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Draft

# KERALA HYGIENE EVALUATION STUDY

February 1996.

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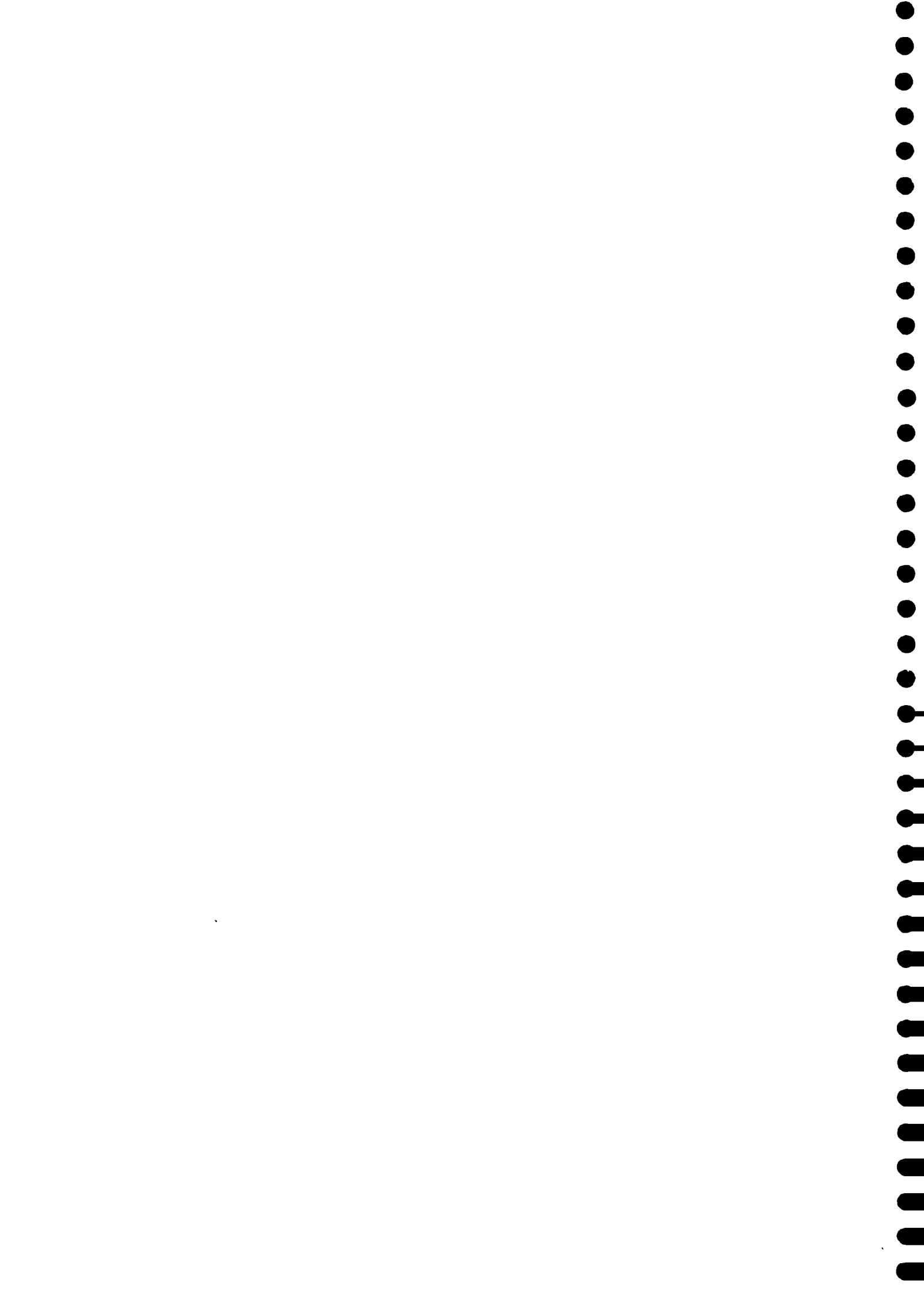
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*To everyone who co-operated with the KHES*





## Foreword

*It gives me immense pleasure and a great amount of pride that the Kerala Hygiene Evaluation Study (KHES) undertaken by a Team of SEU staff members has come out successfully in this draft report form, even though a little behind schedule*

*It must be remembered that the KHES team had to work against odds and race against time. The intensive field work during which the KHES team worked overtime brought about voluminous data. Being the first of its kind work for SEU; this Qualitative Research, promised great potential and at the same time posed formidable challenges. There were times when the Study Team feared whether it would be able to finish the study, on time. The KHES team had taken great pains to see this study end up successfully and I am happy that it has turned out as expected.*

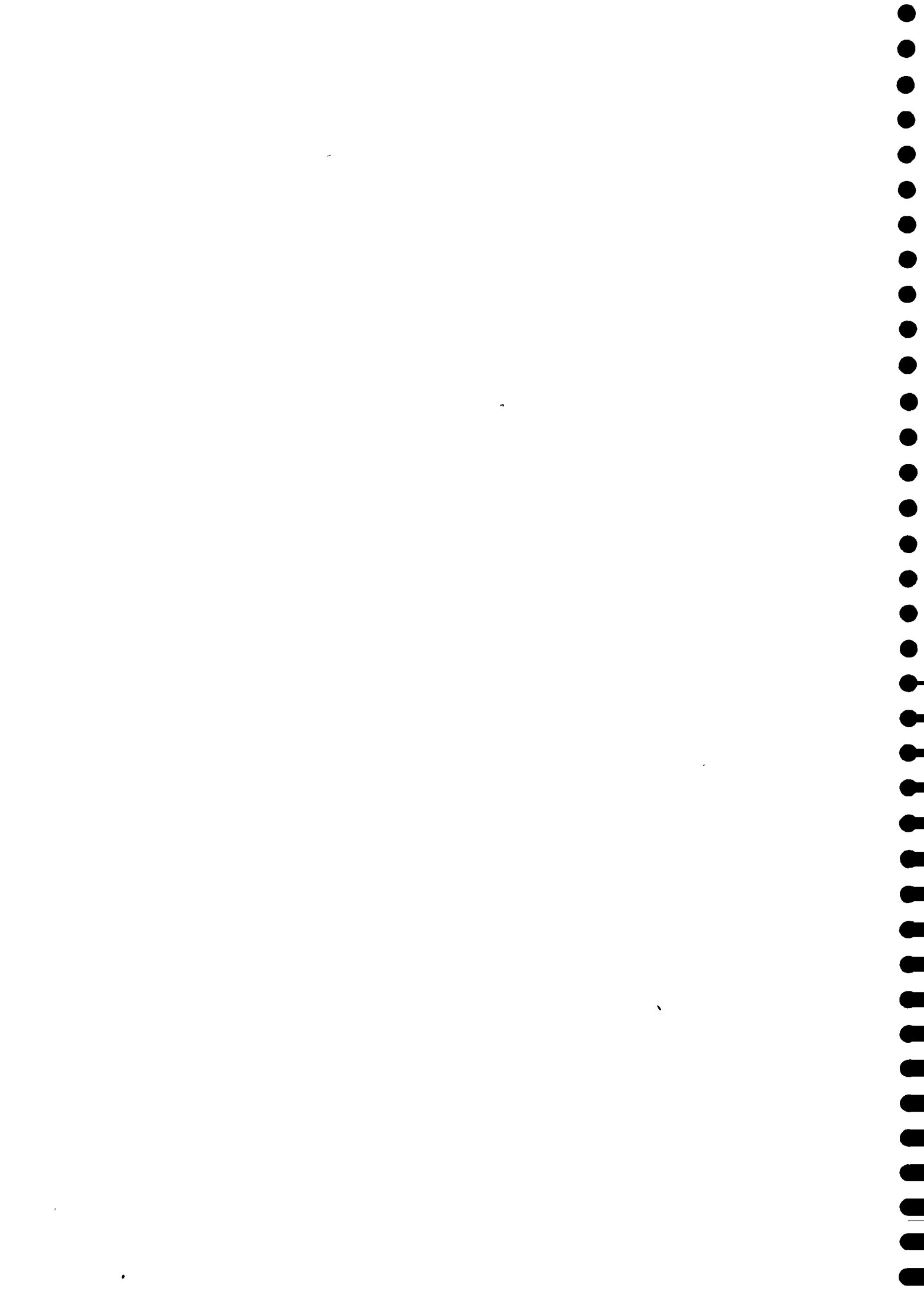
*I must thank Dr Astier Almedom, Lecturer in Medical Anthropology, London School of Hygiene and Tropical Medicine for her support in shaping the KHES, the team and the outcome, as well as Mr Jens Bjerre, Counsellor, Royal Danish Embassy, New Delhi and Mr Carel Brands, First Secretary, Water & Sanitation, Royal Netherlands Embassy, New Delhi. Mrs S Vijayalakshmi Ammal, Local Co-ordinator, (KHES) for their contributions in making KHES a success. I would also like to thank Mr P Harish Kumar, Programme Officer, SEU Co-ordinating office, Mrs Kochurani Mathew, Ms Anilakumary K, Mr B Manoharan, and Mr K N Suresh Babu who had spent most of their time, day and night, consolidating the information and shaping up this report. I formally thank them all for their strenuous effort.*

*The People of Thrikkunnappuzha, Puthenchira and Kuttyattoor are no strangers to SEU and therefore requires no formal acknowledgement. However, it would be inappropriate, not to mention their invaluable co-operation and immeasurable support and patience extended to the KHES team. WWC members, Panchayat Presidents, Senior Citizens, Government servants, Social Workers, Medical professionals, SEU staff members - the list could go on. Every single person who was associated with the KHES will be remembered for their involvement with the KHES.*

*There is still some more, I am sure, that can go into this report. But I would be looking forward to receive valuable suggestions and opinions from readers of this report which will be incorporated in to the final publication.*

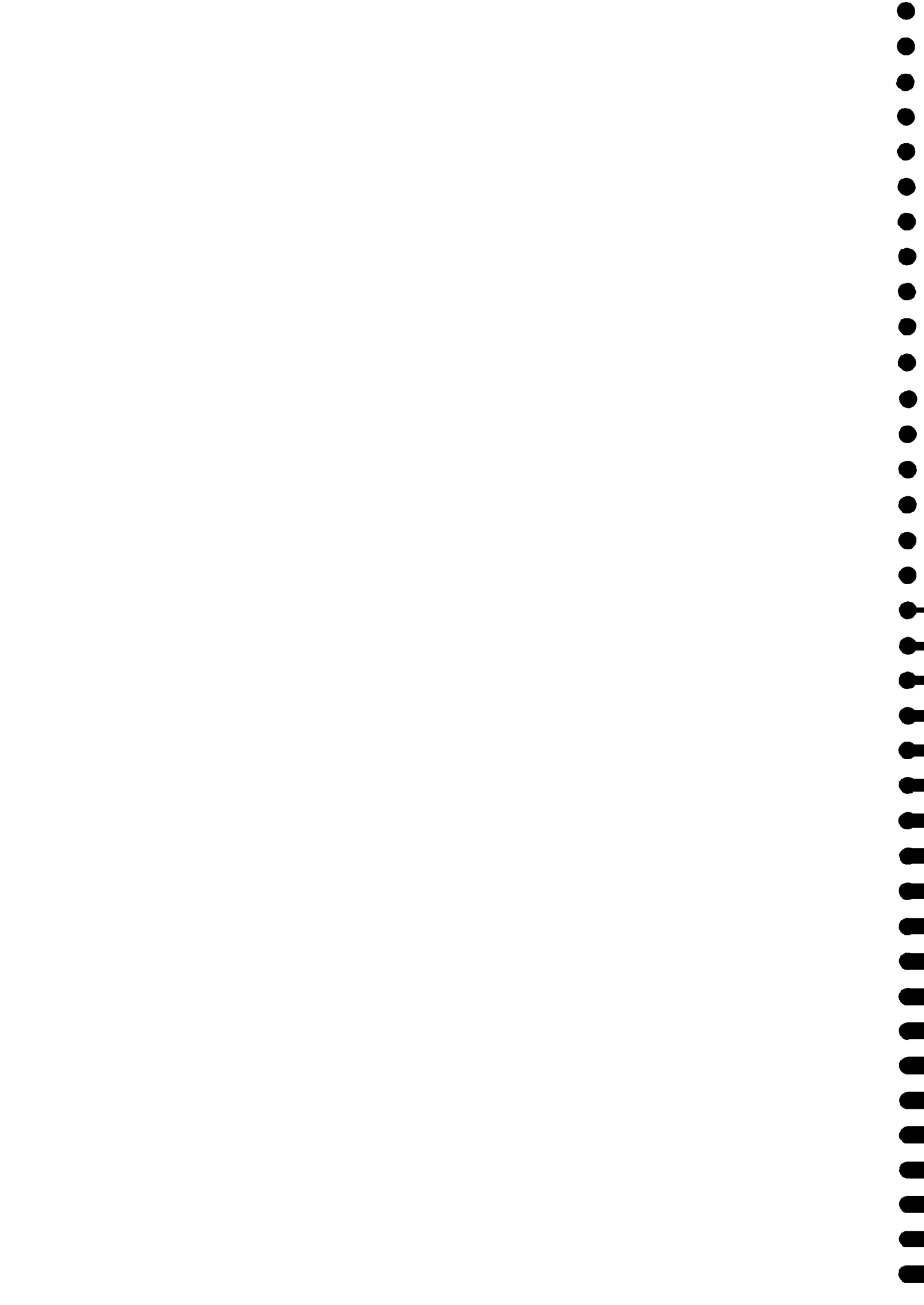
*Trivandrum  
29 February 1996*

*Dr K Balachandra Kurup  
Executive Co-ordinator  
Socio-Economic Units, Kerala*



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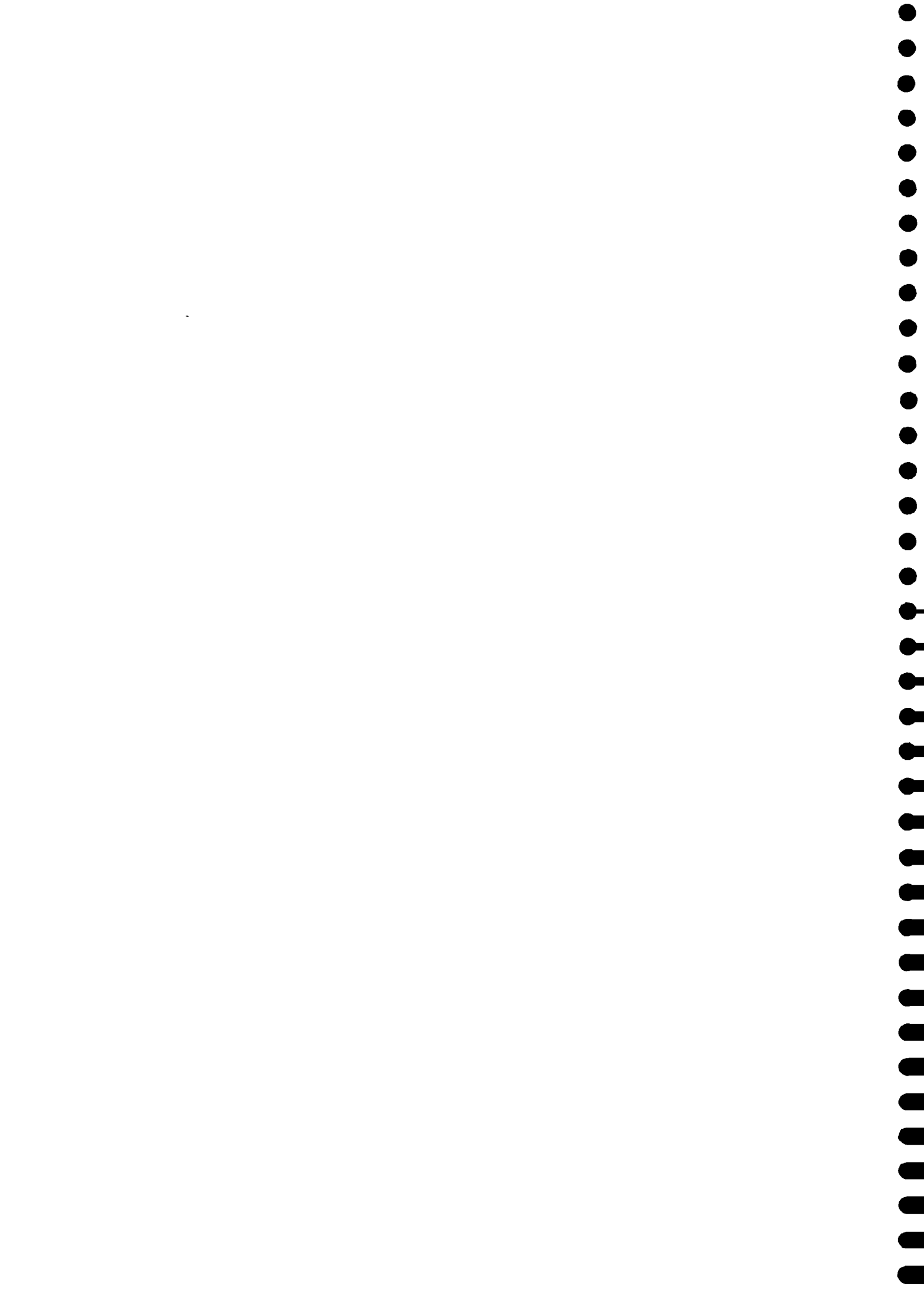


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## Glossary

Anganwadi	Basic peripheral units of ICDS for Child-care and ante-natal care.
Balawadi	Basic peripheral units of Community development Blocks, selected by women's groups. Similar to Anganwadis of ICDS.
Block	Community Development units comprising of five to seven panchayats.
CESS	Centre for Earth Science Studies (Autonomous Institution under the Government of India)
Colony	A settlement of socially and economically weaker people of the society, rehabilitated by Government.
Core Group	A voluntary group of selected WWC members, recognised by panchayats from where SEU plans to withdraw gradually. These groups were formed for sustaining SEU Activities.
EHG	Environmental Health Group
<i>Harijan</i> KSSP	A term coined by Mahatma Gandhi to refer people belonging to backward classes. <i>Kerala Sastra Sahitya Panshad</i> , an NGO active in the field of dissemination of information on Literacy, Environment, Health, etc.
HH	Household
ICDS	Integrated Child Development Scheme of the Government of India, Social Welfare Department
IPP	India Population Project aided by the World Bank for improving health status of four backward districts of Kerala.
KWA	Kerala Water Authority
<i>Mahilasamajam</i>	Voluntary women's group which are registered bodies recognised by the Community Development Blocks
<i>Make-shift Shack latrines</i>	Non-permanent Latrine structure built on stilts, situating just above the backwater stream.
Mothers' Meeting	Meeting Sessions organised as part of ICDS activities in which discussions on various subjects viz. hygiene, environment, and other health-related issues take place.
Panchayat	Local administrative Authority for a rural area covering a population of above 15000 - 30000
PHC	Primary Health Centre under the State Government, Department of Health. These Centres are basic peripheral units of the Department.
POTWATS	Protection of Traditional Water Sources (SEU Programme for chlorination of open-dug wells and income generation for women's voluntary groups)
PTA	Parent-Teachers' Association formed to look after the welfare of school and its subjects
SC/ST	Scheduled Castes and Scheduled Tribes notified by the Government of India



SEU latrine	Latrines built under the sanitation programme supported by the Governments of Netherlands and Denmark SEUs have built these latrines jointly, with contributions from the panchayats and beneficiaries.
SEU	Socio-Economic Units, Kerala
SHC	School Health Club
Ward member	Elected people's representative
Ward	Each panchayat is sub divided into wards, the basic unit of local government, covering a population of 2000 - 4000
WWC	Ward Water Committee (A voluntary group not paid for their services at the ward-level composing of 7 members including at least two women and the elected ward member)



## Executive Summary

The London School of Hygiene and Tropical Medicine developed a Hygiene Evaluation Procedures (HEP) Handbook consisting of practical guidelines for evaluating water and sanitation -related hygiene practices. The draft HEP Handbook is being developed and refined with practical methods and tools for evaluating hygiene practices in the context of water supply and sanitation projects. The HEP handbook was field tested in Kerala, a state in southern India. The field testing was carried out in collaboration with Socio-Economic Units, Kerala (SEU-Kerala), a bilateral-funded project, supported by the Royal Governments of Denmark and Netherlands.

Dr. Astier arrived in Kerala on 11 November 1995, she held a series of meetings with the SEU Executive Co-ordinator and staff members of SEU. After preliminary meetings held at Trichur, intended to introduce and orient SEU staff to the HEP handbook and the KHES, and subsequent training of KHES team at Calicut, and a debriefing at Trivandrum, Dr. Astier returned on 25 November 1995. The study team consisting of eleven members worked under Mrs Vijayalakshmi S who was Local Study Co-ordinator (KHES).

### Specific Objectives

#### Water

- ◆ To locate all existing water sources (direct observations and mapping)
- ◆ To assess the existing hygienic conditions of water sources (observation)
- ◆ To find out the water collection, storage and handling practices at the source in transit and in the home (direct observations, informal interviews and participatory discussions)
- ◆ To find out the reasons for adopting or not adopting certain hygiene practices (multiple methods)

#### Sanitation (Excreta Disposal)

- ◆ To identify the existing sanitary facilities (direct observation, mapping and health walk)
- ◆ To identify the existing domestic hygienic practices.  
Disposal of children's stools  
Hand washing at critical times
- ◆ To assess the functionality, use and upkeep of latrines. Three panchayats, Thrikkunnapuzha, Puthenchira and Kuttyattoor; each under a separate SEU were identified as sites for conduct of the study.

PANCHAYAT	CHARACTERISTICS
Thrikkunnapuzha (SEU - South)	Coastal area, high density of population
Puthenchira (SEU - Central)	Mid-land, medium density of population, more access to urban areas. 100% SEU sanitation coverage
Kuttyattoor (SEU - North)	Hilly area, conservative, low density of population.





The effectiveness of evaluation tools such as pocket chart and three pile sorting cards have been amply demonstrated in this study. Qualitative studies like the KHES can definitely put this tool to very effective use.

The process of field testing the HEP handbook has been a highly rewarding professional experience to the KHES team and the SEU project staff

The cultural/psychological reasons and background for the paradox of knowledge and practice should be investigated. This could be done through a participatory promotional campaign

People's perception on hygienic and unhygienic situations has to be investigated as part of a follow up intervention.

School Health Club should be given more focus as an area under water and sanitation sector.

The results of the KHES should form the basis for conducting a series of field level seminars aimed at strengthening the concerted participatory promotional campaign.

The whole area of sanitation-related hygiene practices of children under five has to be considered as a component for future health promotion activities on a priority basis

It would be worthwhile to mention here that weekly reports were being regularly sent to Mrs. Vijayalakshmi, Local Co-ordinator (KHES). Since the completion of field work, consolidation of findings was done at Kollam from 11 January - 15 January in which Mrs. Kochurani Mathew, Mrs S Vijayalakshmi Ammal, Ms K. Anilakuman, Ms. Anila Kumary K., Mr. Francis K.A, Mr. P Harish Kumar, Mr Lalachan P V, Ms Lissy Paul, Mr. Manoharan B, Mr Nagesh C.K., Ms. Nisha K, Mr Suresh Babu K N. participated. Mr. V. Manilal could attend this workshop only on the last day. Mrs Remadevi was not available for this workshop since she was preoccupied with other work. The first Draft of the Report, which included only the findings of the study was sent to Dr Astier and the three SEUs for comments and necessary changes. Dr Astier had promptly responded with a number of constructive suggestions which helped in to improve the draft report. Even though the KHES team had planned to meet on during 13-14 February, for analysis and interpretation and finalisation of the report, they could meet only on 16 February. Ms Anila Kumari, Mr. P. Harish Kumar, Mrs. Kochurani Mathew, Mr B Manoharan, Mr K N. Suresh Babu and Mrs S Vijayalakshmi worked together till the 27th in completing the report.

Since Mr. K.A. Francis left the SEU to join another organisation, he was not available for the completion of the report. Mr. C. K. Nagesh and Mr. Lalachan P.V. had taken up assignment in a District level survey project of SEU and hence were unavailable during the last few days of the completion of KHES report

The Final Draft Report, in its present form was prepared by Ms Anila Kumary, Mr P. Harish Kumar, Mrs. Kochurani Mathew, Mr. B Manoharan and Mr. K.N. Suresh Babu.

This draft report may still have some gaps that need to be filled, more points required to substantiate and more supporting information that needs to be added. Photographs taken during the study will be prepared in an album format and most or all of them will be used for future studies. The readers are welcome to respond with suggestions and comments that will help improve this report.

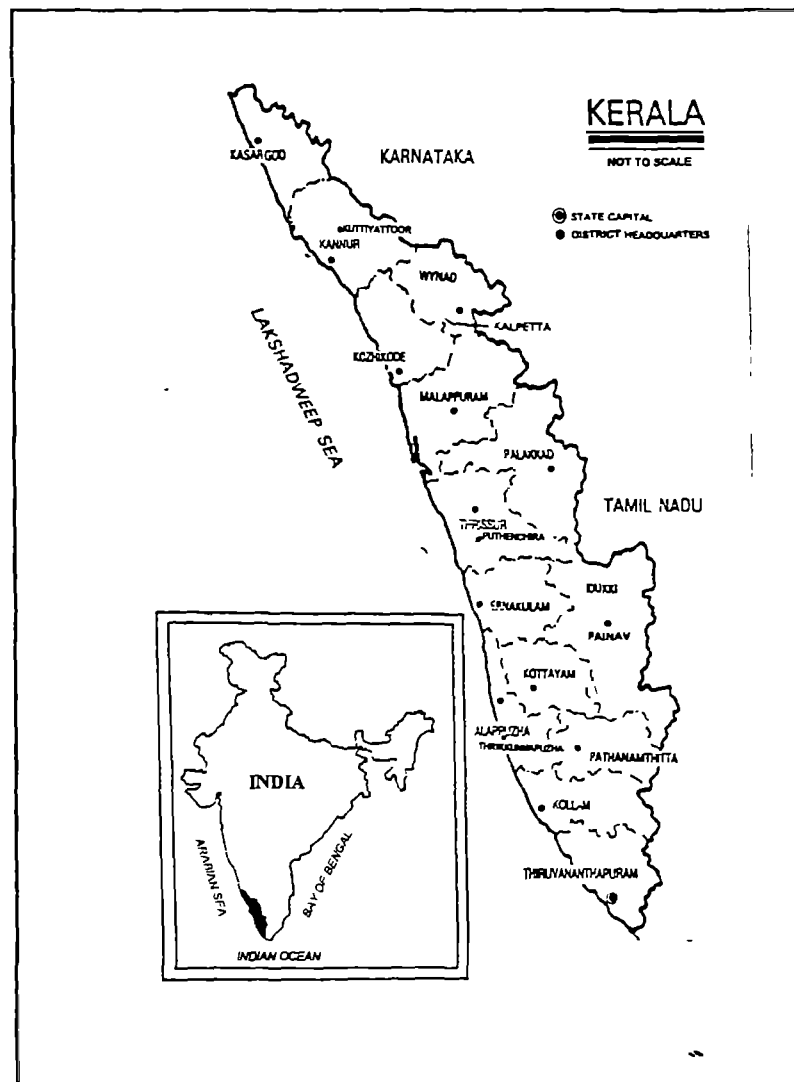


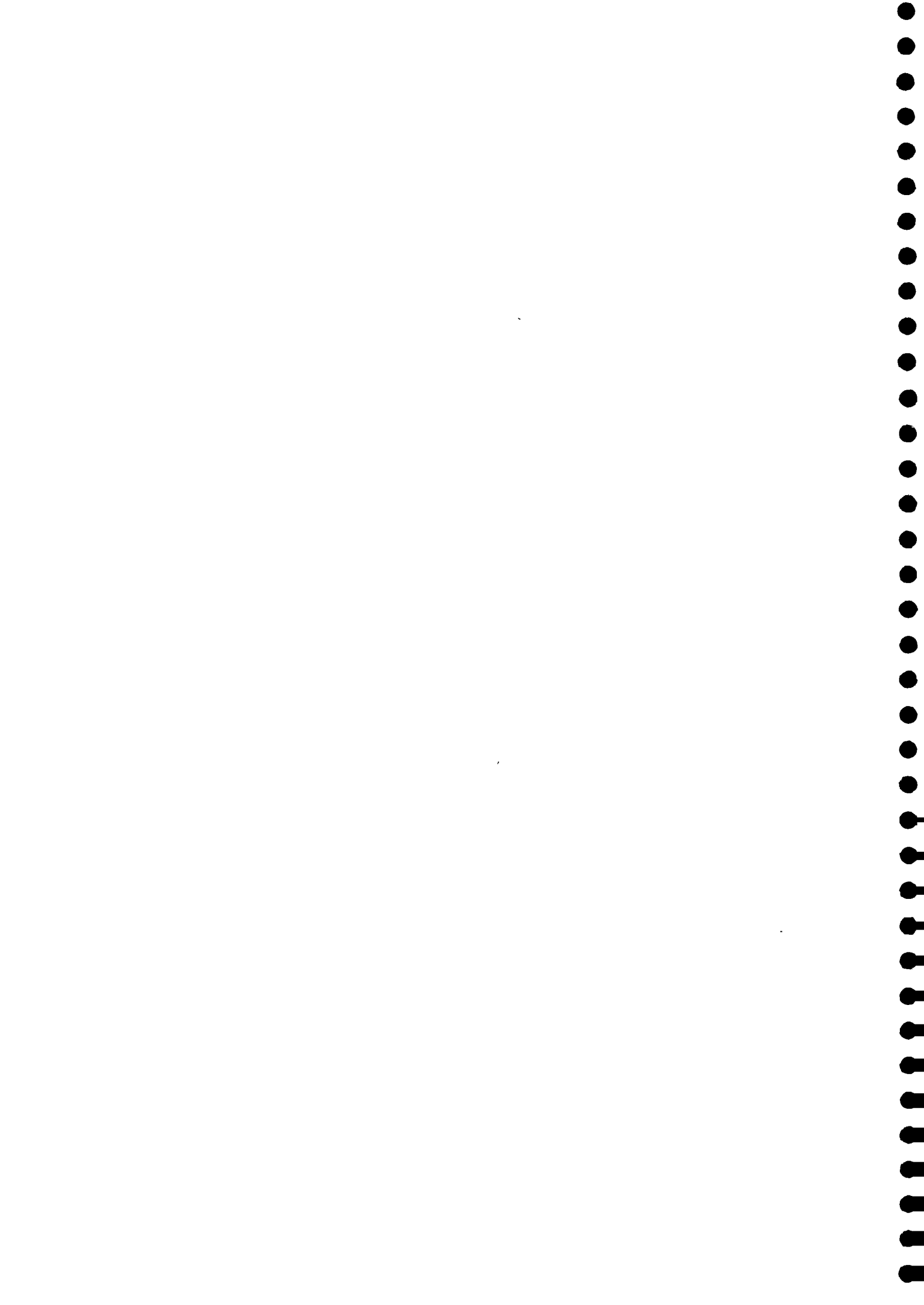
## 1 Background

The London School of Hygiene and Tropical Medicine developed a Hygiene Evaluation Procedures (HEP) Handbook consisting of practical guidelines for evaluating water and sanitation-related hygiene practices. The HEP Handbook which was conceived as a field companion to *Actions Speak: The study of hygiene behaviour in water and sanitation projects* (Boat and Cairncross, 1993), a resource book prepared primarily for project managers and decision makers. The handbook was developed through processes of consultations with field-level project staff working in Eastern Africa.

The draft HEP Handbook is being developed and refined with practical methods and tools for evaluating hygiene practices in the context of water supply and sanitation projects. The HEP handbook was field tested in Kerala, a state in southern India with an area of 38,863 sq km, population of 29,032,828 (1991 census) and population density of 747 per square km. The field testing was carried out in collaboration with Socio-Economic Units, Kerala (SEU-Kerala), a bilateral-funded project, supported by the Royal Governments of Denmark and

Netherlands since 1988. SEU-Kerala works in close collaboration with the Kerala Water Authority; the agency responsible for piped water supply within the state of Kerala.





## 1.1 Pre-planning and training of KHES team

Dr Astier Almedom, Lecturer in Medical Anthropology, Environmental Health Group, London School of Hygiene and Tropical Medicine who was Study Co-ordinator of the KHES came down to Kerala to introduce the HEP handbook and train a team for field testing of the HEP handbook.

Since Dr.Astier's arrival in Kerala on 11 November 1995, she held a series of meetings with the SEU Executive Co-ordinator and staff members of SEU. After preliminary meetings held at the three SEU offices intended to introduce and orient SEU staff to the HEP handbook and the KHES, a meeting was held at SEU Trichur on 15 November 1995. This gave result to the emergence of the team that would take up the Study. The following persons formed the study team under Mrs Vijayalakshmi S. who would be Local Study Co-ordinator.

Ms.Anila Kumary K.  
Mr Francis K.A.  
Mrs Kochurani Mathew  
Mr. Lalachan P.V.  
Ms.Lissy Paul  
Mr.Manocharan B.  
Mr Nagesh C.K.  
Ms.Nisha K  
Mrs. Remadevi O.T.  
Mr.Suresh Babu K.N.

Dr.K.Balachandra Kurup, Mr.V Manilal and Mr.P.Harish Kumar provided support to the study team.

Besides the SEU staff members who formed the study team, 2 Local Assistants (who are Ward Water Committee members) were also selected for the tightly scheduled, carefully planned study (The lady Local Assistants were paid a very modest honorarium of Rupees 1000/- for their selfless service from early morning till very late in the evening).

A training workshop was held at Calicut during 16 November to 20 November, 1995 followed by a debriefing meeting at Trivandrum on November 24, in which the Training report, study design and study schedule were discussed. Dr.Astier along visited two of the SEU project field areas as well. Dr.Astier left Kerala on 25 November 1995.

From the 4<sup>th</sup> of December to 10<sup>th</sup> of December, a workshop for preparation and design of study materials and formulation of specific objectives and working hypothesis was held at Kollam. The materials prepared during this workshop was pre-tested at Perayam panchayat on 8 December 1995. The study team was divided into two different groups and each group started off on a visit to a nearby panchayat (Perayam) where the study design, materials produced and the tentative work schedule was pre-tested.

On return from the pre-test visit to Perayam panchayat, certain changes/corrections and modifications were made in the pictures and structured observation schedules. Slight changes were made on some pictures to improve clarity of message.



The actual field work was planned for the period 11 December 1995 - 9 January 1996. A mid-term review was scheduled for the 19<sup>th</sup> of December, 1995. The final review and documentation during which this report would be written was scheduled for 11 January-15 January

## 1.2 Preparation of Study materials

**Three-pile sorting cards and pocket chart cards** were developed and prepared on water, sanitation and gender tasks. 119 pictures on various themes (47 on water, 46 on sanitation, 26 on gender tasks) suggested by the study team were prepared by professional artists during the workshop. Rough sketches were drawn first, which were in turn discussed by study team members and corrections, changes and improvisation were suggested. These changes were then incorporated into the final sketches. The pictures were then copied for use by the study team in the three different field areas. The pictures used in the study are provided in annexure.

**Structured observation schedules** for Healthwalk and House visit were prepared by the study team based on the specimen provided in the draft HEP Handbook. Separate schedules were drafted for Anganwadi Observation, School Observation and Mothers' Meeting.

Field work started simultaneously in Thrikkunnapuzha and Kuttyattoor panchayats on 11 December 1995, in Puthenchira, study started in 12 December. Local Assistants who had been identified prior to the study were taken around the study area by the study team. This would help the study team to familiarise themselves with the area, and in conducting informal observations on the place, people, prospects and potential problems that they may face in the days to come, during the study period.

