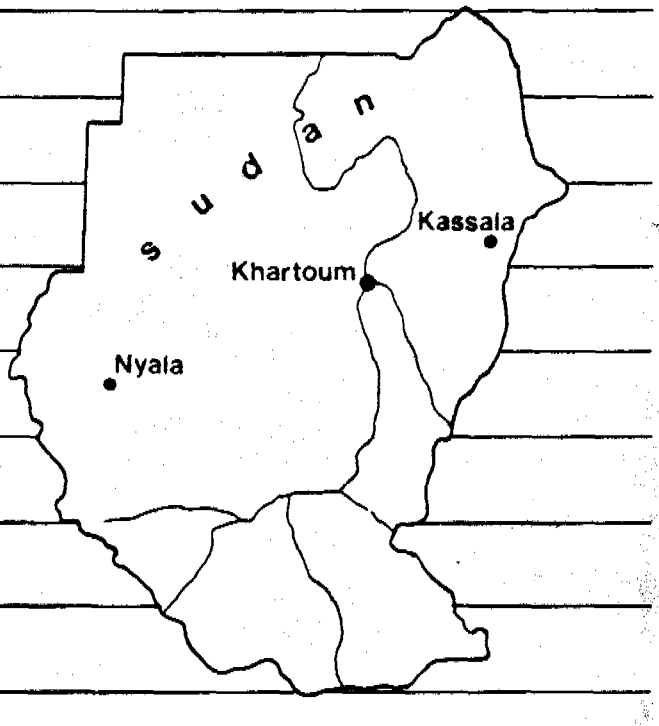
lib

Water resources assessment and development project in the **Sudan** (WADS)



Manuals for extension workers

Appendix H

MANUALS

for

EXTENSION WORKERS

Water Resources Assessment and
Development Project in Sudan
WADS Nyala
July 1989

FINAL REPORT WADS

The final report of WADS consists of:

Main Report (March, 1990)

Appendices

A. Information Centre

B. Hydrogeological map of Sudan

C. Hydrogeological databank

D. Technical Committee Kassala + Annexes (2 volumes)

E. Modelstudy Gash Basin

F. Village water supply programme South Darfur

G. Extension for village water supply

H. Manuals for extension workers

J. Hydrogeology and development of the water resources of South Darfur

K. Siting for hand-dug wells

L. Construction and maintenance of hand-dug wells

M. Aspects of a masterplan for groundwater development in South Darfur

N. Hydrogeological studies South Darfur

O Technical Committee Nyala-Geneina

P. Training

Table of Contents

List of Acronyms and Abbreviations

CHW	Community Health Worker
H/hh	Household
IRC	International Reference Centre for Water Supply and Sanitation
IWSS	Improved Water Supply System
l/lts	Litre(s)
l/c/d	Litre per capita per day
LS	Sudanese Pound
MOH	Ministry of Health
MSF(B)	Medecins Sans Frontières (Belgium)
NCDRWR	National Corporation for Development of Rural Water Resources
NGO	Non-Governmental Organization
PHCU	Primary Health Care Unit
RC	Rural Council
SRC	Sudanese Red Crescent
VHC	Village Health Committee
VLOM	Village Level Operation and Maintenance
VPS	Village Project Section
VWC	Village Water Committee
VWSP	Village Water Supply Programme
WADS	Water Resources Assessment and Development Project in Sudan

INTRODUCTION

1 General

This report contains the manuals for extension workers, as presently used in the Village Water Supply Programme of the project. The manuals were partly developed by the extension workers themselves, who also designed much of the shown or described material.

The report has been prepared by the Water Resources Assessment and Development Project in Sudan (WADS), which was executed by the NCDRWR in Khartoum and TNO-DGV Institute of Applied Geoscience of Delft, the Netherlands and was financed by the Sudanese and Dutch Governments.
The project started in 1986 and was completed by mid 1989.
The Village Water Supply component, however, started only in the first half of 1987, and will now be continued for a period of five years under similar financing.

The report is Appendix H of the final project report which deals with all project activities, and should be read as an annex to Appendix G of the final report: "Extension for Village Water Supply".
For the framework within which the extension activities took place, reference is made to Appendix F of the final report: "Village Water Supply Programme South Darfur".

2 Summary of extension work

In the villages eligible for an improved water supply system by means of hand dug wells with or without windlass, an organization has to be set up, and arrangements have to be made, for participation by the village in the fields of planning, implementation, operation and maintenance of the systems.

The first two extension visits to a village deal with these subjects. They should result in the signing of a contract between the village and the project, after which siting and construction can start.

During the visits baseline data is collected by observation and interviews, and meetings with men and women respectively are held. There the terms of contract, the pro's and con's of different technological options, and the desirable organizational form for the distribution of village tasks are explained and discussed.

Once the contract has been signed, a site selected, the well constructed (and the windlass installed, if that option is chosen by the village), the operation and maintenance aspects of the system become important.

The wells constructed by the project are open, and hence they are liable to contamination by private buckets and ropes if those are not clean. In fact, this can also happen when a windlass has been installed, for example when people are not willing to queue during rush hours.
When the area around the well is not kept clean, and communal buckets are not properly handled, similar effects can be expected.

Education of water collectors and users on operation of the system is necessary to safeguard the quality of the water in the well.
Moreover, clear responsibilities should be assigned within the village organization to protect the well and keep the immediate surroundings clean.
Water may also become contaminated during transport and storage at home, and thus people should be trained in proper ways of handling the water.

However, the relationship between clean (not to be mistaken for clear) water and health conditions in the village, is not yet understood by the large majority of the population.

"Training of trainers on village level", in casu the members of the Village Health Committee, seems to be a reasonable approach for the dissemination of practical topics on water related hygiene. For that purpose a training course of three days in consecutive weeks has been designed.
The course is conducted by the project's extension workers, shortly after inauguration of the well.

Various factors may influence the patterns of water collection and consumption. Distance, means of transport, lifting device, household size, number of livestock, seem to be the most striking ones so far.

Knowledge of these relations is of prime importance, for policy adaptations may possibly be derived from it.
Monitoring surveys on this subject are carried out by the extension workers.

It goes without saying that the "tricks of the trade" of communication cannot be conveyed in a manual. Extension workers can only gradually build up their experience by practice in the field. Moreover, some people are just fit for the job and others are not. Knowledge and skills, however, can be acquired and the manuals presented in this report are meant to serve that purpose.

They should be considered as guidelines and aides to memory for extension workers in the preparation and execution of the fieldwork, and in the processing and analysis of collected data.
Manuals and computer programmes for the processing of monitoring data on the efficiency of operation and maintenance on village level, are now under preparation.

3 The manuals

The "Manual for Pre-construction Extension", which is used for the first two extension visits, forms Part A of this report.

Part B is the "Manual for Hygiene Extension in Villages with an Open Well". A number of versions have preceded this manual, which presumably will have to be adapted again in due time.

For the collection of field data and their processing into formats suitable for interpretation, a methodology was developed which is described in Part C: "Manual for Monitoring of Water Collection and Consumption".
It includes a users manual for the data processing programme "QUEST", which was prepared by the WADS Database in Khartoum.

PART A

MANUAL FOR PRE-CONSTRUCTION EXTENSION

Table of Contents

ANNEXES

1 FIRST VISIT TO THE VILLAGE

Purpose:

1. Draw a village sketch map (see below).
2. Collect baseline data about history, organization and financing of community projects and about the health condition pre-vailing in the village.
   (Questionnaire for key-informants)
3. Give response to the villagers' request for an Improved Water Supply System.
4. Introduce WADS - VWS Programme to the villagers.
5. Give an overview on forthcoming activities.

Participants:

Head of the Village Project Section

Village authorities

Extension workers (male/female)

As many villagers as possible

Tasks to perform:

1. <u>Draw a village sketch map</u>

   Make a tour around the village with the village authorities, and draw the sketch map. For instructions see Annex H.A.1.

   Identify the target group: those who actually want to participate in the WADS-programme

2. <u>Do interviews with key-persons of the village: Questionnaire</u>

   Do also further informal interviews with the villagers on the topics of the questionnaire and on the general water situation of the village.

   Note findings on Reporting Form: Remarks.

3. WADS - Well

3.1. Explain why the technical design of the WADS-well is kept simple: open well with slab, drainage, soak pit, with or without windlass (but: foundations laid for future installation), and a fence.

Relate the technical design to:
- low installation costs
- easy maintenance
- low maintenance costs

Maintenance costs:
- purchase of cement
- compensation for preventive and corrective maintenance activities
- purchase of communal buckets/ropes

Point out the consequences of technologically more sophisticated I.W.S.S. with respect to cash contribution (installation costs), maintenance costs and spare parts supply.

3.2 Give information about the costs of the WADS-well: about LS 40.000 , and mention the sum the villagers are asked to pay: LS 1000/1250 (without / with windlass).

3.3. If the village population is larger than 1.000 inhabitants, the villagers can apply for a second well.

4. Community Participation

4.1 Point out that the WADS well is designed as a community project where all villagers should participate and have a say in:
- labour and cash contribution
- decision making (lifting device/siting)
- maintenance
- training events
- hygiene-education programme
- monitoring/follow-up

4.2 Emphasize that WADS will assist the villagers to find a solution for all aspects and activities mentioned concerning the WADS village water supply project.

The WADS extension workers will make first proposals.
If the villagers disagree, they are welcome to come up with counter-proposals.

But these should be the outcome of a village meeting where all villagers have a say.
Proposals should not reflect the opinion and interest of individuals and dominant groups only.

5. Well Site

5.1 Explain procedure of well-siting (test drilling) and the choice the villagers have: at least two sites should be proposed by the villagers.

Point out, that the last decision for the well site depends on the hydrological verdict.

Emphasize, that the proposals made by the villagers for the site of the WADS -village well should be the outcome of a village meeting.
Nobody should be disadvantaged, otherwise the well-site turns out to become a source of trouble and nobody feels responsible any more for proper operation and maintenance of the WADS -well.

5.2 If a promising well site can be found only on a private plot, e.g. agricultural land, the VWC and the village authorities are responsible to find a solution accepted by all villagers.
Public access to the WADS -village well must be guaranteed.

5.3 If "distance to the WADS-well" should be one criterion for participation in the WADS -project, what would be the maximum acceptable distance for the villagers/hamlets?
Make notes, use Reporting Forms.

6. Village Level Organization and Maintenance

6.1 The villagers should form a VWC and a VHCin such a way, that all tribal segments and/or localities (hamlets) are represented.
Give example.

6.2 Caretakers: two skilled persons (at best masons) should be appointed for technical maintenance tasks.
At the end of the well-construction a training will be given to the caretakers, the VWC and the VHC.

Upon the compensation of the caretakers (in cash or in kind) all villagers should agree: village meeting.

6.3 Point out the need to involve especially women in 'hygiene at the well-site'.
Water and Health belong to the household sphere and are thus women's task.

But emphasize that all men of the village should give full support to the women, because all will benefit from a reliable water source that provides all villagers with sufficient and safe water throughout the whole year.

A reduction of water related diseases prevailing in the village can be expected, if for hygiene at the well site is cared and more water is used at home and stored/handled in a safe way.

6.4 Stress the importance of Key Persons like sheikh/a imam, agiid, CHW, local doctors and the school-teacher in giving support to the WADS-VWSP.

Ask the school-teacher, if available, if school classes can support the VHC in cleaning the site in the form of a 'training event in hygiene'?

7. Hygiene-Education

7.1 Proper operation and maintenance of the WADS-well is basic to keep the water source safe. But more must be done with respect to hygiene in order to experience 'better health through safe water':

- cleaning buckets regularly: safe water transport
- cleaning well site/drainage/soak-pit/slab regularly
- to build a fence in order to keep animals away from the water source

- safe water storage at home

- to use more water for personal hygiene, especially for children

7.2 Explain that the WADS/MOH will start a Hygiene Programme in this village after the well has been constructed.
All villagers should participate in order to reduce the occurring water related diseases in the village:

- diarrhoea
- eye-infections
- stomach ache
- kidney ache
- dysentery
- (malaria)
- skin diseases

8. Contract

8.1 Present the contract and explain point by point. Leave time to the villagers to comment on it. Pick up each question raised.

8.2 Hand over the 'hand out', where all responsibilities on part of the villagers and on part of WADS are explained in detail.

For the next meeting all villagers (men and women) should be fully acquainted with its content and prepare questions on the topics mentioned.

8.3 Give approximate time schedule of coming activities.

8.4 Mention, that the villagers have priority right in using the WADS well. All who contribute with labour and cash do have equal user rights.

The actual owner remains the NCDRWR as the official representative of the Sudanese government.

9. Tasks for the villagers for the next meeting

a - forming of a VWC according to the WADS-proposals
b - forming of a VHC according to the WADS-proposals
c - appointment of two caretakers and agreement on compensation for their services
d - proposal of at least two well-sites
e - proposal how to organize labour supply
f - proposal how to organize cash contribution
g - proposal how to organize 'fence building'

10. Summary of committees'/caretakers' tasks and responsibilities

10.1 Caretakers:

- participation in construction of the well
- participation in training event (including installation of water lifting device)
- maintenance of water lifting device
- repairing of breaks in the slab/drainage

10.2 Village Water Committee:

- appointment of 2 caretakers
- signing contract in Nyala
- organization of labour-teams (12 persons) for test drilling (3 to 5 days) and construction (3 to 4 weeks)
- construction and maintenance of a fence
- participation in installation of water lifting device
- proposal of 2 sites: agreement reached in village meeting
- appointment of VWC-representative in Village Health Committee
- responsible for financial matters
- responsible for cement/spare parts supply
- introduction of system operation to nomads
- communication with RC/NCDRWR/WADS/MOH
- supervision and support of caretakers
- support of VHC in performing its duties
- organize monthly meetings with caretakers and VHC.

10.3 **Village Health Committee:**

- contract signing
- supervise and promote hygienic behaviour at well site and in households
- household visits for monitoring storage and discuss hygiene
- organizing well site cleaning parties, if possible with support of school teacher / pupils and VWC
- prevent animals to enter inside the fence
- reporting of any constraint faced at the well site during water collection to the VWC
- introduction of system operation to nomads'
- participation in Hygiene-Education Programme and follow-up
- monitor sanitary condition at well and water transport
- organize neighbourhood hygiene education meetings
- co-ordinate with VWC and caretaker

11. <u>Date for second meeting</u>

Make an appointment for the next meeting: Committee members, caretakers, village authorities and as many villagers as possible should be present for the second and last meeting.

Method of collecting information:
- questionnaire
- observation
- informal interviews
- drawing sketch map
- discussion

Method of giving information:
- contract
- hand out
- formal presentation of the WADS-programme
- discussion
- photos

Documentation:
- questionnaire
- village sketch map
- reporting forms
- field notes

2 SECOND VISIT TO THE VILLAGE

Purpose: 1. Give response to questions raised by the villagers concerning the first visit.

2. Explain tasks of the VWC, VIC and CTs in detail.

Participants:

WADS-extension team

Village authorities and key-persons

As many villagers as possible

Tasks to perform:

1. Check (sketch map) if committees are formed according to the WADS-proposals: names, tribe, hamlet.

2. Check if Caretakers are appointed: names, profession, tribe, hamlet.

3. Ask for proposed well-sites.

Check in sketch map who could be disadvantaged. Discuss this matter with the villagers.

4. Present and discuss tasks of the VWC:

4.1 Money collection for cash contribution

a - point out that LS 1000 is a small sum the villagers are asked to pay, compared with the costs of the well: about LS 40,000.

b - for some villagers the contribution might still be a burden, because they are poor. Ask, if the villagers ever established 'payment categories' in order to match inequality of wealth.

c - explain that the money has to be paid when the contract is signed in Nyala/WADS office not later than 14 days from today on.
But point out: the earlier the villagers show up, the earlier the WADS-activities can start.

d - for maintenance the villagers themselves are responsible, including covering the maintenance costs:
  - purchase of cement
  - compensation of caretakers
  - substitution of buckets/ropes

4.2 Labour supply - Test drilling

12 villagers should help in test-drilling, in order to find the most suitable well-site with respect to

- water quantity
- distance to the village

A number of test holes will be drilled.

The villagers should decide for the final well-site after consultation with the WADS-geohydrologists.

Test drilling will take about 3 days.

Proposal: The appointment of labourers should be organized through the VWC members, so that each segment/hamlet contributes.

Because: Who does not contribute with labour looses priority right in using the well.

4.3 Labour supply - Construction

For the whole period of well construction (4 to 6 weeks) 12 villagers should participate.

Proposal: The appointment of labourers should be organized through the VWC members, so that each segment/hamlet contributes.

Because: Who does not contribute with labour looses priority right in using the well.

Caretakers should be members of the village labour team.

4.4 Material supply

Sand, gravel and stones are needed for well construction.

The villagers should help to bring this material to the well site with trucks provided by WADS.

5. Fence building

At the end of the well construction the VWC organizes that a fence will be built (diameter 15 m) in order to keep animals away from the well site, and to demarcate the boundary for laundry.

The fence must be strong so that it is not washed away by floods.

6. Training organized by WADS

6.1 The caretakers appointed by the VWC, and the members of the VWC should take part in a half day training on the technical maintenance tasks (preventive and corrective) of the well.

6.2 The VWC and the VHC should join a one day training at the well site concerning operation, maintenance and hygienic needs of the well.

6.3 The VHC members should participate in a training course of 3 days on hygiene education.

6.4 As many women as possible should take part in the evening sessions of this course, whereby the VHC has the lead.
Afterwards, the VHC will carry out elementary water hygiene education at the household level.

7. Well use by nomads

If nomads camp in the vicinity of the village and use the WADS well, the VWC and the VHC will organize a meeting with the nomads (men and women) and introduce:

- mode of system operation
- responsible persons (VWC-/VHC members / Caretakers)

8. Monitoring visits

WADS is still in the pilot phase and many lessons still have to be learned, concerning the organization of operation and maintenance, and improvement of health conditions in the village.

Project staff will frequent the villages in order to get information (observation and interviews) which may take some time from the villagers.

Point out that in the end the villages will profit from this because of improved project performance, education material, technical designs, etc.

9. Answer any question raised by the villagers.

Point out again that the last date for contract signing is 14 days from now, and ask the villagers to speed up.

Method of collecting information:
- observation
- informal interviews
- discussion

Method of giving information:
- contract
- hand out
- discussion
- photos, slides
- flip-chart
- pin-/flannel board

Documentation:
- reporting form
- field notes

ANNEXES

ANNEX A.1

INSTRUCTION FOR DRAWING VILLAGE SKETCH MAP

INSTRUCTION FOR DRAWING VILLAGE SKETCH MAP

An example is shown on page A-18.

Indicate the following on the map:

1. Major wadi's, roads and tracks.
   North arrow.

2. Localities that make up the village.

   Note distance of these localities to the main village.
   Give numbers.
   Use yellow colour.

3. Localities of the various tribal segments
   (main village and detached localities).

   Give letters.
   Use blue colour.

4. Compound of office holders and their tribal identity:

   - Sheikh(s) SH + Deputy SHD
   - Sheikha(s) SHA + Deputy SHAD
   - Imam I + Deputy ID
   - Agiid A + Deputy AD
   - School teacher ST
   - Community health worker CHW

   Use green colour

5. Compound of committee members + specific compound of "Head of the committee":

   - Men village committee : MVC; MVCH
   - Women village committee : WVC; WVCH
   - Administration committee: AC; ACH
   - WADS village water committee: WVWC; WVWCH
   - Others

   Use red colour

   Note: If office holders live near to each other in a certain location of the village, consider the rest of the main village as a location on its own.

6. Location of:

- Mosque M
- Village shop VS
- Grain mill GM
- P.H.C.U. PHCU
- Bakery BA
- Soukh SOU
- School SCH
- Others

7. Location of:

water sources used by the villagers.

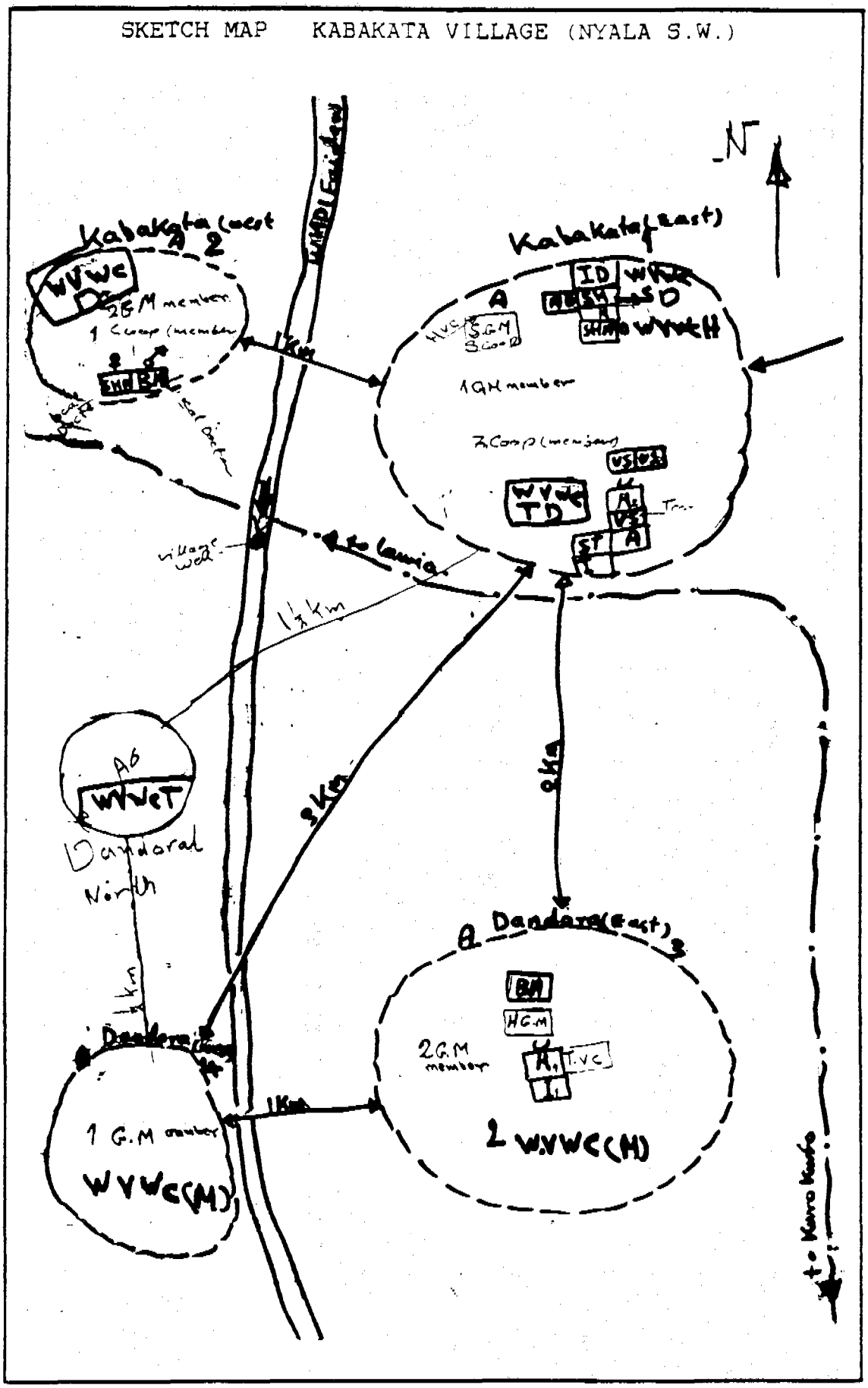
Note distance of these sources to the main village.

