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ZANZIBAR URBAN WATER SUPPLY

DEVELOPMENT PLAN

PROGRESS REPORT

2ND QUARTER 1990

824-TZZA90-9864

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## PREFACE

The Project operations continued with intensive field studies. Short term consultancies on drilling technology, electrical works, Environmental issues, Design Work and on Economical and Financial issues were completed or started during the 2nd quarter. First draft for Project Document 1991-1994 was drafted.

The financial situation of Project was improved by allocations of local component funds according to previous commitments of the Government of Zanzibar. The procurement budget of the Project was practically completed and any procurements in future will go under contingencies budget line.

The Project work progressed in the planned schedule smoothly.

## 1. PROJECT CO-ORDINATION

The steering committee for Urban Water Supply Project did not meet. The bi-weekly progress meetings with DWD continued regularly.

## 2. STAFFING

Use of staff time is presented in Annex 1.

## 3. STATUS OF PROJECT ACTIVITIES

Status of Project activities as per 30th of June 1990 is presented in Annex 2.

### 3.1 Institutional Study and Human Resources Development

Summary of external factors and functional environment of the Water Supply is in progress. A developmental overview on institutional aspects of the water supply is under preparation as well.

New information will be mainly achieved through a Study on Management Practices, Manpower Inventory and Household Survey.

The study on management practices and training needs was completed and reporting on results is in progress.

Manpower inventory has been more time consuming than expected. The basic data including only essential information on 550 employees had to be collected from various sources. The data is presently being processed with computer. Data checking is done manually. An analysis on existing staff will be completed by the end of July. Afterwards an assessment of human resources and development needs can commence.

The Household Survey is aiming at gathering on the following information:-

- the practices of people regarding water usage and sanitation

- existing systems for water supply and waste disposal
- people's understanding and knowledge of water and
- chances and means for community participation.

The household survey questionnaire consists of 69 questions, Annex 3. The total number of studied households is 300 in Unguja and Pemba. The interviews are conducted and the data will be processed by YUBO Group as a subconsultancy. The results will be available for conclusions by the beginning of August.

Water Work Rules will be revised by a small committee. A table of contents for Water Work Rules has been drafted.

During data collection phase it was realized that some questions of the Project Document could be answered only during the first implementation phase. Skill and task analyses and a comprehensive training programme with syllabus proposals based on them are preferred to be prepared after the tasks and staffing of the proposed Urban Water Supply Authority have been specified. Nevertheless, a strategic training programme with objectives and proposals for implementation of training will be prepared and scheduled.

### 3.2 Water quality monitoring

The results of the water analyses carried out in the University of Dar Es Salaam were received in June.

The equipment for the water laboratory of the Project was received and the establishment of the laboratory and the training of personnel was started in June. First samples from existing water sources of Pemba (including local wells) were analyzed by the end of June.

## Programme for the 3rd Quarter

The final report of the water quality analyses done by the University of Dar Es Salaam will be ready.

Water quality analyses will be carried out in the laboratory of the Project.

Water quality monitoring programme for the Project will be prepared.

### 3.3 Environmental Impact Assessment (EIA) Study

A study to assess the impacts of project activities to environment was started in June.

The Study includes a literature review of environmental studies done in Zanzibar and analysis of

- the risks of the increased use of ground water (including the impacts to the existing local wells and their users)
- the risks caused by the discharge of waste water
- the risks of the quality of water and comparison of the available water quality data with the health statistics
- risks of the use and storage of pesticides to the quality of drinking water systems
- other possible risks and advantages

## Programme for 3rd Quarter

The EIA study report will be prepared, including analysis of the major risks, other possible risks and also things which most probably will not cause problems and recommendations for future action.

### 3.4 Financial and Economic Progress Report

The initial four weeks period of economical survey in Zanzibar has entailed:-

- 1) Collecting cost information on the Water Department as it operates at the present time.
- 2) Reviewing the system of charging for water.
- 3) Starting the economic study, briefing on Government policies etc.
- 4) Assessing customer affordability as opposed to willingness to pay for water.
- 5) Considering the benefits of a clean and continuous supply of water to health, tourism and political stability to set against the cost of the project.
- 6) Preparing a work programme for the counterpart accountant.
- 7) Meeting senior officials on the Zanzibarian Islands of Unguja and Pemba, of the Ministry of Water and Construction, the Water Department, the Ministry of Finance, the Tourist Department and the Department of Statistics.

### 3.5 Water Works Survey

Population estimates have been completed in Zanzibar for years 1990-2000. Town area is divided in two major parts i.e. Zanzibar Town including 8 separate population zones and Zanzibar Urban Extension inside of Town boundary with 4 zones. Population growth is varying inside zones from 0.5% - 17.7%, average 3.8%. Minimum growth is valid in present Town center and maximum growth exist in fringe areas inside of Town's boundary, which follows the chinese made Master Plan land use plan. The population growth estimates were approved by representatives of Land Use and Environment Department in

Chief Minister's Office.