After a week, on 19 December 1995, the Study Team met at Thrissur for a mid-term review of the KHES. This meeting was attended by each one of the Study Team members and the Executive Co-ordinator of the Socio-Economic Units was detailed about the study by the Study Team members by sharing their experiences in the field. The Study team were just getting used to a new set of routine work and had hardly faced any problems in the field. Big work were still ahead and the Study Team was raring to go. The only suggestions that came up during this meeting were that the Study team could also gather information on the names and ages of residents in the households during house visits. Households may be selected on the basis of one more criterion - a cross-section of sample based on income level.

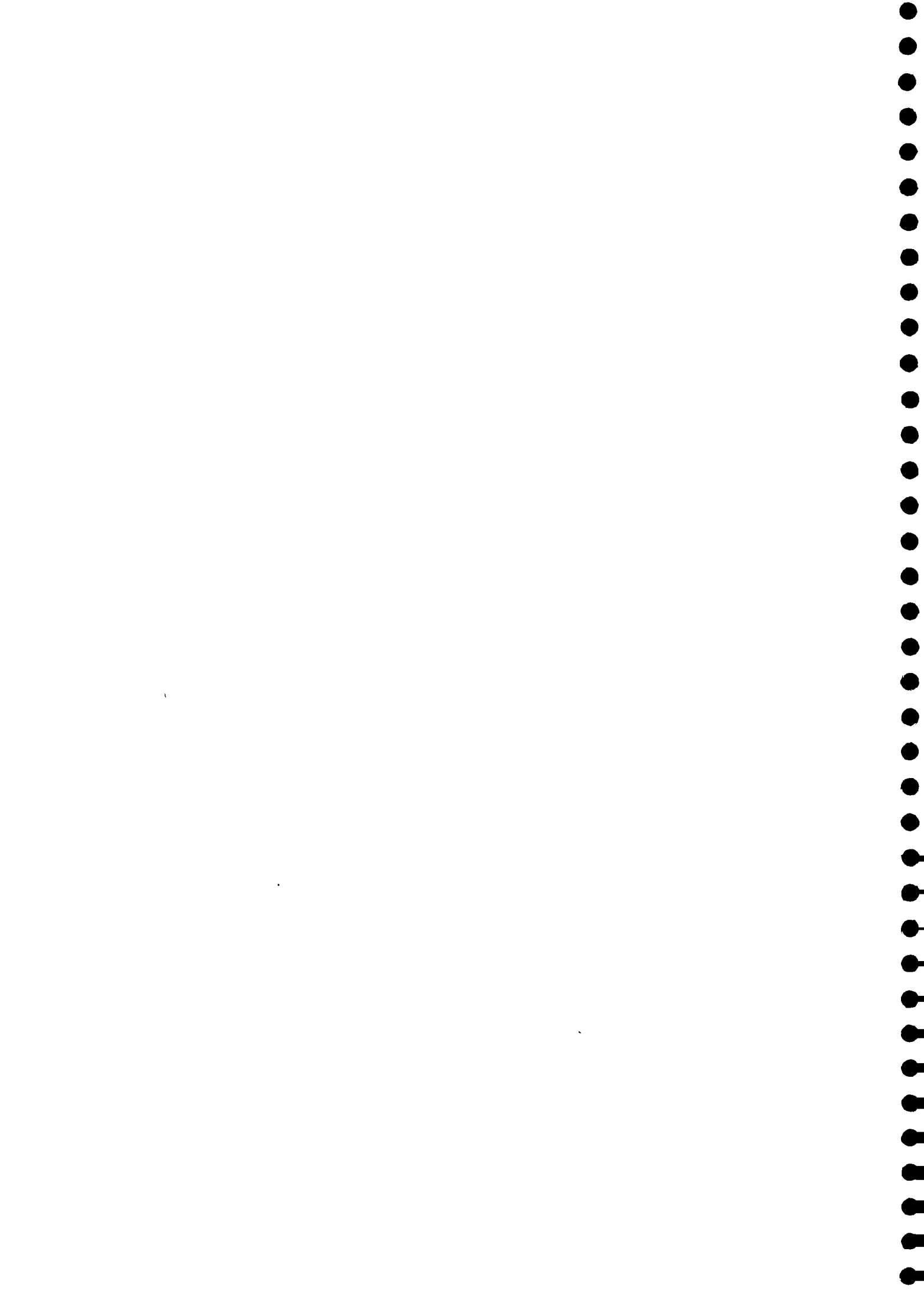
## 2 Study Design

### 2.1 Objectives

#### Aims:

The **primary aim** was to design and conduct a <sup>participatory</sup> hygiene evaluation study in SEU project area.

The **implicit aim** is for the KHES to contribute to the improved design and implementation of the Health, Hygiene Education component of SEUs' work





The **secondary aim** was to assess the utility and practicability of the HEP handbook.

**Objectives:**

To understand existing water and sanitation related hygiene practices in their cultural, social, economic and physical context.

Study team to gain first hand experience and training in a systematic assessment of hygiene practices.

To acquaint the study team with the methodology of pre-testing a field handbook (HEP).

To define relevant issues for follow-up action and or further investigation for SEU

## 2.2 Intended output

Feedback to the study participants (community members)

A core study team with practical skills for assessing hygiene practices systematically

A complete study report for use by the SEUs. This should include a set of practical recommendations and a follow-up action plan

Contributions of examples/case studies for the Environmental Health Group (EHG) to include in the revised HEP handbook.

Simple tools for monitoring the most critical hygiene practices for SEUs to use periodically

Various articles for disseminating the findings to multi users e.g. local, regional, and national government and non-government institutions, local and global network newsletters such as the SEU newsletters in English and Malayalam, GARNET Hygiene Behaviour newsletter and various journals such as the natural resources forum, Waterlines etc

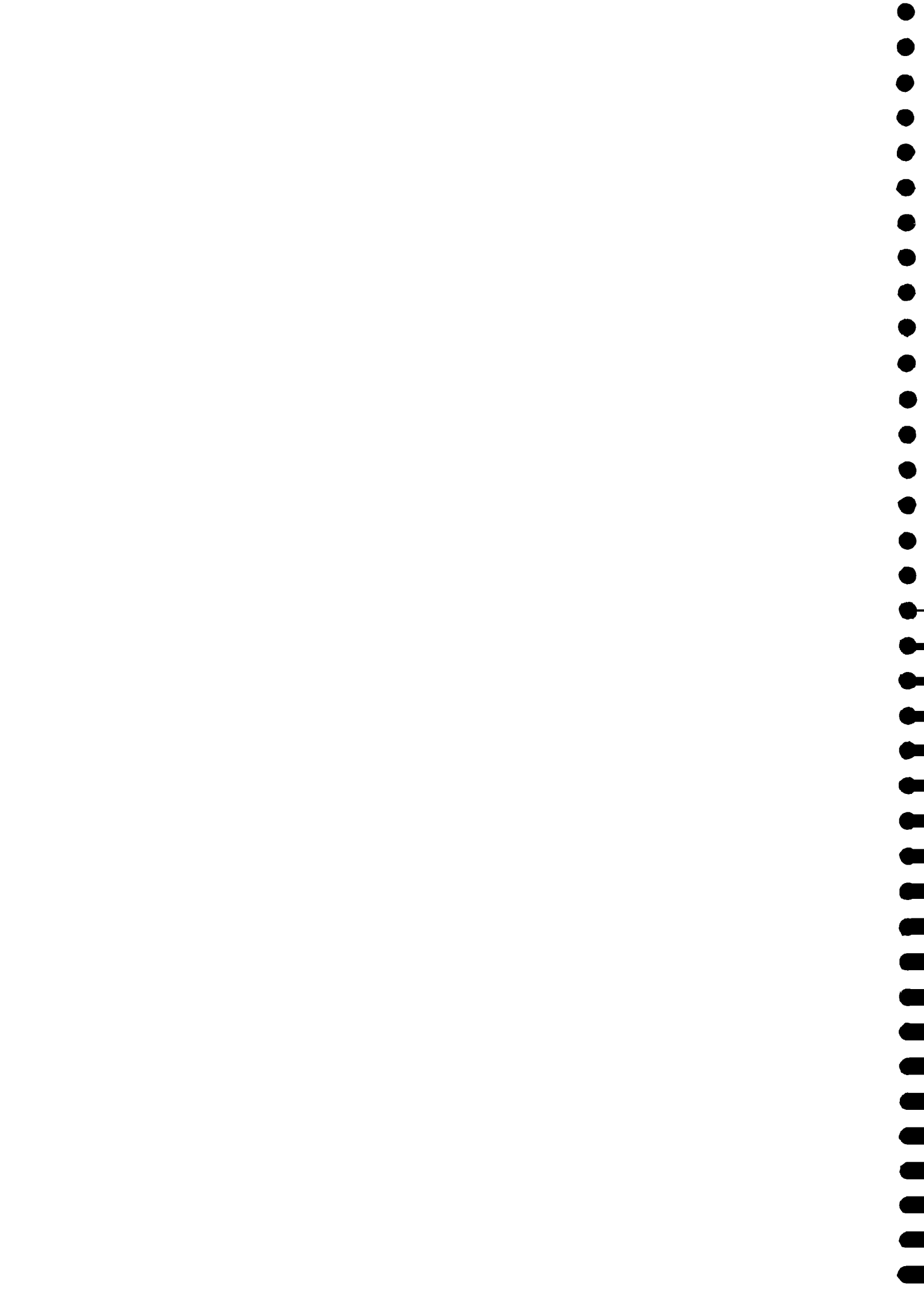
## 2.3 Specific Objectives

### Water

- ◆ To locate all existing water sources (direct observations and mapping)
- ◆ To assess the existing hygienic conditions of water sources (observation)
- ◆ To find out the water collection, storage and handling practices at the source in transit and in the home (direct observations, informal interviews and participatory discussions)
- ◆ To find out the reasons for adopting or not adopting certain hygiene practices (multiple methods)

### Sanitation (Excreta Disposal)

- ◆ To identify the existing sanitary facilities (direct observation, mapping and health walk)
- ◆ To identify the existing domestic hygienic practices



- Disposal of children's stools
- Hand washing at critical times
- ◆ To assess the functionality, use and upkeep of latrines.

## 2.4 Area for study and study population

Three panchayats, Thrikkunnapuzha, Puthenchira and Kuttiyattoor, each under a separate SEU were identified as sites for conduct of the study.

PANCHAYAT	CHARACTERISTICS
Thrikkunnapuzha (SEU - South)	Coastal area, high density of population
Puthenchira (SEU - Central)	Mid-land, medium density of population, more access to urban areas. 100% SEU sanitation coverage
Kuttiyattoor (SEU -North)	Hilly area, conservative, low density of population.

Three wards from each of the panchayats were identified by the study team. The study area was selected on the basis of the following criteria developed by the study team during the pre-planning and training session.

### Selection of Wards:

One ward with accessibility to information and facilities (main road, shopping place, schools, panchayat office, Primary Health Centre etc )

One ward in the interior area, where accessibility is a little difficult. Places which do not have sufficient infrastructure, basic services or have poor living conditions.

The third ward between the two. Meaning, facilities that are neither excellent nor grossly inadequate.

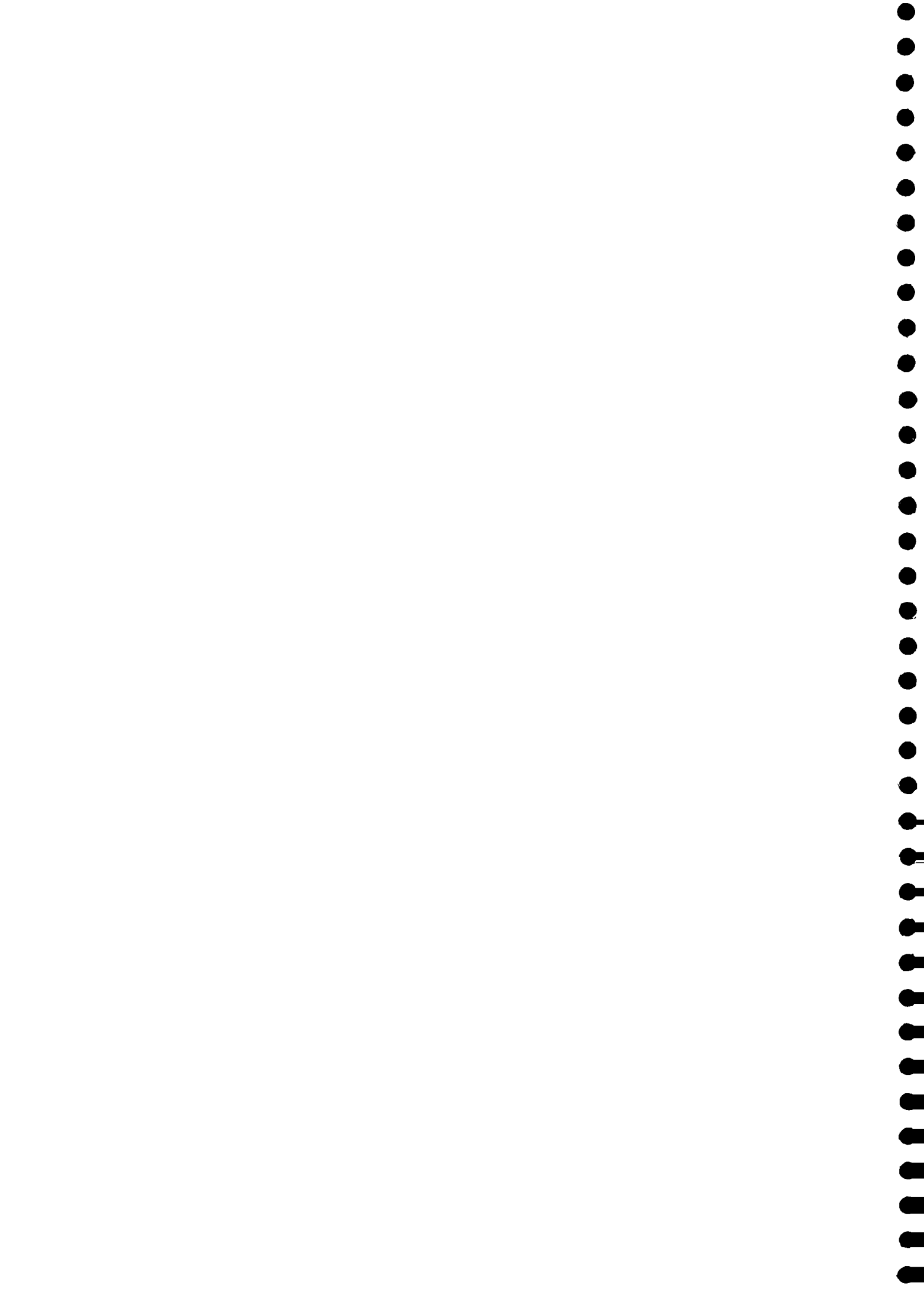
CHARACTERISTICS OF WARD	Thrikkunnapuzha	Puthenchira	Kuttiyattoor
Accessibility to information and adequate facilities	III	III	III
Facilities neither excellent nor too bad	I	II	VI
Very poor facilities and difficult living conditions	IX	IX	IX

### Selection of Households:

Ten households from each ward were selected. All the houses selected had children below 5 years age. The Households selected represented a cross section of low, middle and high income levels. Five households with children below the age of five from a Colony.

### Conducting Group discussions:

Size of groups for group meetings would be 20-30 adult individuals. Two groups from each ward were involved in group meetings and discussions.



### Schools/Anganwadis:

One school from each panchayat and one Anganwadi from each ward was selected for the study.

20 students (10 boys and 10 girls) belonging to School Health Clubs (SEU) and 20 students (10 boys and 10 girls) who are non-School Health Club members were targeted to take part in the meetings and discussions for the study.

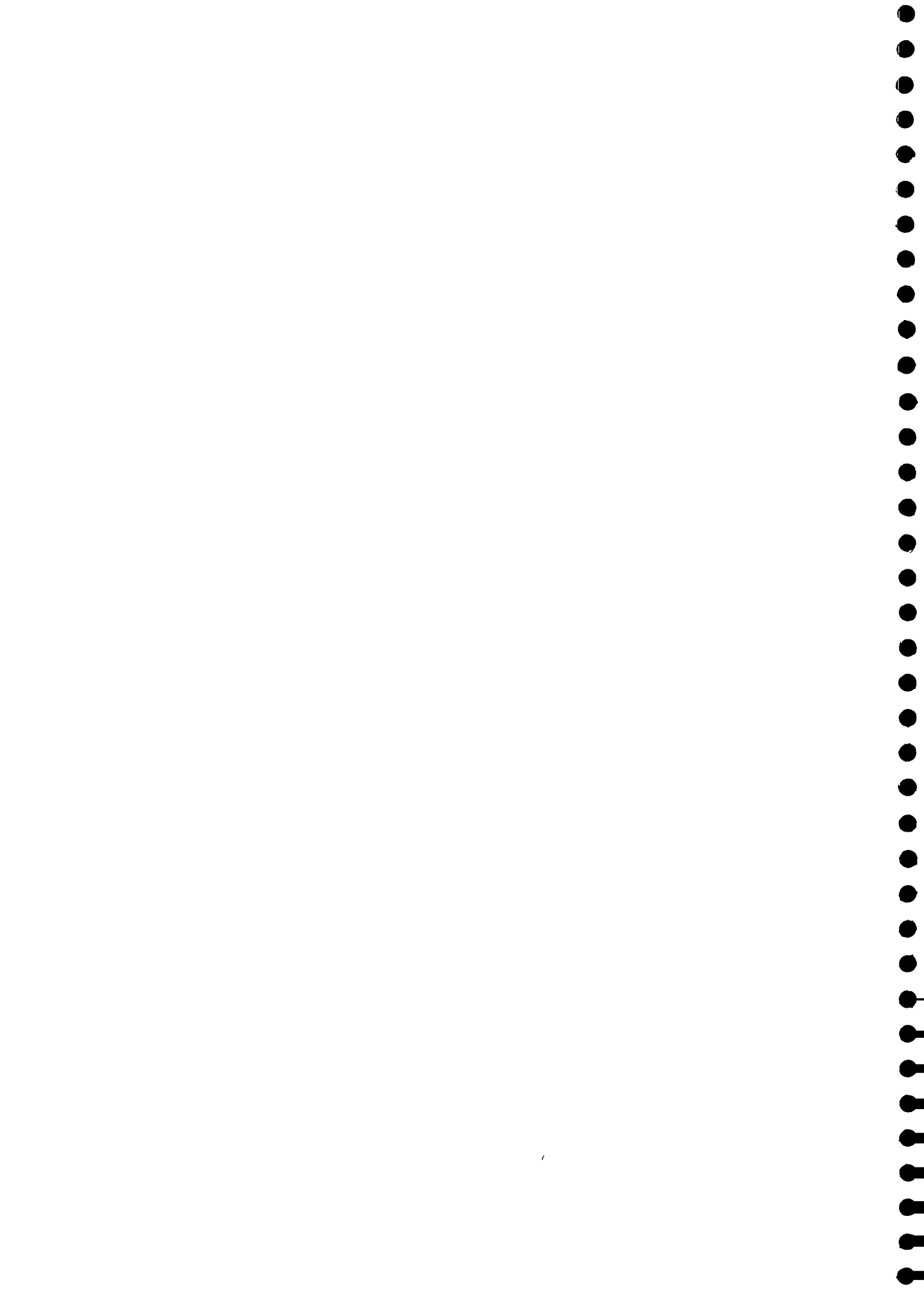
Mothers' meetings conducted at each Anganwadi were attended by 20 - 30 mothers (This number was flexible and more or less could attend)

### **Thrikkunnapuzha Panchayat**

Thrikkunnapuzha panchayat with 11 wards is in Alleppey district between south and central Kerala, is a coastal area with high density of population. Wards I, III and IX were selected for the study from this panchayat. Piped Water Supply from NAP and other schemes are available in this panchayat. SEU Sanitation programme is in progress here.



Established in 1957, this panchayat has a population of 25,849 living in 12 53 square kms. The number of families that live under this panchayat are 5,214 and has about 8 colonies. 82% of the population are Hindu and Muslims form 30% of the total population Major occupation of people are fishing, coir making and agnculture Literacy level here is around 78% and there are about 8 schools (one High School, two Upper Primary School and five Lower Primary Schools. There are about 36 voluntary organisations working in the area. Health care facilities are relatively good with a Primary Health Care Centre, two private hospitals (Allopathy), a dental clinic, a Homeopathy and an Ayurvedic hospital The panchayat also has a veterinary hospital The panchayat has about 412 public taps and about 362 private house connections.



SEU started working here in 1988 and has built about 1,633 double-pit-pour-flush latrines. SEU has developed 11 Ward Water Committees and two School Health Clubs.

### **Puthenchira Panchayat**

A mid-land panchayat with 9 wards of Vellangallore Block in Trichur District of Central Kerala. Wards II, III and IX were selected from this panchayat for the study. Western side of this panchayat is saline water-locked area with a number of streams and paddy fields (now serving as shrimp farms).

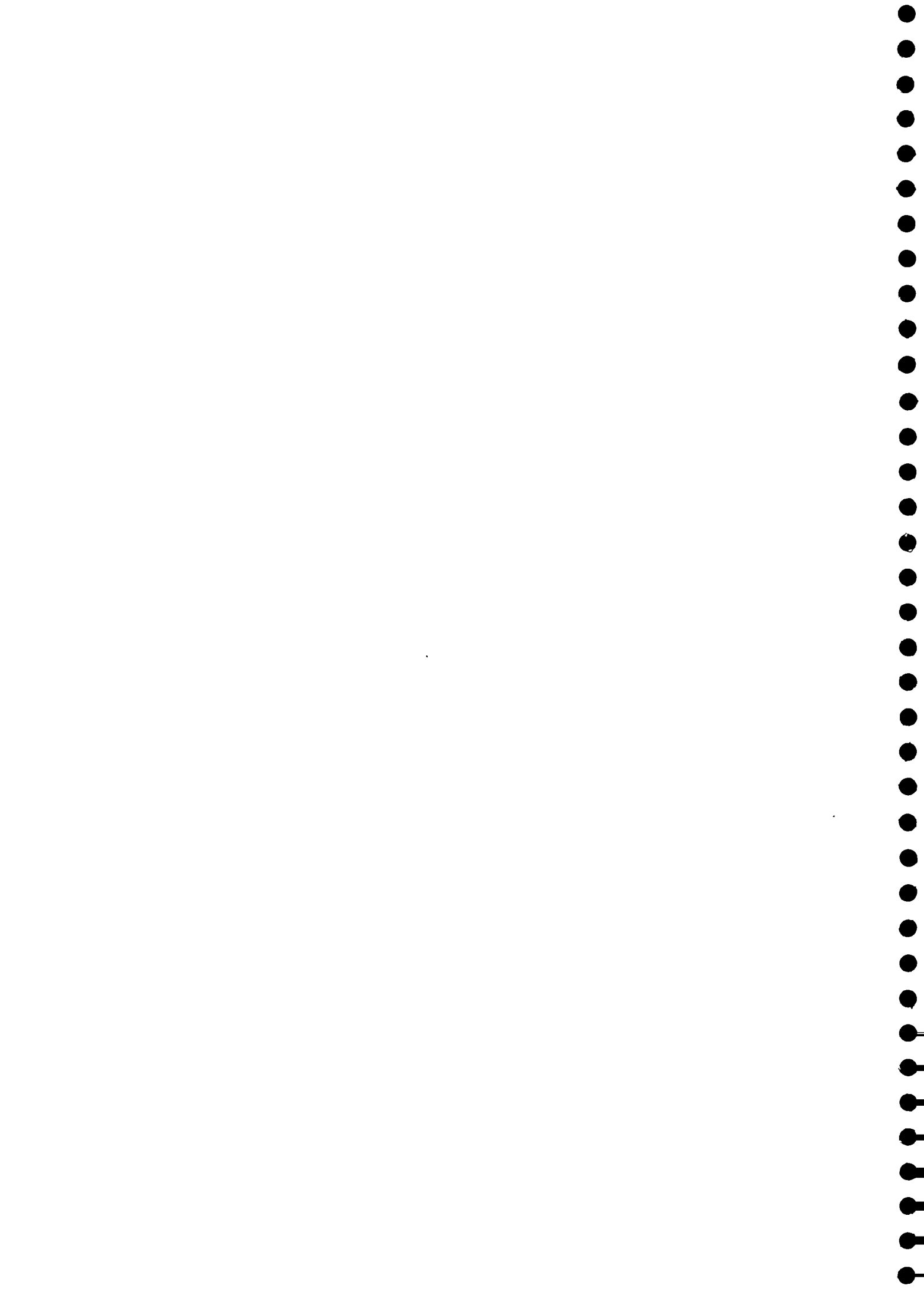
Population density is medium and the place has more access to urban areas. A population of 19,804 (Male-9,257, Female-10,547) live in an area of 22.03 sq.km. Number of households are 4,377 and population below poverty line is around 54%. Major occupation among residents in the area is agriculture. Literacy level is 100%. There are 9 schools in the panchayat (High School-1, Vocational Higher Secondary School-1, Upper Primary School-1, Lower Primary School-6). Besides the Panchayat Office, there are, Village Office, Krishi Bhavan, Veterinary hospital, Ayurveda Hospital, Homeopathy hospital, 1 Primary Health Centre and 3 Sub-Centres.



The panchayat area is served with about 237 public taps and 25 Public wells. Private Water connections in the area are 345 and chlorination of Well Water has been ongoing since 1988 (POTWATS)

Other institutions in the panchayat are. ICDS, Anganwadi-3, Balawadi-5, Post Office-1, (Branches-4), Reading room - 1, Cinema Theatre-1, Village Extension Office-3, KSEB Office-1, Civil Supplies retail store-1, SEU sanitation programme has given 100% coverage to the place in sanitation coverage.

Major livelihood of people are agriculture and allied occupations. People from





adjacent water-locked areas mainly depend upon inland fisheries. Rearing of goats, chicken and ducks are also common, but in a very small scale.

### **Kuttiyattoor Panchayat**

Hilly area with low-density conservative population in the North-Kerala district of Kannur. Wards III, VI and IX were selected for study from this panchayat. Spreading over 36 sq.kms with a population of 21,860 with 3,483 households in nine wards, Kuttyattoor has eight SC/ST colonies and two one-lakh housing colonies. Kuttyattoor has 11 Schools (HS1, UP2, LP8). 20 Anganwadis and 1 PHC, 3 IPP Centers (PHC subcentre) Health care facilities include two Homeo Clinics, one private hospital, one Veterinary hospital and Agriculture Office. Fourteen libraries that have been approved by the State Library Council are located in this panchayat. Almost 52 Youth Clubs function in this area. Literacy rate in panchayat is 90%



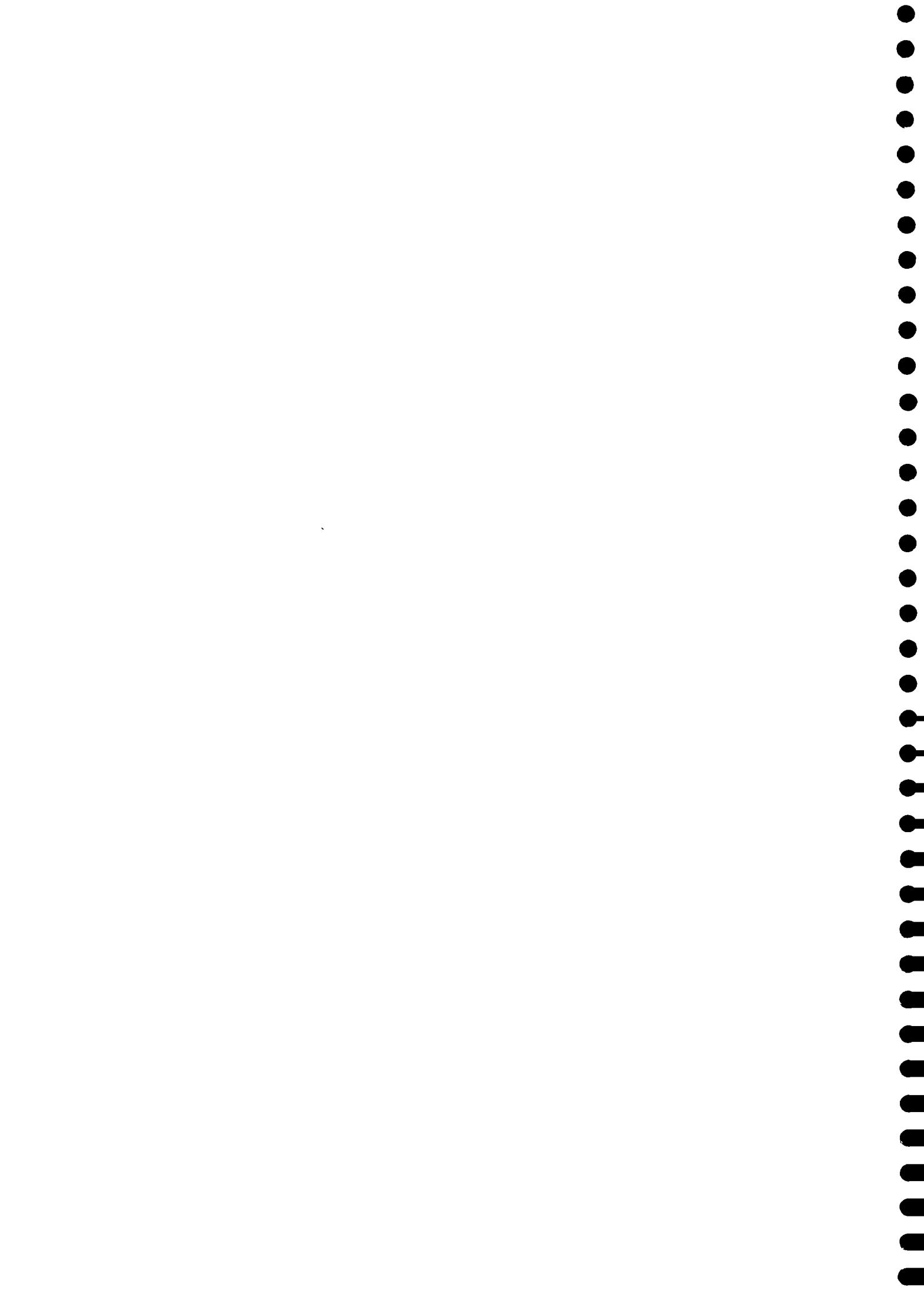
Public taps - 102, Public Wells-23. HH with Latrines-2703.(SEU-1550). School Health Clubs-10.

### **3 Methods and Tools used for Study**

Methods and tools adopted for the KHES were primarily from the HEP handbook Pocket Chart and 3-pile sorting card exercises were conducted with smaller groups earlier in the SEUs, it was after the orientation and training programme by Dr Astier that the exercises could be conducted in a very effective and systematic manner.

#### *Historyline:*

Panchayat Presidents, local leaders and senior citizens of the locality were



approached as the first step of the study. Later, the information collected was presented to a group and reconfirmed or amended as the group decided.

#### *Seasonal Calendar:*

Information on seasons, incidence of diseases etc. were collected from Primary Health Centres (PHCs), Group Discussions, Ward Water Committee members, Balawadi/Anganwadi teachers, Senior Citizens. These information were cross-checked wherever possible with official data available. The information gathered were presented to different groups during group discussions and corrected, wherever required.

#### *Healthwalk:*

Healthwalks were carried out at different hours of the same day or different hours during different days.

#### *House Visit:*

House visits were carried out by the study team to conduct direct observations and collection of information by interviews. Interview schedules taken from HEP specimen was used for this exercise. Repeated visits had to be made to gather required information.

#### *Structured Observation Schedules:*

Separate schedules were prepared for Mothers' meeting, Anganwadi visits, School Observations Please see Annexure 4.1 - 6.3

#### *Group Discussions:*

Group discussions with two groups from each ward, were conducted using Pocket Charts and Three-pile Sorting Cards

Pocket charts were used for identification of sources and uses of water, practices of handling and storage of water, sanitation facilities, home sanitation, and school observation (Water, sanitation and personal hygiene).

Pictures on Water, Sanitation and Gender Tasks were developed to be used for Pocket Chart and Three-pile sorting cards

Certain times, in order to cross-check information gathered by using other tools, local school children selected specially were used to observe certain personal hygiene practices. These children aged around 10-12 years, were briefed before hand on the specific task to observe.