8. Location of:

WADS-well sites proposed by the villagers: VWS

9. Mark hamlets/segments that do not participate in the WADS - village water supply project.

SKETCH MAP KABAKATA VILLAGE (NYALA S.W.)



ANNEX A.2

QUESTIONNAIRE FOR KEY-INFORMANTS

QUESTIONNAIRE FOR KEY-INFORMANTS

Name of village : Date :

Village Council : Interviewer:

Rural Council :

Name(s) of sheikh(s) :

Name(s) of sheikha(s) :

Infrastructure :

School (primary)	O	
School (secondary)	O	
Dispensary	O	
P.H.C.U.	O	
Soukh	O	Day :
Grain mill	O	
Bakery	O	
Village shop	O	
Others	O	: _____

1. Population size

a - Number of inhabitants _____

b - Number of compounds _____

2. Tribal groups living in the village

Name of tribe	Percentage (%)
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____

3. Nomads

a - How many nomads settle in the vicinity of the village?

individuals _____

camps (fariq) _____

b - What tribes do they belong to?

_____

_____

_____

_____

c - At what time of the year do they arrive?

_____

d - Where do they come from?

_____

e - With how much livestock do they move?

- cattle _____
- goats _____
- sheep _____
- camels _____
- horses _____
- donkeys _____

f - At what time of the year do they leave?

_____

g - Where do they then go to?

_____

4. Community projects

a - Name projects:

_____

_____

_____

_____

b - Way of financing these projects:

_____

_____

_____

c - Highest amount of money collected:

_____

d - Do all villagers co-operate in these projects?

O yes O no

e - If not, which segments/hamlets not, and for what reason?

_____

_____

_____

_____

f - How is communal work organized?

_____

_____

_____

_____

g - Which projects in the village are:

private _____

_____

co-operatives _____

_____

communal _____

_____

h - Does the village have a community fund?

O yes O no

If yes, with how much cash? _____

i - Ways of collecting money in the village:

O per head O per household O men only

O men contribute more than women

O payment categories established

k - Does the community co-operate with other villages in community - projects?

O yes O no

If yes, name co-operating villages and projects:

Village	Project
_____	_____
_____	_____
_____	_____

5. <u>Which facilities do the villagers need most?</u>

_____

_____

_____

6. Committees in the village

a - Name the different committees (most important ones):

_____

_____

_____

b - Mode of selection of committee members:

* Each tribal segment and each hamlet is represented:

O yes O no

* One or more dominant groups only are represented in the committees (name tribal segments):

_____

_____

c - Committee members:

Tribal identity _____

_____

Indicate compound on village sketch map!

d - Women's participation

In which way are women active community members?
Name activities:

_____

_____

_____

How are women organized in the village?

_____

_____

_____

How often do they meet?

_____

How do men's and women's committees exchange information?

_____

_____

_____

7. Health

a - Number of

medical assistant	_____
C.H.W.	_____
midwife	_____
Daia Habil	_____
Faki	_____
Basir	_____
Menaziel	_____
Shellani	_____
----------	
latrines	_____

b - Main diseases in the village

	dry season	wet
Men	_____	_____
	_____	_____
	_____	_____
Women	_____	_____
	_____	_____
	_____	_____
Children	_____	_____
	_____	_____
	_____ _____	_____

c - Health Care Costs:

How much money per household per year do villagers spend for curing diseases?

_____

How are the costs distributed?

Men : _____

Women: _____

Which diseases are most costly to cure?

_____

_____

_____

8. Artisans

a - What kind of artisans are living in this village?

_____

_____

_____

b - How many masons are living in the village? _____

c - If none, which person from which village will do masonry when that is needed?

_____

What is the distance to that village? _____

d - How many blacksmiths live in the village? _____

9. WADS - Village Water Supply Programme

a - Who actually will participate in the project?

Name the hamlets (sketch map), which do not participate in the village water supply project:

_____

_____

_____

b - Note the reasons given by the villagers for not participating:

_____

_____

_____

c - How many people will actually get water from the WADS - well, especially during the dry season?

Give approximate figures:

Villagers _____ cross-check with number of inhabitants (1.)!

Nomads _____

Neighbour villagers _____

d - How will village authorities behave, when "outsiders" want to use the WADS - well?

_____

_____

_____

_____

10. Remarks

Note down additional information on topics of this questionnaire, received through observation and informal interviews with the villagers.

ANNEX A.3

SPECIMEN OF CONTRACT

(Arabic and English)

WATER RESOURCES ASSESSMENT & DEVELOPMENT PROGRAM IN THE SUDAN

برنامج تقييم وتنمية مصادر المياه في السودان

WADS

Ministry Of Energy and Mining
Khartoum
National Water Corporation
P. O. Box 381
Tel. 74343

The Directorate Of
International
Technical Assistance The Hague
Institute Of Applied Geoscience
DGV - TNO Delft
c/o Royal Netherlands Embassy
P. O. Box 391
Khartoum Tel. 77788

عقد حفر بئر عادية

Date :

Our ref.:

Your ref.:

١/ عام: لقد تم بموجب هذا العقد أن يقوم مشروع تقييم وتنمية مصادر المياه في السودان ممثلاً للهيئة القومية لتنمية موارد المياه الريفيه (ويعرف فيما بعد بالطرف الأول) بحفر بئر عادى لاهالى قرية _____ بمجلس ريفى _____ الممثلين فى لجنة مياه القرية (وتعرف فيما بعد بالطرف الثانى)

٢/ الالتزامات

أولاً: الطرف الأول

أ/ يقوم بالمسح الاولى للقرية واجراءات الدراسة الجيولوجية لتحديد موقع لحفر بئر لمياه الشرب •

ب/ يقوم بتوفير الأدوات الأنشائية من أسمنت وحصى وطوب لتشييد البئر •

ج/ يقوم بدفع مرتبات وأجور وعلاوات العاملين بالمشروع الذين اشتركوا فى حفر وتشييد البئر •

د/ يقوم بترحيل العاملين بالمشروع وكذلك ترحيل المعدات والمواد المطلوبة لتشييد البئر •

هـ/ أعادة حفر بئر أخرى فى حالة فشل البئر الاولى الا اذا كان الفشل بسبب: /

١/ عدم ايفاء الطرف الثانى لألتزاماته

٢/ عدم وجود موقع أخر بالقرية يكون جيداً من النواحى الجيولوجية •

و/ تدريب الملاحظ ولجنة مياه القرية على مهامهم •

ثانياً: الطرف الثانى :

أ/ (١) دفع مبلغ (١٠٠٠) ألف جنيه تفاصيلها كالتى : /

(٢٥٠) مئتان وخمسون جنيهاً (غير مستردة) عبارة عن رسوم لمسح القرية واجراء الدراسات الجيولوجية • (٧٥٠) سبعمائة وخمسون جنيهاً (مستردة فى حالة عدم ايفاء الطرف الأول بالتزاماته) وهى عبارة عن مساهمة القرية فى حفر البئر على أن يتم الدفع بمبانى المشروع الهولندى مباشرة بعد امضاء العقد •

ب/ تقديم العقد بعد امضائه والمبلغ المذكور اعلاه فى النقطة أ/ فى خلال ١٤ يوماً تبدأ من يوم استلام القرية للعقد •

يعتبر العقد لاغياً فى حالة عدم تقديمه فى الفترة المقررة وهى ١٤ يوماً من استلامه

ع/ قبول موقع البئر المحدد بواسطة المشروع الا اذا حددت الدراسة الجيولوجية وجود مواقع بديلة بالقرية فعلى مجلس مياه القرية اختيار موقع من المواقع البديلة فى فترة اقصاها ثلاثه أيام فقط •

د / توفير المواد المطلوبة محلياً خلال فترة العمل (من خوصلنة ورمل وحجارة وماء) لتشييد البئر.

هـ/ قبول تصميم البئر المقدم من المشروع

و/ المشاركة الفعالة في : /

١/ تكوين لجنة مياه القرية وتقديم اسمائها للمجلس الريفي تقوم اللجنة برفع تقارير دوريه للمجلس الريفي لضمان تشغيل وصيانة البئر.

٢/ تكوين لجنة الصحة بالقرية وتقديم اسمائها للمجلس الريفي . سينال اعضاء لجنة الصحة تدريب في النواحي الصحية وسيكون برنامج التدريب مشترك بين المشروع ووزارة الصحة تقوم اللجنة برفع تقارير دوريه للمشروع الهولندي .

٣/ توفير العمالة بصورة متواصلة خلال فترتي الدراسات الجيولوجية وحفر وتشييد البئر على ان لا يقل عددهم في اي وقت عن اثنى عشر عامل .

٤/ بناء سور حول البئر مباشرة بعد انتهاء التشييد وذلك تحت اشراف قسم تشييد الآبار بالمشروع .

٥/ تعيين ملاحظ للبئر للاشراف عليها دورياً .

على الملاحظ : /

أ/ المشاركة في البرنامج التدريبي الذي يقدم بواسطة المشروع

ب/ رفع تقارير دورية للجنة الصحة بالقرية

ثانيا: التحكيم:

تحكم لجنة التسيير في حالة حدوث خلافات بين لجنة مياه القرية والمشروع تتكون لجنة التسيير على النحو التالي : /

١/ السيد / المدير التنفيذي لمديرية جنوب دارفور	رئيساً
٢/ السيد / المدير السوداني المناوب للمشروع/نيالا	عضواً ومقرراً
٣/ السيد / مدير الهيئة القومية لتنمية موارد المياه الريفيه	عضواً
٤/ السيد / مدير أدارة صيانة التوة واستثمار الاراضي /نيالا	عضواً
٥/ السيد / المدير الاداري لمنطقة نيالا	عضواً
٦/ السيد / المدير الاداري لمنطقة عد الغنم /	عضواً
٧/ السيد / مدير الشئون الصحية /نيالا	عضواً

رابعاً: التوقيعات

مشروع تقييم وتنمية مصادر المياه في السودان

الأسم : _____ الأمضاء _____ التاريخ _____

لجنة مياه القرية

الأسم

١/ _____ الأمضاء _____

٢/ _____ الامضاء _____

٣/ _____ الامضاء _____

التاريخ _____

صوره الى : / ١/ لجنة مياه القرية

٢/ مجلس ريفي .....

٣/ سجلات المشروع

CONTRACT FOR CONSTRUCTION OF A DUG WELL

1. General

According to this contract the WADS project representing NCDRWR (later known as first part), will construct a dug well to the people of ..... village of ..... Rural Council, represented by the Village Water Committee (later known as second part).

2. Obligations.

2.1 First part:

a. To do the village survey and hydrogeological study to locate a site for digging a water well.

b. To provide the materials (cement, steel, bricks) used in the construction of the well.

c. To pay the salaries, wages, allowances, etc. that concern its personnel contributing in the construction of the well.

d. To transport its staff, the equipment and the materials which will be used for the construction of the well.

e. To construct another well in case of failure. No other well will be constructed if failure is due to:
   - the second part does not fulfil its obligations;
   - there is no other good site in the village from hydrogeological point of view.

f. To train caretakers, Village Water Committee members and Village Health Committee members in their tasks as they are defined in the side contract.

2.2 Second part:

a. To pay a lump sum of LS 1000.00 which includes:
   - LS 250.00 (non-refundable) representing the cost of village survey and hydrogeological study.
   - LS 750.00 (refundable if the first part does not fulfil its obligations), representing contribution of the village in the construction of the well.

   Payment shall be made to the WADS project in Nyala, immediately after signing the contract.

b. To submit to the WADS project in Nyala the signed contract and the sum mentioned under 2.2.a. within a period of 14 days, counting from the day of receipt of the contract by the Village.
   The contract will be regarded null and void, if this period is not strictly adhered to.

c. To accept the location of the well sited by the WADS project. In case alternative locations can be offered after the hydrogeological studies, a final decision on the site of the well shall be made by the Village Water Committee within maximum three days.

d. To provide any local materials (sand, gravel, stone, water, etc.) required for the construction.

e. To accept the design of the well as prepared by the project.

f. To participate actively in:

1. The formation of a Village Water Committee, which has a reporting relationship towards the Rural Council and towards WADS, in order to ensure a proper operation and maintenance of the WADS village well.
The members of the Village Water Committee will get introduced into their tasks by WADS during a "training" course.
The names of the office holders and other members of the Village Water Committee will be made known to the Rural Council office.

2. The formation of a Health Committee. Its members will take part in a hygiene education programme, organized by WADS in co-operation with the Ministry of Health. The Health Committee will report to the Village Water Committee about its progress.
The names of the office holders and other members of the Health Committee will be made known to the Rural Council Office.

3. The provision of labourers for the hydrogeological investigations and for the construction of the well, throughout the period of studies and construction.
The number of labourers should not be less than twelve (12).

4. The building of a fence around the well site immediately after well construction under the supervision of the WADS construction team.

5. The nomination of two caretakers for the future maintenance of the WADS village well. Their names will be made known to the Rural Council Office.
These caretakers are supposed to:

5.1 participate in a "training" programme provided by WADS.
5.2 report periodically to the Village Water Committee.

3. Arbitration

A Steering Committee will do the arbitration in case of conflicts between the Village Water Committee and the WADS project.
This Committee is presided by the Executive Manager of Southern Darfur Province, and has as its members:

- the Project Manager of WADS (secretary)
- the Manager of NCDRWR Nyala.
- the Manager of Soil Conservation, Land Use and Water Programming Administration, Nyala.
- the Administrative Officer of Central District.
- the Administrative Officer of South West District.

4. Signature

For WADS Project:

Name: Signature:

Date:

For Village Water Committee:

Name: 1. Signature: 1.
2. 2.
3. 3.

Date:

For Village Health Committee:

Name: 1. Signature: 1.
2. 2.
3. 3.

Date:

For Caretakers:

Name: 1. Signature: 1.
2. 2.

Copies of this contract to:
1. Village Water Committee
2. Rural Council
3. WADS project files.

ANNEX A.4

HAND-OUTS FOR VILLAGES

(Arabic version)

1. Introduction of the project
2. Responsibilities of committees
3. Fund collection

Ministry Of Energy and Mining
Khartoum
National Water Corporation
P. O. Box 381
Tel. 74343

قسم أمداد القرى بالمياه

The Directorate Of
International
Technical Assistance The Hague
Institute Of Applied Geoscience
DGV - TNO Delft
c/o Royal Netherlands Embassy
P. O. Box 391
Khartoum Tel. 77788

Date : Our ref. : Your ref :

١/ مذكرة حول أهداف وسياسة المشروع الهولندى

مقدمة : /

المشروع هو نتاج للعلاقات السودانية الهولندية والتى بدأت منذ زمن بعيد وقد بدأ المشروع فى مرحلته الأولى بمديرية جنوب دارفور فى مجال أبحاث المياه فى كل من وادى نيالا ووادى كجا بمنطقة الجنينه وأودية أخرى • بالأضافة الى الأبحاث فى مجال المياه دخل المشروع فى مرحلة عملية لأمداد قرى الريف بالمياه فى كل من مجالس الأرياف الآتية : / كاس ـ جنوب وغرب نيالا ـ عد الغنم ـ كبم •

أهداف المشروع: /

كلكم تعلمون أن الماء هو أساس الحياة • كما جاء فى قوله تعالى (بسم الله الرحمن الرحيم وجعلنا من الماء كل شىء حى) عليه وجود مصدر مائى يكفى حوجة المواطنين طوال السنه ويمدهم بماء نظيف وصحى هو الأساس والبداية فى تحسين وتطوير مرافق أخرى بالقرية •

عليه هدف المشروع هو حفر آبار للمواطنين بقرى مجالس الأرياف المذكورة أعلاه • هذه الآبار ستحفر وتبنى بمواصفات صحية تضمن أستمرارية وجود ماء كافى طوال السنة انشاء الله تعالى •

سياسة المشروع

يعتبر المشروع ان البئر التى ستحفر لكم هى مشروع تعاونى بالقرية لابد وأن يساهم فيه كل المواطنين بالجهد والمال وتعتبر البئر ملك لكم نظير هذه المساهمات ولا بد لأهل القرية جميعاً فى المشاركة الفعالة فى : /

- دفع مبلغ معين محدد فى العقد الذى سيبرم بينكم وبين المشروع بالقرية حتى يتم تسليم البئر لكم •
- البرنامج الصحى الذى سيحدده المشروع بالتعاون مع وزارة الصحة •
- صيانة البئر وانشاء سور واق حولها ونظافتها والألتزام بالصيانة ألتزاماً دائماً يضمن سلامة واستمرارية البئر •

الخطة : ـ

ستصلكم أتيام من المشروع فى أوقات محدده مثلاً سيصلكم المرشدين الحقلين بالمشروع للتدارس معكم ومناقشة كل تفاصيل سياسة المشروع والنشاطات التى سيقوم بها المشروع

بقريتكم هذه .
أيضاً بعد ذلك سيصلكم التيم الذى سيحدد لكم موقع البئر (الموقع الذى يضمن وجود ماء طوال السنة .)

ثم بعد ذلك سيصلكم التيم الذى سيقوم بحفر وبناء البئر بمعاونتكم له بتوفير العمالة والمواد المحلية المطلوبة من رمل وخوصانة وماء .

نوع البئر المقدمة من المشروع

بئر عاديـــــة : /

سيحفر لكم المشروع بئر عادية وستبنى بحلقات أسمنتيه أو بطوب وستكون مساهمتكم فى هذه البئر (١٠٠٠) ألف جنيه سودانى بالأضافة الى صيانة البئر ودفع مرتب الملاحظ .

../سيدة/ :

Ministry Of Energy and Mining
Khartoum
National Water Corporation
P. O. Box 381
Tel. 74343

قسم أمداد القرى بالمياه

The Directorate Of
International
Technical Assistance The Hague
Institute Of Applied Geoscience
DGV - TNO Delft
c/o Royal Netherlands Embassy
P. O. Box 391
Khartoum Tel. 77788

Date : Our ref. : Your ref :

٢/ مذكرة حول تكوين لجنتى الماء والصحة بالقرية
(وتعيين ملاحظ للبئر)

مقدمة:ـ بعد أطلاعكم على العقد لا بد انكم قد وجدتم من التزامات قريتكم هذه تكوين لجنة مياه القرية • ولجنة صحة القرية وتعيين ملاحظ للبئر للاشراف عليها وصيانتها لضمان استمراريتها كمورد ثابت للماء بالقرية
لا بد أنكم تعرفون مدى أهمية التعاون فيما بينكم جميعاً فى قريتكم هذه ولابد أنكم تفهمون جيداً أن غرة التعاون بينكم جميعاً ستكون انشاء الله وجود بئر بها ماء كاف طوال السنه لشربكم لضمان صحة الماء بالبئر لا بد أن تشترك كل قطاعات القرية فى تكوين لجنتى الماء والصحة بالقرية •
لابد أن تشارك جميع المواطنين فى البرامج الصحية التى سيقدمها المشروع بالتعاون مع وزارة الصحة •

اللجان: /

١ـ لجنة مياه القرية: /

من أختصاصات هذه اللجنة :
١/ تكون هذه اللجنة هى حلقة الوصل بين القرية واتيام المشروع العاملة بالقرية (أى مسئولة عن تنظيم العمل) •
٢/ توفير العمالة (١٢ عامل) والمواد المحلية (رمل ـ خرصانة ـ وماء) •
٣/ تكون مسوله عن جمع التبرعات من المواطنيين بالقرية لأيفاء التزامهم الموجود بالعقد •
٤/ أعضاء العقد بالنيابة عن القرية (ثلاثه أعضاء فقط) •
٥/ بعد أكتمال البئر وتسليمها تقوم اللجنة بمتابعة البئر والأهتمام بها ورفع تقارير للمشروع الهولندى/نيالا بذلك •

تكوين اللجنة: /

يراعى فى تكوين هذه اللجنة أن تشمل عضويتها كل أحياء القرية بمختلف تكويناتها لضمان التعاون المطلق بين تلك الاحياء • ولضمان جمع التبرعات من كل احياء القرية حتى تخلق فى المواطنيين جميعاً روح ملكية البئر

والشعور بالمسئولية نحو صيانتها لضمان استمراريتها للحصول على ماء كافى وصحى
(يفضل ان تكون عددية أعضاء اللجنة من ثمانى أعضاء) .

٢/ لجنة صحة القرية :/

من اختصاصات هذه اللجنة :/

١/ الأشراف على الحالة الصحية للصدر (البئر)
٢/ المشاركة فى البرنامج الصحى الذى سيقوم بواسطة المشروع ووزارة الصحة .
٣/ عقد حلقات دراسة للنواحى الصحية لأهالى القرية وخاصة نساء القرية .
٤/ كتابة تقارير للمشروع بالحالة الصحية فى القرية وخاصة حالة البئر الصحية .

تكوين اللجنة : /

يراعى فى تكوين هذه اللجنة أن تشمل هويتها كل أحياء القرية بمختلف تكويناتها وذلك لضمان مشاركة كل احياء القرية فى البرامج (الدروس) الصحية التى ستعقد بالقرية . يستحب فى تكوين هذه اللجنة أكبر عدد من العضوية على أن تكون نسبة عضوية النساء فيها هى الغالب وذلك بحكم أن النساء هن المسؤلات عن جلب الماء والتعامل به فى البيت أكثر من الرجال .

تحديد مكان البئر : /

- سيكون لكم الخيار فى تحديد موقع البئر حيث يراعى فى ذلك اتفاق جميع المواطنيين حول الموقع وخلوه من معوقات أختياره .
- مثل النزاع عليه أو ادعاء أحد المواطيين لملكية ذلك المكان
- اذا أتضح أن المكان الذى اخترتموه غير مناسب من النواحى الجيولوجيه (أى انه لا يوجد ماء بالمكان الذى أخترتموه).

سيطرح لكم تيم (الاوقرنج) (التيم المسؤل عن تحديد مكان الماء) أماكن بديلة لتختاروا منها المكان الذى يناسبكم .

بسم الله الرحمن الرحيم

الهيئة القومية لتنمية موارد المياه الريفية
برنامج تقييم وتنمية مصادر المياه في السودان
مشروع العون الهولندي
ص/ب ١٩٠
نيالا

٣ــ مذكره حول تنظيم جمع المال لتمويل البئر في مرحلة التسيير وصيانتها مستقبـــــــــلا

مقدمة :ــ لضمان استمرارية البئر بطريقة صحية ومرضية لابد من وجود الاشراف التام عليها وصيانة الاجزاء التي تتلف منها .
لابد من وجود شخص مسئول عن تشغيلها والمحافظة على ســـورها والزام كل من يستعمل البئر بالقواعد الصحيه التي تضمن للمواطنين توفر ماء صحي لاستعماله وهو الهدف المنشود كما سبق وأن علمتهم من العقد أن هنالك التزام مالي من جانب قريتكم هذه للمشاركـــه في حفر وتشييد البئر وعلى كل المواطنيين بالقرية المساهمة فـــي ذلك حتى تكون البئر ملك للجميع .
سيكون ايضاً هنالك التزام مالي على المواطنيين في استمرارية صيانة البئر كلما احتاجت للصيانة ودفع مرتبات العاملين بها لتشغيلهـــا وصيانتها .