Surveying and levelling work of present intakes, reservoirs, booster stations is completed both in Zanzibar and Pemba. Site maps preparation is done for Zanzibar and it is in progress for Pemba. Maps of main distribution network are under study and will be completed during next quarter.

Study of present condition and capacity of main distribution network has been in progress and it will continue during next quarter by recharge measuring, pipe sample and thickness collection as well as pressure recording.

Report of utilisation of existing intakes, Pumping stations, reservoirs and distribution network as a part of future water supply is completed in Zanzibar and it is in progress for Pemba.

Design of water consumption estimates in relevant consumer groups for years 1990, 2000 and 2015 is completed in Zanzibar. For Pemba it will follow during next quarter.

Urgent rehabilitation work of water supply for Zanzibar should be carried out for Saateni Water Works. Study work was completed already during first quarter 1990. Detailed design work for the same water works will start during next quarter. In Pemba urgent water supply rehabilitation works will be carried out in Chake Chake Town. Study for rehabilitation will be conducted during next quarter.

Preliminary hydraulic calculations for distribution network in Zanzibar were completed by using LOOP computer program of UNDP. Pemba will follow later.

Storage capacity study for Zanzibar water supply was completed. Pemba will follow later.



### 3.6 Water Resources

A draft report on geology of water intake areas was prepared. The hydrogeology study continued with implementation of test pumping programme. Test drillings were started at Miembe Mchomeke water intake area and will continue later at Bububu Spring area.

There are no high capacity pumps available to assess the actual yields of the existing spring intakes. The natural overflow rates from the springs are monitored.

Filter sand samples were send for analysis to Dar University. A tentative programme for geoelectrical soundings was prepared. To be done as a subconsultancy work by Dar University.

Tentative calculations on groundwater potential were completed. Preparation of detailed hydrogeological maps of water shed areas was commenced.

### 3.7 Financial Report

The following local component funds have been obtained by the project.

<u>Date</u>	<u>Amount</u>
14.12.89	TSHS 300,000.00
30/04/90	TSHS 1,200,000.00
03/05/90	TSHS 1,000,000.00
21/06/90	TSHS 1.499,700.00
TOTAL	TSHS 3,999,700.00

=====

The total fund allocation covers the planned local budget of TSHS 4 million until the end of June 1990. The expected local component allocation for the second half of 1990 is TSHS 8-9 million.

The budget for procurements was completed and all further procurements will go on contingencies. There are no needs for any major procurements during this project phase any more. The freight costs have substantially exceeded the planned budget, due to expensive freights charges between Dar and Zanzibar.

The contingency and part of local component budget is suggested to be used as follows:-

1. Completion of subconsultancies for
  - water quality survey
  - household survey
  - data base, for manpower and hydrogeology
  - geoelectrical soundings
  
2. Payment of rents

All the 3 leased houses should be kept with the project until the commence of the next project phase. The two empty houses would be used by short term consultants and visitors and also as storage facility for project equipment.
  
3. Consultancies like
  - a) Environmental specialist  
extension of one month
  - b) Management Consultant  
extension of six to seven weeks
  - c) Design Engineer  
extension 2 months
  - d) Second Water Supply Engineer  
1-2 months, if funds available



NAME	JOB DESCRIPTION	1989			1990											
		10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
COUNTERPARTS - ZANZIBAR																
MZEE MPTANI ALI	WATER SUPPLY ENGINEER			XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX						
KHAMIS BAKARI	HYDROBEOLOGIST				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX						
SALEH MZEE	MONITORING TECHNICIAN (HYDRO./WATER QUALITY)				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX						
ALI ABDU	WATER WORKS TECH.								XX	XXXXX	XXXXX	XXXXX				
HAULA KASSIM	INST. STUDIES OFFICER								XXXXX	XXXXX	XXXXX	XXXXX	XXXXX			
ALI HAJI JUMA	SURVEYOR								XXXXX	XXXXX	XXXXX	XXXXX				
SAWURA MOH'D	LABORATORY TECH.								X	XXXXX	XXXXX	XXXXX				
MOH'D J. KHALID	LABORATORY TECH.								X	XXXXX	XXXXX	XXXXX				
OMAR F. MAMBO	LABORATORY TECH.												X			
AMEIR M. NAHODA	LABORATORY TECH.												X			
FIRDOUS RASHID	CARTOGRAPHER											X	XXXXXX			