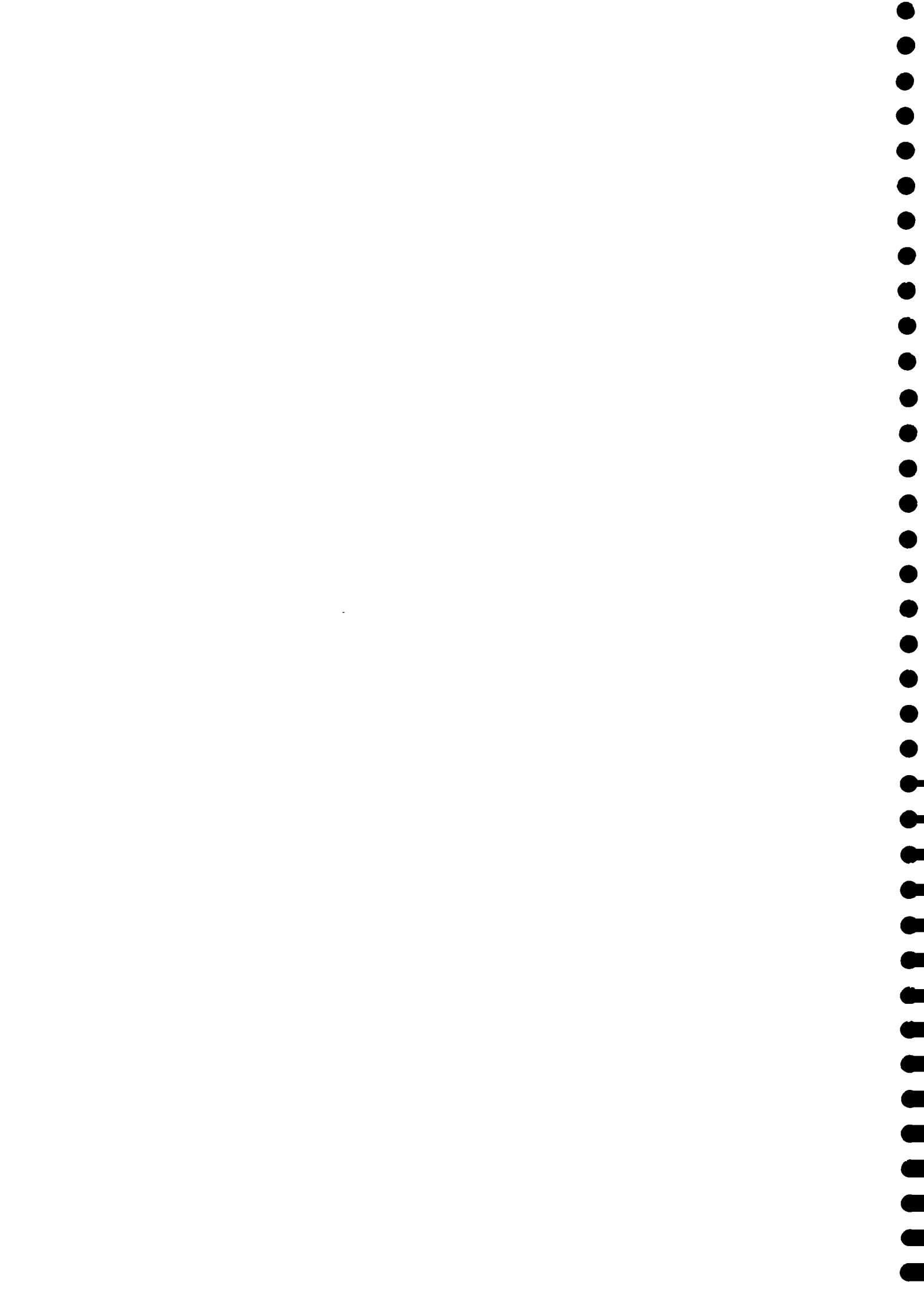
## **4 Findings and Results**

### **4.1 Historyline**

#### *Thrikkunnappuzha Panchayat*

1924 Demise of the famous Malayalam poet *Mahakavi* Kumaranasan in a boat accident.

1951 Primary Health Centre came into existence



- 1957 Thrikkunnappuzha Panchayat came into existence
- 1957 Thrikkunnappuzha sea wall was completed.
- 1962 Piped-water scheme brought protected water to the panchayat for the first time
- 1976 First High School came into existence.
- 1977 Thrikkunnappuzha bridge was commissioned
- 1977 Ms Volga, a lady from Netherlands visited the place for a research project (Marrned to a local resident, people of Thrikkunnappuzha remember her as the lady who was instrumental in getting the present water supply scheme)
- 1982 Late.Mr Prem Nazir, Malayalam's *Evergreen Hero* who's name appears in the Guinness Book of World Records visited Thrikkunnappuzha.
- 1982 Central Minister Mr.Y.B.Chavan visited Thrikkunnappuzha.
- 1984 Police Station came into existence.
- 1984 Sea water flooded land for about a kilometer inside. Two settlement colonies came into existence with this.
- 1988 Spread of Cholera all over. SEU commences work in the panchayat.
- 1991 Universal Literacy declared in the panchayat.
- 1994 SEU had built 1633 latrines in the panchayat which helped achieve 75% sanitation coverage.
- 1995 Village Panchayat Council comes to power as part of Panchayatiraj (Due to recent elections resulting from constitutional amendments)

#### *Puthenchira Panchayat*

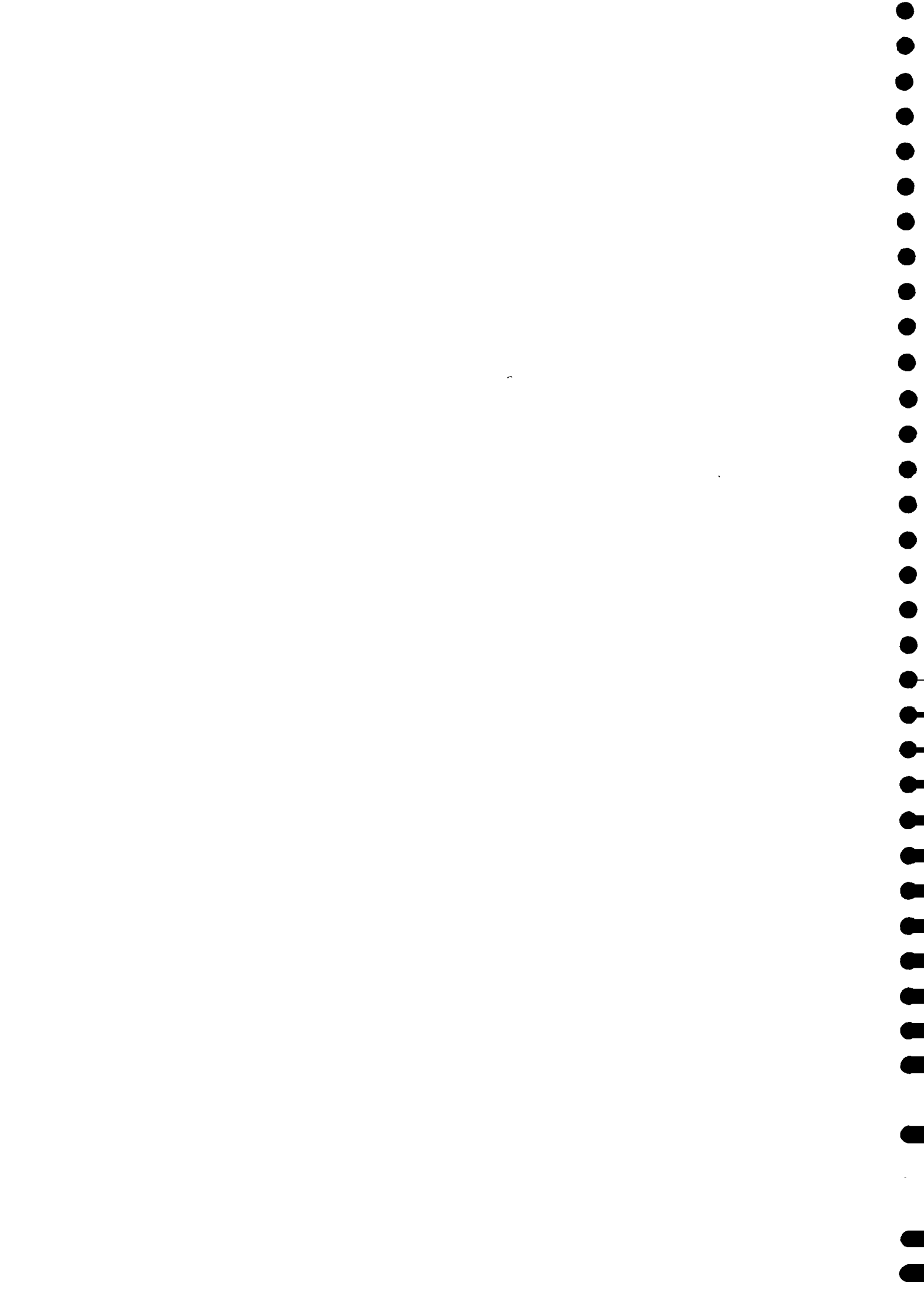
- 1762 Puthenchira, surrounded by the princely state of Kochi was donated to the erstwhile state of Travancore
- 1770 Tippu Sultan's invasion. Some Hindu temples destroyed.
- 1780 Village Union (Panchayat), Dispensary (PHC) come into existence
- 1784 Middle School and Co-operative Society come into existence.
- 1949 Merger of Travancore-Cochin; border disputes solved
- 1952 Chalakkudy-Kunnathunad Community Project came into existence One of the pilot projects in Community Development anywhere in India. Puthenchira was included in the project through people's initiatives
- 1953 The Health Dispensary was converted into Primary Health Centre.



- 1965 Mala assembly constituency comprising of Puthenchira Panchayat elected Mr K.Karunakaran (former Chief Minister of Kerala and Present Union Minister for Industries)
- 1966 An Upper Primary School was upgraded to High School.
- 1967 A small rural water supply scheme started functioning with support from the Harijan Welfare Department.
- 1979 Household electrification was provided in large scale
- 1988 SEU Intervention. School Health Clubs started.
- 1991 Universal Literacy declared.
- 1995 Declaration of Total sanitation coverage.  
Village Panchayat Council comes into power.

*Kuttiyattoor Panchayat*

- 1946 *Jenmi-Kudiyar* struggle (Landlord-Tenant struggle)  
Malabar Special Police action.
- 1948 Famine, related deaths.
- 1961 Formation of two panchayats. Maniyoor and Kuttiyattoor
- 1962 Two panchayats became one - Kuttiyattoor
- 1980 A dispensary started in Panchayat  
High school started  
Formation of Panchayat Service Co-operative Bank
- 1990 Dispensary converted to PHC. Three Sub Centers started  
Universal Literacy Movement.
- 1992 Resource Mapping carried out in Panchayat. (CDS/KSSP)  
SEU latrine construction programme started.
- 1995 Panchayatiraj elections





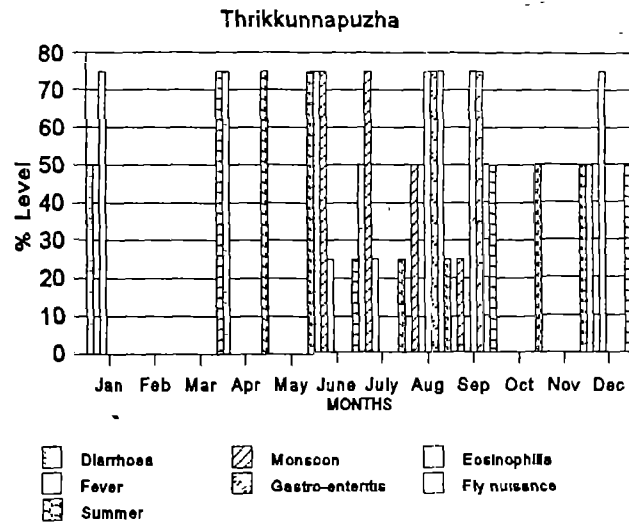
## 4.2 Seasonal Calendar

Information for Seasonal Calendar were collected from various sources in each of the three panchayats.

### Thrikkunnappuzha Panchayat

Mothers' meetings  
 Group meetings  
 Health Inspectors of Primary Health Centers  
 Senior Citizens in coastal area  
 Core Group, Ward and Panchayat Committee meetings  
 Children from coastal area  
 School Health Club  
 Teachers - in - charge  
 House visits

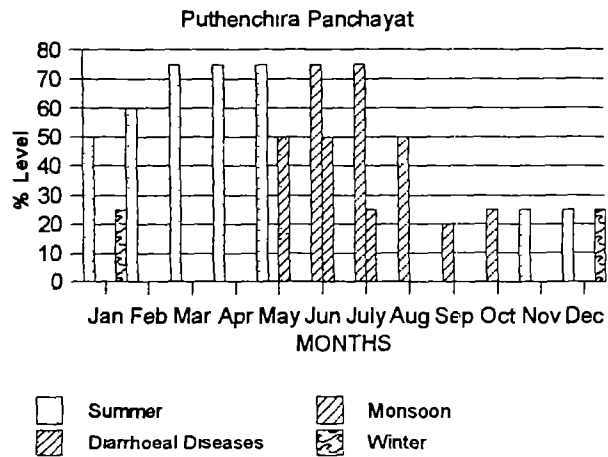
### Seasonal Calendar



### Puthenchira Panchayat

Public Health Centre (Doctors and Nurses)  
 Group Meetings  
 Mothers' Meetings  
 House visits  
 Ward members  
 Ward Water Committee members  
 Senior Citizens  
 Balawadi Teachers

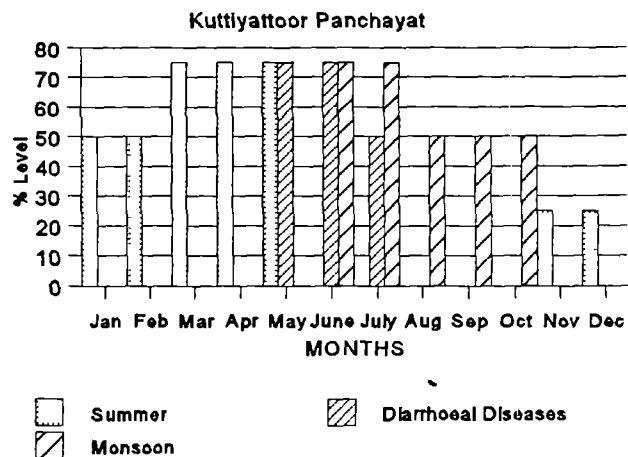
### Seasonal Calendar



### Kuttiyattoor Panchayat

Primary Health Centre (PHC), India Population Project (IPP)  
 Mothers' meetings  
 Ward Water Committee members  
 Group meetings  
 House Visits  
 School Teachers & Anganwadi Teachers

### Seasonal Calendar





### 4.3 Healthwalk

*Thrikkunnappuzha Panchayat.*

Ward I:

#### Water

Wells, taps and back water streams (people call them lakes) are major sources of water. Distance of water sources from households are: taps - 50-100 metres, lake - 100-500 metres, wells - 50-100 metres

Cleaning of vessels and bathing of women and children were seen near wells and backwater streams. Mainly, women were seen collecting water. Plastic and aluminum pots, buckets and vessels were used to collect water.

It is common that fingers get dipped in the collected water while carrying some vessels/ pots/ containers. This is applicable to water carried by hand or on hip because while lifting the vessel, fingers get dipped in water. Water in public and private wells do not seem purified periodically. Buckets used to collect water from public well are not clean. Bucket is not at all clean. Rope lies down on the ground. People reported that the water was not used for drinking. Five women and a man were seen collecting water from a tap. All of them had dipped fingers in their vessels. An interesting observation made here was that near a tap located outside a local restaurant, a vessel full of water was placed. This was meant to be used by customers for washing hands and mouth. A crow flew in sat on the vessel and started drinking water from the vessel.

During healthwalk on another day, near another tap where people were also seen collecting water. A woman was seen drying her hair near another tap where people were also seen collecting water. The woman must have just had a bath. Near another tap, women were seen brushing their teeth while some others were seen cleaning their tongues.

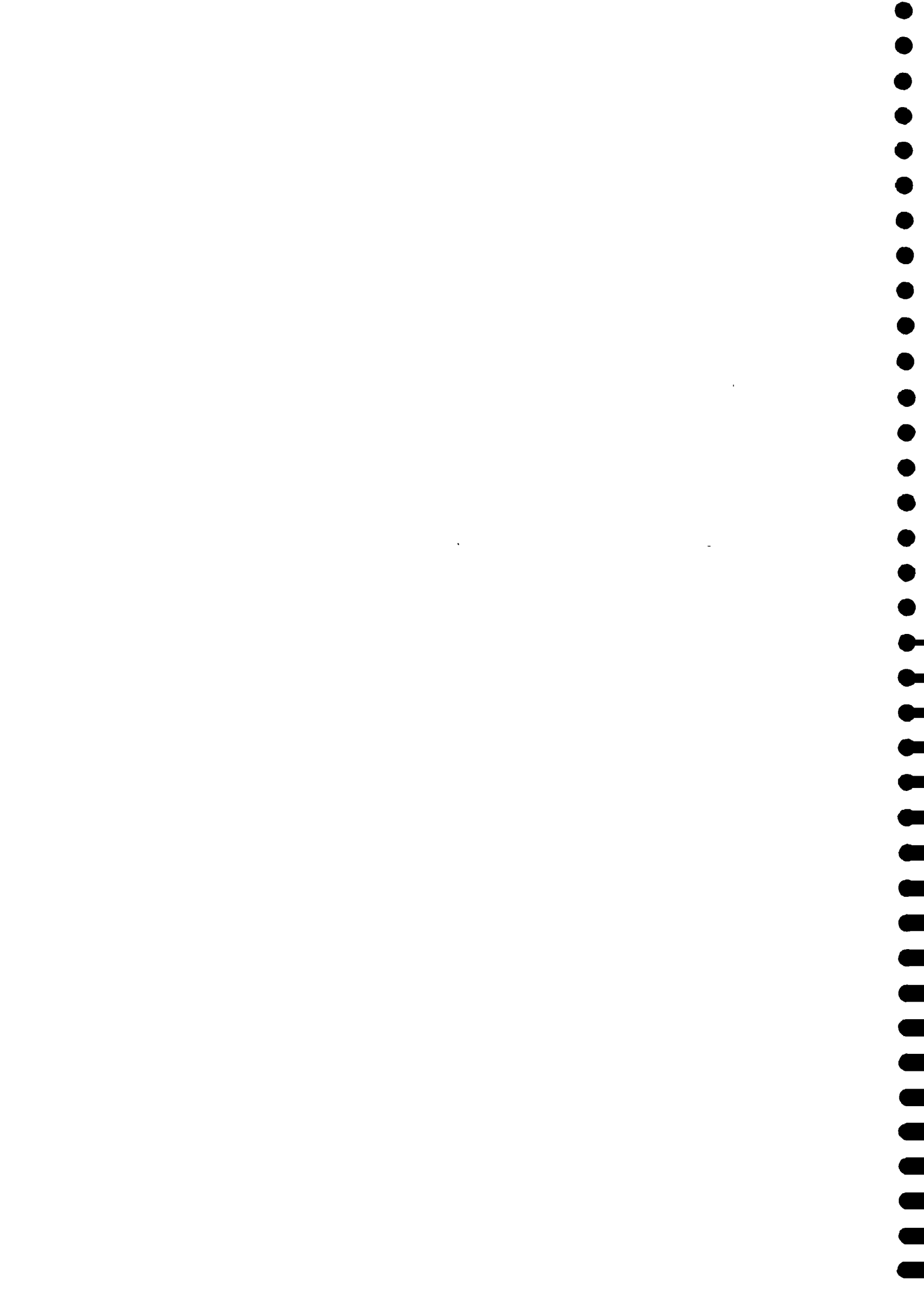
Five households sighted with SEU latrines. Three of them were nearer to the houses and two others, away from the house. All latrines were structurally strong, provided with adequate privacy and can be used by children. Only women and children used the latrines. Male members visited seashore for defecation. Few ladies admitted that they go out in the open for defecation.

Pathway to latrines was seen as partially clean. No foul smell, three latrines had brush and water inside. One latrine had a soap outside. Water seal was maintained properly.

#### Environmental Sanitation

Houses and surroundings were generally clean. No trace of faeces in the courtyard. Solid wastes, garbage etc. dumped away from home. No drainage for kitchen and bath room. No waste-bin. Utensils due to be cleaned were seen thrown on the ground. Roads and surroundings were not clean. No garbage bins on road sides. Garbage seen dumped on road sides. No proper drainage for hotels.

As most of the men reportedly used the beach for excreta disposal, one early



morning, the study team took a walk by the beach, wearing informal dress; pretending to be there to perform defecation. The walk over a distance of four kilometres by the beach showed over 150 men and children defecating in the open. Some men made a small ditch on the ground for defecation. A physically

disabled old man was brought by someone to the beach on a bicycle. The man; with great difficulty, moved closer to the water, made a small ditch and started defecating. The man moved closer to the waves, performed ablutions in waves and left the place when the bicycle returned. The people sitting in line showed no sign of embarrassment, they were seen mostly conversing to each other. Crows were seen feasting on the droppings. People were seen walking barefoot on the beach scattered with human excreta.

### Asha's Story

During a house visit, a group of children were seen walking towards the seashore. "Where are these kids going"? A member of the study team asked people in the house. "To the seashore, for defecation".

"Do you have a latrine "?,

The answer was "yes, but used only by women".

"Where do the men go"?

"To the seashore, of course".

"Do the children use the latrine"?

"Only my twelve year old daughter Asha. All our other children go to the seashore".

Why only Asha? . Asha was asked.

Asha became very vocal. She knew open-air defecation was not only a bad habit, but also harmful to people's health.

Asha was a member of the SEU School Health Club. Asha could not motivate others to use latrine since almost everyone in the area have been used to open-air defecation.

They believe that this habit has not caused any harm to anyone till date and hence no need for a change!

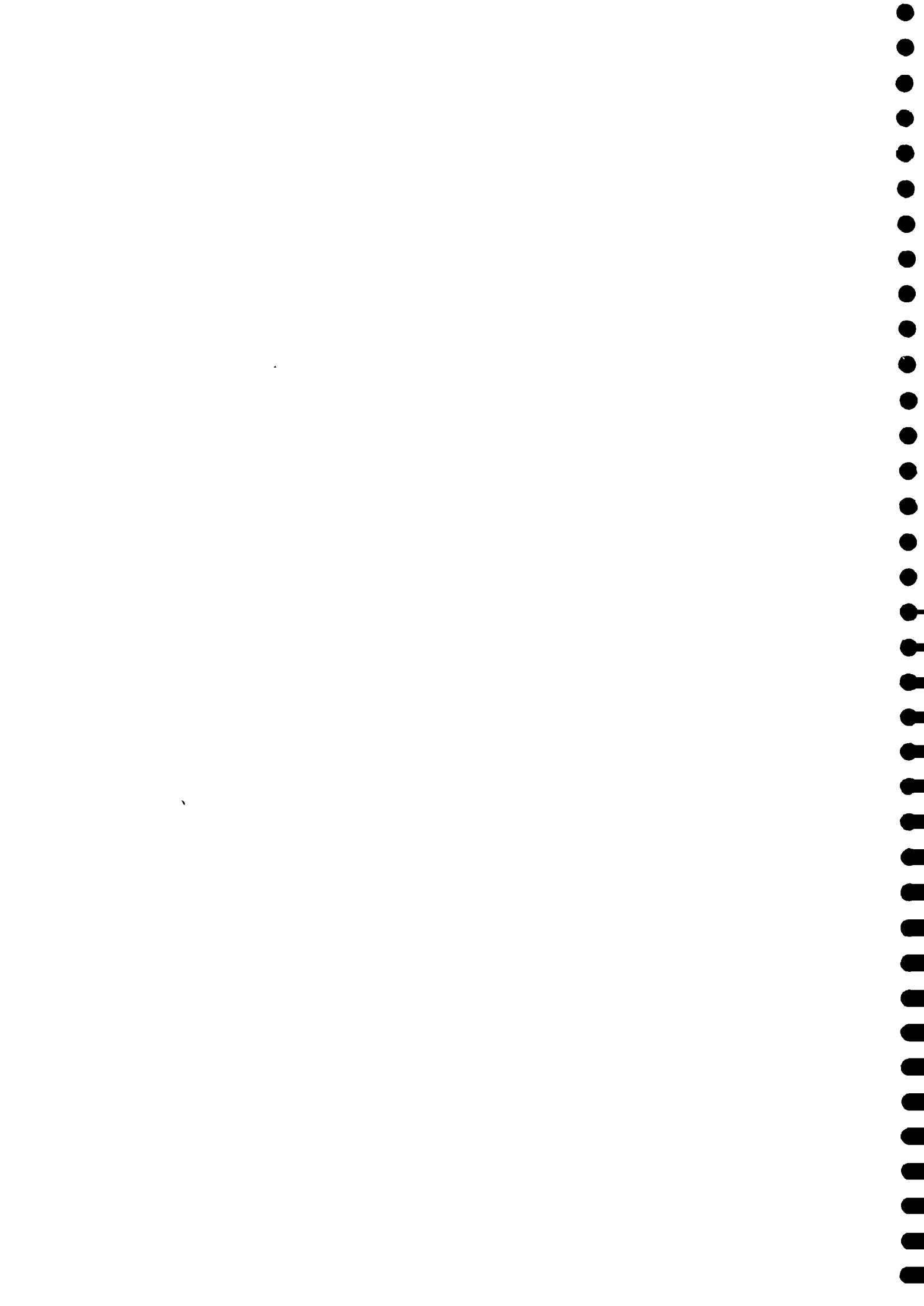
Mothers were seen waiting near sea walls while their children were defecating by the sea wall. Women go to the sea shore for defecation either at dawn or at dusk. This became known from the children used specially for observing sanitation practices of women and children out of the ten taps observed, all had proper drainage.

*Ward III:*

### Water

Main sources are taps, wells, and backwater streams. Puppeteer and well water are partially protected. Streams are not at all protected. In fact the river here is highly polluted due to the number of 'latrines' channeled out to the river. There are a number of 'make-shift, shack latrines' in the Panchayat. The water from these rivers are used for every other purpose except drinking and cooking for which tap water is used. Pipes are within 50-250 metres, wells up to 500 metres and river up to 500 metres to most of the households in the area.

No public wells in the area and most private wells are not periodically purified. Tap surroundings are generally crowded. In some places, pots are placed one on top of another. It is common practice that women dip in their hands in the vessels containing water for domestic use. Some quantity is off-loaded by hitting water



out by hand.

Open-air defecation, mostly by men is done on the sea shore and near the sea wall which also provides privacy. Faeces found all over the place. One girl of about 12 year age was seen returning with a jug from near the sea wall. Before entering her house, she was seen washing her hands, feet and face. Six SEU latrines were seen during the healthwalk. Three latrines were situated close to the backwater streams. SEU latrines were structurally strong, clean and usable by children. These latrines which also provided adequate privacy were free from odour and all these latrines had brushes and water inside. Soap was found kept near one latrine. Water seal was maintained. 'Shack latrines' which are widely found in the area provide privacy. These latrines stand on stilts, not very strong and hence children can hardly use. Privacy is not adequate and these latrines are not clean either.

One side of the ward has seashore which is visited by men and children for defecation and more than 100 households did not have any latrine facility either permanent or temporary. Foul smell of human excreta is very much in the air. Human excreta or could be found all over the beach.

While on the other side of the ward, people, irrespective of their gender and age use 'shack latrines'. Pathway to 'shack latrines' did not appear clean.

#### Environmental Sanitation

Houses close to the seashore has plenty of garbage dumped around. Lake-side houses have garbage dumped into the lake. Kitchen and toilets have no drainage facilities. Utensils to be cleaned were seen thrown around in the sand. Roads other than those near the seashore were generally clean. Roads near the lake-side were partially clean. No garbage bins were found on the road side. Drainage from tea shop and hotels were absent. Hospital (PHC) was seen to be partially clean during first visit. At the time of leaving the ward, this

#### **Collective Crime?!**

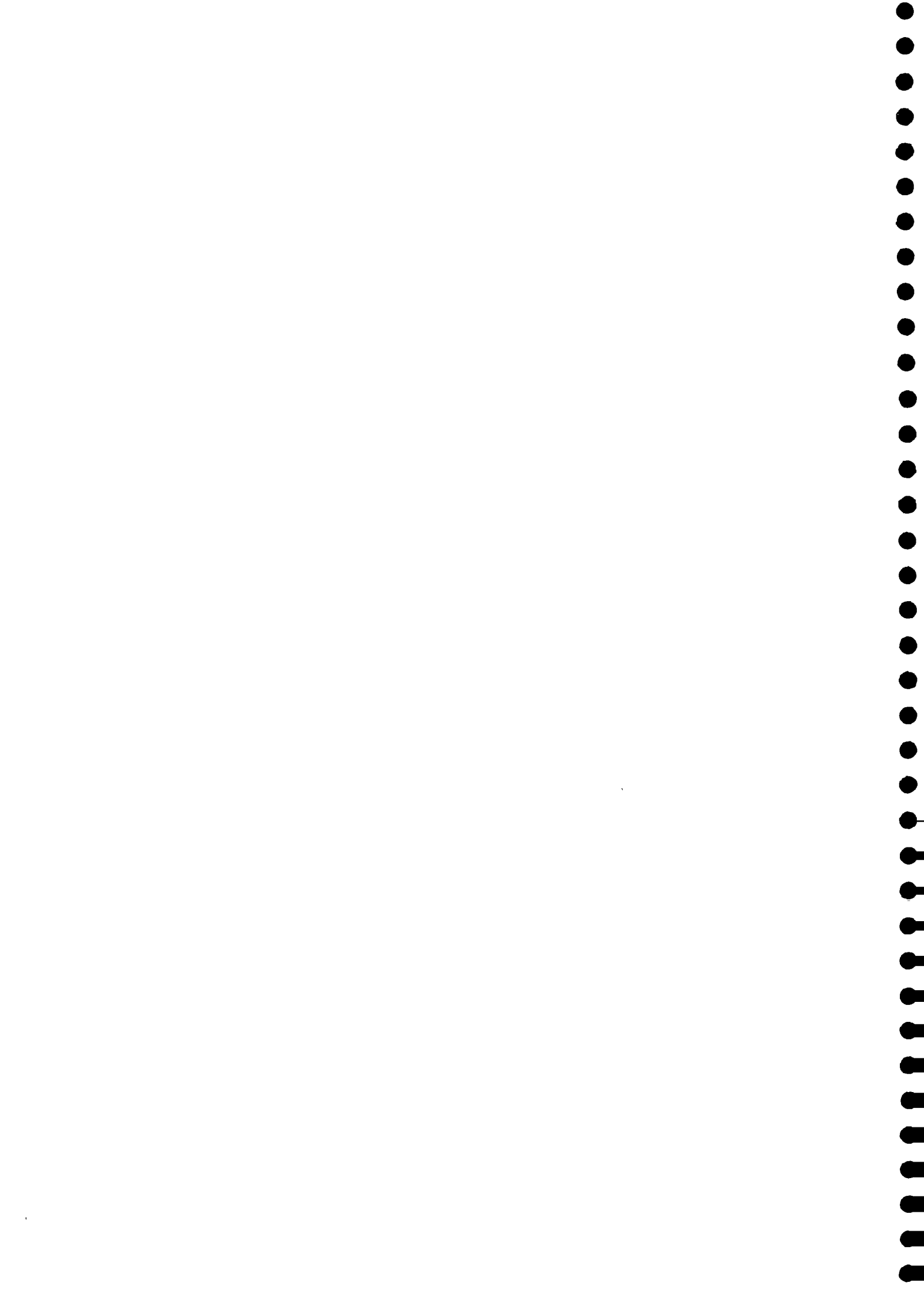
Dr Maithredevan heads a family of doctors. His wife is a retired school teacher and his two daughters are medical doctors. The house and surroundings are very clean, typical of a doctor's residence.

After introductions and a cup of coffee, the study team toured the doctor's house and surroundings. The latrine, built very close to the backwater stream had its outlet extended to the stream! This latrine was being used for the last ten years.

The Doctor and his family members are aware that this should not be

"It has always been like this and we did not build a new latrine. Most of the latrines in this area are like this. The streams are fenced with *kartha* plants and the streams have plenty of fish. The fish, they say, consume most or all of the excreta and therefore the practice does not cause any harm. The practice, in Doctor's words, is a collective crime and standing out all alone does not help improve the situation. The Doctor does not seem to consider the seriousness of the problem since this has been a general practice.

The Doctor's brother, a prominent political leader living nearby has also built his latrine in similar fashion.





garbage dump was seen as burnt and cleared.

*Ward IX:*

### Water

Taps, river (backwater streams) and ponds are main sources. Taps are protected with proper drainage, platform and clean surroundings. River and ponds not protected. Average distance of taps from household is about 50-500 metres. (Although taps are right in front of the household, being a water-logged area, people have to walk up to 500 metres to collect water from the tap.) Ponds are about 50-1000 metres far away from household. These ponds were the only source of drinking water before the arrival of piped water supply and has been unused since then, it was reported. Backwater streams are places where bathing by women and children, washing clothes, cleaning vessels and washing animals are carried out. Taps and surroundings are maintained clean. Ponds are not at all in use.

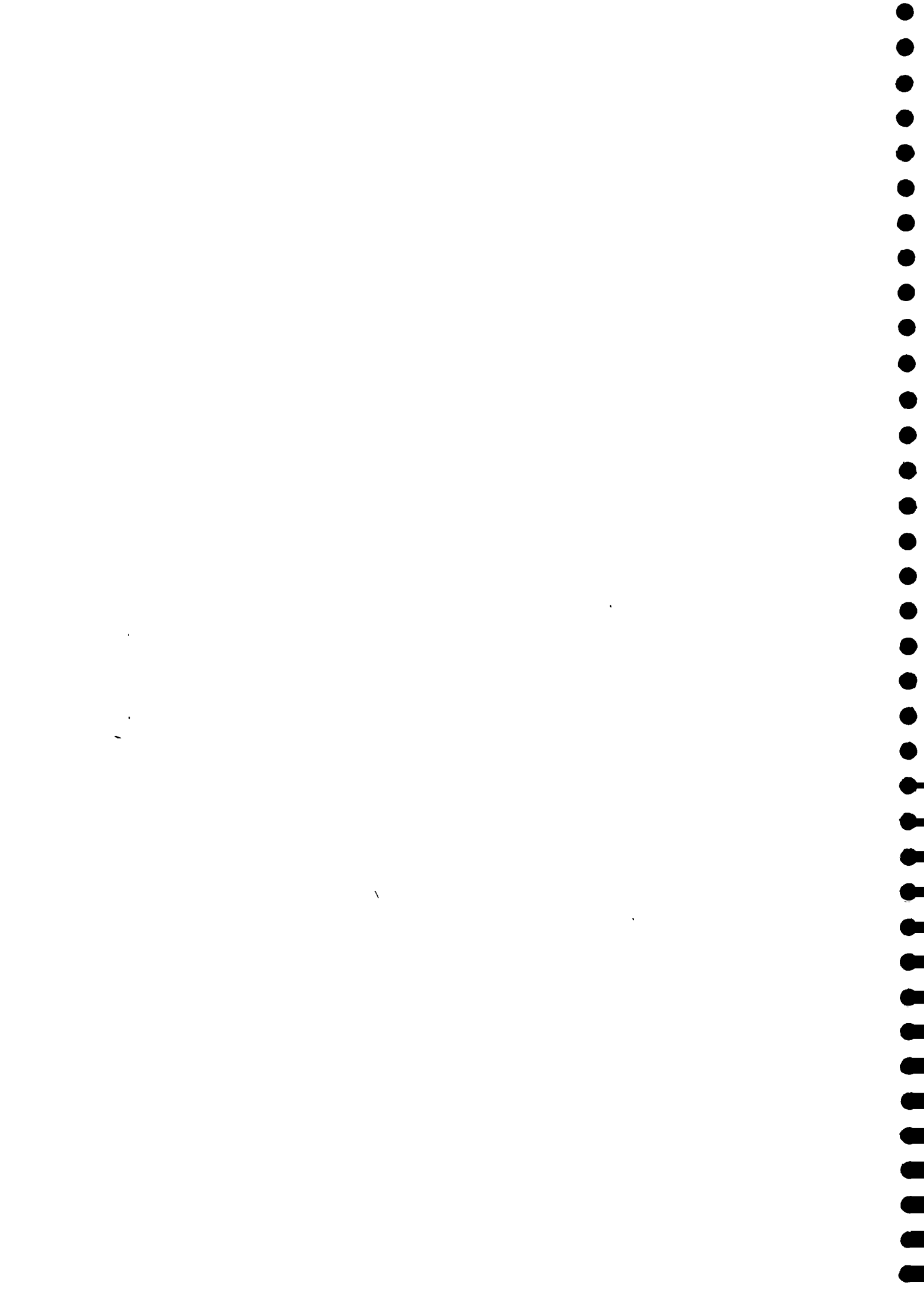
Collection of water is carried out by women using plastic and aluminum pots, vessels and plastic buckets. Water is carried by hands or on hips. No public or private wells were found in this area.

The backwater stream in this ward is used for various purposes. On one side was a woman and a few boys taking bath, adjacent to her was another woman taking water in a pot and carrying it home. On the opposite bank, was a woman washing her kitchen utensils, and on the same side, but a few yards away were two 'make-shift shack latrines'. No such sights were seen near the any where near the taps observed. During collection of water, women were seen involuntarily dipping their fingers in their pots of water. In most houses, non-permanent stands/shelves were made for storing washed vessels.

### Sanitation

Out of nine houses visited as part of the healthwalk, four were SEU latrines and the remaining were 'make-shift shack latrines'. SEU latrines were nearer to the households whereas the shack latrines were close to the backwater streams. SEU latrines were those with superstructure and strong foundation. These latrines are being used by all adults in the households while faeces of children are thrown away into the backwater stream. Some of the SEU latrines are partially clean and without foul smell. Two of these latrines had soaps, brushes and water. Shack latrines did not have any soap or water nearby.

Some residents in this ward, were asked whether it seemed to them as a potential health hazard that the children's faeces was being thrown into the backwater streams. The answer was that it was better than being thrown out into the yards, which in turn would be picked up by crows and other birds. This would also mess up the whole place around! People here believe that another villain is the real cause of all health hazards - Coconut husks drenched for softening (for making coir) has some loose fibers that get into children's stomachs and cause scabies and diarrhoeal diseases!



