

Government of Egypt  
Governorate of Fayoum

Government of the Netherlands  
Ministry of Foreign Affairs  
Directorate General for  
International Cooperation

# FAYOUM DRINKING WATER AND SANITATION PROJECT



## PILOT VILLAGES PROGRAMME

### Report 1

Data collection, identification of pilot  
projects and hygiene education approach

March, 1992

EL AZAB WATER WORKS, FAYOUM in cooperation with

## IWACO

Consultants for Water & Environment  
Rotterdam  
The Netherlands

## DHV

DHV Consulting Engineers  
Amersfoort  
The Netherlands

## ECG

Engineering Consultants Group S.A.  
Cairo  
Egypt

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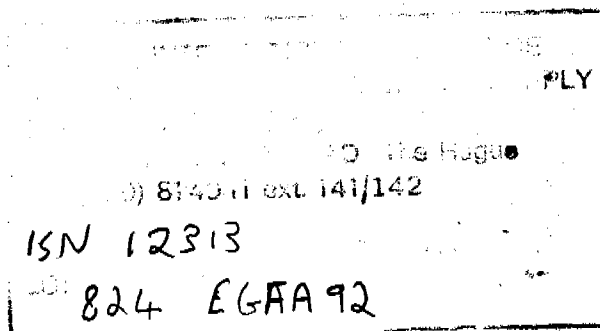
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## 1. INTRODUCTION

### 1.1 BACKGROUND

This report is the result of a three week mission to the Fayoum Drinking Water and Sanitation Project in February 1992. The mission took place within the framework of the "Pilot Villages Programme", which according to the Plan of Operations is to start at the beginning of 1992 and should run until the end of the first phase.

Main objective of the mission was to assist in the start-up of the technical field survey, which will ultimately cover 5 Local Units (pilot villages), selected by the Governorate of Fayoum.

The mission performed field testing of the available draft checklist, modified this checklist and provided guidance to the data collectors in the field for using it. Inputs were provided to the ECG computer programmer for completing the data processing software.

The information collected during the mission aimed at:

- obtaining background information from village level and water users for masterplanning;
- provide guidelines for the identification of small pilot projects in the villages, to be implemented in Phase I of the Project (1992 - 1993);
- to provide a set-up for the identification and execution of small pilot projects at village level;
- outline and approach for pilot hygiene education activities.

The following general recommendations are made:

- 1) The Project shall perform any activity in the village together with the Local Unit staff. This is to involve them from the beginning in planning and decisionmaking. The objective is to strengthen the Local Units capacity for implementing and maintaining projects concerning water supply and sanitation improvements.
- 2) The pilot character of the small projects allow for other than "conventional" solutions with regard to technology, service level and phasing. Therefore a step-by-step approach will be adopted, including project monitoring.
- 3) The relation between the Pilot Villages Programme and the other ongoing project activities should be established clearly, and wherever possible linkages should be established by concentrating other (study) activities on these Pilot Villages.

At the time of reporting, February 1992, data collection in one village, the village of Kalamshah in Itsa District, had been completed. The draft data collection report is expected to be finished in July 1992, after all five villages have been surveyed.

## 1.2 OBJECTIVES AND SCOPE OF ACTIVITIES

The main objective of Fayoum Drinking Water and Sanitation Project is:

*To improve the drinking water supply and sanitation in Fayoum Governorate to such an extent that it has a long lasting impact on public health and the well being of the rural population in Fayoum Governorate.*

The Plan of Operations mentions that in 1992 a programme in pilot villages for improvement of water supply and sanitation will be prepared and executed, in conjunction with improved maintenance, billing and client relations. The objective of this programme is to identify and evaluate water supply and sanitation improvements at village level, and to establish a preliminary activity with respect to hygiene education.

Tentatively 5 villages have been selected by the Governorate, one in every District (*Markaz*). A staged programme has been outlined for the pilot villages <sup>1</sup>.

### \* Stage 1:

General data collection and a complementary reconnaissance field survey with respect to the existing situation concerning drinking water and waste water.

### \* Stage 2:

Specific data collection, including:

- technical inspection of actual water and waste water facilities and connections in houses of residents, randomly 60 per village (see annex 1);
- inspection of public taps, 5 selected taps in each village plus hamlets (annex 2);
- public facilities survey (annex 3);
- health and hygiene conditions, through the local health centre;
- preparing a topographical village map, or upgrading the existing map;

---

<sup>1</sup> Relevant studies in the field of water supply and sanitation in Egyptian villages which served as a frame of reference are:

- A 1986 study of women's practices with regard to water and sanitation in two villages, Babil and Kafr Shanawan in the Minufiyya Governorate, conducted by the Social Research Unit of the American University in Cairo. Published by El-Katsha, Samiha et al., "Women, Water and Sanitation: Household water use in two Egyptian villages". In: *Cairo Papers in Social Science*, Vol. 12, Monograph 2, Summer 1989.
- A 1987 study by the Institute of Cultural Affairs in Beni Suef on women as health care takers in Beni Suef. Institute of Cultural Affairs: *The Health Care Takers Program in Bayad Village*. Cairo: Unicef, June 1987.
- An ethnographic study by Linda Oldman and her team, commissioned by Unicef in 1988/89, into socio-cultural factors influencing the prevalence of diarrhoeal diseases in rural Upper Egypt. Published by Unicef Cairo in four reports, the summary report of which is: *Sociocultural Factors influencing the Prevalence of Diarrhoeal Disease in Rural Upper Egypt: An Ethnographic Study in Six Villages*. Cairo: Unicef, 1990.

- soil and groundwater investigation;
- institutional assessment of relevant available organizations.

#### **\* Stage 3**

Implementation of improvements. These may include the following:

- leak detection and reduction programme
- rehabilitation of house connections
- customer relations, billing
- upgrading of public standposts
- hygiene education activities
- on-site sanitation improvements
- street cleansing, solid waste disposal

The pilot study of 5 villages/Local Units of the 39 in Fayoum Governorate concentrates on the following villages:

1. Kalamshah in Itsa District,
2. Abu Ksa in Ibshway
3. Tersa in Sennoures District
4. Desia in Fayoum
5. El Roda in Tamiyya

### 1.3 METHODOLOGY

The study teams are introduced to the villages by two official letters. The first one is from the Project leader approved by the Governor of Fayoum, stating that this village is selected by the Governorate for a detailed study in the Fayoum Drinking Water and Sanitation Project. The second one contains a recommendation of the Director of Al Azab Company to the mayor of the village.

At the start of the study the teams pay a visit to the major of the Local Unit to introduce the project and the field study to him.

These letters and explanatory visit are essential to the approval of the study by the local officials. In Kalamshah this introduction meant that the researchers were accompanied by Local Unit personnel and that a list of households to be visited in the main village had been prepared.

The Local Unit of Kalamshah has been most cooperative in providing information and support to the study teams.

The methodology of the study consist of observation and structured interviews. Most of the study time is devoted to home visits, designed to observe the different water supply, sanitary and hygiene conditions in different social groups of the village and its various hamlets. Interviews are conducted with public taps users. Interviews are also conducted with staff of the Local Unit, the health centre, schools, youth club, and other public facilities. Official statistics were often said or found to be quite distant from reality. Hence, most of the figures included in the village description are either

estimates provided by the concerned personnel or key informants, or they are based on own observations, which in that case is mentioned.

The key informants from the various areas were distributed as follows:

*Itsa District, Kalamshah main village*

In the main village 30 households were visited. Next to that 8 public facilities were visited and observed, while 1 public tap was observed.

*Itsa District, Kalamshah satellite villages*

Eleven hamlets were visited, in each hamlet 2-3 families were visited, in total 30. Also all public taps, in total 11, were observed.

For the execution of the study in Kalamshah two teams were formed consisting each of three persons, from Al Azab Drinking Water Company, NOPWASD and the Consultants' team. One or two staff of the Local Unit joined each team. After about 4 hours of work daily, the results were discussed. The total field work period covered nearly 2 weeks.

The results of the first data collection in Kalamshah are presented in annex 4. The data collection forms for the household survey, the public tap survey and the Public Facilities survey are attached as annexes 1, 2 and 3.

## 2. APPROACH FOR SMALL IMPROVEMENT ACTIVITIES

### 2.1 DRINKING WATER SUPPLY IMPROVEMENTS

Since Al Azab is the responsible agency for drinking water in Fayoum Governorate all improvements in this field have to be coordinated by Al Azab, such as:

- Rehabilitation of existing public taps, involving a development of users' contribution, drainage and platform construction (by Local Unit), metering of new standposts, monitoring of water consumption, billing for water consumption and ultimately increasing users' responsibility for public standpost maintenance.
- Leak detection and reduction, involving also support to Local Units, which are formally responsible for repair of pipes of 2" and less.
- Improvement of customers relations;
- Billing improvements, by improvement and computerizing of the accounts system.

### 2.2 SANITARY IMPROVEMENTS

On-site sanitation improvements can be prepared by Consultants' team and executed with the Local Units, such as:

- Rehabilitation and construction of school latrines.
- Improvement of septic tank system for schools.
- Improvement of cess pit emptying system.

More far-reaching activities such as design of improved sewerage system for part of a village will have to be coordinated with other ongoing project activities.

### 2.3 MANAGEMENT SET-UP FOR SMALL PROJECTS IMPLEMENTATION

The proper execution of small projects requires a management set-up which is appropriate to the Egyptian local government.

An implementation process is envisaged in which the consultants act as change agents for processes, which are actually executed by Local Units, which receive expert advice from specialized agencies as Al Azab for drinking water improvements, NOPWASD for sanitary improvements and other agencies for hygiene improvement training.