OTHER STAFF FROM THE MINISTRY

GHARIB KHAMIS	DRAUGHTSMAN								XXXXX	XXXXX	XXXXX	XXXXX				
MOH'D ABDALLA	SURVEYOR								XXXXX	XXXXX	XXXXX	XXXXX				
HAMDU HAJI	SURVEYOR								XXXXX	XXXXX	XXXXX	XXXXX				
SAID MKONA	DRIVER				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX				
THANI JUMA	DRIVER								XXXXX	XXXXX	XXXXX	XXXXX	XXXXX			
OMAR ALI	DRIVER								XXXXX	XXXXX	XXXXX	XXXXX				
JUMA A. OTHMAN	SURVEYOR								XXXXX	XXXXX	XXXXX	XXXXX				

NAME	JOB DESCRIPTION	1989				1990										
		10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
COUNTERPARTS - PENBA																
MOH'D ABDALLA M.	WATER SUPPLY ENGINEER				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX						
MOH'D JUMA KAMIS	HYDROGEOLOGIST TECH.				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX							
MOH'D ALI SALEH	WATER TECHNICIAN				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX							
ABDULKADIR A.K.	MONITORING TECHNICIAN (WATER QUALITY ETC.)				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX							
ISAADA S. ISSA	TYPIST								XXXXX							
MASOUD J.S.	CLERK								XXXXX	XXXXX	XXXXX	XXXXX				

OTHER STAFF FROM THE MINISTRY

FAKI J. KOMBO	PLUMBER															
SAID S. H.	LABOURER								XXXXX	XXXXX	XXXXX					
MOH'D T.A.	WATCHMAN								XXXXX	XXXXX	XXXXX					
SALIM K.V.	WATCHMAN								XXXXX	XXXXX	XXXXX					
MOH'D A.A.	WATCHMAN								XXXXX	XXXXX	XXXXX					

NAME	JOB DESCRIPTION	1989			1990											
		10	11	12	1	2	3	4	5	6	7	8	9	10	11	12
LOCAL EMPLOYEES																
ISAID SALUM MAGRAM	ADMINISTRATIVE OFFICER	XXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX						
IBUYLEKE NARAIN	PROGRAMME ASSISTANT				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX							
IFARHANA MITHA	SECRETARY				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX							
ISHAIBU RASHID	OFFICE MESSENGER				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX	XXXXX						
IHAMADA ABDALLA	OFFICE CLEANER				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX							
IMWINI KHAMIS	WATCHMAN				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX							
IALI SULIEMAN	WATCHMAN						XXXXX	XXXXX	XXXXX	XXXXX						
IKHAMIS JUMA	WATCHMAN						XXXXX	XXXXX	XXXXX	XXXXX						
IKHAMIS ALI	WATCHMAN						XXXXX	XXXXX	XXXXX	XXXXX						
IKHAMIS HASSAN	WATCHMAN						XXXXX	XXXXX	XXX							
IRISHO DAUDI	WATCHMAN				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX							
IMADDOU J.S.	CLERK						XXXXX	XXXXX	XXXXX	XXXXX						
ISULETMAN A.B.	DRIVER						XXXXX	XXXXX	XXXXX	XXXXX						
IJUMA MOU'AH	WATCHMAN				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX							
ISSA MASOUD	WATCHMAN				XXXXX	XXXXX	XXXXX	XXXXX	XXXXX							
ISAID SALUM	PROCUREMENT & ADM. OFF.								XXXXX	XXXXX						
IKHAMIS HAMZA	WATCHMAN								XXXXX	XXXXX						

## ZANZIBAR URBAN WATER SUPPLY

## HOUSEHOLD QUESTIONNAIRE

INTERVIEW NO. .... DATE .....

INTERVIEWER .....

A. LOCATION .....

B. AREA CLASSIFICATION a b c d .....

1. Is the interviewee the head of household ? Yes < > No < >  
 2. Sex of interviewee Male < > Female < >  
 3. Age of interviewee ..... years old

4. Type of dwelling  
 1. apartment block < >  
     1.1 no. of floors .....
- 1.2 no. of your floor .....
2. detached house < >  
 3. hut < >  
 4. other (specify) .....

5. Size of dwelling (Count of all rooms except for bathroom) .....

6. How many people are living in the same house or flat ? .....

7. How many people belong to your household ? .....

8. Number of adult males in your household ? .....

9. Number of adult females in your household ? .....

10. Number of children in your household? .....

11. Where do you normally get your water from:

1. indoor tap, own < >  
 2. neighbour's tap connection < >  
 3. yard tap, own < >  
 4. public standpipe < >  
 5. container lorry < >  
 6. well < >  
 7. pond < >  
 8. stream < >  
 9. other (specify) .....