### Environmental Sanitation

Many people were seen washing clothes and kitchen utensils near the backwater streams. Surroundings of houses not hygienic. Cow dung was seen in most of the places. Solid wastes were seen dumped on both sides of the

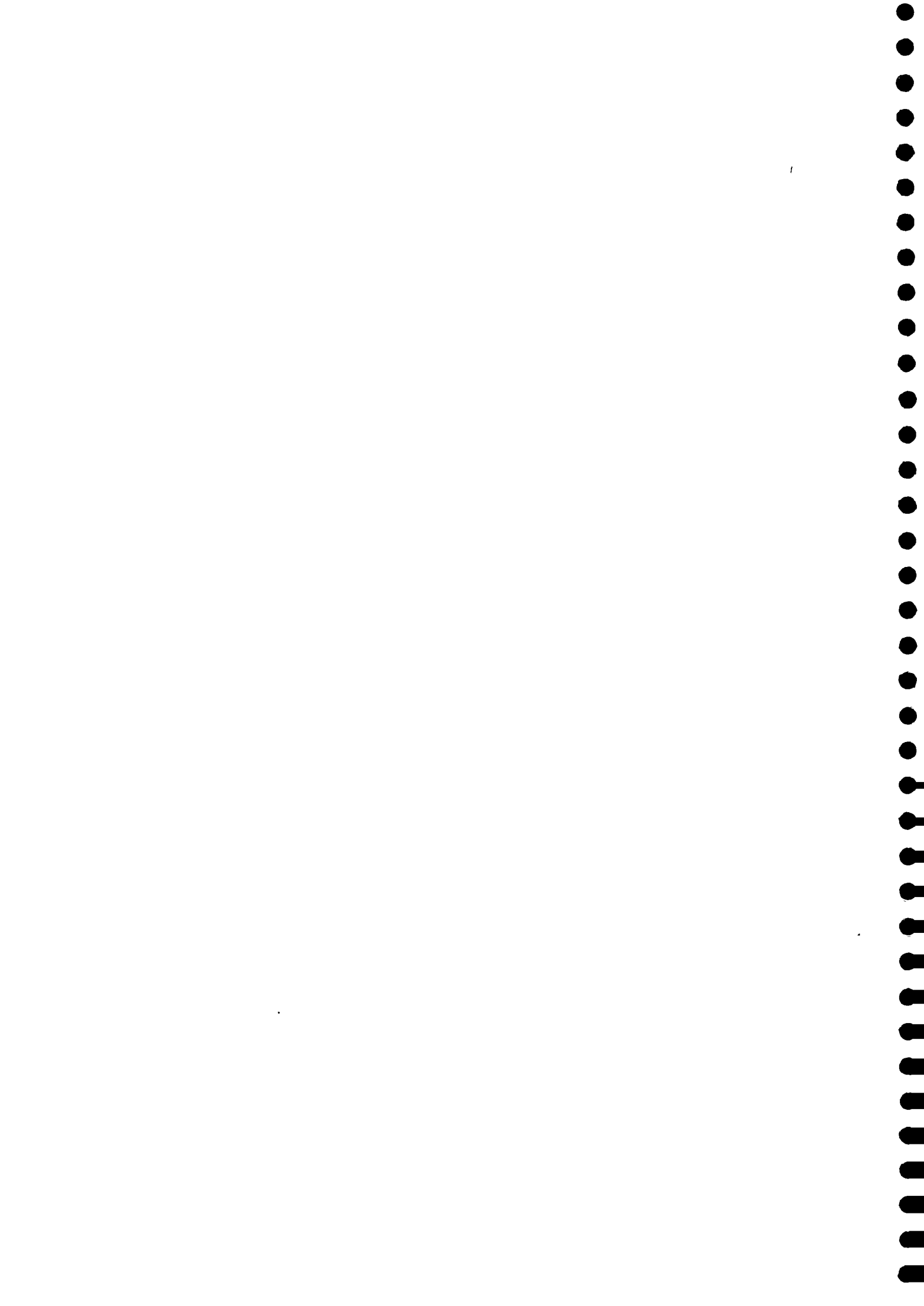


backwater streams. No waste bins or proper drainage were found. Vessels due to be washed were seen thrown on the ground. Road was also partially clean. The only market place located in the ward is partially clean. All garbage is thrown into the backwater stream. Hotels do not have proper drainage. Plenty of house flies were spotted in and around the area. The restaurant into which the study team proceeded for lunch had a vessel outside, with water in it, meant for washing hands. The vessel had stains of crow's faeces in it! The team had to ask to remove and replace the water to wash hands, which was promptly done.

A private hospital in the ward had inadequate waste disposal facilities. Water and other wastes were drained out into the backwater stream.

Women and children were seen in the morning, wearing soiled clothes and looked a bit worked up as they were in the middle of some work. Children below 5 years appeared under-nourished and generally weak. On being asked whether the children had any recent instances of diarrhoeal diseases, the answer was in the negative. People are basically aware of hygiene practices (Simple hygiene-related questions were asked), but reported that due to work load, and shortage of time, they were not able to practice hygiene habits.

No common toilets or lavatories were seen in this ward.



### *Puthenchira Panchayat*

The three wards selected from the Panchayat were II, III and IX.

#### *Ward II:*

This is a ward with inadequate facilities. In terms of facilities, this ward would fit in somewhere between ward III and ward IX. Healthwalk was conducted during two different times of the same day, three hours from 7 in the morning and one hour starting 5.30 in the evening.

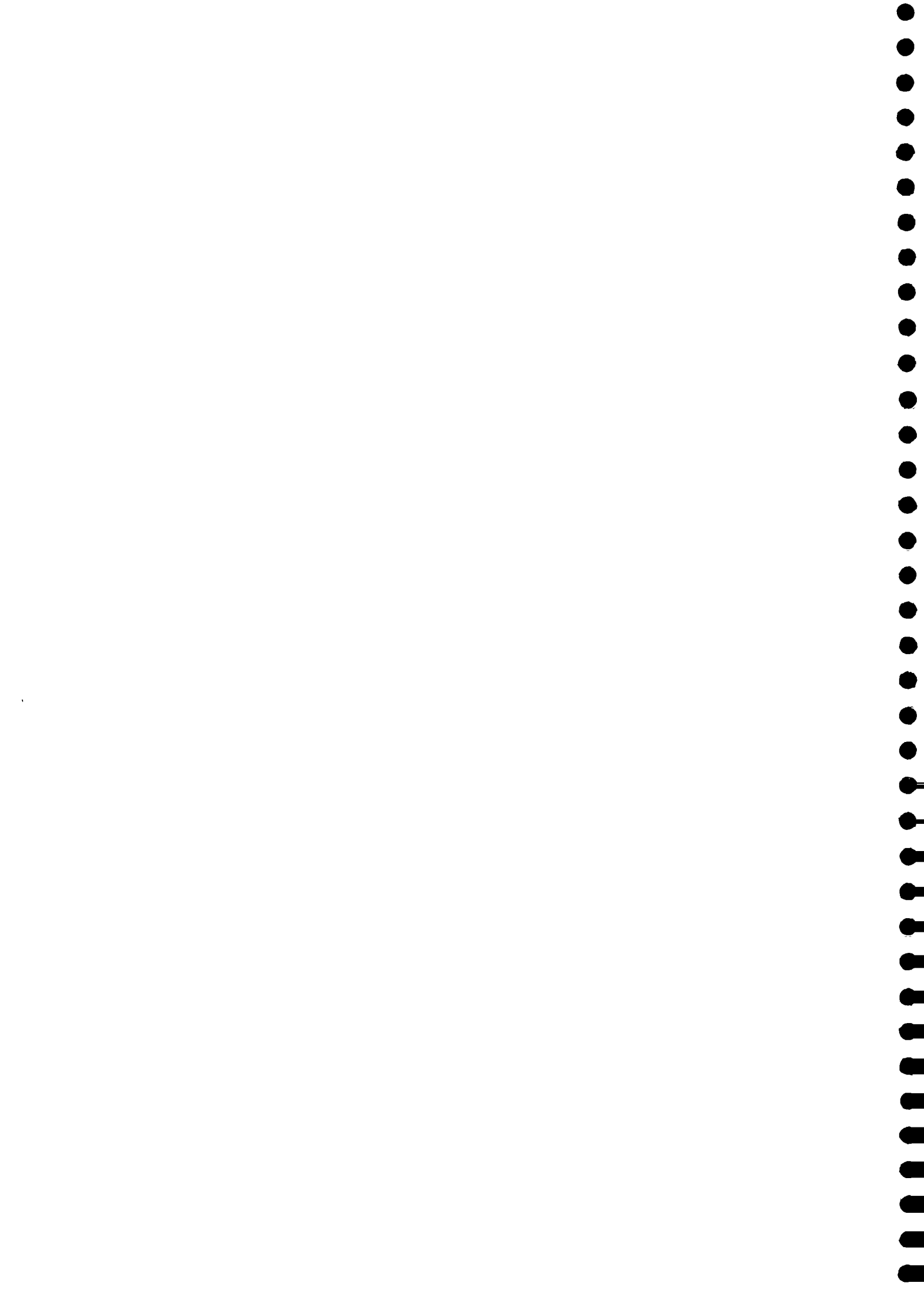
#### Water

Wells, ponds and taps were the main source of water. Well water is used for drinking and cooking. Tap water is used for bathing and washing clothes. One of



the taps had a washing stone a little away from it. Distance to the wells and taps from households are less than 100 metres. 'Rubber buckets' are popular in here for drawing water from wells. Aluminum, rubber and plastic buckets are being used for collection of water from these sources. Water from public wells are drawn using own individual sets of buckets and ropes by each householders. One of the public well surrounding was found to be very poorly maintained, with stagnant water around. Most individual householders left their buckets and ropes on the ground after collecting required quantity of water. It was also noticed that platforms with poles were seen in some places to keep buckets and ropes without touching the ground.

Two ponds found in the area were seen, being used for bathing and washing clothes. One of the ponds, belonging to a temple, a huge one (about one and a half acre large) was seen as being used by many people (reportedly those



belonging to Hindu religion). Many boys were seen bathing and swimming in this pond. Separate areas with sufficient privacy were provided for men and women. People using the pond had to strictly adhere to Hindu customs. This pond did not have any compound wall.

The other pond which was very small was not protected or maintained properly. It was seen to have plenty of weeds ('African weeds') This pond was seen being used for washing animals, washing clothes and bathing. This pond was seen to have about five washing stones, used for washing linen.

Mostly women in the area were seen collecting water. Pots were hand carried after collection of water. Fingers would get dipped in the water while carrying water in this manner. Even while collecting water from taps, it was seen that hands of those collecting water were getting wet because they held the mouth piece of taps.

Wells were largely not protected, while some were partially protected. It was reported that some were purified periodically. All the taps and surroundings were seen to be very clean and protected very well. All taps except one were seen to have proper drainage.

### Sanitation

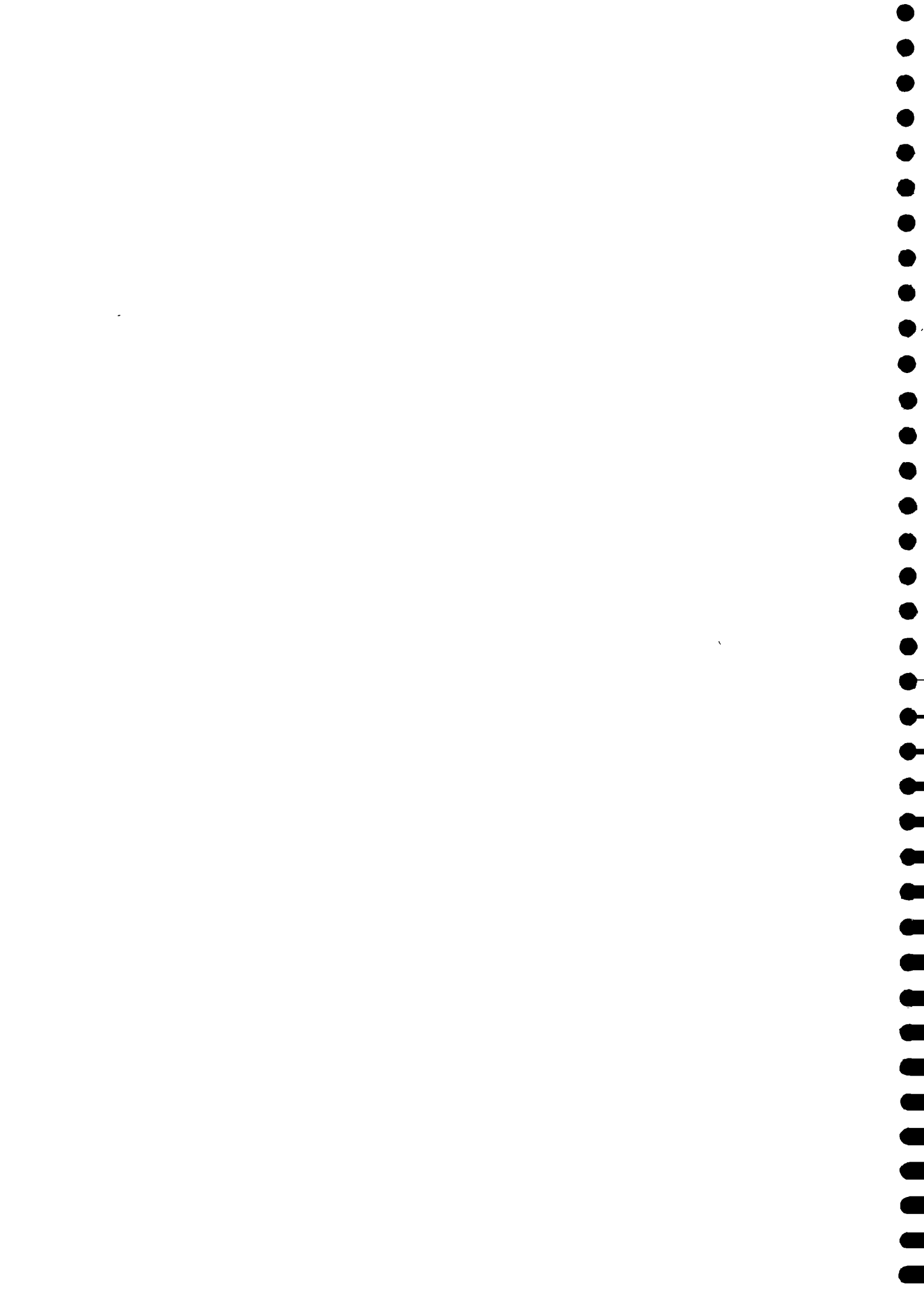
All the sixteen houses visited as part of the healthwalk had latrines. Out of this, six were SEU latrines, eight with septic tanks and two single-pit latrines. SEU latrines had brushes and water inside. Only three out of these latrines had soap kept nearby. Waterseal was maintained well. Three septic tank latrines had brush and water inside. Four latrines attached to the bath rooms had soap. Only three of these latrines were maintained well. Both the two pit latrines had thatch covering and had concrete slabs as squatting pans.

Latrines are situated very near to all the houses. All the people except children below the age of five were said to be using latrines. No signs of open air defecation were observed. Only four out of the sixteen households practiced washing hands using soaps. Others say that they normally forget to do hand washing. People here reported as usually taking a bath immediately after a visit to the latrine.

### Environmental Sanitation

Kitchen utensils are washed and cleaned by placing them on the ground filled with stagnant water and slush. Utensils are left on the ground for a long time during other times when work in the household is carried out. Crows and chicken were seen pecking soaked remains on these utensils. People when asked, said, that they do not believe that the birds that climb up the utensils are a problem because they wash the utensils later using firewood ash or soap. Houses in which washing of utensils is carried out inside the kitchen have permanent or temporary drainage. Cattle sheds are built close to most houses in this area. The cattle sheds are cleaned by removing droppings into a pit. Some people said that they also use this as manure to coconut trees.

Houses and surroundings were seen to be generally clean. Even some houses belonging to people below poverty line were seen as cleanly maintained. Cow dung is used to plaster the yard surrounding these houses. This is also applicable





to the colony visited during the health walk.

Two tea shops were seen during the healthwalk. One of these was maintained cleanly. No fly nuisance was noticed in this shop. Waste water was collected in a barrel through a rubber tube (Cycle tyre tube piece) and disposed far away. Though the second tea shop did not have proper drainage facility, the interior and surroundings were generally clean. No garbage was seen to be thrown around carelessly.

#### *Ward III:*

An ideal ward with all necessary basic infrastructure, access to hospitals, Panchayat office, schools, government Office, agricultural office, good roads, frequent bus service, water supply etc. Healthwalk conducted over two days in the mornings were of two hour duration each day, starting at 7 in the morning.

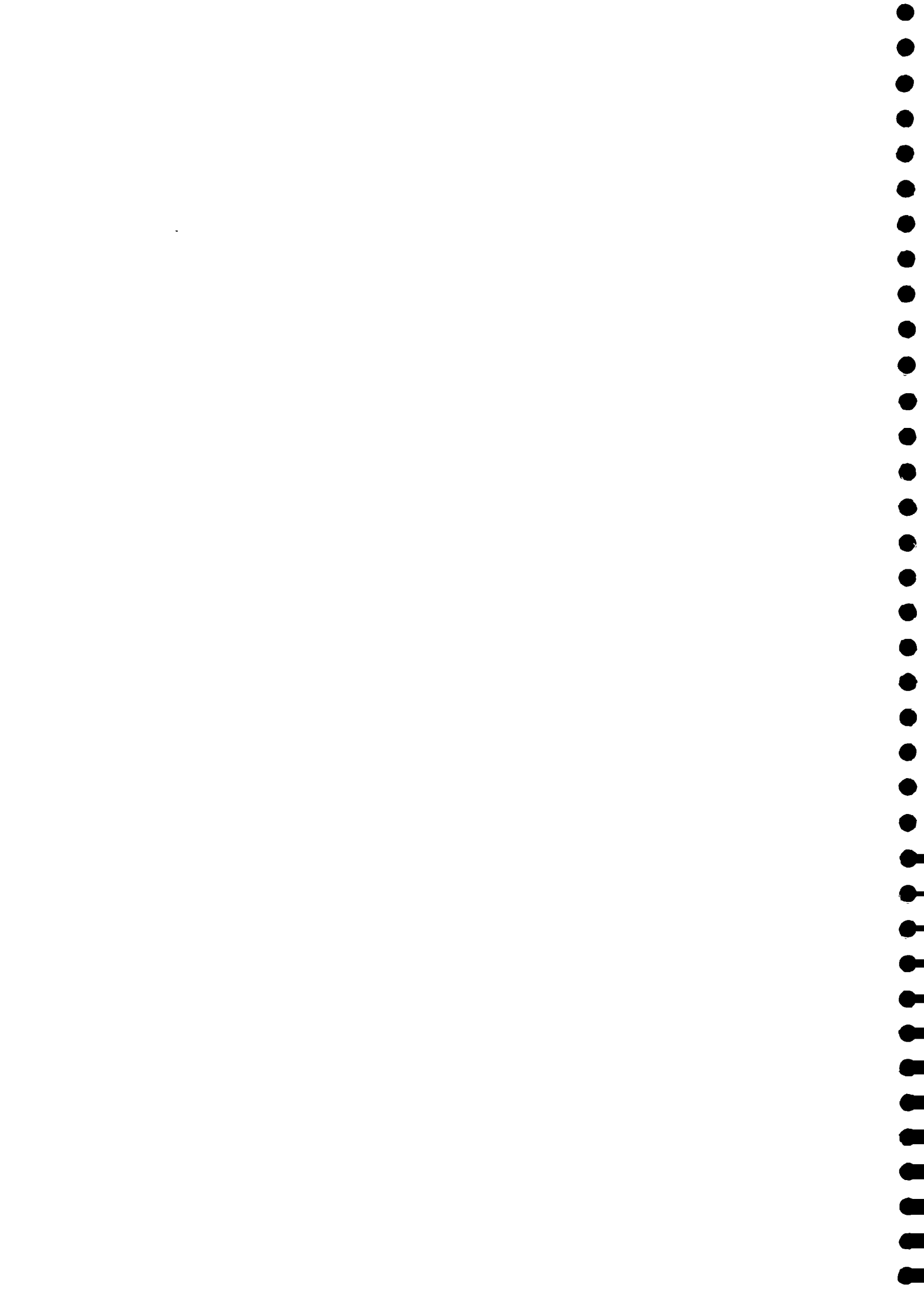
#### Water

Taps, wells and ponds are the main sources of water. Tap and well water are used for drinking and cooking. Although people prefer tap water, due to non-availability of sufficient water from taps well water is used largely for domestic



purposes. Ponds are used for bathing and washing clothes. Aluminum and rubber buckets are used to draw water from wells. Aluminum, plastic and rubber containers are used to transport water drawn from the wells. Mostly women were seen collecting water. Collected water is hand-carried in pots, containers and plastic buckets. In most cases, fingers get dipped in water involuntarily while transporting them home.

While collecting water from taps, it was noticed that only some people do not wet



their fingers. Near one well, it was observed that a child was being given a bath. Near another tap, it was observed that pots were placed one on top of another, while collecting water.

Cattle sheds were seen built very near to wells in households of people below poverty line. Wells in the area were seen as being partially protected. Buckets and ropes were not properly kept. Some buckets and ropes were seen left on slushy ground. Plenty of plants (mainly ferns) could be seen growing inside wells. None of the four public wells had proper drainage. It was reported that purification is done, but not at regular intervals. One public well was seen to have apron and platform but used only by one household. One private well was reportedly being used by thirteen households, each household using their own, bucket, rope and pulley.

One public pond (belonging to a temple) was seen with plenty of weeds and plants with unclean water used only by men for bathing.

### Sanitation

No indication of open air defecation could be noticed. All the 28 households visited as part of healthwalk had latrines. 13 of these latrines were generally clean. 15 latrines here were SEU latrines and 12 were septic tank latrines. One latrine in the area was a single pit latrine. 13 out of the 15 SEU latrines had brush and water inside. Six of these latrines had soap nearby. Out of the twelve septic tank latrines, only eight had water inside. Three of these latrines attached to bathrooms had soap. All except the only single pit latrine in the area were close to the household. The pit latrine was away from the household. It was observed that a woman returning from the latrine was washing her hands using soap.

### Environmental sanitation

Except those latrines provided by the SEU, all other latrines built earlier (mostly septic tank latrines) were very near to the wells. Kitchen utensils are left on the ground. No proper drainage in places where utensils are washed. Six houses did not have proper drainage from places of washing clothes and kitchens. Cattle sheds are very near to the houses. Front courtyards were maintained very clean. Houses and surroundings were clean. Surroundings of houses in a colony had already been cleaned. A Butcher's shop was very clean. 'Bleaching powder' was sprinkled around the place. The place had no foul smell or house flies.

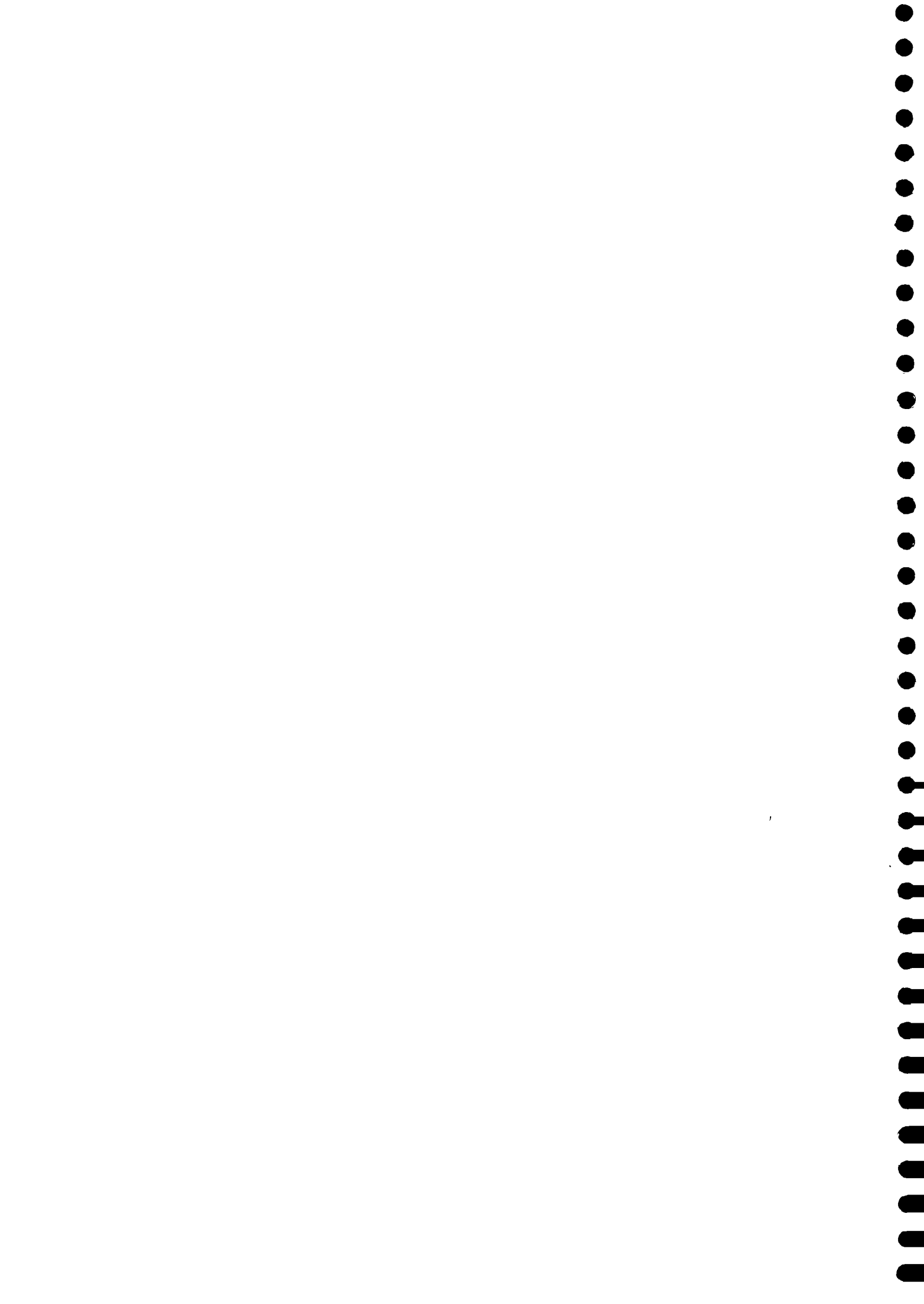
### *Ward IX:*

A ward with inadequate basic facilities, acute water scarcity experienced during dry seasons. Hilly areas. Also has a tiny island where eleven families were living. This is the farthest ward from the Panchayat office.

The healthwalk in this ward was carried out over four and a half hours starting about seven in the morning.

### Water

Ponds, public taps, wells and streams which are about 100 metres far from households are major sources of water. Tap water is used from drinking and cooking. It was reported that piped water supply was irregular during all times of



the year which was much worse during dry seasons: Wells are partially protected No periodic purification carried out as reported by residents. Wells have saline water intrusion during dry seasons.

Four public wells were seen in the area , none of which had, apron, platform, net covering or proper drainage Plenty of weeds and plants inside public wells One public well was seen covered with concrete slabs in which a small opening was allowed to dip buckets during collection of water. Householders use their own set of bucket and rope to draw water from public wells Aluminum and rubber buckets are used to draw water from the wells. Mostly women were seen collecting water Aluminum pots and plastic buckets are used to transport water Fingers get dipped in hand-held containers.

Tap and surroundings were found to be clean. One man was also seen collecting water from a public tap. Upon enquiry, he said that the lady of his house had gone out on work.

Two ponds, one near a temple and other a public pond were partially protected Water was used mainly for bathing The pond was covered by weeds. Another pond in the area which also had weeds had compound wall and steps Mainly used for bathing and washing clothes. Steps in the pond were used to wash clothes Another temple pond situated on a rock had water with green colour People reported that water from this pond was used for bathing and washing vehicles The next pond visited did not have any steps or wall. Plenty of plants were seen around Water did not seem clean. Women used water for washing - clothes and sleeping mats. Children were seen fishing.

A pond developed by individual households were seen being used for bathing by two men

#### Sanitation

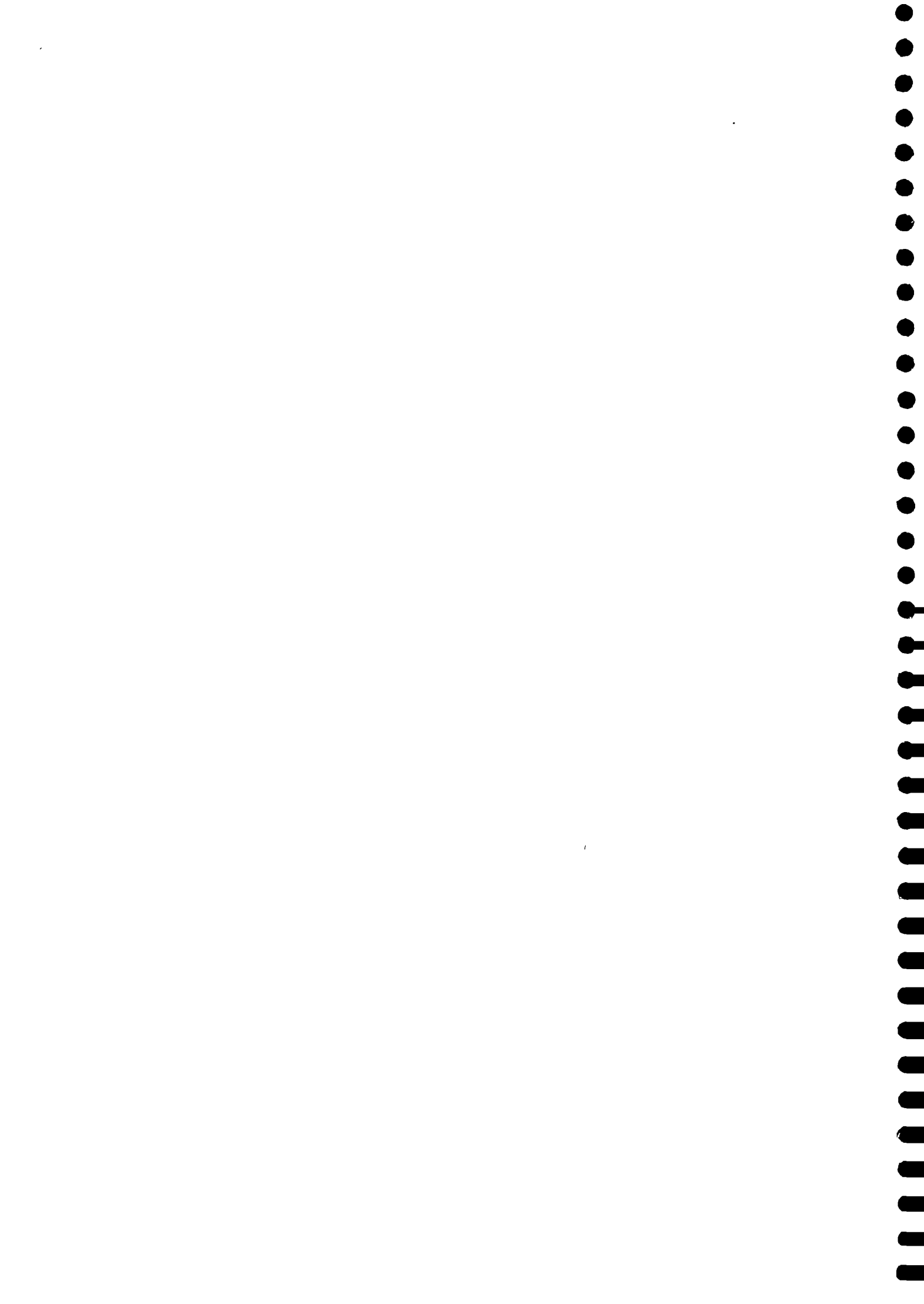
All houses in the ward visited as part of healthwalk, have latrines; except one house that has recently come up Indications of open air defecation noticed near the stream. Fifteen out of twenty one houses had SEU latrines Six houses had septic tank latrines Eight out these latrines had brush and water

inside Three latrines had soap nearby. Two latrines had poorly maintained water

#### **Devil's Island**

The team visited "Chekuthaan Thuruthu" (Devil's island) which takes 30 minute's travel by country boat The team was accompanied by the local Panchayat ward member (an elderly woman) and few ward water committee members 11 families stay in this small island surrounded by saline water streams on all sides. The majority of land where coconut, plantains etc are cultivated belong to one family This family had a pucca house with septic tank latrine All the other families were formally 'Kudikidappukars' (homestead dwellers) who through the land reforms measures got ownership over their dwelling land. All these houses are thatched houses and the people mainly depend on fishing for survival Some of them work in the shrimp fields in the area owned by outsiders.

There is no electricity in the island and the people have to go by country boat for every purpose The children are ferried to the main land to attend school and ferried back in the evening Lack of medical facilities and the inevitable delay in reaching the hospitals regularly create problems The contacts of the people of this island to Puthenchira Panchayat which they belong to is minimal They go to the Panchayat area for purchase of articles from the ration shop (Public distribution system) The students mainly study in the schools in another side of the main land in Poyya Panchayat For other purchases the people go to the nearby town of Kodungallore Shack latrines are found in this area also.



seal All in the family except those below the age of five use latrines it became known from enquiry

### Environmental Sanitation

Houses and surroundings are generally clean. Front yards of houses in colonies were litter free and were seen plastered with cow-dung. Some houses that have cattle shed maintain them clean. One of the cattle sheds had cement-plastered floor, seen cleaned by washing out droppings. One cattle shed in the area was seen not clean or maintained properly. Drainage from this shed was leading to the public road. Utensils are dumped on the ground before cleaning. Crows, ducks and chicken were seen pecking this lot of utensils.

A local tea shop had drainage routed towards the road. Waste water, slush and rotten food remains created foul smell. While returning, from the walk, it was noticed that the garbage was cleared and that the place was smeared with bleaching powder.

The ward was generally clean, however, the popularity of shrimp farms on a house to house basis was telling. Some water-logged areas had rotten water weeds and plants that raised foul smell.

