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MATERIAL NIGERIA
FROM TRAVEL WITH M. TSOI

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Not included

1. Guidelines for the UNICEF Assisted Rural Water and Sanitation Programme: A Reference for States; Federal Ministry of Health, Lagos, Nigeria; June 1986

2. Rural Water and Sanitation Programme: Policy and Guidelines; Federal Government of Nigeria; May 1986

3. Status Report; Kwara State Drinking Water and Sanitation Project; Nigeria; February 1986

4. Progress Report on Health Education and Training Unit; ditto; Nigeria; July 1985

5. Socio Cultural Beliefs in Relation to Water and Sanitation in Borgu Local Government Area of Kwara State; Nigeria; c. 1986

6. A Typical Handpump Utilization Day at Igaboaran, Afon District, Kwara State; c. 1985

7. Report of a Pre-Intervention Data-Gathering Exercise in Borgu Local Government Area of Kwara Sate, Nigeria; October 1985

8. Project Monitoring Summary Report; Afon District, Kwara State; April 1985

9. Guineau Worm Statistics for Moro Local Government Area, Kwara State, Nigeria; c. 1985

10. First Report of Data Gathering Exercise in 56 Villages in Moro Local Government Area

11. Evaluation Report of the Health Education Component of Kwara State Water and Sanitation Programme; c. 1986

12. Questionaire for Baseline Survey; UNICEF Assisted Water and Sanitation Project; (Imo?) State; c. 1986

M. SEAGER

SOCIO-CULTURAL BELIEFS IN RELATION TO WATER AND SANITATION PROJECT IN BORGU LOCAL GOVERNMENT AREA OF KWARA STATE, NIGERIA.

1. INTRODUCTION:

Belief is a strongly held feeling, trust or confidence which has an influence upon the believer. Belief can be on unseen beings like God, spirits or devils or on physical objects like images or even on actions that can or are capable to be taken by believer or somebody else.

In what follows we shall limit ourselves to socio-cultural beliefs in relation to water storage, water uses and faecal disposal.

The purpose of the survey is to find out if there are existing socio-cultural beliefs which can be exploited to the advantage of or for which we must guide ourselves for successful implementation of the Project at Borgu Local Government Area.

2. METHODOLOGY OF DATA GATHERING

The Sample survey was carried out with each team-mate obtaining interview in the second house being covered in any given village. Each village was usually divided into clusters or enumeration areas and team mates assigned to each of the areas. Thus the chosen sample was representative of the different sections of the villages and of the villagers.

On certain occasions the District and Village heads were interviewed as we expect such important personalities and custodians of traditions to know more of socio-cultural beliefs.

3. RESULTS.

3.1 WATER STORAGE

The results of the survey are presented according to districts for convenience and in order to bring out more salient features.

TABLE 1

DISTRIBUTION OF HOUSEHOLDS BY DISTRICTS AND BY CONTAINERS USED TO STORE DRINKING WATER

DISTRICT	Drinking Water Containers			
	Pot (%)	Drum (%)	Bowl (%)	Total (%)
Agwara	20 (87.0)	3 (13.0)	- (0.0)	23 (100.0
Babanna	20 (95.2)	1 (4.8)	- (0.0)	21 (100.0
Bussa	3 (75.0)	1 (25.0)	- (0.0)	4 (100.0
Gwanara	46 (85.2)	7 (13.0)	1 (1.8)	54 (100.0
Ilesha	22 (95.6)	1 (4.4)	- (0.0)	23 (100.0
Kaiama	36 (80.0)	9 (20.0)	- (0.0)	45 (100.0
Okuta	26 (92.9)	2 (7.1)	- (0.0)	28 (100.0
Shagunu	30 (96.8)	1 (3.2)	- (0.0)	31 (100.0
Wawa	27 (93.1)	2 (6.9)	- (0.0)	29 (100.0
Yashikira	26 (68.4)	12 (31.6)	- (0.0)	38 (100.0
Total	256(86.5)	39 (13.2)	1 (0.3)	296 (100.0

From table 1 above we can see that it is only at Gwanara district that 1.8% of the households were found to use bowls as containers for drinking water. Drums are mostly used at Yashikira, Bussa and Kaiama districts whereas least use of drums can be found at Shagunu district.

The use of earthen or clay pots has endured the test of time and space. Time because numberless forebears were said to use the type of container and people would still delight to use them tomorrow. Space because the practice was found in all districts. Even at Yashikira district where drums were largely used, slightly more than 2 out of every 3 households there (i.e 68.4%) use clay pots.

TABLE 2

LOCATIONS IN HOUSES WHERE DRINKING WATER CONTAINERS ARE STORED.

DISTRICT	LOCATIONS						
	Along the passage (%)	In a room (%)	In the Kitchen (%)	At the Back-yard (%)	In front of the house (%)	Others e.g. within open compound (%)	Total (%)
Agwara	1 (4.4)	3(13.0)	8(34.7)	1(4.4)	9(39.1)	1(4.4)	23(100
Babanna	-(0.0)	2(9.5)	-(0.0)	-(0.0)	18(85.7)	1(4.8)	21(100)
Bussa	-(0.0)	1(25.0)	1(25.0)	1(25.0)	1(25.0)	-(0.0)	4(100)
Gwanara	3(5.6)	28(51.8)	5(9.3)	1(1.8)	17(31.5)	-(0.0)	54(100)
Ilesha	1(4.4)	6(26.1)	2(8.7)	-(0.0)	14(60.8)	-(0.0)	23(100)
Kaiama	3(6.7)	27(37.8)	5(11.1)	1(2.2)	19(42.2)	-(0.0)	45(100)
Okuta	-(0.0)	13(46.4)	2(7.1)	1(3.6)	12(42.9	-(0.0)	28(100)
Shagunu	1(3.2)	11(35.5)	8(25.8)	-(0.0)	7(22.6)	4(12.9)	31(100)
Wawa	-(0.0)	19(65.5)	3(10.3)	1(3,5)	-(0.0)	6(20.7)	29(100)
Yashikira	-(0.0)	11(29.0)	4(10,5)	1(2.6)	22(57.9)	-(0.0)	38(100)
Total	9(3.0)	111(37.5)	38(12.8)	7(2.4)	119(40.2)	12(4.1)	296(100)

Two locations in the houses stand out clearly as areas for keeping drinking water containers. The locations are "the front of the house" (by 40.2% of the households) and "In a room" (by 37.5% of households). It was only at Wawa district that households do not keep their drinking water containers in front of the house whereas, more than 8 out of every 10 households (i.e. 85.7%) and about 6 in 10 households and 5 in 10 households at Babanna, Ilesha and Yashikira districts practice that! As high as 20.7% of the households in Wawa district are, however, known to be keeping water containers within open spaces of their compounds. The use of Kitchens is more common in Agwara and Shagunu districts and whereas households at Babanna district do not keep drinking water containers in the kitchen.

3.1.1. BELIEFS OR TABOOS.

As to the question of whether there are beliefs or taboos concerning water containers or their locations in the house 36.5% of the households answered to the affirmative while 63.5% said there are no beliefs or taboos. 1 in every 2 households at Bussa, Shagunu and Okuta districts hold certain beliefs/taboos as to the type of water containers and where they have to be kept in the house.

Some of the beliefs / taboos in Borgu LGA in respect of water storage include:

(a) With respect to Water containers: it is strongly believed that the clay pots make water to cool faster and for longer period of time than any other containers. Again the customs of their forefathers must be sustained.

The clay pots also remind people of their relationship to the earth (dust) from which they are made of.

(b) On locations in houses:

(b.1) In front of the house:- Some households believe that it makes water containers readily accessible to both members of the households and strangers who pass along the house and need to drink or refill bottles without restrictions like owners not being at home or location locked up. Some, however, sustain this age-long practice without knowing why or raising querries.

- It is also strongly believed in some households that the spirits of the forefathers or even of any other departed ones do visit them especially at night and such spirits would readily have access to. containers in front of the houses without having to pass through doors, passages or compounds.

- In order to ward off evil spirits or evil influences and poisoning by enemies some households have buried

certain local medicines on the Spot where the containers are placed in front of the houses

b.2 In rooms or Kitchens: - Some believe that it promotes cleanliness of the water than keeping it else where.

- Some believe that water kept in such locations would be out of the reach of children playing and consequently avoiding contamination or dirts.
- Some believe that it protects drinking water from flies and mosquitoes.
- Some believe that the locations are more ideal to make the water cool.
- Some are keeping their containers and its content from poisoning by enemies.

b.3 In the Compound: This is largely practiced when enough space is not available in rooms or kitchens. Some, however, believe that it is easily accessible to all members of the compound.

3.2 WATER USES.

It was found that all members of nearly 1 in every 2 households in Borgu LGA uses a common cup to drink water (i.e. 48.0% of all households). On the other hand 37.1% of households have a common cup on top of their water containers and made individual member of their households own separate cups (see table 3 below).

TABLE 3

DISTRIBUTION OF HOUSEHOLDS BY DISTRICTS AND HOW THEIR MEMBERS DRINK FROM WATER CONTAINERS.

District	Members of households are using a common cup (%)	Individuals with a cup but No common cup on water container (%)	Individuals with a cup but A common cup on water container (%)	Total (%)
Agwara	9. (39.2)	7 (30.4)	7 (30.4)	23 (100)
Babanna	8 (38.1)	3 (14.3)	10 (47.6)	21 (100)
Bussa	1 (25.0)	3 (75.0)	- (0.0)	4 (100)
Gwanara	27 (50.0)	5 (9.3)	22 (40.7)	54 (100)
Ilesha	12 (52.1)	2 (8.7)	9 (39.2)	23 (100)
Kaiama	23 (51.1)	4 (8.9)	18 (40.0)	45 (100)
Okuta	12 (42.9)	- (0.0)	16 (57.1)	28 (100)
Shagunu	18 (58.1)	8 (25.8)	5 (16.1)	31 (100)
Wawa	12 (41.4)	10 (34.5)	7 (24.1)	29 (100)
Yashikira	20 (52.6)	2 (5.3)	16 (42.1)	38 (100)
Total	142 (48.0)	44 (14.9)	110 (37.1)	296 (100)

However, 14.9% make individuals own their own cups but going freely to dip it into the water container. Bussa district is well noted for this last practice whereas it is not done at Okuta district. In Bussa district no household has a common cup on top of water containers while having members own their separate cups. On the whole the Health Education Team must intensify efforts in all districts to discourage the use of a common cup by all members of the same household.

3.2.1 BELIEFS

On beliefs in respect of water uses the survey revealed that 64.9% of the households hold no belief in respect of how they drink water whereas 35.1% held certain beliefs.

Some of the beliefs are:

In respect of Using a common Cup:

- some people believe that the practice reminds numbers of sqme household that they have blood ties.
- It is also believed by some that the pratice fosters Unity and harmony among members of the same household.
- others believe the pratice was inherited from anscestors as a tradition and must not be allowed to die.

In respect of Individuals with a cup but a common cup on water container.

- Some believe that practice makes them to avoid the spread of communicable diseases when a member is affected.
- some also believe that the common cup on top of water container is bound to remind all and sundry that they are related.

3.3 FAECAL (EXCRETA) DISPOSAL

Two options seem to be left for the villagers in Borgu LGA. The options are using the field (bush or dung hill) and using the pit latrine. The survey revealed that 6 out of every 10 households go to the field for faecal disposal while the remaining 4 in every 10 households use the latrines. (See table 4 below).

TABLE 4

DISTRIBUTION OF HOUSEHOLDS BY DISTRICT AND WHERE THEIR MEMBERS DISPOSE OF FEACES.

DISTRICT	Location for defecation: by going to the bush/dung hill (%)	By going to the pit latrine (%)	Total (%)
Agwara	13 (56.5)	10 (43.5)	23 (100)
Babanna	16 (76.2)	5 (23.8)	21 (100)
Bussa	2 (50.0)	2 (50.0)	4 (100)
Gwanara	31 (57.4)	23 (42.6)	54 (100)
Ilesha	16 (69.6)	7 (30.4)	23 (100)
Kaiama	36 (80.0)	9 (20.0)	45 (100)
Okuta	13 (46.4)	15 (53.6)	28 (100)
Shagunu	20 (64.5)	11 (35.5)	31 (100)
Wawa	16 (20.2)	13 (44.8)	29 (100)
Yashikira	20 (52.6)	18 (47.4)	38 (100)
TOTAL	183 (61.8)	113 (38.2)	296 (100)

We have more households using pit latrines at Okuta and Bussa districts while the pit latrines are not all that common at Kaiama and Babanna districts.

3.3.1 BELIEFS

Beliefs in respect of Faecal disposal include:

with respect to going to the bush/dung hills:-

- It is believed by some to be the custom of the forefathers and appears more comfortable than any other facility.
- Some believe that if a latrine is close to the house/compound then flies could emerge from there to pollute their food and that is why they go far into the field from where flies carrying germs could not easily reach their food.
- many people using the field of course said it is the only facility available to them in the villages.

with respect to pit latrines:-

- some households believe it is a way to avoid the various hazards associated with the field.
- The pit latrines are believed by some to prevent the spread of diseases.
- Some others believe the pit latrines afford better privacy.
- Others believe that their environment becomes cleaner and it is the most hygienic way for faecal disposal known to them.
- Others simply dig and use the pit latrines because of the sanitation preached to them by health authorities.

On the whole 19.6% of the people held such beliefs expressed above while 80.4% of the people held no fixed beliefs in respect to faecal disposal. Most of the beliefs were mostly held by people around Okuta district (39.3% of the households) Shagunu district (35.5%) whereas only 8.7% and 8.9% such held beliefs at Ilesha and Kaiama districts.

3.4. USE OF COMMON PIT LATRINES.

The households interviewed were asked whether children and adults of the same sex can use the same pit latrine if built in their villages and 85.8% of them replied to the affirmative while 14.2% do not approve of the practice. The result is presented in table 5 below:-

TABLE 5

DISTRIBUTION OF HOUSEHOLDS BY DISTRICTS AND BY WHETHER CHILDREN AND ADULTS CAN USE THE SAME PIT LATRINES.

DISTRICT	YES (%)	No (%)	TOTAL (%)
Agwara	20 (87.0)	3 (13.0)	23 (100)
Babanna	18 (85.7)	3 (14.3)	21 (100)
Bussa	2 (50.0)	2 (50.0)	4 (100)
Gwanara	47 (87.0)	7 (13.0)	54 (100)
Ilesha	19 (82.6)	4 (17.4)	23 (100)
Kaiama	38 (84.4)	7 (15.6)	45 (100)
Okuta	26 (92.9)	2 (7.1)	28 (100)
Shagunu	27 (87.1)	4 (12.9)	31 (100)
Wawa	25 (86.2)	4 (13.8)	29 (100)
Yashikira	32 (84.2)	6 (15.8)	38 (100)
Total	254 (85.8)	42 (14.2)	296 (100)

Certain reasons given by some of the households for not approving same latrines for children and adults of same sex include:

- children messing up the latrines.
- some adult males would not like their wives to go out to such pit latrines because such wives are in puddah.

4. CONCLUSION.

Occupation was not found to significantly affect water storage, uses and faecal disposal. However, Male traditional religionists held more of the beliefs associated with water storage and faecal disposal than male christians and male muslims

whereas the beliefs associated with water uses are mostly found among the male christians than their counterparts in other religions. All female christians held no beliefs in respect of water storage and uses and faecal disposal whereas female muslims and traditional religionists , held the beliefs expressed in the report.

If the VIP latrine construction is vigorously pursued at Borgu LGA then a transition between the traditional facility (the field) and modern facility (VIP latrine) may dramatically take place.

Previous beliefs in respect of water storage and uses would gradually change because the need to store plenty of water may not arise again, also the need to store water in front of the house to make it easily accessible to strangers may not come up again.

Project staff, especially the mobilisation, Health Education, Sanitation and Development support communication should try and exploit some of the beliefs to advantage of this project.

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STATUS REPORT
KWARA STATE RURAL DRINKING WATER AND SANITATION PROJECT

2/86

A: Objectives

As all Unicef-Assisted Projects in Nigeria, the overall objectives of the watsan project is to improve the well being of children and mothers.

The primary objectives are:

The provision of potable drinking water

(a) To reduce the incidence of gastro enteritis and other water related diseases. Diarrhoea of which is the major child killer.

(b) To reduce the walking distance for mothers to search for water, so that they can spend more time to take care of their babies.

(c) To create an attitudinal change towards

(1) water use, its protection from the handpump until it gets to the childs mouth.

(2) Safe facael disposal and body and environmental sanitation.

(d) This is so as not to reduce the potential Health benefits of the safe drinking water supply due to contamination during handling.

(d) Given that the whole rural population of Kwara State estimated at above 1.5 million has absolutely no source of potable drinking water, emphasis is put on areas highly endemic in Guinea Worm infection, Guinea worm infection is thus used as an indicator for selection of intervention villages.

WHY ARE GUINEA WORM INFECTED AREAS GIVEN PRIORITY

Guinea worm infection is the single most delibitating disease in Kwara State. Guinea Worm is also the most simply eradicable water borne disease by the mere provision of safe drinking water.

From a pre - intervention survey carried out by Dr. Edungbola in ASA LGA area, it was found out that about 40.1% of children enrolled in schools were infected, of which 27% were abscent from school.

Also from the surgey the following prevalence of infection among females was found

Age (years)	% of Infection
21 - 29	52%
30 - 39	84%
40 - 49	69%

These figures show for themselves the degree of maternal neglect the child suffers due incapacitation of the mothers from Guinea worm infection.

Furthermore over 57% of the active male population also suffer. This certainly has a great impact of food production in such highly farming dependent communities.

B. Background

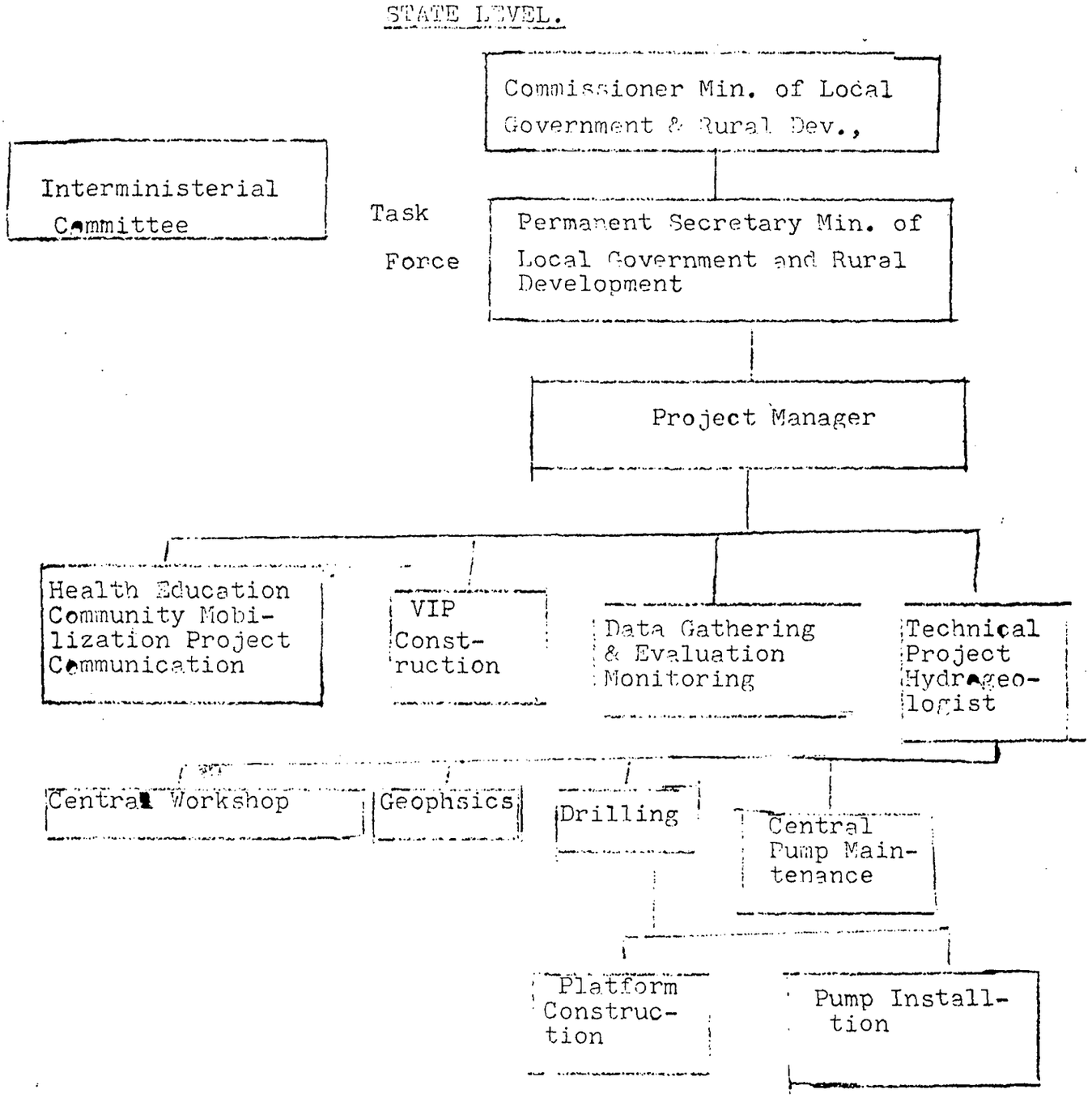
The kwara State Rural Water and Sanitation Project was formally launched on 16th July, 1984. Prior to the launnhing a plan of action was prepared to get all project teams ready and trained so as to have a hitch free project take off. This proved impossible due to various political and administrative changes during the last quarter of 1983.