12. If yes to Q11: 1 or 3, how old is your connection ?

1. recently installed < >  
 2. a year ago < >  
 3. over two years ago < >  
 4. don't know < >

13. Do you have fixed water tank on the roof ? Yes < > No < >

14. Do you use a pump to get water into the roof tank? Yes < > No < >

15. Do you have underground or surface tank? Yes < > No < >

16. If yes to Q13 or 14 what is the capacity of the tank in litres?

1. Roof .....

2. Ground .....

17. If yes to Q13 or Q14, what is the state of the tank(s)?
1. Good
  2. Works, but needs repair
  3. Not in working order
18. If yes to Q13 or 14, what is the material of the water tank ?
- Roof tank:
1. galvanised standard steel < >
  2. ordinary tin < >
  3. old fuel barrel < >
  4. concrete block < >
  5. other, specify .....
- Ground tank:
1. galvanised standard steel < >
  2. ordinary tin < >
  3. old fuel barrel < >
  4. concrete block < >
  5. other, specify .....
19. If yes to Q13 or 14, what kind of connection have you got from the tank ?
1. whole premises/flat, house < >
  2. to the toilet only < >
  3. to the toilet and kitchen < >
  4. other, specify .....
20. Have you got any problems in water supply during the last weeks ? Describe what kind of problems. How often ?
1. poor quality < >, specify .....
  2. inadequate quantity < >, specify .....
  3. unreliable supply < >, specify .....
  4. maintenance problems < >, specify .....
  5. other < >, specify .....
21. In which ways have you tried to solve those problems ?
- .....
22. How many days' notice is reasonable to you, if water is temporarily not supplied ? ..... days
23. Suppose that your tap is faulty and leaks. How many days' delay in repairing is still acceptable ? ..... days

Questions 24-30 only for those who must fetch water (no house/f: connection or connection out of order):



24. Distance to water source ..... km  
If in apartment block, number of floors .....
25. How many times do you fetch water daily ? < >
26. No. of hours/day spent for water hauling ? < >
27. Time and effort used for fetching water is
1. too much < >
  2. normal < >
  3. little < >
28. Who fetches water ?
1. male family member < >
  2. female family member < >
  3. child/children family member(s) < >
  4. hired help < >
- Why this person? .....
29. What kind of container do you use ?
1. tin bucket < > size in litres .....
  2. plastic bucket < > size in litres .....
  3. plastic container < > size in litres .....
  4. drum < > size in litres .....
  5. other (specify) .....
30. Do you clean container before filling ? Yes < > No < >
31. If yes to Q30, how? .....
32. If yes to Q30, why? .....
33. If yes to Q30, how often?
1. every time < >
  2. once a day < >
  3. once in 2 days < >
  4. once a week < >
  5. less < >
34. Do you store water ? Yes < > No < >
- If yes to Q34, answer questions 35-37:
35. Why do you store it? .....
36. How do you store it ?
1. in the same container used for fetching < >
  2. tin or plastic bucket < >
  3. concrete or masonry cistern < >

4. drum < >  
 5. other (specify) .....
37. Where do you store the water ?  
 1. inside the house < >  
 2. outside the house < >
38. Is the container covered ? Yes < > No < >  
 If yes, why do you cover it ? .....  
 .....  
 If no, why not? .....
39. How do you get water out of the container ?  
 1. dipper (calabash, mug, cup, bowl) < >  
 2. hosepipe, tap < >  
 3. tilting the container < >  
 4. other (specify) .....  
 Why do you use this method?.....
40. Where do you put dipper after use ?  
 1. on the floor < >  
 2. on the table < >  
 3. in the container < >  
 4. on the lid of the container < >  
 5. other (specify) .....  
 Why do you put the dipper there? .....
41. How often do you clean storage container ?  
 1. once a day < >  
 2. once in 2 days < >  
 3. once a week < >  
 4. less < >  
 Why do you clean it this often? .....
42. Do you collect rainwater ?  
 1. irregularly < >  
 2. occasionally < >  
 3. never < >
43. For what do you use this water?  
 1. cooking and drinking < >  
 2. bathing and toilet flushing < >  
 3. washing clothes < >  
 4. garden livestock < >  
 5. other (specify) .....
44. How much water (from the usual source) do you use for:



3. standpipe in the distance less than 200m Yes < > No < >
54. If yes to Q53, how much would you be willing to pay for
1. house connection TSHS/month .....
  2. yard connection TSHS/month .....
  3. standpipe TSHS/month .....
55. If no to Q53, why not? .....
56. If the water was rationed, at what time would you like to have water in your place?
1. between 6 - 12 < >
  2. between 12 - 2 < >
  3. between 2 - 6 < >
  4. other, (specify) .....
57. What's your opinion, should the Water Sector remain a government department or should it be converted into corporation ?
1. a department is preferred < >
  2. a corporation is preferred < >
  3. reasons for your opinion .....
  4. no opinion < >
58. Could you work with other people to contribute to the improvement of the water supply in the community ? Yes < > No < >
59. If yes to Q58, how would you like to contribute ? .....
60. If yes to Q58 under what conditions ?
1. voluntary/self help < >
  2. exchange work < >
  3. paid work < >
  4. other (specify) .....
61. How have you arranged the disposal of human excreta ?
1. flush toilet < >
  2. pit latrine < >
  3. outdoors (ditch, bush, seashore etc. < >

62. How have you arranged the disposal of waste water ?

- 1. the house has a complete drainage system < >
- 2. throw it into flush toilet < >
- 3. throw it into pit < >
- 4. throw it outdoors < >
- 5. other (specify) .....