جمع المال :ــ
لابد منكم أن توفروا مال المشاركه في حفر وتشيد البئر ولابد لكـم أن توفروا مستقبلا المال اللازم لصيانة بئركم هذه والا سيصيبهـــا الخراب . وعليه يمكنكم أن تتعاونوا فيما بينكم بجمع التبرعات مستقبلا لجمع المال اللازم لدفع مرتبات العاملين وصيانة البئر .

ANNEX A.5

REPORTING FORM FIRST VISIT

REPORTING FORM FIRST VISIT

Village :

Village Council :

Rural Council :

Extension Workers :

Date of visit :

---

1. Community Participation

Note critical and positive remarks that villagers give on the topics of C.P.:

critical:

---

positive:

---

2. WADS - Well

2.1 Villagers comment on technical design of IWSS

2.2 Villagers comment on 'well-costs and village cash contribution':

2.3 Villagers comment on 'maintenance costs paid by the villagers':

2.4 Villagers' opinion about the need for a second well:

---

3. Well - Site

3.1 If distance to the WADS - well should be a criterion for participation in the WADS - project, what is the maximum distance villagers/hamlets would accept?

3.2 Do village authorities expect any problem, if the final decision for the well-site would fall on a private plot?

O yes O no

If yes, how will they solve it?

---

4. Village Level Operation and Maintenance (VLOM)

4.1 Villagers' comments on forming committees (VWC / VHC) according to the WADS proposals:

4.2 Villagers' comments on 'appointment and compensation of caretakers':

4.3 Do village authorities agree to take over supervision functions with respect to operation and maintenance of the WADS -well?

Sheikh(s):

Sheikha(s):

Hakaama(s):

Immam:

Agiid:

School Teacher:

5. Health

5.1 Note villagers' comments on the implementation of a hygiene-programme after the well has been constructed. Mainly women should be active, but fully supported by the men:

5.2 What relation do villagers see between 'safe water and good health':

---

6. Fence building

6.1 Villagers' comments on 'fence construction':

6.2 Villagers' comments on 'function of fence':

---

7. Remarks on the present water situation in the village:

---

8. Time spent in the village:

---

9. Participants:

Sheikh(s)	o	o	o	o
Sheikha(s)	o	o	o	o
Imam	o			
School Teacher	o			
Daia Hukumia	o			

Male local doctors		Nr.:
Female local doctors		Nr.:
Daia Habil		Nr.:
Villagers:	men	Nr.:
	women	Nr.:

10. Comments on 'participation of villagers in the meeting':

ANNEX A.6

REPORTING FORM SECOND VISIT

REPORTING FORM SECOND VISIT

Village :

Village Council :

Rural Council :

Extension Workers :

Date of visit :

---

1. Have VWC & VHC been formed according to the WADS - proposals?

---

2. Caretakers

2.1 Have caretakers been appointed?

	1.	2.
Names:		
Tribe:		
Hamlet:		
Profession:		

2.2 Has an agreement been reached about compensation of the caretakers?

O yes O no

If yes, what is the agreement?

---

3. Well - Site

3.1 Has an agreement been reached among the villagers with respect to the well-site(s)?

3.2 Check in sketch map: are any hamlets disadvantaged by the villagers' decision?

3.3 If yes, ask the VWC/VHC members especially of the disadvantaged hamlets what they have to say about?

---

4. Financing

4.1 Villagers' comments on 'cash-contribution' and 'payment categories':

4.2 Comments on 'maintenance costs taken over by the villagers':

---

5. Labour - Supply

5.1 Do villagers accept to supply 12 labourers during test drilling and construction activities ?

Villagers' comments:

5.2 Will labourers be paid by the villagers?

O yes O no

5.3 If yes, how much is the daily wage?

5.4 In which way will the labourers be selected?

O Voluntary

O Each tribal segment/hamlet sends labourers through their VWC-representative.

O Sheikh/Agiid will appoint labourers.

6. Do caretakers agree to participate in construction of the well?

O yes O no

If no, what is the reason?

---

7. Comments of villagers on the importance of building a fence:

---

8. Are Caretakers and VHC-members willing to participate in training events?

O yes O no

Comments: ----------

---

10. Time spent in the village:

---

11. Participants:

Sheikh(s)	o	o	o	o
Sheikha(s)	o	o	o	o
Imam	o			
School Teacher	o			
Daia Hukumia	o			

Male local doctors		Nr.:
Female local doctors		Nr.:
Daia Habil		Nr.:
Villagers:	men	Nr.:
	women	Nr.:

PART B

MANUAL FOR HYGIENE EXTENSION IN VILLAGES WITH AN OPEN WELL

Table of Contents

1 INTRODUCTION

Water supply conditions in South Darfur Province are poor: in areas where shallow groundwater is available, the majority of the population depends on shallow wells of limited depth and yield, poor water quality and little structural stability.
Moreover, the distance from the villages to these wells is often great: 3 to 4 km is no exception.

This situation largely contributes to the poor health conditions in the area: at least 50 % of the cases reported to dispensaries and Primary Health Care Units belongs to the categories of water-borne or water-washed diseases.

The Village Water Supply Programme of WADS caters for the construction of open wells with concrete lining, slab and drainage system. If desired, a windlass can be installed for water lifting.
After construction of the wells, a hygiene education training programme is carried out in the villages.

The following project targets were of direct influence on the design of the training programme:

- Sustainability of the systems on village level: operation and maintenance by the village.
- Increased appreciation among villagers of the need of hygienic behaviour and proper handling of water.
- Use of the well throughout the year.
- Increased per capita consumption.

Achievement of these targets would require a very intensive and continuous to the villages for a long period.
This is beyond the capacity and mandate of the WADS project.

The presented training programme must therefore be seen as the first step in a chain of activities:

- training of village level trainers (i.e. the members of the Village Health Committee) by WADS
- training of village women by the VHC
- training of children at home by their mothers and at school by the teacher
- regular monitoring and follow-up by MOH staff.

The basic extension messages derived from the above targets are the following:

- To safeguard the (bacteriological) quality of the water in the well.
- To safeguard the quality of the water unto consumption.
- To use more water for personal and domestic hygiene.
- To use the WADS well throughout the year.

Preventive health care and water belong to the fields of responsibility of women. Therefore, the hygiene education training is aimed at reaching as many women as possible. With the objective of actively involving all participants in the training sessions, the point of departure is adult education:

> All participants (extension workers as well as villagers) come with a certain level of knowledge which may be useful to all, and which can be built upon by all. The training context should thus not be determined by a hierarchical pupil-teacher relation, in which monologues are often held, but by an adult working group, in which dialogue (or open discussion) is necessary.

Together with the villagers an attempt should be made to analyze present behaviour and find acceptable ways of changing it into directions suiting the targets.
This method is practised in three training days held during three consecutive weeks.

The extension team should consist of a woman and a man, in order to reach the target groups.

Three existing publications proved to be of great help in the preparation of the training programme and this manual:

- Anne Hope and Sally Timmel, Training for Transformation. A Handbook for Community Workers. Mambo Press, Gweru, Zimbabwe, 1984.
  Some of the drawings originate from their book.

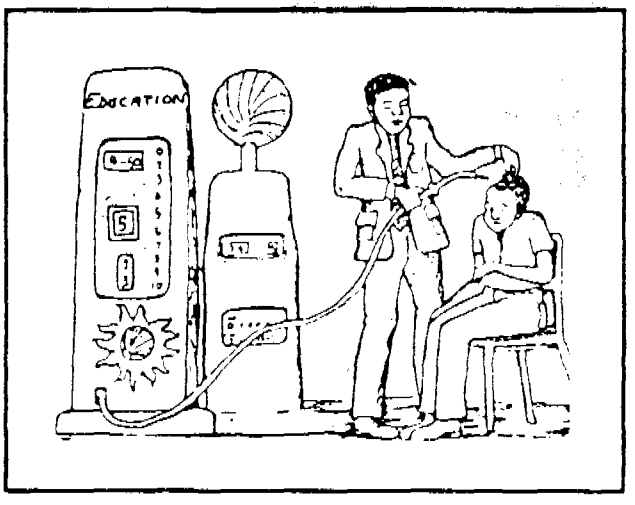
- David Werner and Bill Bower, Helping Health Workers Learn, The Hesperian Foundation, Palo Alto, U.S.A., 1986.

- Christine Ansell and Robert Burrows, Training Manual in Elementary Hygiene/Sanitation and its Instruction, American Save the Children, Yemen Arab Republic, 1981.

Last but not least, this manual is based on the field experiences of the project's extension workers.

2 EXTENSION IS ASKING MANY QUESTIONS

When you try to achieve a change in behaviour, like for example in water-use patterns and hygiene, you have to accept, that the people behave in a certain way for very logical reasons.
It would just not work, if you would try to fill the brains of the people with your knowledge. They are not empty containers which can be filled with knowledge.



For this reason you must provide a framework for the participants of training sessions. They should consider a common problem and find solutions for it by themselves, with your help.

You can do this by asking many questions with:

WHY ? and HOW ?

With such questions a discussion can be started up among the participants.
Questions which can be answered with yes or no, are only asked as an introduction to the **WHY** and HOW questions.

Sometimes the participants will not know the answer to a WHY or HOW question. Only then your specialist knowledge comes in.
In that way you can come to an open discussion with the participants, which enables and motivates them to see that "the way things are done now, is not the only way they could be done".

The training must be an exercise with them, not for them; you can also learn a lot from them.
Therefore, you must:

- respect the knowledge and experience of the villagers,
- listen and understand very well,
- express our insights very clearly, so that also the villagers can understand them;
- diagnose their needs together with them,
- analyze the causes for their problems together with them,
- find solutions for their problems together with them.

Your main task is to help the participants analyze and understand their situation. They will remember much better what they have said and discovered themselves, than what a "teacher" would have told them.
You should not talk much, but encourage discussion in the group, by asking the right questions.

You should summarize when necessary and build on the contributions of the participants.

You have a very important role in setting a good learning climate. You must be sensitive to the dynamics in the group, involve shy people in the discussions, and prevent the talkative ones from dominating.

The African culture is a culture of the spoken word. Therefore, the visual aids like the slides and the poster should only be used as a stimulant for group discussion.

For example: A SLIDE OR PHOTO OF A CHILD WITH DIARRHOEA, (OR EYE, OR SKIN INFECTIONS)

Question: What do you see on this picture?

Answer: A sick child.

Q: Can you see what illness the child has?

A: Yes, it has diarrhoea.

Q: Can you tell what causes the diarrhoea?

A: No, we do not know.

Q: Have you ever seen insects, which are so small, that you could barely see them?

A: Yes, like fleas or lice you mean.

Information: Well, there are insects, which are even much smaller, which enter your body and can cause diarrhoea. (here it would be nice to have a microscope in the field, so that you could have demonstrated it to the VHC members beforehand. Then they can back up your story. First take a hair for example, and show how this is magnified, than take a drop of water and show them the life in it).

Q: Can you imagine any way in which these small creatures can enter your bodies?

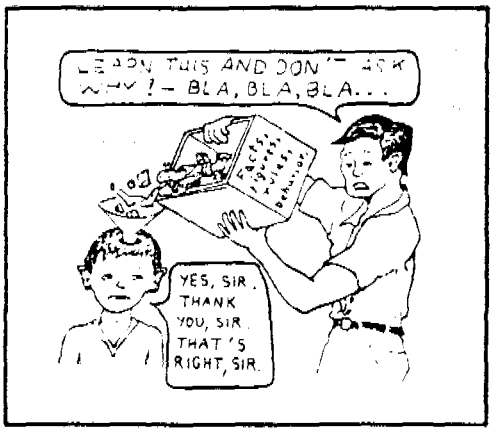
A: Maybe with our eating and drinking.

Q: Yes, how can we prevent that they are in what we eat and drink?

and so on.

Of course, there will never be such straight questions and answers. A spontaneous discussion will arise, in which the questions are no more than guidelines for the discussion. However, the result should be common conclusion, that the water should be kept clean.

They themselves have discovered now the relation between water and health; it was not simply told to them.



It is also good to work with association of ideas. People can often learn to understand a new idea if it is compared with something they already know.
For example:

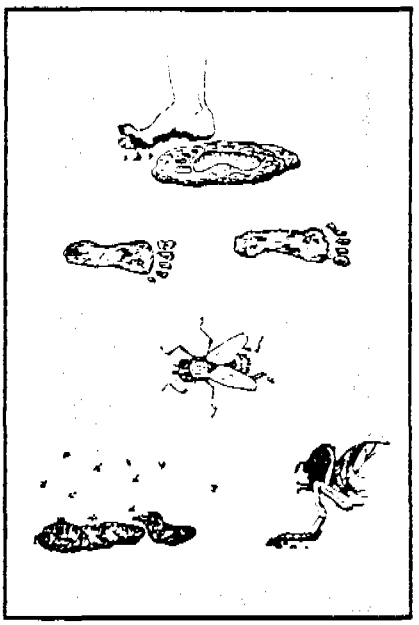
"Do you have feet?" "Yes!" Feet are shown with laughter.

"If you step in cow shit, do you get some of it on your feet?"
"Yes!"

"When you enter your house afterwards, does some of the shit get on the floor?"
"Yes, if the shit was fresh and wet!"

"Do flies have feet?" "Oh, yes, 6 of them!"

"Do you think that in the same way you get cow shit on your feet, the fly gets human shit on its feet?"
"Yes."



And so the discussion continues. A conversation like this gives new ideas greater meaning.

The next step is then to come to solutions for these recognized problems, also by stimulating group discussions.

3 TRAINING PROGRAMME

3.1 Schedule of the programme

Introduction day (approx. one month after construction):

Morning :
- Introduction to the village
- Monitoring sanitary condition well site
- Monitoring water hygiene in households

Afternoon :
- Meetings (men/women) with villagers on:
  - desirability of hygiene education
  - composition VHC
  - programme of the training

Training day 1 (approx. one week after the introduction):

Morning :
- Session with VHC
  - Discussion with VHC on (water) hygiene and health.

Afternoon :
- Session with VHC
  - Observation of sanitary conditions well site and of water transport
  - Discussion of hygiene at the well-site and water transport

Evening :
- Session with VHC, villagers (esp. women)
  - Slide show on the same subjects
  - Discussion with all attendants on the same subjects, assisted by VHC members for stimulating the discussion.

Training day 2 (approx. one week after training day 1):

Morning :
- Session with VHC
  - Observation in households on water storage and hygienic water use

Afternoon :
- Session with VHC
  - Discussion on water storage, hygienic water use and personal hygiene.

Evening :
- Session with VHC, villagers (esp. women)
  - Slide show on the same subjects
  - Discussion with all attendants on the same subjects. The VHC assists in stimulating the discussion.

Training day 3 (approx. one week after training day 2):

Morning : - Session with VHC
- Observation on (new) sanitary conditions at the well-site and on water transport

Afternoon : - Session with VHC
- Discussion on present sanitary condition at well-site and water transport.
- Discussion on possible improvement.
- Discussion how the VHC can contribute to a better water-related hygiene situation in the village.
- Preparation of the evening meeting for the villagers.

Evening : - Session with villagers (esp. women)
- Discussion lead by female VHC member in women's group and male member in men's group on what has been achieved so far, what should be achieved in the future, and the role of the different committees and villagers in improving the water related hygiene situation in the village.

3.2 Introduction day

Go to the sheikh, introduce yourself if he does not know you yet, and ask permission to interview some villagers - mainly women - on water use and hygiene (you might start with himself, in his compound).
The questionnaire is shown in Annex B.2.

Estimate the time required for interviewing every tenth household. Make an appointment with the sheikh for a village meeting at the time you think you will be ready.
Explain what the meeting will be about (to discuss the need for hygiene education, and how to keep water healthy).

Ask him to invite as many people as possible for this meeting, especially women.
Arrange your food and lodging with him.

You should go to the well now, and fill in the "Monitoring sheet for observation of sanitary conditions at the well-site" (see Annex B.3).
Invite also the people at the well to the meeting and explain the topics to be discussed.

Your colleague should start the questionnaires in every tenth household. Later on, you should join her/him in doing this job. Ask everyone you interview to join the meeting.

When you are through with the questionnaires, go to the place of appointment. Make sure you are there at the agreed time.

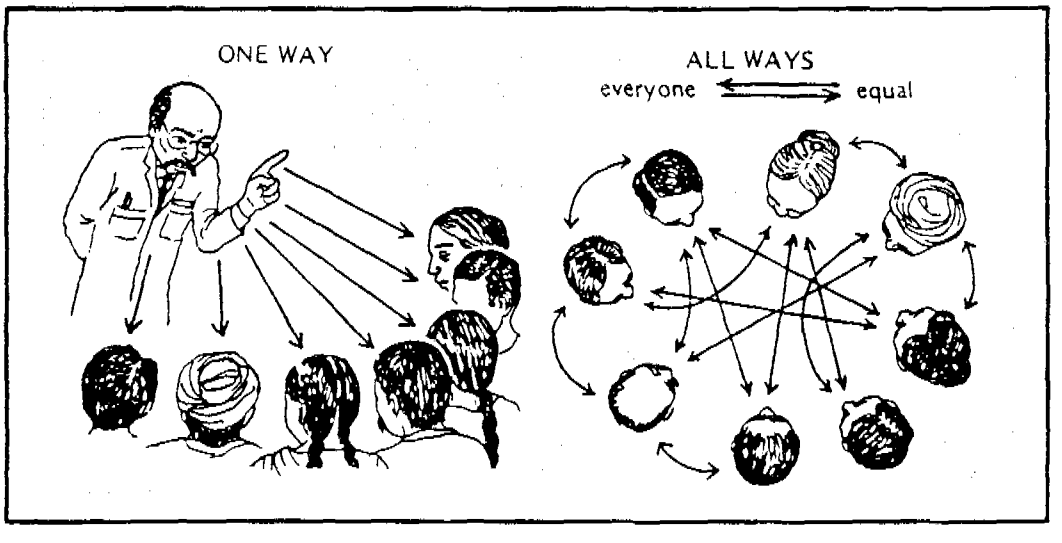
When the people start arriving, make two groups: women and men. The woman in the extension team should be with the women's group; the man with the men's group.

When most people have arrived, explain them the purpose of the meeting again: to assess the need for hygiene education in the village.

Ask the people if there are many cases of diarrhoea, skin infections and eye infections in the village (you can check this beforehand in the office: baseline data from the first extension visits).
Probably the answer will be yes.
Ask the people if they know how these diseases are caused, and how they can be prevented.

> **Do not tell them "We are going to organize for you a hygiene training", but try to achieve that they themselves discover the benefit of a hygiene education programme.**

Try to achieve a discussion in which everybody participates. Do NOT make it a one way communication!!



When everybody agrees on the possible benefit of a training programme, explain the set-up of the hygiene education: training of the VHC members as future village-based teachers.

Ask the people and the village authorities to reconsider the composition of the VHC Discuss with them **WHO** and **WHAT** kind of people should be members. Again, do not forget the "asking strategy". Think about Sheikha, Hakama, representative of VWC, CHW, midwife, other active women.

Note down the names of all (new) members and ask to arrange a fixed meeting place to work with the VHC.

Explain how much time will be asked from the VHC for the training events (3 mornings, 3 afternoons, and 3 evenings). And explain in short what will be the subjects of the different sessions. See Section 3.1: Schedule of the programme.

Make an appointment with the VHC for the first training day.

3.3 Training day ONE

Plan your fieldwork so that you are in one of the clustered villages on the afternoon before the start of the first training days in those villages.

That afternoon, visit all the villages and remind the VHC's of the time and day of the week you will give the training.

Ask once more the commitment from key-persons to be in time at the meeting places.

Day ONE, morning session:

Be clearly present and waiting for the V.H.C at the place of meeting, at least half an hour before the appointment.

When the VHC members are (much) too late tell them, that this is not what you agreed upon, and ask them if they really want to continue with the training. Point out that you do not want to force them; they should participate of their own free will, because they see the importance of it.

When everybody is sitting comfortably, ask if every participant knows and understands why you are there together.

Let them explain the purpose of the meeting.

Start asking questions as described in Chapter 2, in order to stimulate the discussion from this point onwards.

The subject of this session is: **HYGIENE AND HEALTH.**

Let the VHC members explain why people get diarrhoea, eye infections, etc.
Give only new information when they need it to keep the discussion going.

When everybody agrees and understands, that there is a direct relation between insufficient or dirty water and sickness, summarize the discussion. Then ask in what stages or places of collection the water could get polluted.

When a common conclusion is reached, propose to do observation at the well-site that early afternoon.
Again: make a very clear appointment.

HOW PEOPLE LEARN

People remember 20% of what they HEAR,

40% of what they HEAR and SEE

80% of what they DISCOVER

People remember what they have said themselves best, so teachers should not speak too much.

Teachers must give participants a chance to find solutions before adding important points the group has not mentioned.

Day ONE, afternoon session:

Keep your appointment. Be in time at the meeting place.

Go with the VHC to the well and explain what you mean by observation:

- seeing things without making judgement or too quick interpretations.
- a few examples should be given, like: there are sheep inside the fence, the fence is broken, some people do not use communal bucket but private bucket, etc.

Start the observation exercise now, by asking the VHC members to write down or memorize everything they see.

- In order that all relevant topics are seen and remarked, use the "Monitoring sheet for observation of sanitary conditions at the well-site" observation sheet as a checklist.
- Point out the subjects which the VHC members do not seem to notice.
- When everything has been observed after a half to one hour, return to the meeting place.

Now you will start a pin- or flannel board exercise.
The members of the VHC should be seated in a half circle around the board.

- Ask the VHC members to mention all the things they have seen.

- One of you sticks the drawings or symbols of the topics mentioned by them, on the board.
  Examples of such drawings are shown in Annex B.4.

- Your colleague should sit with the VHC and stimulate the discussion on what is observed. You can add some of your own observations, taking away shyness or shame also by naming funny things.

When all observations have been mentioned and their corresponding drawings or symbols stuck to the board, divide the board in a "bad" side, with a sick person's picture at the top, and a "good" side, with a healthy person's picture at the on top.

If the drawings or symbols are not clear enough for all the participants to understand, explain very carefully what they represent.

> Take notes so that you can adapt the drawings in the office later on.

Now ask the VHC members to put the observations which are not bad for health on the "good" side; the bad ones on the "bad" side. When the people do not agree upon good or bad stick the drawing on both sides.

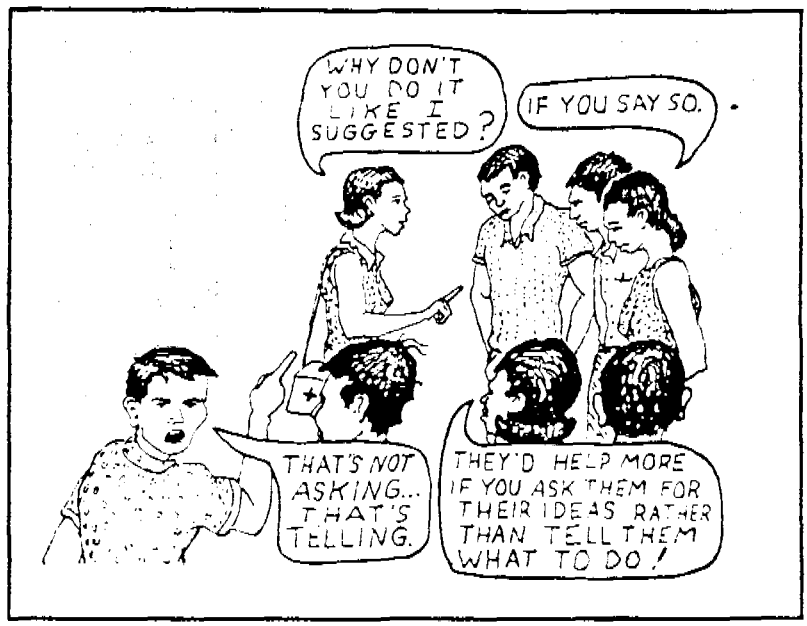
- Ask for every drawing or symbol why it is placed at the good side, or at the bad side of the board.