### *Chekuttaan Thuruthu (Devil's Island)*

#### Water

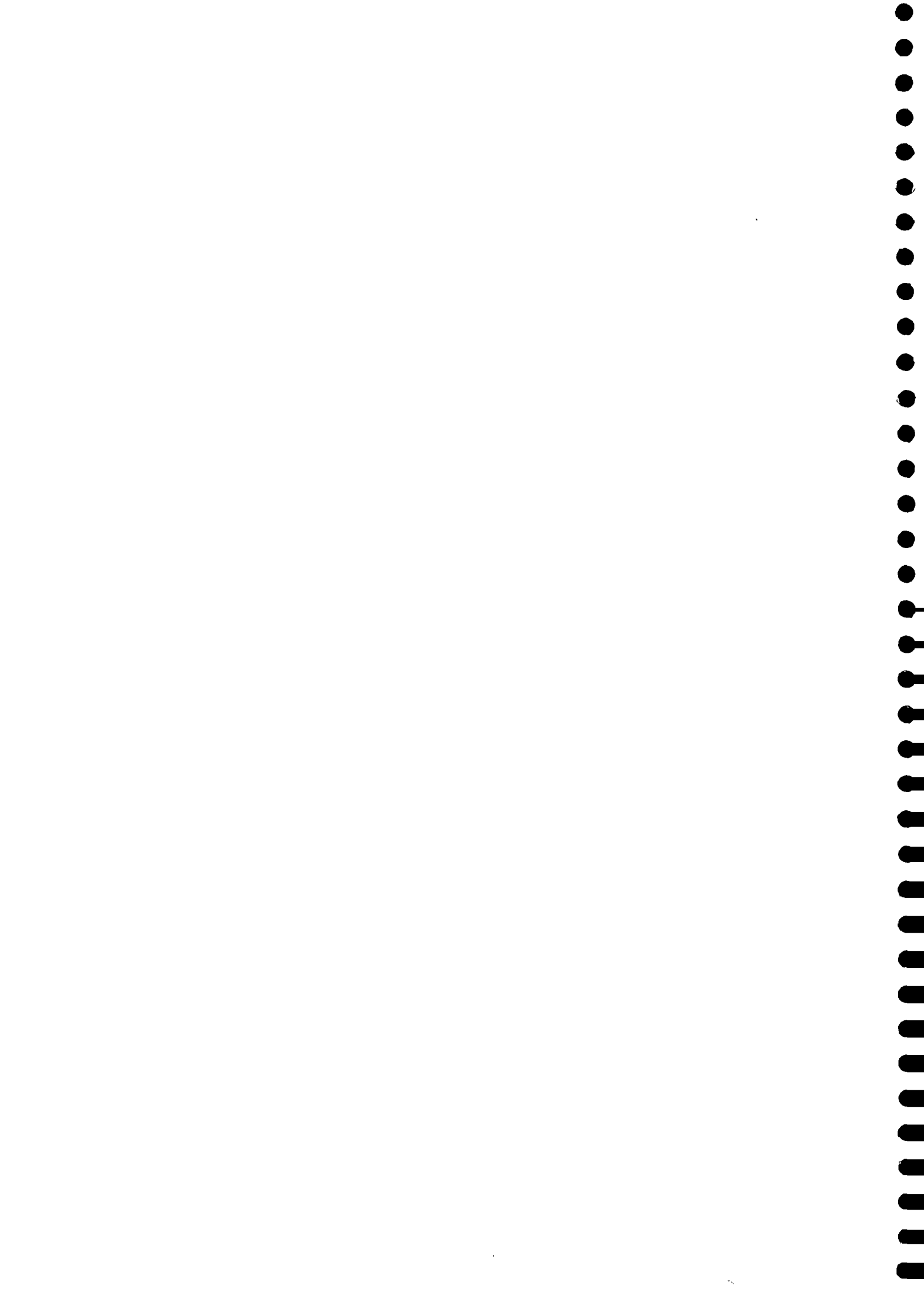
There are few wells in the island. In all except one the water becomes saline during monsoon. There is one well which provides good water through out the year and majority of the people depend this well for drinking water. Two families stated that they bring water from the other side of the area from piped water supply (Kodungallore). An elderly man stated that this well with good water used several families in the main land during seasons where salinity is prevalent. He remembers instances when water was transported to the main land for functions like marriage. A pond in the landlord's place for irrigation purpose was also used for taking bath. The wells are not protected and the surroundings are not kept hygienically.

#### Sanitation

Only the landlord's house has a septic tank latrine. Others go for open air defecation. One or two houses have temporary squatting platform to the stream. Practices like washing hands with soap at critical times is non-existent as revealed by the people.

#### Environmental sanitation

Rearing ducks and chicken is common and its excreta is seen almost every where. The surroundings of the houses are generally clean. In two houses there were wooden stands for keeping the cleaned vessels. In all houses the utensils are washed in the open sand.







### *Kuttyattoor Panchayat*

Kuttiyattoor Panchayat in Kannur district had wards III, VI and IX as sample areas for the study

### *Ward III*

Plain land accessible to Panchayat office, PHC, Agriculture office, Service Co-operative Bank and bus terminus Major occupation of the people is daily labour

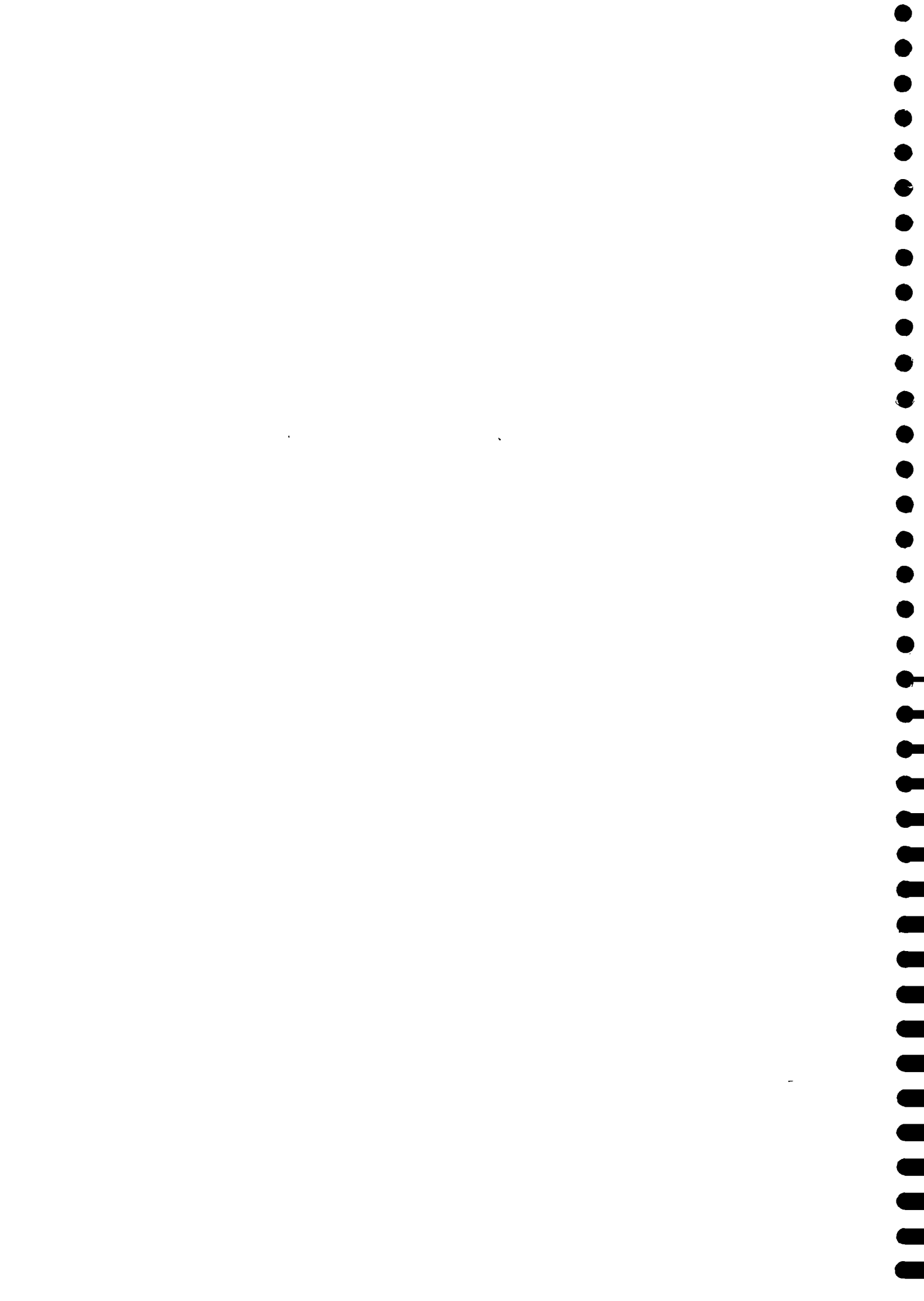
Healthwalk in this area was between 7 and 10 am.

### Water

Wells and taps are the main sources of water. Since water from taps are not very reliable, most people depend upon well water for all domestic uses. Most of the households have their own wells which are purified periodically. After removing sludge from under the wells, burnt coconut shell would be dropped into the well for purification (Future turbidity would be absorbed by this burnt shell, people say). For two days after sludge-removal from wells, the wells are left unused. Distance of households to wells may be around 50 metres.

Women carry water in pots on their hips. A girl around age 12 was seen carrying water in a bucket by hand. A woman was seen carrying water in an aluminum pot on her head. It was observed that mostly women collect water for their households. Metal buckets were used in all places to draw water from wells.

Out of the eight wells seen, four wells were seen to be properly protected. Two wells had aprons, platforms and covering with plastic nets. Two wells had apron only. Four other wells had no aprons or platforms. Among these four wells, one



had net covering. One of the wells was covered with woven coconut palm leaves, leaving a small opening to dip bucket.

### Sanitation

Signs of open-air defecation was noticed in the roadside bush area. Ten out of the twelve houses visited had latrines. Eight out of this ten were SEU latrines and two were single pit latrines. One of the eight SEU latrines and one of the single-pit latrines were not clean. No brush or water were seen inside the latrines. It was reported that water would be brought into the latrine only when they are used. Soap was found on the rear verandahs of two houses. The residents present said that the soap was used to wash hands after visiting the latrine. A two-year old child was seen defecating out in the open front court yard of a house.

### Environmental sanitation

Utensils and washing stones was found near to one of the wells. It was observed that this was near the well with no apron or platform. Stagnant water also seen in many of the places. Two houses with inadequate drainage facilities had utensils washed with water from wells very near to the houses just outside the kitchen. Before being washed, these utensils were left on slush with firewood ash.

Eleven out of the twelve houses visited as part of the Healthwalk had very clean front court yards. However, outside the courtyard, it was noticed that there were garbage dumped. No waste bins or garbage pits were found in households. Only two houses had wells with proper drainage systems.

An interesting observation made in two Muslim households was that there were small brassware vessels with water kept at the entrance of the house. This was for washing feet of anyone entering the house. It was reported that this was a customary practice among Muslim houses in the area. These houses had urinals with half-walls built with cement on the front court yard. Only adult male members in the family used these urinals as part of religious rituals.

Roads were not very clean. IPP Centre (PHC sub-Centre) in the ward was seen as being maintained cleanly.

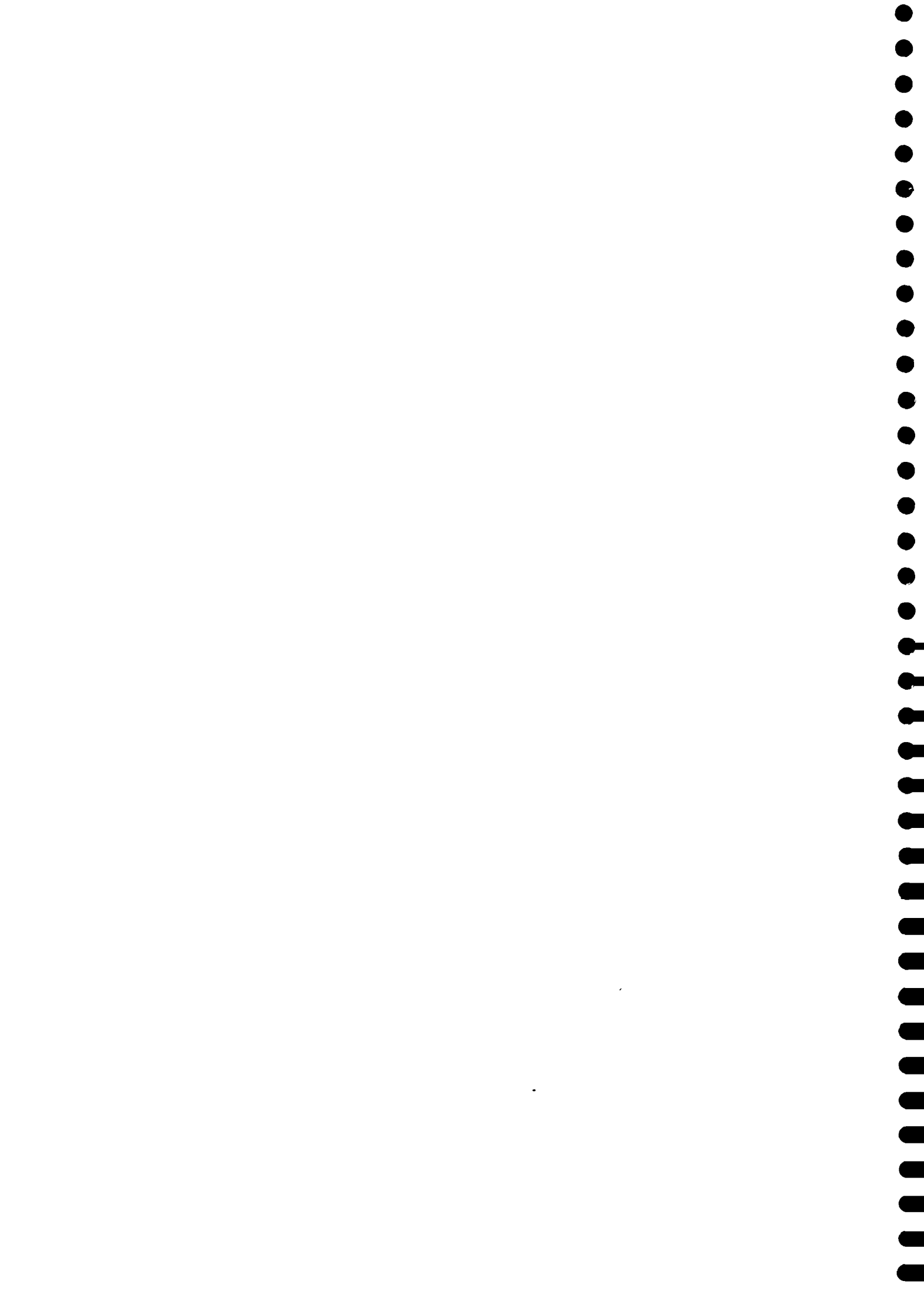
A butchery was found in front of a house during healthwalk. This place was used thrice a week to sell meat. Wastes from slaughtering animals were disposed in a pit 200 metres away from here. The pit was seen covered and lime powder was seen sprinkled around the place.

### Ward VI:

Plain land with relatively lesser accessibility. Major occupation is agriculture and daily labour. 70-80% literacy level. Healthwalk started at 6 am and lasted two hours.

### Water

Wells and taps are the main sources of water. Wells are mostly private and are about 50 metres away from the households. It was reported that water is scarce during summer months in some areas of the ward. Two out of the ten houses visited during healthwalk do not have wells. These houses mainly depend upon wells for drinking and cooking purposes. Most wells had buckets left on the



ground. One house had a wooden plank left near the well where the bucket would be kept when not in use. Another wooden plank was used to stand on while drawing water. Two wells had aprons. One of these wells had platform, net covering and proper drainage. The other well had no platform but had net covering. The other two houses depend upon public taps for water. Women and girl children collect water. A man was also seen collecting water during the healthwalk but he said this was for agricultural purposes. A woman was seen hand-carrying a plastic pot full of water. Plastic pots are the most widely used vessels in this area for collection of water. Sludge removal is practised widely during dry seasons. Chlorination is also used as a method of purifying water in this area but not frequently, it was reported.

One of the public taps had a string attached to the mouth piece from which a woman was seen collecting water. This would be removed after collecting the required quantity of water. A girl who came to collect water from this tap in the morning was seen washing her feet after collecting water. This tap had platform and proper drainage; yet water was stagnant outside platform area. Around eight households collect water from this tap. Another standpost was seen not in use during health walk but a little farther away, a woman was seen washing clothes. Around five neighbouring households reportedly collect water from this tap.

### Sanitation

Out of ten houses visited, two did not have latrines. Six out of these houses had SEU latrines. One out of the other two houses had two single pit latrines. The other house had a septic tank latrine. Cow dung found in many places mainly in cut-roads and foot paths. No signs of open air defecation was noticed. During informal discussions, people admitted that children below three years practise open-air defecation in courtyards or one particular place outside the courtyard.

All latrines except one were maintained clean. Six of the latrines had brush and water. Soaps were not found near any latrine.

a two year old child was sitting on the lap of her mother, with a peeled banana in hand. The hand was dirty with mud and the mother was seen doing the child's hair and killing lice.

### Environmental Sanitation

It was also observed that a well had stagnant water around and had utensils meant to be washed. The first six wells did not have any apron, but had net covering. Two of the wells had stagnant water with firewood ash and slush. People believe that firewood ash is not harmful, even if it falls into the well. A boy aged 12 was seen bathing near a well. He used separate water to wash his body but the water spilled into the well. No apron found around this particular well. A housewife here said, it is alright for a boy of this age to bathe near a well. The house had a make-shift bath room used only by the women in the house.

Foul smell from a garbage pit of the house next door reached the study team on their visit to one of the houses during healthwalk.

An infant was seen sitting upon its pool of urine on the cow-dung plastered floor of a house. Its mother was sitting in the next room, chopping vegetables without bothering about this.



Three women and a girl of age around 12 were seen sweeping courtyards of their respective houses. This was about 7 in the morning. Being winter season, an aged person was seen burning the garbage in the garbage pit and warming up himself.

Garbage pits were noticed in the back yards of three houses.



Chicken shelter was seen in the kitchen of one of the houses. Cattle sheds very close to houses were seen in two places. These places were not clean and dung and cattle urine were seen not removed. Four houses had droppings of chicken and goats on their front courtyards.

The study team entered a local restaurant for breakfast where a medium-sized cement container was filled with water used for washing hands. Drainage from this place was leading to the front of the restaurant by the road side. Tea is mixed just beside the spot where hands of guests are washed.

Water filled in a tub is used to wash tumblers to serve tea to guests. Fingers were dipped in tea cups during service to customers.

#### *Ward IX:*

Healthwalk started at 6.30 am and went on up to 9.30. Hilly area. Interspersed with paddy fields. Remote, roughly 10 kilometres away from the Panchayat office. Water scarcity experienced. Laterite brick quarries in abundance. Most of the adult male population work on these quarries. Women population work on breaking granite rubbles. Most households have own land of about 50 cents. Scantly vegetated.





## Water

Wells, taps, streams and tube wells are the main sources of water. About 10 houses visited as part of healthwalk. Nine of these houses had their own wells. Five of these wells had aprons. Two out of these five wells had platforms and three others had net coverings. Four out of the five wells had plastic net coverings.

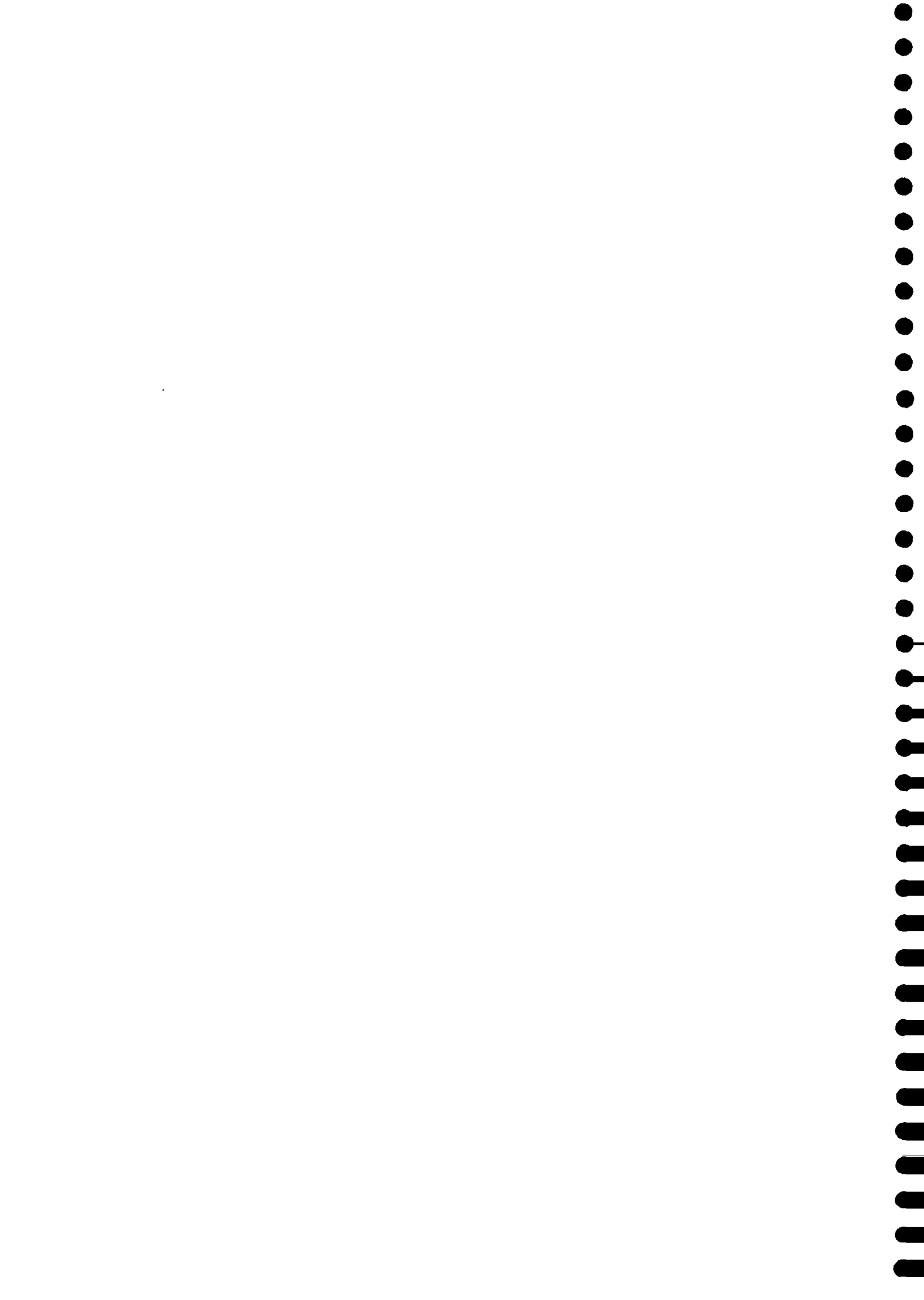
Most houses use metal buckets to draw water from their wells. Six houses had buckets and ropes left carelessly, near the well. One well had the bucket and rope hanging carelessly down the pulley. Women and girl children draw water from wells. Three houses had men collecting water. This, they said, was for their own purposes like bathing etc. Four women and two girls were seen hand-carrying water in plastic pots. A public well was also seen in an Anganwadi premise. Two nearby households and the Anganwadi itself is served by the well. These households have their own bucket and rope to fetch water. The well has an apron and platform but no covering. Inside of the well had plants like ferns growing. Fishes were seen in the well.



One house had a well which was reportedly purified with bleaching powder, but this, they said, was done only when some small animals like rats or cats fell inside and died.

Two public taps were observed during the health walk. Neither taps had water supply during the healthwalk.

A tubewell was observed during the health walk which was used by nearby shops and two houses. These tube wells are the only source for all uses; it was reported. One of the shop owners said that water from these tube wells were being used to wash automobiles as well.



a stream by paddy fields was seen during the health walk. Protected by plants (*Kaitha*), certain openings allowed washing and bathing in the streams. A woman and two girls were found washing clothes in this stream. Cattle were also washed occasionally. (Animal droppings were found in one place) Spinach was seen being grown beside the stream. Foul smell of human excreta filled the air near the stream.

### Sanitation

Out of the ten houses visited during the healthwalk, eight houses had latrines. Four of these were SEU latrines. One was ESP and the other three were septic tank latrines. ESP latrine with cement closet was very poorly maintained. Water seal was found to have faeces. Brushes were found in this latrine but no water was seen. Surroundings of this latrine was not clean.

During the healthwalk conducted in the three wards the Study Team have made an interesting observation that most of the children used the house verandahs (which are plastered with cowdung paste) for defecation!

Mothers, on being asked about this peculiarity, said that they knew that children's faeces were indeed harmful to health. But since they removed the faeces and disposed on the courtyard from the place and plastered the floor using cowdung paste, which dries up quickly, they thought was a practice which was relatively safe. It also helped them keep the house and surroundings clean, they added.

Plenty of litter could be seen around. Two out of the three septic tank latrines had brush and water kept inside. All but one SEU latrine had water and brush. Soap was seen kept near one SEU latrine and one septic tank latrine. One housewife said that her grand father does not use latrine just for the reason that he is not used to using a latrine.

Cattle dung found on cut roads and in some places beside the stream

### Environmental Sanitation

One house had a well just behind the kitchen. The well which did not have an apron or platform also had food and vegetable wastes and remains dumped nearby. It was also noticed that fish was being cleaned near the well. In one house it was seen that chickens were feeding themselves on the verandah. Chicken droppings were found on the front courtyard. In one of the houses, a goat was seen tied to the pillar of a house. Jack fruit leaves to feed the goat was also tied to the pillar. Droppings of the goat could also be seen here. Front yard of all the other houses were clean. Waste were seen dumped around the house.

Waste water from the bath room and kitchen of a house was routed through a drainage channel to a pit outside the rear courtyard. A block in this channel was yet to be cleared and stagnant, making it difficult for the waste-water to drain down to the pit. Children below two years age were reportedly defecating on the front courtyard or beyond. Dry leaves, it was said by many would be burnt out on a weekly basis. Cattle sheds were found very close to two houses in the area. One of these cattle sheds had waste not been removed for days on end. This raised foul smell even to the front area of the house.

Three houses had utensils dumped for cleaning near the well



#### 4.4 Anganwadi Observation

##### *Thnkkunnapuzha*

Three Anganwadis were observed in this Panchayat. Water is collected from nearby taps. Two Anganwadis had clean taps and surroundings. The third Anganwadi tap was not clean. Water, cooked food, vessels and utensils were maintained clean in all three Anganwadis. Drinking water was stored properly and the tub was seen covered.

In one Anganwadi, the Anganwadi maid was seen washing hands before serving food to children. Some children were seen washing hands on their own by dipping their hands into the tub containing water; while some others were seen washing hands with the help of the maid. The quality of water used to wash hands was seen to be poor since the same water in the tub was being used by all children to wash hands by dipping them into the tub.

In another Anganwadi, water used to wash hands was seen being used to wash plates before serving food. All the children, by turn, were seen helping to wash their friends' hands.

In the third Anganwadi, the helper was seen washing hands of children after meals. The routine followed by this helper was to wash hands of a child, make the child blow its nose, and wash the child's face. This was repeated over and over again 37 times, for all the children in the class using the same water.

Children in two Anganwadis were wearing clean dresses.

Children in the third Anganwadi by the seashore provided an appalling picture. Not one child looked clean nor did they seem to be practising any personal hygiene habits. Kitchen, front yard and the class rooms of all except this one Anganwadi were kept very clean. A well near this Anganwadi was given least regard. The well appeared to be a garbage dump rather than a source of water. A nearby tap had no different story to tell.

None of the three Anganwadis had toilet facilities. In case of urgencies, it was reported that latrines of neighbouring houses would be used by children.

##### *Puthenchira*

Puthenchira Panchayat has no Anganwadis. Instead they have what is called Balawadis. The only difference is that these Balawadis do not have nutritious meal schemes. However, these Balawadis provide afternoon light meals.

Three Balawadis were visited. Children in all the three Balawadis were clean and wearing clean dresses. Water for all the three Balawadis are collected from public taps. Taps and surroundings are clean and maintained well. Vessels used to store water were seen placed on the floor but protected properly by covering them.

In two Balawadis, children were seen bringing their own food. The third Balawadi had noon meal provided (under the Harijan Welfare scheme) to children. A makeshift kitchen was seen here, made to prepare food for children. A bucket full of water was seen being used by all children to wash hands by dipping. Plates were



also seen being washed in the same water here. Plates were seen being washed by the maid helps in all the three Balwadis

In one of the Balwadis, water was kept in two vessels, one in which children washed hands by dipping, and the other in which the children once again dipped hands to wash. Children in this Balwadi removed their footwear before proceeding to take food.

Two of the three Balwadis did not have toilet facilities. The other Balwadi had a latrine which appeared to be not in use. Children were seen using the backyards for urination. During urgencies, toilets in neighbouring houses were used.

#### *Kuttyattoor*

Surroundings of all the three Anganwadis were good. One of the three Anganwadis was housed in a temporary shed (extension of a shop). Interior and the verandah were not clean. Very little space was used to store vessels, food items and seat the children.

Two Anganwadis collected water from nearby wells. One Anganwadi had access to both well and public tap. Tap and surroundings were clean. It was reported that tap water supply was not regular. Water for drinking and cooking was collected only from the well. The well is not covered by net. Plants were seen growing on the side walls of the well. The wells and surroundings of the other two Anganwadis were not clean. Stagnant water was found near the well. Both the wells did not have nets. Water was stored in vessels and kept on the floor. Vessels were covered.

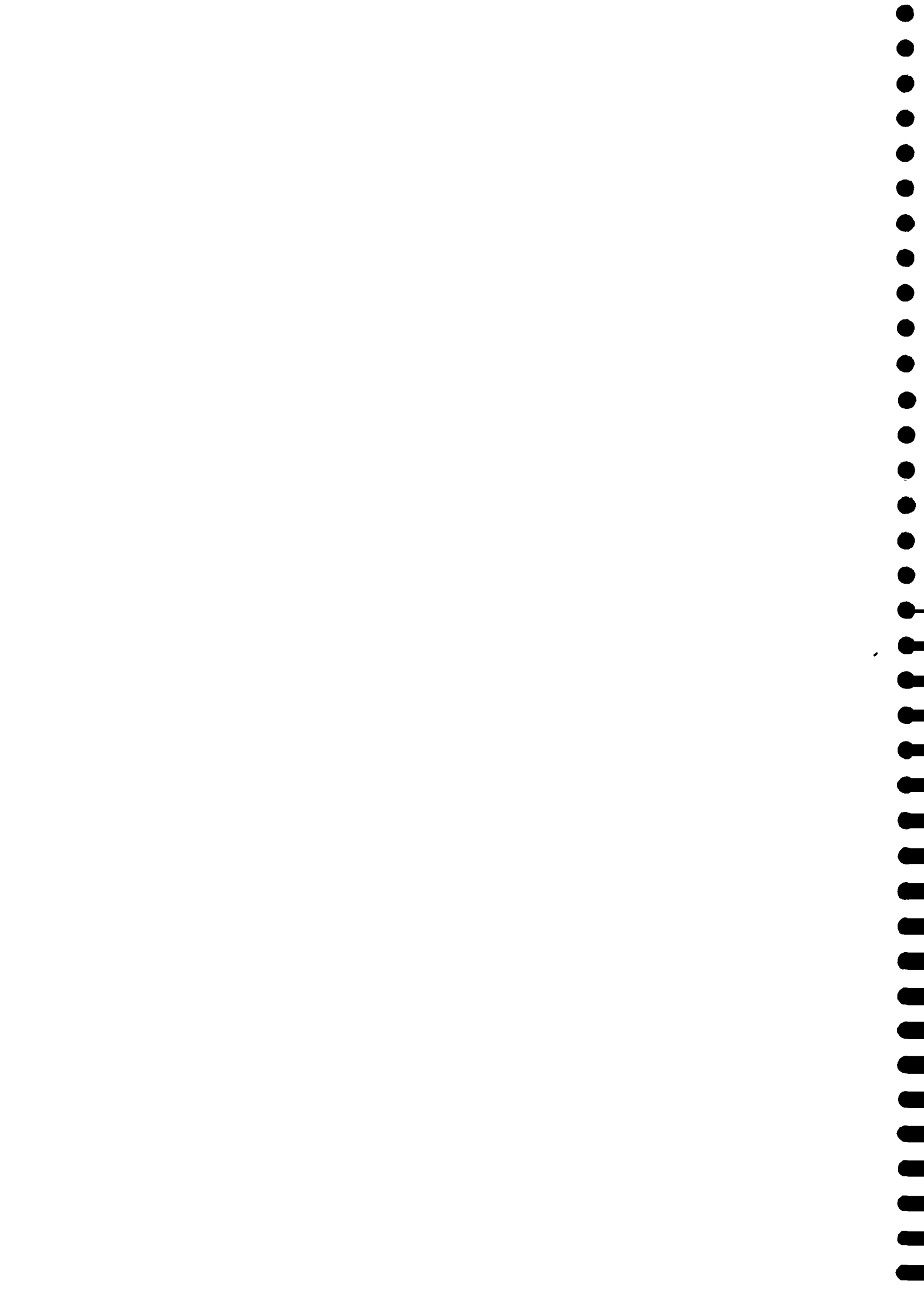
Teacher and children were seen washing hands before taking food. Some children were seen washing their hands on their own. Some children were helped by the teacher to wash hands. It was observed that children who washed hands on their own had not washed them clean. They had merely dipped their hands in the tub of water. The water used to wash vessels was used repeatedly by children in one of the Anganwadis. The other two Anganwadis had much cleaner water to wash plates.

Two of the Anganwadis did not have toilet facilities. One Anganwadi had a toilet which was not being used. This toilet found a different use, in which firewood and emptied packets of food materials were stored. Children in all the Anganwadis had clipped their nails properly. Premises of one of the Anganwadis had smell, of human excreta, originating from a nearby bush. Cooked food in this Anganwadi was seen as left open. Cooking place was not clean. Cooking place in the other two Anganwadis were clean.

Children were seen wearing clean clothes in all the three Anganwadis.

#### 4.5 Mothers' Meeting

Meetings of mothers' were conducted to discuss awareness on drinking water, health, personal hygiene practices, diseases and sanitation. Mothers of children attending Anganwadis/Balwadis were the participants in these meetings. In some places, mothers who do not send their children to Anganwadis also attended these meetings. Discussions were held during tools used in these





meetings, which focussed on water-borne diseases

### *Thrikkunnappuzha*

Separate meetings were organised in three wards Wards I, III and IX. 17 mothers from ward IX, 12 from ward III and 37 from ward I attended the meetings, making a total of 66. 58 of these mothers sent their children to Anganwadis.

Diseases occurring most frequently among children in the area was the starting point of discussions here. Diarrhoea, Dysentery, worm infestations, fever, vomiting, sneezing, Eosinophilia, common cold, scabies and primary complex were brought out as most common diseases in the area. The group also pointed out that occurrence of Eosinophilia in coastal areas was high in the months of December and January. During June, July months fever and diarrhoeal diseases were common. Diarrhoea and vomiting were intermittent during *Chakara* (a local phenomenon in which schools of fish move towards the shore, Chakara means Harvest). November-December months give a general feeling of uneasiness. Diarrhoea lasting for three days and fever for one week is common in this area.