63. Describe your solid waste disposal system ?

- 1. no system < >
- 2. dust bin < >
- 3. burning < >
- 4. solid waste disposal heap/pit < >
- 5. collection is arranged by the Municipality < >
- 6. other (specify) .....

64. Do you know any diseases or infections caused by unclean water ? What diseases ? .....

65. Has anyone in your household had diarrhea during the last three months ? Yes < > No < >

66. If yes to Q65 specify

- 1. number affected children < >
- 2. number affected adults < >

67. Where do you usually get information on water ?

- 1. newspapers < >
- 2. radio < >
- 3. TV < >
- 4. neighbours < >
- 5. doctors and health workers < >
- 6. school < >
- 7. governmental offices, specify .....
- 8. other, specify .....

68. Major sources of the livelihood of the family ?

.....  
.....  
.....

69. Average cash income per month ? TSHS .....

form: 26.5.90

COMPONENTS	OUTPUTS	INDICATORS OF SUCCESS	STATUS 2ND QUARTER 1990
INSTITUTIONAL ARRANGEMENTS	RECOMMENDATIONS FOR IMPROVED AND RATIONALIZED ORGANIZATION	REVIEW OF APPROPRIATE INSTITUTIONAL ARRANGEMENTS FOR URBAN WATER SUPPLY (UWS) PREPARED JOINTLY WITH DWD	CHECKING OF THE BASIC DATA COLLECTED IS GOING ON. TABLE OF CONTENTS FOR THE REVISION OF WATER WORK RULES DRAFTED
	DEVELOPMENT PROGRAMME FOR MANAGERIAL AND OPERATIONAL STAFF RESOURCES	ASSESSMENT OF STAFF RESOURCES FOR EACH UWS PREPARED	MANPOWER DATA COLLECTED, CHECKING OF DATA IS GOING ON AND ANALYSING WILL FOLLOW. DOCUMENTATION OF PRESENT ADMINISTRATIVE PROCEDURES CONTINUES.
		RECOMMENDATION OF NECESSARY ADDITIONAL MANAGERIAL AND OPERATIONAL STAFF RESOURCES FOR EACH UWS PREPARED	WILL FOLLOW AT LATER STAGE AFTER COMPLETION OF THE MANPOWER INVENTORY
HUMAN RESOURCES DEVELOPMENT	TRAINING NEEDS ASSESSMENT	TASK ANALYSIS PREPARED FOR EACH POST	WILL FOLLOW AT LATER STAGE AFTER COMPLETION OF THE MANPOWER INVENTORY
		SKILL ANALYSIS OF DW'S PERSONNEL DONE	
		ALL TRAINING NEEDS ASSESSED	INTERVIEWS ABOUT MANAGEMENT PRACTICES AND TRAINING NEEDS OF MANAGEMENT STAFF COMPLETED, REPORT ON RESULTS IS ON PROGRESS, WILL CONTINUE TO OTHER GROUPS AFTER COMPLETION OF THE MANPOWER INVENTORY
	COMPREHENSIVE TRAINING	RELEVANT TRAINING INSTITUTIONS IDENTIFIED	IDENTIFICATION OF INSTITUTIONS COMPLETED
	PROGRAMME	A COMPREHENSIVE TRAINING PROGRAMME FOR ALL LEVELS OF STAFF AND NEW EMPLOYEES PREPARED	WILL FOLLOW AT LATER STAGE, PREPARATIONS HAVE BEEN COMMENCED
RECOMMENDATIONS FOR IMPROVED PROCEDURES IN ACCOUNTING AND FINANCIAL CONTROL		APPROPRIATE WORKPLAN AND BUDGET PROCEDURE FOR UWS PREPARED	WILL FOLLOW
		APPROPRIATE PROCEDURES OF FOLLOW-UP AND CONTROL OF FINANCE AND COSTS PREPARED	WILL FOLLOW
		O&M OF EACH W/S ASSESSED	WILL FOLLOW
OPERATIONAL DEVELOPMENT	RECOMMENDATIONS FOR IMPROVED PROCEDURES IN OPERATIONS AND MAINTENANCE	APPROPRIATE PROCEDURES OF o&m PREPARED AND PROPERLY DOCUMENTED AND AVAILABLE AT EACH WATER SUPPLY	DRAFTED AS FOR ELECTRICAL INSTALLATIONS. OTHER PARTS WILL FOLLOW
		FOLLOW-UP SYSTEM ESTABLISHED TO BACK-UP PRECAUTIONARY MEASURES.	WILL FOLLOW
	RECOMMENDATIONS FOR IMPROVED STOCK MANAGEMENT	APPROPRIATE PROCEDURES OF SPARE PARTS STOCKING AND SUPPLY PREPARED FOR EACH UWS	WILL FOLLOW