- Start discussing the items on the "bad" side and those on which the participants could not agree upon.

- Do not tell, but ask if they can imagine why they are placed on the "bad" side. Try to achieve that the people themselves discover the good answer and the reasons behind it.

- When everything is understood, ask whether the participants can think of ways to improve the situation concerning the topics which are placed on the "bad" side of the board.

Try to achieve that they themselves find the solutions for improvement!



When this is all finished, and the VHC agrees upon all solutions, prepare them for the evening sessions with the villagers.

- Explain that in the evening you will show some slides, instead of doing observation at the well-site, because it would be difficult to go to the well with the whole village.

- Explain your intention to do a kind of observation exercise with the villagers by means of the slide shows, and that you will try to get the same kind of discussions as with the VHC that afternoon.

- Ask the VHC to assist you in stimulating the discussion. However, they should take care not to do all the talking.

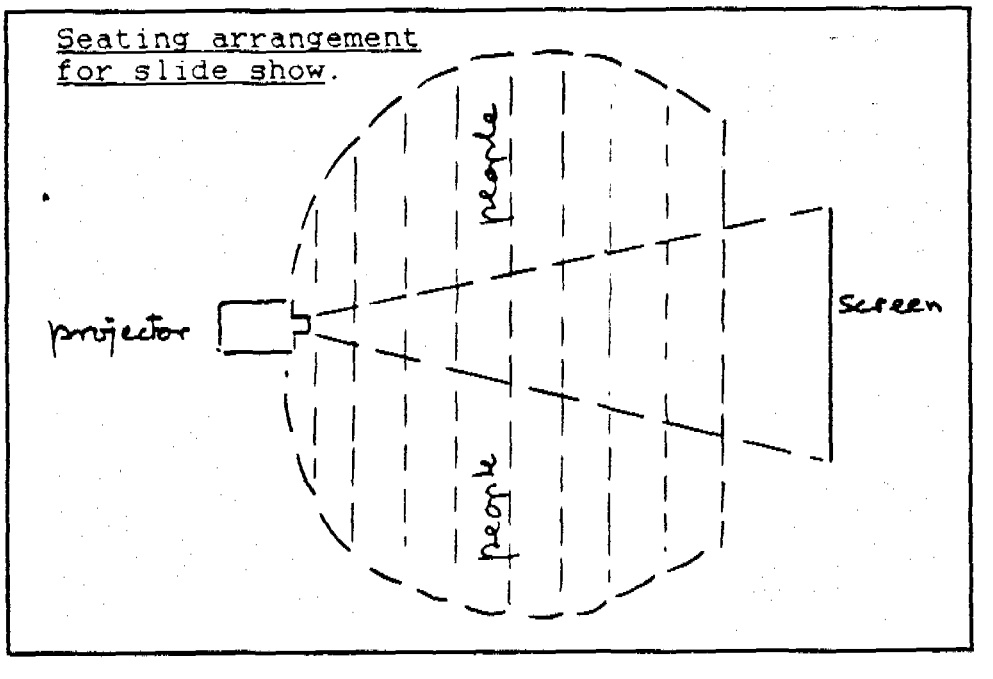
- Explain that, just like they did, also the villagers must discover the solutions by themselves.

So the evening session with slide shows will be more or less a repetition and summary of the day sessions with the VHC.

Day ONE, evening session

Prepare the slide shows carefully:

- There must be two locations for the slide shows: one site for women, one site for men.
- Preferably get electricity from batteries, because these do not produce noise. When you have to use a generator, place it far away so that the noise will not hinder you.
- Test your equipment and its arrangement well in advance.
- Arrange the people in front and beside the projector, but not behind it. Project the slides over the people's heads, as shown below.



Start the session well in time, by first showing some slides not related to the topics of hygiene education, to familiarize the people with the medium.
Meanwhile play music on the cassette player to alert the people in the village.

The slides for this evening session are dealing with:

- (water) hygiene and health.
- sanitary condition at the well-site.
- water transport.

They are listed in Annex B.5.

The procedure is to start with a "bad" slide, then have a discussion, followed by the "good" slide.

- Show a "bad" slide and give the people some time to watch, then ask what they see.
- Stimulate together with the VHC as many people as possible to mention their observations.
- For each item mentioned ask if it is good or bad.
- Stimulate everyone to participate in discussing the answers.
- By giving the right information on the right moment (not to quick) try to reach the good conclusion, together with the participants.
- As to the items classified as "bad", ask how it should be.
- Again: stimulate everyone to participate in the discussion.
- When the good conclusion is reached, show the "good" slide and ask what they see.

Then show the next "bad" slide, and follow the same steps. Follow this sequence for the entire slide show

With the last three slides the whole session can be summarized:

- (Water) hygiene and health are inter-related.
- Water can be kept clean by keeping the well-site clean as shown on the slide.
- Water can be kept clean by using closed transport containers, as shown on the slide.

Summarize in words what kind of actions must be taken to improve the situation.

Try to make a plan of action (WHO, WHAT, WHEN, HOW and by WHICH MEANS) together with the participants, to implement the required improvements.

> **Again: try to achieve that the participants reach their conclusions by themselves, by discussion and analysis of the present situation.**

> Take notes of the agreed Plan of Action, which:
> - will help you assess the progress made
> - will be filed in the village history record in the office.

Make an appointment for the next week, and thank them for their co-operation.

TOPICS COVERED ON TRAINING DAY ONE:

General	-	Relations between health, water and hygiene.
Slab/area	-	Clean well-site in general.
	-	Clean slab.
	-	Filling of water containers on the slab.
	-	Clean drainage system.
	-	Prevent muddy places around the well.
	-	Cover muddy places around the well.
	-	Avoid spilling of water.
	-	Keep all containers on the slab.
Fence	-	Build and maintain a strong fence with gate.
	-	Close the gate when you leave the well-site.
	-	Keep animals outside the fence, also for watering.
	-	Do the laundry outside the fence.
Lifting	-	If present use the communal buckets and rope to lift water.
	-	Take care that they are clean, before they are used to fetch water.
	-	If private lifting buckets and ropes are used, take care that they are clean.
Transport	-	Use a closed container for water transport.
	-	Wash it carefully before pouring water in it.
	-	Keep children and animals away from containers, also during transport.
	-	Avoid to touch the water with your hands.
	-	Do not leave the water containers unguarded.
	-	The role and responsibility of the VHC and other villagers in all these matters.

3.4 Training day TWO

Again, plan your fieldwork so that you are in one of the clustered villages on the afternoon before the start of the first training days in those villages.

That afternoon, visit all the villages and remind the VHC's of the time and day of the week you will give the training.

Day TWO, morning session:

Be clearly present and waiting for the V.H.C at the place of meeting, at least half an hour before the appointment.

Summarize the items and results of the first training day, and ask if there are any questions about this.

Today's topics are: WATER STORAGE AND HYGIENIC WATER-USE.

Explain the programme of this second training day:

- observation in the household in the morning.
- discussion about the observations in the afternoon.
- slide show and discussion with the villagers in the evening.

Then go with the VHC members into the village (preferably first to their own houses) and observe like described for training day one.
Visit every tenth household.

When finished, make an appointment for the afternoon.

Day TWO, afternoon session:

In the afternoon, discuss water storage and hygienic water use, in a similar manner as the subjects of day ONE.

Day TWO, evening session:

Conduct the evening session in the same way as on training day ONE.
The slides for this second evening are listed in Annex B.5.

Try to make a **PLAN OF ACTION** together with the villagers to implement the necessary improvements.

> **Again:** try to achieve that the participants reach their conclusions by themselves, by discussion and analysis of the situation at present.

Make appointments for the next week and thank them for their attention.

> **Again:** take notes of the agreed Plan of Action:
> - it will help you assess the progress made
> - it will be filed in the village history record in the office.

TOPICS COVERED ON TRAINING DAY TWO:

- Clean water storage at home in general.
- Empty the storage container of old water and deposits, before refilling it.
- Clean the storage container(s) regularly.
- Apply filtering or depositing method already used(if unharmful).
- Keep the storage container covered, and away from small children and animals.
- Use the "two-mug" system.
- Keep the area around the storage container clean.
- Put storage container on a table or stand, so that children cannot reach in.
- Store ropes and water fetching containers in a safe (= hygienic) place, i.e. high, dry, away from animals and dirt.
- Wash your hands often and bath regularly, with plenty of water.

3.5 Training day THREE

Again, plan your fieldwork so that you are in one of the clustered villages on the afternoon before the start of the first training days in those villages.

That afternoon, visit all the villages and remind the VHC's of the time and day of the week you will give the training.

Day THREE, morning session:

Be clearly present and waiting for the V.H.C at the place of meeting, at least half an hour before the appointment.

Summarize the items and results of the previous two training days, and ask if there are any questions.

Explain the schedule for this third day:

Morning	-	observation on (new) sanitary conditions at the well-site and on water transport with them in the morning.
Afternoon	-	discussion on the observations with them.
	-	discussion on what can still be improved.
	-	discussion on how the VHC can contribute to a better water-related hygiene situation in the village.
	-	preparation with the VHC of the evening meeting with the villagers.
Evening	-	discussion with the villagers lead by the VHC about what should be achieved in the future.

Then go to the well-site and observe the present sanitary condition and the containers and ways in which the collectors transport water now, as is discussed before.

Make an appointment for the afternoon session.

Day THREE, afternoon session:

During the afternoon session, ask the VHC members what they saw, and what still was wrong. In that way the previous training should be repeated at least partly.

Ask how these things can still be improved.

Then explain, that this is the last day of hygiene training, and ask them if they think it would be useful to continue paying attention to hygiene in the village.

Probably they will answer that it is.

Ask them, how this should be done and what should be their role in it.

Hand them over the posters on hygienic behaviour (Annex B.6) and tell them they can use these for their meetings, and that they can be spread amongst the villagers.

If there is a dispensary or PHCU in the village, stick at least one to the wall there. Also a village shop is a good place, if the owner agrees.

Then try to start a discussion on how they can contribute, with their newly gained knowledge, to the hygiene and health situation in the village.

The optimal result would be, that they themselves propose

- to do household visits to promote clean storage and hygienic water use in the household.
- to organize regular neighbourhood meetings, to discuss hygiene and water more extensively with the villagers, to achieve a better hygiene situation in the village.
- to organise cleaning parties at the well when this is necessary.
- to maintain hygienic conditions at the well in general.

If they do not arrive at these conclusions themselves, you could give them these points for a suggestion.

Do not push, that is useless.

If you want lasting results:
POINT..... but don't *PUSH*.

People will move by themselves once they see the need clearly and discover a way.

Then discuss the programme for the evening session:

- Explain, that it is up to them to lead the discussion that evening and that you will only assist.

- As a matter of fact, this should be the first neighbourhood meeting, as there should follow many in the future.

- Ask them to organize the meeting the same way as you organized this afternoon session, with the only difference, that there will be no board.

- The schedule for the evening should be:
  - present sanitary condition of the well-site.
  - achievements.
  - possible further improvements.
  - spreading of the posters among the attendants.
  - starting with the poster a discussion on how everybody, villagers as well as VWC and VHC, can contribute to a better hygiene situation in the village, as far as water is concerned.

- You must assure that they:
  - decide on who is going to lead the discussion.
  - will see to it that people speak loud enough to be heard by all.
  - plan to let the villagers do most of the talking, like you did.

Stress to the VHC, that it would be good to arrive at a common plan of action with the villagers. This means:

- a list of what should be done.
- a list of who is going to do what and when.

Day THREE, evening session:

Again, start with music to draw the attention of the villagers.

When most people have arrived, explain that this evening is going to be led by the VHC like it will also happen in the future.

Then give the floor to the VHC.

Only intervene and give additional information, when this is absolutely necessary.

When the VHC members are talking too much, tactfully try to direct the discussion to the other villagers.

Take care, that a plan of action is made, on which all agree, and which is understood by all.

Again: take notes of the agreed Plan of Action:
- it will help you assess the progress made
- it will be filed in the village history record in the office.

Tell the meeting that this is the end of the training programme. Thank the villagers, the Village Health Committee, the Village Water Committee and the village authorities for their co-operation in and contributions to the training.

Wish them success in the implementation of the Action Plan, and tell them that the project is always prepared to assist the village with advise and possibly material support.

TOPICS COVERED ON TRAINING DAY THREE:

- Summary of the previous two days.
- Improvements achieved sofar.
- Improvements still to be achieved.
- Plan for future action based on poster.
- Role and responsibility of different committees and the villagers in the future.
- Task division.

ANNEXES

ANNEX B.1

CHECKLIST FOR EQUIPMENT AND MATERIALS

CHECKLIST FOR EQUIPMENT AND MATERIALS (ONE EXTENSION TEAM)

1. One generator 1.5 KVA + fuel.
2. Two electrical cables of 50 m each: generator should not obstruct normal conversation.
3. Two slide projectors + spare bulbs.
4. Two projection screens on stands.
5. Sets of slides:
   - two on health and hygiene, well-site and transport.
   - two on storage and water use.
6. Two light-pointers, to point on specific items on the projection screen.
7. Rope, to fasten the screens to tree or other object.
8. One "pin-board" to put drawings or symbols of observations on.
9. Two sets of observation drawings or symbols to put on "pin-board".
10. One box of pins to fix drawings.
11. Cassette player + music cassettes.
12. Water hygiene education posters + tape + pins.
13. Health education results questionnaires.
14. Observation sheets for sanitary conditions at the well-site.
15. One simple microscope + glass plates.
16. Two small tube lights.
17. Stretchers and sleeping bags for two extension workers.
18. Stove for cooking and cooking/eating utensils.

ANNEX B.2

HEALTH EDUCATION RESULTS

MONITORING LIST

HEALTH EDUCATION RESULTS MONITORING LIST

DATE: INTERVIEW NUMBER:

VILLAGE:

VILLAGE COUNCIL:

RURAL COUNCIL:

HYGIENE EDUCATION GIVEN?:

WHICH BATCH:

WHAT KIND OF DEVICE PRESENT:

TICK THE APPROPRIATE ANSWER.

1) SEXE OF RESPONDENT: O MALE O FEMALE

2) TOTAL HOUSEHOLD SIZE:.....

3) WHERE IS WATER COLLECTED? O TRADITIONAL SOURCE

O WADS WELL

O BOTH

4) HOW MUCH IS COLLECTED PER DAY? .....

5) HOW IS WATER TRANSPORTED HOME?

O WALKING

O RIDING

O BOTH

6) IN WHAT KIND OF CONTAINER IS TRANSPORTED?

O OPEN CLAY POT

O CLOSED CLAY POT

O OPEN JERRY CAN

O CLOSED JERRY CAN

O OPEN OTHER CONTAINER

O CLOSED OTHER CONTAINER

7) HOW OFTEN IS THE TRANSPORT CONTAINER CLEANED?

..... TIMES PER .....DAY(S).

8) WHERE IS TRANSPORT CONTAINER CLEANED?

O AT HOME

O AT WADS WELL

O AT OTHER SOURCE

9) IN WHAT KIND OF CONTAINER IS WATER STORED AT HOME?

- O OPEN ZEER
- O CLOSED ZEER
- O OPEN BARREL
- O CLOSED BARREL
- O OPEN JERRY CAN
- O CLOSED JERRYCAN
- O OPEN OTHER CONTAINER
- O CLOSED OTHER CONTAINER

10) WHERE IS THE STORAGE CONTAINER PLACED?

- O GROUND LEVEL
- O HIGHER PLACE
- O OTHER

11) IS IT PLACED INSIDE THE HOUSE OR IN OPEN AIR?

- O INSIDE THE HOUSE
- O OPEN AIR
- O OTHER

12) HOW OFTEN ARE STORAGE CONTAINERS CLEANED?

..... times per .....

13) WHERE ARE STORAGE CONTAINERS CLEANED?

- O AT HOME
- O AT WADS WELL
- O AT TRADITIONAL SOURCE

14) IS TWO-MUG SYSTEM USED?

- O YES
- O NO

15) DO YOU USE FILTERING METHOD?

- O YES
- O NO

16) DO YOU USE DEPOSITING METHOD?

- O YES
- O NO

17) WHERE DO YOU DO YOUR LAUNDRY?

O AT HOME

O AT WADS WELL

O AT TRADITIONAL SOURCE

O DIFFERENT PLACES

18) DO PEOPLE LOOK CLEAN?

O YES

O NO

19) DO YOU USE SEPARATE CONTAINERS FOR HUMAN DRINKING AND OTHER PURPOSES?

O YES

O NO

20) ARE (SOMETIMES) PRIVATE WELL BUCKET AND ROPE USED?

O YES

O NO

21) ARE PRIVATE BUCKET AND ROPE ALSO USED FOR OTHER PURPOSES?

O YES

O NO

22) WHERE ARE PRIVATE WELL BUCKET AND ROPE STORED?

O INSIDE HOUSE O OUTSIDE

O HIGH PLACE O ON GROUND

O OUT OR REACH OF CHILDREN AND ANIMALS O IN REACH OF CHILDREN AND ANIMALS

23) WHERE IS TRANSPORT CONTAINER STORED?

O INSIDE HOUSE O OUTSIDE HOUSE

O HIGH PLACE O ON GROUND

O OUT OF REACH OF CHILDREN AND ANIMALS O IN REACH OF CHILDREN AND ANIMALS

24) IS THE TRANSPORT CONTAINER ALSO USED FOR OTHER PURPOSES?

O YES

O NO

25) (the following question is to examine what people remember of hygiene education meetings/or topics discussed in the village. DO NOT GIVE POSSIBLE **ANSWERS**, BUT QUESTION THOROUGHLY!!!)

WHICH HYGIENE EDUCATION TOPICS CAN YOU MENTION?

- O CLEAN WELL-SITE (1)
- O NO ANIMALS ON SLAB (1)
- O NO ANIMALS WITHIN FENCE (1)
- O KEEP FENCE IN GOOD CONDITION (1)
- O USE COMMUNAL BUCKET AND ROPE (1)
- O KEEP COMMUNAL BUCKET AND ROPE CLEAN (1)
- O KEEP BUCKETS ON THE SLAB (1)
- O NO ANIMALS DRINKING FROM BUCKETS (2)
- O USE CLOSED CONTAINERS FOR TRANSPORT (2)
- O PUT TRANSPORT CONTAINER IN HYGIENIC PLACE (2)
- O DON'T TOUCH WATER WITH HANDS (2)
- O DON'T LEAVE CONTAINERS UNGUARDED (2)
- O CLOSE THE STORAGE CONTAINER (3)
- O PUT STORAGE CONTAINER ON HIGH PLACE (3)
- O USE SEPARATE CONTAINERS FOR HUMAN DRINKING AND OTHER PURPOSES (3)
- O KEEP CHILDREN AWAY FROM STORAGE CONTAINER (3)
- O PUT PRIVATE BUCKET AND ROPE IN HYGIENIC PLACE (3)
- O USE TWO-MUG SYSTEM (4)
- O USE DEPOSITING METHOD (4)
- O USE FILTERING METHOD (4)
- O BATH/WASH OFTEN (4)

REMARKS:

ANNEX B.3

MONITORING SHEET FOR OBSERVATION OF

SANITARY CONDITIONS AT THE WELL SITE

MONITORING SHEET FOR OBSERVATION OF

SANITARY CONDITIONS AT THE WELL-SITE

VILLAGE: VILLAGE COUNCIL: DATE:

RURAL COUNCIL: NAME EXT. WORKER: HYGIENE:

0) Waterlevel and time it was taken.(preferably before 7 am. or at 4 pm.) ☐ waterlevel ☐ time

I

1) Fence: ☐ present ☐ not present

2) Fence condition: ☐ good ☐ medium ☐ bad

3) Animals within fence: ☐ none ☐ few ☐ much

4) Laundry within fence: ☐ no ☐ yes

5) Gate present: ☐ no ☐ yes

6) Faecal deposits within fence: ☐ no ☐ few ☐ much

II

7) Sand on the slab: ☐ no ☐ little ☐ much

8) Water on the slab ☐ no ☐ little ☐ much

9) Dirt on the slab: ☐ no ☐ little ☐ much

10) Muddy area around well: ☐ no ☐ small ☐ large

11) Drainage clean: ☐ no ☐ medium ☐ yes

12) Soaking pit: ☐ not present ☐ present

III

13) Communal material used: ☐ never ☐ mostly ☐ always

14) (if also private) Are they cleaned before use: ☐ never ☐ mostly ☐ always

IV

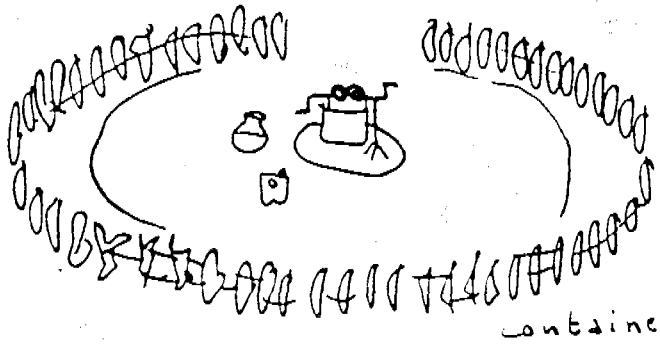
15) Watercontainers filled on the slab: ☐ none ☐ most ☐ all

TYPE OF DEVICE AND CONDITION: CONDITION WELL:
CONDITION SLAB:

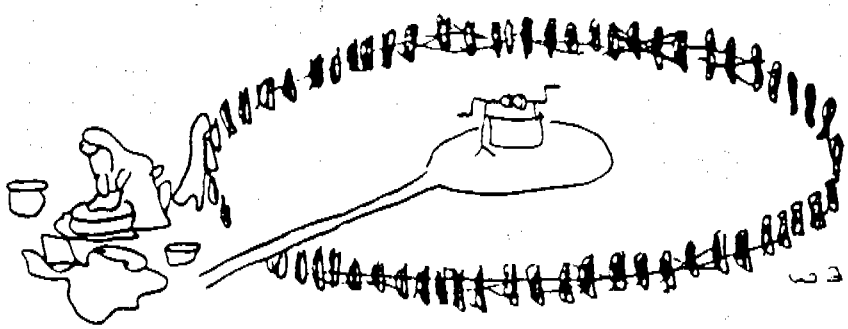
ANNEX B.4

PIN- OR FLANNEL BOARD DRAWINGS

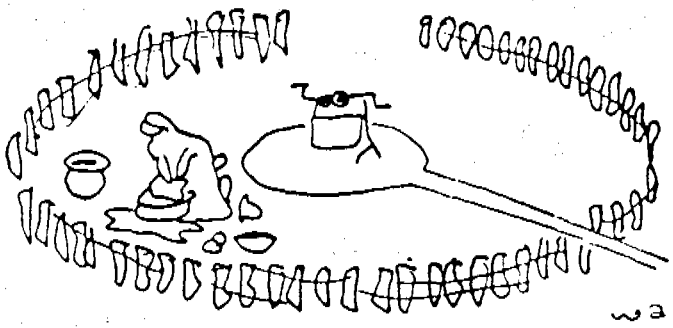
dirt around well.