When the project was launch it had two major chanllenges

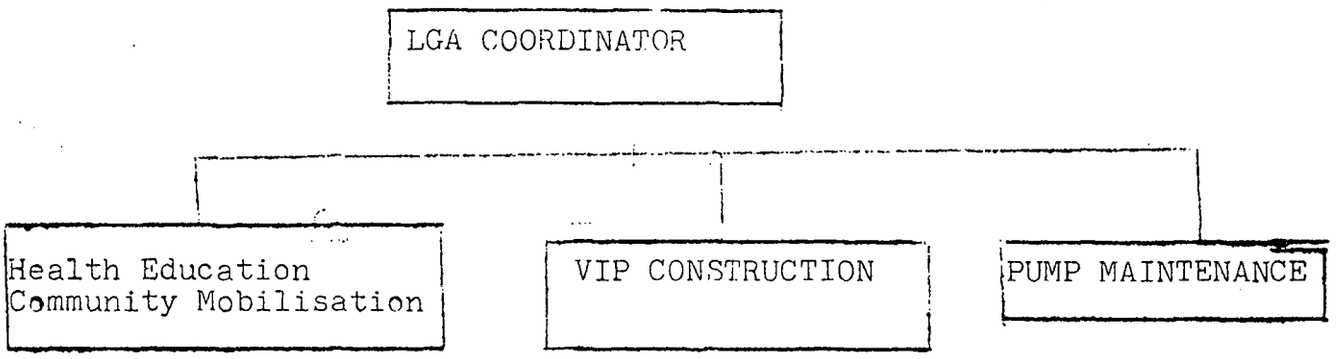
(a) To produce - for credibility

(b) To get seconded staff from various ministries, and give them the necessary training.

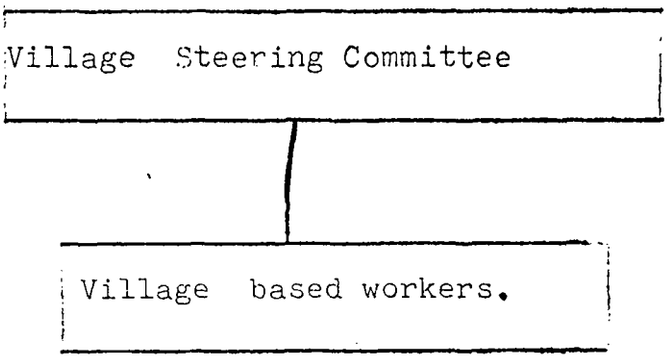
PROJECT ORGANIZATION



LOCAL GOVERNMENT LEVEL



VILLAGE LEVEL



Project Implementation

Given the total objectives of the water and sanitation project, its implementation consist of various elements i.e. Health Education, Community Mobilisation, Sanitation, Data Gathering and Evaluation/Monitoring, and Technical Operations.

56 boreholes equiped with handpumps have been completed in the first Local Government, ASA LGA. Also about 20 compartments of VIP Latrines have been completed in some villages about 10 more are in various phases of completion. About 35 villages based worker (VBWs) have been trained. Although drilling operations have been completed in ASA Local Government, Health Education and promotion of VIP latrines is still going on. This is done by Local Government based Health Education, and Sanitation (VIP Construction) teams. The LGA based maintenance team also takes care of minor maintenance of handpumps in the Local Government.

When there is major maintenance the state central maintenance team is called upon. When the LGA maintenance team would have been experienced enough, the overall maintenance will be taken care by them under the supervision of the LGA Secretariat. The promition VIP Latrine is a very slow process. There is no doubt the Health Education compenent of the project needs to be strenghtened to achieve the noble goal of attitudinal change. So far, the LGA Health Education and VIP construction team had a problem of transportation. This problem has now been solved by the provision of a pickup landcruiser to facilitate the jobs of the three LGA teams. There should be an improvement in near future.

The VBWs are intended to be the most important channel of comminication in their various communities. For the mean time, the major messages they preach are the seven basic messages centered around water protection and need to drink only from the handpump and hand washingwhen handling food. They will undergo more training as more elements are added.

In In ASA LGA, most of the Communities are farm settlements, it is therefore difficult to get craftsmen in the villages to be trained in VIP latrine construction. As the Project expands, and move to more enterprising communities, village latrine builders will be trained.

Drilling operations are now going on in MORO LGA about 15 boreholes have been completed. The 3 LGA teams

i.e. - Health Education
- VIP construction
- Pump maintenance

have been formed. The LGA Health Education team (Midwives, Nurses, Community Development Officers) have undergone a one week orientation training on VBW training. They are presently training the first batch of 32 village based workers. The VIP construction team had been trained at ASA LGA and are now operating in MORO LGA. The pump maintenance team are undergoing training with the Drilling team. After drilling operations are over in MORO LGA, they will assume the responsibility of maintenance.

E: Constraints.

It is normal in a large project of this nature for some constraints to slow down progress. Many of such constraints are operational and could be easily overcome when identified in time. One of the major constraint is

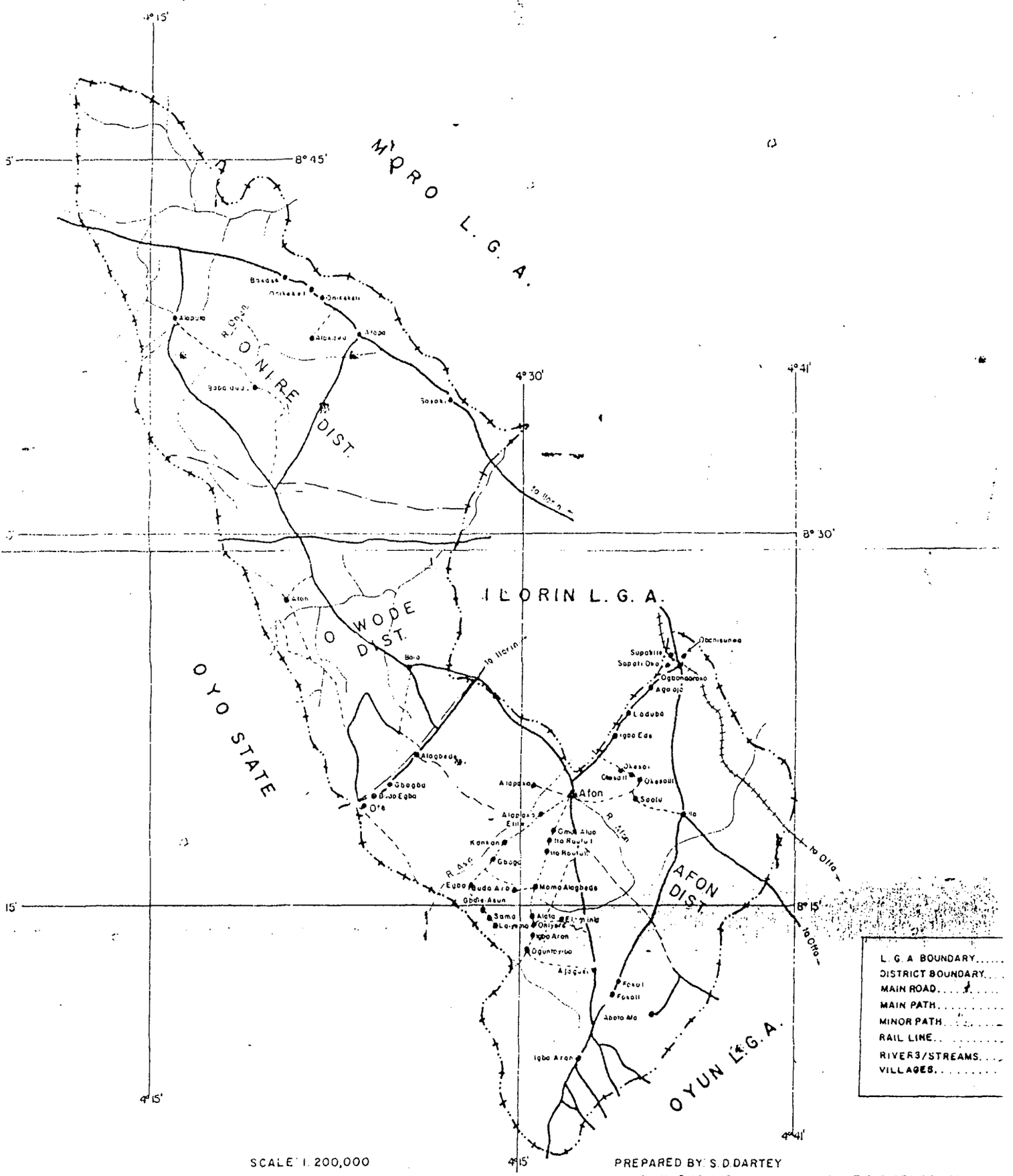
- The freeze on employment by the State Government

  In this difficult economic period, Kwara State is one of the most hit. There has been a complete freeze on employment. The State Government insist only on deployment of staff from other Ministries. Unfortunately some technical staffs like drillers are not available in other ministries. Even though the monthly subvention of ₦60,000 by the State Government can pay for the salaries of such required staff, The Government still does not permit the project to do so.

The Project is still fighting to be exempted from certain Civil Service Regulation, Lack of competent drillers reduces the project performance by about 30%.

ASA LOCAL GOVERNMENT AREA

SHOWING INTERVENTION COMMUNITIES



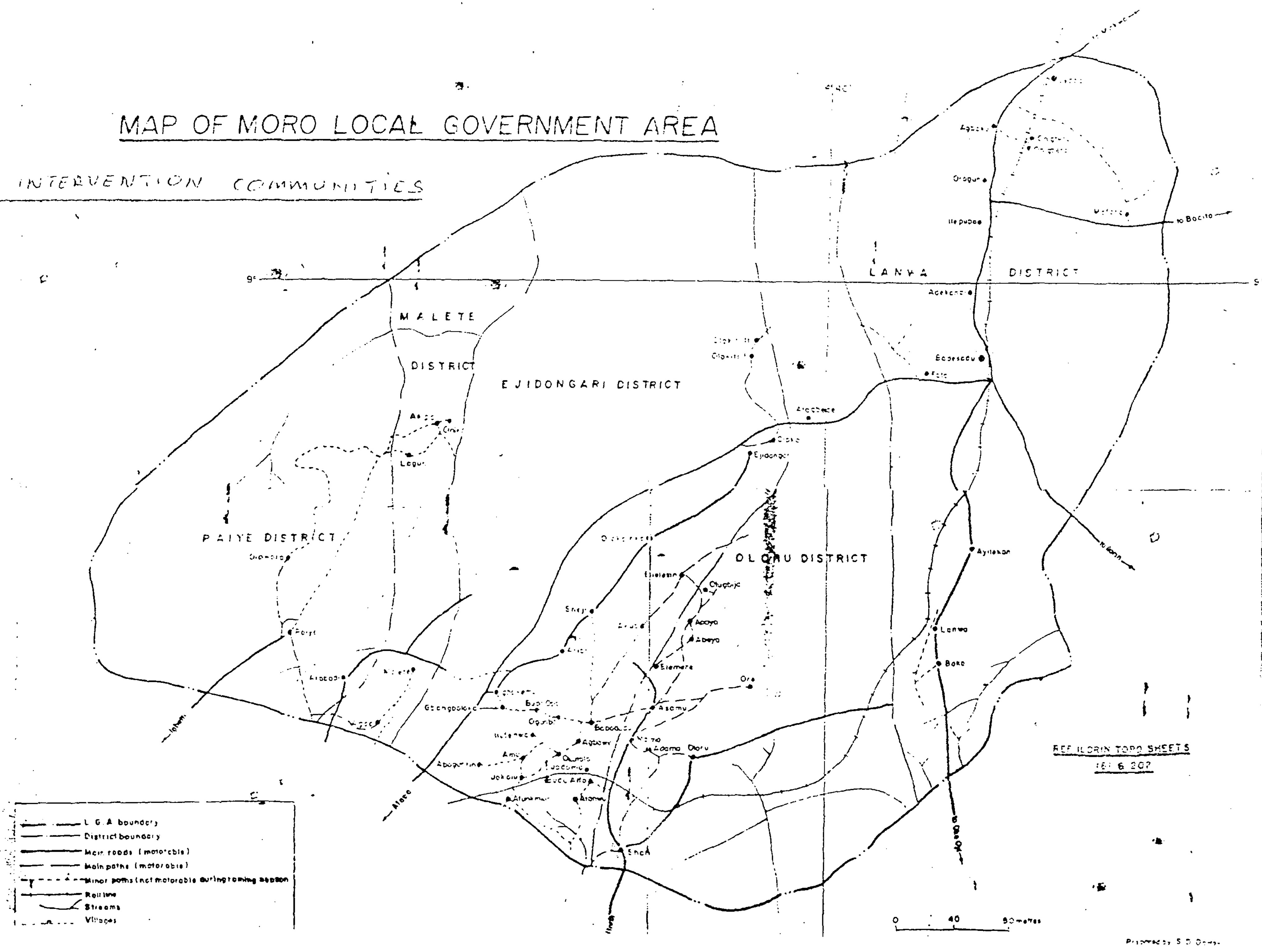
SCALE 1:200,000

PREPARED BY: S.D.DARTEY
ILORIN 2/6/85

POSITIONS OF VILLAGES ARE

MAP OF MORO LOCAL GOVERNMENT AREA

SHOWING INTERVENTION COMMUNITIES



WORK PLAN

ACTIVITIES	AUGUST 1	2	3	4	SEPTEMBER 1	2	3	4	METHODOLOGY	RELATED ACTIVITIES	UNITS INVOLVED
MORO LGA 1. VBW training from 2 districts in MORO LGA		▨							Lectures, dramatisation, filmshows, slide Presentations		STATE Health educatio LGA Health Team Project Communicat
2. Selection of VBWs in 3 OTHER DISTRICTS			▨	▨					Village to Village visits Discussions,	COMMUNITY MOBILISATION, CREATION OF VILLAGE COMMITTEES	LGA HEALTH TEAM MOBILISATION " HEALTH EDUCATION
3. SANITATION CAMPAIGN. ON THE JOB TRAINING OF VBWs			▨	▨	▨				HOUSE TO HOUSE VISITS INSPECTION OF WATER STORAGE. HEALTH TALKS ON WATER AND FACAEL RELATED DISEASES. PROMOTION OF VIP LATRINES.	TRAINING OF VBWs ON USE OF HEALTH EDUC. FLIPCHART. DEMONSTRATION OF HYGIENIC WATER STORAGE.	SANITATION TEAMS MOBILISATION " HEALTH EDUC. " VBWs.
4. DRILLING, PUMP INSTALLATION, PLATFORM CONSTRUCTION WATER QUALITY TESTING.	▨	▨	▨	▨	▨	▨	▨	▨	GEOPHYSICS AND BOREHOLE SITTING WAS COMPLETED IN JULY. DRILLING, PLATFORM - CONSTRUCTION, PUMP INSTALLATION. 33 BOREHOLES TO BE COMPLETED	COMMUNITY MOBILISATION AND HEALTH EDUC. DURING DRILLING TRAINING OF LGA PUMP MAINTENANCE TEAM.	- HYDROGEOLOGIS - DRILLING CRE - PUMP INSTALLATIO TEAMS. - PLATFORM CONS TEAM.
5. TRAINING LGA PUMP MAINTENANCE TEAM	▨	▨	▨	▨	▨	▨	▨	▨	ON THE JOB TRAINING LECTURES ON PUMP MECHANISISM. DESIGN OF MAINTENANCE SCHEDULE REPORTING SYSTEM	· PUMP INSTALATION · WATER SAMPLING · EXPLANATION TO VILLAGERS ON CORRECT USE.	· PUMP INSTALL. · WORKSHOP MANA

CTIVITIES	AUGUST 1	2	3	4	SEPTEMBER 1	2	3	4	METHODOLOGY	RELATED ACTIVITIES	UNITS INVOLV
BORGU LGA DATA GATHERING IN SELECTED PROJECT AREAS.			▨	▨	▨				• DEMOGRAPHIC SURVEY • G.W. SURVEY • SURVEY ON SOCIO-CULTURAL HABITS TO WATER USE AND EXCRETA DISPOSAL	• MAPPING OF INTERVENTION AREAS. • MOBILISATION • PROJECT COMMUNICATION.	• DATA GATHERIN • CARTHOGRAPHE • MOBILISATIO
BOREHOLE SITTING						▨	▨	▨	• GEOPHYSICAL INVESTIGATION.	COMMUNITY MOBILISATION.	• GEOPHYSICS TEAM • COMMUNITY MOB
FORMATION OF LGA TEAMS				▨	▨				SELECTION FROM LGA STAFF 1) HEALTH EDUCATION 2) VIP CONSTRUCTION 3) PUMP MAINTENANCE		-HEALTH EDUCATION • TECHNICAL - SANITATION
TRAINING OF 3 LGA BASED TEAMS IN MORO LGA							▨	▨	• TRAINING WITH CORRESPONDING TEAMS IN MORO LGA	• MONITORING OF VBW ACTIVITIES • CONTINUATION OF COMMUNITY MOBILISATION	• TECHNICAL • HEALTH EDUC • SANITATION

UNICEF-ASSISTED WATER AND SANITATION PROJECT.

22

23rd July, 1985.

The Project Manager,
UNICEF-Assisted Water
and Sanitation Project,
Ministry of Local Government
and Rural Development,
P.M.B.1407,
Ilorin,
Kwara State.

PROGRESS REPORT ON HEALTH TRAINER
EDUCATION AND TRAINING UNIT

TRAINING OF THE TRAINERS:

One of the guidelines of the Unit is to form a health Team in any new L.G.A. where the Project is moved to. As to this, a new health Team is already formed at Moro L.G.A. and they have been trained; they include:

(1) Mr. Joseph Adekola - Public Health Supt. (Team Leader)

(2) Miss. Fatimo Sheu - Staff Midwife/Nurse (Asst. Leader)

(3) Mall. Sule Ayinla - Health Education Attendant

(4) Mall. Raimi Akangbe - Health Education Attendant

(5) Mall. Saadu Ajala - " " "

THE FUNCTIONS OF THE TRAINERS

They are to train the Village Based Workers (VBWs) on the major cardinal aspects of the health Education within the Project. These are:

(a) To learn and practice personal hygiene.

(b) To improve their environmental Sanitation.

(c) Provide and learn the use properly and maintain V.I.P latrines.

The Village Based Workers in return will go back to their villages and teach the communities what they are being taught.

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2

MOBILIZATION, SELECTION OF VILLAGE WORKERS AND STEERING COMMITTEES

We have Mobilized, Selected, Village Based Workers and steering committees in all the villages that are to benefit from the programme in Ejidogari and Lanwa Districts of Moro L.G.A. The attached list is for Ejidogari District.

MONITORING THE VBW. AT ASA L.G.A. CONTINUED

/that I have visited those villages /benefit from the programme manytimes with my health Team from Asa L.G.A. What we monitor are:-

(a) Environmental Sanitation of the concerned villages.

(b) Personal cleanliness

(c) Proper use and provision of VIP latrines (continuation)

(d) The proper use of handpumps water

(e) Water collection, storage and usage

(f) How oral Ryhydration solution have helped them

(g) How often the communities make use of their Local health clinics.

(h) What they have achieved from the written materials placed on the boards near the boreholes, etc.

ACHIEVEMENTS

Majority of the people in those villages where we have the borehole accept the fact that that guineaworm manifestation is from contamination found within their environments.

(b) That the use of borehole/clean water is one of the best ways to eradicate the guineaworm infection.

(c) The environmental sanitation of the villages where we operate is much better than those where we do not. Women learn how to sweep their surroundings daily, cover their water pots, while the men hoe regularly their yards. Chage, [illegible], [illegible], Opatoyinbo and Solu are some

of the villages that are extremely clean.

(d) O.R.T. is being practised by many of the women according to the reports of some of our VHWs; so this means that many lives of our children are being safed.

(e) And that these communities have learned how to boil and filter polluted water and they practise this when the need arises. etc.

MATERIALS NEEDED

(a) Voicegun - This is to supplement our Public address system which has been having some some problems.

PERSONNEL NEEDED

One health educator or health superintendent. He will assist me. As the Project moves to [illegible] it will be very difficult for me alone to do the monitoring, and the major part of my work is to see that the standard set in those L.G.As' do not fall.

PROBLEMS

The vehicle attached to my Unit is not good at all. (KWSG 3090) that vehicle is already grounded. I would like to appeal to the authorities concerned to please see to this important issue.

(J. A. OGUNYOMI)
Principal Health Educator.

Copied to:

The Project Co-ordinator,
UNICEF Office,
Ilorin.

The Permanent Secretary,
Ministry of Health,
Ilorin.
(Attention - Chief Health Officer)

The Consultant Epidemiologist,
Epidemiological Unit,
Ilorin.

Overleaf and above for your information, please.

(J. A. OGUNYOMI)
Principal Health Educator.