To act as a facilitator of technical change processes the consultants' team in cooperation with Al Azab and NOPWASD has executed a thorough field study. The aim of the field study is to provide enough information to enable the team:

- to define problems and identify solutions;
- to build coalitions with the local government;
- to motivate people for improving water supply and sanitation conditions.



Based on problems identified, strategies are formulated to solve a number of the identified problems, which are within the mandate of the Fayoum Water Supply and Sanitation Project.

A clear relationship exists between strategies and plans developed and the resources and organisation required to support them. Limitations in different type of resources restrict the number of alternative strategies that can be followed.

The process of selecting certain small projects (or targets) to implement is guided by several considerations:

- There must be flexibility in implementation, based on an analysis of opportunities and limitations in a certain village;
- Intervention requires that the outsiders' role is one of a temporary outside advisor. Consultants certainly will not take over the responsibility for implementation.
- There must be a cooperative relationship between Local Unit (client) and the Al Azab/consultants' team. This implies commitment of the Local Unit, and orientation towards project sustainability in the longer term.

#### 2.4 ROLE OF LOCAL GOVERNMENT

The local government is the direct meeting point between citizens and government. It is at this point that policies have to be effected in concrete actions.

While policymaking is a task of government, each government has its administrative apparatus to prepare and implement policies. At the basis, in the towns and villages, the policies have to be executed.

In the case of provision of potable water supply and sanitation in Fayoum Governorate El Azab Water Works is responsible for supply of drinking water. For sanitation there exists no agency yet at Governorate level. In villages the Local Units are responsible for the sanitary situation in their municipalities.

For the successful realization of a policy it not sufficient that the aims of the institution fit in with those of the target group. For, also the institution should be sufficiently capable to implement the tasks for which it is made responsible. It has to have personnel, financial and material means at its disposal, as well as an internal structure and leadership which enables it to implement activities.

In the relation between an institution and its environment various linkages between institution and target group can be conceptualized.

A prominent place is given to the concept "interest", meaning whether and to what extent a member of a target group has a genuine interest in what a governmental institution has to offer.

For example, while the interest of the people for obvious reasons can be expressed as lowering the groundwater, it is not certain whether a governmental institution is able to fulfil this interest.

### 3. APPROACH OF HYGIENE EDUCATION

#### 3.1 OBJECTIVES AND TARGET GROUP

The objective of a hygiene education programme is to support the sustainability of small physical projects and to have a lasting favourable impact on personal and domestic hygiene. It is assumed that the impact of a personal and domestic hygiene campaign is best served by a combined water and sanitation hardware programme in conjunction with hygiene education.

Target groups are school children and staff, as well as the nurses and doctors of the health centres.

#### 3.2 HEALTH EDUCATION PROGRAMMES IN EGYPT

President Husni Mubarak has declared the decade 1989-1999 the Decade for the Protection and Development of the Egyptian Child.

Before children can benefit from a good education, they must be in good health. The nationwide infant mortality rate was 101/1000 in 1986 as reported by the Central Agency for Public Mobilization and Statistics (CAPMAS). The mortality rates in individual governorates vary widely. From 71 in Alexandria to 151 in Qena.

Although the Oral Rehydration Campaign jointly sponsored by UNICEF, USAID, the World Health Organisation and the National Center for Diarrhoeal Disease Control has already reaped impressive results, and infant mortality figures have taken a marked turn for the better, many improvements in child health and hygiene conditions are still to be undertaken. The influential UNICEF publication *The State of Egyptian Children*, 1988, testifies this.

The Universal Child Immunization Programme (UCI) moved well above 80 percent coverage for all six vaccines by 1990, while nutrition, including proper breastfeeding and child spacing get recently more attention from the Child Survival Project (CSP), a department of the Ministry of Health which started in 1987. In this framework UNICEF and CSP engaged in a *daya* (traditional midwives) training project to end the unsafe birthing practices, and to integrate her in the formal health system.

Health education programmes in Egypt follow usually the route from the centre via the governorate, through the district all the way down to the rural health unit, to which the mother usually first turns when she decides to resort to official medical services. The same path way also serves to transmit information back to the central level, in the form of surveys, registration data etc. There is one bypass to reach the public directly: the nearly omnipresent television campaigns, carrying advice on everything from bilharzia to breastfeeding, are the usual method for skipping all levels in reaching the public.

Nevertheless most intervention programmes are designed to be executed along government-district line.

### 3.3 APPROACH OF HYGIENE EDUCATION IN SCHOOLS AND HEALTH CENTRA

The intended hygiene education activities will start from bottom-up. Hygiene education can start in schools, the health centre or the women's sewing class room. But, to intervene only through educational projects is a form of blaming the victim: and it is unacceptable to tell people to wash their hands when there is no proper drainage system.

Because schools and health centra offer the opportunity to tackle basic infrastructural problems and to combine this with education, they will be the first target.

Lasting improvements of school latrines are best served by school hygiene education. Secondly, a large number of people directly and households indirectly, via the children, can be reached. Lasting improvements of latrines and hygiene conditions in the health centra education by nurses and doctors will reach 90% of all women having children in the age to be vaccinated and school going children who will visit the centra for their annual bilharzia check.

In order to formulate best conditions for success, first the risks must be faced:

- (i) The best information cannot guarantee the required change in behaviour. The persistence of widespread misuse of ORS demonstrates that disseminating information in no way guarantees that it will be followed.
- (ii) Propagating more hygienic behaviour might encounter obstacles from a medical establishment with little experience in the field. For example most of the unwanted cessation of breastfeeding is due to medical advice.

The non-educated mother knows more about hygiene than health educators think. Health educators tend to forget rural mothers have developed their indigenous knowledge on hygiene and child rearing, which has arisen both from tradition and in response to their environment. A recent article *Saving the child* reports on the results of a study of rural hygiene habits, commissioned by UNICEF in 1989 (Cairo Today, February 1992: 104). It was found that rural mothers recognize up to eight different types of diarrhoea, each with its own separate causes, symptoms and treatments. Upon this the research team concludes that the messages on diarrhoea prevention and use of ORS were unhelpful and confusing.

- (iii) The emphasis on education ignores the basic element which creates people's (un)hygienic habits and most of the actual health problems among children: the physical environment.

There is no subject in schools, which explicitly deals with hygiene education, apart from perhaps home economics for girls and Islamic teaching as far as it deals with the ritual cleansing before prayer.

The new subject of environmental studies - a combination of science, home economics, agriculture and social studies - , which was introduced per September 1991 to grades 1-3, would lend itself best to include hygiene education. But this has not been introduced yet to rural schools in Fayoum, as it seems.

With help of the didactic material of UNICEF and the Centre for Development Services in Cairo a series of lessons/exercises could be introduced in one school and/or one health centre aiming at solving one particular hygiene problem. Drama, role play or puppet play are amongst the theatrical-didactical means which can be used in the lessons at school. Teachers, nurses and doctors will be considered for the courses of the Centre for Development Services.

### 3.4 EXECUTION AND TENTATIVE WORKPLAN

Below a tentative staged programme for hygiene education in a school in Kalamshah has been outlined.

#### \* Stage 1:

Selection of school and further preparation of programme, including:

- discussion with the representative of the Organisation of Education in the Local Unit and possibly the mayor on improvement of school latrines and an educational programme in one or two schools;
- physical project preparation: area survey, design, bill of quantities, approval for execution;
- meeting with (interested) teachers;
- meeting with Centre for Development Services on possible support, briefing on goals of programme, timing, collection of necessary materials.

#### \* Stage 2:

Specific preparations, including:

- detailed investigation of health and hygiene conditions at school, possibly of some students at home;
- training of trainers, including local teachers and nurses, possibly some Al Azab staff by Centre of Development Services;
- preparation of materials, puppets, etc.
- identification of target groups of students, their level of knowledge, age etc.

\*\* Preferably at this time the physical implementation programme should start.

#### \* Stage 3

Implementation of out-of-school activities. These may include the following:

- preparation of a school theatre;
- an investigation of level of hygiene in the own street;
- street cleansing, solid waste campaign;
- formation of sanitation brigade (class captain), to take care for toilets;
- development of hygiene promotion campaign etc.

4. WORKPLAN FOR FURTHER DATA COLLECTION

4.1 TIME SCHEDULE FOR COMPLETION OF TECHNICAL STUDY IN FIVE DISTRICTS

This planning schedule involves a time planning for the further conduct of a technical survey in 5 Local Units in Fayoum Governorate, as well as guidelines for identification of small projects in Local Units.

The technical inspection of the drinking water and sanitary situation in 5 pilot villages in Fayoum Governorate has been split into three parts:

- a. a household study
- b. a public tap study
- c. a public facilities study.

Planning parameters are:

- the scope of study per Local Unit
- availability of staff of Al Azab and NOPWASD
- the cooperative attitude of Local Unit staff
- time involved in data processing and data entry.

*Scope of study*

The survey will only take place in the main village of the Local Unit and its surrounding hamlets. The Fayoum Governorate has selected one Local Unit in each District (*Markaz*) of the Governorate.

Within one Local Unit the scope of study involves:

- a. study of drinking water and sanitation situation in 60 households;
- b. study of public taps in all hamlets and minimally two in main village;
- c. a survey of around 8 public facilities, including:
  - a primary school
  - a preparatory school
  - an Islamic school
  - the health centre
  - the youth and sports club
  - a mosque
  - a women's activities club (Department of Social Affairs)
  - the Local Unit itself

Information from a. and b. will be computer processed.

*Staff availability*

Based on the experience in the Local Unit of Kalamshah in Itsa District the completion of the technical study requires around 6 working days of two teams, consisting each of 2-3 staff of El Azab, NOPWASD and Consultants team, completed with Local Unit staff, covering a period of two weeks.