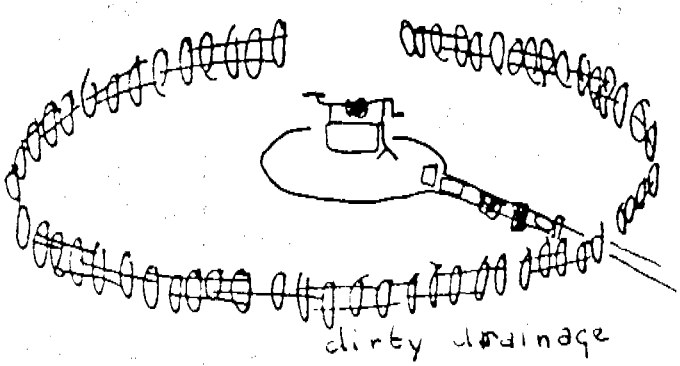
containers off slab.



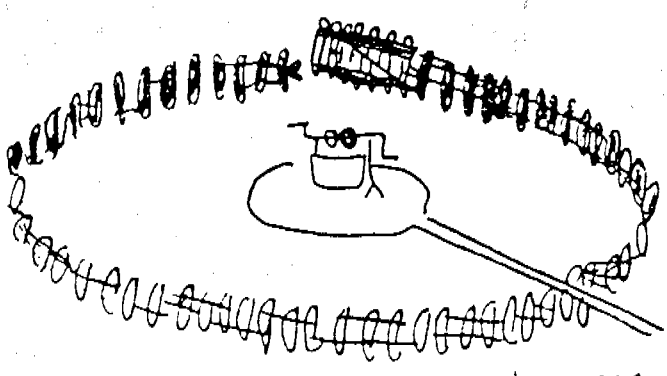
washing outside fence



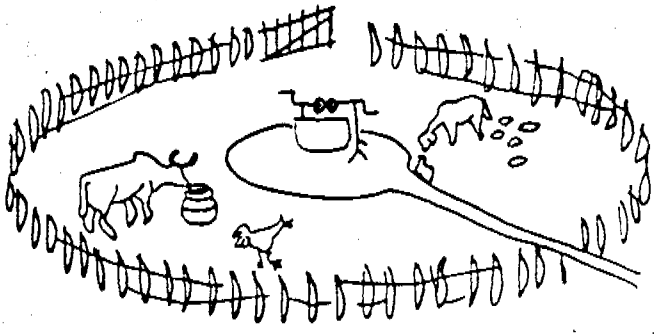
washing inside fence



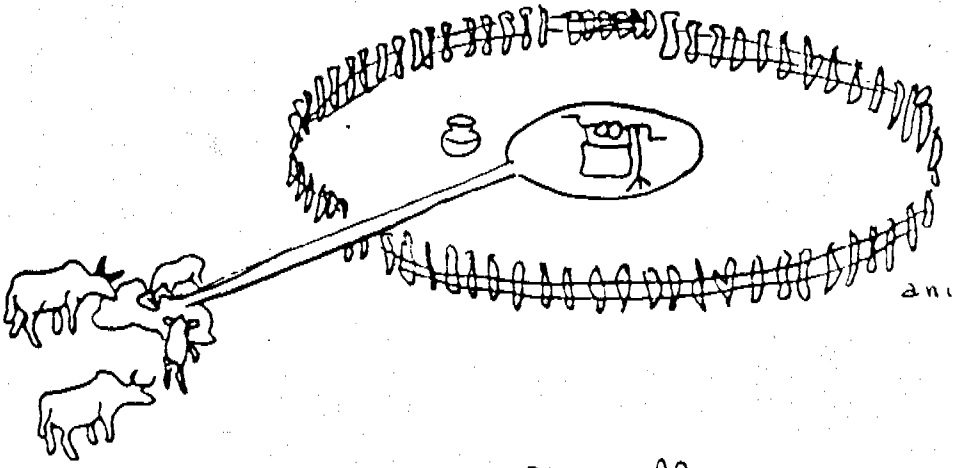
dirty drainage



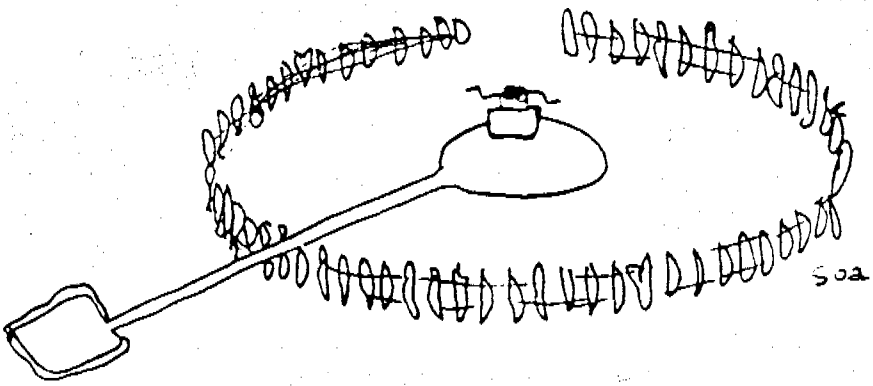
clean drainage



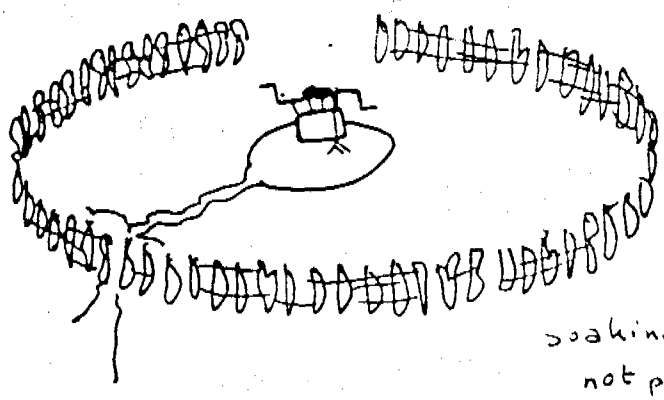
animals within fence



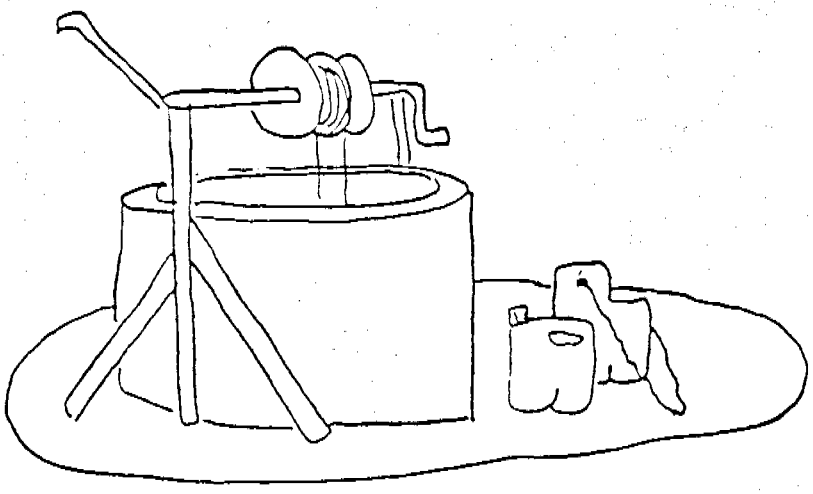
animals outside fence



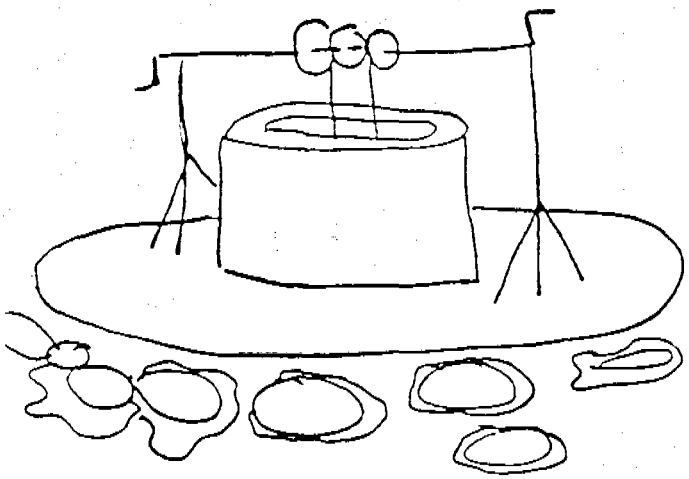
soaking pit present



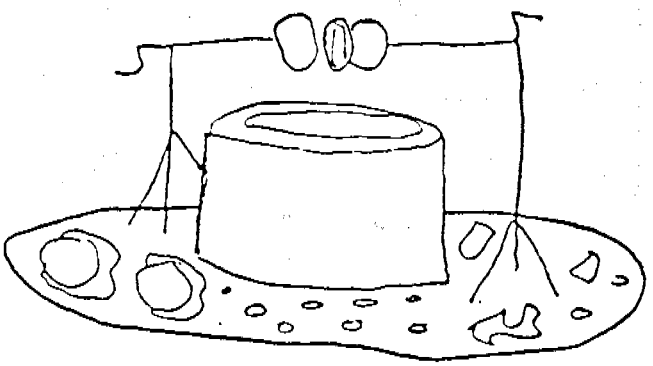
soaking pit not present



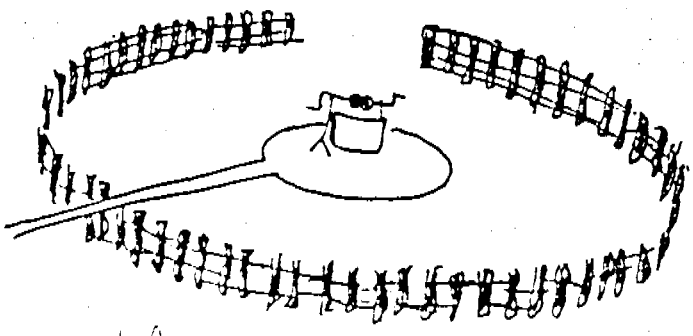
containers on slab



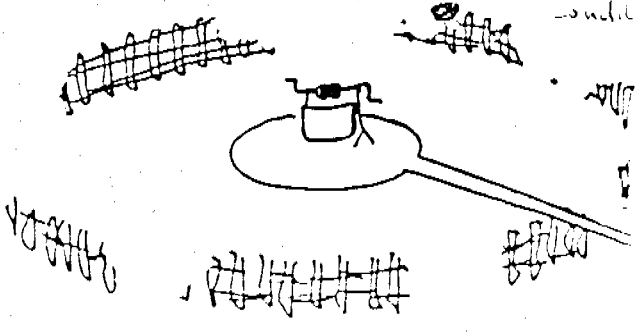
dirt around well



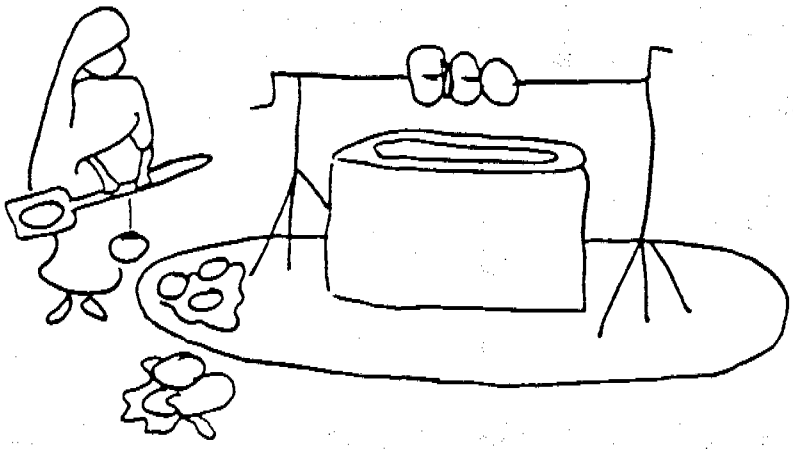
dirt on slab.



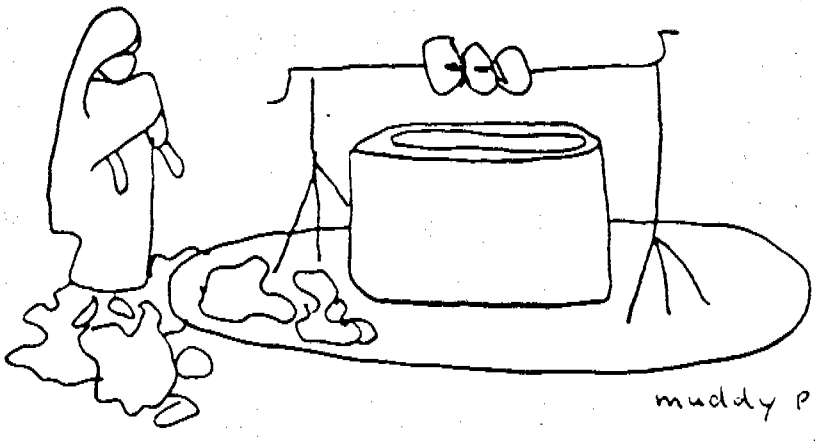
good fence



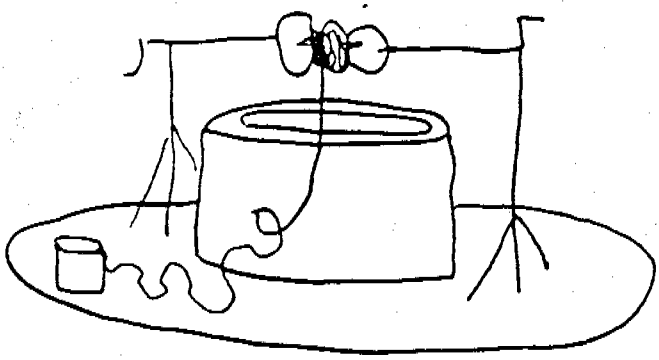
fence in bad condition



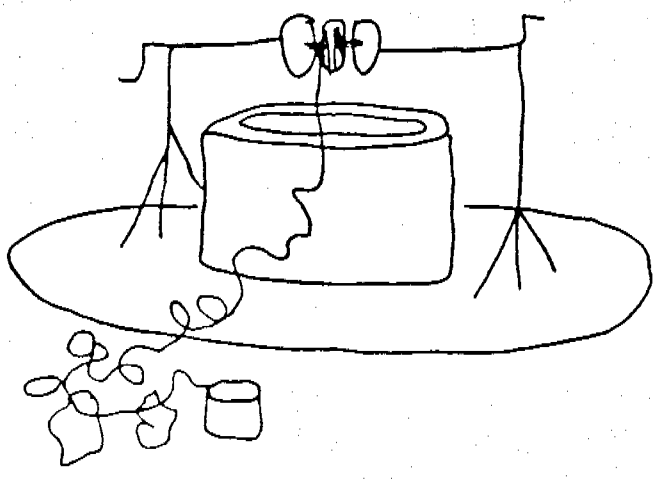
covering muddy places



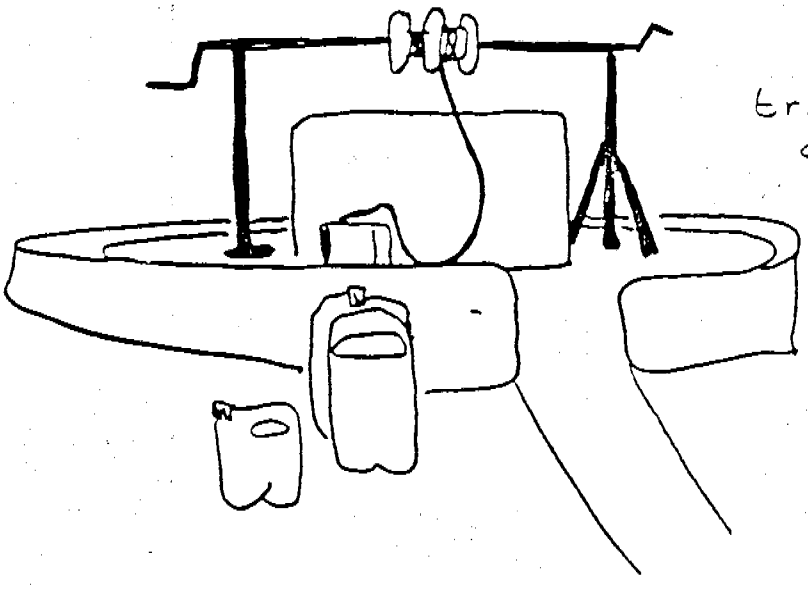
muddy places around well.



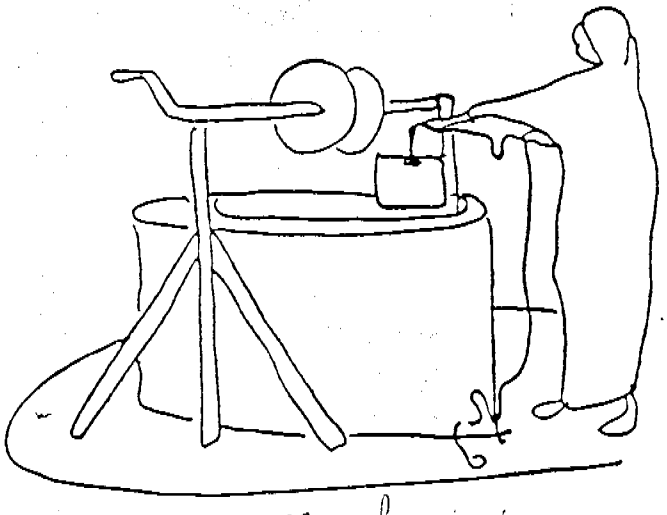
communal rope + container on slab.



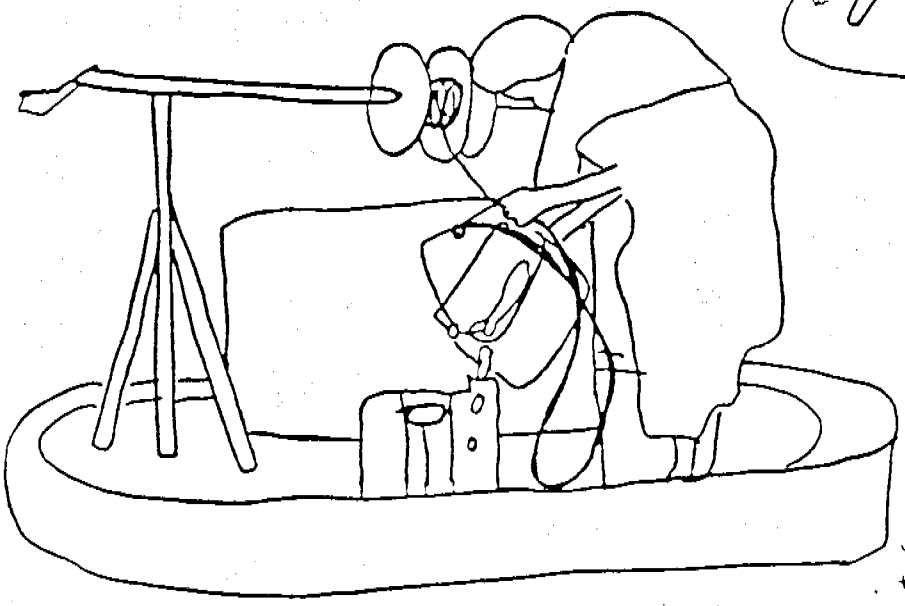
communal rope + container of slab.



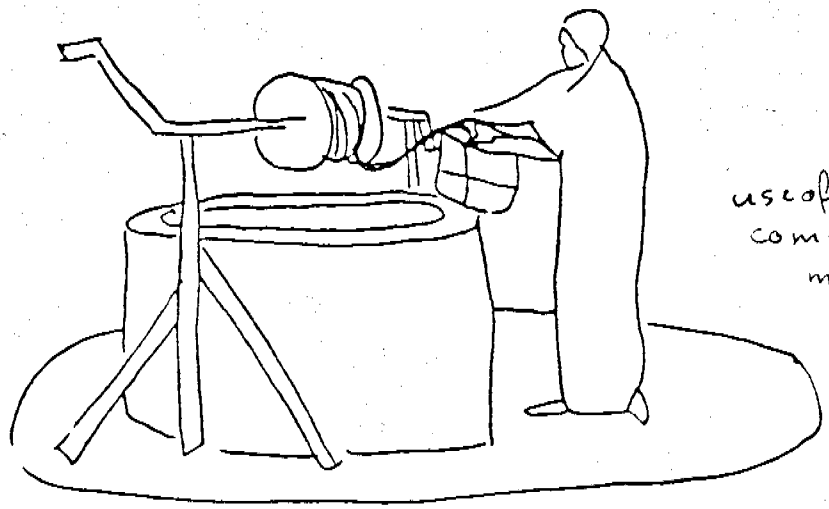
transport containers of slab.



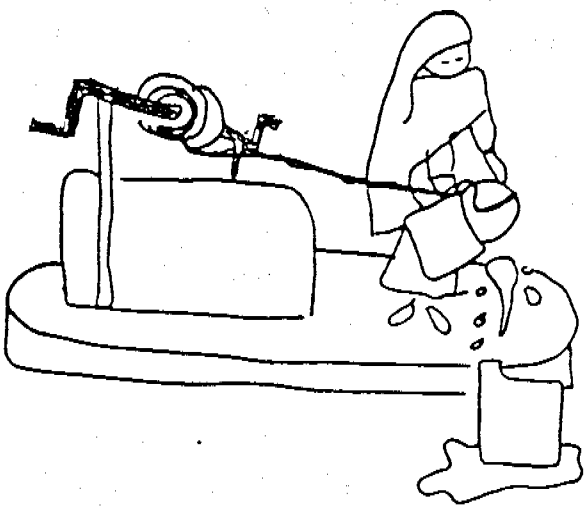
use of private bucket trope.



use of communal material + filling on slab.

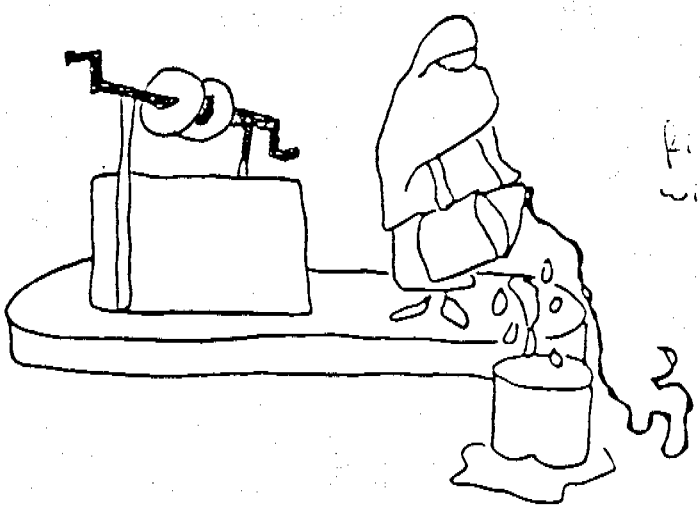


use of communal material.