VILLAGE STEERING COMMITTEE & VILLAGE BASED WORKERS

KWARA STATE

S/NO	VILLAGE STEERING COMMITTEE	VILLAGE BASED WORKERS	VILLAGE
1. 2. 3. 4.	Mal. Saliu Adisa " Yusufu Amuda " Baba Adio Mrs. Madinat Ayinde	Mal. Abdulahi Alh. Umaru	Budo-Oba "
1. 2. 3. 4.	Mal. Badaru Iyanda(Chairman " Jimoh Yellow " Jimoh Iyanda Mrs Sifawu Akani	Jimoh Ayinde Mal. Umaru Alao	Gbangbalako Gbangbalako
1. 2. 3. 4.	Mal. Ramanu Iyanda " Jinadu Aremu " Aliu Amori Mrs Ayoka Amoo	Mal. Mustapha Aremu Alh. Akanbi	Ogunbo
1. 2. 3. 4.	Alh. Momonu " Issa Alfa Amosa Mrs Atoke Iya Abasi	Mal. Momodu Alabi " Abdulkadir Alao	Babadudu
1. 2. 3. 4.	Mal. AbdulRamonu Jimoh " Saidu Alabi " Saliu Akangbe " Mrs. Ajarat Saliu	Alh Yusuf Alao 12th June, 85	Budo Al
1. 2. 3. 4.	Alh. Salami Aremu Suleiman Atanda Mal. Gidado Olodo Mrs. Saratu Garuba	Mal. Adesina Ayinla " Issa Oyeyebi	Jodoma "
1. 2. 3. 4.	Alh. Isiaka Aremu Mal. Asani Akangbe Alh. Atanda Suberu Mrs. Abibat Alake AbdulRamani	Dauda Atanda	Atawin
1. 2. 3. 4.	Mr. Samuel Gidado " Adelabu Akanni " Amodu Alao Mrs Filicial Ajao	Mr. Solomon Ajao " Julius Amoo " -	Igbo-Emu "
1. 2. 3. 4. 5.	Mal. Aiyelagbe Amosa Alh. Yakubu " Larongbe Mr. Baba Church Mal. Baba Karpenter	Mal Karimu Amoo " Karimu Omokawu "	Okutala
			Agbawe & Oja-Oke
		Alh. Ajani Alh. Baba	Abogunri
			Jokolu
			Amu
			Ilufenwa

.../2..

S/NO	VILLAGE STEERING COMMITTEE	VILLAGE BASED WORKERS	VILLAGE
1. 2. 3. 4.	Alh. Ayinde " Jimoh Amao Usman Ibrahim Ishola	(1) Alh. Ibrahim (2) Mall. Yahaya Elewure	SHEJI
1. 2. 3. 4.	Alh. Akanbi Chairman Sanbo Ayinda Ayinla Ojo Mrs. Yusuf Oniyo	(1) Alh. Nurudeen (2) Mal. Aremu ojo	Oloko
1. 2. 3. 4.	Amuda Tolagbe Chairman Ajani Kuraga Jimoh Ajagbe Mrs. Adebutu Ayoka	(1) Amodu Afoda (2) Ajao Adewale	Bielesin
1. 2. 3. 4.	Alh. Issa Lawal Ayindechairman Ishola Jimoh Iyanda Ajagbe	(1) Baba Agbe (2) Alabi Omoeleran	EJIDCCARI
			Afunkinkin
1. 2. 3. 4.	Alh. Bayo " Raimi Alh. Akanbi (chairman) Mrs Jimoh Seliha	(1) Alah. Salihu (2) Alh. Amao	ADAMA
1. 2. 3. 4. Mrs. Asiawu Yusuf	Garuba Ajagbe Momonu Ajanechairman Alh. Saibu	(1) Amodu Yesufu (2) Salahu Akano	AKUHO

A TYPICAL HANDPUMP UTILIZATION DAY AT IGBOARAN, AFON DISTRICT, KWARA STATE.

1. BACKGROUND.

15th January, 1985. We were at Igboaran village to evaluate the utilization of the handpump following the directive given by the Project Manager, UNICEF - Assisted Projects in Kwara State that the water demand pressure be assessed.

The total depth of the borehole at Igboaran was 61.21 meters (or 202 feet) with an estimated yield of 8.65 litres per second (or7,000 gallons per hour). It has the highest estimated yield amidst 24 successful boreholes in 1984.

The handpump was provided at Igboaran to serve a population of 1,026 made up of 173 households with an average number of 7.14 persons per household. But the handpump serves much more than that population because people from neighbouring villages, for example, Abote Oja, do collect water from time to time at the handpump.

The two main water sources at Igboaran are a stream and the handpump but this report is an explanation of the true situation on a typical bright day at the handpump. It is hoped that it will meet the set objectives of determining the actual water-demand-pressure on the handpump with a view to recommending necessary actions to be taken.

It should be borne in mind that at this period of the year there is a likelihood of less active participation in farming. A marriage ceremony was held in the village on 14th January, 1985 which most probaby resulted in greater demand on the handpump than the survey day because of washing and cooking activities involved.

The area around the h ndpump was clean enough at the time of the survey. Throughout the day the plat-form was washed two times and those who cared to wash/rinse their containers poured the water at the proper channel.

The average size of containers in use in this area was 5 gallons (22.72 metric litres).

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2. PUMPING DRILL

The villagers have mastered the technique of pumping . The pumping drill has been locally described as dancing to the 'Thalazol Fuji Music' (Thalazol Fuji Music' is a local but popular musical dance among the Yoruba tribe of Nigeria), and any operator, no matter the age and sex, could be laughed at especially when such a person is tired or could not fill her container in time. Such laughters relieve them of the strains of queueing up. However fairly old women appear to feel so exhausted and a probable solution to making handles more flexible in all handpumps would be appreciated.

3. IMPACT OF THE HANDPUMP IN THE LIVES OF THE PEOPLE.

At the handpump some of the villagers took delight to discuss freely how they or their husbands now insist at drinking water only from the handpump even though long queues sometimes forced them to the stream to collect water for cooking and washing purposes.

A woman aged 36 years and interviewed expressed her uneasiness at drinking water from traditional sources each time she goes to neighbouring villages x, y or z either for trading or on mere visitation/ceremonies. A lady of 19 also interviewed said the slogan in the village is "Do not give guinea worm any room in your life, drink water from the handpump". Could this popular slogan be an empty one in view of the gross impatience at queueing up at the handpump thus resulting in water collection still from the stream? Listen to this woman of about 40 years and interviewed on her way to the stream along with her colleagues: ' I can not go to the handpump because of the long queues and moreover I need water urgently for washing my clothes'.

A man aged 24 years from a neighbouring Aboto-Oja village claimed he rides his motorcycle to Igboaran daily to collect water but he complained about the taste of the water which if possible, should be corrected for the people.

4. METHOD OF DATA COLLECTION.

The Mogagi (Head) of the village and the two village Based Workers were informed about our presence.

...../3. ...

Observation method of data collection was adopted. Opinions of certain villagers were obtained by interview and reported under impact (see section 3 above). We stayed at some distance from the handpump to avoid scaring off some collectors, provoking unusual frequency of water collection and to miss none every water collector was duely counted. The survey covered the period of 6.30 am when it was still fairly dark till 7.30 p.m. At the dot of each hour we counted everybody on the queue starting from 7.00 a.m. till 7.00 (see table 6 and diagram 2). We took a sample of 30 water collectors and timed them right from arrival to the queue until they have collected water (see table 5). We also took a sample of 30 collectors with same size of containers and timed them from when they gat hold of the handle till when they have filled their containers (see section 5D).

5. RESULTS.

The results of the survey are presented as tables 1 - 6.

(A) NUMBER OF PERSONS (BY SEX) COLLECTING WATER BY TIME OF WATER COLLECTION.

Table 1 discusses the distribution of persons, by sex, collecting water at different time periods.

The morning period was from 6.30 a.m. - 12.00 noon while Afternoon was taken to mean 12.01 p.m - 4.00 and Evening was defined as 4.01 - 7.30 p.m.

TABLE 1

NUMBER OF PERSONS COLLECTING WATER BY TIME OF COLLECTION AND BY SEX 15/1/85

Time of water collection	Males	%	Females	%	Total	%
Morning	14	22.22	136	43.31	150	39.79
Afternoon	35	55.56	77	24.52	112	29.71
Evening	14	22.22	101	32.17	115	30.50
TOTAL	63	100.00	314	100.00	377	100.00
%	16.71	-	83.29	-	100.00	-

From this table we find that out of 377 people who collected water that day from the handpump 314 (representing 83.29 per cent) of them were females while the remaining 63 (that is, 16.71 per cent) were males.

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The table also reveals that 39.79 per cent of water collectors used the handpump in the morning, this however dropped by about 10.00 per cent both in the afternoon and evening. There hardly appears a difference between the percentages of afternoon and evening collectors.

Slightly above one out of every two Male water collectors (i.e. 55.56 per cent) collected water in the afternoon. On the other hand the lowest number of female collectors (24.52 per cent) were found to do so in the afternoon.

In trying to test the hypothesis (Ho) that sex is independent of the period of time of water collection against the alternative hypothesis (Hi) that it is not, a chi-square was calculated and the expected frequencies are in table 2:

TABLE 2.

EXPECTED FREQUENCIES OBTAINED FROM TABLE 1

Time of Water Collection	Males	Females
Morning	25.07	124.93
Afternoon	18.72	93.28
Evening	19.22	95.78

Using the formula $X^2 = \sum \frac{(O - e)^2}{e}$ we obtained the value of X^2_2 = 24.57 comparing this with the tabulated X^2_2, 0.05% = 5.991 we find that the value obtained from our data is very highly significant. On the basis of the data we reject Ho and accept Hi which says sex and time of water collection are dependent 95.00 per cent of the day of observation.

(B) NUMBER OF PERSONS BY SEX, COLLECTING WATER BY THEIR ESTIMATED AGES AT GIVEN TIMES OF THE DAY.

Table 3 brings in the estimated ages of water collectors to bear on the time of the day both males and females collected water at the handpump that day.

TABLE 3

NUMBER OF PERSONS BY AGE AND SEX AND BY TIME OF WATER COLLECTION , 15/1/85

Estimated ages of Water collectors	MORNING		AFTERNOON		EVENING		TOTAL			
	M	F	M	F	M	F	M	F	Both M F	%
Less than 5 years	-	-	4	-	1	-	5	-	5	1.33
5-15 years	12	16	25	37	9	41	46	94	140	37.13
16 years & over	2	120	6	40	4	60	12	220	232	61.54
Total	14	136	35	77	14	101	63	314	377	100.00

Note:- M = Male
F = Female

.../5...

In this table we find that 61.54 per cent of all water collectors were aged 16 years and over. Out of 232 water collectors within this age bracket 220 (representing 94.83 per cent of them) were females while as few as 12 (that is 5.17 per cent) were Males. One of the most important activities of women folk in the village is the daily collection of water for their households. We take for granted that the water source affects the frequency, time of collection and amount of water collected.

The table also reveals that 37.13 per cent of water collectors were aged between 5 - 15 years and majority of these people operated largely in the afternoon. This could be said of the school-going children because they have closed from school by afternoon and then rush to the handpump to collect water for bathing, cloth washing or for other activities. The people of this age group appeared to brave the intense sunshine than the adults.

The very low percentage of 1.33 obtained for those aged under 5 years could arise from certain factors such as (a) they can hardly operate the handpump (b) the Mogaji, in order to aviod such children playing with the handpump, has warned children and their parents that any child caught operating the handpump would be fined ₦10.00 (ten naira). The warning appears to be serving its desired purpose even though it was a mere scare crow.

When a chi-square was calculated in the same line as was done under 5(A) above to test the hypothesis that age is independent of the time of water collection against the alternative hypothesis that it is not, the value of the calculated chi-square was 49.31 which was very highly significant when compared with the tabulated X^2_4, 0.05% = 9.488. Thus we hold that on the basis of the data age and time of water collection are dependent.

(C) NUMBER OF WATER COLLECTORS AND PROPORTION OF THEM WASHING/RINSING THEIR CONTAINERS.

The observation survey took cognisance of the fact that the villagers were told to wash/rinse their containers when collecting water. Throughout the day of the survey no single water collector except the one who rode on motorcycle from Aboto Oja covered his/her container. A tray could have been sufficient to cover the kind of containers used in the village. Added to the non-coverage of containers is the problem of non-washing/non rinsing of

..../6...

containers.

Table 4 and the accompanying chart below (diagram 1) are self explanatory.

The Health Education team would need to intensify its effort in enlightening the villagers on the dangers inherent in not covering water carried over several meters when motor vehicles pass along the roads and raise huge amount of dust all the time. Their messages should also include that people exercise moments of patience to rinse their containers even if they have used it to collect water earlier in the day or even if they presume their containers are clean enough. The underground sends plenty of water through this handpump but it is theirs to protect and drink for their good health.

TABLE 4

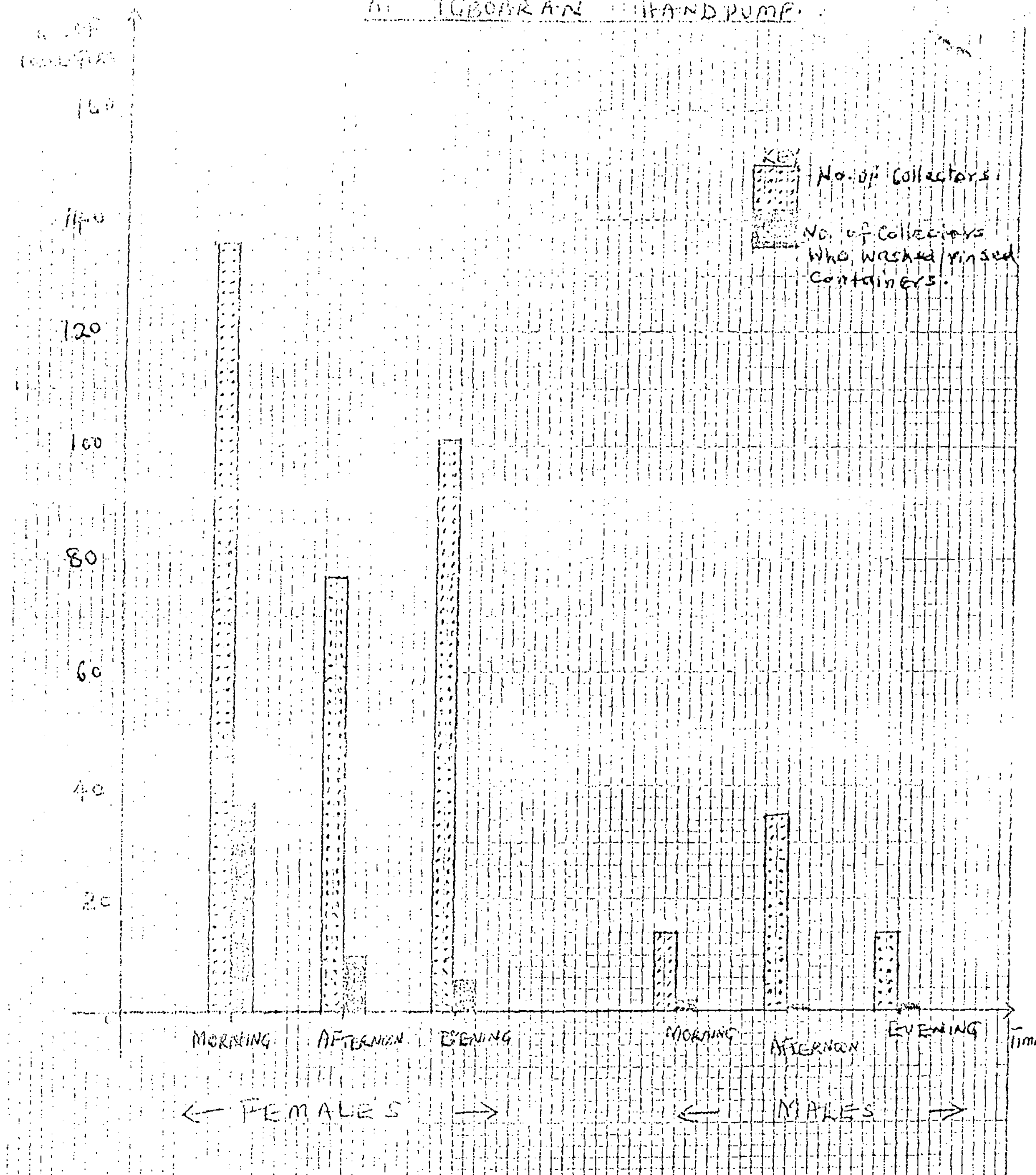
NUMBER OF PERSONS COLLECTING WATER AND PROPORTION OF THEM WASHING THEIR CONTAINERS AT DIFFERENT TIMES OF THE DAY.

Time of water collection	No. of people Collecting water		No. who washed/ rinsed their containers		Proportion of collectors who washed/rinsed containers.	
	Males	Females	Males	Females	Males	Females
Morning	14	136	2	37	0.1428	0.2721
Afternoon	35	77	1	10	0.0286	0.1299
Evening	14	101	1	6	0.0714	0.0594
Total	63	314	4	53	0.0635	0.1688

.../7...

DIAGRAM 1

A CHART SHOWING NUMBER OF WATER COLLECTORS AND THOSE WHO WASHED/RINSED THEIR CONTAINERS AT STATED TIMES AT IGBOBRAN HANDPUMP



JUGS 15-11-85

(3) QUEUEING OR WAITING TIME AT THE HANDPUMP.

What the villagers appear to find more difficult to adopt to is not the taste of the water nor the Thalazol Fuji musical dance but the patience to join the frustrating queue. Several times we found that some water collectors would join the queue only to check-out to the stream when the queue was moving slowly.

An observation of 30 randomly selected water collectors was made right from when they joined the queue till they have collected water. The result of this waiting times is presented below as table 5.

TABLE 5

ACTUAL WAITING TIMES BY 30 WATER COLLECTORS 15/1/85.

Time of water collection	Observation in Minutes	Total (minutes)	$\bar{x}$	S
Morning	54,50,45,60,40,38,39,48,45,40	459	45.90	7.20
Afternoon	15,2,2,3,5,2.5,4,6,10,20	69.5	6.95	6.17
Evening	22,18,13,12,12.5,9,10,12,15,15	138.5	13.85	3.86

The average waiting time for the day was found to be 22.23 minutes with a standard deviation of 18.18. The average waiting times vary between different times of water collection, the greatest deviation being in the morning.

Taking N=377 and N=30 we find the standard error of waiting time using the formula $se(\bar{x}) = \sqrt{\frac{1}{n}\left(1 - \frac{n}{N}\right) S_{\bar{x}}^2}$ to be

$$= \sqrt{\frac{1}{30}\left(1 - \frac{30}{377}\right)(18.18)^2}$$

$$= 0.7468.$$

The co-efficient of variation (CV) is $\frac{se(\bar{x})}{\bar{x}} \quad 100 = \frac{.7468}{22.23} \times 100$

= 3.36 per cent.

With this result we construct the following confidence interval using

$$\bar{x} \pm 1.96 \text{ CV } \bar{x}$$

$$22.23 \pm 1.96 \times \frac{3.36}{100} \times 22.23$$

$$20.77 \_ 23.69$$

Thus we can confidently say that the true waiting time (queueing time) is between 20.77 - 23.69 minutes 95 per cent of the time.

..../9....

We recorded actual times taken to fill an average of 5 gallons container by 30 randomly observed collectors. The data obtained are:-

1, 30, 3, 2, 2, 1.5, 1.5, 1.5, 2.1, 2, 3,

1.39, 2, 1.20, 1.22, 2.17, 2, 1.43, 2, 1.21, 2,

1.50, 2, 1.25, 1.22, 2.17, 2, 1.43, 2, 1.21, 2,

This gave a mean of 1.78 minutes and a standard deviation of 0.48 minutes, with a co-efficient of variation 4.72 per cent and a 95 per cent confidence interval of 1.62 minutes -- 1.94 minutes.

(E) HOURLY QUEUEING POSITION AT THE HANDPUMP ON 15/1/85.

At the dot of each whole hour all the water collectors queueing up were counted and recorded. The result is presented as table 6 below and also drawn into a graph (diagram 2).

TABLE 6

A TYPICAL HOURLY QUEUEING POSITION AT IGBOARAN VILLAGE HANDPUMP, 15/1/85.

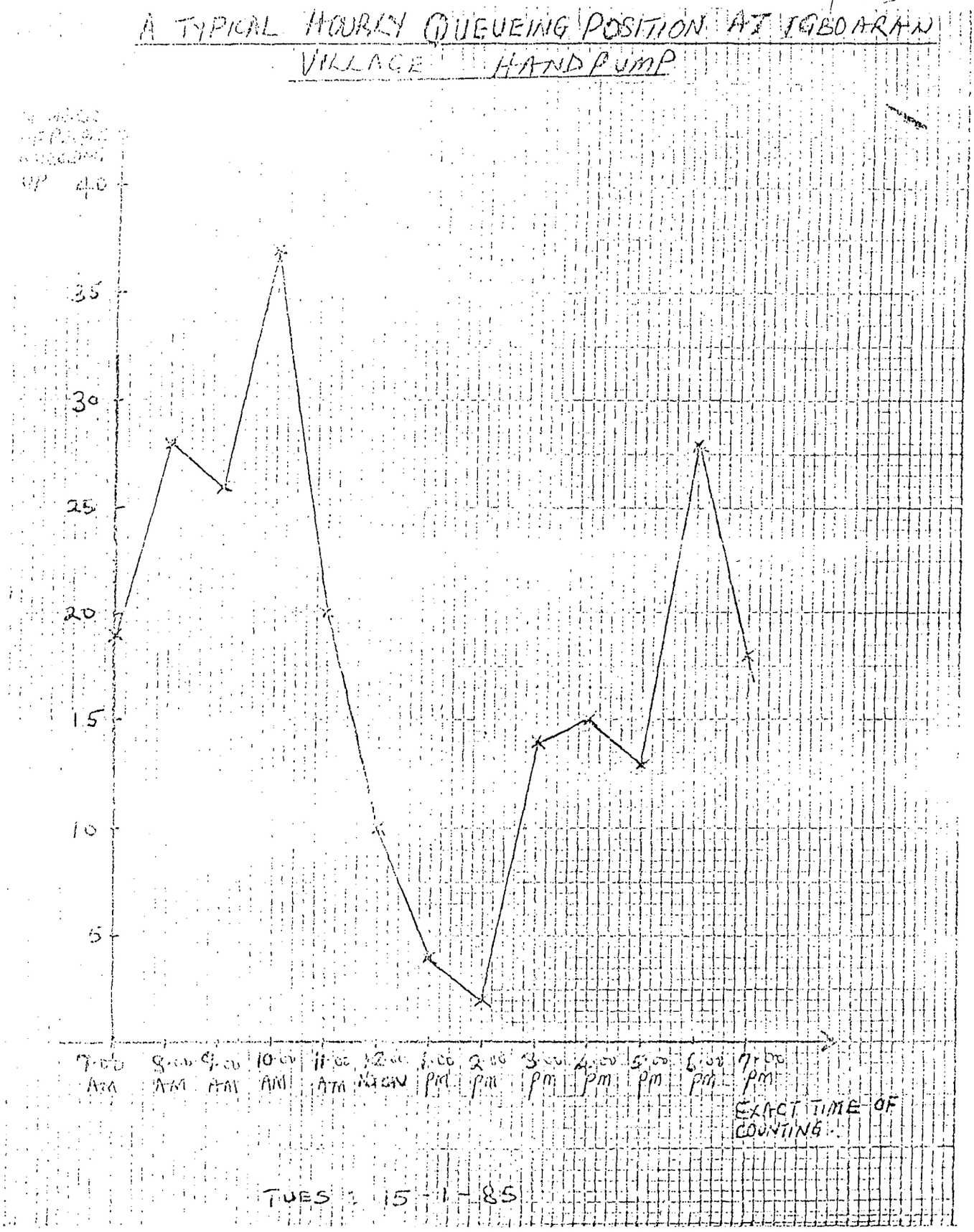
Hour of Counting (Local Time)	Number of people on Queue.
7.00 am	19
8.00 am	28
9.00 am	26
10.00 am	37
11.00 am	20
12.00 noon	10
1.00 pm	4
2.00 pm	2
3.00 pm	14
4.00 pm	15
5.00 pm	13
6.00 pm	28
7.00 pm	18

The average number of people on the queue was 18 with a standard deviation of 9.98 persons.

