary erosional products of the Uluguru and Nguru Mountains but Basement outcrops and predominantly Mesozoic deposits are also found.

Narrow strips of shallow Quaternary deposits are found along most rivers and streams.

The short rains begin in November and last until December, January and February are dry and continue until the end of May. The long rains begin in March.

The main food crops are rice, maize, cassava and all types of beans. The cash crops are sisal, cotton and oil seeds: sunflower, soya beans, groundnuts and simsim.

The health infrastructure can be summarized as follows:

---

health centres	5
dispensaries	58
village health posts	10

---

The drought of 1991 has contributed to an increased malnutrition and to water resources being unreliable. Cholera is reported even in programme villages. Malaria and diarrhoea are still the diseases with the highest incidence. No allocation for the RWSP is made by District Council, indicating low priority for water at the highest policy and decision making level in the District. The development fee in Morogoro is TShs 800 for each adult male. This amount has doubled since last year. The reason being that women are exempted.

## 2. EXISTING WATER SUPPLIES

The water supply situation according to the District Water Engineer (DWE) and the DHV database in Morogoro is summarized in the following Table:

	Total	Defect	Operational
Shallow wells (tube)	371	98	273
Shallow wells (ring)	1	0	1
Piped water schemes (boreholes)	13	>11	<2
Piped water (river, gravity)*	29	>5	<24
Piped water (ring wells)	4	>8	<6

\*many in bad condition

The data specifying for each village the type of water supply, the total population, the served population, the type, number and condition of the shallow wells, and the water quantity can be found in Annex 1. The villages served by piped water schemes are listed in Annex 2a while the piped water supplies schemes themselves are listed in Annex 2b. It is difficult to estimate the number of systems that are out of order because breakdowns of the institutional water supplies are rarely reported.

More is known about the numbers of Domestic Water Points that are out of order. The estimate of the population served by domestic water points was done on the basis that each point serves 300 souls. In this way it was calculated that 26 % of the population is actually served and that the infrastructure is in place to serve 44 % of the population.

	All Water Points			Operational Water Points		
	No.	Pop.	Served	No.	Pop.	Served
Shallow wells	371	113,300	23%	273	82,000	17%
Public Taps	318	95,400	20%	135	40,500	8%
TOTAL	689	206,700	43%	408	122,500	25%

The piped water supply schemes are listed in Annex 2. In all gravity systems, river water enters the pipes without proper treatment.

Almost all shallow wells are situated in the plains. Most are scattered in irregular clusters along the footslopes of the Uluguru Mountains, east of Morogoro Town and along the road along the footslopes of the Nguru Mountains. Smaller groups are found elsewhere in the plains.

The piped water supply schemes are found along the afore mentioned footslopes.

The bacteriological quality of piped water equals that of surface water which is usually unsatisfactory. The head-waters are usually deforested and partly used for agriculture. As a result, the rivers are contaminated and carry lots of silt, notably during the rains. Generally, water enters the pipes untreated, except for a number of supplies with silt traps. But these are often by-passes.

Groundwater of good chemical quality is found in the Uluguru and Nguru Mountains (springs), and in the plains north of the Wami River.

Elsewhere in the plains of the District, groundwater is mostly saline to such an extent that it affects its taste (>1000 ppm Cl<sup>-</sup>). Acidity (CO<sub>2</sub>) is often the main problem together with high iron and manganese concentrations. However, these problems do not pose health hazards. Groundwater of good chemical quality seems to be locally present near streams. Quite often, traditional water sources yield water of a better taste than neighbouring Programme wells. This seems to be the main reason why people sometimes prefer their unprotected traditional water supplies.

The supply of safe water is very urgent as cholera and typhoid are endemic: two of the three villages visited suffered from cholera. In Langali there is a piped water supply (untreated) while there are shallow wells in Doma. In these two villages, the number of cholera cases during the last 12 months amounted to around 1% of the population.

There are some major discrepancies between the areal distribution of the population and the distribution of the shallow wells and piped water supplies. Only little water development was carried out in the densely populated areas of the Uluguru (80,000 souls) and Nguru Mountains. Springs have not been protected. One of the villages visited where cholera was endemic (Langali) lies in the mountains.

This observation contradicts the statement from the 1980 DHV Water Supply Conditions Report which states on page 23 that water problems do not occur in the villages located in the well watered mountainous parts of the survey area, i.e. the Uluguru Mountains, and the Nyuru and Rubeho Mountains. In these areas, the high average annual precipitation sustains a number of springs and large and small perennial water courses which contain water of good quality, not seriously polluted by human beings during both the wet and dry season.

This assessment of the water situation in the mountains is rather optimistic. Since the end of the seventies, the bacteriological water quality has certainly deteriorated due to the increasing population pressure. The actual reason for the unbalanced development of water supplies was that it was decided to concentrate on shallow wells which could not be dug in the mountains.

Therefore, it is imperative to pay much more attention to these densely populated, neglected areas where safe piped supplies from springs seems feasible. Notably to the Uluguru Mountains east of Morogoro. This area has a good development potential: already most of the fruits for Dar Es Salaam are grown here but a much higher production seems to be possible. More attention should be paid to the development of water supplies from springs and other technology options (see Chapter 8).

### 3. SANITATION

Water shortage is a common problem in the district. Reliable data on the sanitation conditions are lacking. The cholera control campaign enforces better sanitation conditions. Due to contamination of water at the intakes, even water from improved facilities is not safe. Boiling water is needed. The main advantage of the RWSP is therefore the time saved by women in fetching water.

For hygiene and sanitation improvement at village level the following programmes are implemented.

- Primary Health Care (PHC) by GOT
- Child Survival Development (CSD) by UNICEF
- Facts for Life - WHO UNICEF/UNESCO/GOT
- RWSP

The Extended Programme for Immunization has also a health education component.

Despite the number of programmes dealing with hygiene and sanitation, improvements at village level are slow. Reasons are that educational activities are geared to division, ward and village leaders. At village level the inspecting of houses and latrines seems to be the most common approach to reach out to the target group. This of course does not allow for a satisfactory participation. The HA's mentioned the lack of communication and community mobilisation skills as a factor hampering their performance.

The PHC is in principle responsible for the training of VHW and midwives. Information and educational materials on health and sanitation issues are limited. Posters are available from UMATI. Facts for Life have recently produced materials to be used by the HA. It seems that the Ministry of Health together with UNICEF is preparing a Handbook on Village Level Sanitation and Hygiene.

The CDS programme is operating in the B/Chini division and 2 programme villages are included. The other two divisions in which CDS is operating will be included in the next phase of the programme.