2. Rehabilitation or construction of school latrines
3. Hygiene education activities
4. Design of improved sewerage system for part of the village
5. Design of extension of piped water supply network to hamlets
6. Improvement of cess pit emptying system
7. Leak detection and reduction programme
8. Customer relations, billing

Tasks of the supervisors at the completion of the data collection are:

1. Discussion with the Local Unit on establishing a Project Unit, which will be further involved in preparation and implementation of projects. This Project Unit preferably consists of one staff member of the Technical Department and one staff member of the Planning Department of the Local Unit.
2. Discussion with Mayor and other representatives of Local Unit on priorities and their involvement in preparation and execution.
3. Preparation of a list of selected implementable pilot projects in the Local Unit, based on observations and discussions.
4. Appointing one consultant of the Consultants' team for monitoring the contacts, progress of project preparation and necessary actions to take for implementation.

*1. Establishment of a Project Unit within the Local Unit*

This Project Unit will function as the focal address within the Local Unit during preparation, implementation and impact monitoring of small projects. The composition will be decided on by the Local Unit, although it must be clear that the Technical Department and the Planning Department have to be represented.

The Project favours as much as possible execution of the works by the local community.

*2. Discussion with Local Unit on priorities and involvement*

If people in the planning process are involved they are committed to executing what they have planned.

*3. List of implementable pilot projects in the Local Unit*

The implementable projects will have to be described by type of project, location, number of people benefitting and reasons for giving it priority (e.g. participation of users, of interest for other villages, covering a wide number of people or an underprivileged section of population, of interest because of technical priorities).

As we noticed at the survey of Kalamshah many preparatory activities still have to be carried out, before such a list can be drawn, such as:

- investigation of specifications of equipment;
- taking measurements and photographs of existing standposts;



- field visit to other pilot improvement projects (Kafr Al Shaykh etc.)
- adaptation of one of the existing designs, for example for an improved public standpost;
- preparations, contacts and contracts for an hygiene education component
- investigation of local implementation capacity of small contractors or skilled workers;
- investigation of local costs of materials, etcetera.

As soon as the Project team has gained experience with preparation of small implementable projects in Local Units, it is expected that preparation of such projects will become more a routine affair.

4.      *Monitoring of progress of project preparation and implementation.*

As a last step regular monitoring visits are essential, even when the physical works are hampering.

*Annex 1*

**ANNEX 1**  
**DATA COLLECTION FORM HOUSEHOLD SURVEY**

## HOUSEHOLD SURVEY

1 Serial code:

2 DISTRICT	:	6	HC REGISTRATION NUMBER	:
3 VILLAGE	:	7	DATE	:
4 EZBAH	:	8	DATA COLLECTOR	:
5 ORIENTATION	:	9	SUPERVISOR	:

(NAME:)

A. RESPONDENTS WHO HAVE A WATER SUPPLY CONNECTION INSIDE THE HOUSE

1 The connection	1	El Azab connection	----
	2	Through neighbour or other HH	----
	3	Other connection	----

*In case the answer is 2 (by containers) ask from section A only question A.2 no. 9, A.5 and A.10 and estimate the total daily transport in ltrs.*

2 Type of connection costs and extensions	1	Metered	----
	2	Unmetered	----
	3	Electric pump	----
	4	Other HH connected	----
	5	Other HH outside house using this HC	----
	6	Year of installation	----
	7	Installation costs	----LE
	8	No. of taps in house	----
	9	No. of users	----
3 The water meter	1	Functioning	----
	2	Out of order, since...	----
4 Meter reading interval	1	Yes, ...times/year	----
	2	Never	----
5 Water bills	1	Don't pay	----
	2	Pay ..times/year	----
	3	Pay at Local Unit	----
	4	Pay otherwise, .....	----
	5	Amount per year	----LE

6	Quality of supply	1	24 hours	----
		2	Day only	----
		3	Night only	----
		4	Good pressure	----
		5	Low pressure	----
7	Water cut-offs	1	Frequent	----
		2	Sometimes	----
		3	Rarely	----
8	Warned in case of problems	1	El Azab	----
		2	Local unit	----
		3	Others (plumber/myself)	----
9	Repairs/maintenance	1	El Azab	----
		2	Local unit	----
		3	Others, .....	----
		4	Have no problems	----
10	How do you store the water at home	1	Zir	----
		2	Container/Jerrycan, count total ...ltr.	----
		3	Covered	----
		4	Uncovered	----
	Special storage/basin for hand washing ?	1	No	----
		2	Yes (water in basin?)	----

**In case the HH uses public tap and/or canal on a regular basis, ask:**

11	For what purpose do you use the public tap?	1	Washing clothes	----
		2	Washing dishes/utensils	----
		3	Bathing	----
		4	Watering animals	----
		5	Other, .....	----
12	For what purpose do you use the canal?	1	Washing clothes	----
		2	Washing dishes/utensils	----
		3	Bathing	----
		4	Watering animals	----
		5	Other, .....	----
13	Why do you use the PT besides HC	1	To reduce the water bill	----
		2	Waste water in house	----
		3	It supplies more water	----
		4	To meet others	----

- |    |   |   |                               |     |
|----|---|---|-------------------------------|-----|
| 14 | Why do you use the canal besides the HC | 1 | To reduce the water bill      | --- |
|    |   | 2 | Waste water problems in house | --- |
|    |   | 3 | Canal gives much water        | --- |
|    |   | 4 | To meet others                | --- |

**REMARKS:**

**B QUESTIONS FOR ALL REGULAR USERS OF PUBLIC TAPS**

- |    |  |                       |  |           |
|----|--|-----------------------|--|-----------|
| 15 | Public tap from house                              | 1                     | < 50 meters                              | ----      |
|    |  | 2                     | 50 - 100 meters                          | ----      |
|    |  | 3                     | 100 - 200 meters                         | ----      |
|    |  | 4                     | 200 - 300 meters                         | ----      |
|    |  | 5                     | > 300 meters                             | ----      |
| 16 | How many times daily does your family visit the PT | 1                     | < 3 times                                | ----      |
|    |  | 2                     | 3-5 times                                | ----      |
|    |  | 3                     | > ....times                              | ----      |
| 17 | Who in the family visits the PT                    | 1                     | Wife                                     | ----      |
|    |  | 2                     | Children/daughters                       | ----      |
|    |  | 3                     | Husband                                  | ----      |
| 18 | What time of the day is most convenient            | 1                     | Early morning                            | ----      |
|    |  | 2                     | Midday                                   | ----      |
|    |  | 3                     | Afternoon                                | ----      |
|    |  | 4                     | Evening                                  | ----      |
| 19 | Waiting time at the tap before having access       | 1                     | No waiting                               | ----      |
|    |  | 2                     | Few minutes                              | ----      |
|    |  | 3                     | > 15 minutes                             | ----      |
|    |  | 4                     | Only problems in summer                  | ----      |
| 20 | How do you transport the water from the PT         | 1                     | Carry it by person                       | ----      |
|    |  | 2                     | Carrying by donkey                       | ----      |
|    |  | 3                     | Estimate total transport/day             | ----litr. |
| 21 | How do you store the water at home                 | 1                     | Zir                                      | ----      |
|    |  | 2                     | Container/Jerrycan, count total ...litr. | ----      |
|    |  | 3                     | Covered                                  | ----      |
|    |  | 4                     | Uncovered                                | ----      |
|    | Special storage/basin for hand washing ?           | 1                     | No                                       | ----      |
| 2  |  | Yes (water in basin?) | ----                                     |           |
| 22 | Water cut off from PT                              | 1                     | Frequent                                 | ----      |
|    |  | 2                     | Sometimes                                | ----      |
|    |  | 3                     | Rarely                                   | ----      |

- |    |   |  |     |
|----|---|--|-----|
| 23 | What improvements do you prefer of the PT           | 1 A PT nearer to the house                       | --- |
|    |   | 2 More faucets on the PT                         | --- |
|    |   | 3 Space f. washing clothes                       | --- |
|    |   | 4 Space for watering animals                     | --- |
|    |   | 5 Cleanliness                                    | --- |
|    |   | 6 Better supervision                             | --- |
|    |   | 7 Other, .....                                   | --- |
|    |   |  |     |
| 24 | Would you be willing to pay for a better public tap | 1 Yes, how much/month                            | --- |
|    |   | 2 No, I prefer HC                                | --- |
|    |   | 3 No, because.....                               | --- |
|    |   |  |     |
| 25 | Why don't you have a HC now ?                       | 1 Difficult to get                               | --- |
|    |   | 2 I have no money now                            | --- |
|    |   | 3 Have applied, but still waiting for connection | --- |
|    |   | 4 No, too expensive                              | --- |
|    |   | 5 Present situation is OK                        | --- |
|    |   | 6 Not suitable for this house                    | --- |
|    |   | 7 Other, .....                                   | --- |

**Question for respondents, who have no HC and use the canal besides the PT**

- |    |                          |                             |     |
|----|--------------------------|-----------------------------|-----|
| 12 | Why do you use the canal | 1 PT is too crowded         | --- |
|    |                          | 2 PT sometimes has no water | --- |
|    |                          | 3 PT too far                | --- |
|    |                          | 4 As much water as you like | --- |
|    |                          | 5 Better for washing        | --- |
|    |                          | 6 Other, .....              | --- |