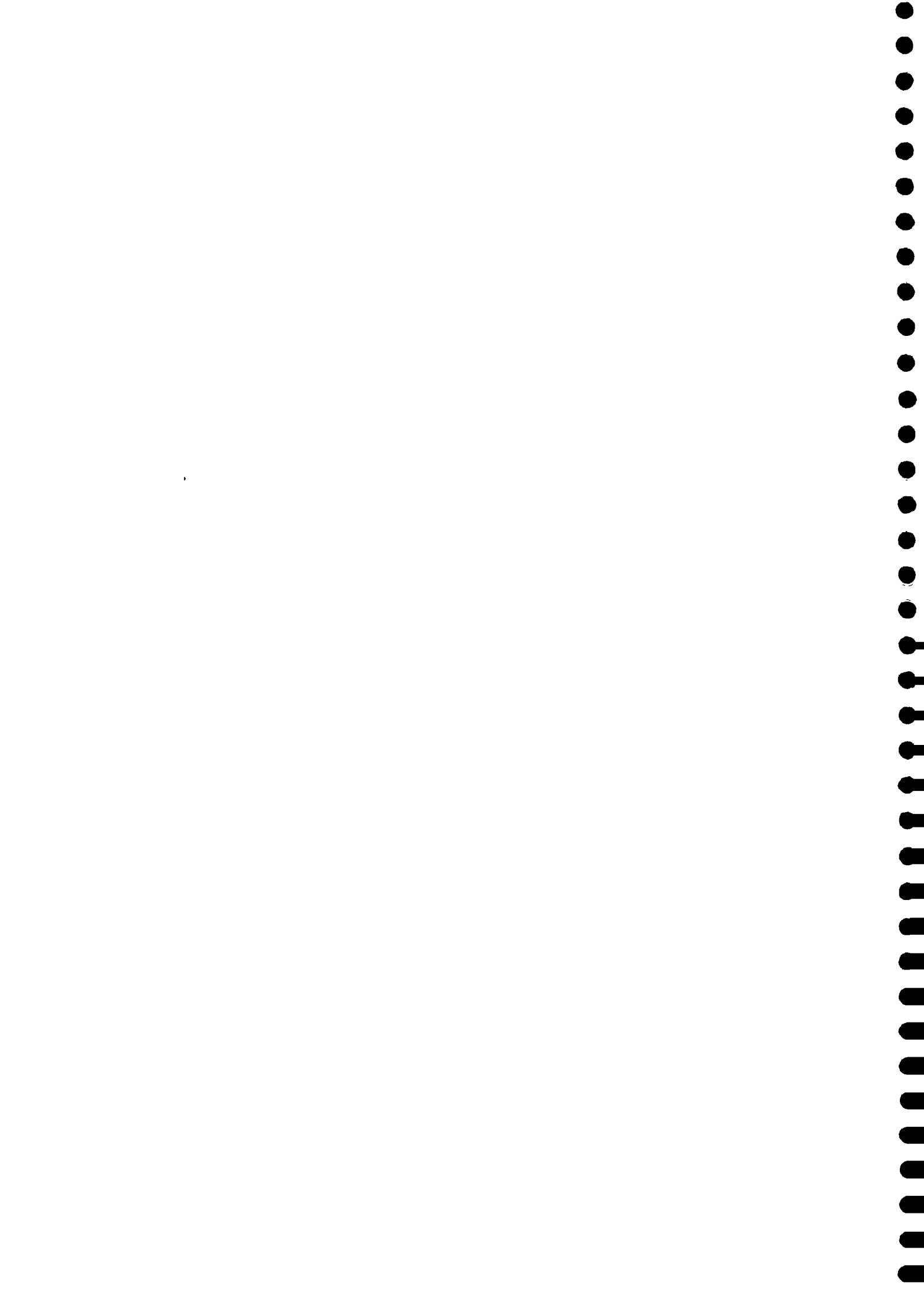
<b>Reasons for diarrhoeal diseases according to the mothers are:</b>
Excreta routed to the streams Make-shift shack latrines Use of unhygienic food and water. Bathing in dirty water streams Unclean surroundings. Feeding one child, without washing hands properly after performing ablutions on another child.

<b>Reasons for spreading of diseases according to the mothers are:</b>
Failure to get adequate treatment. Inadequate sanitary practices Soaking coconut husks in water sources causes scabies and diarrhoea. Coastal areas, at times when fish is available in plenty, are used to dry fish. If it happens to rain during these time, half-dried fish decays and fly nuisance heightens. Diarrhoea is caused and spreads very rapidly.

<b>Treatment for diarrhoeal diseases according to the mothers are:</b>
Give plenty of water, boiled and cooled. Give tender coconut water, salted rice soup. Give water with salt and sugar and "ORS".

It may be interesting to note here that the mothers listed sources of their knowledge as

TV, Radio, News papers, Health Education classes of SEU, PHCs, Anganwadis etc.



Discussions that followed, centered around drinking water. Taps were considered as a more reliable source of water for drinking and cooking. Wells would be used when water was not available in taps.

#### **Discussion on knowledge of water-borne diseases:**

Mothers listed Diarrhoea, vomiting, typhoid, dysentery, running nose, itching and fever as water-borne diseases.

Suggested preventive measures were:

Use of boiled and cooled water, collection of water in clean containers, purification of water, use of piped water alone, using sanitary latrines. Disposal of children's faeces in latrines.

#### **Discussion on Sanitation:**

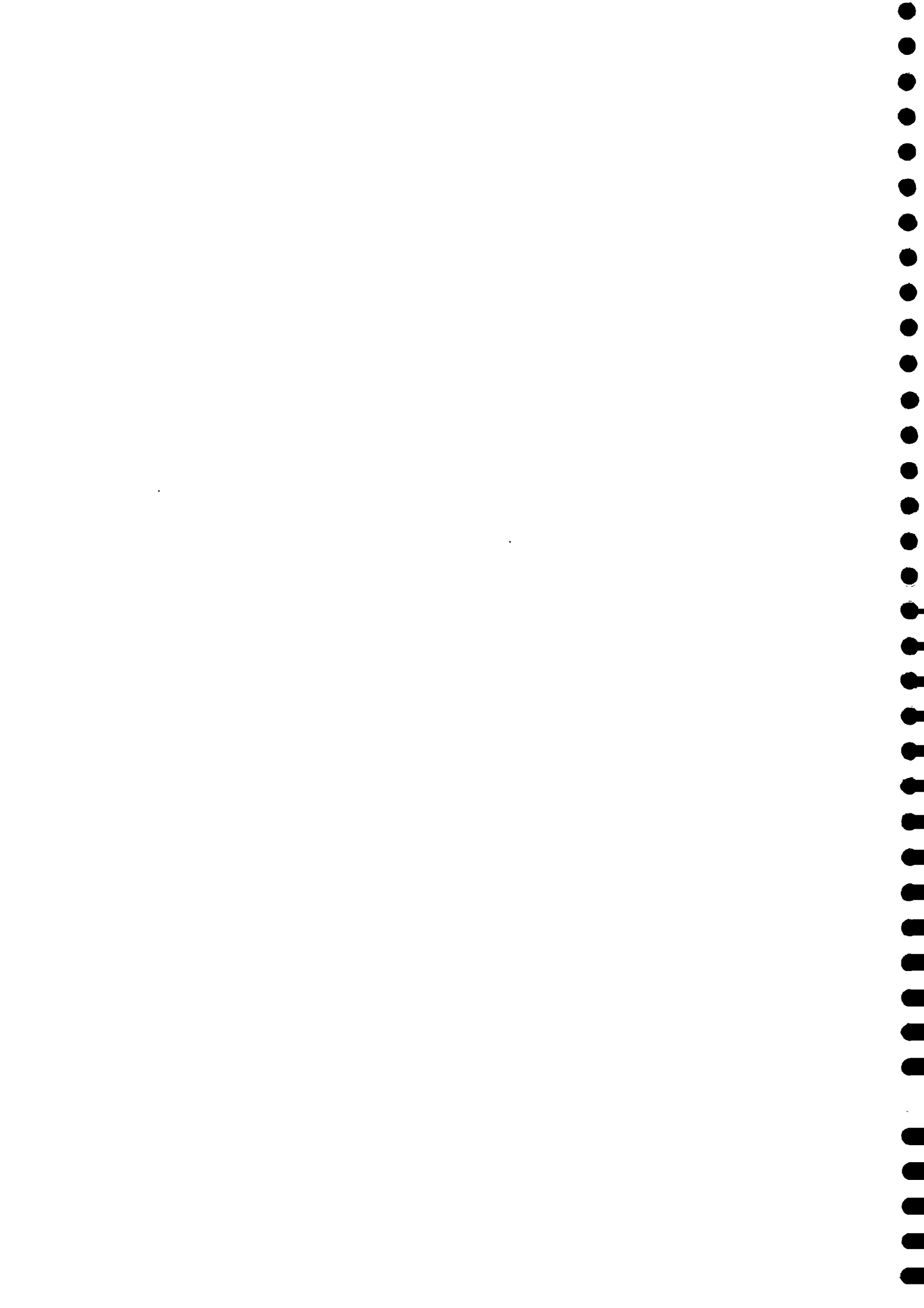
Twelve out of 66 houses do not own latrines. Financial constraints and availability of temporary facilities (backwater banks and beaches) are pointed as reasons for not constructing latrines. The fact that open air defecation is a cause for diseases is known to most mothers. Cholera, worm infestations, jaundice, dysentery, diarrhoea, typhoid, gastro enteritis were diseases caused due to open-air defecation, mothers said.

Two children were affected with diarrhoea for the last one week and this illness prolonged for two more weeks. Preventive measures for diseases caused due to open air defecation and water-borne diseases were: drinking of purified water, defecation by all members of the house only in latrines, washing hands with soap after ablutions. Washing of hands before and after taking food. Protecting food and water by covering them. Keeping house and surroundings clean.

Women, mothers were generally aware of need for sanitary and hygienic practices. However, they were victims of adverse living conditions, which according to them were the only reasons for the way they live. Renovation of ponds in the area, they believe, can solve most of their present problems.

#### ***Puthenchira***

Eighteen mothers in ward III, 18 in ward IV and 13 in ward IX attended group meetings. Diseases commonly affecting children were, according to the mothers; fever, cough, diarrhoea, bronchial congestion, jaundice, worm infestations, vomiting and stomach ache. Changes in seasons bring about diseases mentioned above. During rainy seasons, fever, cough, diarrhoea and vomiting occur. During summer, jaundice and chicken pox is prevalent.



**Reasons identified for diarrhoeal diseases:**

Well pollution due to open-air defecation.  
Drinking plain water.  
Eating food before washing hands properly.  
Eating food that is not fresh and warm  
Open food stuff get dirty through flies.  
Germs from human excreta enter human body when people step upon them  
Germs enter through finger nails.  
By consuming unclean food.  
Well water during summer depletes and the little water left will be bad.  
Children drinking rainwater get diseases

**Remedies for diarrhoeal diseases:**

Give boiled water to children in plenty  
Give tender coconut water and rice soup.  
Give "ORS".  
Nutmeg powder mixed with honey  
Burnt sugar mixed with water.

Eleven out of 48<sup>a?</sup> mothers only used tap water for drinking and cooking. The rest collected water from their own or neighbours' wells. Wells used by the participating mothers, according to them were only partially protected. Well water is chlorinated periodically, every three months. All the mothers know that tap water is purified and free from germs. However they do not like the smell and taste of chlorinated water. This is also the reason for why they prefer well water to tap water.

**Water-borne diseases:**

Diarrhoea, vomiting, cholera.

**Preventive measures pointed out by the mothers:**

Drink only pure water.  
Drink clean water. Boiled water is also good for drinking  
Wells should be protected.  
Vessels used to collect water should be clean.  
Drinking water should be protected by keeping covered.  
Wells should be chlorinated

Sanitation

All the 48 participants had latrines in their houses. Everyone in the houses except children below three years age used latrines. Twenty one of the participants had children below three years age. These children defecated in the front court yards of respective houses. Three mothers disposed faeces in the nearby premises. These mothers did not believe that the children's faeces were hazardous to health. The remaining mothers think that excreta of adults are hazardous to



health Eighteen mothers disposed children's faeces in the latrine. Ten houses had children between three and five years age. Nine of these children used latrines for defecation. One child used a potty and the faeces was later disposed off in the latrine. People who dispose children's faeces in their yards do so because they had the land. All the participating mothers were aware that open-air defecation contaminated water and food. The following diseases, according to mothers were caused by open-air defecation. Diarrhoea, Dysentery, Gastro-enteritis, Cholera and worm infestations.

**Water-borne diseases and diseases caused by open-air defecation could be prevented by**

Avoiding defecation in the open air.  
Taking care in not allowing food and water to contaminate.  
Keep house and surroundings clean to avoid flies.  
Protecting water sources.  
Drinking only boiled water.  
Washing hands with soap before taking food and after ablutions  
Observe personal hygiene practices.

**Water - The life saver**

Rajeswari, a resident of Ward III in Thrikkunnapuzha Panchayat narrated an incident which happened forty years back (This was as told to her by her parents)

In those days, water was not given to patients with diarrhoea, cholera, dysentery etc because people believed that consumption water was fatal. An aged man, suffering from cholera was in critical condition. People who had waited for the man to die saw that he was pathetically looking towards the direction where water was kept. People did not want give water to him.

As is customary, as part of the last rite, close relatives and friends started to drip few drops of water to the man. They returned home and said that they would come later. After some time, they returned to see that the condition of the old man had improved.

People not only realised that there was no harm in giving water to patients with diarrhoeal diseases but also developed the belief that such should be given plenty of water.

**Kuttiyattoor**

Eighteen participants from ward III, 24 from ward VI and 39 from ward IX attended the Mothers' meeting. Common diseases affecting children in the area, remedial measures, defecation habits of children were discussed at the meetings. According to the mothers, Diarrhoea, vomiting, fever and Scabies were diseases common among children in the area. Worm infestation and Measles were also reported as being found in some areas. May, June and July months were times when these diseases were most common.





<b>Diarrhoeal diseases spread through:</b>
Leaving food stuff open. Through house flies. By not following hygienic environmental sanitation practices. Because children play in mud. Drinking dirty water.

During summer, wells dry up and one well where water is available will be used by several households. Water gets contaminated and diseases spread fast because of this. A few mothers believe that diseases occur for no reasons.

<b>Remedial measures undertaken by mothers for diarrhoeal diseases:</b>
Salted rice soup Tender coconut water Water mixed with salt and sugar ORS Arrow-root porridge

In earlier days, popular conception was that no water should be given to diarrhoeal patients but now it has changed.

#### Water

Most people prefer well water to tap water because of irregular and therefore unreliable water supply through taps. Purification of well water is carried out by dropping burnt coconut shells, sand and lime shells/powder. Bleaching powder is also used in some places.

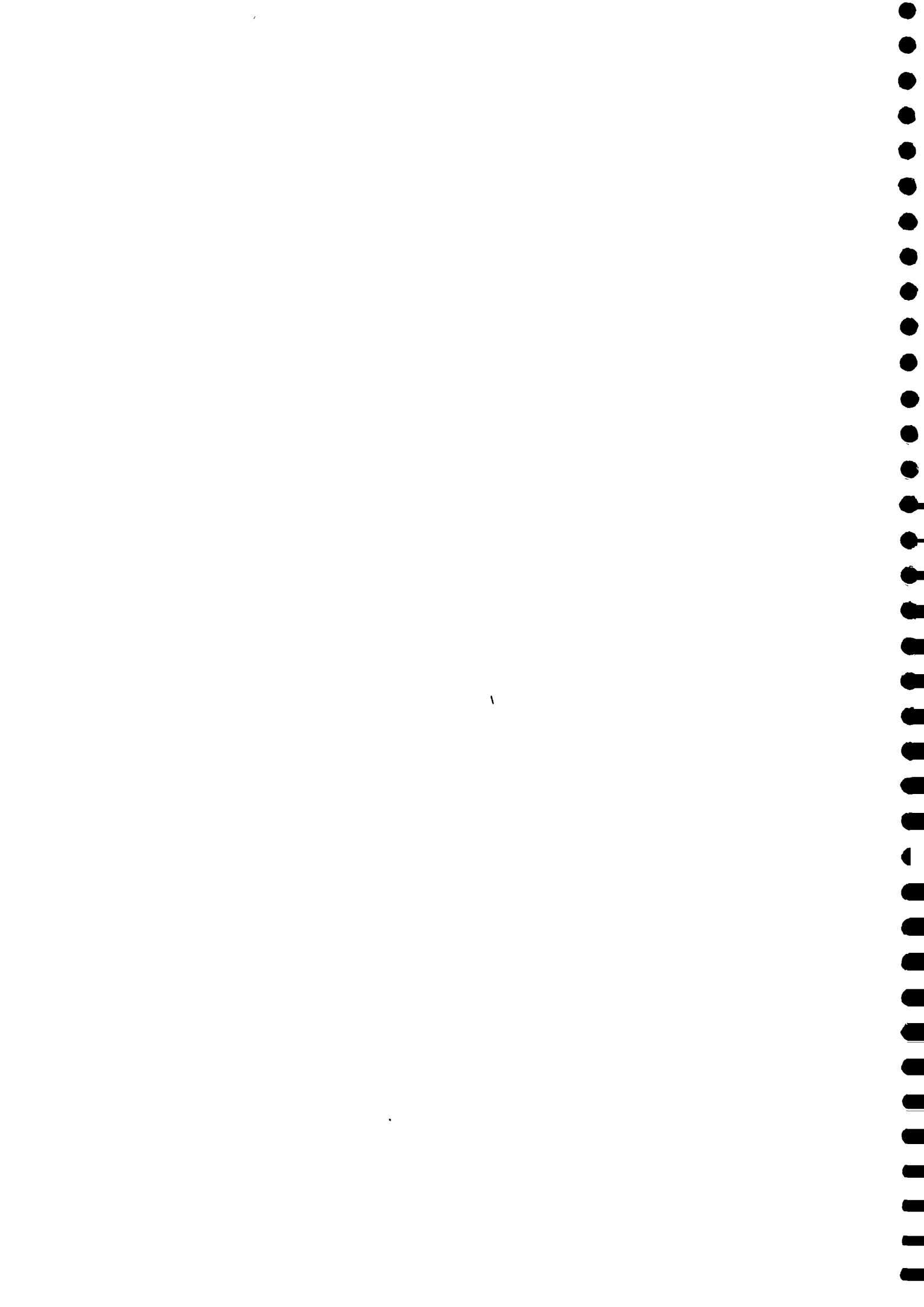
#### Sanitation

90% of the mothers who attended the meeting had latrines in their houses. Children below the age two defecated in the front courtyard. Although open-air defecation by children is not a good practice, it is common practice because of convenience as well, some mothers added. Moreover it is difficult to take little children to latrines, they said. Some mothers are of the opinion that, having continued with the practice for such a long time, no cases of disease were known to have been caused by open-air defecation of children.

Some mothers admitted that children's faeces were hazardous to health. Some mothers said that after clearing children's faeces from the courtyards, cow dung was used to smear the spot.

Most mothers were of the opinion that adults used latrines if they owned one. Since washing hands using soap after ablutions was not a habit to many, they admitted that many of them did not practice this. Busy work schedule was also blamed by some mothers for not washing hands with soap after ablutions.

No cases of diarrhoeal diseases were reported to have occurred in the study area during the past two weeks.



Many mothers believed that scarcity of drinking water and open-air defecation cause diarrhoeal diseases. They also admitted that most often they never even noticed such matters like open-air defecation and drinking water scarcity being causes for diseases. As a precaution, the mothers suggested the following.

Measures to prevent diarrhoeal diseases:
Only boiled and cooled water should be used for drinking. Use latrines for defecation. Observe personal hygiene habits. Always keep food stuff covered.

#### 4.6 School Observation

One school with School Health Club from each Panchayat was chosen to observe personal hygiene level, water use habits, and environmental sanitation practices of SEU School Health Club members and non-School Health Club members. Interviews, Pocket-Chart exercises, Spot check observations, informal discussions and Picturisation were the various tools used for this. Pocket Chart exercise conducted to observe water use habits revealed that School Health Club members practised hygienic behavior. Twenty out of the 30 students who participated in the exercise voted as practising correct water handling habits

##### *Thnkkunnappuzha*

MT Upper Primary School was chosen in Thnkkunnappuzha Panchayat

School observations based on the structured observation schedules brought out the following results

All the classrooms in the school had dust bins and classrooms were found to be clean.

All classrooms had earthen pots with water, kept covered for drinking purposes a small mug was also seen kept near. The responsibility of burning out garbage and wastes is with the members of SHC. Although the school did not have a compound wall, surroundings were generally clean. Toilet and latrine were maintained clean. The school had no separate latrines for teachers and students.

The only tap available in the school was damaged, yet used satisfactorily and students collected water by standing in a queue. No well was found in the school premises. Cooking place in the school was found to be cleaned satisfactorily. Store room was also found clean. A Shop outside the school was seen selling covered eatables. No flies were found in the shop. The shop keeper also appeared to be generally clean. General cleanliness of students was also found to be satisfactory. The school did not have any wandering stray dogs or chicken.

##### *Puthenchira*

The only Government School, where 360 students attended was chosen for observation from this Panchayat. School surroundings are generally clean. Students were seen cleaning the front yard of the school when the study team entered the school premises at around 12:45 pm. Ash remains of burnt garbage



could be seen in two places within school premises. No signs of disposed excreta or foul smell could be noticed in the school surroundings. Class rooms are generally clean and class room walls had charts and posters on study subjects and health-related messages. Four out of the six class rooms were seen to have dust bins. It was seen that these bins were being used to dispose waste.

The well in the school had apron and platform, but did not have any net covering. Plants were seen growing on the side wall of wells. Water was seen being pumped into a tank with asbestos sheet cover. Water from this tank was distributed through four taps. According to the school officials, periodic purification is carried out by chlorinating every three months.

During pocket chart exercise, and observation, it was observed that well water is also being used for drinking. The tap did not have proper platform or drainage. Left overs of food were found on the platform of taps.

Two latrines were found in the school. One for Staff members and one for the students. Latrine meant for the teachers had water, brush and soap. Children do not seem to use the latrine. During discussions after Pocket-chart exercise, it was mentioned that children do not require latrine facilities and even if they did, they would use the latrine meant for staff. Defecation, it appeared from pocket chart exercise that all children used latrines in their homes.

Two urinals, separate for boys and girls were found in the school. Urinal for girls had foul smell and there was no tap or water inside. The boys urinal was seen generally clean. There was water tap inside. Pocket chart exercise revealed that the boys urinated in open air.

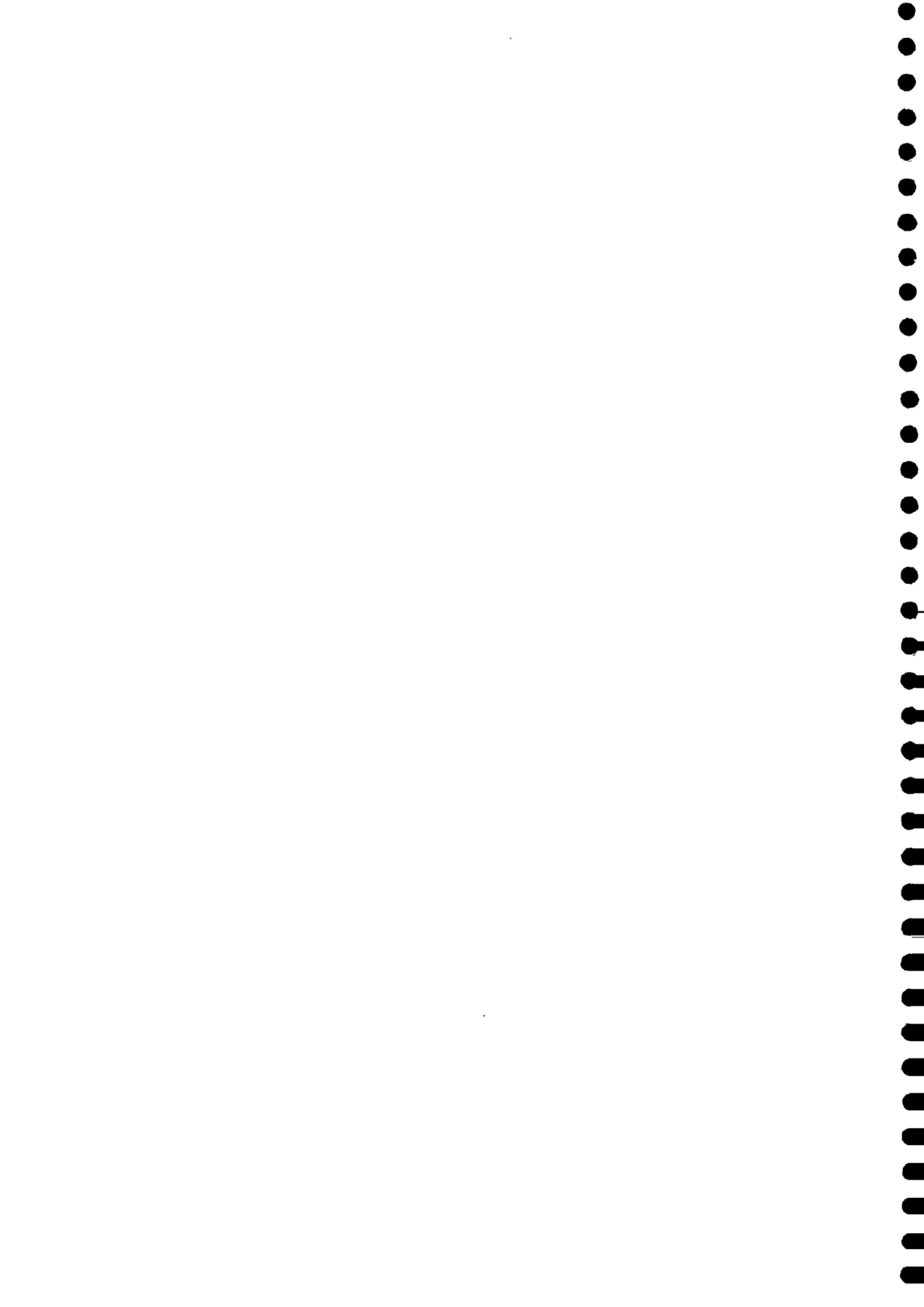
The kitchen of the school was a temporary shed, not fully covered. On one side, firewood was stored and on the other side, mid-day meal was seen being cooked and ready to serve. Vessels and ladles were seen to be neat. The woman in the kitchen was also neatly dressed. The tap near the kitchen had no drainage and the area was filled with stagnant water. Since there was no store room, rice and other materials for cooking were kept in a cement box in the office. These materials were cleanly stored out of reach by rats and insects.

Vessels were cleaned on the ground since the place had no cleaning place. After cleaning, these vessels were stored in the office room.

Students were seen serving meals during the mid-day meal session. Children had removed their footwear. While most children merely water-washed their hands, some children were seen washing hands using soap. The latter group was later identified as School Health Club members. Children swept the floor clean after the meal session. A bucket placed to dispose waste food was also seen, being taken by a neighbouring man to feed the cattle. Food stains and left over was found beneath taps as the children had just washed their hands. Soaps used by children to wash hands was seen being taken to the office for storage.

A bunk shop found just outside the school was seen selling covered eatables like toffees, and salt-pickled gooseberries. Shopkeeper was seen to be neatly dressed. Eatables were hand-served. No fly nuisance was noticed in the shop.

Children were seen wearing clean dresses. Many children were seen not wearing footwear. Most children appeared to have had a bath in the morning. Finger nails



of many children were not clipped

School premises were kept clean by children of each class division in turn and class rooms were cleaned by students of the same class. School verandah was washed by children every week.

Wells were purified using bleaching powder every three months. Well water is used for cooking. Water for kitchen use is not stored. Instead, it is collected as and when required.

Four out of the six class rooms had drinking water kept inside in earthen pots. Very few children bring boiled and cooled water from their homes. Soap, and pots required for each class room are bought by students themselves.

#### *Kuttyattoor:*

Aided Upper Primary School, Kuttyattoor with 680 students (boys-342, and girls-338) and 23 teachers was chosen from the Panchayat for observing School Health Club activities. Twenty SHC members and 23 non-SHC members formed the two groups. The first session was conducted with the non-SHC members group. Pocket chart exercise was carried out to assess three aspects, hygiene practices - especially water handling, school sanitation and home sanitation. Non-SHC members gave realistic answers. School had its own pipe and children used this tap for all purposes. This was also clear from the pocket chart exercise. All class rooms had dustbins.

Afternoon session was conducted for the SHC members. While doing the pocket chart exercise, teachers were also present. It was observed that the school and the campus and the personal hygiene habits were generally satisfactory.

The place where cooking was done as part of mid-day meal scheme was seen to be maintained cleanly. Cooked food was seen being carried in aluminum vessels by students. Food was served by the class leaders. Long-handled ladles were used for serving food. After taking meals, vessels would be taken near the tap for cleaning. The helper washed the vessels then and there and had stored them in the kitchen. The class room was cleaned by students.

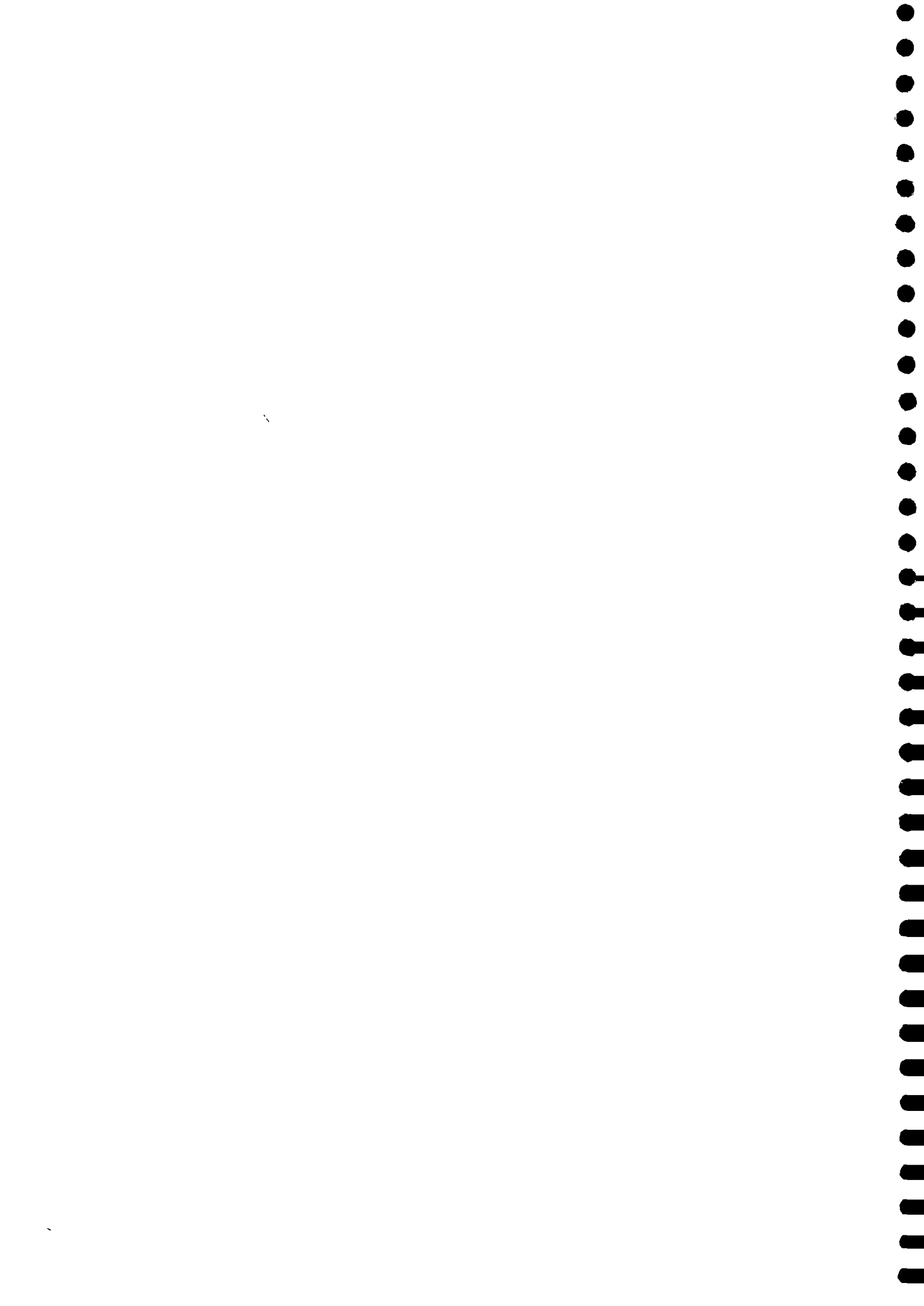
The latrine and urinal in the school were built jointly by the SEU and the Parent Teachers Association (PTA) of the School. Separate latrines were built for teachers and students (separate for boys and girls). Latrines are generally clean and neat. The School Health Club members cleaned the latrine and urinal every day in turn.

#### 4.7 House Visits

There were 173 children under age five from 105 houses, selected for house visits.

Thnkkunnapuzha had a total of 63 children out of which there were 26 boys and 37 girls.

Puthenchira had a total of 53 children under five out of which there were 28 boys and 25 girls.





Kuttiyattoor had 57 children of which 24 were boys and 33 were girls.

TABLE - 1 CHILDREN BELOW FIVE YEARS

Panchayat	Total Houses	# of Children	Boys	Girls
Kuttiyattoor	35	57	24	33
Puthenchira	35	53	28	35
Thrikkunnappuzha	35	63	26	37
Total	105	173	78	95

Mothers stretching their legs and seating infants (under one year age) to defecate was one practice prevalent in 15 houses. In 32 houses children are used to defecating on open yards. It was also noted that a particular place was used for this purpose. Children below two years age were particularly noticed, defecating in the front yard. According to the adults in these households children defecate in the open air because they are not trained to use latrines. In Thrikkunnappuzha Panchayat, four children go to the beach for defecation.

TABLE - 2 PLACES WHERE CHILDREN DEFECATE

PANCHAYAT	Latrine	Courtyard	open air	seated on stretched legs	Potty	Seashore
KUTTYATTOR	28	14	9	6	-	-
PUTHENCHIRA	21	18	7	6	1	-
THRIKKUNNAPUZHA	18	22	16	3	-	4
TOTAL	67	54	32	15	1	4

#### Places where children's faeces were disposed

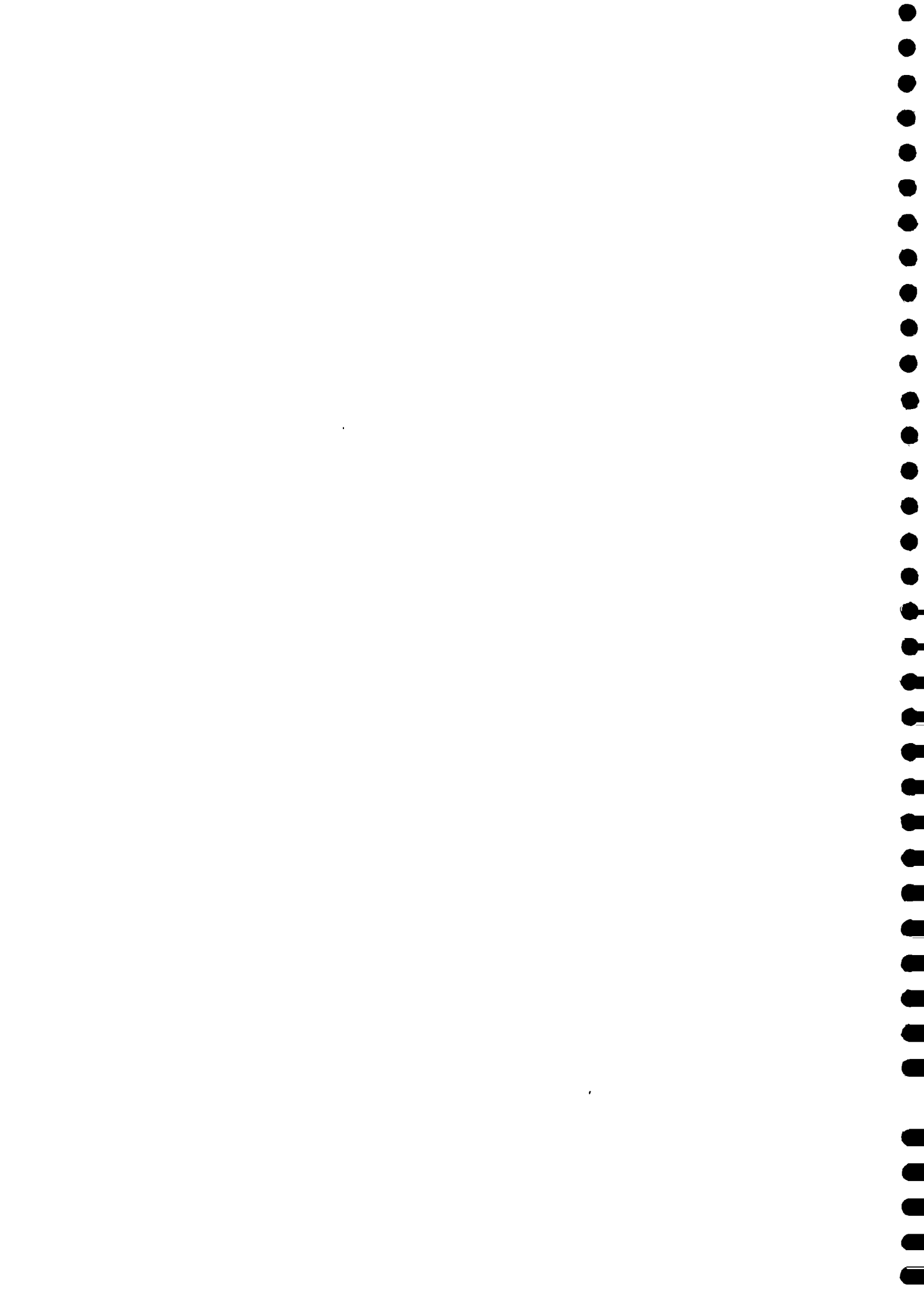
There are 82 families where children's faeces were disposed in latrines. Out of this three families pointed out that they disposed children's faeces in latrines because they did not have enough open space to throw faeces and the place was surrounded with houses and temples.