..../10...

DIAGRAM 2

A TYPICAL HOURLY QUEUEING POSITION AT IGBOARAN VILLAGE HANDPUMP



TUES. 15-1-85

Considering the table and the graph the queue reached its peak at 10.00 am then it began to reduce and reduce to the shortest size at 2.00 pm. The factors constributing to this pattern could be legs activity in the farm thus giving more time for the women at home; those who went through the rigours of marriage ceremony the previous day must have overslept and woken up toward. 10.00 am. With the rising intensity of the sun water collectors must have retreated into their homes at 2.00 pm and again because Igboaran is a largely muslim village water collectors could have gone to say their 2.00 pm prayers. The length of the queue thereafter began to increase till 6.00pm when greater demand for water at the handpump was again exerted.

Given that N= 24 hours and our observed n = 13 hours. The mean is 18 and standard deviation 9.98 persons. Then the standard error:

$$Se(\bar{x}) = \sqrt{\frac{1}{n}\left(1 - \frac{n}{N}\right) S_x^2}$$

$$= \sqrt{\frac{1}{13}\left(1 - \frac{13}{24}\right) 99.60}$$

$$= 1.8739$$

The coefficient of variation is found to be 10.41% and with this we can confidently say that 95.00 per cent of the time the true average number of people on queue at the handpump given any hour will be between 14.33 - 21.67 persons.

Given the distribution of table 6 we can fit a regression line as follows where for convenience 12.00 noon has been taken as origin,0, and time points (hours) denoted negatively for AM and positively for PM and calculations done accordingly (see table below).

x (hours)	X^1	No of persons (Y)	X^{12}	X^1Y
7.00 am	-5	19	25	-95
8.00 am	-4	28	16	-112
9.00 am	-3	26	9	-78
10.00 am	-2	37	4	-74
11.00 am	-1	20	1	-20
12.00 noon	0	10	0	0
1.00 pm	1	4	1	4
2.00 pm	2	2	4	4
3.00 pm	3	14	9	42
4.00 pm	4	15	16	60
5.00 pm	5	13	25	65
6.00 pm	6	28	36	168
7.00 pm	7	18	49	126
Total	13	234	195	90

$$\bar{x}' = \frac{13}{13} = 1, \qquad \bar{y} = \frac{234}{13} = 18$$

given the model $Y = a + b x$

$$\hat{a} = \bar{y} - b\bar{x}$$

$$\hat{b} = \frac{\Sigma x'Y - n\bar{x}'\bar{y}}{\Sigma x'^2 - n\bar{x}^2}$$

Substituting values to get $\hat{b}$ we have $\hat{b} = \frac{90 - (13)(1)(18)}{195 - 13(1^2)} = -0.79$

We now substitute values to obtain $\hat{a}$ as $\therefore \hat{a} = 18 - (-0.79)(1)$

$= 18.79$

and the estimated regression line will then be:

$$\hat{y} = 18.79 - 0.79 X$$

Using this to get values for 5.00 am, 6.00am, 8.00 pm and 9.00 pm we obtain 24.32, 23.54, 12.47 and 11.86 persons respectively on the queue.

RECOMMENDATIONS AND CONCLUSION:

The average waiting time of between 20.77 - 23.69 minutes and the average number of persons on queue at the dot of every hour of 14.33 - 21.67 persons might be considered okay by those comparing several villages or countries but it certainly is not okay for Igboaran dwellers. The water - demand - pressure at the handpump is too high for the people and the temptation is very high to be drawn to the nearby stream. To avoid the current uncomfortably high degree of by-pass of the handpump this report strongly recommends another borehole for the village.

With the provision of a second borehole the people would probably have no further excuses to going back to the guinea worm infected stream nor could they give satisfactory reasons for again giving guinea worm a room in their lives.

Further messages on washing and covering of water containers should be given to the people especially the women. And finally they should be encouraged to use water from the handpump for all purposes - cooking, drinking, cloth or dish washing.

With 377 water collectors and using an average of 22.72 litres containers it meant 377 x 22.72 = 8,565.44 litres of safe water was collected that day for at least 1,026 people in the village. This shows an average of $\frac{8,565.44}{1,026}$ = 8.35 litres per day to each person. Probably with the provision of a second borehole this average will significantly increase.

M. SEIGER

UNICEF ASSISTED PROJECTS.

REPORT OF PRE-INTERVENTION DATA GATHERING EXERCISE IN BORGU LOCAL GOVERNMENT AREA OF KWARA STATE, NIGERIA- (4 SEPTEMBER 1985 - 21 OCTOBER, 1985).

1. INTRODUCTION:

GO UNICEF GO SEARCH AND GET WATER FOR THE 'PEOPLE OF BORGU'. This is only a plea. And it is made in all sincerity in the hope that UNICEF will consider it as an independent reading of Borgu peoples' desire to set them free from thirst and guinea worm disease. The plea would keep pouncing the mind of any open-minded person going through the length and breadth of Borgu Local Government Area (LGA) just as the water in the river Niger keeps bashing its shore non-stop. The month of September started to reveal the nakedness of the beds of many rivers and streams as the waters are already dried up and Borgu people are again slowly and painfully going into another state of torture of water crises during the long-dry season.

Borgu LGA with a mixture of grassy and woody landscapes has an area of land covering 28,698 square kilometers to the west of Kwara State. A projected population of 184,193 in 1985 and a population density of 6 persons per square kilometer. This low population density shields off the facts that:

- many villages in Borgu LGA are big and thickly populated.
- many of the largely populated villages are therefore deprived of several socio-economic infrastructures.
- majority of the people stay in their villages as they have nothing to prompt urban migration.

Perhaps our demographers should look into Borgu situations and offer suitable parameters to explain the sizes and distributions of such populations.

Borgu LGA has 2 main administrative divisions namely NORTHERN BORGU comprising of Wawa, Shagunu, Agwara and Babanna districts (New Bussa district being taken as central Borgu), and Kaiama, Yashikira, Okuta, Ilesha and Gwanara districts form the WESTERN BORGU.

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2. THE BORGU PEOPLE: ETHNICITY AND OCCUPATION.

Hospitable. Co-operative and can easily be mobilized for just causes as ours. The LGA comprises of many ethnic groupings or tribes such as the LARU, KAMBARI, KAMBARI LARU, KAMBARI LOPAWA, BOKO, BOKO BARU, BUSSAWA, BARUBA, HAUSA and YORUBA. The Bokos dominate Babanna district as Boko Barus in Kaiama district, Bussawas and Larus are in Bussa, Shagunu/Wawa districts respectively. Baruba spreads over Ilesha, Okuta, Yashikira and Gwanara districts. The Kambaris are largely found in Agwara district, Wawa district (where they are called Kambari Laru) and Shagunu district (where they are referred to as Kambari Lopawa or Kambari Laru). Hausa is largely spoken in Northern Borgu as Baruba is in Western Borgu. Yorubas dotted all villages as traders or transporters.

This project must take cognisance of the two administrative divisions and the tribes during village selection and project implementation stage. For instance, the Kambaris, living a closed life-type with their artistic hair-cut and peculiar mode of dressing, have chosen not to live or mix freely with the rest of the villagers and prefer making their settlements outside the villages. Would the handpumps and VIP latrines further prompt them away from their present settlements as did modern resettlement houses or schools? They do not even give names to their children under one year old.

2.1 OCCUPATION

Most of the people in Borgu LGA are brave farmers fortunately in rich and large agricultural area of Kwara State. They provide foodstuffs like Yam tubers (fresh or dried), Millet (Jero), Guinea corn(dawa) and fish to Kwara State and other States like Oyo, Ogun, Ondo and Lagos to the south, Niger , Kaduna and Sokoto to the North of river Niger. If good drinking water is provided by this project there is a likelihood that children would gradually be released from the farms to the few existing schools and the adults would have more time and good health to attend to their farming and fishing activities, settlements hitherto unstable because of water crises would now become more stable, inhabitants would become free from physical deformities caused by guinea worm disease and cultural activities like MAGSA, GANI and TAKET dances would perhaps bring the required joys

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to the people.

3. PROSPECT AND PROBLEMS OF THE PROJECT AT BORGU LGA.

Borgu LGA is the one that needs this project most in Kwara State, nay, in Nigeria. There should therefore be a deliberate, quite deliberate effort to provide AT LEAST 100 HANDPUMPS in Borgu LGA. This will even go a long way to forestall the unstable nature (due to lack of water) of some settlements and save this project a lot of logistic problems and the whole Kwarans would rejoice.

One knows that UNICEF is handicapped in a way but as this author writes far away, from Borgu LGA tears again roll down his cheeks as he recalls the peoples guinea worm problems and water crises. It is nerve wrecking remembering, say a 95-year-old man who was met critically ill and severely deformed by giunea worm and has to lie down for the past 40 years because he could not stand up nor sit down and death refuses to take him away. Many more cases like that.

UNICEF can live for decades in Borgu villages and in the minds of all Borgu people just as the names of providers of wells were effortessly recalled. Some of such wells were sunk before the 35-year-old author of this report. But a peep down into some of the wells often gives one a lasting impression of the peoples sufferings.

The project has a bright prospect for success in the LGA. The people can easily be mobilized, the Health Education component would easily be grasped and construction of VIP latrines would perhaps be built faster in the LGA than in LGAs where the project operated before.

This report strongly believes that water can be obtained anywhere in the LGA. Its reasons include the fact that no village or town is founded in Nigeria by our forebears without a prove of water to drink. Their own instruments for detecting water are however different from our modern ones. Again, our special terrameter could be used to a good advantage in the LGA.

However, all the project staff should disabuse their minds that it is difficult to get water at Borgu. The determination that UNICEF should succeed where others have failed should from now prevail, afterall, the EPI

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is succeeding fast where previous immunization plans have failed why not the water and Sanitation project?

If only all the project staff are ready to husband the very long distancesover rough undulating roads between project villages and are really willing to implement the package to the letter this report remains unshaken in its belief that the project would be very successful at Borgu LGA.

Problems include the big size of the LGA which could be frightening but we can cover it. The roads which are bad but it is not the fault of the people. The staff who could be discouraged but the Management could solve this problem by prompt payment of allowance and sometimes paying visits to field staff.

4. METHODOLOGY OF DATA GATHERING

Both enumeration of all households and a sample of houses/households methods were engaged during the exercise.

Where a sample of houses was selected the sample mean $\bar{y} = \frac{Sy}{n}$ was calculated and the estimated resident population figures with the formula

$$\hat{Y} = N \bar{y}$$

Where:-

Sy = total number of persons in the sample.

n = number of houses in the sample

N = total number of houses in the village

$\bar{y}$ = sample mean.

$\hat{Y}$ = estimated resident population figure for the village.

The sample sizes varied according to the sizes of the villages and amount of time available for data gathering.

The field operation also consists of making prior contact with the villages before actual date of data gathering to facilitate maximum co-operation and to forestall under estimation of population owing to people going to their farms.

4.1 STAFF AND TRAINING

In addition to the 2 project staff, 9 community Assistants in the LGA formed the team for the data gathering exercise. A training between 5-6 september, 1985 was carried out in the Council Chamber at the LGA Secretariat with a demonstration at Koro village near new Bussa. The

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training enabled all the team-mates to know the

- organisational set up of the project
- aims/purposes of the data gathering and how to explain to respondents.
- requirements of good data gatherers.
- techniques of successful data gathering and
- the various forms/questionnaires to be used during the exercise.

5. FACTORS MILITATING AGAINST DATA GATHERING EXERCISE .

This Unit, like John the Baptist who bore the pangs of being a forerunner to Christ, prepares the way for all other Units and silently bearing the brunts of:

- insufficient financing of data gathering exercise under this project
- Working extremely long hours (most days 12-15 hours in the field) without shift and without incentives to staff.
- Inadequate provision of vehicles
- Shortage of necessary equipment
- Language barriers
- Low level Education of some of the team mates
- inadequate provision of petrol resulting in fuelling at far away New Bussa or buying at costly rates.
- Cultural pattern of building houses
- Meeting many tribal leaders differently in a given village.
- The only driver being overworked as a result of the nature of operation.

6. GUINEA WORM DISEASE: ORIGIN, CAUSE AND LOCAL NAMES IN BORGU LGA.

6.1 Origin:

Centuries ago the Borgu LGA used to have a flourishing trade route from the South West of river Niger through Kaiama and New Bussa to the North of Nigeria and Africa. Perhaps guinea worm disease was then introduced into the then commercial town of kaiama from where it spread out. All the

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then trades thinned off perhaps partly due to the knotty problems of water, slave trade, internal migration and intertribal wars but guinea worm disease remains with the people. Perhaps as a result of the previous influence of Kaiama the first and only primary school in Borgu LGA was sited at Kaiama and as people attended the school they exported the disease from kaiama to other districts. The scholars being young perhaps went to rivers and streams in their home villages to bath or swim and consequently introducing guinea worm into their villages during holidays.

6.2 CAUSES

Guinea worm disease is well known in the LGA and among the various ethnic groups. While majority of the people believe, and rightly too, that water from guinea worm infective water sources cause the disease, a few however, believe otherwise. For instance, one head of household strongly believed that when thunder strikes guinea worm enters through ones's head and slowly passes through the body to the feet where it will begin to emerge. During the striking of the thunder the worm would measure the victims height and that would account for how long the worm would be and determine the period of incapacitation.

6.3 LOCAL NAMES

Guinea worm disease has local names like ZUBA among the Bokos and Bussanchis, ZUBLOR among some Kambari's, KUNUKUNU among the Hausas BULUTU among the Fulanis, NENA (plural NENI) among the Batunis (Barubas) and SOBIA among the Yorubas. Guinea worm is such a dreadful disease that a victim of the disease can never forget the incidence and a non-victim can never claim to have had it and so once the Local names are mentioned the people readily give correct answers to questions.

7. RESULTS

No village or district is free from guinea worm infection in Borgu LGA. The most endemic districts with guinea worm disease are Ilesha, Gwanara, Kaiama and Babanna. The least affected district is Bussa and probably because of tap water in New Bussa and environ.

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TABLE 1

DISTRICTS BY PREVALENCE RATES.

DISTRICT	SURVEY POPULATION	NUMBER AFFECTED BY GUINEA WORM	% AFFECTED BY GUINEA WORM	RANGE OF PREVALENCE RATE (%)
Agwara	6,586	379	5.8	1.2 - 12.7
Babanna	3,863	388	10.0	2.1 - 65.5
Bussa	971	8	0.8	0.8
Gwanara	11,661	1,771	15.2	5.8 - 26.2
Ilesha	8,781	1,737	19.8	12.4 - 20.9
Kaiama	13,123	1,950	14.9	2.2 - 46.7
Okuta	23,511	2,040	8.7	3.1 - 15.3
Shagunu	5,650	225	4.0	0.7 - 13.3
Wawa	3,738	150	4.0	1.6 - 23.4
Yashikira	12,140	579	4.8	2.0 - 25.7

Considering the range of prevalence rates the lower limit gives a good picture of the areas with high endemicity of guinea worm as it appears the higher the value of the lower limit the more prevalent the disease in the district.

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DEMOGRAPHIC DATA AND GUINEA WORM PREVALENCE RATES OF VILLAGES IN BORGU LGA AS AT 20 OCT, 1985

No	VILLAGE	No of Residential Houses	No of House-Holds	Total Resident population			No of people ever Affected by Guinea worm			Prevalence Rate of Guinea Worm (%)			Traditional Water sources	Remarks (on the basis of at least 100 boreholes)
				Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both sexes		
	CENTRAL BORGU													
	A.1 BUSSA DISTRICT													
1.	Malale-Doro	138	183	474	497	971	7	1	8	1.5	0.2	0.8	R. Niger	Recommended for 1 borehole
	NORTHERN BORGU													
	B.1 AGWARA DISTRICT													
1.	Agwara	214	283	798	699	1,497	36	16	52	4.5	2.3	3.5	Dam, Well stream	Recommended for2 boreholes
2.	Mago	116	166	418	460	878	16	8	24	3.8	1.7	2.7	well, stream	Recommended for 1 borehole
	Old Papiri	174	280	710	742	1,452	12	5	17	1.7	0.7	1.2	well, R.Niger	Recommended for 2 boreholes
	Papiri Gajere	Informed but on Enumeration day the people all deserted their homes.												
1.	Kofia	109	239	879	948	1,827	113	119	232	12.8	12.6	12.7	R. Niger well	Recommended for 2 boreholes.
	Gabon Papiri	108	144	448	484	932	36	18	54	8.0	3.7	5.8	well	Recommended for 2 boreholes a dispensary.
	B.2 BARAINA DISTRICT													
	Babanna	166	257	759	734	1,493	22	10	32	2.9	1.4	2.1	Well, stream	Recommended for 3 boreholes
9.	Dekara	35	53	181	173	354	60	58	118	33.1	33.5	33.3	well, stream	Strongly Recommeeded for 1 borehole
0.	Kigbera	62	129	343	368	711	16	6	22	4.7	1.6	3.1	pond, well, stream	Recommended for 1 borehole
1.	Kpeyan	25	35	79	84	163	31	20	51	39.2	23.8	31.3	well, stream	Recommended for 1 borehole

TABLE (2)

DEMOGRAPHIC DATA AND GUINEA WORM PREVALENCE RATES OF VILLAGES IN BORGU LGA AS AT 20 OCT.9185

Marami	29	63	189	246	435	38	39	77	20.1	15.8	17.7	well, stream	Recommended for 1 borehole
Pissa	58	99	299	321	620	17	14	31	5.7	4.4	5.0	well, stream	Recommended for 1 borehole
Sesora	10	19	43	44	87	28	29	57	65.1	65.9	65.5	stream	Recommended for 1 borehole
Other Guinea worm endemic areas still worth considering are KABE, YAGBASO, KEFENJI, GBEJI, SAFASHI, KONKOSO AND KOKANI.													
B.3 SHAGUNU DISTRICT													
Amboshidi	33	61	190	226	416	2	3	5	1.1	1.3	1.2	R. Niger	Recommended for 1 borehole
Luma Baare	99	121	330	267	597	2	2	4	0.6	0.7	0.7	well, stream	Recommended for 1 borehole
Luma Sanke	112	131	373	355	728	4	8	12	1.1	2.2	1.6	stream, well	Recommended for 1 borehole
Sansani Daji	11	13	33	53	86	5	1	6	15.2	1.9	7.0	Pond, streams	Recommended for 1 borehole
Sabon(New) Sansani	37	51	132	137	269	7	8	15	5.3	5.8	5.6	stream, well	Recommended for 1 borehole
Swashi	222	291	858	972	1,830	30	15	45	3.5	1.5	2.5	well, stream	Recommended for 2 borehole
Ujiji	59	132	383	403	786	9	4	13	2.3	1.0	1.6	well, R. Niger	Recommended for 1 borehole
Yumu	104	135	498	440	938	87	38	125	17.5	8.6	13.3	well, R. Niger	Recommended for 1 borehole
B.4 WAWA DISTRICT													
Avuru	142	230	681	748	1,429	25	15	40	3.7	2.0	2.8	R. Niger, stream	Recommended for 2 borehole
Fakun	102	127	344	411	755	7	5	12	2.0	1.2	1.6	R. Niger	Recommended for 1 borehole
Garafini	102	162	396	354	750	9	15	24	2.3	4.2	3.2	R. Niger	Recommended for 1 borehole
Koro	47	110	274	274	548	14	0	14	5.1	0	2.6	well, stream, pond, rain	Recommended for 1 borehole
Lesugbe	28	51	124	132	256	34	26	60	27.4	19.7	23.4	stream, pond, well	Recommended for 1 borehole
WESTERN BORGU													
C.1 GWANARA DISTRICT													
Ere	47	81	227	251	478	65	60	125	28.6	23.9	26.2	well, stream	Recommended for 1 borehole
Gbebe	155	225	765	785	1,550	40	50	90	5.2	6.4	5.8	well, pond stream	Recommended for 2 boreholes

TABLE (2) -10 -

DEMOGRAPHIC DATA AND GUINEA WORM PREVALENCE RATES OF VILLAGES IN BORGU L. G. A. AS AT 20 OCTOBER, 1985.