**REMARKS:**

C QUESTIONS ABOUT SANITATION FOR ALL

- |   |   |   |   |        |
|---|---|---|---|--------|
| 1 | Water logging around/in house   | 1 | Yes, its a problem                          | ----   |
|   |   | 2 | A problem only in winter                    | ----   |
|   |   | 3 | No problem                                  | ----   |
| 2 | Waste water discharge   | 1 | Connection pipe to open channel/drain       | ----   |
|   |   | 2 | Connection to sewer in street               | ----   |
|   |   | 3 | Cess pit/latrine                            | ----   |
|   |   | 4 | Throw in canal                              | ----   |
|   |   | 5 | Bucket on street                            | ----   |
| 3 | How often do you empty the cess pit / soakaway  | 1 | Frequency (per year)                        | ----   |
|   |   | 2 | Costs/year                                  | ----LE |
|   |   | 3 | Vacuum truck Local Unit                     | ----   |
|   |   | 4 | Vacuum truck City Council                   | ----   |
|   |   | 5 | By private tanker/horse                     | ----   |
|   |   | 6 | Manually                                    | ----   |
| 4 | Estimated depth of the pit  | 1 | 1-2 meter                                   | ----   |
|   |   | 2 | 2-3 meter                                   | ----   |
|   |   | 3 | 3-4 meter                                   | ----   |
| 5 | Do you have problems with cess pit  | 1 | Overflowing                                 | ----   |
|   |   | 2 | Bad smell                                   | ----   |
|   |   | 3 | Capacity too small                          | ----   |
|   |   | 4 | No problems                                 | ----   |
| 6 | <b>Ask those who don't have sewage pipe</b><br>Why don't you have a sewage pipe installed now | 1 | Not necessary, vacuum truck service will do | ----   |
|   |   | 2 | Too expensive                               | ----   |
|   |   | 3 | Local unit should do it                     | ----   |
|   |   | 4 | Agree, for connection costs                 | ----   |
|   |   | 5 | Agree for monthly fee                       | ----   |
| 7 | How do you dispose of solid waste ?<br>(plastic, paper, glass etc.)                           | 1 | Often burned in stove                       | ----   |
|   |   | 2 | Buried                                      | ----   |
|   |   | 3 | Thrown OUTSIDE village                      | ----   |
|   |   | 4 | Dispose in a street box                     | ----   |
|   |   | 5 | Throw in the drain/street                   | ----   |
|   |   | 6 | Burned on land                              | ----   |
|   |   | 7 | Fertilizer for land                         | ----   |



8 Is garbage a problem  
for you ?

- 1 Yes, should be collected  
by Local Unit
- 2 Yes
- 3 No problem

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

D. GENERAL DATA

## QUESTIONS

- |   |                                   |          |
|---|-----------------------------------|----------|
| 1 Respondent  | 1 Male                            | -----    |
|   | 2 Female                          | -----    |
|   | 3 Age:                            | -----yrs |
| No. of household members<br>total living in same house)                                     | 4 Adults                          | -----    |
|   | 5 Children                        | -----    |
|   | 6 Total HH in house               | -----    |
|   | 7 Total people in house           | -----    |
| 2 No. of households sharing<br>HC outside house   | 1 One other HH                    | -----    |
|   | 2 Two other HHs                   | -----    |
|   | 3 Three or more HHs               | -----    |
|   | 4 Total no. of people (est)       | -----    |
| 3 Facilities in house   | 1 Electricity                     | -----    |
|   | 2 Water supply                    | -----    |
|   | 3 Bath/WC                         | -----    |
|   | 4 Cess pit                        | -----    |
|   | 5 Drainage pipe                   | -----    |
|   | 6 Separate kitchen                | -----    |
| 4 Which sources do you use<br>for water<br>(Rank from 1 onwards which<br>is most important) | 1 El Azab connection              | -----    |
|   | 2 Extension tap<br>from neighbour | -----    |
|   | 3 From neighbour<br>in container  | -----    |
|   | 4 Public tap                      | -----    |
|   | 5 Canal                           | -----    |
|   | 6 Water vendor                    | -----    |
|   | 7 Other source                    | -----    |

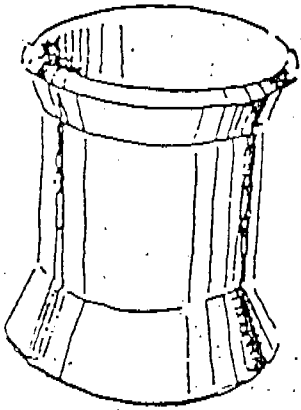
## OBSERVATIONS

- |                 |                 |       |
|-----------------|-----------------|-------|
| 5 Type of house | 1 Mud           | ----- |
|                 | 2 Brick         | ----- |
|                 | 3 Concrete      | ----- |
|                 | 4 Stones        | ----- |
| 6 Type of house | 1 No. of floors | ----- |
|                 | 2 No. of rooms  | ----- |

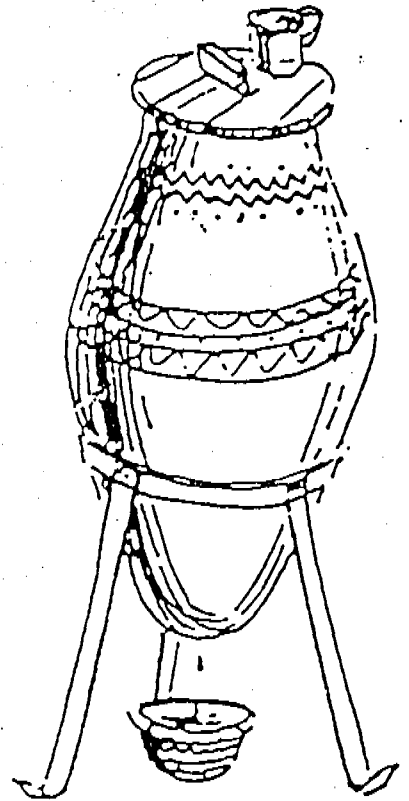
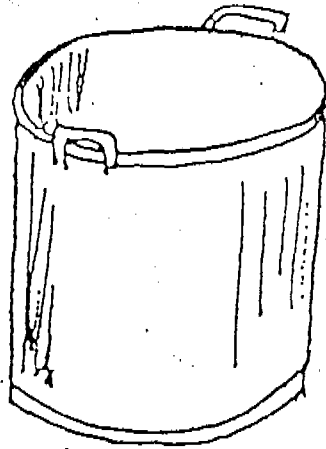
- |   |   |  |      |
|---|---|--|------|
| 7 | Amenities in the house  | 1 TV                                     | ---- |
|   |   | 2 Refrigerator                           | ---- |
|   |   | 3 Washing machine                        | ---- |
|   |   | 4 Telephone                              | ---- |
|   |   | 5 Gas stove                              | ---- |
|   |   | 6 Tape player                            | ---- |
| 8 | Is there a special provision (zaribah) for animals in/ around the house ? | 1 HH has no animals                      | ---- |
|   |   | 2 Yes, zaribah                           | ---- |
|   |   | 3 Buffalo has access                     | ---- |
|   |   | 4 Cow                                    | ---- |
|   | Check which animals have access to the house ?                            | 5 Horse                                  | ---- |
|   |   | 6 Donkey                                 | ---- |
|   |   | 7 Sheep                                  | ---- |
|   |   | 8 Poultry.....                           | ---- |
|   | Where do you water animals?   | 1 In zaribah                             | ---- |
|   |   | 2 In canal                               | ---- |
|   |   | 3 They drink themselves                  | ---- |
| 9 | OBSERVE cleanliness in/ around house                                      | 1 Garbage in and around                  | ---- |
|   |   | 2 Garbage and animal faeces around house | ---- |
|   |   | 3 Mud/water ponding in and around house  | ---- |
|   |   | 4 Clean inside and outside               | ---- |

REMARKS:

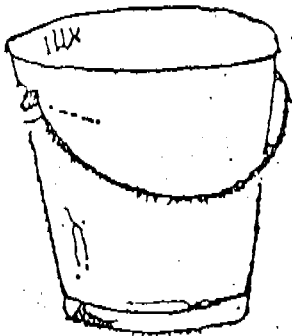
# WATER CONTAINERS



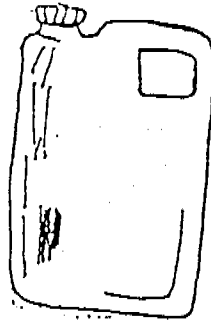
BASTELLA



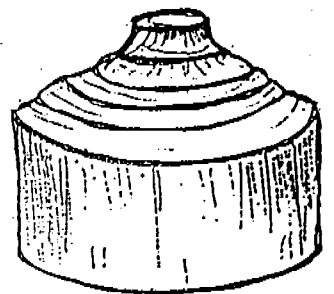
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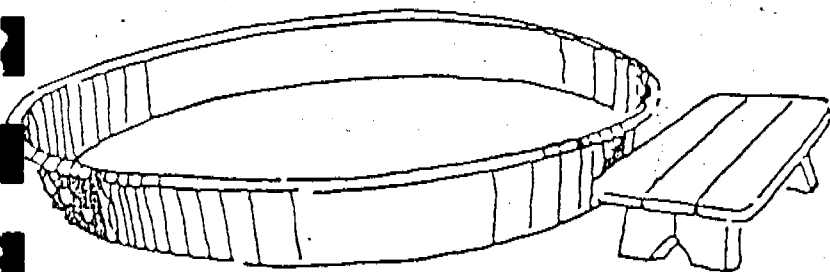
GARDAL



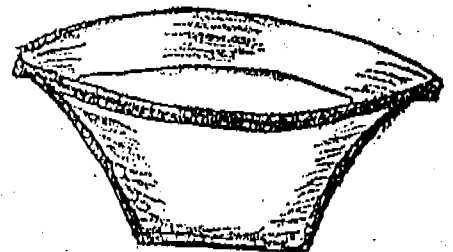
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HALLA



TASHT



ANGER

**ANNEX 2**

**DATA COLLECTION PUBLIC TAP SURVEY**

DATA COLLECTION FORM**PUBLIC TAP SURVEY**

1 Serial code:

2	DISTRICT	:	5	DATE	:
3	VILLAGE	:	6	DATA COLLECTOR	:
4	IZBAH	:	7	SUPERVISOR	:

---

Describe location in izbah/village:

1 TAP CHARACTERISTICS

1 Tap location	1 Inside habitation	----
	2 Outside habitation	----
	(mention distance in mtrs.	
2 Type of stand	1 Cast iron	----
	2 Concrete stand	----
	3 Diameter of connection	----
3 Type of faucet	1 Turning tap	----
	2 Self closing	----
	3 Push-up/down	----
	4 Open pipe, no tap	----
	5 One open pipe, one tap	----
4 Number of faucets	1 One	----
	2 Two	----
	3 One, second one broken	----
	and closed off	----
5 Drainage	1 Open gutter/pool	----
	2 Soak away	----
	3 Drainage canal	----
	4 Pipe	----
6 Elevation of the tap (in metres)		----
7 Tap installed in what year?		----
8 Did any changes/improvements occur after the installation year	1 Concrete stand was made	---- ....yr
	2 Tap was relocated	---- ....yr
	3 Other,.....	----

9 Condition of Izbah	1 Total no. of PTs	----
	2 Total no. of HCs	----
	3 Latrines	----
	3 Electricity	----
	4 No of mosques	----
	5 No. other public facilities	----
	6 Est. no. of people	----
	7 Est. no. of households	----

## II CONDITION OF TAP AND ENVIRONMENT

10 Faucet functioning	1 Free flowing	----
	2 Closes poorly	----
	3 Closes but leaks	----
	4 Functions well	----
	5 Water comes from pipe not connected to faucet	----
11 Leakage from pipes/fittings	1 None	----
	2 Little	----
	3 Substantial	----
12 Condition of drain	1 Mud/broken/clogged	----
	2 Fair	----
	3 Functions well	----
13 Condition of concrete stand	1 Broken	----
	2 Fair	----
	3 Functions well	----
	4 No concrete stand	----
14 Condition of platform	1 Broken	----
	2 Fair	----
	3 Functions well	----
	4 No platform	----
15 Water ponding/mud around the tap	1 Yes	----
16 Garbage around the tap	1 Yes	----
17 Are animals watered at the tap	1 Yes	----
18 Donkeys collecting water at tap	1 Yes	----

**REMARKS**

Improvements recommended:

**III. USER STATEMENTS**

19	Continuity of supply	1 Irregular	----
		2 Few hours daily	----
		3 All day	----
		4 Day and night	----
20	Water cut offs	1 Frequent	----
		2 Sometimes	----
		3 Rarely	----
21	Anybody takes care	1 Not known/nobody	----
		2 Shaykh Al Balad	----
		3 Local Unit	----
		4 Al Azab	----
22	How far do people come	1 Neighbourhood only	----
		2 From this ezbah only	----
		3 One family from ezbah	----
		4 From other places also	----
23	Number of families using this tap	1 Not known	----
		2 Estimated no. families	----
24	Has anything been improved by users	1 Mud wall around tap	----
		2 Faucet replaced	----
		3 Gutter improved	----
		4 Other,.....	----

**REMARKS:**



**ANNEX 3**

**DATA COLLECTION FORM PUBLIC FACILITIES SURVEY**

DATA COLLECTION FORM**PUBLIC FACILITIES SURVEY**

1 Serial code:

2	DISTRICT	:	6	NAME OF PF	:
3	VILLAGE	:	7	DATE	:
4	IZBAH	:	8	DATA COLLECTOR	:
5	LOCATION	:	9	SUPERVISOR	:

---

(Main informer: )

1	Type of public facility	1 Health Centre	----
		2 Primary School	----
		3 Prep school	----
		4 High school	----
		5 Mosque	----
		6 Local Unit	----
		7 Youth club	----
		8 Women's sewing club	----
		9 Other,.....	----
2	If school, operating in howmany shifts	1 One shift	----
		2 Two shifts	----
		3 Name of school in second shift	----
3	Manpower of institution	1 Head	----
		2 Professional staff	----
		3 Administrative staff	----
		4 Workers	----
		5 Others, .....	----
4	Relevant data on diseases	1 Main diseases mentioned, .....	----
		2 Other problems,.....	----
5	Total no. of users of facility:	1 Staff total, ..	----
		2 Public (incl. students in case of schools)	----

6 Potable water connection	1 Distance to building	----
	2 Metered	----
	3 No. of faucets	----
	4 Gutter/drain	----
	5 Condition of sink(s)	----
	6 Availability of soap	----
	7 Condition of platform	----
7 The water meter	1 Functioning	----
	2 Non functioning, since ...	
	3 Frequency of meter reading: ...times/yr	
8 Water bills	1 ...times/yr	----
	2 Amount/yr	----
	3 Who pays, .....	----
9 Who is responsible for maintenance	1 Local Unit	----
	2 Responsible Department	----
	3 Ourselves	----
	4 Others, .....	----
10 Availability of latrines	1 No. for women/girls	----
	2 No. for men/boys	----
	3 Number for staff only	----
	4 Condition	----
Condition: good* = 1		
reasonable* = 2		
unhygienic* = 3		
unhygienic/broken* = 4		
11 Emptying of cess pit	1 Size of cess pit	---- m <sup>3</sup>
	2 Emptying .../yr	----
	3 Waiting time for vacuum truck to come	----
	4 Who pays for emptying	----
	5 Payment per year/emptying---	
	6 Bad smell	----
	7 Overflow of pit	----
	8 Small capacity	----
	9 Location not suited for vacuum truck	----
	10 Other,.....	----
12 General hygiene conditions	1 Good	----
	2 Could better	----
	3 Not good	----

13 Activities to improve  
hygiene and cleanliness

- 1 Health/hygiene education ----
- 2 Health/hygiene materials ----
- 3 Special teaching -----
- 4 Cleaning activities -----
- 5 Flower planting -----

14 Priorities for improvement:

**ANNEX 4**

**CONDITIONS IN KALAMSHAH, ITSA AND ITS SATELLITES**

## 1. THE VILLAGE OF KALAMSHAH

A recent topographical map of the area is not available. An earlier reconnaissance survey did provide some initial information. However, the detailed study learned that only by actual field survey reasonable accurate impressions can be gained.

### 1.1 COMPOSITION OF THE LOCAL UNIT

The Local Unit of Kalamshah belongs to Itsa District and consists of the main village Kalamshah and two attached villages Al Hamdiyya and Kasr Al Basl. The Local Unit exists from 1956.

The attached villages have no separate annual budget and are for all governmental and administrative operations dependent on the Local Unit and its staff in the mother village.

*Kalamshah* is situated 18 km south of Fayoum city and 12 km from Itsa town. Both irrigation canal and Saif Al Din drain run through the village. It has 12 hamlets (*izaab*). The population of these hamlets (estimated over 18,000) is most probably exceeding the population of the main village.

*Al Hamdiyya* is located 22 km. south of Fayoum city and 5 km. south of Kalamshah. Most houses are mud-brick constructions. It has 4 hamlets connected to potable water supply.

*Kasr El Basl* is located 25 km. south of Fayoum city and 8 km. south of Kalamshah. It has an estimated 12 hamlets. The majority of the houses are brick constructions.

Kalamshah main village and 11 of its hamlets are intensively surveyed.