Fifty one houses threw children's faeces anywhere in the land surrounding the house. This, according to them is because they own more land! This was brought up again during mothers' meetings.

In ten families, people dispose faeces in pits made near to house compounds. Invariably faeces is thrown carelessly somewhere near this pit. They also admitted that carelessness was the reason for this practice.

Twenty four families threw children's faeces into backwater streams (23 families in Thrikkunnappuzha Panchayat and one family in Puthenchira Panchayat). People do not think this is an unhygienic practice.

Six families which were those settled in the sea shore, disposed faeces into the sea. This, according to them was easy.



**TABLE - 3 WHERE ARE YOU DISPOSING CHILDREN'S FAECES?**

Panchayat	latrine	open-air	pit in the yard	back water stream	seashore
KUTTYATTOR	21	36	-	-	-
Puthenchira	38	8	6	1	-
Thrikkunnapuzha	23	7	4	23	6
Total	82 ( 47%)	51 ( 29%)	10 ( 6%)	24 ( 14%)	6 ( 3%)

*173 children under five*

Ways of cleaning floor after children's defecation:

Using water, using cow-dung, coconut husks, sweeping, throwing away and disposal in latrine were different ways of cleaning floor after children's defecation. Use of cow-dung is a widely practiced method of cleaning floor which has customary value. By plastering walls and floor, people believe, the place gets disinfected.

**TABLE - 4 HOW IS THE FLOOR CLEANED AFTER DEFECTION OF CHILDREN?**

Panchayat	using water	using cowdung	using latrine	with out latrine	by sweeping out	throwing it out	court yard beach
Kuttyattor	4	14	13	1	1	2	-
Puthenchira	3	-	12	-	-	19	1
Thnkkunnapuzha	1	-	7	-	-	25	1
Total	8	14	32	1	1	46	2

Are children capable of using latrines on their own?

Out of 173 children, only 71 were capable of using and used latrine on their own. Observations and interviews in the houses established the fact that children were not using the latrine just because they were not trained to use the latrine. During healthwalk, children were seen defecating in open-air.

**TABLE - 5 ARE THE CHILDREN CAPABLE OF USING THE LATRINE ON THEIR OWN?**

Panchayat	Yes	No
Kuttyattoor	26	31
Puthenchira	25	28
Thnkkunnapuzha	20	43
Total	71	102

Who all use latrine in the house visited?

All members of the house used latrine only in 29 houses. Children in 57 houses do not use latrine mainly due to the fear that they may fall inside closets and because they were not trained. In four houses in Kuttyattoor Panchayat elderly people do not use latrines. Vast barren land available for open-air defecation and lack of interest to use latrines were pointed out as reasons. In five houses in



Thrikkunnappuzha Panchayat, all members of the houses except adult male use latrines. In nine houses, only women use latrines. In the other houses, men and children use seashore for defecation

TABLE - 6 WHO ALL ARE USING LATRINE AT HOME?

Panchayat	all members	except children	only use by women	all members and some children	all except elder (above 60) children	none	all others except males
KUTTYATTOR	13	17	-	-	4	1	-
Puthenchira	11	24	-	-	-	-	-
Thnkkunnappuzha	5	16	9	-	0	-	5
Total	29	57	9	-	4	1	5

Are children's faeces considered hazardous to health?

Parents in 69 houses think that this is dangerous. The remaining 36 families do not think that faeces of children are hazardous to health. During group discussions, elders expressed that there is no increase incidences of diseases owing to this practice

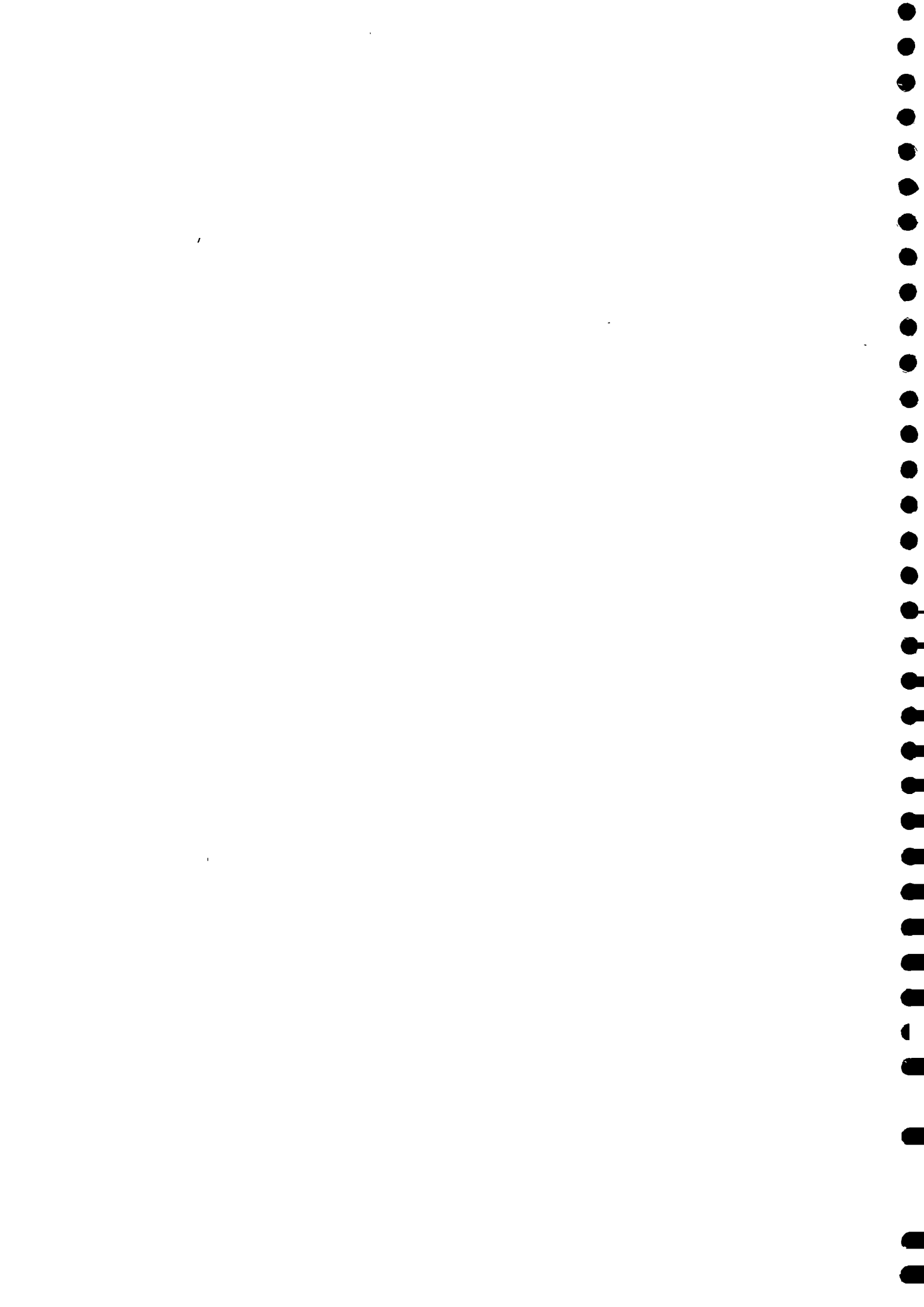
TABLE - 8 DO YOU FEEL THAT CHILDREN'S EXCRETA IS DANGEROUS TO HEALTH?

Panchayat	yes	no
Kuttyattor	26	9
Puthenchira	23	12
Thnkkunnappuzha	20	15
Total	69	36

Incidences of diarrhoeal diseases during the last one week, reasons believed and treatment given

Eight houses had children affected with diarrhoea during the week before the house visit. Popular beliefs held as reasons causing diarrhoea were children eating mud, breast feeding children at long intervals, very warm weather, eating sweets and consuming stale food and water. It was also believed that seasonal variations had a direct bearing on the incidence of diarrhoeal diseases. One adult each from Thnkkunnappuzha and Puthenchira were affected with diarrhoeal attack during the past week. They were taken to hospital for treatment.

Treatment given for diarrhoeal diseases were: giving more quantity of water, giving home made solutions, and giving Allopathic medicines at hospitals. Discussions during Mothers' meeting and observations also indicated the same. Most women were aware of methods of preparing home-made solution for diarrhoeal diseases



**TABLE - 9 DID THE CHILDREN HAVE DIARRHOEAL DISEASES DURING LAST WEEK? IF SO REASONS, WHAT IS THE TREATMENT GIVEN? WHO ELSE HAD DIARRHOEAL DISEASES OTHER THAN CHILDREN.**

Panchayat	YES	NO	if yes, reasons	treatment given	who else has children	other than children
Kuttiyattoor	2	33	eating sand, feeding with breast milk after a gap than 6 hours	medicine from hospital more water given	none other children had diarrhoea	
Puthenchira	2	33	in hot climate diarrhoea occurs don't know	allopathy treatment allopathy treatment	34	1
Thnikkunnappuzha	4	31	don't know reason by eating sweets don't know reasons fault of food and water	allopathy treatment home made solutions allopathy treatment	34	1
<b>TOTAL</b>	<b>8</b>	<b>97</b>			<b>68</b>	<b>2</b>

Whether reasons for how children are affected by diarrhoeal diseases are known and if reasons known what are they?

Thirty three householders admitted that they were not aware of reasons for diarrhoeal attacks among children. People in four houses said they knew; but did not give any reasons. Views expressed by people in 68 houses were- Consumption of spoilt food and polluted water, and lack of environmental sanitation.

**TABLE - 10 ARE YOU AWARE OF THE REASONS HOW DIARRHOEAL DISEASES OCCUR IN CHILDREN, IF YES HOW?**

	Kuttiyattoor	Puthenchira	Thrikkunnappuzha
Keeping food articles open, keeping fruits unclean	18	10	3
Germs due to stagnant water	1	-	
Drinking water with out boiling	3	2	1
Intake of mud into mouth	2		
one to spoiled food items	2		2
open air defection & not keeping proper environmental hygiene	3	6	1
As the temperature level increases	-	1	
playing in mud	-	1	
From contaminated water	-		7
Drinking contaminated water, bathing in contaminated river	-		1
Not keeping personal hygiene	-		1





due to eating of articles such as mango tamarnd	-		2
Putting fingers to mouth, due to worms	-		1
Total	29	20	19

### Sources of collecting water, quantity, timings and purposes

Water was collected from 74 wells, 43 taps, 1 pond and 5 backwater streams. The maximum quantity of water is drawn from wells. While 61 houses collect water from wells during morning and evening, 14 houses collect water from wells in the morning only. 36 households collect water from taps during morning and evening while eight houses collect water from taps in the morning only. One household collected water from the pond during morning and evening. Five houses collect water from backwater streams during morning and evening.

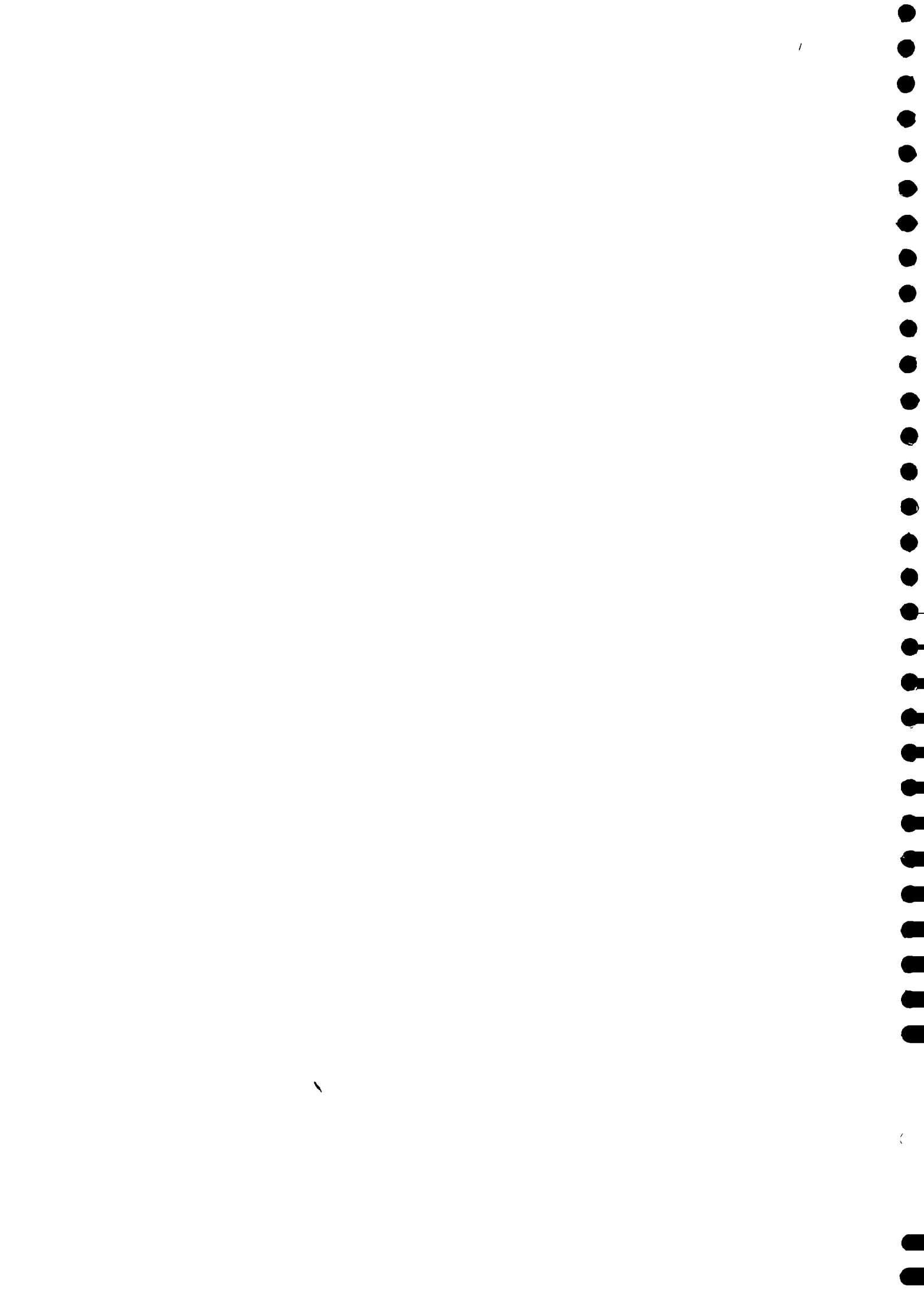
Well water is used for all purposes by 66 households, 25 houses use <sup>tap?</sup> well water for all purposes. Water from taps is used for drinking purpose only by 14 houses. Only one house uses tap water for kitchen use only while three houses use well water for kitchen purposes only. For bathing and washing of clothes, three households use well water. One household uses pond for bathing and washing clothes while five households use backwater streams for washing and bathing. Houses collecting 10 buckets of water from wells were-4. Houses collecting 20 buckets of water from wells were-12. Houses collecting 30 buckets of water from wells were-22 and houses collecting above forty buckets per day from wells were 36. Similarly, households collecting 10 buckets per day from taps were - 9. 20 buckets per day - 8, 30 buckets per day - 8 and 40 and above were 18. One household collected 30 buckets from a pond and another house collected the same quantity from a backwater stream while another four households collected 20 buckets each from the backwater stream. Table-11 shows details of all variables like source, use, quantity and timings of collection of water in the three panchayats.

**TABLE 11-a FROM WHERE DO YOU TAKE WATER? HOW MUCH?**

		10 buck ets	20 buckets	30 buckets	40buckets & above
KUTTYATTOR	well	2	4	9	20
	pipe	2	1	1	-
PUTHENCHIRA	well	1	4	11	14
	pipe	-	3	2	3
THRIKKUNNAPUZH A	well	1	4	5	15
	pipe	7	4		
	pond	-	-	1	-
	Stream	-	4	1	-

### Whether water is purified before using for drinking and cooking purposes

Sixty four houses responded by saying that they did purify water before using it.



for drinking and cooking purposes. Forty one houses responded saying that they did not purify water. While two households filtered water before use, three households applied sedimentation technique for purification. Forty six households boiled water before use. Thirteen houses use bleaching powder for purification of water.

**TABLE - 12 IS WATER PURIFIED BEFORE FOOD PREPARATION AND DRINKING .IF YES HOW?**

PANCHAYAT	YES	NO	Sedimentation	Filtration	Boiling	Others
KUTTYATTOOR	26	9	-	-	26	-
PUTHENCHIRA	26	9	-	-	13	13 (using bleaching powder)
THRIKKUNNAPUZHA	12	23	3	2	7	-
TOTAL	64	41	3	2	46	13

*cross variation with type of source?*

Whether separate vessels are used to store drinking water and whether this water is covered

Ninety nine houses used separate containers to store drinking water while six houses did not have any separate containers for storing drinking water. Ninety three households kept water stored for drinking, covered while twelve houses did not cover stored drinking water. In Puthenchira Panchayat, a colony (Puliyilakkunnu) had big cement tanks made near kitchens to store drinking water. In most SC/ST houses, Block offices have distributed large Aluminum containers for storing grains which they use to store water.

**TABLE 13 WHETHER SEPARATE VESSELS ARE USED TO STORE WATER AND WHETHER WATER IS KEPT COVERED**

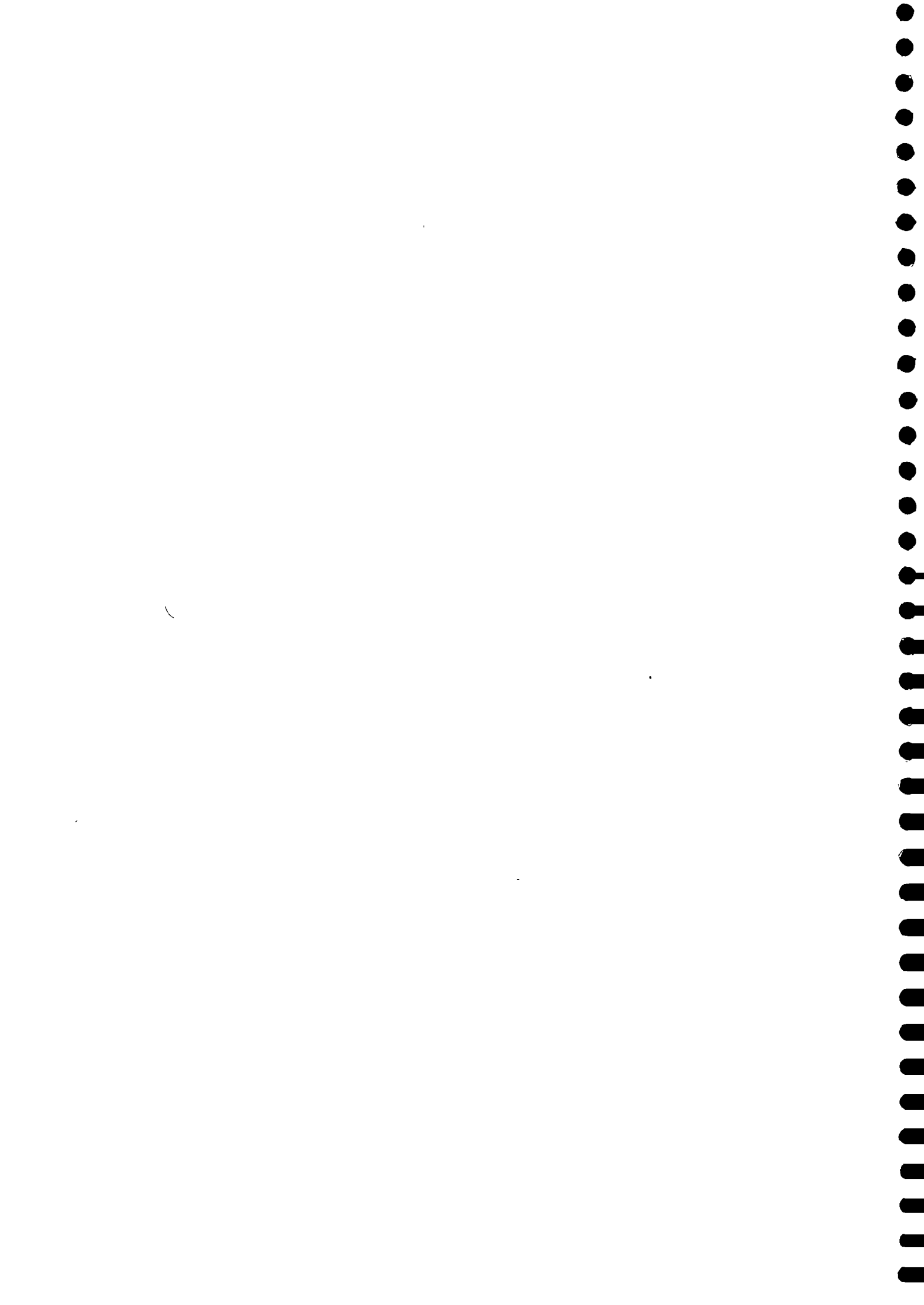
PANCHAYAT	DO YOU USE SEPARATE VESSELS FOR STORING WATER		IS WATER KEPT COVERED	
	YES	NO	YES	NO
KUTTYATTOOR	32	3	31	4
PUTHENCHIRA	35	0	35	0
THRIKKUNNAPUZHA	32	3	27	8
TOTAL	99	6	93	12

Handling of drinking water

Thirty four households admitted that their fingers get in contact with water, though involuntarily. Six households used ladles during usage of stored water. Mugs and cups with hand grips were used by sixty one households during water handling.

**TABLE - 14 WATER HANDLING PRACTICES**

PANCHAYAT	DIPPING HANDS	USING LADLES	MUGS	OTHERS ?
KUTTYATTOOR	9	3	23	
PUTHENCHIRA	11	2	18	4
THRIKKUNNAPUZHA	14	1	20	
TOTAL	34	6	61	



TOTAL	34	6	61	4
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Whether food articles are kept covered:

While eighty six households took care in keeping food articles covered, nineteen households do not follow this practice. Four houses had fly nuisance (Two houses had flies covering the food! and another two houses had flies covering vessels protecting food). Some women expressed frankly that they forget to keep food covered, especially when they are in a hurry.

**TABLE - 15 ARE FOOD ARTICLES KEPT COVERED AND WHETHER FLIES WERE SEEN ON FOOD**

PANCHAYAT	WHETHER FOOD ARTICLES WERE FOUND COVERED		WHETHER FLIES WERE SEEN ON FOOD ARTICLES	
	YES	NO	YES	NO
KUTTYATTOOR	30	5	7	28
PUTHENCHIRA	30	5	0	35
THRIKKUNNAPUZHA	26	9	2	33
TOTAL	86	19	9	96

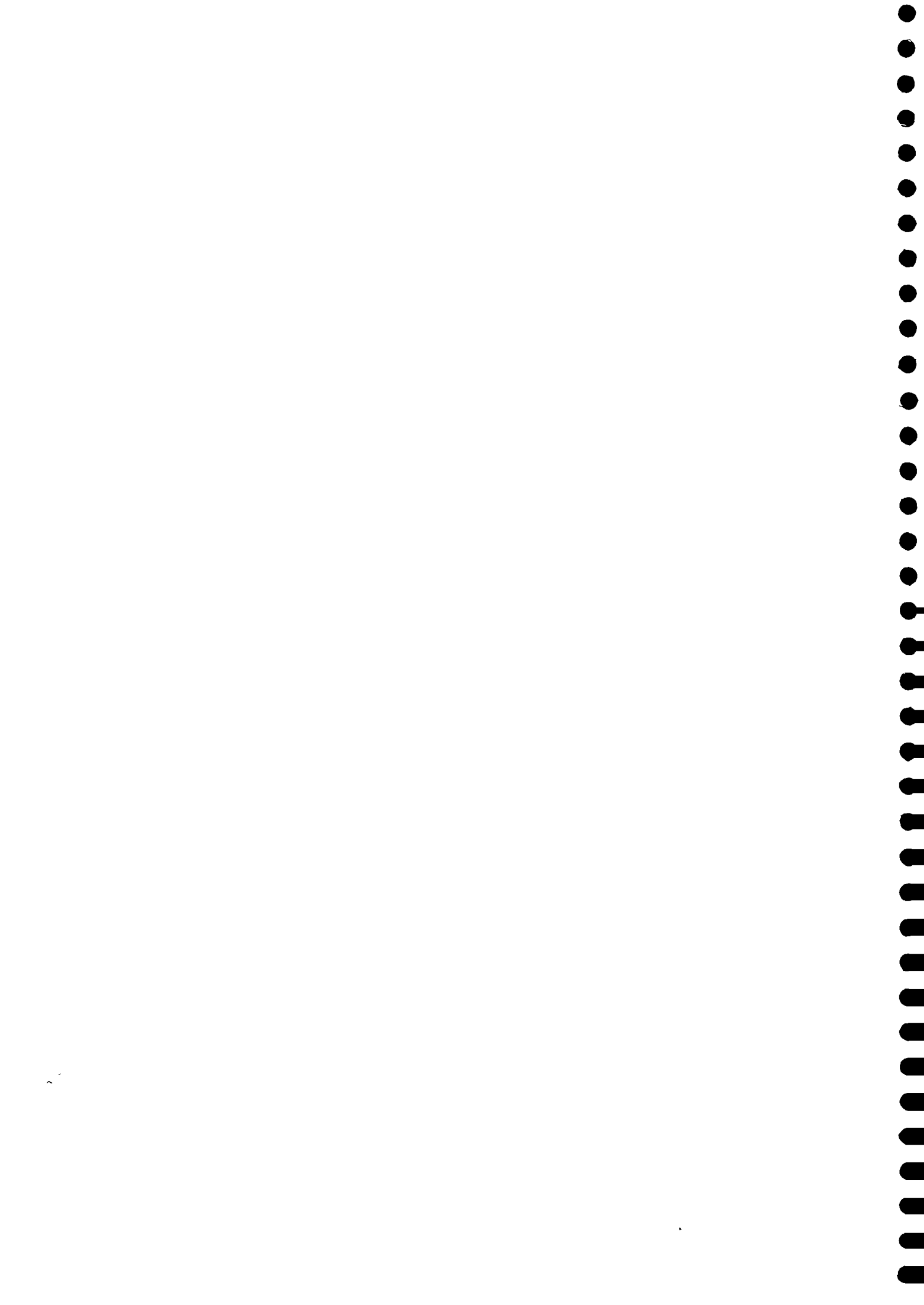
Hand-washing with soap at critical times

According to women in the surveyed households, hand-washing at critical times were as follows

In some houses, plantain leaves, curry leaves and Shikakkai powder were used as alternative to soap for washing hands. Table-16 has a Panchayat-wise distribution of information on hand-washing using soap.

**TABLE - 16 TIMES WHEN HANDS ARE WASHED**

ACTIVITY	Kuttiyattoor	Puthenchira	THRIKKUNNAPU ZHA	TOTAL
After defecation	10	29	17	56
Before using foods	-	2	-	2
Before food materials given to the children	-	1	-	1
Before food preparation	-	-	-	0
After food preparation	1	-	1	2
After fish cutting	23	21	18	62
When hands are dirty with charcoal	21	3	-	24
When hands are dirty with soil	1	-	-	1
After handling cow dung	5	-	-	5
After washing vessels	17	21	13	51
When hands are dirty	10	1	11	22
After using brooms	1	-	-	1
Before prayer by Muslim	-	1	-	1



After bathing children	-	1	-	1
After eating food with fish	-	-	1	1

#### 4.8 Special areas concentrated

Kitchen, houses, cattle sheds, wells, latrines and general cleanliness of members of the family were observed as special areas of concentration

TABLE - 17 SPECIAL AREAS CONCENTRATED DURING OBSERVATIONS

PANCHAYAT	Kitchen		House		Cattle shed		Latrine		General cleanliness of family members		Well		
	S	NS	S	N	S	NS	S	NS	S	NS	S	N	
Kuttyattoor	21	14	18	17	4	3	26	8	26	9	15	12	The females don't use neighbours well or public well 8 females don't have own well using neighbours well 33 Households are using public tap 7 households using neighbours well
Puthenchira	26	9	24	11	4	3	29	6	28	7	14	13	
Thrikkunnappuzha	18	17	17	18	3	6	19	16	23	12	2		
TOTAL	65	40	59	46	11	12	74	12	77	28	31	25	

S - Satisfactory, NS - Not Satisfactory

Non-satisfactory condition of kitchens is a predominant feature in most of the houses. General cleanliness in the cooking place is not satisfactory although drinking water stored is kept covered. Generally, the place seemed shabby.

Generally non-satisfactory conditions were observed in houses. Linen were found scattered in many places in most of the houses. But in houses of people belonging to economically poor sections house floors were found to be plastered with cowdung. Front yards of houses were also plastered using cowdung. Clothes were systematically kept.

Cattle sheds are very close to houses. Cattle sheds are cleaned whenever they get time.

#### 4.9 Colony Visits

Three Colony visits (in the three study panchayats) were conducted as part of House visits in which five houses from each colony were selected. Following are results of the house visits in colonies.

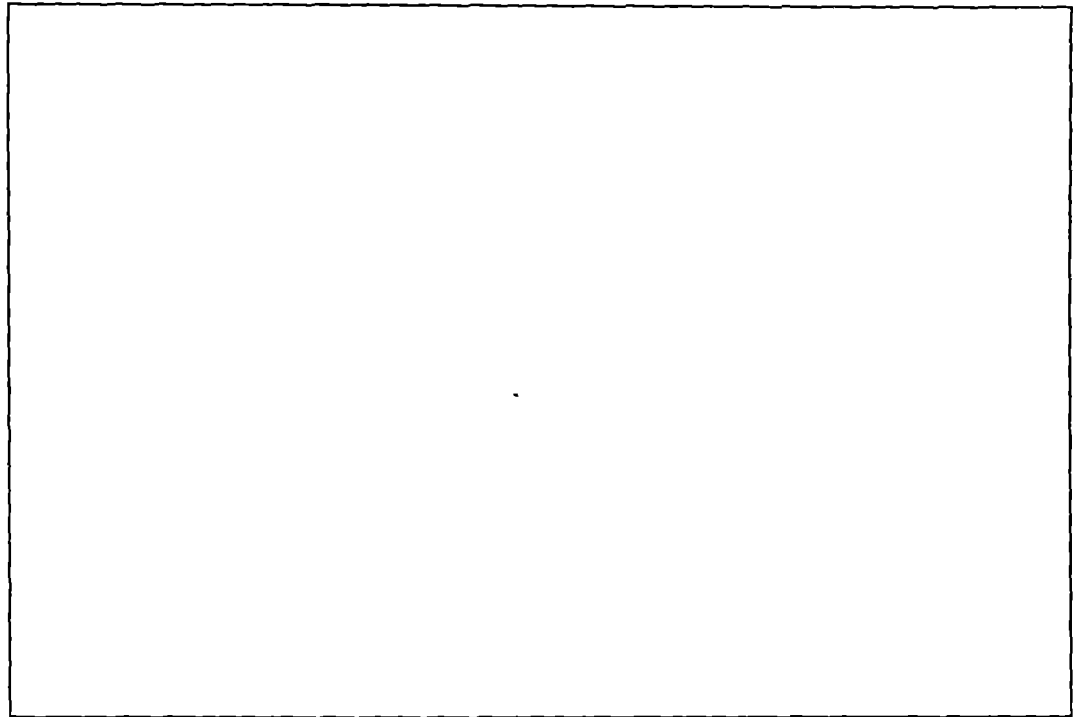
*Puthenpura Colony* in ward VIII of Thrikkunnappuzha Panchayat is a settlement of twelve families in 4 cents of land holding each. Houses are built in marshy lands converted to building sites. People belonging to different communities living here were found to be maintaining satisfactory environmental conditions. Scarcity of water is very critical. There is only one tap available from which water is available only once in three days. Quarrels at tap points are reportedly order of the day. Water in the backwaters can not be used for any purpose, people say. Seashore was used for defecation earlier before when none of these houses had a latrine. Hand washing after visit to the latrine is practiced by all the residents of this





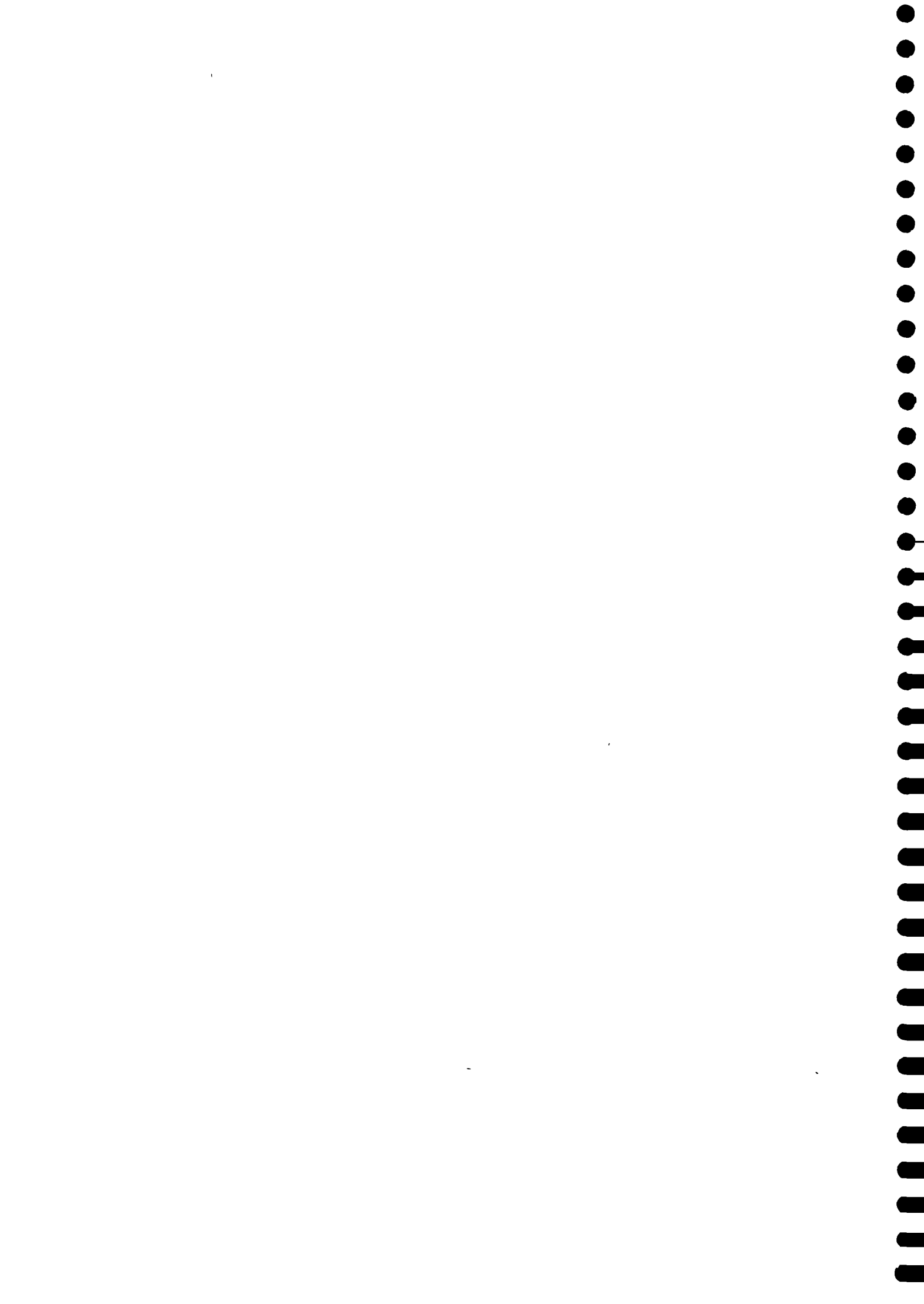
colony. Diarrhoeal diseases are common during flood seasons. Nine of these twelve householders are aware of hygiene practices.