	Gwanara	204	600	1,860	2,004	3,864	432	300	732	23.2	15.0	18.9	well,stream	Recommended for 3 borehol
	Goto	75	189	723	684	1,407	87	90	177	12.0	13.2	12.6	well, stream	Recommended for 1 borehole
	Gorobani	32	84	242	280	522	20	26	46	8.3	9.3	8.8	pond, stream	Recommended for 1 borehole
	Kero	28	83	291	292	583	75	37	112	25.8	12.7	19.2	well, pond,stream	Recommended for 1 borehole
	Kpura Munduro	22	66	206	160	366	28	16	44	13.6	10.0	12.0	well,pond,stream	Recommended for 1 borehole
	Kpurapa-Ayo	54	108	300	261	561	21	24	45	7.0	9.2	8.0	well,pond,stream	Recommended for 1 borehole
	Ningurme	96	254	812	914	1,726	142	146	288	17.8	16.0	16.7	well,pond,stream	Recommended for 2 borehole
	Wokoru	13	29	72	64	136	7	5	12	9.7	7.8	8.8	stream	Recommended for 1 borehole
	Yakira	38	78	244	224	468	55	51	106	22.5	22.8	22.6	well,pond,stream	Recommended for 1 borehole
	C.2 ILESHA DIST.													
	Bukaru	26	55	143	148	291	23	13	36	16.1	8.8	12.4	well, stream	Recommended for 1 borehole
	Gwede bere	27	87	257	238	495	39	32	71	15.2	13.4	14.3	well,pond,stream	Recommended for 1 borehole
	Ilesha	330	890	3,100	2,790	5,890	560	630	1,190	18.1	22.6	20.2	well stream	Recommended for 5 borehole
	Kosomonu	Could not be covered because of a river (but motorable in dry season).												
	Shinawu	125	320	1,010	1,095	2,105	225	215	440	22.3	19.6	20.9	well, stream	Recommended for 2 borehole
	C.3 KAINA DIST.													
	Bani	113	172	429	411	840	31	11	42	7.2	2.7	5.0	well,pond,stream	Recommended for 2 borehole
	Banisula	23	52	135	173	308	49	49	98	36.3	28.3	31.8	well, stream	Recommended for 1 borehol
	Gate	13	13	75	59	134	3	0	3	4.0	0.0	2.2	pond, stream	Recommended for 1 borehol
	Gwamadidi	9	17	57	65	122	25	26	51	43.9	40.0	41.8	well, stream	Recommended for 1borehole
	Gwamina	30	46	171	156	327	30	20	50	17.5	12.8	15.3	stream	Recommended for1 borehole
	Gwatekuta	28	41	123	108	231	16	14	30	13.0	13.0	13.0	well, stream	Recommended for 1 borehol

	Kaiama	404	904	3,218	3,236	6,454	216	300	516	6.7	9.3	8.0	well, stream, pond	Recommending at least 5 boreholes.
	Kemikoko	54	164	337	361	698	52	63	115	15.4	17.4	16.5	Stream	Recommended for 1 borehole
	Kemanji	82	171	471	407	878	140	141	281	29.7	34.6	32.0	well, stream	Recommended for 1 boreho
	Kugiji/wajibe	46	108	409	423	832	120	132	252	29.3	31.2	30.3	well, stream	Recommended for 2 boreho
	Nashi	105	126	265	275	540	71	67	138	26.8	24.4	25.6	River Nishi	Recommended for 1 boreho
	Shirigwariya	28	85	217	233	450	87	123	210	40.1	52.8	46.7	well, pond, stream	Recommended for 1 boreho
	Sinsi Nasu	Data included in that of Kaiama because the 4 houses village is within Kaiama town.											well, stream	village now part of kaia town.
	Tenebo	24	38	110	123	233	36	38	74	32.7	30.9	31.8	pond, stream	Recommended for 1 boreho
	Tungan Aboki	70	107	244	240	484	20	9	29	8.2	3.8	6.0	well, stream	Recommended for 1 boreho
	Yenya	65	82	300	292	592	28	33	61	9.3	11.3	10.3	well, stream	Recommended for 1 borehd.
	C.4 OKUTA DISTRICT													
	Boriya	330	940	2,990	3,040	6,030	450	470	920	15.1	15.5	15.3	well, stream	Recommended for 4 boreho
	Kemu	114	270	765	816	1,581	114	96	210	14.9	11.8	13.3	well, stream	Recommended for 1 boreho
	Okuta	370	1,100	3,530	3,510	7,040	160	150	310	4.5	4.3	4.4	well, stream	Recommended for 6 boreho
	Gbonaguru	Known guinea worm, village but could not be covered for time factors.												
	Shiwa	260	860	2,700	2,630	5,330	350	140	490	13.0	5.3	9.2	well, stream	Recommended for 4 boreho
	Tebemu	220	650	1,700	1,830	3,530	60	50	110	3.5	2.7	3.1	well, stream	Recommended for 2 boreho
	C.5 YASHIKIRA DISTRICT													
	Bwemi	16	40	95	84	179	26	20	46	27.4	23.8	25.7	Stream	Recommended for 1 borehd.
	Chikanda	550	980	1,900	2,080	3,980	49	40	80	2.1	1.9	2.0	well, stream	Recommended for 3 boreho
	Gwana	66	143	362	318	680	19	12	31	5.2	3.8	4.6	stream	Recommended for 1 boreho
	Gwasoro	101	184	531	470	1,001	76	69	145	14.3	14.9	14.5	well, stream	Recommended for 3 borehs
	Date	well-known guinea worm village but inaccessible during period of exercise.												

70	Gure	360	870	2,490	2,670	5,160	120	120	240	4.8	4.5	4.6	well, stream	Recommended for 4 bore holes
71	Karosi	well known guinea worm village but inaccessible during period of exercise.												
72	Sane	Not covered for its small size.												
73	Yashikira	105	193	564	576	1,140	21	16	37	3.7	2.8	3.2	well, pond, stream	Recommended for 2 boreholes.

On village levels Sesora in Babanna district has the highest prevalence rate of 65.5% while the lowest rate of 0.7% was recorded for Luma Baare in Shagunu district.

8. RECOMMENDATIONS.

The following recommendations are strongly recommended for consideration:

(a) There should be a deliberate, quite deliberate effort to earmark at least 100 (one hundred) handpumps for Borgu because of their serious guinea worm problems and water crises.

(b) A lot more investment in terms of dedication, funds, equipment and time and willingness to husband the distances between villages is needed in Borgu LGA when compared with Asa and Moro LGAs.

(c) Project staff should disabuse their minds that water table at Borgu is low and it may be difficult to get water. The determination to make UNICEF succeed where other bodies failed should from now prevail afterall, EPI succeeds where previous efforts failed why not the water and Sanitation project?

(d) Sanitation and Health Education would need to take their rightful positions in the LGA because of the pattern of settlement and the great health hazards posed by cattle-keeping.

(e) It is high time the Kwara State Government is advised to look for funds to purchase rigs through UNICEF in order to reach other villages.

(f) This Unit does not run shifts and we work 12-15 hours and all days of the week during analysis more work is done with no compensations.

(g) The only driver attached does too much work for the 12-15 hours with no overtime allowance. Drivers posted for such assignments should be specially considered for the allowance.

(h) We have to succeed in Borgu LGA and we recommend that no further building construction should go on in the project workshop until water and Sanitation Projects are provided at Borgu villages.

(I) If this Project must keep on using the LGA staff then all LGAs must be informed to make provisions for transport and travelling allowances in their 1986 budgets in order to avoid extra-ordinary payments. It is not certain if the staff used would get their

allowance this year.

(J) This Unit would require 2 vehicles for field operations in future data gathering exercise of this nature.

(K) Enough funds should be made available for data gathering exercises to avoid shortage of funds in the field. This should now apply to all teams going to Borgu LGA.

(L) The plea made before could serve as a maxim to conquer the displeasurably long distances between project villages and long hours of duty both capable of easily bringing staff into transports of discouragement, frustration and sentiments as the progress of implementation tells upon them. A STUBBORN DETERMINATION to make good drinking water and Sanitation a reality in Borgu LGA is hereby solicited for. However every community and tribe appears to have distinct cultural, social and economic peculiarities which require diferential application of strategies by all project Units for effective implementation of the package.

9. CONCLUSION

The data gathering, Evaluation and Monitoring Unit remains grateful to the Sole Administrator, the Community Development Inspectors (Musa Aliyu and Basak Aiyeleso) for their kind assistance. The Unit also remains infinitely grateful to all District Heads and Village Heads for their wonderful co-operation. To the dogged team-mates - A.O. Audu, Ladipo Samuel, Musa Abubakar, Mohammed Bora, Ahmadu Isah, Umaru Shiyaki, Jibril Siano, Ibrahim Salihu, Idirisu Haliru Kaiama, Alhassan Umaru, Aliyu Kinishi and the Driver, Azeez Babatola this project remains grateful for your contributions.

In conclusion, this report strongly feels that there is a tremendous need for the entire components of the package in Borgu LGA. In that respect all project staff must be implored to use all ideas and other resources available to them to implement the project to the letter and successfully too. The plea comes again, this time more forcefully that GO UNICEF, GO SEARCH AND GET WATER FOR THE PEOPLE OF BORGU and may the fountains of the great deep break up in favour of your endeavour.

BY :F. O. ALABI
Project Statistician,
28/10/86.

From: STATISTICIAN (T.O. ALABI)

To: Project Manager,
UNICEF Co-Ordinator,
All Heads of Project Units.

Date: 8th May, 1985.

PROJECT MONITORING SURVEY REPORT:-
AFON DISTRICT, KWARA STATE, APRIL 1985.

CONTENTS:-

PROJECT MONITORING SURVEY REPORT: AFON DISTRICT, KWARA STATE
APRIL, 1985

1. INTRODUCTION:-

During this late dry season two activities readily become prominent in Afon District, they are hunting and water collection. Hunting is an activity that is exclusively for males in a Village (sometimes of neighbouring villages put together) while water collection from the handpump is an activity (nearly exclusively reserved) for the females in any given village. While hunting is seasonal water collection is continuous and while males come together as a team for hunting, females most often go individually to the handpumps as at when water is required.

The continuous and individualistic nature of water collection from the handpumps easily arrests one's interest and made females our respondents. One is also very concerned at why people still go to the traditional water sources or the time and frequency at which people go to the boreholes to collect water or the number and use of ventilated improved Pit (VIP) latrines constructed as part of the intervention package of the water and Sanitation Project.

To this end the Project Monitoring survey was carried out. The survey is a two-way activity which seeks to obtain responses from the population served by the project with the purposes of providing relevant and valuable information on which policy decisions are arrived at, up-dated or formulated.

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It also serves as a further mobilization and re-education of the people who find answers to questions asked on various facets of the project as they (people) now live with the reality of modern technology in peasant communities.

The field-work of the survey was carried out between 16th - 19th april, 1985 after about a week's training of the Enumerators.

This report has been divided into sections with the following titles:-

(1) Introduction.

(2) Guinea worm prevalence.

(3) Households water collection:- A clash between the handpumps and traditional water sources.

(4) VIP latrines: Construction and use.

(5) Performance of VBWs and Health Education programmes.

(6) General observations, Suggestions & conclusions.

There are some unpublished statistical tables because of a check on the length of this report.

1.1 SURVEY METHODOLOGY:-

A two-stage sampling procedure was adopted.

The list consisting of the first 45 boreholes in the state was used as a sampling frame where first-stage units (villages) were selected from using 2-digit random numbers. We replaced numbers corresponding to already selected villages or in which the project was under a month-old.

From the selected villages we compiled the list of all households and the probabilities of selecting households. This list forms the second-stage Units. We cumulated the number of households and assigned ranges

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to the households in the villages making sure that the assigned ranges did not overlap. A household selected is placed back and hence we have WITH REPLACEMENT PROBABILITY PROPORTIONATE TO SIZE sample selected with unequal probability.

1.2 IMPACT OF THE PROJECT.

The impact of water and Sanitation Project in this district goes beyond whatever pen can describe on paper.

Since the handpump was installed and the pregnant earth gave birth to water from its womb the handpump is serving as a centre of life and attraction and as a potent force (as Alabi once described in his data gathering report in 56 villages in Moro LGA):

> ' releasing the people of this LGA into a healthy state never before enjoyed by their forebears, releasing them into a state of boom in their social and economic life and releasing them perhaps also into active religious, political and cultural activities which tacitly give credit to UNICEF'.

1.3 SUMMARY OF WEAKNESSES OF THE PROJECT:-

The survey reveals certain weaknesses in the implementation of the package which are contained in various parts of the report. Below is a Summary of such weaknesses:

(a) Some of the handpumps are not functioning properly perhaps due to inadequate flushing of the boreholes. Other problems include stiff handle and leaking at the head assembly perhaps due to a draw-back e.g. at Olodemeji; less water than demand level leading to unpleasant rationing e.g at Okeso, Foko and Gbago.

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(b) Improper pumping mechanism with the handle by water collectors. The VBWs should be asked to enlighten villagers on the proper handling while collecting water.

(c) In all villages with VIP latrines children below 5 years are hardly allowed to use the latrines for fear of messing up the latrines. That shows that about 25% (see table 2) of the population do not have access to VIP latrines at all. And again, a discouraging percentage (44%) of children between 5-10 years use the VIP latrines. This defeats some purposes of the project. The village heads must be immediately told to inform all their subjects to allow children to use and get used to using the VIP latrines. Children's faeces are equally dangerous as those of adults.

(d) Certain adults to not use the VIP latrines because the traditional places are nearer to them than the location of the latrines. The village heads must be told to make it compulsory for all adults to use VIP latrines.

(e) The VIP latrine construction is very slow. The villagers must be given a list of items to purchase and other responsibilities to shoulder. The villagers will then plan how to generate the necessary funds. The Sanitation Team is being awaited in some villages to measure the latrine sites so that at least excavation can start. There is need to explore the use of other building materials, such as MUD apart from cement blocks and iron roofing sheets. Afterall majority of the houses in these villages were built with mud why not their latrines?

(f) Most of the villages are dirty and full of dried leaves, animal droppings and weeds. It appears the VBWs only mobilize villages to clean and clear their surroundings when Projects staff are 'expected' to visit the villages.

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(g) Most of the VBWs only talk about personal and Enviromental hygiene. It was only at Okeso that oral rehydration Therapy was mentioned. Certainly Personal and environmental hygiene is not the only topic taught the VBWs. There is need for the Health Education Team or supervisors to remind VBWs of other topics and possibly give a time table on when new topics be introduced. There are other evidences which strongly suggest that either the VBWs training was inadequate or they fail to properly understand and prosecute the ideals of this project or their levels of education is a handicap. The VBWs appeared to avoid talking to say Teachers in their communities perhaps due to inferiority complex.

1.4 SOCIO-DEMOGRAPHIC CHARACTERISTICS:-

The result of the survey presented in table 1 below further gives an estimate of the populations being served by this project (1st estimate given by 'report of the exercise on basic demographic data in Afon District' dated 18th October, 1984). We are therefore in a position to know the ratio of the population per borehole. The modal number of persons per household is 5.

TABLE 1

ESTIMATED POPULATIONS OF SURVEY VILLAGES THROUGH HOUSEHOLDS COMPOSITION

Villages	Total Number of households in village. A	Survey households B	Survey population. C	Average number of persons per household C/B	Estimated Village population C/B x A
Alapako	15	8	37	5	75
Budo Aro	54	19	69	4	216
Foko	93	27	118	4	372
Gbago	35	13	59	5	175
Igboede	17	9	29	3	51
Ita Raufu	29	10	34	3	87
Kankan	35	12	61	5	175
Okeso	100	39	178	5	500
Olodomeji	18	7	26	4	72
Omo Alao	25	9	37	4	100
Oniyere	173	33	157	5	865

9% of the survey population were found to be aged between 0 - 2 years while 16%, 22% and 53% were between the age groups of 3 - 5 years, 6-15 years and 16 years and over respectively (see table 2 below). This shows that at least half of the population is dependent-type. The distribution of the survey-populations according to their ages in survey villages are contained in the body of the table.

TABLE 2

PERCENTAGE DISTRIBUTION OF SURVEY POPULATION BY AGES, AFON DISTRICT.

Village	Age group (years)				
	Under 2	3 - 5	6 - 15	16 and over	Total
Alapako	8	14	27	51	100
Budo Aro	12	13	17	58	100
Foko	9	13	25	53	100
Gbago	12	22	17	49	100
Igboede	14	10	7	69	100
Ita Raufu	9	26	3	62	100
Kankan	10	23	15	52	100
Okeso	8	15	26	51	100
Olodomeji	8	23	8	61	100
Omo Alao	8	19	19	54	100
Oniyere	8	13	31	48	100
Total	9	16	22	53	100

Afon district is wholly made up of peasant muslim communities of the Yoruba Tribe with 87% of the heads of households engaging in subsistance farming while 4% are on petty trading on mainly farm-products and 2% were found to be drivers or teachers (see table 3 below).

The modality of operation with respect to Health Education messages mobilization project support communications and data gathering must be tailored to suit farming and Islamic backgrounds in this district.

TABLE 3

PERCENTAGE DISTRIBUTION OF HEADS OF HOUSEHOLDS BY OCCUPATION.

Village	n_i	Occupation of Heads of Households.					
		Farming	Petty Trading	Driving	Teaching	Others	Total
Alapako	8	75	13	0	0	12	100
Budo Aro	19	100	0	0	0	0	100
Foko	27	93	0	0	0	7	100
Gbago	13	100	0	0	0	0	100
Igboede	9	89	0	0	0	11	100
Ita Raufu	10	70	10	10	0	10	100
Kankan	12	100	0	0	0	0	100
Okeso	39	87	3	5	3	3	100
Olodomeji	7	100	0	0	0	0	100
Omo Alao	9	100	0	0	0	0	100
Oniyere	33	70	12	3	9	9	100
Total (District)	186	87	4	2	2	5	100

2. GUINEA WORM PREVALENCE:-

The respondents were asked to give information about all members of their household regarding history of guinea worm infection. Of all the 186 respondents 1% had guinea worm disease NOW while 14% had the disease in the past, 85% had never been infected. It was found that 6% of the households affected have applied native medicines as treatment while 3% applied only English/orthodox medicines, 4% of them applied both Native and English medicines and 2% did not apply any medicines at all.

Guinea worm prevalence is presented in table 4 below. It could be seen from it that 0.5% of the males have guinea worm now whereas 6% had it before. For the females 0.3% no have the disease whereas 9% had it in the past. For males and females the prevalanece rate was 8% in the past and 0.4% now.

The males and females having the disease now are aged 60 years and over, whereas the disease affected all age groups in the past.

Males aged 40 - 49 years and females aged 50-59 years are those who sufferred from the disease most.

The survey also reveals that 94% of those with a history of guinea worm infection were affected on the lower extremity of the body while 6% had the infection on the upper extremity of their bodies.

TABLE 4

GUINEA WORM PREVALENCE IN AFON DISTRICT BY AGE AND SEX, APRIL, 1985.

Age-group (years)	MALES			FEMALES		
	Survey population	% infected in each age group		Survey population	% infected in each age group.	
		NOW	in the past		NOW	IN THE PAST
0 - 9	162	0	3	148	0	2
10 - 19	51	0	4	33	0	6
20 - 29	13	0	8	69	0	14
30 - 39	36	0	11	61	0	11
40 - 49	44	0	14	41	0	12
50 - 59	41	0	5	30	0	20
60 and over	53	4	11	21	5	19
Total	400	0.5	6	403	0.3	9

When households were asked on how people get guninea worm disease, only 14% answered correctly that by drinking from infective water sources. 4% gave answers that were wrong while 82% were ignorant of how people get the disease. This could mean that the VBWs have not enlightened the people on the disease as taught them and the people did not gain much or from the film shows arranged by the Development Support Communication.

3. HOUSEHOLDS WATER COLLECTION;- A CLASH BETWEEN THE HANDPUMPS AND TRADITIONAL WATER SOURCES

IN an ordinary day the handpump appears to be the only outstanding witness that the intervention package has reached most of the project villages. While most of the handpumps are functioning properly a few have problems. Such problems include difficulty in pumping with attendant delays in water flowing out of the spout e.g. at Olodomeji.

At Budo Aro the water has certain sediments which discourage some people from collecting water in the morning.

Perhaps the Drilling and Technical Team must exercise more patience in siting borehole locations, in drilling and when flushing.

3.1 ISSUE OF BY-PASS OF THE HANDPUMPS OR WHY PEOPLE STILL GO TO TRADITIONAL WATER SOURCES:

Before the handpumps got to this district 70% of the households collected water from stream/river in the rainy season while 27%, 3% and 2% used ponds, wells and rain water respectively. In the dry season, however, 37% of the households use stream/river while 62% and 2% respectively use the ponds and wells. This shows that the main traditional water sources in this district are the stream/river, ponds and wells.

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By-passing the handpumps for these traditional water sources is a question of must nearly in all villages especially Okeso, Gbago, Foko, Oniyere and Olodomeji. This is because the available quantity of water from the handpump, per household is below their domestic requirements. For instance, 2 buckets of water (with an average volume of 5 litres per bucket) are collected per day at Gbago for an average of 5 persons per household. At Olodomeji a person can hardly collect up to 2 buckets-full of water in several hours of the day. At Okeso only a compound, averaging 15 water collectors, are allowed daily to collect an average of 10-15 litres of water each to be used over a period of 10-12 days when it would again be the compound's turn to collect water. Thus about 150 litres of water are collected at Okeso for at least 75 people's use giving an average of 2 litres per person for a period of at least 10 days. It is pathetic.