Of the 28 programme village, 26 have VHW. Only two have been trained, they are within the CSD villages. The Ministry of Health has trained at least 70 VHWs. Most of them lost interest as they were not paid by the village government. Programme villages sometimes pay VHW out of the O&M fund.

Little attention is given to gender issues and none of the data are gender specific. In the next phase a framework to incorporate gender is to be developed. Presently all the HA in the district are men.

Although there is still ample work in education and awareness raising to improve hygiene and sanitation conditions at village level, the HA's suggested that RWSP should go beyond education only and promote the construction of improved pit latrines. To do so a village based revolving fund for each scheme should be established.

**Training requirement:**

- For HA's community mobilisation and communication skills
- At village level. HA together with VHW's to provide regular training to groups of men and women on health and sanitation issues.
- Training for VHW's - standard course Ministry of Health. In present programme villages 52 VHW's have to be trained. For the next phase the number depends e.g. on the coverage by CSD programme.



#### 4. WATER DEMAND

A rough estimate of the current water demand is given in the following Table:

---

Domestic water demand	(30 l/head/day)	14,000 m <sup>3</sup> /day
Cattle Watering	(165,000 heads, 30 l/head/day)	5,000 m <sup>3</sup> /day
Other animals	ca	2,000 m <sup>3</sup> /day
TOTAL demand from humans and animals	ca	21,000 m <sup>3</sup> /day

---

This is only a very small fraction of the available water. Not the magnitude of the demand but the dispersed areal distribution of the demand is the problem.

## 5. LEVEL OF COMMUNITY ORGANISATION AT VILLAGE LEVEL

Community Development activities are the full responsibility of the District Council. However, with the limited budget of the district the CD department does hardly receive funds for development activities. The department therefore relies on input from donors. Activities implemented focus on income generating activities for women (ILO, UNICEF and CDTF) and on health and sanitation improvements (UNICEF & CSD).

In the present phase the programme focus has been on awareness raising at the various administrative and decision making levels in the district. At village level, the village government and the VWSC were the main target groups. To consolidate the impact of the programme at village level training should be geared towards including the target groups. To do so Community Development staff need skills in new approaches to community participation. The present methods of transferring ideas is still based on educating the villagers through their representatives e.g. the village council and not by establishing a dialogue. Especially in this time of changes with multiparty system being introduced, training to support the process of democratization is needed. By training the CD staff in the above mentioned a contribution can be made towards popular participation which will benefit the programme as the beneficiaries will become more actively involved in the development.

VWSC. Although all programme villages have a VWSC. These committees do not always function well. VWSC tend to operate in isolation without the necessary links to the village government or the village people.

The average balance in the O&M fund per division:

1. Mvomero	TShs	92,576
2. Turiani	TShs	13,808
3. Mlali	TShs	7,647
4. Doma (sub)	TShs	5,480
5. Bwakira/Chini	TShs	12,172

The village of Kambala has Tsh. 419,200/= on its account to be used as contribution to the rehabilitation of the watersupply.

The system of collection and the amount contributed differ. In general the contribution in village with piped water is higher. The CD staff calculates with the VWSC the financial targets. No information is received from the District on sustainability.

The programme villages are in various steps. It is expected that 16 villages will be handed over before July 1992. Thus 12 will continue in the new phase. The Districts intends to extend the programme with 93 villages. This is not a realistic target considering the time it look to complete the first 16 villages.

**Training requirements:**

- To strengthen community participation more emphasis is to be placed on the training of 10 cell leaders, care takers and women groups.
- Financial management based on sustainability of water at village level for CD staff.

## 6. WOMEN IN DEVELOPMENT

In Morogoro Rural the participation of women at the various level of implementation is as follows.

	Total	Male	Female
DWSC	6	5	1 (PA)
District team	3	3	0
Field teams (5)	15	13	2
VWSC (28)	140	86	54
VHW	26	23	3
VM	28	28	0
TOTAL	218	158	60

A very small number of the care takers are women (10 out of 300). Around 25% of the people directly involved are women. Most of them are members of the VWSC. It is not known to what extent they support the women's interest in the village government. To allow for better communication with women at village level, the field teams should have at least one female member. As Health and Water don't have female staff at division/ward level, the department of Community Development will have to take responsibility for this. It is obvious that the Department of Health should recruit female staff (see Annex 5)

The CDA in charge of women in development issues deals currently with 18 women groups. Five of those groups are supported by the UNICEF project on strengthening of Women's Economic Activities. Agriculture, maize milling and beer brewing are the most common economic activities. The main problems are lack of management, limited technical skills and insufficient communication with the extension staff.

The RWSP lacks a clear objective and consequently a strategy for incorporating gender issues. The field staff deals on practical basis with the issues. They involve women in siting the wells, use them as volunteer labour in the construction phase and encourage them to become caretakers. Contributions to the O&M fund are mostly made by women. However, little is done to mobilise women to increase their involvement in the decision making process relating to Water & Sanitation. In the next phase the programme should try to create better opportunities for women to participate on their own terms in the programme. Therefore more time should be spent in mobilising women and men to hear their views. It is important that the women in the VWSC are actively supported by the rest of the women in the village so that they are not there just to comply with the rule of having at least two women in the VWSC. As a guide-line for the field staff a framework for integrating gender issues in the RWSP is to be developed.

## **7. AVAILABLE WATER RESOURCES**

### **7.1 GENERAL**

In general, there is no shortage of water. The available resources exceed the demand from humans and animals by far. This demand is in the order of magnitude of only 0.04 % of the rainfall. So, the main problem is not lack of water but the underdevelopment of the resources and the bacteriological contamination of the existing supplies.

### **7.2 RAINFALL**

Mean rainfall varies between 600 and 1000 mm/year in the plains. It reaches 1800 mm/year in the Nguru Mountains and exceeds 2500 mm in the Uluguru Mountains, east of Morogoro.

Rainfall can be collected for domestic use by means of roof catchments, especially from buildings with large roofs like those of the government.

### **7.3 SURFACE WATER**

Most major streams originating from the Uluguru and Nguru Mountains are perennial. Other streams are ephemeral. Little forest, if any, remains in the source areas. Even on steep slopes maize cultivation is practised. As a result, the streams carry lots of silt and sand and are contaminated by the people who have settled in these areas.

The piped water supplies have intakes along the perennial rivers. Water enters these systems without proper treatment (except sometimes for silt traps which are often by-passes). During the rains, these systems get often blocked by sand and gravel.

### **7.4 GROUNDWATER (INCLUDING SPRINGS)**

The total amount of groundwater in Morogoro District is more than sufficient for the domestic demand but the distribution and the quality are often problematic.