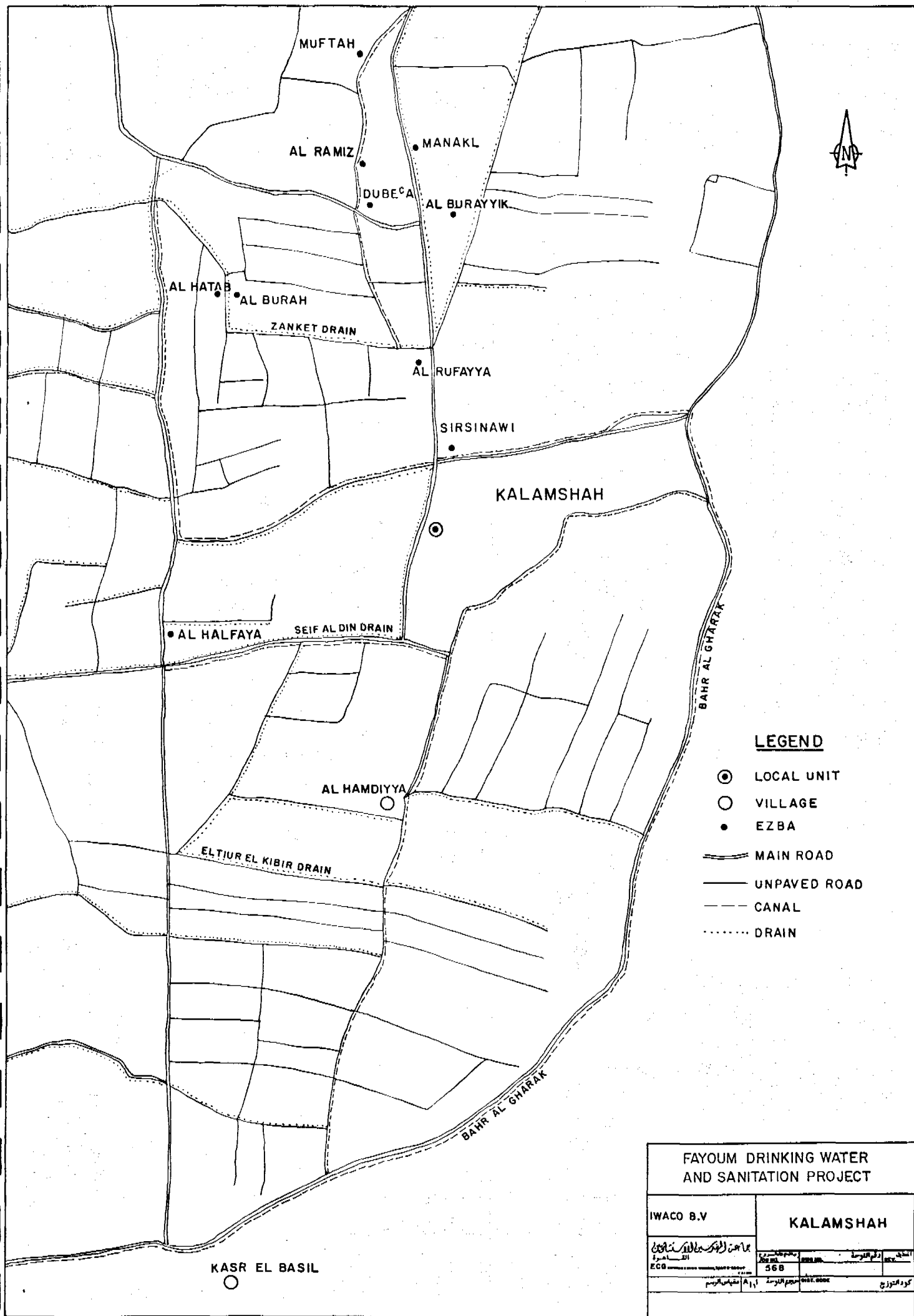
### 1.2 POPULATION

Table 1. Population of Kalamshah per 1986

Village	POPULATION 1986			HOUSEHOLDS No. per 1986	ENTIRE AREA in feddan
	Total	Male	Female		
1. Kalamshah incl. 11 hamlets	18,015	9,396	8,619	3,370	4,650
2. Al Hamdeyya incl. 4 hamlets	3,997 (3255+742)	2,005	1,912	797	2,455
3. Kasr Al Basl incl. 12 hamlets	14,650	7,459	6,191	3,191	4,864
<b>TOTAL</b>	<b>36,662</b>	<b>18,860</b>	<b>16,722</b>	<b>7,358</b>	<b>11,969</b>

Source: Capmas, census 1986

The number of the inhabitants of the hamlets of Kalamshah are presented below.



**LEGEND**

- ⊙ LOCAL UNIT
- VILLAGE
- EZBA
- MAIN ROAD
- UNPAVED ROAD
- CANAL
- ..... DRAIN

<b>FAYOUM DRINKING WATER AND SANITATION PROJECT</b>			
IWACO B.V		<b>KALAMSHAH</b>	
جمهورية مصر العربية وزارة الري والرياحنة مصلحة مياه الشرب 56 B		رقم الوحدة 56 B رقم الترخيص 1000	
رقم المشروع 1000		رقم الوحدة 56 B	
اسم المهندس A. J.		رقم الوحدة 56 B	

Table 2. Number of inhabitants, households, household connections and public taps for Kalamshah hamlets

No.	Name of hamlet	Inhabitants *	Est. of HH	No. of HCs	Public Taps	Electricity
1	Sirsinawi	1,500	200	20	1	yes
2	Al Rufaya	2,000	285	-	1	-
3	Al Gabal	2,000	285	-	1	-
4	Al Burah	5,000	715	1	1	-
5	Al Hatab	500	70	-	1	-
6	Burayyik	1,000	145	25	2	-
7	Duba'a	1,000	145	20	1	-
8	Manakli	250	35	-	1	1 mosque
9	Ramis	1,800	250	10	1	-
10	Al Muftah	600	85	30 ?	-	yes
11	Halfayya	2,000	285	60	1	-
TOTAL		17,650	2,500	166	11	

The population and household figures in table 2.2 are estimates. They are arrived at by subtracting around one third from the estimates given by at least two spokespersons in the izba, among whom most often the *Shaykh Al Balad*. Reason for this that is that given the expectations of a project villagers might estimate their population on the high side. Next to that is that field observers have counted the housing pattern and independently also arrived at a certain estimate for the population.

Household figures are arrived at by taking an average family size of 7 for all hamlets. Where for example a number of 285 households is presented villagers themselves often mentioned 300, with exception Al Rufaya, which mentioned to have 400 households.

### 1.3 LOCAL ADMINISTRATION

The village mayor is appointed by the Governor (Law 43/1979, art. 139), and has the authority of a unit head (*ra'is al-wahda al-mahaliyyah*). Secondly, he is chairman of the Executing Council, consisting of six heads of services at the village level, being representatives of the Ministry of Education, Health (doctor), Agriculture, Social Affairs (social worker), Housing (head of Technical Unit), Interior (or public utilities) and the village secretary.

Thirdly, he is competent to call the Local Popular Council (*Maglis al-Sha'abi*) for a meeting and has to cooperate with the Local Council in the execution of tasks. Finally and most importantly he is chief of the Local Unit' office, an office consisting of between 40 - 80 staff in larger villages in Fayoum, which has the task to prepare and execute policies.



A main task of the village mayor is the coordination of different government services in his Local Unit. Next to that he is co-responsible for public works, such as drinking water supply, electricity supply, roads and transport, for economic development projects and food distribution. Most public institutions and public servants in a village are part of their own ministerial hierarchy. Therefore this coordination is not a small task. A Local Unit counts around 8-10 different public institutions and many more public buildings, without the mosques:

- Local Unit Office
- Agricultural Cooperation
- Village bank, or branch
- Veterinary Centre
- Schools
- Health Centre
- Social Centre
- Police Station
- Youth and Sports Centre
- Telephone/post Office

Officially the planning and budgeting of these institutions have to be combined into one document. Until recent it was common practice that the municipal budget was prepared by the Local Unit, while the budgets for the local branches of the different ministries were added by the District administration (Otto, 1987: 169).

The Local Unit of Kalamshah has three sources of income.

One source is the local Agricultural Department Centre or Cooperative. This keeps a small percentage of all agricultural produce of the Kalamshah farmers, which is transferred to the Collector's Department of the Governorate. The Governorate redistributes this according to certain criteria over the Local Units (37 in Fayoum).

The second source consists of contributions to the local fund for development and services or "*sandug al-tanmiyyah wa al-khidmar*". Each person who requests the services of the Local Unit in preparation of certificates or applications for electricity or water connection, a housing permit etc. contributes a small amount to the "*sandug*", each according to possibility, for example between LE 2 - 5 for an application for water connection). All money contributed goes by receipt. This fund can also be used to receive development funds of foreign donors, such as funds for local development, granted by USAID and managed by ORDEV (Organization for the Reconstruction and Development of Egyptian Villages). The Local Council decides on priorities for spending of the *sandug*.

A third source is the Governorate budget, which allocates a general budget for each Local Unit. This budget caters for 90% or more for salaries, while the other 10% are running costs. However, public facilities don't pay the water bill and often don't pay the electricity bill, because the budget doesn't contain enough provisions for these. It is remarkable that often a large part of the budget for recurrent costs is reserved for payment of the electricity bill.

The mayor of Kalamshah spent this electricity budget last year on replacing of streetlight bulbs and he deducted these expenditures from the budgetline for electricity consumption. It is clear that Local Units cannot meet the bills for consumption of electricity, water and for emptying sanitation pits of public buildings.

A potential fourth source of income are local taxes which can be levied if the Local Council decides so. For example, District towns collect taxes from market vendors and taxidrivers, who rent places at a market or transport terminal. Sometimes also taxes are raised on real estate for sewerage, but this is not the case in Kalamshah.

The Local Unit office plays an intermediate role in collecting the fees of private users for drinking water and electricity. In Kalamshah once a year, often in July and August, the fee collector of Al Azab Drinking Water Company collects the fees from the private users and can be reached at the Local Unit.

Regarding maintenance of public facilities the Technical Department (*kism al-fanni*) of the Local Unit is responsible for maintenance of water provisions by pipes of less than 2", as it is also responsible for maintenance of roads and transport. Funds for maintenance often are collected ad hoc from the public.

The mayor should also supervise the maintenance of public buildings, such as mosques and schools, and the cleaning of streets.

Finally the Local Unit is responsible for the distribution of subsidized consumer goods. The programme for schoolfeeding is executed by the Ministry of Education for government schools and Al-Azhar for Islamic schools.

The Local Council (*Maglis Al Sha'abi*) consisting of 16 chosen representatives and one woman has a policy-making and coordinating task for the complete area of the Local Unit.

An extensive description of the competency and working of institutions at the Local Unit level in Egypt is provided by J.M. Otto in his dissertation of 1987 (Otto, 1987: 141-185).

## 1.4 PUBLIC FACILITIES

### 1.4.1 General water and sanitation situation

A selected number of public facilities of the Local Unit have been visited with the aim to inspect the water and sanitation situation and the aim to start improvements which should contribute to a better public health.

A number of public facilities are found in Kalamshah. The responsibility for maintenance of buildings and utilities rest with the Local Unit, including payment of their water, electricity and sanitary bills.

However, often the users are contributing funds, in particular for repair of taps or emptying cess pits.

Table 3. Public facilities in Kalamshah Local Unit

	Public facility	Kalamsah	Hamdiyya	Kasr Al Basl	Total Local Unit
1.	Primary school	?	1	8	16
2.	Preparatory school	1		1	2
3.	Islamic school (combines 1+2)	1		1	2
4.	Health Centre	1		1	2
5.	Mosques	11	?	?	unknown
6.	Youth Centre	1		1	2
7.	Sewing class (Social dept.)	1			1

Two institutions in particular are important for health aspects: schools and the health centre. Schools are important both as source of health education and as an example of hygiene.

### 1.4.2 Schools

As the population of Egypt continues to grow by 2.8 % annually, students are entering the school system at an astounding rate. During the school year 1990-91 nearly 12 million students were enrolled from kindergarten until secondary schools<sup>2</sup>. The absorption of these students is seriously handicapped by a critical shortage of facilities and qualified teachers, and even the most capable teachers are confronted with obstacles that severely diminish their competence. Despite an increase of facilities many

<sup>2</sup> Department of Information, Ministry of Education

government schools still operate in two shifts, as is the case in Kalamshah.