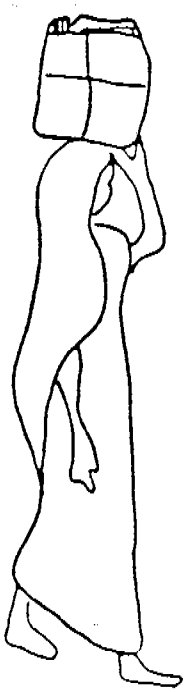


filling of slab with communal bucket

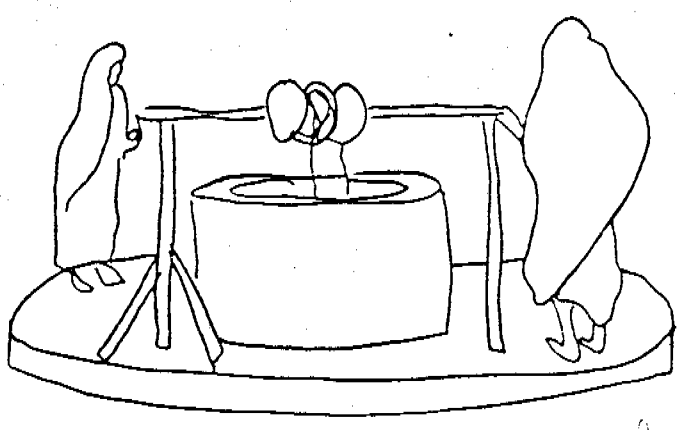
en transport



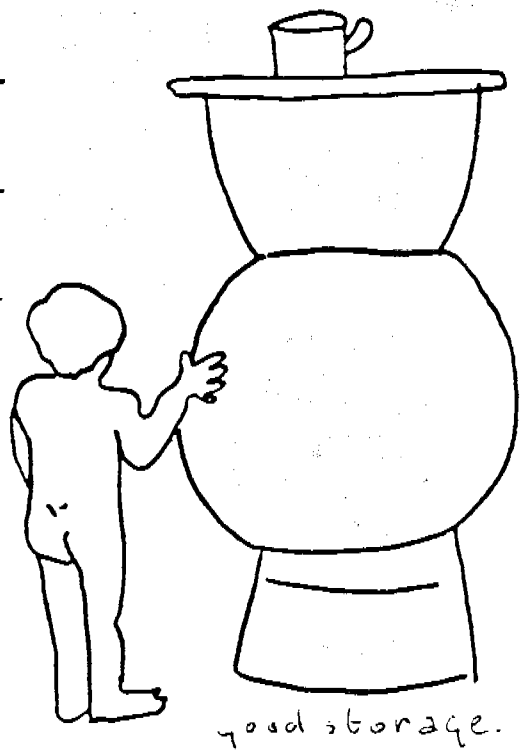
filling of slab with private bucket



closed transport

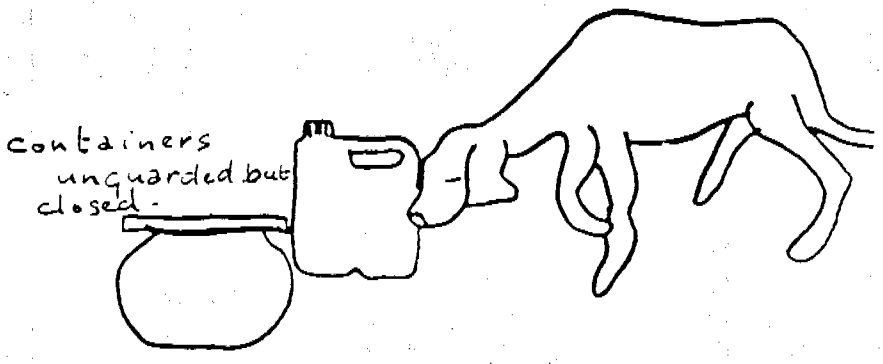


use of communal buckets + ropes

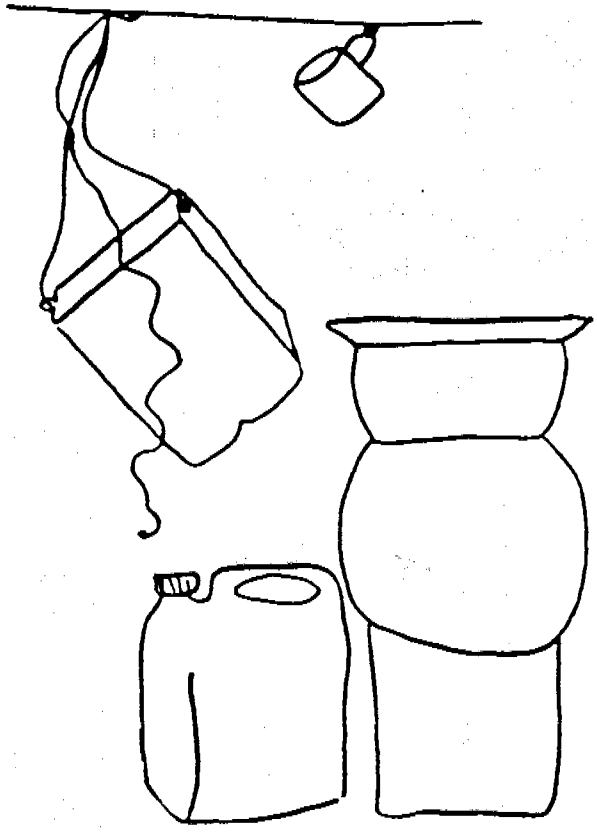


good storage.

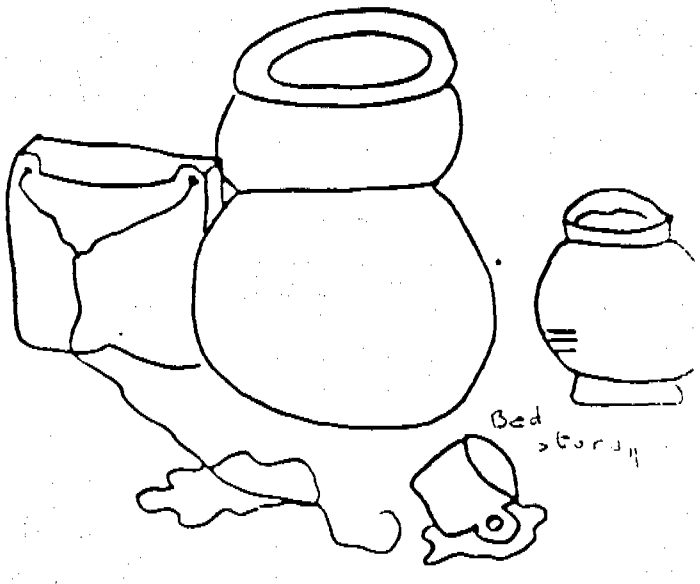
bad storage



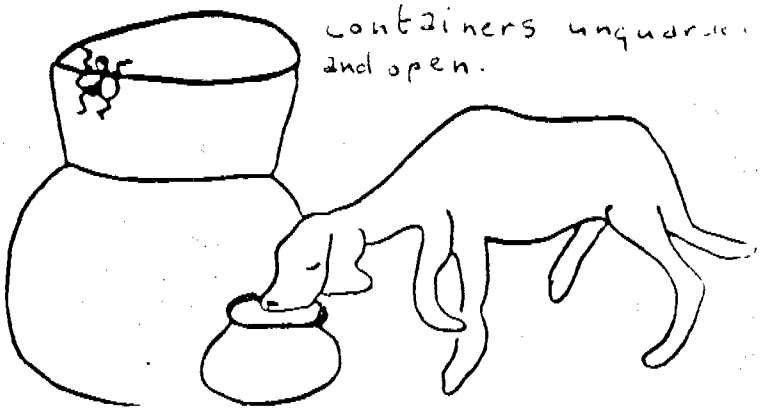
containers unguarded but closed.



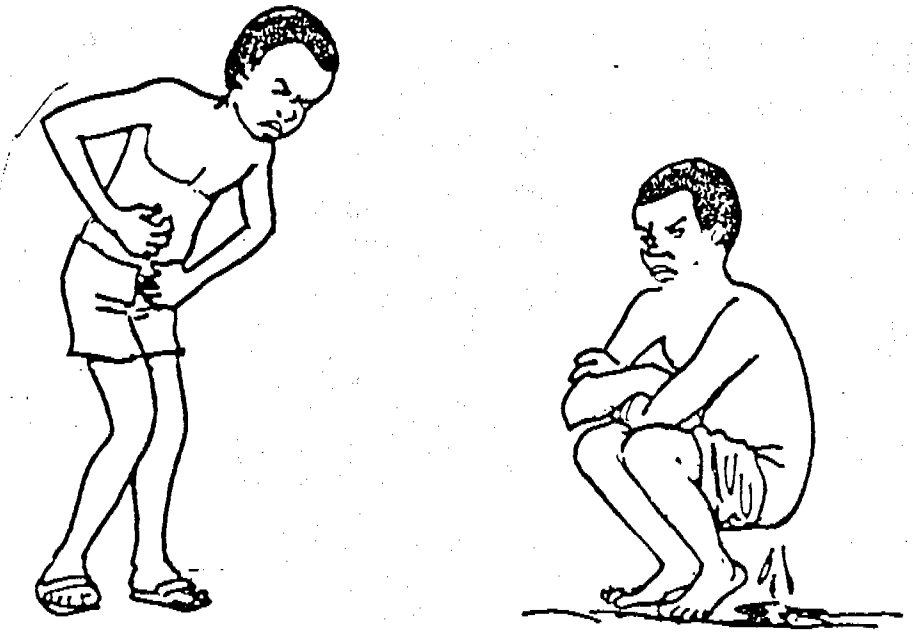
good storage.



Bad storage



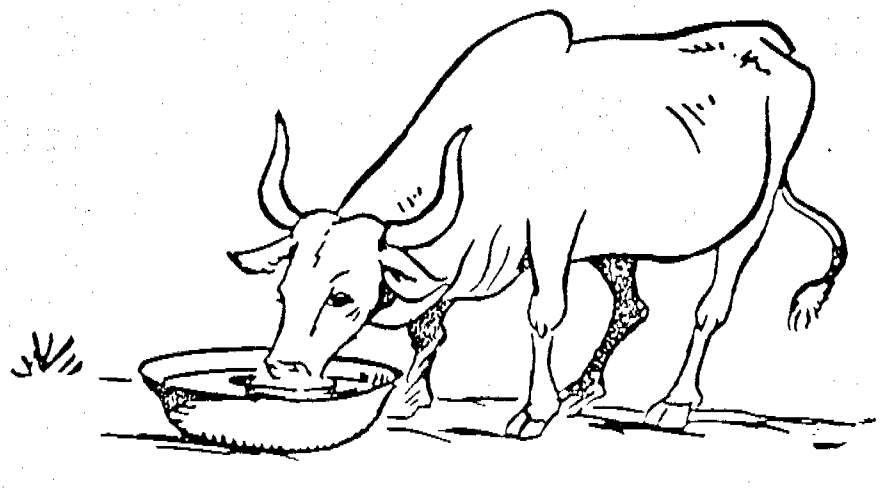
containers unguarded and open.



water-related sickness

washing with abundant water

laundry.



animal watering

ANNEX B.5

SLIDES FOR

EVENING SESSIONS ONE AND TWO

SLIDES TO BE USED ON EVENING SESSION ONE

1) 5 to 10 'nice' and/or funny slides, to familiarize the people with the medium and to shorten the waiting time before the education show is going to start.

2) Child with diarrhoea, unhealthy looking, and dirty.

3) Child with eye infections in close up portrait. With dirty face.

4) Dirty well-site, with animals on the slab, animal excreta around the well and/or on the slab, dirty slab, containers around the slab, muddy places around the well, no or a bad fence, without a gate, open containers, ropes lying around in the mud, etc.

5) Clean well-site, good fence, closed gate, animals clearly outside the fence, all containers on the slab, clean drainage, clean slab, closed transport containers, etc.

6) Focus on dirty part of the slab, with containers filled off the slab.

7) Focus on clean slab, all closed containers on the slab.

8) Open container filled off the slab, with much spilling.

9) Closed container being filled very carefully on the slab.

10) People using private lifting buckets and ropes, besides the communal ones.

11) People only using communal material with windlass, and people neatly waiting for their turn.

12) Animal watering on the slab.

13) Donkey defecating in fenced area.

14) Animal watering outside the fence.

15) Woman transporting water in open container, spilling water, and touching the water with her hands.

16) Woman transporting water in closed jerrycan.

17) Again the "perfect well-site".

SLIDES TO BE USED ON EVENING SESSION TWO

1) 5 to 10 'nice' and/or funny slides to familiarize the people with the medium.

2) Storage container in hut or rakuba on the ground, without cover, child reaching in, dirty surroundings, transport containers lying around in the dirt, ropes lying on the ground, etc.

3) Storage container on stand of table, a child besides, clearly incapable of reaching in, container covered, transport containers and ropes hanging from the roof so that children and animals can not reach them. In general a clean hut.

4) Focus on storage container placed on ground, without cover.

5) Focus on storage container placed on table or stand, clearly covered.

6) Container with one cup on top.

7) Person drinking from that cup which should be recognizable as the same one.

8) Container with two clearly different cups on top, for example a blue and a red one.

9) Person taking water with red cup.

10) Person pouring water from the red cup in the blue cup.

11) Person drinking from blue cup.

12) Child washing with little water and soap.

13) Child washing with abundant water and soap.

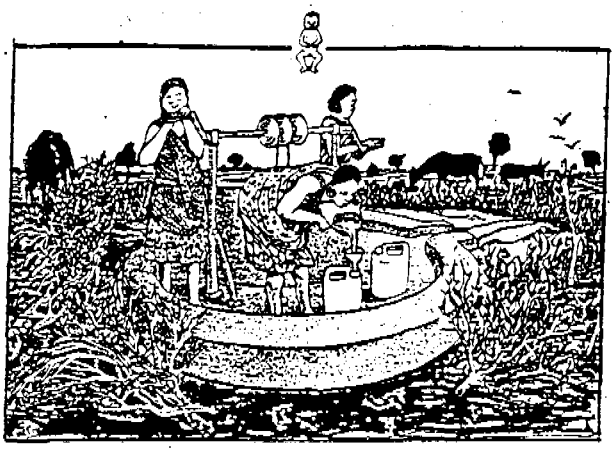
14) Happy, healthy family.