COMPONENTS	OUTPUTS	INDICATORS OF SUCCESS	STATUS 2ND QUARTER 1990
FINANCIAL DEVELOPMENT	ANALYSIS OF ECONOMY OF UWS	OPERATING COST PROJECTION PREPARED FOR EACH UWS	COSTS BEING COLLECTED AND VISITS MADE TO EACH U.W.S.
		CAPITAL COST PROJECTING PREPARED FOR EACH UWS	TO FOLLOW
		PROPOSAL OF TARIFFS AND SUBSIDIES PREPARED FOR EACH UWS IN ACCORDANCE WITH EXISTING COST-RECOVERY STRATEGY	SCALES OF CHARGES AND CUSTOMER BASE BEING REVIEWED. ECONOMIC STUDY COMMENCED. GOVERNMENT POLICIES ON SUBSIDY/VIABILITY OF WATER DEPARTMENT BEING OBTAINED. CUSTOMER AFFORDABILITY BEING ASSESSED.
		RECOMMENDATIONS FOR EFFECTIVE REVENUE COLLECTION PREPARED	EXISTING REVENUE COLLECTION SYSTEMS ARE BEING REVIEWED AND THEIR OPERATION TESTED.
ROLE OF COMMUNITIES	ASSESSMENT OF COMMUNITY PARTICIPATION NEEDS AND BENEFITS	TENTATIVE CASHFLOW PLAN PREPARED	TO FOLLOW
		ASSESSMENT OF COMMUNITY PARTICIPATION IN DESIGN, IMPLEMENTATION OF O&M OF UWS PREPARED	DOCUMENTATION OF COMMUNITY PARTICIPATION PRACTICES IN ZANZIBAR GOING ON
		ASSESSMENT OF WATER USE AND HYGIENIC HABITS PREPARED	HOUSEHOLD SURVEY EXECUTED IN UNGUWA AND GOING IN PEMBA, RESULTS AVAILABLE BY AUGUST
		RECOMMENDATIONS FOR COMMUNITY PARTICIPATION	RECOMMENDATIONS OF COMMUNITY PARTICIPATION PREPARED
		COMMUNITY AND USER EDUCATION PROGRAMME OF WATER SUPPLY AND HYGIENIC PREPARED	WILL FOLLOW AT LATER STAGE AFTER RECEIVING THE RESULTS OF THE SURVEY

COMPONENTS	OUTPUTS	INDICATORS OF SUCCESS	STATUS 2ND QUARTER 1990
DESIGN GUIDELINES	ESTABLISHMENT OF ACCEPTABLE GUIDELINES	EXISTING GUIDELINES REVIEWED AND REVISIONS MADE AS NECESSARY	WATER WORKS AND BOREHOLE DESIGN CRITERIA DRAFTED
WATER DEMAND	REVIEW OF EXISTING AND ASSESSMENT OF FUTURE DEMAND	TOTAL AND UNIT WATER CONSUMPTIONS ASSESSED AND DIVIDED IN RELEVANT CONSUMER GROUPS	FIRST DRAFT COMPLETED ZANZIBAR, PEMBA IS IN PROGRESS
		DEMAND AFTER 10 YEARS ASSESSED AND DIVIDED IN RELEVANT CONSUMER GROUPS	FIRST DRAFT COMPLETED ZANZIBAR, PEMBA IS IN PROGRESS
		DEMAND AFTER 25 YEARS ASSESSED AND DIVIDED IN RELEVANT CONSUMER GROUPS	FIRST DRAFT COMPLETED ZANZIBAR, PEMBA IS IN PROGRESS
		OTHER WATER NEEDS (IRRIGATION, CATTLE, WATERING ETC.) ASSESSED AND TAKEN INTO ACCOUNT IN WSDP PREPARATION	STUDIES ARE UNDERWAY
IMPROVEMENTS	PROGRAMME OF POTENTIAL IMPROVEMENTS	AVAILABILITY OF COSTED IMPLEMENTATION PROGRAMME AND EXPENDITURE PLAN CONSISTENT WITH PROGRAMME BUDGET INDICATING ALLOCATIONS OF AUGMENTATIONS AND REHABILITATIONS BY EACH UWS IN PROJECTIONS OF 10 AND 25 YEARS	SAME AS IN EARLIER PROGRESS REPORT
ENVIRONMENTAL IMPACTS	PROGRAMME OF ENVIRONMENTAL IMPACT ASSESSMENT, MONITORING AND AUDITING	STUDY OF POSSIBLE CHANGES IN GROUNDWATER LEVEL AND QUALITY PREPARED	MONITORING IS UNDERWAY
		STUDY OF IMPACTS OF SPRING WATER ABSTRACTION TO THE ENVIRONMENT PREPARED	WILL BE ASSESSED
		STUDY OF POSSIBLE CONTAMINATION BY UNKNOWN OR HAZARDOUS PARTICLES PREPARED	STUDY IS UNDERWAY (STARTED IN JUNE)
		STUDY OF IMPACTS TO THE ENVIRONMENT DUE TO UNSATISFIED SEWERAGE AND DRAINAGE PREPARED	STUDY IS UNDERWAY (STARTED IN JUNE)
		STUDY OF EROSION DUE TO LEAKING WATER SUPPLY PREPARED	WILL BE ASSESSED
		STUDY OF IMPACTS OF THE MULTIPURPOSE USE OF WATER TO THE ENVIRONMENT PREPARED	STUDY IS UNDERWAY (STARTED IN JUNE)