The table 5 below shows the degree of by-pass of the handpumps. The table gives the fact that slightly less than half of the households use the handpump water for all domestic activities. 26% of the households have to go to the streams while 22% went back to the ponds to satisfy their water requirements.

TABLE 5

PERCENTAGE DISTRIBUTION OF HOUSEHOLD BY WEETHER OTHER WATER SOURCES ARE USED BESIDE HANDPUMPS

Village	Only the handpump is used	Using other sources of water plus the handpump			
		stream/ river	Pond	Well	Total
Alapako	100	0	0	0	100
Budo Aro	64	10	10	16	100
Foko	56	33	11	0	100
Gbago	31	23	46	0	100
Igboede	89	11	0	0	100
Ita Raufu	70	10	20	0	100
Kankan	92	0	0	8	100
Okeso	5	51	41	5	100 *
Olodomeji	43	0	57	0	100
Omo Alao	67	22	11	0	100
Oniyere	46	30	24	0	100
Total	49	26	22	3	100

Note:* Use of multiple water sources.

It is only at Alapako (estimated population 75) that all households use the handpump for all purposes. We have 5% of the households at Okeso (estimated population 500) using the handpump for all purposes whereas 51% go back to the stream and 41% to the ponds because of insufficient water collection from the handpump. At Olodomeji 57% fall back to the pond and so the dismal picture is seen in the other parts of the table above.

The following table 6 shows distribution of the people of this district according to water sources used for different activities within 2 weeks to the survey.

Table 6

HOUSEHOLDS' WATER USE WITHIN 2 WEEKS TO THE SURVEY BY KIND OF ACTIVITIES AND WATER SOURCES

(n= 186) (%)

Activity	WATER SOURCES				
	Handpump	Stream/ River	Pond	Well	Others (e.g rain).
Drinking	99	1	0.5	0	0
Bathing	71	10	18	3	1
Washing of clothes	32	25	37	5	1.
Washing of food/ Utensils	66	10	21	3	0
Cooking	84	5	9	2	0

With this high rate of boycott of the handpumps when considering activities like washing of clothes, food/utensils and bathing perhaps more villagers than what is in the table definitely use traditional water sources for drinking purpose. And the survey results (not published) shows only

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3% of the households apply allum to drinking water, 7% boiled such water while 90% applied no treatment to drinking water.

By-passing the handpumps is not wholly the villagers fault. It arises either because the number of boreholes do not meet the drinking requirements of the people (e.g. at Okeso, Oniyere and Olodomeji) or the people are afraid their handpumps would breakdown or borehole go dry (e.g. at Gbago) and so pass a regulation that nobody should use water from the borehole for washing clothes; or the handpump is not functioning properly (e.g. at Olodomeji and Okeso) or nature refuses to provide enough underground water in some villages in this district.

3.2. BOREHOLE USE:- TIME OF WATER COLLECTION AND FREQUENCY AT THE HANDPUMPS.

The survey reveals that 95% of the households in project villages in this district collect water in the mornings while 20%, 30% and 1% of households use afternoons, evenings and nights respectively for collecting water.

A long queue will therefore be expected in the mornings. This long queue occurs at Foko because their handpumps are under lock and are only opened to people between the hours of 6.00 am - 11.00 am and 4.00pm -7.30 pm (local time) daily.

Table 7

PERCENTAGE NUMBER OF HOUSEHOLDS COLLECTING WATER, AND AVERAGE NUMBER OF BUCKETS OF WATER COLLECTED FROM THE HAND PUMPS AT DIFFERENT TIMES OF THE DAY.

Village	n_i	Morning		Afternoon		Evening.		Night	
		% No of households	Average no of buckets collected	% No of Households	Average No of buckets collected	% No of households	Averge No of buckets collected	% No of Households	Average No of buckets collected
Alapako	8	100	4	88	3	75	2	12	1
Budo Aro	19	84	2	37	2	47	2	0	0
Foko	27	93	2	18	3	48	2	0	0
Gbago	13	100	2	0	0	23	1	0	0
Igboede	9	100	3	0	0	44	2	0	0
Ita Raufu	10	90	2	0	0	10	2	0	0
Kankan	12	100	3	25	2	42	2	0	0
Okeso	39	95	2	8	2	5	3	0	0
Olodomeji	7	100	2	0	0	0	0	0	0
Omo Alao	9	89	2	56	2	56	2	0	0
Oniyere	33	97	2	30	2	24	2	3	1
Total	186	95	2	20	2	30	2	1	1

In most villages complaints about long queues can not be tenable as the handpumps are virtually free in the afternoons e.g. Gbago, Igboede and Ita Raufu.

Olodomeji stands out clearly in this table 7 because water can only be collected in the early mornings alone at an average of 2 buckets per household.

The average number of buckets of water collected is also the same as the frequency of going to the handpumps because a water collector usually goes with a bucket at each time of water collection.

On the average a household goes to the handpump 2 times in either morning, afternoon or evening.

3.3 WATER COLLECTION HABIT:

Households were asked if they collected water from the handpumps within 2 weeks to the survey. In all villages, except Ita Raufu, Okeso and Omo Alao all households have collected water from the handpumps during the period. Those households(2%) which did not collect water include those that was not their turn to collect water (at Okeso) because of rationing and households that travelled out but arrived on survey day (but claimed to be collecting water before travelling and would collect after the interview).

It can be seen from table 8 below that there is no village in which all households claimed they collect more water from the handpumps than their traditional water sources.

Some reasons attributable are that:

(a) the handpump is so near to their houses and there is a guaranttee of getting water at any time and so no need to collect plenty of water for storage.

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(b) Rationing such as at Okeso where each compound is allowed to collect water at about 10 days interval and

WATER COLLECTION HABITS OF HOUSEHOLDS IN AEON DISTRICT, APRIL, 1985

Village	Ni	Collection of water from the handpump within the past 2 weeks.			Whether MORE water is collected from handpump than traditional sources		
		Yes	No	Total	Yes	No	Total
Alapako	8	100	0	100	88	12	100
Budo Aro	19	100	0	100	90	10	100
Foko	27	100	0	100	56	44	100
Gbago	13	100	0	100	85	15	100
Igboede	9	100	0	100	89	11	100
Ita Raufu	10	90	10	100	80	10	100*
Kankan	12	100	0	100	50	50	100
Okeso	39	95	5	100	5	92	100*
Olodomeji	7	100	0	100	29	71	100
Omo Alao	9	89	11	100	33	67	100
Oniyere	33	100	0	100	52	48	100
Total (n) (District)	186	98	2	100	52	47	100 *

NOTE;- * The values making the total to be 100% represent households not using the handpumps.

the restriction to only 2 buckets at Gbago, the locking of the handpumps at Foko and the mal-functioning at Olodomeji.

(c) Discouragement because of the long queues (e.g. at Oniyere) each time they go to collect water.

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3.4 TIME COMPARISON BETWEEN HANDPUMPS AND TRADITIONAL WATER SOURCES.

Households were asked to compare the time taken to go to and from traditional water sources and that of the handpumps. 64% said they now spend less time because the handpump is nearer them and it takes about 2 minutes to fill up their containers. 19% of the households claimed they spend same period of time and the water they collect from the handpump sometimes does not meet their domestic requirements while 16% of the households said they spend more time collecting water from the handpumps than if they had gone to traditional water sources because of delayed flow and long queues.

From survey results 14% of the households complained about pumping many times before water comes out especially at Olodomeji, Okeso, Alapako and Foko. Another 14% of households complained about stiffness of the handle while 11% of the households said there is no enough water coming out all the time they get to the handpumps. 2% of the households said they found sediments in water (at Budo Aro and Okeso) while 12% complained of other problems. However, 59% of all households said they have no problems with the handpumps. In general the handpumps can be said to be gradually winning the clash between it and the traditional water sources. If within its short span of existence in this district the people readily accept it as best quality water for drinking purpose than as certain human reservations die the tendency to greater demand for water from the handpumps would steadily rise.

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4. VIP LATRINES:- CONSTRUCTION AND USE, AN IMPOSITION ON PEOPLE'S TRADITIONS?

There is one experience people of all cultures, irrespective of their sex, religion and socio-economic status share daily and it is the excretion of faeces. However, where, when and the frequency with which individuals pass through the experience vary even within a given culture, household and individual.

The UNICEF Ventilated Improved Pit (VIP) latrines is an attempt at standardizing where people go to answer nature's call in the rural areas of this district leaving the questions of when and frequency to the respective villagers.

Perhaps the provision of the VIP latrines could be termed an imposition on the peoples traditions (?). This is because in Yoruba and Ogori traditions there exists an age-long tradition of going to the field (PAPA or ATAN) to answer nature's call. People of different age-groups can figure out specific times they can, there, meet their colleagues for discussions or plan strategies and thereby ask for absentees.

Now the VIP latrines have been provided covering an area of land quite less than the traditional ATAN or PAPA and quite unable to accommodate the number of colleagues of different age-groups.

The project monitoring survey reveals that in 4 villages with VIP latrines 98% of the mothers in 42 households interviewed use the VIP latrines while 2% did not use the latrine. Again 98% of the households hold the opinion that VIP latrine is better than traditional places while 2% said they do not know which is better.

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Only 20% of children aged between 3 - 5 years and 44% of children aged between 5-10 years were found to be using the VIP latrines where they exist in this district. (see table 9 below). 19% of children aged 3-5 years and 8% of those aged between 5-10 years use PO facility which are eventually disposed of by the mothers or any grown up children.

TABLE 9

TOILET FACILITIES USED BY CHILDREN UNDER 10 YEARS.

Village	Children aged 3-5 years					Children aged 5-10 years				
	Use VIP latrines	go to the Bush/Field (Papa)	Use Dung hills (Atan)	Use PO	Total	Use VIP latrine	go to the Bush/Field (papa)	Use Dung hills (Atan)	Use PO	Total
Alapako	25	0	0	75	100	63	0	37	0	100
Budo Aro	9	78	11	11	100	0	86	14	0	100
Foko	0	89	0	11	100	0	92	0	8	100
Gbago	39	20	0	41	100	31	69	0	0	100
Igboede	11	0	0	89	100	22	78	0	0	100
Ita Raufu	0	100	0	0	100	0	0	0	0	0
Kankan	8	52	27	13	100	59	41	0	0	100
Okeso	0	36	18	46	100	0	92	8	0	100
Olodomeji	0	0	100	0	100	0	0	100	0	100
Omo Alao	0	100	0	0	100	0	100	0	0	100
Oniyere	0	80	0	20	100	0	92	0	8	100
Total	20	50	11	19	100	44	49	5	2	100

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As for children aged 0-2 years 92% of them in this district use the PO facility provided by parents, 4% pass faeces any how within the yard while 2% use Nappies or are taken to the dung hill.

The method of disposal of faeces for children under 2 years is by mainly throwing the faeces in the PO into the Bush/Field. 67% of the households with children under 2 years practice that. 27% of the households throw such children faeces into Pit latrines while 5% bury them in the ground ad 1% of the households call animals to eat up the faeces. Details of the methods of disposal of children's faeces according to the survey villages are contained in the following table 10.

TABLE 10.

DISTRIBUTION OF HOUSEHOLDS BY HOW THE UNDER 2-YEAR-CHILDREN FAECES ARE DISPOSED OFF.

%

Village	METHOD OF DISPOSAL				
	Thrown into Pit latrine	Thrown into the Bush/ Field	Buried in the ground	Animals do eat it	Total
Alapako	100	0	0	0	100
Budo Aro	0	100	0	0	100
Foko	0	100	0	0	100
Gbago	78	22	0	0	100
Igboede	80	0	20	0	100
Ita Raufu	0	100	0	0	100
Kankan	89	11	0	0	100
Okeso	0	83	11	6	100
Olodomeji	0	80	20	0	100
Omo Alao	0	100	0	0	100
Oniyere	0	94	6	0	100
Total	27	67	5	1	100

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4.1 ISSUE OF BY-PASS OF THE VIP LATRINES:-

The fact that the traditional toilet facilities are nearer some households than the VIP latrines makes some people to boycott the VIP latrines. Such people however, need be told by their village heads that it is compulsory to use the VIP latrines while use of traditional facilities would attract certain penalties.

The percentages of children using the bush/field or dung hills as contained in table 9 above shows the degree of by-pass by children of those ages in the different villages. The Elders/Parents must be pressurised or convinced to allow their children to use the VIP latrines.

Another possible factor for by-passing the VIP latrines is queueing. When an individual under pressure wants to use the VIP latrine and consistently finds it engaged then the tendency is to use the alternative facilities.

Religion and culture were not found to contribute to the boycott of VIP latrines.

4.2 VIP LATRINES CONSTRUCTION:-

The VIP latrine construction must go local in this state. The Sanitation Team must think fast of alternative materials such as mud or mud-blocks for superstructures. Perhaps different villages can be asked to use stones with cement for the foundation till the DPC level and thereafter build with mud or mud-blocks. If we want the VIP latrine construction to catch up with other units under the Project then this possibility has to be looked into. Afterall many houses in this district are mud-built and have endured all weather conditions for decades.

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At Alapako, Gbago, Igboede and Kanakan villages where households have been enjoying the use of VIP latrines, household were asked if they would build their personal ones. 69% of the households replied that they would not like to have their personal VIP latrines because of lack of funds, the one provided by UNICEF satisfies their needs for now. The remaining 31% desired to have personal VIP latrines in order to beat the queueing which occasionally arises, in order to take better care of the latrines and the further privacy it affords them.

5. PERFORMANCE OF VBWs AND HEALTH EDUCATION PROGRAMMES:-

96% of the survey households said they have seen and or talked to their VBWs in the past one month to the survey. The change in VBW at Kankan must have accounted for why 17% of survey households in the village claimed they did not see nor talk to a VBW in the past one month.

The VBWs have arranged to be visiting households in some villages once a week. The VBWs have been adopting two methods of operation (a) group meeting/discussions especially on every vital or new topics. (b) Personal visits to households. The home visits are used more often. 48% of the households claimed they have seen/talked to a VBW at least 4 times in the past one month in their homes. 9% said the VBWs called 3 times while 2% said they were visited twice. 4% of the total households interviewed claimed that they have never seen nor talked to any VBW before-this set of people are mainly teachers in the communities.

On group discussions 31% of the households said they have attended up to four meetings, 5% claiming 3 group-meetings and 1% saidshe attended 1 group meeting within a month to the survey.

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It is noteworthy that 100% of the households deemed all the discussions and meetings with the VBWs useful. However while 98% of the Households would wish the discussions held by VBWs should continue 1% of the households would like a discontinuation and another 1% could not make up their minds whether they like it to continue or stop.

The main topic discussed by VBWs is personal and enviromental hygiene. Very very few households mentioned covering of drinking water containers, covering of food, drinking only water from the handpump, care of children and oral rehydration therapy. The VBWs have not created the awareness in dangers inherent in going back to drink from traditional sources of water, and the cause of guninea worm.

5.1. IMMUNIZATION IN YOUNG CHILDREN AND BREAST FEEDING PRACTICE.

Only 3% of the 122 households in which there are children under 3 years claimed they have immunization cards for their children, and such cards could not be produced for examination.

97% of the households not having immunizations for their children could be because only one basic health clinic exists in the district and at Afon an average distance of 11-15 kilometers to the survey villages. Transport poses a problem in taking children for "only" immunizations (apparent value placed on such immunizations ?). Cost of travels to and from Afon in terms of long trekking or finance. No mobile health clinic operating in the district

Perhaps the EPI programmes would consider operating deep into rural areas and enough vaccines would be available all the time.

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5.2 OTHER HEALTH MATTERS.

87% of the households bath their young children 2 or more times daily. 12% bath their children once daily and 1% of the households with young children bath such children only when there is enough water at home.

The survey also reveals that 84% of the households with children sometimes use soap for bathing the children while 14% of the households use soap all the time the children are taking their bath. 2% of the households were found not to use soap when bathing their children.

With respect to handwashing practice among mothers with young children it was found that 62%

TABLE 11
PERCENTAGE DISTRIBUTION OF HOUSEHOLDS BY HANDWASHING PRACTICES AMONG MOTHERS.

Village	Activity						
	Before eating	Before preparing a child's food	Before preparing food/meals for household	After handling a child stool	After defecation	On return from a sick persons home, hospital	Others
Alapako	62	38	50	0	0	0	12
Budo Aro	84	37	16	5	0	5	10
Foko	81	41	41	4	0	0	0
Gbago	38	46	38	0	8	0	0
Igboede	33	44	33	0	0	0	0
Ita Raufu	40	10	50	0	0	0	0
Kankan	42	58	25	0	0	0	0
Okeso	72	56	62	18	13	5	0
Olodmeji	29	57	14	0	0	0	29
Omo Alao	56	11	56	0	0	0	0
Ontoloen=186)	62	48	37	12	64	0	3

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of the households mentioned they wash their hands before eating, 44% of them before preparing a child's food while as low as 7% of them said after handling a child's stool, 4% after defecation and 2% on return from a sick persons home or from the hospital. Thus table 11 shows that there still remains a lot more work to be done by the VBWs, their supervisors and the Health Educator.

In observing the containers used for storing drinking water we found out that 78% of all the households covered their water containers while 22% did not cover such containers with lids. Omo Alao, Budo Aro and Kankan are chief villages where water containers are not covered by at least half of the housholds interviewed.

92% covered prepared food while 8% of the households did not do so especially at Kankan, Gbago, Budo Aro and Igboede villages.

In 49% of the houses inspected there was tittle refuse/rubbish lying in them while 37% contained little amount of human/animal faeces. This shows that environmental hygiene messages have not gone down well to the people.

6. SUGGESTIONS AND CONCLUSIONS:-

The Project Authority might need to prepare answers to face an envisaged demands for (or permission to erect) overhead tanks to be built by some of the communities either in this district or in others. This is because this simple modern technology (called handpump) has generated positive acceptance by usual residents of these peasant communities but perhaps not with the few yet vocal

'educated' sons and daughters living in Lagos, Ibadan, Kaduna or Ilorin. Perhaps making minimum number of VIP latrines construction as a condition before permission is granted any community would deter them.

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The failure of some handpumps to function properly calls on the maintenance team to go round from time to time to avoid people reaching for traditional water sources again. When people go to the streams and ponds to wash clothes they should be told to go with a bottle of drinking water from the handpump. This is because 82% of the households do not know that drinking infective water causes guinea worm disease.

The restrictions in the number of buckets of water to collect in certain villages or restriction to compound is enough evidence to show that even through the ratio of population per borehole may be low, one borehole per village in this district appears not to be enough.

Some villages need assurance that the handpumps would be repaired if they breakdown. The Drilling/Technical team must exercise patience in siting boreholes, drilling and flushing exercises.

The VIP latrine at Gbago is infested with flies and the Sanitation Team should look into it.

The Project needs to explore the use of MUD or mud blocks as materials for superstructures this might be better than waiting indefinitely on villages to construct VIP latrines with cement blocks.

The VIP latrines have been accepted for their convenience and secrecy of individuals the project should ask villagers to allow their children to use the latrines and also make it compulsory for all adults to use. The mothers be asked to take their children to the VIP latrines, teach them how to squatt and use without ~~by~~ messing the latrines up.

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Most of the villages (especially Foko and Okeso) are very dirty. They are as full of animal droppings and dried leaves as are grasses along the roads that lead to them from Afon. It appears the VEWs usually mobilize their people to clean their environment only when august visitors or Health Education Supervisors are expected to get to their respective villages.

Finally lack of vehicle attached to this unit is a great handicap.

The handpumps were installed in survey villages in the following dates:

Alapako	20/8/84
Budo Aro	15/12/84
Foko	7/12/84
Gbago	29/8/84
Igboede	29/8/84
Ita Faufu	24/1/85
Kankan	20/8/84
Okeso	8/2/85
Olodomeji	25/1/85
Omo Alao	26/1/85
Oniyere	15/11/84

M. SEABER

GUINEA WORM STATISTICS FOR MORO LOCAL GOVERNMENT AREA, KWARA STATE, NIGERIA

1. INTRODUCTION:

This report complements the "first report of data gathering exercise in fifty-six (56) villages in Moro Local Government Area" released in March, 1985. It tries to bring to light certain results obtained from the detailed analysis of the preintervention data gathering exercise. All the communities covered (except 1 in Ejidongari district and 7 in Oloru districts) have since been provided with the UNICEF borehole-handpumps. It is hoped that the remaining 8 communities would take precedence over others when the project returns to the Local Government Area (LGA).

The aim of this report is to provide a wide and adequate basic on which future guinea worm statistics could be compared with or projected from; provide a basis for which impact of the water and Sanitation project on the situation of guinea worm could be measured or ascertained; provide statistics which can give insight into the health status of the rural communities and to show the effect of the guinea worm disease on some socio-economic and demographic variables.

2. MATERIALS AND METHOD OF DATA GATHERING.

Materials used in this report are outcomes of tallies of information collected on 14,881 persons in 52 communities in Moro LGA between February and March, 1985. The number of communities covered were Ejidongari district (21), Ipaiye district (3), Lanwa district (11), Malete district (4) and Oloru district (13). The period of enumeration fell within the identified peak patency period of guinea worm infection in the LGA. Data gathering was done by specially trained enumerators who administered the survey forms. With the exception of Shao town where a 20% sample was taken, we undertook a sample census of persons in all the other 51 communities. It was a sample census because data gathering of census type of data was carried out in sampled villages in the LGA. The sample census was carried out because

- of the sizes of the communities,
- of the need for actual resident population figures of the various communities since no (reliable) resident population figures, nor records indicating such, were found useful to the project management from elsewhere.

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- of a bid to cover the communities in the lists and provide guinea worm statistics which may be used to up-date records with Kwara State Ministry of Health or the University of Ilorin.

3. RESULTS

Several statistical tables have evolved from the analysis and for brevity only a select few are presented in the report. However certain information in unpublished tables might find their places in parts of the report.