ANNEX B.6

WATER HYGIENE EDUCATION POSTER

AND SEPARATE DRAWINGS

CLEAN WATER FOR GOOD HEALTH

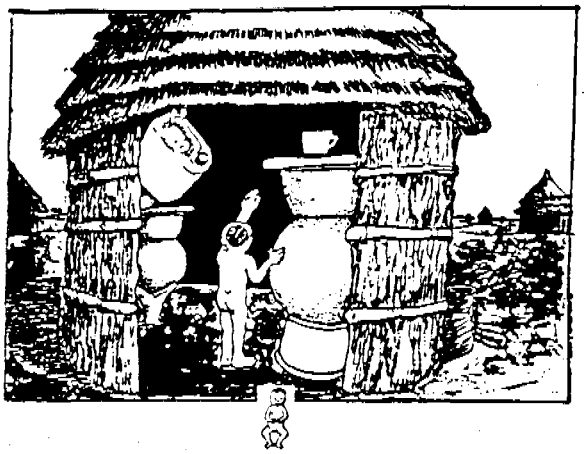


Clean well, good use

Dirty well, bad use

Good transport

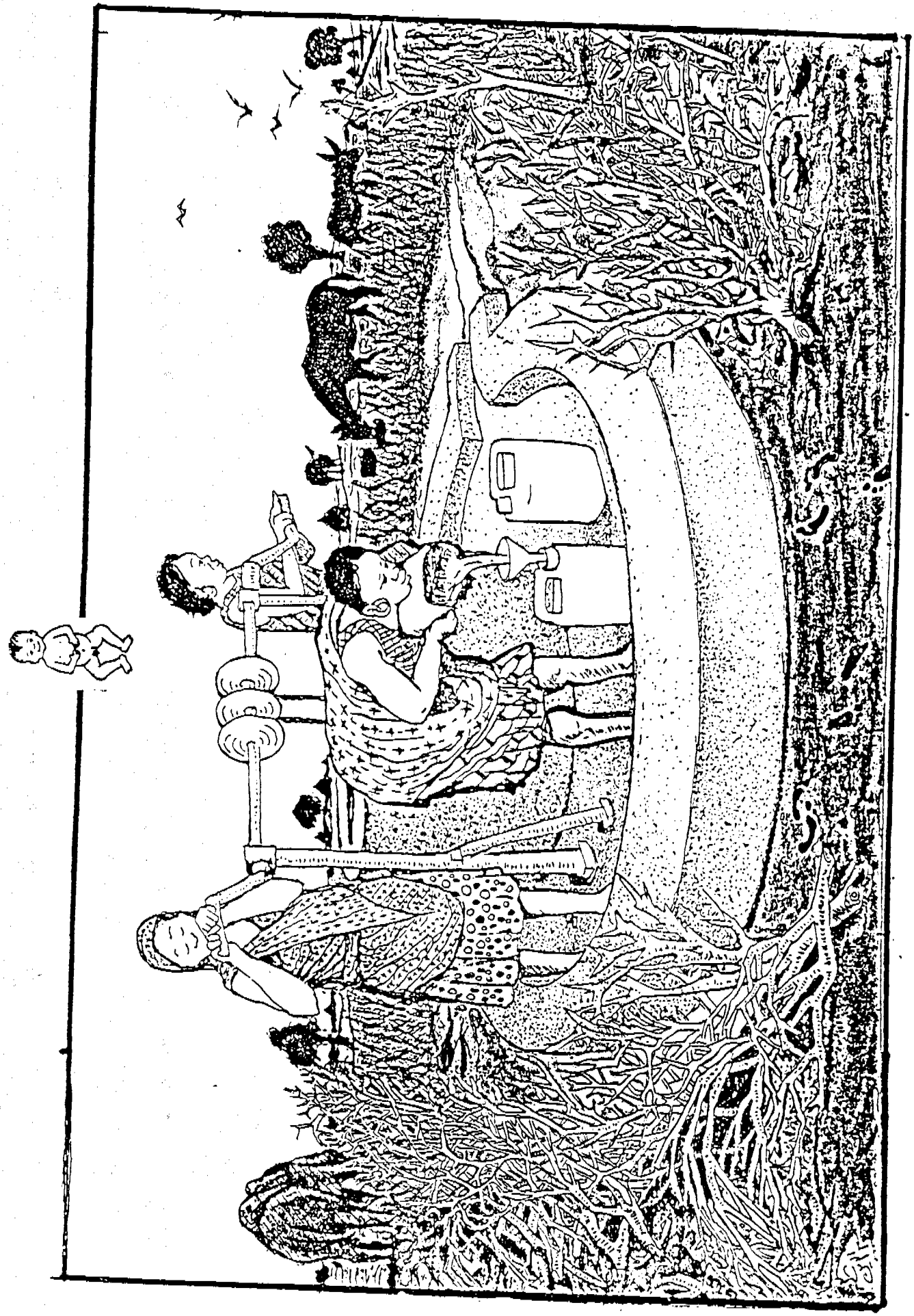
Bad transport

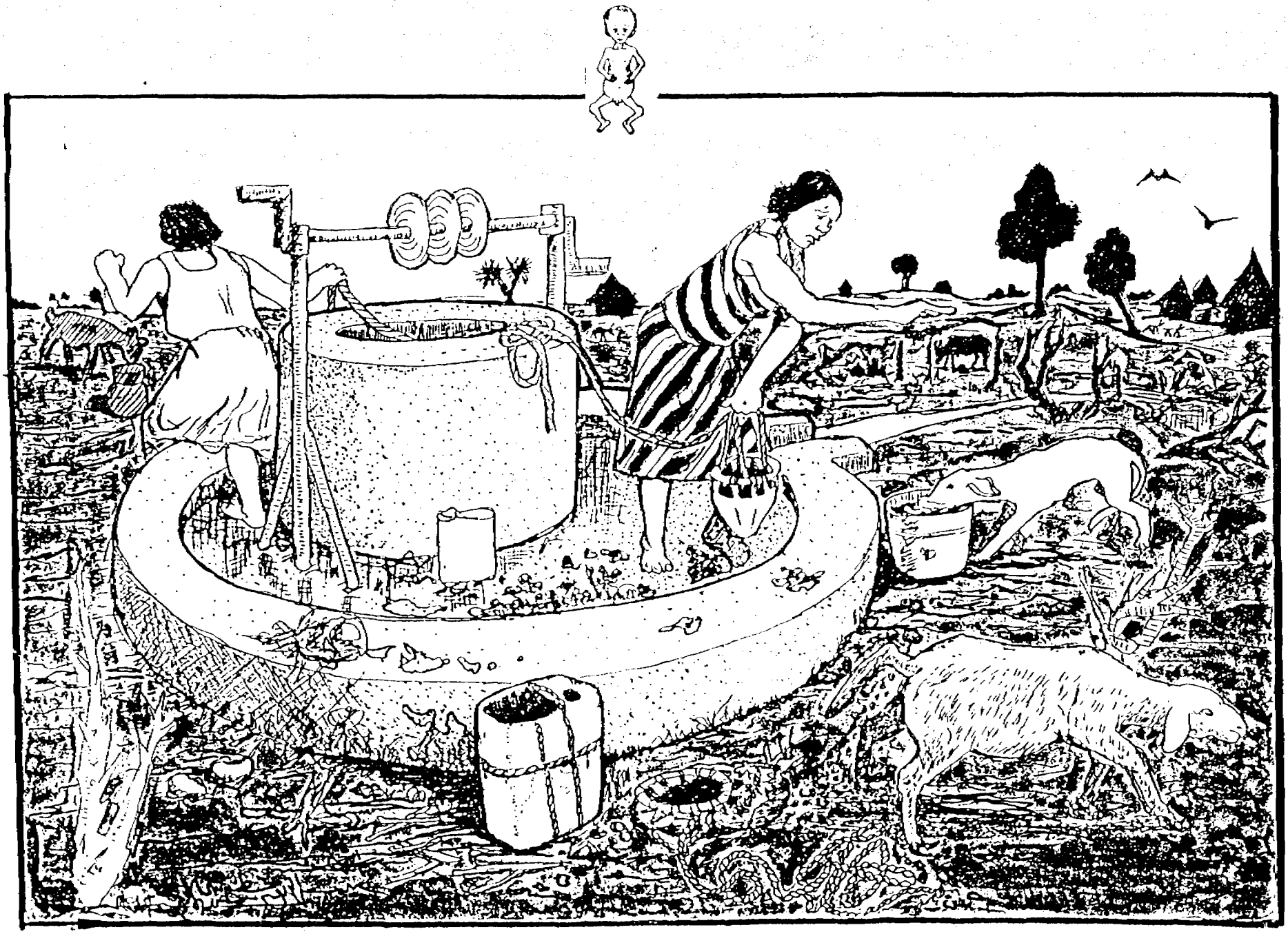


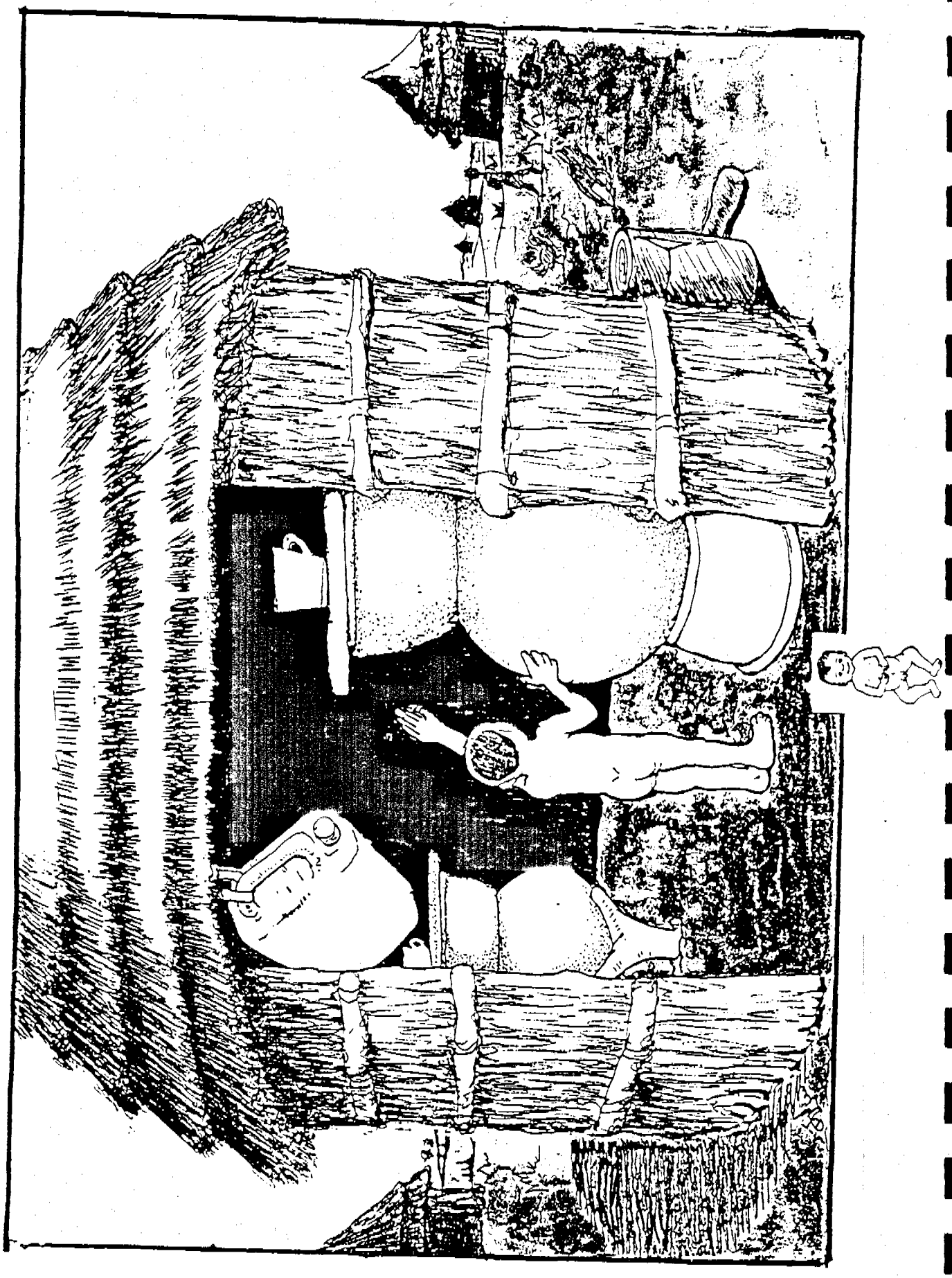
Good storage

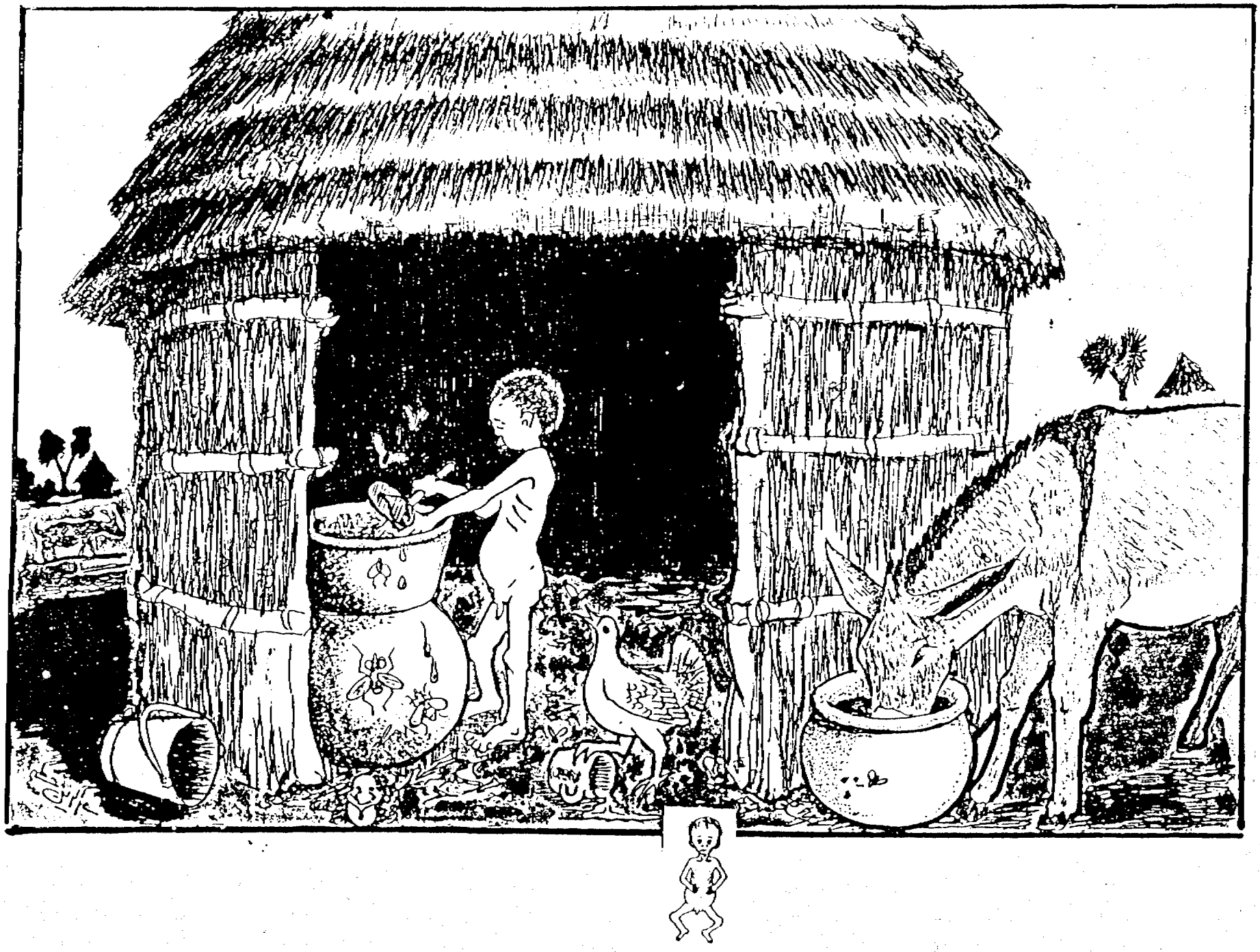
Bad storage

WADS - Nyala









PART C

MANUAL FOR MONITORING

WATER COLLECTION AND CONSUMPTION

Table of Contents

1 INTRODUCTION

The overall objective for the Village Water Supply Programme of WADS is:
"To provide access to a reliable source of water throughout the year for rural villages in order to reduce the time required for fetching water, and to contribute to an eventual improvement in health conditions".

In relation to this objective the project has adopted the following measurable targets:

- Reduced walking distance to the wells.
- Reduced waiting/operating time at the well.
- Use of the well throughout the year.
- Increased per capita consumption.

By comparing results between villages with different features and project interventions, before and after construction, and in different seasons, important indications may be obtained with regard to:

- village selection criteria
- required number of wells per village
- efficiency of the lifting device
- site selection procedures
- efficiency of health education

These may be of direct impact on extension messages.

In co-operation with the Wad el Magboul Institute of the NCDRWR, the IRC in the Netherlands, and the WADS Database in Khartoum, a methodology was developed for the collection and processing of the necessary field data.

The methodology which is described in this manual, is applicable in any water supply project, no matter what technology is adopted.
Only the sample stratification may vary for different circumstances.

In the WADS project, field data is collected by extension workers during intensive surveys, by means of

- observation and interviews of the water collectors
- household interviews in villages/hamlets that use the well
- preparation of village and area maps.

The surveys are conducted by a team of 4 persons (preferably 2 men and 2 women) and take 2 days per surveyed village.

2 METHODOLOGY

2.1 Sample criteria for village selection

In order to arrive at a meaningful sample stratification, one must decide on the variables, which are expected to be of influence on water use patterns:

1. Depth of the well - water level

   Influence on
   - nr of livestock watered at well
   - waiting time
   - (per capita) water consumption

2. Distance to WADS well
   In general, distance is a determining factor when people in South Darfur choose their water source.

   Influence on
   - water consumption
   - means of water transport
   - pressure on the well

3. Lifting device installed or not

   Influence on
   - waiting time during peak hours
   - water consumption

4. Hygiene Education carried out or not

   Influence on
   - nr. of well users (compared with village population size) during-and after the rainy season.
   - water consumption

5. Livestock owned by the villagers
   Each animal watered at the well is in addition to human beings another 'user'.

   Influence on
   - waiting time at WADS wells
   - water consumption

6. Tribal structure
   In "troublesome" villages the WADS wells might be under-utilized due to tribal conflicts.

   Influence on
   - pressure on WADS wells

7. Problematic water situation
   Long waiting time at- and long distances to the water sources make water collection the most time consuming household task of women and children.

Significant improvement with a WADS well might lead to higher commitment on part of the villagers towards extension messages.

8. **Season**
Peak times in agricultural activities and changing climatic conditions will have

Influence on
- pressure on WADS wells
- means of water transport
- water consumption

General

It is pointed out in relevant literature that water use pattern vary among different geographical/cultural areas, which might also be unequal when infra-structural development is concerned.
The expected wide range of received data on one topic results in higher standard deviations, which relativates the statistical value of findings.
With ongoing monitoring activities and bigger sample sizes, however, the involved bias will automatically be reduced.

2.2 Data collection

Two days per village are required for collection of the required field data.
Annex C.1 shows the different activities.

Village and area maps

Village maps help to verify hypotheses concerning water use patterns, because they provide a visual overview of the village area by means of the 'hardest' data available: exact distances to relevant locations.

Clear conclusions can be drawn from findings provided by maps by checking some indicators for target-achievement against Distance (e.g. higher/lower water consumption).

a. A village map is drawn, main village and hamlets (population size/tribal segments) are integrated:

- exact distance from hamlet to hamlet/hamlet to WADS well/hamlet to traditional water source is indicated (distance checked by car)
- directions are taken with compass
- all water sources used by the villagers are indicated (distance/direction/type)
- water sources used by each hamlet on survey day

b. An Area Sketch Map is drawn, upon which are indicated:

- neighbour villages of WADS-project villages (distance and direction/compass)
- population size
- tribal structure
- dry season water sources used by project villages and its neighbour villages

Area Sketch Maps give indications about the expected pressure on the WADS wells during the dry season.
Examples of village and area maps are shown in Annex C.2

Household interviews

Before the WADS well is monitored, interviews are held in the village/hamlets in order to learn about:

- content (number of lts) of containers used for water collection by villagers: during monitoring through observation data are collected concerning quantity of water extracted from the well and carried per water journey.
- how much additional water is collected during the week on peak day(s): required for calculation of water consumption
- regularity/irregularity of water collection pattern: is usually the same amount of water collected with- and before WADS?
- do villagers complain more about waiting time at- or walking time to their traditional water source: criteria for village selection (priority ranking)
- nomads camping in the vicinity of WADS-project villages; Nr.of people and livestock; expected pressure on the WADS well

Two household questionnaires are given in Annex C.3:
the first one to be used in villages/hamlets where a WADS well has been constructed, the second one to be used in villages without a WADS well.

Monitoring at the well

During the second day the water collection at the well is monitored from 6:00 in the morning until 7:00 in the evening.

Data are obtained from observation and interviewing of <u>every</u> water collector (29 data in total).
The forms used for this purpose are shown in Annex C.4.

2.3 Data processing

A computer programme in dBase III, titled "QUEST", is used for the processing of the raw field data.
Reference is made to Annex C.5 for a users manual of the programme, which caters for

- data input: raw data from monitoring sheets
- processing (calculations and statistics) of raw data by means of coding frames[']
- display of the results in the form of tables; an example is shown in Annex C.6

3 RELIABILITY OF DATA

Three different types of data can be distinguished:

- "hard" data : counted / measured
- "weak" data : stated
- processed data : extrapolated from weak data, using "bias factors" (see below)

3.1 Hard Data

Only few quantitative data can be collected through direct observation at the well site:

- number and sexe of water collectors (1)
- quantity of water per water journey (25)
- means of water transport (26/27)
- number of water journeys (26/27)
- waiting time at the well (28)
- livestock watered at well site
- time (29)

The figures in brackets are item nos. on the monitoring sheet.

['] The Code Book has not been added to this report.
It is part of a WADS-report: "Some Aspects of Water Use of Traditional Water Sources and WADS-Improved Water Supply Systems in Darfur, Part I.

3.2 Weak Data

This is data obtained from "statements" of the interviewed persons at the well, and in the households:

- number of water journeys with and before WADS (23/24)
- quantity of water collected before WADS per water journey (question: same, more or less?)
- additional quantity of water collected at peak days per household per week (questionnaire)

3.3 Processed Data

a) It has appeared that there is a marked difference between the counted and stated number of water journeys. The ratio of these two (bias factor) is calculated for every village.
This bias factor is used for further calculations on increase of water consumption and time savings after construction of the well (these are based on the stated number of water journeys before the well was constructed).

The accuracy of this factor is considered to be sufficient: it will be automatically re-defined when the sample size (Nr. of monitored wells) increases.

b) No bias factor is introduced for "Household Size" and "Number of Households in the village", even though these data are used intensively for further data processing[²], because

- the sample size is very large (all water collectors using the WADS wells), which limits the deviation factor involved considerably, and
- comparison with data from other surveys in the project area justifies this.

[²] In polygynous marriage systems a husband forms with each of his wives (in islamic culture up to four) a separate household.
None, or all of the water collectors of each of a man's household might mention him as household member.
Also: The question if guests are served, or if some household-members are absent on the survey day, was not asked.

c) A quite important bias factor is defined concerning the relation between stated population size and actual number of WADS well users.
Introduction of this factor leads to more realistic data with respect to "number of persons-well ratio".

Villagers usually over-estimate, because bigger villages are placed more quickly onto the 'rural development path'.

This bias factor will be defined more accurately when the sample size increases with ongoing monitoring activities.

This is important for:
- planning in line with rural development policies of Rural/Area Councils: village/area selection
- decision on number of wells provided per village (one WADS well can serve from 500 to 750 persons)

d) Results concerning "quantity of water fetched by children" is in so far biased that also those containers are counted, which are actually carried by adults who accompany the child(ren).

ANNEXES

ANNEX C.1

INSTRUCTIONS FOR COLLECTION OF FIELD DATA

INSTRUCTIONS FOR COLLECTION OF FIELD DATA

1. Day

Draw Village Map:

- Indicate location of satellite villages / hamlets
  Note tribes / population / livestock

  Use compass and check exact distances with the car

- Indicate location of traditional water sources and of WADS well

  Use compass and check exact distances with the car

  Differentiate between dry- and wet season water sources

Draw Area Sketch Map:

- Indicate location of satellite villages / hamlets of the WADS project village

  Note tribes / population / livestock

- Indicate location of dry season water sources which are used by these villages

  Use compass

Assess: Containers used for collecting water

Do training on determination of its volume

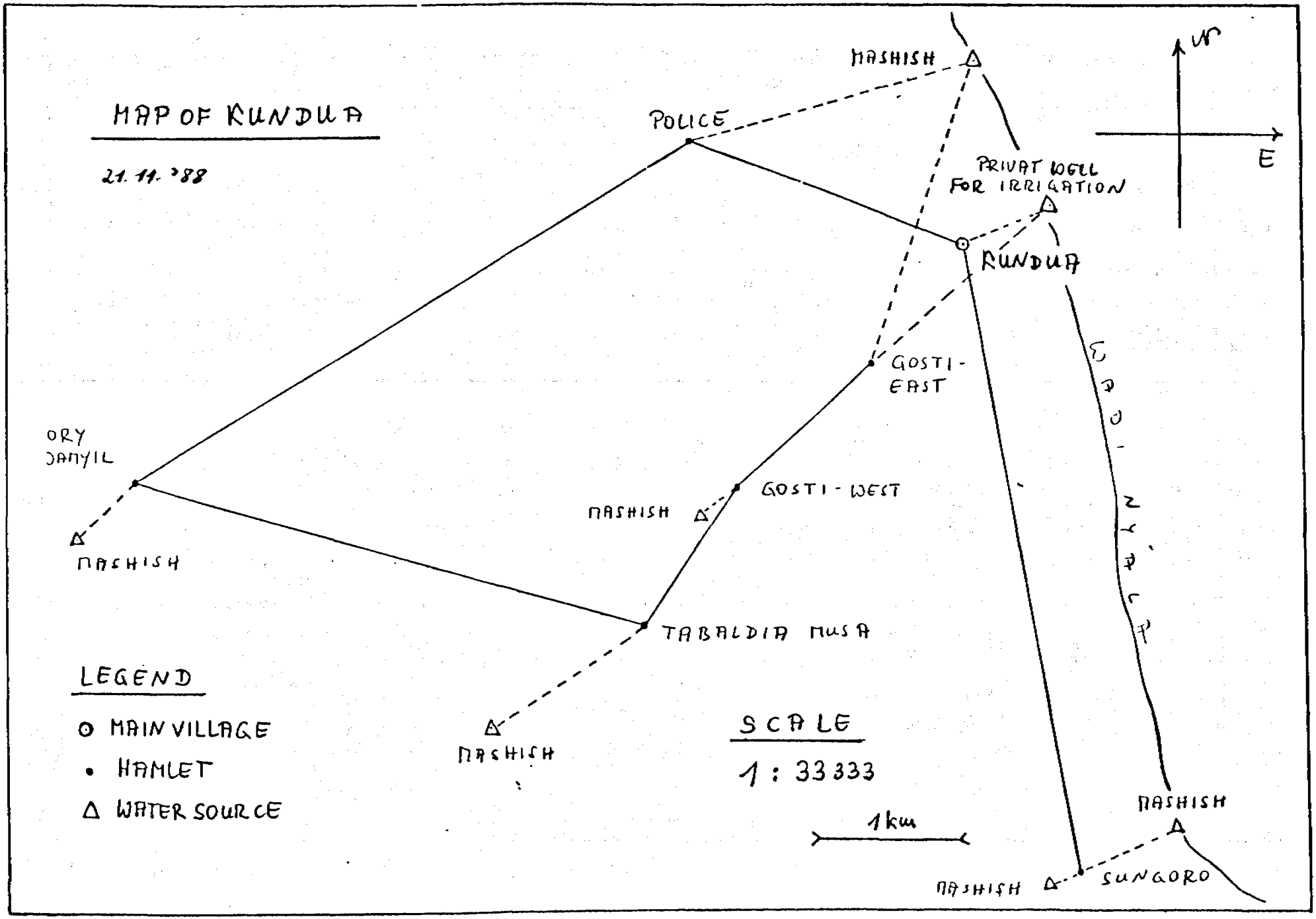
Do: Household interviews

5 per each hamlet that uses the WADS well

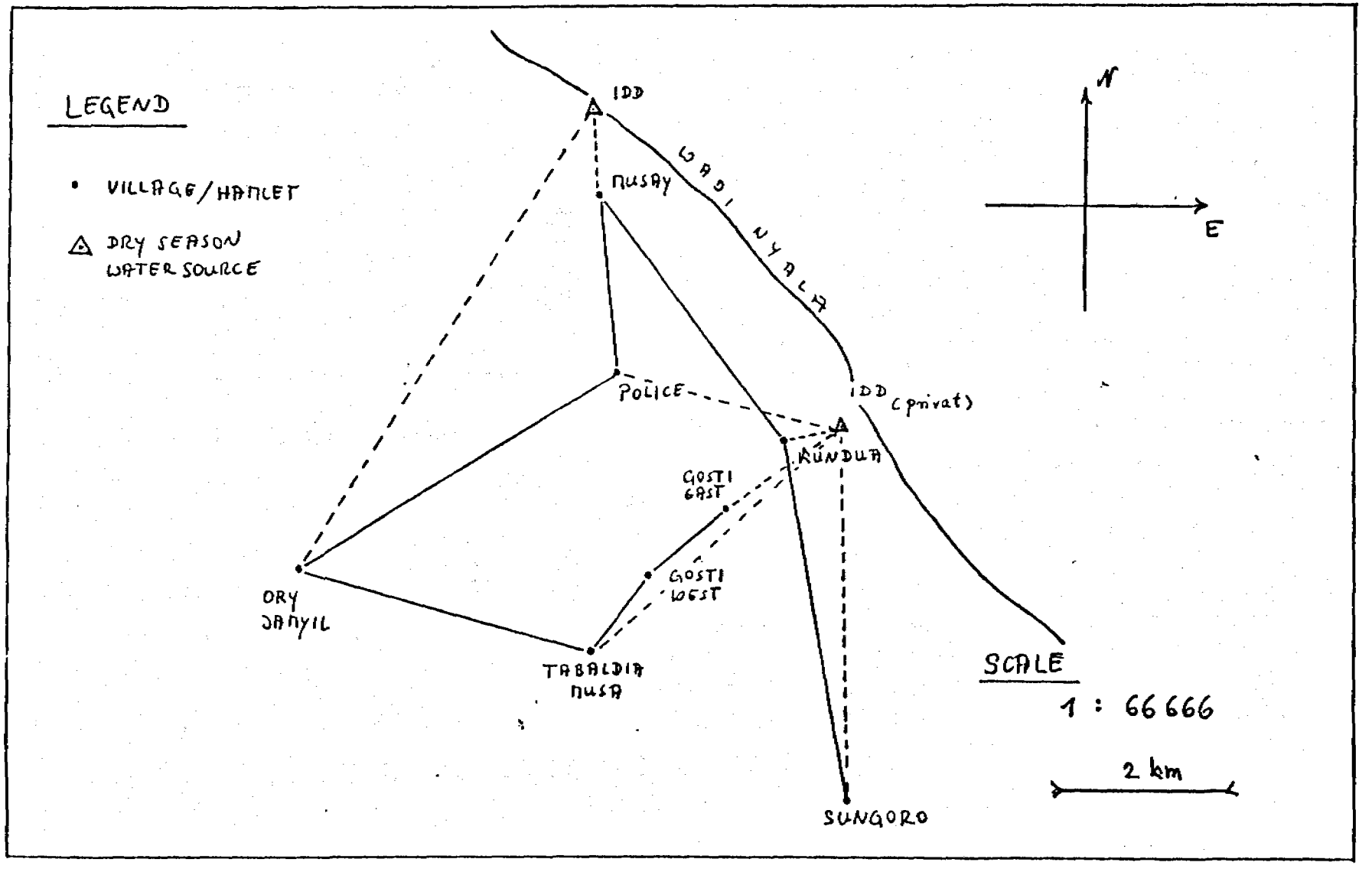
2. Day 6 a.m. to 7 p.m.: Monitoring of the WADS well

ANNEX C.2

EXAMPLES OF VILLAGE AND AREA MAP


MAP OF KUNDUA
21.11.'88
POLICE
NASHISH
PRIVAT WELL FOR IRRIGATION
KUNDUA
GOSTI-EAST
GOSTI-WEST
ORY DANYIL
NASHISH
NASHISH
TABALDIA MUSA
NASHISH
NASHISH
SUNGORO
N
E
LEGEND
O MAIN VILLAGE
• HAMLET
Δ WATER SOURCE
SCALE
1 : 33333
1km

KUNDUA AREA SKETCH MAP



ANNEX C.3

HOUSEHOLD QUESTIONNAIRES

NOS. 1 AND 2

QUESTIONNAIRE NO. 1

Questionnaire for WADS Project Villages
Where Monitoring Sheet Is Used

Village:

Hamlet: Date:

Name of Interviewer:

1. Since you collect water from this well,do you or other members of your household collect more water than before?

   a - o yes no o

   b - if yes, how much more do you collect every day?

   c - if yes, why do you collect more water?

   d - if yes, for what purpose do you use the additional water collected?