COMPONENTS	OUTPUTS	INDICATORS OF SUCCESS	STATUS 2ND QUARTER 1990
EXISTING DATA SOURCES	REVIEW OF EXISTING PLANS AND POPULATION FORECASTS	EXISTING INFORMATION REGARDING HYDROGEOLOGY REVIEWED DURING WSDP PREPARATION	ALL AVAILABLE REPORTS HAVE BEEN STUDIED AND FIELD WORKS CONTINUED. MONITORING OF WATER LEVELS AND CONDUCTIVITY CONTINUED. TEST PUMPINGS CONTINUED IN UNGUJA AND WILL BE COMMENCED IN JULY IN PEMBA.
		EXISTING INFORMATION REGARDING HYDROGEOLOGY REVIEWED	110 LOCAL WELLS ARE MONITORED IN ZANZIBAR AND 60 IN PEMBA. ALL URBAN WATER SUPPLY BOREHOLES ARE REGULARLY MONITORED. DRILLING OBSERVATION BOREHOLE WAS COMMENCED.
		RURAL ENGINEERING STUDY REVIEWED	THE LATEST DRAFT - FEB 1990 - HAS BEEN COPIED AND STUDIED
		REPORT OF REHABILITATION AND IMPROVEMENT OF SEWERAGE, DRAINAGE AND WATER SUPPLY SYSTEMS IN ZANZIBAR TOWN REVIEWED	DRAINAGE AND SEWERAGE PLAN FOR ZANZIBAR TOWN TO BE DONE BY A GERMAN CONSULTANT ON KMF (A GERMAN) FUND
		OTHER RELEVANT WATER PLANS OR STUDIES IN THE REGIONS REVIEWED	ALL AVAILABLE ENVIRONMENTAL STUDIES AND REPORTS HAVE BEEN GATHERED AND STUDIED
		RELEVANT DEVELOPMENT PLANS IN ZANZIBAR, MKOANI, CHAKE CHAKE AND NETE TOWN REVIEWED	COMPLETED
		UPDATED ESTIMATE OF POPULATION DERIVED FROM THE 1988 CENSUS	COMPLETED AND APPROVED BY DWD AND OTHER AUTHORITIES
	ESTIMATES OF YIELDS FROM EXISTING SOURCES	EXISTING BOREHOLES TESTED AND RESULTS ANALYSED	ALL URBAN WATER SUPPLY BOREHOLES IN UNGUJA TEST PUMPED AND RESULTS HAVE BEEN CALCULATED. DOCUMENTATION UNDERWAY.
		THE YIELD OF EXISTING SPRINGS USED IN URBAN WATER SUPPLIES DETERMINED	OVERFLOW OF SPRINGS IS MONITORED. NO HIGH CAPACITY PUMPS AVAILABLE TO ACCESS THE ACTUAL YIELDS.
	ASSESSMENT OF WATER QUALITY	WATER QUALITY OF THE EXISTING SOURCES ANALYZED	WATER QUALITY RESULTS RECEIVED FROM DAR UNIVERSITY. FIRST TESTS FROM PEMBA CARRIED OUT IN THE PROJECT LABORATORY.
EXISTING WATER SUPPLY		WATER QUALITY IN THE DISTRIBUTION NETWORK ANALYZED AND ASSESSED	WATER QUALITY RESULTS RECEIVED FROM DAR UNIVERSITY
		WATER QUALITY IN THE "TRADITIONAL" SOURCES ANALYZED AND ASSESSED	CONDUCTIVITY/SALINITY ASSESSED IN 175 LOCAL WELLS. WATER QUALITY RESULTS RECEIVED FROM DAR UNIVERSITY. FIRST TESTS FROM PEMBA CARRIED OUT IN THE PROJECT LABORATORY.
	INFORMATION ON LOCATION AND SIZES OF THE EXISTING WATER SUPPLY FACILITIES	MAPS PREPARED WHERE THE LOCATIONS AND SIZES OF INTAKE FACILITIES, PUMPING STATIONS, STORAGE TANKS, CONVEYORS AND DISTRIBUTION PIPES ARE SHOWN	ZANZIBAR: INTAKES, PUMPING STATIONS, RESERVOIRS MAPS COMPLETED. DISTRIBUTION NETWORK MAP IN PROGRESS. PEMBA: SURVEY TEAM WAS SENT TO PEMBA TO COMPLETE FIELD WORK. ACTIONS OF MAPS IN PROGRESS
	INFORMATION ON CONDITION AND CAPACITY OF THE EXISTING WATER SUPPLY FACILITIES	CONDITION AND CAPACITY OF RETICULATION NETWORK ASSESSED IN A PILOT AREA	ZANZIBAR: INTAKE RECHARGE MEASUREMENTS DONE WHILE TEST PUMPING, PIPE LINE THICKNESS MEASUREMENTS ARE IN PROGRESS. PIPE SAMPLE COLLECTION AND PRESSURE MEASUREMENTS WILL COMMENCE WHEN INSTRUMENTS ARRIVE. PEMBA WILL FOLLOW LATER
		REPORT PREPARED BASED ON THE ASSESSMENT AND WHERE THE CONDITION AND AVAILABLE CAPACITY OF EXISTING INTAKES, PUMPING STATIONS, STORAGE TANKS, CONVEYORS AND DISTRIBUTION PIPES ARE REVIEWED	FIRST DRAFT REPORT COMPLETED FOR ZANZIBAR. PEMBA'S REPORT IN PROGRESS
WATER SUPPLY SOURCES	IDENTIFICATION AND ANALYSIS OF POTENTIAL WATER SOURCES FOR URBAN WATER SUPPLIES	YIELD OF POTENTIAL SURFACE AND GROUNDWATER SOURCES ANALYZED BASED ON EXISTING AND NEW HYDROGEOLOGICAL AND HYDROLOGICAL DATA	PRELIMINARY ESTIMATES ARE READY. DOCUMENTATION WILL FOLLOW AFTER TEST PUMPINGS IN PEMBA WILL BE COMPLETED.
		QUALITY OF POTENTIAL SOURCES ANALYZED AND DOCUMENTED	PRELIMINARY ANALYSES ARE READY. DOCUMENTATION UNDERWAY. FIRST TESTS CARRIED OUT