There are two types of schools: government schools under the Ministry of Education and Islamic schools which fall under Al Azhar.

The Local Unit as a whole has 16 primary schools, 2 preparatory schools and 2 combined Islamic schools, all co-educational. Kalamshah itself has 7 primary schools and 1 preparatory school, which operate in two shifts, from 7 - 12 in the morning and from 12 - 5 in the afternoon. The Islamic school operates in one shift.

The average class size is substantial. The Kalamshah prep school has 678 students in the morning and 694 in the afternoon. The Sadat primary school has 467 pupils, while the combined Islamic school counts 650 pupils. When all students are present the school would be overcrowded.

Adding the dual shift system to crowded schools means that the buildings, the desks and its sanitary facilities and playgrounds are intensively used.

The contribution of pupils is LE 5-6 per year in the Islamic school and LE 25-30 per year in the preparatory school. These school funds, which amounted in 1991/92 to LE 4000 in the prep school and LE 1500 in the Islamic school, are used for sports, recreation and administrative expenses.

#### *School sanitation*

Upon inspection of three schools in Kalamshah the classrooms looked relatively clean, but most toilets are in a lamentable state, smelly and run down. Also, there are not enough toilets for the growing number of students.

Regular emptying of the cess pit, repair of latrines, and repair of leakages in the piped water system are responsibilities of the Local Unit.

Funds for repair are hardly available and when a school has collected money for improvement amongst the parents the utmost priority is expansion of class rooms, not improvement of sanitary conditions.

While, in general, a rural school would be blessed with more outdoor play space than many urban governmental schools, in Kalamshah half of the play grounds of schools cannot be used due to leaking or overflowing cess pits, which spread an extremely bad smell and cause health hazards. The play ground near one school, which accommodates a sports field, had more than 40 cm. water on it, due to a leaking pipe.

Frequency of emptying of cess pits should be higher, but unfortunately because schools have no funds, sometimes they have to wait one to two months before a vacuum truck arrives for emptying.

#### *Hygiene education*

The original emphasis in Egyptian educational policy on increasing the number of

### *Hygiene education*

The original emphasis in Egyptian educational policy on increasing the number of schools has shifted in recent years to improving the quality of education.

While the government syllabus emphasizes the accumulation of information and rote-memorization rather than analysis, reform of the curriculum and testing system has started recently in 1991. In September 1991 a new subject "environmental studies" - a combination of science, home economics, agriculture and social studies - was introduced to grade 1-3. New textbooks on several other courses are under fieldtesting. It is announced that topics such as population studies, pollution and tourism will be integrated in the curriculum in the future (Cairo Today, February 1992: 99).

To our information, in Kalamshah no curriculum innovation has started yet. The only entrance for some hygiene education are the home economics classes for girls, in grade 1-3, while the boys are taught outdoor practical agricultural lessons. Because class time is limited in schools with multiple shifts there is no time for recreation or for extracurricular activities.

#### 1.4.3 Health centre

The Local Unit of Kalamshah has a health centre. The centre is staffed by a medical doctor and a dentist and 7 nurses. Next to that officially there are 70 administrative staff. Overstaffing is the consequence of the ending of several local development projects, of which excess staff was redistributed over governmental institutions. The health centre receives around 70 outpatients per day.

The health centre supervises a school immunization and school health programme, which is designed to detect especially bilharzia. Water borne or water related diseases with a high incidence here are bilharzia, skin disease, eye diseases and infections and a high salt rate in blood of children, due to the wrong use of ORS (Oral Rehydration Salt).

The centre is involved in a Family Planning programme, supported by USAID. Material on hygiene education is absent.

#### 1.4.4 Mosques

The 80-year old mosque in the centre of Kalamshah has 16 faucets and 9 toilets in three blocks, which all were clean and in a good condition. Emptying of the large cess pit, located outside the boundary wall, is done regularly and paid for by regular visitors of the mosque. The money is collected when needed.

#### 1.4.5 Other public facilities

Other public facilities are the Local Unit building itself, a Social Centre, a Youth and Sports club, a ladies sewing club, a police station and a post-office.

Adult women have hardly possibilities to meet. In other areas in Egypt where rural

women are involved in development, literacy and hygiene education projects women groups start by renting a small place, or they meet in one of the houses, or in Islamic centres or schools (oral communication by Unicef staff).

### 1.5 GROUND WATER PROBLEMS

The groundwater table in *Kalamshah* is 10 cm. below ground surface and in the lower parts of the village 10-30 cm above ground surface and causes in the irrigation season a lot of flooding nuisance in about 70 % of the village.

A combination of leaking pipes of the drinking water supply network, the condensed presence of cess pits, and seepage of water from irrigation canals, -of which the waterlevel surmounts the village level-, is responsible for the water logging.

In the lower parts inhabitants have raised their floors sometimes with 1 -2 meter, and walls are wet till 2-3 meters above plint level. Some houses were destructed due to the high water table. House doors are moved upwards or their height is reduced.

*Al Hamdiyya* suffers at many places from water flooding, due to a groundwater table of 60 cm. below ground surface. In 1987/88 an USAID supported project (grant of LE 17,800) was implemented to lower the ground water table. Percolated pipes were inserted, but without significant results.

In *Kasr Al Basl* the ground water table of 2 meter below ground surface does not present major flooding problems, although in winter time at some places water logging occurs.

No major industry, no solid waste collection exist in this village. Priority areas are lowering the ground water table, waste water treatment and pavement of main road.

## 2. DRINKING WATER AND SANITATION IN KALAMSHAH

### 2.1 DRINKING WATER: PRESENT SITUATION

In the mother village of Kalamshah piped water is available in many homes, while in the hamlets with exception of a few households (130 on over 2500) nearly all households are dependent on public taps or, worse, on canal water.

An estimated 85% of the households in the mother village are served directly or indirectly, through neighbours, by house connections. Direct house connections according to Al Azab are 1375. Households in the centre of the village, which don't have a house connection collect water in their neighbour's house with help of containers.

Most people in the main village, who were not having a house connection, like to have one, and are on the waiting list.

Despite the presence of abundant water in many houses, only limited quantities are used for domestic purposes. The reason for this parsimony with water is the lack of drainage. Water used in the household must be dumped outside, which means that it must be carried, and large amounts of water mean muddy streets, in case no irrigation drain is running in front of the house. Furthermore, because of fear for waterlogging problems in or near the house people remain very reluctant to increase water use. A message to increase water use for more personal and domestic hygiene would only succeed if a suitable solution for drainage can be found.

Drinking water is stored in *zirs*, to keep the water cool and water for other purposes is stored in various containers.

There are 5 public taps in Kalamshah village and 11 in the surrounding hamlets. The largest hamlet, Al Burah, has around 5000 inhabitants and is served by only 1 public tap.

To complement the picture, according to the earlier reconnaissance survey 95 % of the people in Al Hamdiyya and 60% of the people in Kasr Al Basl are served by house connections. Also all Kasr Al Basl's 12 hamlets are now served by piped connections, of which 6 are only recently connected, thanks to a grant of LE 376,443 from USAID, according to information received of the Local Unit. In 1989/90 the Kasr Al Basl pipe network was finished, and with a remainder sum in 1990/91 the connection was extended to 6 hamlets.

The water sources are Al Azab water treatment plant (80 %) and a compact unit at Kasr Al Basl (30 l/s). The estimated water consumption at present is 60 l/c/d, but this figure includes a considerable hidden leakage by pipes.

More details are provided after analysis of the household study, which tries to give details on the following aspects of drinking water:

- the distribution of present service levels over main village and hamlets
- number of households having directly access to house connections
- number of households having indirectly access to house connections
- average number of people using one household connection
- number of households served by public taps
- number of households without access to potable water supply
- demand for improvement of service levels
- storage of water
- estimated water consumption in l/c/d for the different service levels
- condition of water meter and regularity of meter reading
- billing conditions, payment discipline and average cost of house connection.

## 2.2 PRIORITIES FOR IMPROVEMENTS IN DRINKING WATER SUPPLY

Many households are still on a waiting list to receive a household connection. Because the Governor of Fayoum has limited the total number of new connections to 100 per 6 month per District, the demand exceeds by far the offer. It is recommended to reconsider the restricted allotment of connections, after a feasible solution for drainage in the village centre has been found.

Major restrictions in access to safe water occur in the *izbah*'s. A first priority is improvement of the platform and drainage conditions of existing public taps. Because people are prepared to contribute to better taps, the *shaykh al-balad* could be requested to collect a minimum sum of 25% of the rehabilitation cost for improvement, to be supplemented by the Project.

It is suggested to install at least one additional new tap in the large hamlets, for which the *shaykh al-balad* collects next to the above 25% for platform and drain costs the connection costs. The connection costs will be transferred to Al Azab, which places a water meter at these new taps. Payment for water consumption of a public tap is a new phenomenon, and probably only successful when only one group of households of the same family uses the tap.

Finally, infrastructure development projects have concentrated to a great extent on providing fresh water to rural communities. Little attention has been paid to how this water is to be stored, or more importantly, disposed of once it is used. Sewer systems don't exist in Fayoum villages. Dirty disease carrying water has to be thrown either on the street, in a drainage canal and water logging has increased because of collecting waste water.



## 2.3 SANITATION: PRESENT SITUATION

### 2.3.1 Sanitation

In the main village of Kalamshah 30 households have been visited, while another 30 households were visited in its 11 hamlets.

Although an extensive analysis of the sanitary conditions, habits and the willingness to pay for improvements will have to wait until the data are analyzed, general impressions are provided here.

Most people in the main village and one prosperous hamlet (Al Muftah) have access to an in-house toilet (often shared with more than one household). Religious and cultural restrictions limit the sharing of toilets.