Groundwater is in very short supply in Gairo and the Ngerengere Divisions

In the mountains, there must be many springs but only few, if any, are being used as a direct source for domestic use.

### **7.5 WATER QUALITY**

In large parts of the District, the quality of untreated surface water and groundwater is unsatisfactory for domestic purposes.

As to surface water, the head-waters are usually deforested and often converted into arable lands. As a result, the rivers are contaminated and carry lots of silt, notably during and after rains when river intakes get often blocked.

Groundwater of good chemical quality is found in the Uluguru and Nguru Mountains (springs), and in the plains north of the Wami River. Elsewhere in the plains, groundwater is mostly saline to such an extent that it affects its taste (>1000 ppm Cl-) or that it should not be consumed (>2,000 ppm Cl-). Nevertheless, groundwater of good chemical quality can often be found near streams in these plains.

So, in large parts of the District, groundwater from shallow wells does not taste good. This is one of the main reasons why many people still prefer their open, traditional wells despite the risk of contamination. These wells draw groundwater from the upper part of the aquifer where salinity is usually relatively low.

The supply of safe water is very urgent as cholera and typhoid are endemic: two of the three villages visited had suffered from cholera. In these two villages, the number of cases recorded in the past 12 months amounted to around 1%.

It is apparent that the situation has deteriorated in the last 12 years: the 1980 DHV Water Supply Conditions Report states (page 23) that water problems do not occur in the villages located in the well watered mountainous parts of the survey area, i.e. the Uluguru Mountains, and the Nyuru and Rubeho Mountains. In these areas, the high average annual precipitation sustains a number of springs and large and small perennial water courses which contain water of good quality, not seriously polluted by human beings during both the wet and dry season.'

## **8. IMPLEMENTATION CAPACITY AT DISTRICT LEVEL**

In the next phase the programme is will be extended with two divisions. The district has the necessary staff for field teams at divisional level.

### **8.1 PLANNING**

The DA is a planning officer and although her task is in principle only to coordinate the Programme, she also involves herself too much in implementation. She is isolated from the Planning Office in the sense that she shares her office with the district team. The advantage is that bureaucratic structures can to a certain extent be by-passed. However, the disadvantage is the isolation in which the RWSP is being implemented. Objective programme planning is a problem. To increase involvement of district and field teams a short workshop on programme planning is suggested.

### **8.2 COMMUNITY DEVELOPMENT**

The focus for community mobilisation has to be geared more on the involvement of 10 cell leaders and villagers themselves. Too much attention was provided in the last year to mobilise village council, village secretary and the VWSC without involving the villagers. To support this process of an increased participation of the target groups, the CD staff is to be trained in new approaches to community mobilisation.

### **8.3 GENDER ISSUES/WOMEN IN DEVELOPMENT**

The district and field teams do appreciate the importance of water and sanitation for women. However, little thought has been given on ways to use the water and sanitation issues to improve the position of women at village level in terms of participation in the decision making process. For the next phase clear objectives to the gender issues have to be developed and a framework for implementation is to be established covering the involvement of Maji, Afya and Maendeleo.

### **8.4 SANITATION AND HYGIENE**

For the DHOI and the HA's, their skills in communication and community mobilisation should be improved. Refresher course to update knowledge is needed.

For daily education at village level the position of the VHW is important. After handing over, the VWH together with the VWSC continues monitoring the impact of RWSP. Training of the VHW is recommended. Follow up training in monitoring should be provided.

## 8.5 SURVEY AND CONSTRUCTION ACTIVITIES

The District has the manpower and equipment (to be borrowed from the Region) for the survey and construction of 25 shallow wells per year and the rehabilitation of another 25. If enough equipment is available, one to two piped supplies can be annually constructed and the same number rehabilitated.

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Section	Qualified Untrained Staff	Trained Staff	Equipments Available	No. of Operational Teams
Survey	3	2	Not available but	1
Piped Supplies			borrowed from the Region	
Construction	3	7	Some available and others	2
Piped Supplies			borrowed from the Region	
Survey	2	4	Available but old	1
Shallow Wells				
Construction	1	4	Available but old	1
Shallow Wells				

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## 8.6 MONITORING/REPORTING

The system of monitoring and reporting is only worthwhile when implementors field, and district level use the information to solve problems and improve the Programme. This is presently lacking. Follow-up training is needed, focusing on data analysing and report writing. It is important that the district team and fieldteams meet regularly to discuss the problems which were mentioned by the villagers and take the necessary actions where these have not been addressed when collecting the forms. Presently the villages do mention problems but little action is taken at the various level to solve these.

## 8.7 TRANSPORT

If driven properly the existing vehicle can last for another 5 years. Pressures in the District to use the car for other purposes than RWSP and the fact that maintenance and repair is a problem at district level, will cause the vehicle to be out of order after a couple of years. The lack of transport will hamper the development of the programme as transport is regularly borrowed by the district administration. It is suggested to provide the district with funds to hire transport from the Programme.

At divisional level. With the expansion of the programme distances to cover become larger, 21 motorcycles and replacements thus a total of 25 are needed. Various models should be compared and the one most suitable for women should be chosen. To provide the motorcycles on loan basis is not effective as staff when being transferred take the transport with them and cease to repay the loan. Another system is to be developed.



At village level, the VHW and VM are to be provided with bicycles to improve mobility in the village.

## 8.8 FACILITIES AND EQUIPMENT

Field staff requested containers to be placed at divisional level to be used as offices.

## 8.9 FINANCIAL CAPACITY

The financial capacity of the District Council is limited. In the last year the total budget came to Tsh. 93,774,661.- of which Tsh.31 million was to be paid for salaries and TShs. 62 million for recurrent. No funds were allocated by the District Council to development projects in the water sector. This demonstrates clearly the low priority given to the water sector.

Sustainability and cost recovery is not an issue of consideration yet. The mission has the impression that this matter has not even been dealt with and that financial calculation for both the district and the village level has not been done. At village level the sustainability is promoted by establishing a water fund to cover for basic repairs and salaries of VM and VHW. The CD staff has little understanding on financial implication of sustainability and cost recovery. The example of Kambala demonstrated that villages are prepared to contribute in investment costs as long as services are provided. At district level the issue of sustainability and costs recovery is not being dealt with. The financial constraints of the District Council does not allow for sustainability as revenues from water fees are being transferee to other priorities. Thus in Morogoro Rural other alternatives are to be developed to guarantee sustainability and cost recovery in the future and a less dependency on donor inputs.

## 9. WATER DEVELOPMENT OPTIONS

### 9.1 SHALLOW WELLS - HAND DUG LARGE DIAMETER (RING WELLS)

There are 25 ring wells in the Morogoro District. They are suitable for the lowlands with alluvial or colluvial cover. The major disadvantage of this kind of well is that they are dug by people, and that therefore digging has to stop just below the water table. If the water table drops the wells have to be deepened. Another disadvantage is that these wells can easily be contaminated.