OUTPUTS	INDICATORS OF SUCCESS	STATUS 2ND QUARTER 1990
REHABILITATION OF EXISTING FACILITIES	DRAWINGS OF DETAILED URGENT REHABILITATIONS	UNDER PREPARATION
ENGINEERING DESIGNS	TENDER DOCUMENTS FOR CIVIL, ELECTRICAL AND MECHANICAL WORKS	WILL FOLLOW LATER
	AVAILABILITY OF DRAWINGS OF DETAILED DESIGN FOR NECESSARY OFFICES, STORES AND WORKSHOPS	WILL FOLLOW LATER
	AVAILABILITY OF SPECIFICATIONS	WILL FOLLOW LATER
	AVAILABILITY OF BILL OF QUANTITIES	WILL FOLLOW LATER
TECHNICAL REPORT	AVAILABILITY OF STRUCTURAL ANALYSIS OF STRUCTURES	DATA COLLECTION IN PROGRESS
	AVAILABILITY OF HYDRAULIC CALCULATIONS FOR INTAKES, PUMPING STATIONS, CONVEYORS AND DISTRIBUTION NETWORKS	ZANZIBAR: FIRST HYDRAULIC CALCULATION OF NETWORK COMPLETED FOR YEARS 1990, 1994, 2000 AND 2015
	ECONOMIC STUDY OF STORAGE CAPACITY PROVISION	FIRST DRAFT COMPLETED
FINAL COST ESTIMATES	AVAILABILITY OF COST ESTIMATES OF CIVIL WORKS	UNIT PRICE COLLECTION IN PROGRESS
	AVAILABILITY OF COST ESTIMATES OF PIPE MATERIALS	UNIT PRICE COLLECTION IN PROGRESS
	AVAILABILITY OF COST ESTIMATES OF EQUIPMENT	UNIT PRICE COLLECTION IN PROGRESS
	AVAILABILITY OF COST ESTIMATES OF ELECTRICAL AND MECHANICAL WORKS	UNIT PRICE COLLECTION IN PROGRESS
	AVAILABILITY OF COST ESTIMATES FOR CHEMICALS AND O&M COSTS	WILL FOLLOW LATER
	CONTINUOUS SUPPLY OF SPARE PARTS ASSESSED	WILL FOLLOW LATER