Apart from that children use school latrines and men use the public toilets of the mosques. Nearly all households in the poorer hamlets have no toilet and use the fields and irrigation canals for defecation. No in-house toilet presents especially a problem for women, who have to go out in the night or use the *zaribah* (animal shed).

Each toilet has its own cess pit, which in general is around 2-4 m<sup>3</sup>. There are no septic tanks in Kalamshah, with exception of one at the compound of the Local Unit, shared by Health Centre and Local Unit offices. Cess pits are located in house, in a small backyard or outside in front of the main entrance.

During irrigation season the ground water table rises, which sets cess pits out of function and causes overflow and a bad odour in the streets, backyards and sometimes inside the house.

Cess pits are emptied by a vacuum extracting truck, sometimes a private car, and also manually with a horse cart, in cases they are situated so unfortunately that they can't be reached by a vacuum truck.

Vacuum extracting trucks are made available to Kalamshah Local Unit, by Itsa Town Council to empty pits at a rate of LE 10 per emptying operation. Itsa Town Council has about 4 or 5 of these trucks. They discharge their content in the desert and sometimes at the drain.

The capacity of trucks varies from 2m<sup>3</sup> to 8m<sup>3</sup>, depending on their make and trade-mark. One truck can make 4 trips per day and collect an average of 15m<sup>3</sup> per day.

The emptying system does not work satisfactorily. Sometimes people and in particular public buildings have to wait one to two months before their pit is emptied, with all resulting negative consequences. Reasons are:

- lack of enough trucks for the whole District;

- public buildings don't pay for emptying;
- a cumbersome administrative procedure.

To react much quicker and more efficient on a request the Local Unit itself should have the disposal over a vacuum truck. A conservative estimate learns that there are at least 1500 pits in Kalamshah and an equal number in Kasr Al Basl, which need at least 3-4 times emptying annually. It is easy to see that one truck would not even cover the needs of the Local Unit.

At present the emptying system costs the average household with a toilet around LE 60 per year. Many pay more. When asked whether one would be prepared to contribute to construction of sewerage and to pay an annual fee, on top of the water bill, for maintenance of the sewerage system, all people without exception reacted very positively: "this is our dream".

This public statements needs some qualification, because some people might expect that also the water table problems will be solved by a proper sewerage system.

However, one wants the sewage and bad smell problems to be solved and is definitively willing to pay for investments and recurring costs.

This attitude also fits in with the statement of the Project consultant on sanitation Mr. A. Budde in his 'Second mission on Sanitation' report, saying that only "if the 90% subsidy (..) is abandoned, users will be more open for more economical, less convenient, but affordable and still acceptable systems."

### 2.3.2 Sullage

Waste water is discharged manually in the Saif Al Din drain which runs through the main streets of the village of kalamshah. Some households have individual connections to this drain, constructed by themselves. People in the main village are very careful with water throwing at the street, to avoid more water logging problems. Most households throw waste water in the drain and by exception in the toilet.

No drawings exist of the waste water sewerage system.

## 2.4 PRIORITIES FOR IMPROVEMENTS IN SEWERAGE

The situation of the on site sanitation system in Kalamshah is poor because:

- lack of adequate pit emptying system
- mix of sludge and waste water in cess pits of public buildings
- connections are not seamless and tight and not repaired.

This leads to logging of bad smelling water in depressions. The water logging situation is aggravated by water seepage from the higher situated irrigation canals, due to

irrigation and by leakages in the piped supply network.

To make a pilot project on village sanitation sustainable, the Project will have to work together with the Local Unit staff using the management and maintenance capacities of the Local Unit staff.

The sanitation mission of Mr. A. Budde in November 1991 advised to postpone the feasibility study for urban and rural sanitation until a technical, institutional and policy framework for such study is clear.

He also indicated that construction of a small bore sewer system would be a preferable solution, especially in areas with a high water table.

Whatever solution is opted for it is suggested to select one of the pilot villages, e.g. Kalamshah, as a priority location. Only in this way one can make an optimal use of existing linkages and contribute to strengthening of local planning and implementation capacity.

Meanwhile, one of the pilot projects will be the improvement of school sanitation combined with a hygiene education programme.

## 2.5 SOLID WASTE

Solid waste is either burned in the household over, sometimes on the farmland and sometimes thrown on the street.

There is no solid waste collection.

### 3. PROFILE OF THE SATELLITE VILLAGES OF KALAMSHA

#### 3.1 SIRSINAWI

Sirsinawi is connected to Kalamshah by earth road, and is situated at the other side of the irrigation canal (*Bahr Al-Lahif*). It has some 1500 inhabitants of which some seem to be rich, others very poor. The habitation has 20 house connections and one public tap directly along the canal. A high water table causes problems and even the most poor people were willing to pay a small amount for a sewer system.

#### 3.2 AL RUFAYYA

In Rufayya 2000 people are living. The public tap is outside the village at a distance of 200 meter bordering the main road. The tap is completely broken and the pipeline coming from the ground is functioning as "faucet". It is a big mess. Also another izba, of 100 people, situated at a distance of 800 meters, uses this tap.

In Rufayya there is one connection in the mosque. People complain about the water facility and want a public tap inside the habitation.

#### 3.3 AL GABAL

Al Gabal is situated about 2 km east of Kalamshah bordering the desert. The izbah is connected to Kalamshah by earth road. Due to the sandy permeable soil it has no ground water problems.

The big hamlet has some 2000 inhabitants all taking drinking water from just one public tap, which - unfortunately - often is out of order, in particular in summer time.

The public tap has two faucets, of which one is broken and can not be closed anymore. The tap is situated at the irrigation canal (*Bahr Gharaq*), next to the house of the Shaykh el Balad. Often people have to resort for drinking water to the irrigation canal, and an estimated 80% of them suffers from bilharzia. Houses in the villages are nearly all constructed from stones from a quarry in the desert. A stones constructed house is cheaper than a bricks constructed one, although it insulates better, in particular for people who are, next to being farmers, working as labourers in the desert to get construction materials like stones and sand.

During a discussion in the house of the local teacher people appeared to be motivated to improve the drinking water situation. The only tap is very crowded and women fight about having water.

The reason for being out of order is often a leakage somewhere in the pipe coming from Al Azab. If this is the case some men of Al Gabal go to the Local Unit of Kalamshah to find the man who is responsible for maintenance. They take him with them to the point of leakage, while the users themselves hire and pay labourers to fix the broken pipeline. The maintenance responsible only supervises the repair. If he thinks they repaired it well, the pipeline will be opened again. However, if the people would not pay and repair the pipeline themselves they still would be without water.

It is proposed to select Al Gabal as a pilot village for three reasons:

1. Users are willing to participate in improvement of the water supply situation, either by contributing money, or by digging or constructing.
2. An extra public tap is warranted, considering the number of inhabitants of 2000.
3. Women are allowed to be trained in sanitation-education programmes, while the teacher likes to give the children hygiene lessons, which are only of use when they have access to clean water.

Although people are aware that taking drinking water from the canal is bad they often have little choice.

#### 3.4 AL BURAH

Al Burah is the biggest hamlet of Kalamshah, situated next to Al Hatab with an estimated population of 5000 at a distance of 3.5 km of the mother village Kalamshah. The inhabitants share only one public tap, which is always very crowded. Only the *Shaykh al Balad*, whose house is next to the public tap, has an house connection. Because of the crowd at the only public tap many people use the canal also as a source for drinking water.

#### 3.5 AL HATAB

In Al Hatab 500 people are living. It is a poor hamlet with very small houses, situated at 3 km from Kalamshah, next to Al Burah. The 500 people are living in 40 houses, averaging 12.5 person per house. There is one public tap at a distance of some 200 m outside the village.

#### 3.6 AL BURAYYIK

The izba is located on the right side of the road coming from Kalamshah at 2.5 km from Kalamshah. It is separated into two parts, each inhabited by one family. In all there are 150 households, with altogether over 1000 people, of which 40 have a (shared) house connection. There are about 25 house connections. The hamlet has no electricity, but 12 of the better-off families do have generators. Except for two mosques there are no other public facilities.

The family of the *Shaykh al Balad* uses one tap, constructed by themselves under supervision of Al Azab, along the canal. A second public tap at a distance of 300 m from the first lies in the middle of the village along the "main road" and is used by the second family.

If a member of a family goes to the "wrong" public tap a fight will result. Both taps have a concrete stand, one functioning pipe, and a very muddy platform.

Public tap rehabilitation requires improvement of both taps at the same time.

### 3.7 DUBA<sup>a</sup>A

Duba<sup>a</sup>a is next to that of Ramis. Both have the same *Shaykh al Balad* who lives in Ramis. An estimated 1000 people live here.

The villagers take water from one public tap and around 20 families have a house connection. There is no electricity.

### 3.8 MANAKLI

Manakli is located following Al Burayyik, and has an estimated population of 250 from two families, living in 35 houses. The izbah has no electricity, except for a connection to the only mosque. There is one public tap along drain along the main road.

### 3.9. AL RAMIZ (MINSHAWI)

Al Ramiz (old name: Minshawi) is situated 3 km from Kalamshah. The Shaykh al Balad is the owner of the petrol station situated along the main road. His family is better off, as can be observed from their big houses which are located near to each other. It was told that some 2500 people live in the village. There are 10 house connections, while the other inhabitants are dependent on one public tap.

### 3.10. AL MUFTAH

Al Muftah has around 600 inhabitants. The izba is relatively prosperous, because of male migration to the Gulf. Many houses have house connections and there is no public tap.

### 3.11. AL HALFAYA

Around 2000 people live in Halfaya in nearly 300 households.

El Halfaya is at a distance of 2.5 km from Kalamshah to be reached over a paved road. The water distribution is as follows: 50-60 house connections and one public tap. There is no electricity in the village and only two of the families have a generator.