### 9.2 SHALLOW WELLS - HAND AUGURED

By far most wells constructed in Morogoro District are of this type. They are suitable for the lowlands with alluvial or colluvial cover where the water table is not too deep. Their total number amounts to approximately 400. These wells are safe.

### 9.3 MACHINE DRILLED DEEP WELLS

Many boreholes were drilled in the past but most were not successful due to salinity problems or low yields. Currently, six boreholes used as sources for piped water supply. One has an electrical pump while five are powered by diesel pumps.

### 9.4 SURFACE WATER - RIVERS, LAKES

Most piped water schemes draw their water directly from intakes along permanent streams. In most cases, and possibly all, it enters the pipes untreated except for sand traps (which are often by-passes). Intakes get often blocked during the rainy seasons.

### 9.5 SPRINGS - GRAVITY, VALLEY BOTTOM

Springs are underdeveloped. There seems to be ample scope to develop them in the Uluguru and Nguru Mountains. However, a systematic survey was never done.

The high dry season flows of the rivers draining those areas indicate the presence of many perennial springs. But the incidence of water-borne diseases (typhoid, cholera, diarrhoea) is high. This points to pollution of the water sources and a urgent need to protect the springs.

## 9.6 ROOF CATCHMENTS

The biggest buildings in the District are those built by the government, and they are the ones which seems to be most suitable to function as roof catchments. A large part of the water demand from these building can be met in this way.

## 9.7 ROCK CATCHMENTS

The scope for this kind of water source is very limited. According to the District Water Engineer, there is a suitable rock at Maseyu (presumably an Inselberg)

## 9.8 SAND & SUB-SURFACE DAMS

These kind of dams are new for the District. These options are suitable for sandy rivers in semi-arid areas. There might be numerous feasible sites for these kind of structures, notably where none of the foregoing water supply options is feasible.

An important advantage of these structures is that water is kept underground and that these sites cannot become breeding places for malaria mosquitos.

## 9.9 EARTH DAMS, CHARCOS AND PANS

A small dam was build in Kidugalo. Such structures can be useful for cattle watering but not for domestic supply as they can easily become contaminated and infested with malaria.

## 9.10 HAFIRS (VALLEY TANKS)

These are usually rather large, rectangular excavations often made along roads. Many of them can be found in the Sudan. They are suitable for animals but not for domestic use as they are usually contaminated and infested by malaria mosquitos.

## 10 INPUTS BY OTHER AGENCIES

For 1991/92 the GOT has allocated to water.

- |   |                 |
|---|-----------------|
| - Rural Water Supply. For Kambala   | TShs 3,300,000  |
| Purchase of new pump  | TShs 1,300,000  |
| (the RWSP recently received   | TShs 1,070,000) |
| - Mkuyuni - 3 shallow wells and Mtombozi<br>rehabilitation of watersupply | TShs 2,000,000. |

## **11. WATER RESOURCES DEVELOPMENT PLANNING**

The future direction of the Rural Water Supply programme, as seen by the people involved is mainly an expansion of the number of shallow wells and piped water supplies. The District proposes to put all the remaining villages in to the Programme but the implementation capacity of the Districts will not be sufficient to cope with such a large number.

## **ANNEXES**

- Annex 1** Rural Water Supply Points
- Annex 2A** Piped Water Supplied Villages
- Annex 2B** Piped Water Supplies Schemes
- Annex 3** Programme Villages
- Annex 4** Proposed Programme Villages
- Annex 6** Present Programme Villages Representation of Women in VWSC and Village Council

Annex 1	Rural Water Supply Points
Annex 2A	Piped Water Supplied Villages
Annex 2B	Piped Water Supplies Schemes
Annex 3	Programme Villages
Annex 4	Proposed Programme Villages
Annex 5	Estimate Budget 1992 - 1997
Annex 6	Present Programme Villages Representation of Women in VWSC and Village Council

## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Ring wells	Tube wells	Not working		Water Qty	Dist	WSC Present
						Ring wells	Tube wells			
1 Amini		1412							NO	
2 Baga		1346							NO	
3 Bagilo		1694							NO	
4 Balani		997							NO	
5 Bigwa	G	977	977		2			good	NO	
6 Bigwa R.T.C.	G	929	929						NO	
7 Bonye		3333	1800		7		1	Good	NO	*
8 Bunu		1462			1		1	Sat	NO	*
9 Bunduki		1579							NO	
10 Bungu		1419							NO	
11 Bwakira Chini	G	1839	1412						NO	*
12 Bwakira Jun		1795	600		3		1	Good	NO	
13 Bwila Chini		1982							NO	
14 Bwila Jun		820							NO	
15 Changa		3833	300		5		4	Good	NO	
16 Changarawe	G	1853	2001						NO	*
17 Chanyumbu		2065							NO	
18 Chuo Kikuu SUA	G	2387	2387		2			Good	NO	
19 Dakawa		2298			3		3	Good	NO	
20 Dibamba		791	900		3			Good	NO	*
21 Diburuma		915							NO	
22 Difinga		1009			1		1	Good	NO	
23 Digalama		908							NO	
24 Digoma		2713			5			Sat	NO	
25 Diguzi		927	927		5			Good	NO	
26 Dihinda		2239							NO	
27 Dihombo		1614	900		4		1	Good	NO	
28 Doma		3207	3207		15		1	Sat	NO	*
29 Dimilo		987							NO	
30 Fatemi Estate		755							NO	
31 Fulwe	DP	4167	2400						NO	
32 Gomero		4011	2700		9			Good	NO	*
33 Gozo		2169							NO	
34 Gwata Ujembe		1290							NO	
35 Hembeti	G	2769	2991		3		3	good	NO	
36 Hewe		1048							NO	
37 Homboza		2414							NO	
38 Hoza		1680							NO	
39 Junior Seminary	G	637	637						NO	
40 Kalundwa		1959							NO	
41 Kambala	EP	887	958						NO	*
42 Kanga		2242	300		4		3	Good	NO	
43 Kasanga		1605							NO	
44 Kauzeni	G	1084	1171						NO	
45 Kibangile		1257							NO	
46 Kibaoni		1211							NO	
47 Kibati/Salawe	DP	2975	606						NO	
48 Kibigiri		2185							NO	
49 Kibongwa		1809							NO	
50 Kibuko		1162	600		4		2		NO	



## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Not working		Water Qty	Dist	WVSC Present
				Ring wells	Tube wells			
51 Kibuko		1472					MO	
52 Kibungo		2410					MO	
53 Kibungo		1042					MO	
54 Kibwaya		2004	300		1	Good	MO	
55 Kibwege		1165					MO	
56 Kichangani	G	5542	5542		1		MO	
57 Kidudwe		2144	2144		9	Good	MO	*
58 Kidugallo	DP	2490	2424				MO	
59 Kidunda		1539	300		2	1	Good	MO
60 Kifindike		1510					MO	
61 Kifuru		753					MO	
62 Kiganila		971	900		3	Good	MO	
63 Kigugu		2314	300		4	3	Sat	MO
64 Kihonda		1879					MO	
65 Kikeo		1662					MO	
66 Kikundi	DP	2666	1439				MO	
67 Kilimanjaro	G	2640	2640				MO	*
68 Kinda		1909					MO	
69 Kingolwira	G	2808	2808				MO	
70 Kingolwira Prison	DP	1857	978				MO	
71 Kingolwira Sug.Kst.	DP	1633	816				MO	
72 Kiroka		5157	600		4	2	Sat	MO
73 Kisasi Kituoni		2114	300		1		Sat	MO
74 Kisala		1155	300		5	4	Good	MO
75 Kisanga Stand		1694	300		2	1	Good	MO
76 Kisimagulu		1075					MO	
77 Kiswira	G	1420	1540				MO	
78 Kitonga		1204					MO	
79 Kitunga		1519					MO	
80 Kitungwa A & B	G	3837	4144				MO	
81 Kitungwa		1339					MO	
82 Kiwege		926	300		4	3	Sat	MO
83 Kizagila		637					MO	
84 Kizinga/Legezanwend	G	1725	1647				MO	
85 Kiziwa		3544	300		4	3	Sat	MO
86 Kododo		2758					MO	
87 Kolero		1709					MO	
88 Koloni		1549					MO	
89 Kontonga		1376					MO	
90 Konde		1630					MO	
91 Kongavikenge	G	1992	1885		3		Good	MO
92 Kongwa		2342	900		3		Sat	MO
93 Kumba		1563					MO	
94 Kunke		2148	2100		7		Good	MO
95 Kwaba		901	300		1		Sat	MO
96 Kwantonga		1486	300		1		Sat	MO
97 Kwelikwiji		1960					MO	
99 Langali		2873					MO	
100 Lanzi		1158					MO	
101 Logo		1113	900		3		Good	MO

## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Ring wells	Tube wells	Not working		Water Qty	Dist	VWSC Present
						Ring wells	Tube wells			
102 Longwe		663							MO	
103 Luale		3080							MO	
104 Lubasazi		1305							MO	
105 Lubumu		406	300		4		3	Good	MO	
106 Lubungo		2580			1		1	Good	MO	
107 Lugeni		977							MO	
108 Luholole		2416	1500		5			Good	MO	
109 Lukange		2320							MO	
110 Lukenge		792							MO	
111 Lukenge	DP	1049	855						MO	
112 Lukobe	EP	1314	704		3		1	Sat	MO	
113 Lukulunge		622	300		2		1	Good	MO	
114 Lukunguni		2045							MO	
115 Lukuyu		1027							MO	
116 Lumba Chini		2823							MO	
117 Lumba Juu		1287							MO	
118 Lulongwe		1005	300		1			Good	MO	
119 Lundi		2325			1		1		MO	
120 Lundi		648						Good	MO	
121 Lungo		1988	1500		5			Good	MO	*
122 Lusanga		4119	4119		15				MO	
123 Lusange		1365							MO	
124 Lusange		1365							MO	*
125 Lusungi		1661							MO	
126 Mambani		1626							MO	
127 Madizini		2794	600		9		7	Good	MO	
128 Mafuta		1031	300		1			Good	MO	
129 Magali		754	754		3			Good	MO	
130 Magela		473	473		3			Sat	MO	
131 Magogoni		935	300		4		3	Good	MO	
132 Magunga		795							MO	
133 Maguruwe		1579							MO	
134 Maharaka		2464	1600		4			Good	MO	
135 Makuyu		2762	600		4		2	Good	MO	
136 Malani		1030							MO	
137 Mangae		1290	1290		5		1	Sat	MO	*
138 Manyinga		2875	2400		8			Good	MO	*
139 Manza		670			3		3	Good	MO	
140 Masalawe		1311							MO	
141 Maseyu		1517							MO	
142 Masimba		1117							MO	
143 Maskati	G	3482	3761						MO	
144 Natale		941							MO	
145 Natuli		1824	1500		5			Sat	MO	
146 Nbalini		1030							MO	
147 Nbigiri Prison	DP	1198	300		1			good	MO	
148 Nbogo		2900	2400		8			Sat	MO	*
149 Nbwade		2696	2696		11			Good	MO	*
150 Nifulu		2059							MO	
151 Nfumbwe		2360	1500		5			Good	MO	

## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Ring wells	Not working		Water Qty	Dist	VWSC Present
					Tube wells	Ring Tube wells			
152 Mgata		1543						NO	
153 Mgudeni		1352			2		2	Good	NO
154 Mhale		1724							NO
155 Mhonda	G	2734	2734					good	NO *
156 Mhonda Prison		1863							NO
157 Mikese	DP	2040	1320					Sat	NO
158 Mikesemjini/Kinonko		5270			1		1	Sat	NO
159 Milengwelengwe		1329	1200		6		2	Good	NO
160 Hindu		2279							NO
161 Milama		1449	1449		7			Sat	NO
162 Misongeni	G	2202	2202						NO
163 Mkata	DP	317	317						NO
164 Mkata (Modeco)	DP	416	416						NO
165 Mkindo		3473	300		4		3	Good	NO
166 Mkololo		285							NO
167 Mkono wa Mara		759							NO
168 Mkulazi		621							NO
169 Mkundi		1459	300		1			Good	NO
170 Mkuunyi	G	3349	3617		1				NO
171 Mlali/Kipera/Melela	G	10288	9736		17			Sat	NO *
172 Mlaguzi		760							NO
173 Mlawilila		784							NO
174 Mlilingwa		653							NO
175 Mlono		1606							NO
176 Mngazi		1813	900		6		3	Good	NO
177 Msolokelo		742							NO
178 Msonge		1190	600		4		2	Good	NO
179 Msongozi		2087	1500	1	7		2	Sat	NO *
180 Msufini		917	300		2		1	Sat	NO
181 Mtamba	G	3893	4204						NO
182 Mtibwa Sugar		4083	1500		5			Good	NO
183 Mtombozi	G	1244	1244						NO
184 Muhunga Mkoha		504	300		2		1		NO
185 Mvomero	G	5149	5149		3			good	NO *
186 Mvuha		2900	600		10		8	Good	NO
187 Mwalazi		1359							NO
188 Mwarazi		1924							NO
189 Mziha		2701	600		3		1	Good	NO
190 Mzumbe I.D.M.	G	2251	2251						NO
191 Mzumbe Secondary	G	948	948						NO
192 Mafco		446							NO
193 Ndole		900	600		2			Good	NO
194 Ngerengere	BP	3029	1794		1			Sat	NO
195 Ngong'olo		1958							NO
196 Ngweme		492							NO
197 Ngungulu		1268							NO
198 Ntala		1323							NO
199 Nyachilo		2248							NO
200 Nyamigadu A		1160							NO
201 Nyamigadu B		956							NO