3.1 POPULATION AND PREVALENCE RATES.

Table 1 below shows the population of the LGA and districts, survey population and prevalence rates of guinea worm.

The projected population for 1985 (based on the 1963 census) has shown that the LGA has 203,125 persons distributed into the five districts as follows: Ejidongari (37,446), Ipaiye (25,137), Lanwa (51,191), Malete (29,819) and Oloru (59,532). The number of persons enumerated (survey population) was 14,881 (representing 7.3% of the entire population. In Ejidongari district 5,512 (i.e 14.7% of district population) were enumerated and for Ipaiye district 855 (i.e. 3.4%), Lanwa district 1,540 (i.e. 3.0%), Malete district 346 (i.e. 1.2%) and Oloru district 6,628 (11.1%) were enumerated.

TABLE 1

DISTRICT BY POPULATION AND PREVALENCE RATES OF GUINEA WORM IN MORO LGA, 31 MARCH, 1985

Districts	Estimated 1985 Population	Survey population	Number affected by guinea worm	District's prevalence rate (%)	District's Range of prevalence rates (%)
Ejidongari	37,446	5,512	3,115	56.5	10.1 -96.6
Ipaiye	25,137	855	75	8.8	3.6-11.2
Lanwa	51,191	1,540	617	40.1	2.5-55.2
Malete	29,819	346	83	24.0	0.0-34.6
Oloru	59,532	6,628	529	8.0	0.9-68.6
Total (LGA)	203,125	14,881	4,419	29.7	0.0-96.6

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Of the 14,881 persons covered, 4,419 (representing 29.7%) were found to have got guinea worm disease. This grim situation spells out the index that 3 persons out of every 10 resident persons in Moro LGA have a history of guinea worm infection. There are wide district variations. For example, the prevalence rate for Ejidongari district shows that 6 persons out of every 10 persons within the district had guinea worm while 4 persons out of every 10 persons in Lanwa district had the disease. On the other hand 1 person out of every 10 persons residing in Ipaiye district or Oloru district had been affected.

Considering the communities in the districts, Ejidongari district has widest range of prevalence rates (10.1% - 96.6%) followed by Oloru district (0.9% - 68.6%). The smallest range of prevalence rate was recorded for Ipaiye district (3.6% - 11.2 %). The three highly prevalent districts are Ejidongari, Oloru and Lanwa.

3.2 PREVALENCE RATE WITHIN HOUSEHOLDS.

In each of the 5 districts we obtained information on a household basis. A working definition of a household then was "a person or group of persons who feed from the same pot or purse" and we often asked for individual "Baale" that is, head of household in all the houses.

TABLE 2

DISTRIBUTION OF HOUSEHOLDS AND THOSE HAVING GUINEA WORM BY DISTRICTS IN MORO LGA, 31 MARCH, 1985

District	Survey population	No of households interviewed	Average No of persons per household	No of household reporting guinea worm disease	Household prevalence rate within district (%)
Ejidongari	5,512	1,070	5	855	79.9
Ipaiye	855	216	4	48	22.2
Lanwa	1,540	323	5	212	65.6
Malete	346	87	4	50	57.5
Oloru	6,628	1,432	5	426	29.7
Total	14,881	3,128	5	1,591	50.9

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3,128 households were interviewed resulting into 14,881 persons which implies an average of 5 persons per household in Moro LGA. 1,591 households (i.e. 50.9%) reported cases of guinea worm disease. At least 1 out of every 2 households had guinea worm in the LGA.

Out of every 10 households we have 8 (in Ejidongari district), 7 (in Lanwa district), 6 (in Malete district) 3 (in Oloru district and 2 (in Ipaiye district) that were affected with the disease. And so many households suffer untold socio-economic losses from the seasonal occurrence of the infection.

3.3 AGE, SEX AND DISTRICT PREVALENCE RATES.

Table 3 which follows presents the survey population by sex and the number of them having guinea worm according to their age-groups. The sex-prevalence rates have been calculated as they relate to corresponding age-groups. Perhaps it may be termed guinea worm age-specific-prevalence rates for the sexes.

TABLE 3

DISTRIBUTION OF PERSONS BY AGES AND BY SEX AND PREVALENCE RATES OF GUINEA WORM IN MORO L.G.A, 31, MARCH 1985.

Age Group (years)	Males			Females			Both Males & Females		
	Survey population	Having guinea worm	Prevalence rate (%)	Survey population	Having guinea worm	Prevalence rate (%)	Survey population	Having guinea worm	Prevalence rate (%)
0-9	2,254	318	14.1	1,893	358	18.9	4,147	676	16.3
10-19	2,020	567	28.1	1,172	398	34.0	3,192	965	30.2
20-29	642	172	26.8	838	289	34.5	1,480	461	31.2
30-39	642	224	34.9	1,044	350	33.5	1,686	574	34.0
40-49	738	272	36.9	812	292	36.0	1,550	564	36.4
50-59	632	234	37.0	566	249	44.0	1,198	483	40.3
60 and over	851	382	44.9	777	314	40.4	1,628	696	42.8
Total	7,779	2,169	27.9	7,102	2,250	31.6	14,881	4,419	29.7

Considering the prevalence rates a positive linear relationship exists between age and guinea worm disease in the LGA; because prevalence rates are low lower for lower age-groups and higher for higher age-groups. Childhood or old age is no barrier to infection and/or re-infection neither is sex of persons; guinea worm is, therefore, not age and sex selective.

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3.4 GUINEA WORM DISEASE AS IT AFFECTS MARITAL STATUS

50.2% of the 14,881 persons in the survey were found to be married while 43.8%, 5.1% and 0.6% were single, widowed and divorced respectively.

Amongst the 4,419 guinea worm cases 2,637 (i.e. 59.7%) were married, 1,467 (i.e. 23.2%) were single and 286 (i.e. 6.5%) were widowed. Against total population in Moro LGA we could say that 22.5% of the singles, 35.3% of married persons, 21.3% of divorcees and 37.7% of widowed persons have guinea worm disease.

TABLE 4

DISTRIBUTION OF PERSONS BY MARITAL STATUS AND SEX AND BY PREVALENCE OF GUINEA WORM IN MORO LGA, KOGI STATE, 1985

Marital Status	Males		Females		Both males & Females	
	Population	Having guinea worm (%)	Population	Having guinea worm (%)	Population	Having guinea worm (%)
Single	3,937	716(33.0)	2,574	751(29.2)	6,511	1,467(33.2)
Married	3,606	1,374(63.4)	3,870	1,263(56.1)	7,476	2,637(59.7)
Divorced	84	19(0.9)	5	0(0.0)	89	19(0.4)
Widowed	118	53(2.4)	640	233(10.4)	758	286(6.5)
Not Stated	34	7(0.3)	13	3(0.1)	47	10(0.2)
Total	7,779	2,169(100.0)	7,102	2,250(100.0)	14,881	4,419(100.0)

Within each status we found out that 233 (i.e. 36.4%) of the 640 widows and 53 (i.e. 44.9%) of the 118 widowers pass through a painful combination of agony (one would not like to undergo) of guinea worm disease and memory of the loss of a loved one to take care during the long period of incapacitation.

1,374 (i.e. 38.12) of the 3,606 married males and 1,263 (i.e. 32.6%) of the 3,870 married females could not perform most of their marital duties for upwards of 8 - 10 weeks of the disease, and when per chance husband and wife are affected at the same time then their conditions are better imagined than experienced.

Amongst the singles 716 (i.e. 18.2%) of the 3,937 males were affected while 751 (i.e. 29.2%) of the 2,574 females had the infection. 19 (i.e. 22.6%) of male divorces had the infection while no female divorcee was infected.

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A picture which presents itself clearly shows that apart from the singles, Males in the other marital statuses had the disease more often than their female counterparts.

3.5 LEVEL OF EDUCATION, OCCUPATIONS AND PREVALENCE RATES.

30.8% of illiterates were found to be affected by guinea worm while 27.6% of those in/or attended primary school, 28.5% of those in/or attended secondary/Teachers' Grade II schools and 2.4% with post secondary/Teachers' Grade II education had guinea worm disease in Moro LGA. Only Males with post secondary/Teachers' grade II education were affected, no female with such level of education was found to be affected by guinea worm. Persons with secondary/Teachers' grade II education whether males or females were found to be more affected than persons with only primary education. One would then suggest that College curricula be updated to embrace Health Education so that, for instance, the essence of boiling drinking water whenever people are posted to rural areas would be appreciated.

With respect to occupations (see table 5) questions were only asked about the head of households and their wives (where applicable).

TABLE 5

OCCUPATION OF HEADS OF HOUSEHOLDS AND THOSE OF THEIR WIVES IN MORO L.G.A, 31 MARCH, 1984

Occupation	Males		Females		Both Males & Females	
	Population	Having guinea worm(%)	Population	Having guinea worm (%)	Population	Having guinea worm (%)
Farming	1,471	932(63.4)	824	552(67.0)	2,295	1,484(64.7)
Trading	40	33(82.5)	896	496(55.4)	936	529(57.5)
Teaching	53	21(39.6)	23	7(30.4)	76	28(36.8)
Civil Service	55	24(43.6)	2	0(0.0)	57	24(42.1)
Carpentary	29	23(79.3)	0	0(0.0)	29	23(79.3)
Bricklaying	12	9(75.0)	0	0(0.0)	12	9(75.0)
Others (e.g. students tailoring	161	97(60.2)	168	82(48.8)	329	179(54.4)
None	38	17(44.7)	116	79(68.1)	154	96(62.3)

1,484 (i.e.64.7%) of the 2,295 farmers had the disease. Moro being an agricultural LGA thus has its mainstay of its economy badly affected. 58.5% of the petty traders, 36.8% of the Teachers, 42.1% of civil Servants, 79.3% of carpenters and 75.0% of Bricklayers were found to be affected by guinea worm. 54.4% of persons in other occupations were affected.

63.4% of male farmers and 67.0% of the female farmers were affected while 82.5% male traders and 55.4% female traders had the disease. In case of teachers 39.6% of the male teachers and 30.4% of the female teachers got infected. No female civil servant was found to be affected while 43.6% of the male civil servants were found to have got the disease.

3.6 ANATOMICAL LOCATION OF INFECTION.

Guinea worm is a disease that can affect any part of the body and at the same time the worm can emerge from several locations. Even within one anotomical location emergence can occur in up to 8 places but these are not taken care off in our exercise. We analysed data only for the first mentioned anatomical location. Despite the indiscriminateness in its attack, guinea worm tends to make the leg its favourite location in the whole of man's anatomy. 2096 (i.e. 47.4%) of total cases of the disease (see table 6) were found to affect the legs 16.8% got affected on their feet while 8.4%, 8.2%, 5.3%, 3.0% and 0.9% were located on the arms, thighs, hands, trunks and buttocks respectively. 10.0% of all cases were located in other parts of the body.

TABLE 6

NUMBER OF GUINEA WORM CASES BY FIRST MENTIONED ANATOMICAL LOCATION OF INFECTION BY SEX, MORO LGA 31 MARCH 1985

Anatomical Location of Infection	Male (%)	Female (%)	Bothe Male & Female (%)
Foot	378(17.4)	363(16.1)	741(16.8)
Leg	971(44.8)	1,125(50.0)	2,096(47.4)
Thigh	192(8.8)	172(7.7)	364(8.2)
Buttock	23(1.1)	15(0.7)	38(0.9)
Arm	160(7.4)	210(9.3)	370(8.4)
Hand	110(5.1)	123(5.5)	233(5.3)
Trunk	81(3.7)	52(2.3)	133(3.0)
Other parts of the body	254(11.7)	190(8.4)	444(10.0)
Total	2,169(100.0)	2,250(100.0)	4,419(100.0)

Thus at least 73.3% of infections were located in the lower extremity of man while at least 16.7% of the [illegible] infections were located in the upper extremity. Differences with respect to sex is negligible. We found out that at least 1,008 persons (i.e. 22.8%) of the 4,419 persons affected were infected in more than one anatomical locations thus a person could be affected on the foot as well as the thighs or private parts at the same time.

3.7 NUMBER OF WEEKS UNABLE TO WORK BY PERSONS AFFECTED.

The 4,419 persons affected by the disease were found to be unable to work for a total of 37,746 weeks. This shows that they have lost 2,113,776 (i.e 2.1 million) man hours assuming 8 working hours a day.

TABLE 7

NUMBER OF PERSONS AFFECTED BY GUINEA WORM AND NUMBER OF WEEKS UNABLE TO WORK BY DISTRICTS IN MORO LGA, 31 MARCH, 1985

Districts	Number of persons affected by guinea worm			Number of weeks unable to work			Average number of weeks unable to work.		
	Male	Female	Both male & Female	Male	Female	Both Male & female	Male	Female	Both Male & Female
Ejidongari	1,516	1,599	3,115	12,707	13,245	25,952	8	8	8
Ipaiye	36	39	75	283	398	681	8	10	9
Lanwa	312	305	617	2,802	2,661	5,463	9	9	9
Malete	39	44	83	273	373	646	7	9	8
Oloru	266	263	529	2,748	2,256	5,004	10	9	10
Total	2,169	2,250	4,419	18,813	18,933	37,746	9	8	9

In two of the 5 districts (Ipaiye and Malete) where the disease is not as prev prevalent as in the other three districts, the women lost more man days/weeks than the men. In highly prevalent areas Ejidongari and Lanwa districts, the men and women have same average number of weeks unable to work. Against the background that Moro LGA is an agricultural area and we have already seen that 64.7% of the heads of households and wives are farmers (table 5), agricultural output would be greatly affected as the disease appears to be deliberately selective of the peak-farming-activity period, coupled with the weak health of the farmers.

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Average number of weeks unable to work by persons affected by the disease is 8 - 10 weeks. For men the average is 9 weeks and it is 8 weeks for women. The sex and district variations can be studied from table 7.

3.8 WATER SOURCES AND PREVALENCE RATES

Out of the 851 households found to be using the stream as main source of drinking water 524 (i.e. 61.6%) were affected. 705 (i.e. 81.4%) of the 866 households using the pond got the disease while 301 households (i.e. 26.2%) of the 1,149 households using the wells were affected. 9 (i.e.40.9%) of the 22 households using other sources of water were also affected. Variation amongst households according to districts and different water sources can be studied in table 8.

TABLE 8

DISTRIBUTION OF HOUSEHOLDS BY DISTRICTS BY WATER SOURCES AND NUMBER HAVING GUINEA WORM IN MORO L.G.A., KG, MARCH 1985

District	Stream		Pond		Well		Other sources		Not Stated	
	No of house holds using	No of house holds having g.worm	No of House holds using	No of house holds having g.worm	No of house holds using	No of house holds having g.worm	No of house holds using	No of house holds having g.worm	No of house holds using	No of house holds having g.worm
Ejidongari	433	318	553	492	25	18	2	0	57	27
Ipaiye	24	1	38	22	68	12	2	0	84	13
Lanwa	142	78	142	122	0	0	10	3	29	9
Malete	35	24	48	26	0	0	0	0	4	0
Oloru	217	103	85	43	1,056	271	8	6	66	3
Total	851	524	866	705	1,149	301	22	9	240	52

We can see the prevalence rates among water sources and between sexes in table 9. For the whole ponulation 46.7% of pond users were infected by gu nea worm. 25.8% of stream users had the disease while 9.9.% of well users and 18.6% of users of other sources (spring etc) had the disease.

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TABLE 9

NUMBER OF PERSONS BY WATER SOURCES AND BY PREVALENCE RATE AND BY SEX, MORO L. G. A. , 31 MARCH 1985

Water Sources	Male			Female			Both Male & Female		
	Population	Having guinea worm	Prevalence rate (%)	Population	Having guinea worm	Prevalence rate (%)	Population	Having guinea worm	Prevalence rate (%)
Stream	2,715	691	25.4	2,546	668	26.2	5,261	1,359	25.8
Pond	2,877	1,278	44.4	2,790	1,368	49.0	5,667	2,646	46.7
Well	1,419	119	8.4	1,096	131	12.0	2,515	250	9.9
Other Sources	59	12	20.3	43	7	16.3	102	19	18.6
Not stated	709	69	9.7	627	76	12.1	1,336	145	10.8
Total	7,779	2,169	27.9	7,102	2,250	31.7	14,881	4,419	29.7

With the exception of other sources of water the females have higher susceptibility, than Males, to contact guinea worm disease when they both drink from the stream, pond or well.

3.9 OTHER PREVALENCE RATES.

Infection was found not to be wealth, occupation or religions dependent in Moro LGA.

3.9.1 RELIGION.

Considering the population as a whole out of the 4,419 persons affected by the disease 3,690 (i.e. 83.5%) were muslims, 669 (i.e.15.1%) were christians and 60(i.e. 1.4%) were traditionalists.

Of the 9,098 muslims in the survey, 3,690 (i.e 40.6%) had guinea worm disease. 42.5% of muslim males and 38.9% of female muslims had the disease while 11.1% of Male Christians and 15.8% of female christians were affected. On the whole of 5,170 christians 669 (i.e. 12.9%) had guinea worm disease. For traditionalists out of the 613 in the survey 60 (i.e.9.8%) of them had the disease. 7.3% of Males and 15.0% of female traditionlists had the disease.

3.9.2 PLACE OF ORIGIN

Out of the 14,881 persons in the survey 12,628 (i.e. 84.9%) of them were found in their places of origin whereas 2,253 (i.e.15.1%) moved in from elsewhere - other communities.

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Of the 4,419 guinea worm cases 87.1% were residing in their places of origin and 12.9% moved in from communities other than the ones in which they were enumerated. 97.2% of males living in their places of origin and 2.8% of those not living in their places of origin were affected. On the other hand 77.3% of females enumerated in their places of origin and 22.7% of females who moved to survey villages had the disease.

Out of the 12,628 persons found in their places of origin 3,849 (i.e. 30.5%) had guinea worm whereas of the 2253 whose places of origin are different from survey villages 570 (i.e.25.3%) had guinea worm.

When sex is brought to play with places of origin we found out that 2109 (i.e. 30.7%) of the 6,869 males in places of origin and 60 (i.e. 6.6%) of the 910 of males originating from other villages were affected by guinea worm. For females 1,740 (i.e.30.2%) of 5,759 living in places of origin and 510 (i.e. 38.0%) of those who came from other villages apart from the ones in which they were enumerated had the disease. This shows that females who have moved from other villages different from those in which they were enumerated have higher susceptibility to have guinea worm than males. One of the major causes for moving from one village to another is marriage. Marriage is therefore an effective medium of spreading guinea worm disease.

3.9.3 DURATION OF RESIDENCE.

Out of all persons having guinea worm 0.1% of them were found to be within their first year of residence in survey villages. This is a clear case of micro migratory effect on guinea worm.

91.8% with infection had stayed over 6 years in survey villages while 4.9% with infection stayed between 4-6 years and 3.2% having infection had stayed between 1-4 years in survey-villages. Guinea worm is well known in most of the villages and the longer one stays in the villages the higher the risk of infection.

3.10 CONCLUSION.

Manual analysis, by few hands, of the different information concerning 14,881 persons was not easy. This accounted for the delay in releasing the report.

The damage caused by guinea worm to the health and other socio-economic aspects of the people of Moro LGA is beyond description and the magnitude as revealed by our data has continued to humble us. Our consolation is that,

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after the data gathering exercise, water has been provided in most of the villages we visited and as the people, hopefully, now shift from their traditional water sources to the modern borehole-hand-pumps, we hope they would be released into a state of boom in their health and socio-economic lives which had hitherto eluded most of them or was a mere day dream to some.

Our thanks to the team mates especially the now late mallam Haruna Abubakar (driver) for the field work and analysis.

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21st April, 1986.

FIRST REPORT OF DATA GATHERING EXERCISE IN FIFTY-SIX (56) VILLAGES IN MORO L.G.A. GUINEA WORM ERADICATION AREA.

Away from home and away from office and township environments into the harsh realities of this guinea savannah region of Moro Local Government Area (LGA) and into the villages such as Atawin (in Ejidongari district), Piribiri (in Lenwa district), Oniko (in Malete district), Ore and Niasa (both in Oloru district), one gets deeply moved with the sufferings of man, woman and children who lie for weeks, writhing in severe pains and long incapacitation during this season's peak period of guinea worm infection.

Yet the disease is preventable and eradicatable through the provision of good water, thereby releasing the people of this LGA into a healthy state never before enjoyed by their forebears, releasing them into a state of boom in their social and economic life and releasing them perhaps also into active religious, political and cultural activities which tacitly would give credit to UNICEF - Assisted Projects.

This first part of the report is based on findings from 56 villages in Moro LGA of Kwara State. A house to house enumeration of the population and those of them with a history of guinea worm was undertaken using three lists viz: list of UNICEF - Assisted Project villages submitted by the state Executive council, list of guinea worm villages submitted by both University of Ilorin and the state Ministry of Health. The purpose of the data gathering was to use the findings to assist the management of the Project to make a rational choice of villages to benefit from the first-phase.

The field work undertaken between 21st February - 19th March, 1985 reveals a great variation in the endemicity of guinea worm. The disease is not endemic in Ilorin and Malete districts as it is in Ejidongari, Lenwa and Oloru districts. Perhaps it is due to the lower population densities per unit of kilometer or perhaps their traditional water sources are free from the disease (?).

...../?...

The cases found at Ipaiye district, for instance at Oloworu village, were as a result of in-migration of infected persons coming to farm or as marriage partners. Could this account for the low percentage of infection in the district as compared with other districts ?. Most of the villages in Moro LGA lack perenial streams/rivers and water shortage reaches unpredictable level during the long dry season. In other to avoid the spread of the disease in Ipaiye and Malete districts, the names listed in the table below are recommended for boreholes/ handpumps. However, Ipaiye has an abandoned Federal borehole since 1980 while Malete appears to get irregular supply of water from their pipes. The state utility Board (water corporation has a dam at Malete).