2. Do you think you should use more water in your household?

   a - o yes no o

   b - if yes, why do you not do it?

3. Are there days in the week on which you collect more water than on others?

a - o yes no o

b - if yes, on which day(s)?

c - if yes, for what reason do you use this additional water collected?

d - if yes, how much more water do you collect per week?

4. Is water usually collected every day for your household?

a - o yes no o

b - if not, on which day(s) not:

5. Before you used the WADS well, did you carry the same amount of water per water journey?

a - o yes no o

b - if no,

how much less:

how much more:

6. Before you used the WADS well, did you children also collect water?

a - o yes no o

b - if yes,

by donkey o
on foot o

7. Since you use the WADS well, do your children also collect water?

a - o yes no o

b - if yes,
by donkey o
on foot o

8. If you could choose, for what water source would you decide?

a - 1 hour walking - 3 hours waiting

b - 2 hours walking - 2 hours waiting

c - 3 hours walking - no waiting

9. Do you use the water which you carry home also for watering animals?

a - o yes no o

b - if no, at what water source do you water your animals?

QUESTIONNAIRE NO. 2

Questionnaire for Villages Where No WADS Well Is Monitored

Village:

Hamlet: Date:

Name of Interviewer:

1. Do you collect water every day?

   a - o yes no o

   b - if no, on how many days during the week do you collect water?

2. How many times a day do you collect water?

3. How much water do you usually collect every day?

   (check containers used and estimate volume)

4. Are there days during the week on which you collect more water than usually?

   a - o yes no o

   b - if yes, how much more water do you collect per week?

5. For how many persons do you collect water?

6. For what purpose is the water used which you collect?

Drinking o Livestock o Laundry o
Cooking o Bathing o

7. Do you sometimes use more than one water source on one day?

a - o yes no o

b - if yes, which ones (see village map)

c - if yes,on how many days a week do you use this other water source?

d - for what purpose do you use the water collected from this other source?

e - if yes, how many litres do you collect from this other water source?

8. Do you usually collect water on foot or by donkey?

o on foot by donkey o

9. Do children collect water for your household?

a - o yes no o

10. How much time does it usually take to go to the water source, - and to come back?

ANNEX C.4

WATER COLLECTION SURVEY DATA SHEETS

DATE: VILLAGE: RURAL COUNCIL:

NAME EXT. WORKER:

M = MALE F = FEMALE C = CHILD UNDER 14

M = MALE F = FEMALE C = CHILD UNDER 14

No.+sexe of collectors for 1 h.hold		M	F	C	M	F	C	M	F	C	M	F	C	M	F	C	M	F	C	M	F	C	M	F	C	M	F	C
village																												
hamlet																												
No. of users																												
water used for:	drink																											
	cooking																											
	bathing																											
	laundry																											
	animals																											
1st trip																												
2nd or > trip																												
other sour-ces used:	mashis																											
	idd																											
	rahad																											
	hafir																											
water used for:	drink																											
	cooking																											
	bathing																											
	laundry																											
	animals																											
FurtherasWads																												
nearer asWads																												
No.of Jour-neys per day	with WADS																											
	before WADS																											
ltrs collecte																												
on foot																												
donkey/camel																												
waiting time																												
time																												

DATE:.../.../1989. VILLAGE:..................RURAL COUNCIL:............

NAME EXTENSION WORKER:...

...% cattle ...% goats/sheep ...% camels ...% horses/donkeys at well

waterlevel														
measuretime	6am	7am	8am	9am	10am	11am	12am	1pm	2pm	3pm	4pm	5pm	6pm	7pm
No.at well														

DATE:.../.../1989. VILLAGE:..................RURAL COUNCIL:............

NAME EXTENSION WORKER:...

...% cattle ...% goats/sheep ...% camels ...% horses/donkeys at well

waterlevel														
measuretime	6am	7am	8am	9am	10am	11am	12am	1pm	2pm	3pm	4pm	5pm	6pm	7pm
No.at well														

DATE:.../.../1989. VILLAGE:..................RURAL COUNCIL:............

NAME EXTENSION WORKER:...

...% cattle ...% goats/sheep ...% camels ...% horses/donkeys at well

waterlevel														
measuretime	6am	7am	8am	9am	10am	11am	12am	1pm	2pm	3pm	4pm	5pm	6pm	7pm
No.at well														

DATE:.../.../1989. VILLAGE:..................RURAL COUNCIL:............

NAME EXTENSION WORKER:...

...% cattle ...% goats/sheep ...% camels ...% horses/donkeys at well

waterlevel														
measuretime	6am	7am	8am	9am	10am	11am	12am	1pm	2pm	3pm	4pm	5pm	6pm	7pm
No.at well														

QUESTIONS FOR WATER COLLECTION SURVEY DATA SHEET

ROW 1: OBSERVATION. ESTIMATE THE AGE OF CHILD IF WATER IS COLLECTED BY CHILDREN, AND MARK THE NUMBER OF EACH GROU COLLECTING WATER FOR ONE HOUSEHOLD.

ROW 2+3: ASK FROM WHAT VILLAGE OR HAMLET THE WATERCOLLECTOR I COMING.

ROW 4: FOR HOW MANY PERSONS DO YOU COLLECT WATER?

ROW 5 TO 8: FOR WHAT PURPOSE DO YOU USE THE WATER FROM THIS SOURCE?

ROW 9: LEFT: ASK IF WATER IS TAKEN HOME FOR WATERING WHA NUMBER OF ANIMALS AT HOME PUT NUMBER WHEN WATER IS TAKE HOME FOR WATERING ANIMALS AT HOME.
RIGHT:ASK HOW MANY ANIMALS ARE WATERED AT THE WELL SIT AND PUT TOTAL NUMBER IN RIGHT SQUARE. sPECIFICATION O KIND OF ANIMAL IS NOT NECESSARY.
AT THE END OF THE OBSERVATION DAY YOU HAVE A ROUG ESTIMATE ON QUANTITIES OF ANIMALS YOU CAN WRITE DOWN FO EXAMPLE APPROXIMATELY 60% GOATS
30% CATTLE
10% CAMELS, DONKEYS AND HORSES.
WERE WATERED AT THE WADS WELL TODAY. THIS CAN BE MARKE ON THE VILLAGE HOURLY WATERLEVEL SHEET.

ROW 10 + 11: HOW MANY TIMES DID YOU OR OTHER MEMBERS OF YOUR HOUSEHOLD COME ALREADY TO THIS WATER-SOURCE TODAY TO COLLECT WATER? FOR ROW 11 MARK NUMBER OF TRIPS.

ROW 12 TO 15: DID YOU OR OTHER MEMBERS OF YOUR HOUSEHOLD ALSO USE OTHER WATER-SOURCES BESIDES THIS ONE, TODAY?
(IF YES) HOW MUCH WATER DID YOU COLLECT FROM THERE?
(put quantity in proper square!).

ROW 16 TO 19: (If water collected at other source)
FOR WHAT PURPOSE DO YOU USE THE WATER FROM THIS OTHER SOURCE?
(mark the appropriate square)

ROW 20: ASK HOW MANY ANIMALS ARE WATERED AT THIS OTHER SOURC AND MARK THIS IN RIGHT SQUARE.
ASK FOR HOW MANY ANIMALS WATER IS TAKEN HOME FROM THI OTHER SOURCE AND MARK NUMBER IN LEFT SQUARE.

ROW 21 + 22: (If water collected at other source)
IS THIS OTHER SOURCE MORE NEAR OR MORE FAR THAN THIS SOURCE HERE (THE WADS WELL).
(mark appropriate square)

ROW 23: HOW MANY TIMES A DAY DO YOU USUALLY COLLECT WATER NOW THERE IS THIS WADS WELL?
(mark number in appropriate square)

ROW 24: HOW MANY TIMES A DAY DID YOU COLLECT WATER BEFORE THERE WAS THIS WADS WELL?
(mark number in appropriate square)

ROW 25: OBSERVATION
(mark approximate quantity in litres)

ROW 26 + 27: OBSERVATION

ROW 28: OBSERVE OR ASK THE TIME LAPSE BETWEEN ARRIVAL AND FILLING THE WATER TRANSPORT CONTAINER(S).

ROW 29: DON'T FORGET YOUR WATCH!!

ANNEX C.5

USERS MANUAL

DBASE PROGRAMME "QUEST"

Q U E S T

U S E R S M A N U A L

Introduction

This manual describes how to use the Quest Programme. The programme was designed for the use of WADS - Nyala in April 1989 by Evert Holleman.

The programme can be used to process the data from the Water Collection Survey Data Sheet.

In the programme there are 5 options:

- The data can be entered from the Monitoring Sheet.
- The entered data can be modified.
- There is an option to give an overview of the entered data.
- The statistical option gives a number of results.
- A view of the most relevant information combined with the results of the monitoring survey is presented in the last option.

This manual describes how to start the Quest programme.

Afterwards the above mentioned options are described in detail.

The third part of the manual concerns back-up and data management.

1. Starting QUEST

Starting the Quest programme depends on the computer that you are working on:

1. a computer with two floppy drives (like IBM.XT)
2. a computer with a hard disk (like Olivetti M21)

TYPE means to type the mentioned characters and press ENTER.

1.1. Computer with two floppy drives

There are two floppy drives. The top one is called A, the lower one is called B.

* Put the floppy MS-DOS 3.10 for QUEST in drive A
* Switch on the computer and wait until A> appears
  First the dBase programme has to be started
* Put the floppy DBASE III, DISK I in drive B
* Type: B: with ENTER
* Type dbase with ENTER and wait
* Type: space
* A message appears telling you to put another floppy in drive B
* Put the floppy DBASE III, DISK 2 in drive B

Now the QUEST programme has to be started

* Put the floppy QUEST in drive A
* Type: set default to a:
* Type: do Quest

The programme will start with the Main Menu

See chapter 2 to continue.

1.2. Computer with a Hard Disk

The programme and the data are started on the hard disk in the computer.

* Switch on the computer and wait until C> appears
* Type: QUEST
* Give a space when the dbase programmes request that
* Wait until "." appears
* Type: do QUEST

The programme will start with the MAIN MENU

See chapter 2 to continue.

2. Operating QUEST

All activities in the programme QUEST can be started from the MAIN MENU.

The following options are given in the MAIN MENU:

E	Data Entry
L	List Villages
M	Modify Data
C	Calculating Statistics
D	Display Results
Q	Quit

The user can start one of the activities by selecting the mentioned character.
Any other character entered will not be accepted.
The Q will stop the programme.

All options are discussed below.

E - Data Entry

This option allows the user to enter data into data base file.
The data will remain there, even when the computer is switched off.
The data that can be entered is the information that is written on the MONITORING SHEET.
Some additional information is also required.

After selecting E , the DATA ENTRY SCREEN will appear.
There are 4 options:

1 - Enter Village Information

2 - Enter Survey Information

3 - Enter Monitoring Results (collected on MONITORING SHEET)

4 - Stop entering Data

The information is stored in three groups:

1 - The Village Group with fixed information on village and WADS well

2 - The Survey Group with information collected on survey day by other means than the Monitoring Sheet

3 - Information on the MONITORING SHEET from all water collectors interviewed at the well site.

When entering data from the MONITORING SHEET:
start with option 1, if there has been no survey data entered of this well before.
If a survey has already been entered concerning this well, you can skip option 1.

Go to option 2, if no Survey Group information has been entered before.
If survey group information has already been entered, skip option 2.

Go to option 3 to enter the information collected at the well site on MONITORING SHEET from each WADS well user.

Option 1 Enter Village Information

* Type the name of the village

  If this village has already been entered before, a message will appear. You return to the DATA ENTRY SCREEN.

  If not, go on to
* Type the name of the Village Council, the Rural Council and up to five names of Hamlets, which form part of the WADS project village.

* Type the double distance from the village to the WADS Well, expressed in km.

* Type the double distance from the village to the traditional water source used in the dry season by the villagers before the time of WADS.
  - expressed in km.

* Type the depth of the WADS Well, expressed in m.

Then a question appears:

Do you want to change this information?

If you made a typing error you can correct it by typing y
If you type n, the information is stored.
You return then to the MAIN MENU.

Option 2 Enter Survey Information

Type 2 in the DATA ENTRY SCREEN

* Type the village name

  If no information about this village has been entered before with option 1, it is not possible to continue.

  If you are not sure about the spelling of the village name, use option <L> in the MAIN MENU, after leaving the DATA ENTRY SCREEN with "S".

Else:

* Type the data of the monitoring. Type in double digits, for example 5 has to be typed as 05

A question will appear on the screen if you want to change the data.
Reply with y to the question, if you want to change the data entered.
If you made an error, you can correct it now.

Else: reply with n to continue.

A number of questions appear on the screen:

What is the additional water use during peak days. Give average per household/week in litres.

Enter a number

At the Well:

Tank (Y/N) Is there a tank built next to the well? Answer with Y or N

Windlass Enter one of the 5 possibilities, by typing

HANDLE
SPOKES
HANDLE AND SPOKES
HOOKS
ABSENT

Typing errors are not accepted.

Enter the estimated percentage of livestock for

Cattle
Goats/Sheep
Camels
Horses/Donkeys

Type a percentage for each
The percentages should add up to 100%

If the total does not add up to 100%, the programme corrects it proportionally. A message appears at the bottom of the screen: livestock percentages adjusted, and the user can change the percentages again.

Health Education:

If a village has been visited for health extension, type Y , otherwise N.
If yes, enter the year and month of the health education activity.

Water level:

Enter the measured water level of the WADS Well as measured and noted down during survey at the well site from 6 a.m. to 7 p.m.

At the end, if there are no mistakes found, the question: Do you want to change this information?
appears.
Answer with Y or N again.

With N the data will be stored and you return to the DATA ENTRY SCREEN.

Option 3 Entering Monitoring Results from MONITORING SHEET

Type 3 in the DATA ENTRY SCREEN.

Give the name of the village and the data of the monitoring.
Information on the village has to be stored before with option 1.
The date of the survey or questionnaire has to be equal to the one entered in option 2.

Type village name.
Type date, for example 5 April 1989 as 050489

If the above mentioned information has been entered correctly, the data entry starts. Otherwise you will return to the MAIN MENU.

Use the MONITORING SHEET
Enter interview number
Give a number in three digits, like 001
If this number has already been entered for this survey, you will have to give a new number.
An overview of all entered numbers can be found with option <L> in the MAIN MENU.

Collectors	Enter numbers of male, female and children who collect water
Village	Give name of village
Hamlet	Give the name of one of the mentioned hamlet or space Other names are not accepted.
Number of Users	Enter a number
Water used for: Drink Cooking Bathing Laundry	Enter X if water is used for one of the purposes Otherwise leave empty If one of the mentioned purposes is entered with an X, they are all considered like that.
Animals<left>	Enter number of animals for which water is carried at home
Animals<right>	Enter number of animals that are watered near the well.
1st trip 2nd or more	Enter X in one of the two. Leave the other empty. Both entered or both empty is not allowed, since it is either the first visit to the well that day, or not.
Other sources	Enter a number for each source. If no information, leave the field empty.

Do you want to change this data?
Check the entered information carefully.
If you find a mistake, you must correct it, type Y
Otherwise type N and continue.

Water used for (concerning other sources)	Enter X or space like before
Animals	Enter numbers: left - at the other source right - water carried home from the other source
Further/Nearer than WADS	Give X in one of the fields, leave the other empty. Both X or both empty is not allowed.

Journeys with WADS	Enter a number or space
Journeys before WADS	Enter a number or space.
Litres collected	Enter a number
On foot By donkey	Give X in one of the fields, leave the other empty Both X or both empty is not allowed.
Waiting Time	Give number of minutes/waiting time If not measured leave it empty (it is stored as -1) If measured, but zero, enter 0 If measured and not zero, enter number in minutes.
Time	Enter hours and minutes

Do you want to change this information?

Type Y or N

If N, continue with
Do you want to enter another interview?

Enter Y so continue, or enter N to stop.

S Stop Entering Data, to return to the MAIN MENU.

L List Villages

Enter L in the MAIN MENU

A listing of all entered villages is given with the Rural and Village Council.

Do you want additional information?
Enter N to return to the MAIN MENU
Enter Y for more information: Enter the name of the village from the above list.
Some information is displayed.

If you want to see which interview numbers are entered, answer the question

Enter data for monitoring info <ddmmyy)
with one of the dates from the above list

To stop give Return immediately.

M Modify Data

Enter M in the MAIN MENU

This option is similar to the Data Entry Option.

The Village, Survey and Monitoring Data can be recalled and changed if necessary.

C Calculating Results

Enter C in the MAIN MENU

Give the name of the village and the date of the monitoring.

Counting Results will be presented.

Later the Calculating Results appear.

ANNEX C.6

EXAMPLE DATA DISPLAY SHEET

WATER COLLECTION AND CONSUMPTION - DATA DISPLAY SHEET

VILLAGE RURAL COUNCIL	KOGARA KAS	DAWRA KAS	AWEEN RADO KAS	GAMAIZA KAS	KARO KARO NYALA-SW	ALLA GABU NYALA-SW	DABAKAFOT KAS	DABA NYRA KAS
TRIBE(S)	FUR	FUR	FUR ZACHAUA	FUR	FUR BANI HALBA	ISSERRA SAADA	RIZEIGAT	FUR
DATE OF SURVEY	01/11/88	06/12/88	07/12/88	01/03/89	13/03/89	14/03/89	21/03/89	20/03/89
PERSONS SERVED	383	894	143	589	348	378	201	401
DEPTH OF WELL	22 m	14 m	13 m	9.6 m	13 m	16 m	13.8 m	17 m
WATER LIFTING DEVICE:-TYPE -OPERATED YES/NO	WINDL/TANK NO	———	———	HANDLES YES	TANK/HANDLE YES	HOOKS YES	HANDLE YES	HANDLE YES
HYGIENE EDUCATION YES/NO DATE	NO	NO	YES 12/88	NO	NO	NO	YES 12/88	YES 12/88
CONTAM.:TOT/FAEC./DATE CHLORINATION: NO / YES-DATE	30/10/389 Y-7.2.89	20/12/389 NO	26/12/389 NO	4/0/3.89 Y-13.2.89	20/16/389 Y-1.3.89	150/12/389 Y-28.2.89	2/0/3.89 Y-3.2.89	8/2/3.89 Y-4.2.89
DISTANCE TO WADS WELL	0.7 km	0.7 km	1.2 km	0.6 km	0.7 km	1.3 km	0.3 km	0.2 km
DISTANCE TO TRADITIONAL DRY SEASON WATER SOURCE	3.0 km	1.85km	2.05km	2.0 km	1.5 km	1.3 km	0.3 km	0.7 km
REDUCED DISTANCE TO WATER SOURCE WITH WADS	2.3 km	1.15km	0.85km	1.4 km	0.8 km	0.0 km	0.0 km	0.5 km
IN-/DECREASE OF W.JOURNEYS PER DAY/H.H. WITH WADS	+ 69%	+ 7%	+ 7%	+ 19.5%	+ 40%	+ 30%	+ 15%	+ 9%
INCREASE/DECREASE OF LENGTH OF W.J.PER DAY/H.H.WITH WADS	- 60%	- 59%	- 37%	- 64%	- 35%	+ 30%	+ 15%	- 70%
WATER COLLECTORS: CH / F / M (IN %)	30/65/5			20/79/1	34/59/7	18/77/5	36/59/5	25/71/4
WATER COLLECTED: ON FOOT (IN %) BY DONKEY	67 33	62 38	42 58	94.5 5.5	61% 39%	27% 73%	86% 14%	63% 37%
WATER COLLECTED BY CHILDREN: (IN %)				16.8	42%	27%	24%	30%
AMOUNT OF WATER AVERAGE CARRIED PER ON FOOT WATER JOURNEY: BY DONKEY	17.5 l 14.2 l 32.4 l	20.9 l 16.3 l 38.6 l	25.2 l 17.6 l 36.9 l	16.2 l 15.5 l 61.4 l	22.6 l 16.8 l 50.9 l	33.7 l 18.3 l 49.3 l	19.1 l 17.1 l 60.0 l	23.4 l 17.4 l 56.3 l
L.C.D.- AVERAGE BEFORE WADS	7.7 l	7.3 l	5.8 l	9.65l	9.7 l	8.1 l	10.0 l	8.4 l
L.C.D.- AVERAGE WITH WADS	10.0 l	7.8 l	6.2 l	10.8 l	13.2 l	10.2 l	11.0 l	9.1 l
L.C.D.- IN-/DECREASE WITH WADS (IN %)	+ 30%	+ 7%	+ 7%	+ 12.4%	36%	27%	10%	9%
HOUSEHOLD SIZE: AVERAGE	5.7	5.3	5.1	3.8	4	6.5	4.7	5.2
L.C.D.- IN HOUSEHOLDS > AVERAGE H.SIZE	6.7 l	6.1 l	4.3 l	7.8 l	11.6 l	9.4 l	9.4 l	7.6 l
L.C.D.- IN HOUSEHOLDS < AVERAGE H.SIZE	13.6 l	9.9 l	9.4 l	18.4 l	15.8 l	11.6 l	14.4 l	12.0 l
L.C.D.- IN HOUSEHOLDS WHICH DO W.J. ON FOOT	9.2 l	6.8 l	4.8 l	10.8 l	12.6 l	8.3 l	10.6 l	8.6 l
TIME: FOR WATER COLL.BEFORE WADS PER DAY/H.H.-DRY SEASON	4 h 40	4 h 27	8 h 47	8 h 15	3 h 00	3 h 52	1 h 40	3 h 48
TIME: FOR WATER COLL. WITH WADS PER DAY/H.H.	1 h 52	1 h 35	1 h 42	2 h 05	1 h 41	2 h 40	1 h 12	0 h 58
TIME GAIN (%): DIFFERENCES IN L.C.D. CONSIDERED	60%	64%	80%	75%	43%	31%	28%	74%
WAITING TIME-AVERAGE WITHWADS PER W.J. (min)	0	7	0	20	5	11	14	20
WAITING TIME-AVERAGE PER WJ BEFORE WADS DRY SEASON (min)	60	90	240	150	90	90	60	90