## Villages in MOROGORO REGION and water supply systems. - MAJI / MRWSP

Villagename	Pipe Syst	Total Pop.	Served Pop.	Ring wells	Tube wells	Not working		Water Qty	Dist	VWSC Present
						Ring wells	Tube wells			
202 Nyandira		2692							NO	
203 Nyarutanga		3486	1500		10		5	Good	NO	
204 Nyingwa		1832							NO	
205 Pandambili		981							NO	
206 Pangawe	G	1221	133						NO	
207 Peko Misegese		3412							NO	
208 Pemba		3111							NO	
209 Pinde		1014							NO	
210 Rudewa		3506							NO	
211 Rusanga		4210	4210		15			Good	NO	
212 Sangasanga	G	1095	1036		2				NO	*
213 Sangasanga		123							NO	
214 Semwali		1170							NO	
215 Seregete A		343							NO	
216 Seregete B		771							NO	
217 Sesenga		1289	300		1			Good	NO	
218 Singisa		1759							NO	
219 Sinyaulime		1376							NO	
220 Tambuu		3850							NO	
221 Tandai		3393							NO	
222 Tandali		1652							NO	
223 Tandari		1430							NO	
224 Tangeni		4290							NO	
225 Tawa		3474	300		1			Sat	NO	
226 Tchenzema		2155							NO	
227 Tegetero		1409							NO	
228 Temekelo		758							NO	
229 Tulo		1061							NO	
230 Tungi	DP	1412	762						NO	
231 Tununguo		1875	300		3		2	Good	NO	
233 Ubiri		946							NO	
234 Ukwana		1427							NO	
235 Uponda Chini		2090							NO	
238 Usungura		952							NO	
237 Vigolegole		2797	900		6		3	Good	NO	
238 Vihengele		1234							NO	
239 Vinile		876							NO	
240 Visaraka		1024	300		2		1	Sat	NO	
241 Wami Dakawa Agr.	DP	446	446					good	NO	*
242 Wami Kuu Prison	DP	532	532		1			good	NO	
243 Wami Vijana Prison	DP	329	329		1			good	NO	
244 Wami Dakawa	EP	2888	2888		10			good	NO	
245 Wami Luhindo	DP	1160	1160						NO	*
Subtotal Morogoro Rural		439386	152291	1	371	0	98			

PIPED WATER SUPPLY SCHEMES  
MOROGORO RURAL DISTRICT

Village	System	Total Pop.	Served Pop.	Dom. Water Points	Shallow wells	Water Qty	VWSC Present
1 Bigwa R.T.C.	G	929	929	11			
2 Bigwa/Mgolole	G	977	977	6	2	good	
3 Bwakila Chini	G	1412	1412	11			*
4 Changarawe	G	2001	1800	6			*
5 Chuo Kikuu SUA	G	2387	2387		2	Good	
6 Fulwe	DP	4500	2400	16			
7 Hembeti/Dihombo	G	2991	2991	8	5	good	
8 Junior Seminary	G	637	637				Private
9 Kambala	EP	958	958	8			*
10 Kauzeni	G	1171	1171				
11 Kibati/Salawe	DP	3236	606	12			
12 Kidugalo	DP	4849	2424	12			
13 Kikundi	DP	2879	1439	10			
14 Kilimanjaro	G	2640	2400	8			*
15 Kingolwira	G	2808	2808				
16 Kingolwira Prison	DP	1857	978				Private
17 Kingolwira Sug.Est.	DP	1633	816				Private
18 Kiswira	G	1540	1540				
19 Kitugwa A & B	G	4144	2400	8			
20 Kizinga	G	1647	1647	8			
21 Langali	G	2873					
22 Legezawendo	G			10			
23 Lubindo	EP	856	856	7			*
24 Lukenge	DP	855	855	7			
25 Lukobe	EP	1419	704	6	3	Sat	
26 Maskati	G	3761	3761				
27 Mbigiri Prison	DP	1394	300		1	good	Private
28 Mhonda/Turiani	G	2794	2794	10		good	*
29 Mikese	DP	2040	1320	9	1	Sat	
30 Misongeni	G	2202	600	2			
31 Mkambarani/Mgolole	G			5			
32 Mkata	DP	449	449				
33 Mkata (Modeco)	DP	342	342				Private
34 Mkuyni	G	3617	0		1		Not complete
35 Mlali/Kipera/Melela	G	10288	10288	32	17	Sat	*
36 Mtamba	G	4204	4204	23			
37 Mtombozi	G	1344	1344				
38 Mvomero/Dibamba	G	5441	5441	16	3	good	* Seasonal
39 Mzumbe I.D.M.	G	2251	2251				Private
40 Mzumbe Secondary	G	948	948				Private
41 Ngerengere	EP	3289	3289	10	1	Sat	
42 Pangawe	G	133	133	10			Private
43 Sangasanga	G	1119	1119	4	2		*
44 Tungi	DP	1525	762				
45 Kichangani/Turiani	G	5664	5664	19	1	good	
46 Vikenge/Konga	G	1133	1133	10	3		
47 Wami Dakawa Agr.	DP	446	446	1	1	good	Private
48 Wami Prison	DP	575	300		1	good	Private
49 Wami Vijana Prison	DP	355	300		1	good	Private
50 Wami/Dakawa Village	EP	3062	3062	1	10	good	*
Subtotal Morogoro Rural		109575	85385	306	55		