The table presented below contains the resident populations of the villages concerned. The resident populations are the ratios of population per handpumps to be provided. The table also shows the total number of households that will benefit, number of people in each village affected by guinea worm and the corresponding percentage.

Malete, Oloru and Lanwa were not covered by the field work because we saw water flowing from some taps at Malete while Biwater company is very busy working at Oloru. Lanwa has a proposed Federal borehole. Elemere was covered but it would benefit from Biwater Project.

LIST OF SOME GUINEA WORM VILLAGES IN IKPO LOCAL GOVERNMENT AREA 19/3/85

S/No	VILLAGE	No.of Residential houses	No.of house-holds	Total Resident Population	Number of people ever affected by guineaworm	% of people affected by guinea worm	Remarks.
	LANWA DISTRICT						
1.	Agbaku	15	63	157	76	48.4	Recommended. The Villages are located opposite each other.
2.	Osie	33	50	203	5	2.5	
3.	Orogun	25	27	118	21	17.8	Recommended.
4.	Mafara	24	37	151	18	11.9	Recommended.
5.	Biribiri	31	43	201	131	65.2	Recommended.
6.	Ile pupa	13	16	85	39	45.9	Recommended at the new site along Jebba Road they are moving to.
7.	Adekanbi	19	27	134	81	60.4	Recommended.
8.	Awesu	5	5	16	3	18.8	Both villages expressed strong intention to move to Bode Saadu
9.	Onigbenra I&II	6	9	32	11	34.4	
10.	Eleja Nla	24	39	176	77	43.8	Recommended
11.	Bako	17	40	267	155	58.1	Recommended
12.	Lanwa	S k i p p e d (Federal borehole)					
	EJIDINGARI DISTRICT						
13.	Pieleshin	36	40	438	423	96.6	Recommended.
14.	Cloko	41	66	251	140	55.8	Recommended.
15.	Sagi	50	77	368	171	46.5	Recommended.
16.	Igboemu	48	73	538	477	88.7	Recommended 2 boreholes
17.	Budo Oba	23	34	173	88	50.9	Recommending 2 boreholes one at BudoOba/Gbangbalak and the other at Ogunbo.
18.	Gbangbalako	30	33	148	92	62.2	
19.	Ogunbo	36	55	230	117	50.9	

S/No.	Village	No. of Residential Houses	No. of House-Holds	Total Resident Population	Number of people ever affected by guineaworm	% of people affected by guineaworm	Remarks.
20.	Okutala	114	176	979	562	57.4	Recommended for 2 boreholes. (Proposed Fed. govt earth da
21.	Ilufenwa	17	35	192	104	54.2	Recommended.
22.	Amu	37	58	371	262	70.6	Recommended.
23.	Abogunrin	15	19	62	23	37.1	Recommended.
24.	Jokolu	45	73	408	221	54.2	Recommended.
25.	Atanwin	6	9	30	20	66.7	Recommended because of high prevalence rate. The village of Sumaila would benefit.
26.	Akuo	37	54	186	64	34.4	Recommended.
27.	Jodoma	26	34	145	51	35.2)	One borehole recommended
28.	Budo Alfa	10	15	66	25	37.9)	for the 2 villages.
29.	Babadudu	58	73	307	143	46.6	Recommended
30.	Afunkinkin	15	15	66	26	39.4	Recommended. Agbaku-Eji would also benefit from it.
31.	Agbawe	9	10	35	8	22.9	For 2nd phase if not possible now.
32.	Ejidongari	53	83	350	81	23.1	Fed. Borehole. (Recommended)
33	Fanto	(inhabitants not interested. No co-operation).					
34.	Olokiti (I & II)	46	53	169	17	10.1	Recommended between the two villages.
35.	Alaba	S k i p p e d					
	IPAIYE DISTRICT						
36.	Ipaiye	93	150	490	55	11.2	Abandoned Federal borehole, Recommended.
37.	Oloworu	31	46	247	9	3.6	Recommended.
38.	Arobadi	32	41	118	11	9.3	Recommended.

S/No.	Village	No. of Residential Houses	No. of House-Holds.	Total Resident Population	Number of people ever affected by guineaworm	% of people affected by guineaworm	Remarks.
	MALETE DISTRICT						
39.	Logun	10	13	56	∅	0.0	No trace of guinea worm infection.
40.	Chiko	17	35	157	50	31.8)	Recommended for Chiko.
41.	Asipa	3	7	26	9	34.6 }	
42.	Agaa	26	29	107	24	22.4	Recommended.
43.	Malete	S k i p p e d		(Water Corporation dam?)			
	OLORU DISTRICT						
44.	Apata Oko	4 houses (no co-operation)					
45.	Elemere	40	100	457	79	17.3	Not recommended ONLY because of Biwater Project.
46.	Oloru	Skipped - Biwater Project in Progress.					
47.	Aboye	17	31	168	19	11.3	Recommended.
48.	Alagbede	28	41	153	13	8.5	Recommended.
49.	Adama	45	61	175	120	68.6	Recommended.
50.	Olugbija	14	22	73	43	58.9	Recommended.
51.	Mama	19	26	77	35	45.4	Recommended.
52.	Shao	444	864	4,248	37	0.9	Strongly recommending at least 8 handpumps.
53.	Oloni	S k i p p e d					
54.	Alara	60	112	431	58	13.5	Recommending 2 boreholes
55.	Abati	4 buildings (no co-operation)					
56.	Masankoro	9	30	123	3	2.4	Recommended.
57.	Idiose	21	29	97	16	16.5	Recommended.
58.	Asonu	26	57	289	15	5.2	Recommended.
59.	Ore	18	28	96	46	47.9	Recommended.
60.	[illegible]	18	43	2[illegible]	45	18.7	Recommended.

This report in its entirety would strongly advocate for boreholes in between 40-45 villages in the LGA within this first phase. This is because we have declared a war on guinea-worm infection and it ought to be a total war considering the high prevalence of the infection and the high inter-village interactions amongst the people in the LGA as a result of marriage, funeral and other arrangements. It should not matter much if Moro LGA is declared UNICEF guinea-worm-baby-district in Kwara State, perhaps in Nigeria.

SPECIAL CASES.

ATAWIN:- Atawin is a small village of 30 people. 2 out of every 3 persons had severe infection during the field work. The Mogaji has turned pale following the long period of incapacitation. The walls of his house damaged by rainstorm has nearly fallen on him and his wife. He would have been starving to death now had it not been some sympathisers from neighbouring villages that helped him to harvest some of his crops. Of all the villages visited during the exercise Atawin was the only one that had humbled all team members most. No one could talk until after 22 kilometers from the village. It would be appreciated if this small village is given a borehole. The village of Sumaila (same size but about a kilometer away) would benefit from the hand-pump. The strenuous 14 hourly field-work per day we undertook would not bring us joy until safe water is seen to flow from a handpump at Atawin.

ILE PUPA: This village could not be reached by our vehicle because of the railway. The villagers have decided to move across the rail-line to a site along Jebba road. The borehole for the village should be sited at their new site.

SHAO TOWN:

Shao is a small town of at least 4,248 resident population as at 19th March, 1985. A 20% sample size was selected and covered. Shao has an interesting historical past that is not matched with modern facilities, good water source inclusive. Most of whatever functions at Shao appear to be done through communal efforts. Such communal responsibilities would certainly be felt by this project.

On the basis of about 500 persons per handpump this report is recommending in very strong terms at least 8 (eight) handpumps for Shao. Even with the 8 it is envisaged that the

water demand pressure would be high. Perhaps Shao is going to be a test case for this project to function in small Kwara Towns the type of which might be encountered as we move to other Local government areas. Shao has posed a challenge that the project authority should handle confidently.

NON - COOPERATING VILLAGES.

Apataoke and Abati (each with 4 residential houses with estimated population 36), Fanto (about 17 houses with an estimate of 153 persons) refused bluntly to be enumerated. A great deal of patience and time were taken, to explain and re-explain the purposes and benefits of the exercise, the type of handpumps and VIP latrines that would become theirs etc but they said their villages do not want such facilities. A plea that when they see other villages benefitting from the project in no distant future might lead them to regret did not even move them to co-operate.

CONCLUSION.

This report would suggest that when the second rig is delivered to this project, one starts work around Shao and works along Oloru, Malete and Ipaiye district while the second rig works in Ejidongari and Lanwa districts.

Subsequent reports would contain details of guinea worm statistics in the LGA.

The field exercise is too much for the present crew of staff and any future exercise would entail recruiting temporary enumerators if no way to employ permanent ones.

T.O. Alabi
(STATISTICIAN)

Evaluation Course Exercise.

Evaluation Course Unicef/IRC June 1986

EVALUATION REPORT OF THE HEALTH EDUCATION COMPONENT OF KWARA STATE WATER AND SANITATION PROGRAMME.

1. INTRODUCTION

The Kwara State water and sanitation Programme was launched on 16th July, 1984. The main objectives are to eradicate guinea worm and reduce the incidence of (gastro-intestinal diseases through the provision of potable drinking water, construction of VIP latrines, and the establishment of a village based health education system.

2. REASONS FOR EVALUATION

The main evaluation issue is that the health education component of the programme is not working as well as intended. The Village based workers were trained by the project and entrusted with the responsibilities for thirteen basic health messages to end users in the intervention communities while the local government health education team is expected to provide supervision and support.

3. EVALUATION OBJECTIVES.

1. To establish whether or not health messages have reached the end users.
2. To establish reasons for failure and suggest alternative ways of improving health education.
3. To identify programme strengths if any.

Based on these broad objectives, the following issues were explored in great depth;

1. What are the thirteen basic health messages the end users are expected to know (7 basic messages + 6 Kwara special messages).
2. Which of these thirteen messages have the end users heard?
3. Through what channels did they get these messages e.g. VBWS, nurses, radio or town crier?
4. To what extent have the end users put the messages to use?

5. If not what are the reasons for failure:
   (a) inadequacy of manpower
   (b) poor logistic support
   (c) lack of job satisfaction
   (d) poor supervision
   (e) inapproriateness and inadequacy of training and field experience
   (f) the duration and content of training

4. METHODOLOGY: The evaluation team comprised of Gunner Schultzberg, Arit Abasiekong, Steve Adkisson, May Anyabolu, Timothy Alabi and Kwaji Kwaya.

The main evaluation strategy was based on the use of desk study of project materials; observation at pumpsite, household surroundings and VIP latrine locations; survey of village women and conducting of interviews with the state project Health Education Team and the village based workers.

5. FINDING AND CONCLUSIONS.

5.1 VBW

FINDINGS(A): ACTIVENESS OF VBWs

1. The VBWs go around the households in the villages at least 3 times a week.
2. All the 8 women interviewed knew their VBWs by name while 6 out of the 8 of them were visited within a week.

CONCLUSION (A)
VBWs appear to be very active in both villages.

FINDINGS (B): INEFFECTIVENESS OF VBWS

1. 7 out of 8 women interviewed remembered only 2 of the 13 basic health messages. Personal Hygiene and environmental sanitation were well understood whereas EPI, ORT, guinea worm message and others did not get through.

2. 6 out of 12 Water collectors washed their containers. Again only one ofthem covered the container.
3. Despite the fact that the two handpumps in a village were functioning, some villagers were fetching water from the open wells and one confessed that he was going to drink the well water.
4. It was observed that drinking water pot were covered in 3 out of 13 homes examined.

CONCLUSION (B)

Despite the fact that the VBWs are active, they were not very effective in delivering their 13 health messages.

5.2 IDENTIFIED FACTORS INFLUENCING VBW EFFECTIVENESS

5. FINDINGS (C): TRAINING.

1. One of the trainers could not describe ORS correctly.
2. The VBWs expressed desire for more training on certain aspects, e.g. eatiology of diseases and ability to convince mothers to take their sick children to the clinic.
3. All the VBWs interviewed failed to mention ORT, EPI, guinea worm and child nutrition as important aspects of their duties.

CONCLUSION (C)

The training given to both the Trainers and VBWs is considered inadequate.

FINDINGS (D): TRANSPORTATION.

1. The LGA Chairman, Administrative Officer, Senior Assistant Secretary for Health, the LGA Health Education Team, The VBWs and the State Project Health Educator, all expressed

lack of transportation as a major handicap.

2. The LGA Health Education Team Members are forced to use their own transportation for official duties without fuel re-imbursement.

> CONCLUSION (D)
>
> Lack of transportation hampered the effectiveness of health education component.

FINDINGS (E): COMMUNICATION

1. Upon interview on issues such as period of [illegible] and follow-up visits, the state health education team leader, LGA Health Education Team and the VBWs gave conflicting answers.

> CONCLUSION (E)
>
> There is a wide communication gap between the state project health education team, LGA team and the VBWS.

FINDINGS (F): REMUNERATION

1. 2 out of 3 VBWs expressed lack of remuneration as their major problem.
2. All the VBWs interviewed complained of being overworked.

> CONCLUSION (G)
>
> Although the VBWs are presently active there is a strong indication that this enthusiasm may not be sustained for long.

TEAM

1. GUNNAR SHULTZBERG
2. STEVE ADKISSON
3. ARIT ABASIEKONG
4. MAY ANYABOLU
5. KWAJI KWAYA
6. TIMOTHY ALARI

28 JUNE, 1986.

RECOMMENDATIONS

I. VBWs in study villages should be commended and encouraged to continue their work, they are potential resource persons for new VBWs and those showing low motivation in other villages.

II. Health Education Training sylabus should be reviewed and duration of training programmes extended for both trainers and trainees.

III. An aggressive refresher course for present VBWs should be initiated with special emphasis on ORT, EPI, Guinea Worm Eradication and child Nutrition Messages. A leadership training module should also be included.

IV. To reinforce delivery of the seven basic health messages at the village level, information billboards should be installed at every borehole. The durability of the materials used should be improved and worn materials replaced.

V. Health Education Component of Project should be adequately supported with appropriate transport at the state, LGA, and village levels.

VI. Where Health Education staff are compelled to use their own vehicles for execution of official duties they should be paid their kilometer claims promptly from project funds.

VII. To promote communication among project health education staff, monthly reports should be circulated between state and LGA teams. Regular meetings of concerned staff at all levels should be scheduled.

VIII. To sustain and enhance VBW effectiveness and motivation, awareness for their remunenation should be explored.

IX. To insure that these recommendations are implemented, the state Project Manager should circulate this evaluation to all appropriate personnel and make reports on actions taken.

UNICEF-ASSISTED WATER AND SANITATION PROJECT
QUESTIONNAIRE FOR BASELINE SURVEY

(Head of household or wife, where head absent, to be interviewed)

LOCATION /_____/

1. State /_____/ 2. L.G.A. /_____/

3. District/Community /_____/ 4. Village /_____/

5. Date /_____/ 6. Interviewer /_____/

FAMILY DATA

7. Household size, No. of persons resident /_____/

8. No. of males (over 12 years) /_____/

9. No. of females (over 12 years) /_____/

10. No. of small children (under 12 years) /_____/

11. Are any of these people your tenants? /____/

12. If so, how many /____/

13. Are you married Yes /____/ No /____/

14. Head of household: : Male /____/ Female /____/

15. What is your major occupation? Subsistence farming /____/

Large-scale farming /____/ Trading /____/

Hand craft/village based industry /____/ ; Fishing /____/

Civil servant /____/; Other, please specify /_____/

HEALTH AND SANITATION

16. Have any of your household had one of the following diseases during the last three months?

Diarrhoea /____/	Adults /____/	Small children /____/
Dysentry /____/	Adults /____/	Small children /____/
Measles /____/	Adults /____/	Small children /____/
Guinea warm /____/	Adults /____/	Small children /____/
Malaria /____/	Adults /____/	Small children /____/
Intestinal worm /____/	Adults /____/	Small children /____/
Other, specify /_____/	Adults /____/	Small children /____/

(Adult - person over 12 years, small children - person under 12 years)

17. In your view, what was the cause of this illness?

i) Bad weather [ ] ii) By God [ ] iii) Bad water [ ]

iv) Bad food [ ] v) Witchcraft [ ] vi) Other [ ]

vii) Don't know [ ]

18. How did you treat these diseases?

i) Home treatment [ ] ii) Herbalist [ ] iii) Doctor [ ]

iv) Hospital [ ] v) Religious head [ ] vi) None [ ]

HOUSING

19. Of what materials is your house built?

i) Cement blocks with zinc roof [ ] ii) Mud walls with thatch roof [ ]

iii) Mud walls with zinc roof [ ] iv) Wooden wall with thatch roof [ ]

v) Zinc sheet [ ] vi) Others specify [ ]

20. How many rooms are there in your house? [ ]

21. What is the layout of your dwelling?

i. Compound fence/wall with single dwelling inside [ ]

ii. Compound fence/wall with several dwelling inside [ ]

iii. Dwelling with no compound fence/wall [ ]

iv. Dwelling with no compound fence/wall and central courtyard [ ]

22. Do you have space available for siting of latrine? Yes [ ] No [ ]

23. Do you own any of the following? -

Radio [ ] Television [ ] Motorcycle [ ] Car [ ]

Bicycle [ ]

WATER COLLECTION AND STORAGE

24. Where do you obtain water for drinking and cooking?

		Length of Time	Preferred Source
(A)	Traditional well [ ]	[ ]	[ ]
(B)	River/stream [ ]	[ ]	[ ]
(C)	Spring [ ]	[ ]	[ ]
(D)	Pond [ ]	[ ]	[ ]
(E)	Handpump [ ]	[ ]	[ ]
(F)	Piped supply [ ]	[ ]	[ ]
(G)	Other, please specify [ ]	[ ]	[ ]

25. Who fetches water to the house?

i) Adult male [ ] ii) Adult female [ ] iii) School aged male [ ]

iv) School aged female v) Other, specify [ ]

26. Who maintains the water source(s) you use

i) Yourself [ ] ii) Community [ ] iii) Owner [ ]

iv) Other, specify [ ]

27. How much do you pay for water each month? (if no payment, write 'NIL')

[ ] [ ] [ ]

28. If you buy water. for how many months in one year do you buy?

i) Less than 3 months [ ] ii) 3-6 months [ ] iii) Full year [ ]

(iv) Nil [ ]

29. What do you store water for **drinking?**

i) enamel bowl [ ] ii) clay pot [ ] iii) tins/drums [ ]

iv) plastic jerrycan [ ] v) metal water tank [ ]

vi) Other, please specify [ ] (tick more than one where applicable)

30. Is stored water covered? Yes [ ] No [ ]

31. What do you think about your drinking water?

A. Tastes good [ ] i) Tastes bad [ ] ii) Don't know [ ]

B. Does it have odour? Yes [ ] No [ ]

32. If you think your water is bad, why do you think so (Mark where applicable)

i) Causes sickness [ ] ii) Dirty [ ] iii) Salty [ ]

iv) Other, specify [ ]

33. Which sickness does bad water cause?

i)..... ii)..... iii).....

iv).....

34. How do you make bad water good (fill in as many as are applicable)

1)..... ii)..... iii)..... iv) Don't know [ ]

35. Will you be willing to pay for safe and good source of water?

i) Yes [ ] ii) No [ ] iii) Don't know [ ]

36. Would you help build and maintain this source? (Mark all applicable)

i. By labour ☐ ii. By cash ☐ iii. Other ☐

HUMAN EXCRETA DISPOSAL

37. Where do you ease yourself	men	women	and children
Bush	☐	☐	☐
Wrap and throw	☐	☐	☐
Log latrine	☐	☐	☐
Communal trench latrine	☐	☐	☐
Traditional pit latrine	☐	☐	☐
Flush toilet	☐	☐	☐
Stream/River	☐	☐	☐
Anywhere	☐	☐	☐

38. Why do you choose the method(s) above?

i. Traditional, ☐ ii) Easy technolog ☐ iii) cheap ☐ iv) No other alternative ☐

39. What do you use for cleaning after defecation?

	adults	small children
corn cobs	☐	☐
leaves	☐	☐
piece of wood	☐	☐
paper	☐	☐
water	☐	☐
Other, please specify	☐	☐

40. How do you dispose of cleaning materials?

Down latrine ☐ store and burn ☐ throw away ☐

41. Do you think that A. Adult excreta is dangerous i) Yes ☐ ii. No ☐
iii. Don't know ☐

B. Baby's excreta is dangerous i) Yes ☐ ii) No ☐
iii) Don't know ☐

42. If you have a latrine, who do you share it with?

i) Other family members [ ] ii) Male family members only [ ]

iii) Female family members only [ ] iv) All members of the household [ ]

v) Neighbours [ ] vi) Others, please specify [ ]

43. If you have no latrine, would you be interested in having one in your house or compound?

i. YES [ ] ii. NO [ ] iii. Don't know [ ]

44. If you have a traditional pit latrine, does it have -

i) superstructure [ ] ii) squatting slab (concrete, wood and mud, etc.) [ ]

iii) vent pipe [ ]

PERSONAL HYGIENE

45. Where does the family take baths (tick one for each category A-C)

a) Inside the house [ ] b) Right outside the house [ ]

c) River, stream pond, etc. [ ]

46. Do the people wash their hands?

a) After defecation i) YES [ ] ii) NO [ ]

b) Before eating i) YES [ ] ii) NO [ ]

c) After tilling ground i) YES [ ] ii) NO [ ]

47. Are you satisfied to bathe in the same source used for drinking?

i) YES [ ] ii) NO [ ] If no, why not?

48. Is there stagnant water lying near your house? Where does it come from (put N.A. if answer is NO for place)

A) i. NO [ ] ii. YES [ ]

REFUSE DISPOSAL

49. Where and how do you dispose of your refuse?

i) burn [ ] ii) bury [ ] iii) throw away [ ]

iv) throw into stream/river [ ]

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