**ANNEX 2b**  
**PIPED WATER SUPPLY**  
**MOROGORO RURAL DISTRICT**

	Name	Source	Method	No DWP	Operational DWP	Remarks
1	Wami Prison	BH	Elect. Pump	Inst.		
2	Wami Vijana Pr	BH	Diesel Pump	Inst.		
3	Mbigiri Prison	BH	Diesel Pump	Inst.		
4	Mgomba Prison	BH	Diesel Pump	Inst.		
5	Wami Dakawa	BH	Diesel Pump	2	1	
6	Wami Village	BH	Elect. Pump	1	1	
7	Mvomero	River	Gravity	16	8	50%
8	Hembeti	River	Gravity	6	8	
9	Mhonda	River	Gravity	6		350%
10	Turiani	River	Gravity	17		850%
11	Kibati	Ring Well	Diesel Pump	12	0	
12	Mlali	River	Gravity	17	17	
13	Mzumbe I.D.M.	River	Gravity	0	0	Inst.
14	Konga	River	Gravity	3	0	
15	Mzumbe Sec.	River	Gravity			Inst.
16	Vikenge	River	Gravity	3	0	
17	Changarawe	River	Gravity	6	0	
18	Ngerengere	Ring Well	Elect. Pump	10	0	
19	Kizuka T.P.D.F.	Ring Well	Elect. Pump	0	0	Inst.
20	Sangasanga	Borehole	Diesel Pump	0	0	Inst.
21	Kinonko	Borehole	Elect. Pump	0	0	Inst.
22	Kidugalo	Borehole	Elect. Pump	0	0	Inst.
23	Pangawe	River	Gravity	0	0	Inst.
24	Mzinga	River	Gravity	0	0	Inst.
25	Misongeni	River	Gravity	4	2	50%
26	Kingolwira	River	Gravity	10	5	50%
27	Bigwa	River	Gravity	8	4	50%
28	Bigwa	River	Gravity	0	0	Inst.
29	Bigwa Sisters	River	Gravity	0	0	Inst.
30	Kingolwira Pr.	Ring Well	Diesel Pump	0	0	Inst.
31	Mikese	Borehole	Diesel Pump	9	0	
32	Fulwe	Borehole	Diesel Pump	16	0	
33	Mgeta	River	Gravity	12	12	
34	Tawa	River	Gravity	12	12	
35	Mtamba	River	Gravity	23	17	
36	Kiswira	River	Gravity	15	10	
37	Mtombozi	River	Gravity	6	0	
38	Bwakira Chini	Ring Well	Diesel Pump	11	0	
39	Duthumi	Ring Well	Diesel Pump	5	0	
40	Kambala	Borehole	Elect. Pump	8	0	
41	Ubena Prison	Borehole	Elect. Pump	0	0	Inst.
42	Langali	River	Gravity	12	12	
43	Viswai	River	Gravity	9	0	
44	Kikundi	Ring Well	Diesel Pump	10	0	
45	Kihonda School	Ring Well	Elect. Pump	0	0	Inst.

46	Tungi Village	Ring Well	Diesel Pump	1	0	
47	Kingolwira Est.	Ring Well	Diesel Pump	8		50%
48	Jun. Luth. Sem.	River	Gravity			Inst.
49	Pangawe	River	Gravity	10	5	50%
50	Kizinga	River	Gravity	8	4	50%
51	Mkata	Ring Well	Diesel Pump	5	0	
52	Modeco (Mkata)	Ring Well	Diesel Pump	0	0	Inst.
53	Lukobe Village	Ring Well	Elect. Pump	7	2	50%
54	Magadu Village	River	Gravity	4	4	
55	Chuo Kikuu	River	Gravity	0	0	Inst.
56	Lukenge	Ring Well	Diesel Pump	7	0	

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Domestic Water Points per public supply 8.8

50 % means that the system works on and off:  
the number of operational water points wereb estimated as 50 % of the  
points that are mechanically OK.

Institutional water supplies are usually not accessible to the public.

List of PROGRAMME villages  
MOROGORO RURAL DISTRICT

Nr.	Villagename	Pop.	Nr. of SWells	Nr. of RWells	Nr. of DWP's	Current step in O&M setup
1	Bonye	3522	5			4
2	Bwakira Chini	1943			11	4
3	Changarawe	1958			6	10
4	Dibamba	836	2		3	4
5	Doma	3193				12
6	Gomero	4011	9			12
7	Kambala	937			11	6
8	Kichangani	5542			19	4
9	Kidudwe Kidumu	2144	9			16
10	Kilimanjaro	2640			8	4
11	Kipera	3606	4		4	4
12	Konga/Vikenge	1992	3		10	3
13	Kunke	2148	6			11
14	Luhindo	856			6	16
15	Lungo	1988	3			11
16	Lusanga	4119	15			14
17	Mangae	1363	3			4
18	Manyinga	2598	8			14
19	Mbogo	2900	6			12
20	Mbwade	2696	11			13
21	Melela	4298	4		17	4
22	Mhonda	2734			10	4
23	Milama	1538	7			13
24	Mlali	2384	9		11	4
25	Msongozi	2217	6	1		8
26	Mvomero	5441	3		13	0
27	Sangasanga	1095	2		4	3
28	Wami Dakawa	3062	10		1	16
		73761	125	1	134	



Annex 4  
New Programme Villages  
Morogoro Rural District

DIVISION	VILLAGE	POPULATION		
		MALE	FEMALE	TOTAL
RWAKIRA	1. Mgazi	881	932	1813
	2. Vigolegale	1322	1475	2797
	3. Dakawa	1075	1223	2298
	4. Rwakira juu	830	965	1795
	5. Milengwalengwe	678	651	1329
	6. Sasenga	614	675	1289
	7. Nyarutanga	1098	1788	2886
	8. Rwakira chini	939	900	1839
	9. Kieaki	1015	1099	2114
	10. Ronye	1596	1737	3333
MVIHA	11. Msonge	597	593	1190
	12. Mviha	1420	1480	2900
	13. Magogoni	479	456	935
	14. Lukulunge	308	314	622
NGERENGERE	15. Kisanga Stand	822	872	1694
	16. Tunungu	897	978	1875
	17. Kidunda	699	840	1539
	18. Ngerengere	1378	1667	3045
	19. Kidugala	2110	2414	4524
	20. Matuli	854	970	1824
	21. Visanaka	498	526	1024
	22. Lubumu	184	222	406
	23. Lulongwe	483	522	1005
	24. Diguzi	460	467	927
	25. Kiwege	445	481	926
	26. Mkulazi	292	329	621
	27. Magela	226	247	473
28. Kwaha	450	451	901	
29. Serogata A	143	130	273	
30. Serogata B	366	405	771	
KINGOLWIRA	31. Fuliwe	2053	2174	4227
	32. Lubungu A	556	726	1282
	33. Gwata Ujeobe	666	714	1380
	34. Masaya	738	785	1523
	35. Kingolwira	329	380	709
	36. Mubunga Bkole	247	257	504
	37. Mikese	885	1004	1889
	38. Mbono wa Mara	387	372	759
	39. Legaza Muendo	893	849	1742
	40. Pangawe	1362	1371	2733
	41. Pangawe	719	804	1523
	42. Miongeni	1459	1333	2792
	43. Rigwa	783	982	1765
	44. Lukobe	679	644	1323
	45. Kingolwira*	-	-	-

DIVISION	VILLAGE	POPULATION		
		MALE	FEMALE	TOTAL
Mvomero	46. Hambati	1458	1311	2769
	47. Mvomero	2495	2654	5149
	48. Ndole	458	442	900
	49. Magunga	404	389	795
	50. Kihati*	-	-	-
	51. Pemba	1474	1637	3111
	52. Kamhala	433	454	887
	53. Maskati	1736	1746	3482
	54. Makuyu	1352	1410	2762
	55. Mgudeni	616	736	1352
	56. Msufini	446	471	917
	57. Mkindo	1712	1761	3473
	58. Dihanbha	668	662	1330
	TURTANI	59. Mziha	1356	1345
60. Kunga		1216	1026	2242
61. Difinga		555	454	1009
62. Lukenge		442	350	792
63. Mbonda		1316	1271	2587
64. Kichangani		2537	2707	5244
65. Kilimanjaro		1214	1284	2502
66. Lusanga		1951	1947	3898
67. Madizini		1534	1260	2794
68. Kwamtonga		689	687	1376
69. Kigugu		1165	1149	2314
70. Kisala		594	561	1155
71. Dignma		1341	1372	2713
72. Digalama		429	479	908
MGETA	73. Langali	1373	1500	2873
	74. Luale	1437	1643	3080
	75. Bumu	645	817	1462
	76. Lusungi	784	877	1661
	77. Tchezema	958	1157	2115
MILIT	78. Mlali	1093	1163	2256
	79. Melela	2210	2273	4483
	80. Kipera	1707	1706	3413
	81. Homboza	1168	1246	2414
	82. Manza	344	324	670
	83. Magali	390	364	754
	84. Maheraka	1147	1297	2444
	85. Mkata	162	155	317
	86. Luhungu B	663	645	1308
	87. Kongavikenge	505	580	1085

ANNEX 5 - MOROGORO PROPOSED BUDGET - BY PFE - FORMULATION MISSION

(in Tsh x 1000)

MOROGORO		Year 1	Year 2-5	TOTAL
10-4332	District Advisor	215	215	
	. Allowances 82 d	1,400	1,400	
	. Transport 1000 km.	400	40	
	. Stationery			
		2,015	2,015	10,075
10-4311	Local Personnel			
	1. DWSC (3 HQD) 45 days	4,118		
	2. District teams 120 days	864		
	3. Fieldteams - 648 x 7	4,536		
	4. Drivers (3) 200 days	108		
	5. Surveyors 2	1,835		
	6. Construction team and rehab. SW	2,662		
	7. Drawing team (pipe)	4,217		
		14,640	14,640	73,200
20-4927	Investment Implementation			
	(Toolboxes: Villages 20 x Tsh. 84,500.-	845		
	HQ Drilling set 60,000.-	63,000		
	Safari equip: Tsh. 182,000.-	3,822		
	Disinfect - 400 x Tsh. 400.-	900	200	
		69,467		71,557
10-4934	Investment - transport			
	1. Motorcycles 11 Tsh. 521,000.-	10,920		
	2. Bicycles 300 x Tsh. 52,000.-	15,600		
		26,520		26,520
10	Transport running costs			
	Programme vehicles 2			
	50,000 km p.y. 80	6,000		
	Lorry 25,000 km x 100	2,500		
	Motorcycles, District Team 1			
	7 Field - 8 x 7 x 10,000 x Tsh. 20,000.-	4,600		
		13,100	13,300	56,500
20	Materials - Matl.			
	(i) SW - rehab - construction	8,000		
	(iii) Pipe supply rehab - constr.	50,000		
		58,000	58,000	110,000
40	Materials 4000			
	Approved latrine slabs			
	Cement + chicken wire Tsh. 2,000 per slab	1,300	1,300	
	Sh. 10,000 per year per district			
10	Extension drainage	280	280	
	Tsh. 7,000.- per slab - am. 2,000			
		1,560	1,560	7,800

ANNEX 5 - MOROGORO PROPOSED BUDGET - SY PRE - FORMULATION MISSION

(in Tsh x 1000)

MOROGORO	Year 1	Year 2-5	TOTAL
Training			
(a) Staff training			
a.1 Community Development			
Yearly - 2 week refresher		1,000	4,000
<del>P.P. Tsh. 50,000/ = p.p. (10)</del>	4,000		4,000
Two month course year 1			
<del>Probable</del>			
a.2 Health			
Yearly - Tshs. 50,000/= p.p. (10)		1,000	4,000
One month course - year 1	4,000		4,000
to be organized by the region			
a.3 Water			
Yearly - Tsh. 50,000 pp	1,400	1,400	7,000
(Fieldteam & district Officers 1/1)			
a.4 Other training	800	800	4,000
a.5 VHW training			
Training costs per wk = 140,000			
Year 1 = 20	2,800	2,800	14,000
Year 2 = 20			
Year 3 = 28			
Year 4 = 10			
Year 5 = 10			
b Village level training			
1. Refresher courses Monitoring & Reporting			
2. For new progressive village	2,800	2,800	14,000
3. Study tour to successful village			
c Training materials	4,000	4,000	21,000
d Stationeries - office equipment			
Stationeries for office & extended	1,500	1,500	8,000
Office equipment - field staff	700		

PRESENT PROGRAMME VILLAGES REPRESENTATION  
OF WOMEN IN VWSC AND VILLAGE COUNCIL  
MOROGORO RURAL:

DIVISION	VILLAGE	WOMEN IN VWSC	WOMEN IN VILLAGE COUNCIL
MCOMERO	Luhindo	2	2
	Wami Dakawa	2	5
	Milama	2	2
	MCOMERO	2	2
	Dibamba	2	3
	Kambala	NIL	2
TURINANI	Manyinga	2	2
	Lusanga	2	N.A
	Kunke	2	1
	Lungo	2	2
	Kidudue Kidumu	2	3
	Mbogo	2	3
	Mhonda	2	3
	Kichanganj	2	NA
	Kilimanjaro	2	2
MLALI	Changarawe	3	5
	Sangasanga	2	5
	Konga Vikenge	2	2
	Mlali	2	2
	Kipera	2	4
	Melely	2	2
DOMA	Doma	2	2
	msongozi	2	2
	Mangae	2	6
BWAHIRA CHINI	mbusade	2	2
	Bonye	2	1
	B/chini	2	N.A
	Gomero	2	N.A.

\* VWSC consists of 5 members.

\* Village Council consists 25 members.