*Puliyilakkunnu Colony* in ward V of Puthenchira Panchayat is a huge settlement



(over 150 acres) of more than 160 houses. Although the Government has recognised this colony as a *Harijan Colony*, people belonging to different communities also live in this colony. This colony has almost all facilities like public taps (17), public wells (7), electricity and sanitation facilities (82 twin-pit and 75 single-pit). Seven houses in the colony do not have latrines, however, five out of these seven houses have been allotted with funds to build latrines (Government of India funds). Most of the houses use public taps for drinking purposes. Occupation of people in this colony is casual labour. February - May are dry months, however, tap water serves their requirements adequately. Cement storage tanks (for storage of water) with taps attached, have been built in all the houses. These tanks have been covered with nets or coconut palm leaves. Large aluminum containers provided by the government to store food grains etc. were seen, being used to store water. No indications of open air defecation could be noticed here. A pocket chart exercise was conducted to find out awareness on environmental and personal hygiene practices. It was found that the awareness level was quite high.

*Kasturba Bhoodaan Colony* in ward IX of Kuttyattoor Panchayat is a settlement with 24 houses. Each family has about 10 cents of land each. Three Muslim, 10 Hindu and 11 SC live in this colony. One public well and two public stand posts (DANIDA). February - May are dry months. Water shortage is acute in this colony. Women will have to walk at least a kilometer to collect water. Public well surroundings were seen to be very clean. No one is allowed to misuse water. Well is not covered by net but apron and platform with proper drainage was found. Only eight houses have latrines of their own. Financial constraints were pointed out as reason for not owning a latrine. All the people in the colony are aware of



the need for sanitary latrine. People are generally aware of environmental and personal hygiene practices. Open air defecation is common but far away from the colony

#### 4 10 Pocket Chart Exercise

Pocket Chart Exercise was conducted with the following objectives

To identify sources and uses of water

Find out practices of handling of water and transportation of water from source to home

Sanitation Facilities

Domestic Hygiene practices

Hygiene practices among school children

##### a. Water Sources and Uses of water

###### Puthenchira Panchayat

*No. of participants in activity?*

Source>>	Tap	Well	Pond
Variables			
Drinking	13	69	0
Cooking	11	71	0
Bathing	27	45	10
Washing Clothes	26	49	7
Washing vessels	39	43	0
Washing animals	0	15	2
Gardening	3	12	0
Washing vehicles	0	7	0
Latrine Use (Flushing)	41	41	0

###### Thrikkunnappuzha Panchayat

*No. participants?*

Source>>	Tap	Well	Pond	Tube well	River	Lake	Rainwater
Variables							
Drinking	39	0	0	0	0	0	0
Cooking	39	0	0	0	0	0	0
Bathing	13	2	4	0	6	14	0
Washing Clothes	0	0	0	0	0	19	0
Washing vessels	14	6	1	0	3	8	0
Washing animals	4	2	0	0	2	02	0
Gardening	2	1	0	0	0	0	0
Washing vehicles	0	0	0	0	0	2	0
Latrine Use (Flushing)	14	0	2	0	8	15	0



## Kuttyattoor Panchayat

27 participants attended meeting meant for pocket chart exercise. Since during preliminary discussions it became known that open dug wells were the only source of water it was decided that pocket chart exercise would not be very effective in finding sources and corresponding results.

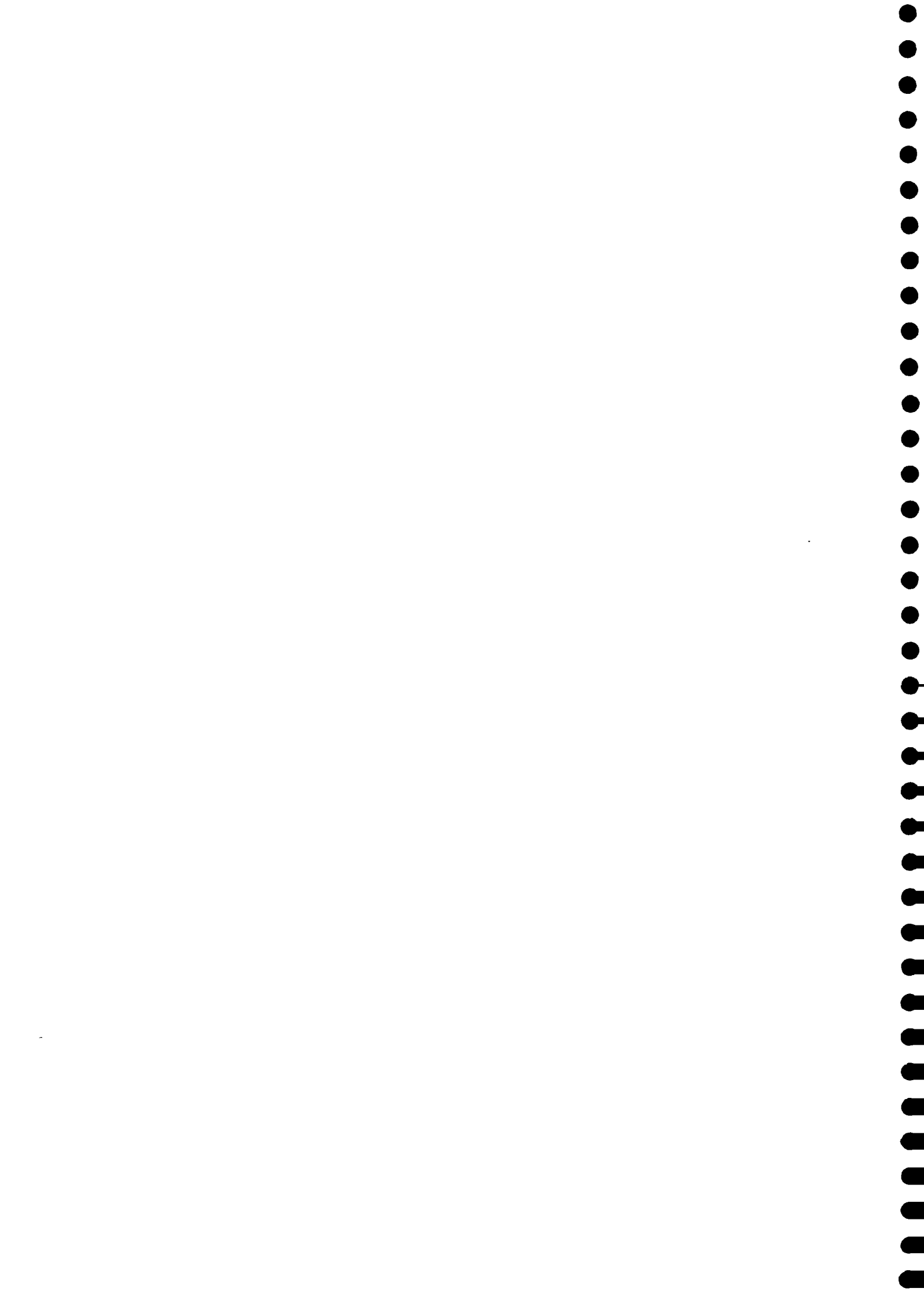
### B. Transportation of water from source to home

VARIABLE (Figure)		Thnkkunnapuzha	Puthenchira	Kuttyattoor	Total		
Figure	Number of Participants	28	18	22	22		
1	Two pots; carried one above the other	6	3	2	4	1	16
2	Covering pots with leaves to avoid spilling					1	
3	Tip of sari touching water in the pot	3		3	2		
4	Water kept open in a pot, water carried open	19	18	22	22	18	
5	Pot carried on the head						
6	Pot covered with plantain leaf						
7	Water carried in bucket						
8	Water in a covered pot carried by head						
9	Pot carried on hip						

All the pictures were introduced to the participants but pictures of practices of prevalent in that area were only discussed and used for voting. Pictures mentioned in the above table, against which no numbers are shown were those which were not used. In all the three panchayats, water pots were carried open. When asked why, they said that, within this short span water will not get contaminated. Two pots carried one above the other- when asked about this practice, some people said this was to avoid having to walk twice to collect water. In Thrikkunnapuzha where water supply through taps are irregular, to get more water in the same trip, women carry two pots, one on top of the other.

### C. Water Handling

VARIABLE (Figure)		Thrikkunnapuzha	Puthenchira	Kuttyattoor	Total			
Figure	Number of Participants	22	32	18	22	22	22	138
1	Fingers dipped in glass while serving water	1	9	13	16	19	3	61
2	Collecting water, dipping hands up to half in bucket	1	10	13	14	17	4	59
3	Taking water using a long-handled cup	16	1	3	2	5	9	36
4	Taking water by tilting the water pot	4	2	12	16	20	6	60
								no. of uplies 216



#### D Sanitation Facilities

PANCHAYAT		P1	P2	P3	P4	P5	P6	P7	P8
MEN	Puthenchira	0	0	35	0	3	0	3	2
	Thrikkunnapuzha	10	1	5	0	0	0	1	0
WOMEN	Puthenchira	0	0	53	1	10	0	12	2
	Thrikkunnapuzha	5	0	5	0	3	0	2	9

P1 - Seashore, P2 - bushes, P3-Latrine, P4-Stretched legs of mother, P5 Courtyard, P6-Courtyard, P7-Child in Latrine, P8- houseyard  
Pictures of variables are shown in annexure

Pictures included for this exercise to find out sanitation facilities also included pictures on sanitation facilities of children.

Four different meetings were held for Group Discussions in Puthenchira Panchayat 35 men and 53 women participated in the four discussions. All the 88 participants used latrines for defecation. SEU-Panchayat joint sanitation programme has achieved 100% coverage. The reasons given by participants for this was that all of them owned latrines, five years earlier, most of them went for open air defecation and, there is no need, nor anybody does open-air defecation.

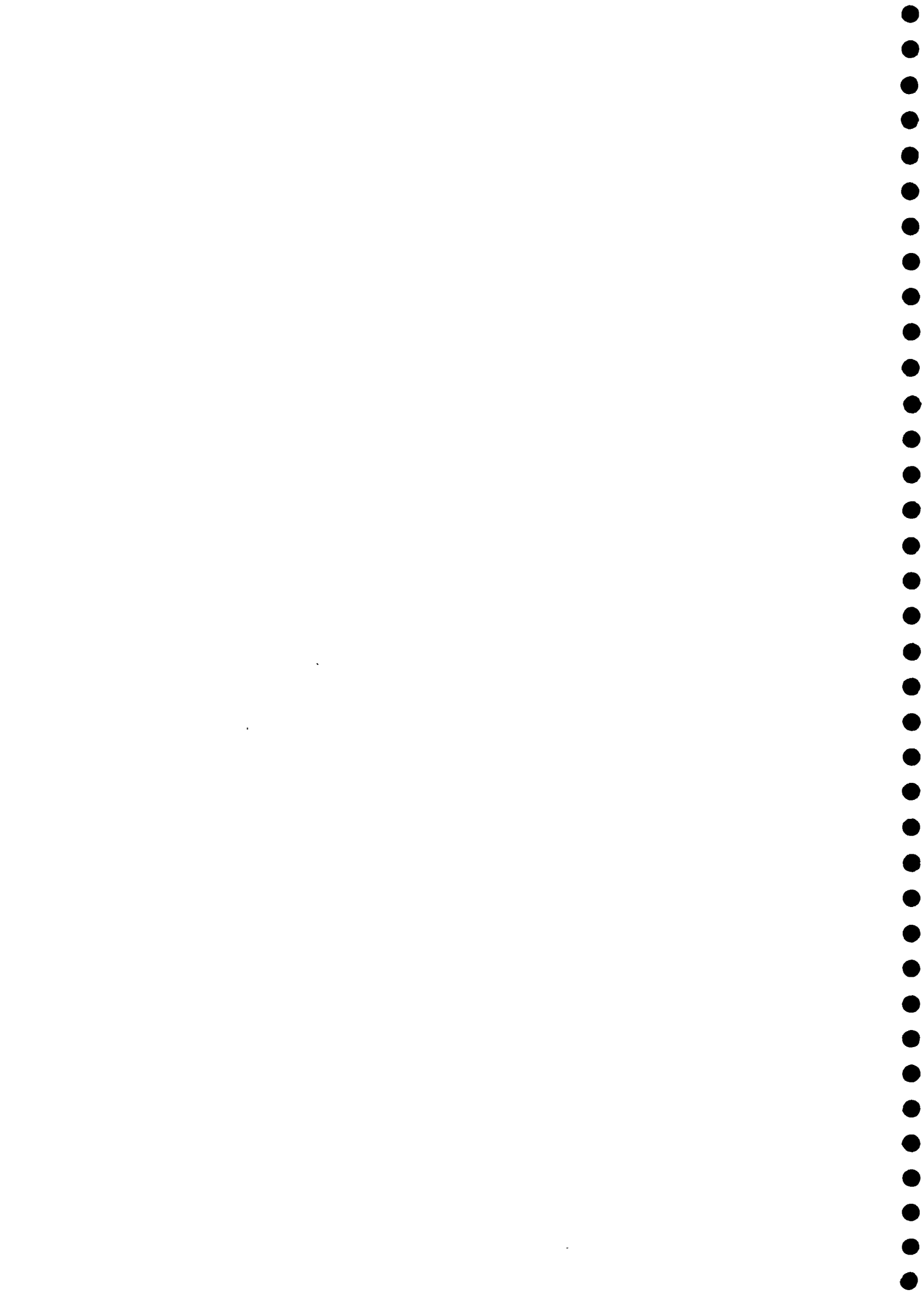
25 out of the 88 participants who attended the Pocket Chart Exercise had children below 5 years age. 12 out of these children used latrines. The remaining 13 children used courtyard for defecation. However, faeces of 7 out of these 13 children were disposed off in latrines, it became known from the exercise. The reason given for why children's faeces were disposed in the courtyard was that there was plenty of land available, and they believed that this was no hazard except that foul smell prevailed for some time.

Out of the 26 participants (16 men and 10 women) who attended the Pocket Chart exercise in Thrikkunnapuzha, 10 men and 5 women voted as using seashore for defecation. This, they said, was because they have got used to the habit, though they knew it was incorrect. Men who go fishing at dawn find it more convenient to go by the seashore. The participants also added that latrine use habit is on the increase in the area.

Three out of 15 children in Thrikkunnapuzha used latrine. Faeces of 12 children are disposed off in the seashore. The belief that children's faeces was harmless and that it was much convenient to throw faeces on the seashore were given by the participants.

The Study Team in Kuttyattoor used these pictures (complete set) for Picturisation exercise within their study area. 20 out of the 22 participants used latrines for defecation. The remaining two members said they do not own a latrine.

Most children used courtyard for defecation while some were seated on their mother's stretched legs for defecation. It is also common that faeces are thrown to the house yards in some places. It became known from Group Discussions that Children's faeces are not harmful and that plenty of land was available were reasons for the practice of disposal of children's faeces.





### E. Domestic Hygiene Practices

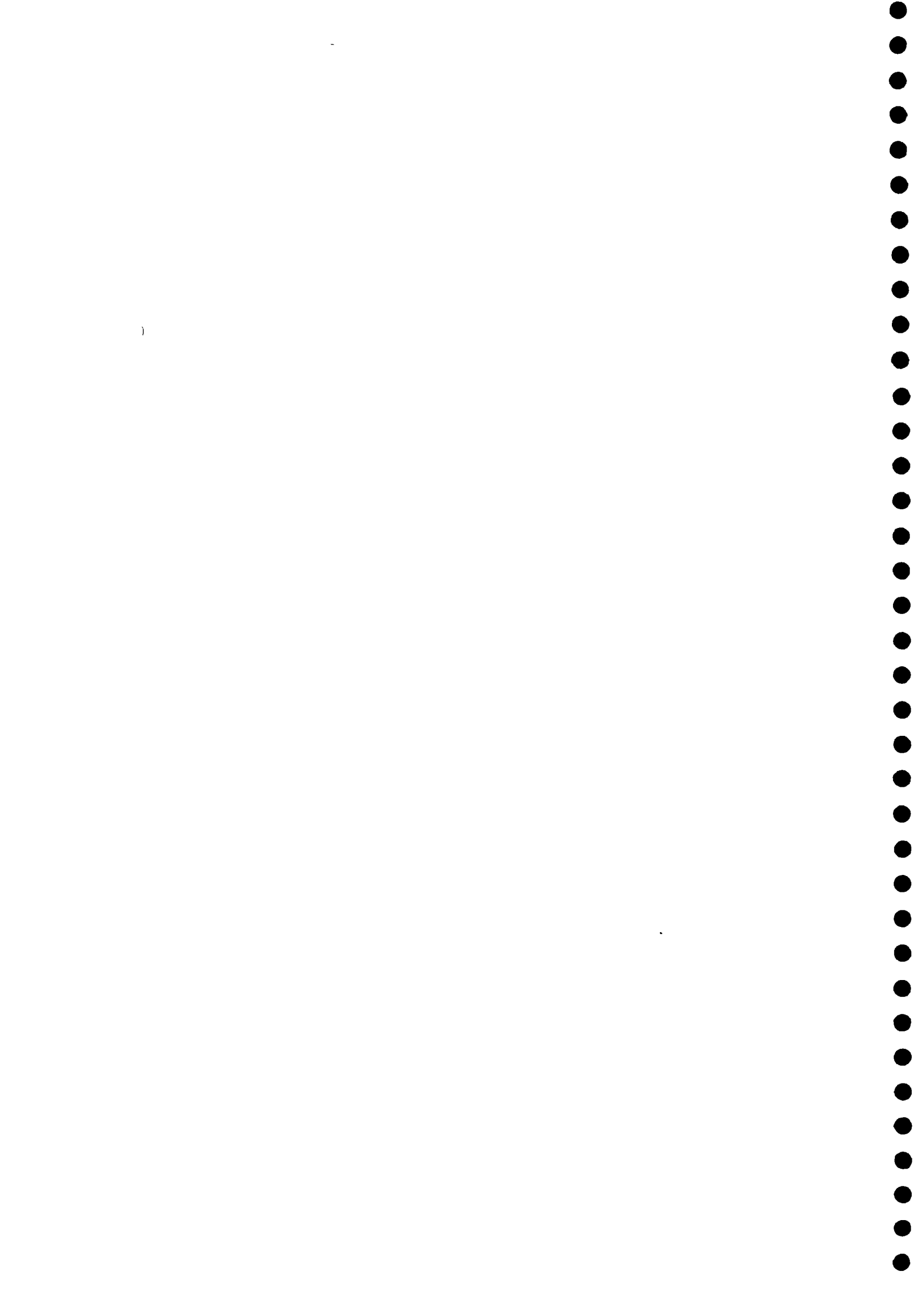
VARIABLES (PICTURES)	PUTHENCHIRA				THRIKKUNNAPUZHA			
	MEETING I		MEETING II		MEETING I		MEETING II	
	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN	MEN	WOMEN
	8	19	8	10	10	25	5	10
Dirty kitchen,	4	12					5	10
Vessels thrown carelessly,	3	5					3	10
Vegetables handled carefully,	7	17					0	10
Vegetables washed after chopping,	7	15					0	3
Flies on open food,	6	14			3	20		
Food kept covered,	6	19			10	25		
Children the ground,	0	0			0	0		
Dog dipping head on vessels,	6	12			6	6		
Waste water drainage from kitchen,	8	10					3	9
House and cattle shed nearby,	2	3					2	0
Hand being washed using soap,	4	13					3	6
Nails being clipped,			8	10	8	21		
Washing clothes,			8	10	10	25		
Garbage disposal,			8	10			0	8
Garbage being burnt out,			4	6			0	6
Washing feet,			7	3			not used	not used
Kitchen waste not removed			2	0			not used	not used

Discussions were carried out in two different groups in Thrikkunnappuzha and Puthenchira panchayats. Pictures used for Pocket Chart exercise was used in Kuttayattoor Panchayat for Picturisation exercise. Results have been shown in the section for 3 pile sorting. Discussions that followed the pocket chart exercises in Thrikkunnappuzha and Puthenchira Panchayat came up with a few comments as follows:

Pictures used for Pocket Chart exercise was used in Kuttayattoor Panchayat for Picturisation exercise. Results have been shown in the section for 3 pile sorting. Discussions that followed the pocket chart exercises in Thrikkunnappuzha and Puthenchira Panchayat

#### *Thrikkunnappuzha Panchayat*

- There is no need to wash hands before chopping vegetables. Hands get washed while



washing vegetables later

- Garbage gathered and burnt is done very rarely. Most often this is dumped in the backwater stream.
- There is nothing wrong in the cattle shed and kitchen being situated very close. Cattle are much less in this area.
- Flies become a nuisance and sit on food more during *Chakara* season. During this season, one spends more time chasing flies than taking food.
- It is easier to bite and trim, than to clip finger nails
- Washing clothes is done in the backwater stream by many people in the area

#### *Puthenchira Panchayat*

- Every single household is kept clean by owners who are keen to keep their houses neat and clean. Sweeping courtyards is a common practice in the area
- Keeping kitchen clean and people keep food and water covered all the time. While reacting to the picture depicting flies on food articles, people commented that if food is left open, not only do flies come and sit, but also spiders could fall into the food
- Cattle sheds situated close to the house is common. It is also due to the lack of space that cattle sheds are situated close to the house. Even if cattle sheds are close to houses, there is nothing wrong if they are maintained clean
- Clipping nails, washing hands using soap, washing feet after a visit to the latrine etc., are common practices. Some people also commented that they washed feet before going to bed so that their bed does not become dirty.

#### *F Hygiene Practices among School Children*

	BOYS						GIRLS					
	Thrikkunnapuzha		Puthenchira		Kuttyattoor		Thrikkunnapuzha		Puthenchira		Kuttyattoor	
	SHC	Non SHC	SHC	Non SHC	SHC	Non SHC	SHC	Non SHC	SHC	Non SHC	SHC	Non SHC
P1	15	8	10	10	8	12	15	7	10	10	12	10
P2	15	8	10	8	8	9	15	7	10	9	11	6
P3	1	4	0	0	1	0	0	0	0	0	0	0
P4	4	8	4	6	7	7	0	0	0	0	0	0
P5	4	6	2	1	0	1	2	5	3	2	0	0
P6	9	6	3	2	0	0	11	7	1	3	0	0
P7	2	8	4	6	0	0	1	6	3	4	0	0
P8	16	4	7	4	7	7	11	6	8	4	11	10
P9	0	8	5	6	3	8	0	6	5	3	2	7
P10	1	1	3	8	0	3	0	0	3	9	0	2
P11	12	5	2	9	0	5	5	2	1	6	4	5

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P12	12	3	4	0	3	4	9	6	6	3	5	7
P13	0	0	4	7	0	0	0	0	3	1	0	1
P14	15	8	5	3	9	10	15	7	4	3	13	9
P15	6	5	2	5	1	2	12	2	1	2	1	3
P16	-	-	-	-	6	0	-	-	-	-	11	3

School Health Club members and non School Health Club members participated in the Pocket Chart Exercise conducted to find out the level of awareness. The exercise was also intended to find out the extent to which the awareness is put into practice. The trustworthiness of the results from pocket chart exercise was cross checked from observations as well as informal discussions.

Information on latrine use habits among students was gathered with a Pocket-Chart exercise. Twenty six out of the 27 students who participated in the exercise voted as those using latrine. The only student who voted as not using latrine, actually did not have a latrine at home. Two among the 26 students, though did not have a latrine at home, used neighbouring relatives' latrines. Thirteen students who were not School Health Club members voted as those using latrines. Later, during discussions, after pocket-chart exercises, it was understood that actually only five students used latrines and that the other eight had given false information. However, these students said that they were aware of the advantages of using latrines from their friends who were members of the School Health Club. These students are aware of the need for use of soap for hand washing through teachers and friends who are SHC members.

With regard to results related to water handling habits, SHC members are aware that when drinking water directly from a bucket, taking water from a container with a tumbler and drinking water directly from a tap, hands should not get in contact with the water. In addition to the pictures shown during Pocket Charts exercises in AUPS, Kuttyattoor students requested to prepare an additional picture of a boy pouring water from a tumbler into the mouth. During discussions, it became known that the children were aware that drinking water should always be kept covered. During the observation all the pots were seen covered, children queuing to collect water from stand posts were seen collecting water carefully without getting in contact with water drawn.

In Puthenchira Panchayat, during Pocket Chart Exercise, children voted as not urinating in the open air. Urinals provided to boys were found to be clean and that provided for girls were not clean. It was observed that the urinal for boys was not used. During discussions based on the observation results, the children admitted that they indeed went for open air urination.

Personal hygiene practices like brushing teeth, clipping nails, bathing etc. were well within the awareness of the SHC members and non SHC members in all the three schools from Puthenchira, Thrikkunnapuzha and Kuttyattoor. During observation also, it was found that most children had clipped their nails, appeared to be clean (have taken bath), and wearing clean clothes.

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### THREE-PILE SORTING CARDS

#### WATER STORAGE

Picture - 1 Three covered pots on a raised platform. a ladle placed on top of one of the pots.

Panchayat	Response
Thrikkunnapuzha	We cover pots like this and do not keep ladles. But instead we use mugs to take water from pot We do not keep water on a bench. It is good to keep water on a raised platform.
Puthenchira	This is good practice. There is a ladle to take water from pot. All the three pots are covered and after is protected. Ladle is not placed on the floor, it is kept on the pot. This is good
Kuttyattoor	We don not use ladles always We use ladles to take rice stalk from pot. It is good to use ladles to take water from pot Usually we use mug to take water from pot

Picture - 2 Two pots kept uncovered on the floor. One ladle left on the floor. a cat dips its head in one of the pots.

Panchayat	Response
Thrikkunnapuzha	This is very bad. Though this does not happen always, if you happen to forget covering water pots, cats, crows and chicken will dip their heads in the pots.
Puthenchira	This is bad practice. Look at the cat dipping its head into the water This is because the pot is not kept covered The ladle meant to take water from the pot is left on the floor
Kuttyattoor	If water is kept on the floor, this will happen. Though we keep water pots on the floor, we keep them covered

Picture - 3 Two pots filled with water is left uncovered on the floor. Lids are placed close to the pots. Ladle is kept on the floor and leans on the wall

Panchayat	Response
Thrikkunnapuzha	Drinking water is always kept covered but we do not use ladles to take water Some times we use mugs to take water
Puthenchira	This is not clean. Look at the ladle, it is left on the floor Both the pots are left open as well. Drinking water is always kept covered.
Kuttyattoor	It is good to keep water closed but ladles should not be left on the floor. Tumblers can be used instead of ladles.





## CONDITION OF WATER SOURCES

**Picture - 4** An unclean well. Three pots are filled and kept nearby. Water is being poured from bucket into a vessel. Water spills out. Tip of the rope touches water in the pot. Tip of the woman's dress also touches water in the pot. a crow sits nearby on the ground. a child plays; dipping its hand into the pot.

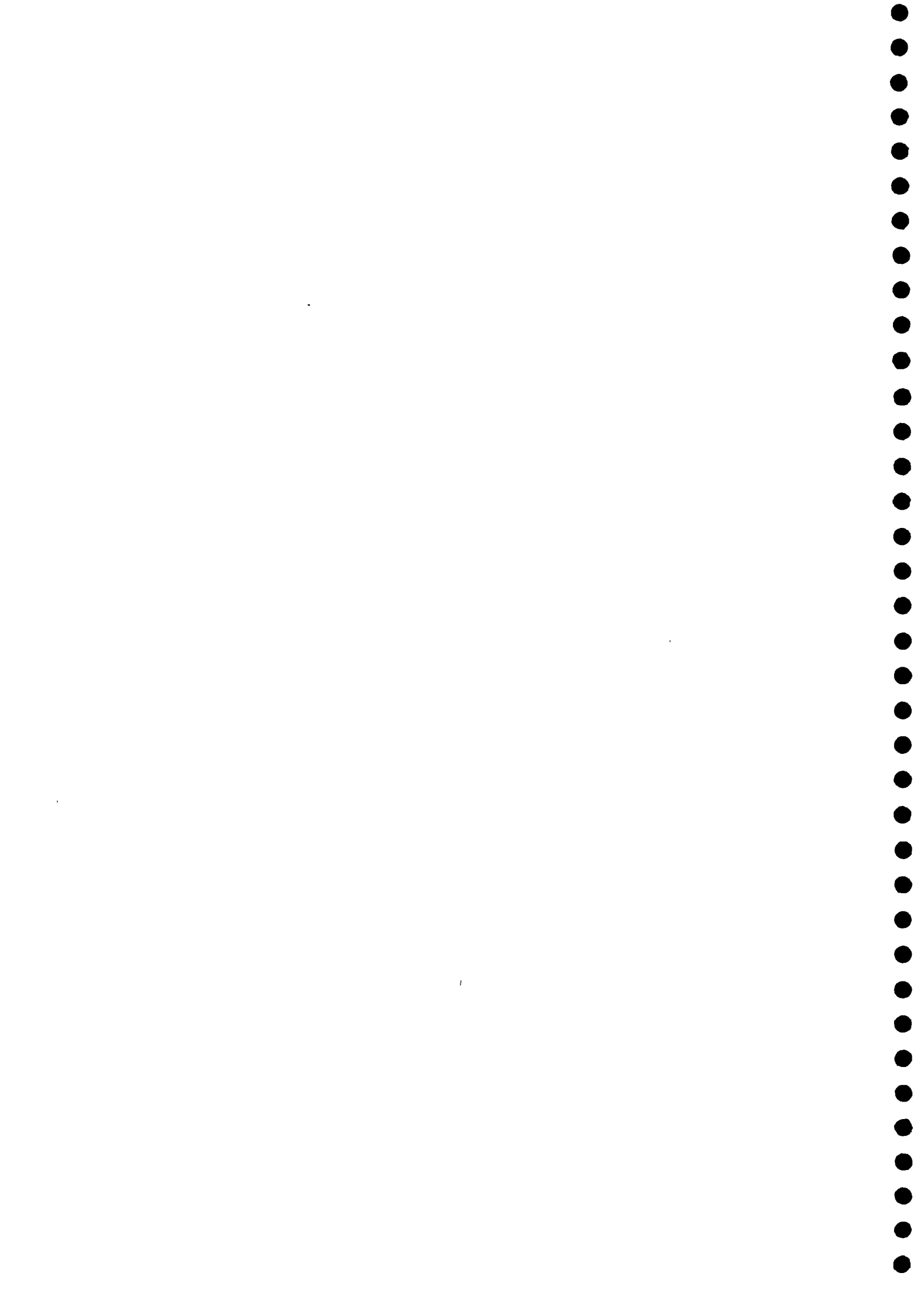
Panchayat	Response
Thrikkunnappuzha	Muddy water also falls into the vessel. This is because water from the bucket is poured from such a height; isn't it? The woman's dress also touches the water. This is not correct. Why should children be taken to the place from where water is collected. This is also common practice.
Puthenchira	This is too bad. There is absolutely no drainage facility Look at the child dipping hands in the water collected in the pot. Nobody does this with water meant for drinking
Kuttyattoor	Care should be taken, not to let children dip hands in water meant for drinking Children should be kept away when collecting water

**Picture - 5** Good well. Two pots kept one on top of another, filled with water. a woman pours water from a lower height, into a vessel without spilling. Tip of the rope is tied to a pillar of the well.

Panchayat	Response
Thrikkunnappuzha	The well has net covering. Surroundings are also clean Water is collected with care. Well also has an apron. This surely is a good well
Puthenchira	This is a good well The well has net covering, apron and proper drainage, leading to a nearby coconut palm Woman collecting water takes care not to touch water.
Kuttyattoor	Net covering for well is very good Look at the way pots are placed one on top of another, this can not be said as good

**Picture - 6** Good well. Two pots kept covered on the floor. Water being poured into a vessel is spilling out. Tip of rope is fallen into the well. a child is seen near the well.

Panchayat	Response
Thrikkunnappuzha	Well is alright. But water spilling from the vessel is not correct The tip of the rope has gone into the well, however condition of well is not bad.
Puthenchira	Can't say that the well is very clean. It sometimes happens Water being poured is spilled out. No drainage nor net covering for the well
Kuttyattoor	Care should be taken not to spill, when pouring water from the bucket



**Picture - 7** a good tap. a woman collects water in a pot. Hand does not touch water from the mouth of tap. Water does not spill from pot. a girl stands waiting for her turn.

Panchayat	Response
Thrikkunnapuzha	This is very good Not even a drop of water is wasted, but we can not take such care because there is heavy crowd If there is not much crowd, we can also do like this.
Puthenchira	This is a picture of a good tap. The hand of the woman does not touch the water at all There is no wastage of water. We are also trying to do like this
Kuttyattoor	Water supply through taps in this area is not at all regular. Taps and surroundings are very clean. It should be like this.

**Picture - 8** Tap with very poor surroundings. Water being collected in a pot placed on another. Water flows, through fingers, holding tap mouth piece. Water spills out as well. a woman combs her hair, standing near the tap. a child brushes its teeth.

Panchayat	Response
Thrikkunnapuzha	This is a very bad environment The lady could have done her hair a little far away The place found by the child is also bad We know that pots kept one on top of another is not good, but here it is common
Puthenchira	This is bad. Placing pots, one on top of another dirties water in the pot underneath Water flows into the pot through the hands of person collecting water. Hands get in contact with water when water is collected by some people It is bad to brush teeth near a tap Look at that woman combing her hair, standing near the tap We will not allow anyone to brush their teeth, standing near the tap
Kuttyattoor	We do not comb hair, standing near the tap. Is that not bad? We have seen people brushing their teeth, standing near the tap on many roadsides Pots placed one on top of another is also bad. Dirt from the pot on top will get into the pot under. But if pots are cleaned it is alright

**Picture - 9** Neat surroundings of a tap. a woman collecting water. Mouth piece of tap tied up with a string.

Panchayat	Response
Thrikkunnapuzha	This is not too bad. We tie-up a string on the mouthpiece while collecting water When water is not available from the tap or when water supply through tap is very little, we tie-up a string to the tap mouth piece
Puthenchira	Tap surroundings is good Tying string is not correct It can be seen in many places. This is a tap surrounding of mediocre cleanliness



Kuttyattoor	Tap and surrounding is clean. But the practice of tying a string to the tap mouthpiece is bad. If the string is not clean, water becomes contaminated
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**Picture - 10 Moderately clean surroundings of a well.**

Panchayat	Response
Thrikkunnapuzha	Surroundings of this well can be improved. Well can be improved by covering with a net. Most of the wells here are like this
Puthenchira	This is a well which is alright, yet can not be said as a very clean well. Well has an apron. Bucket is placed on a high place. The well has no platform, drainage or net covering Some houses have wells like this.
Kuttyattoor	<i>Picture not used.</i>

**Picture - 11 Well with neat surroundings.**

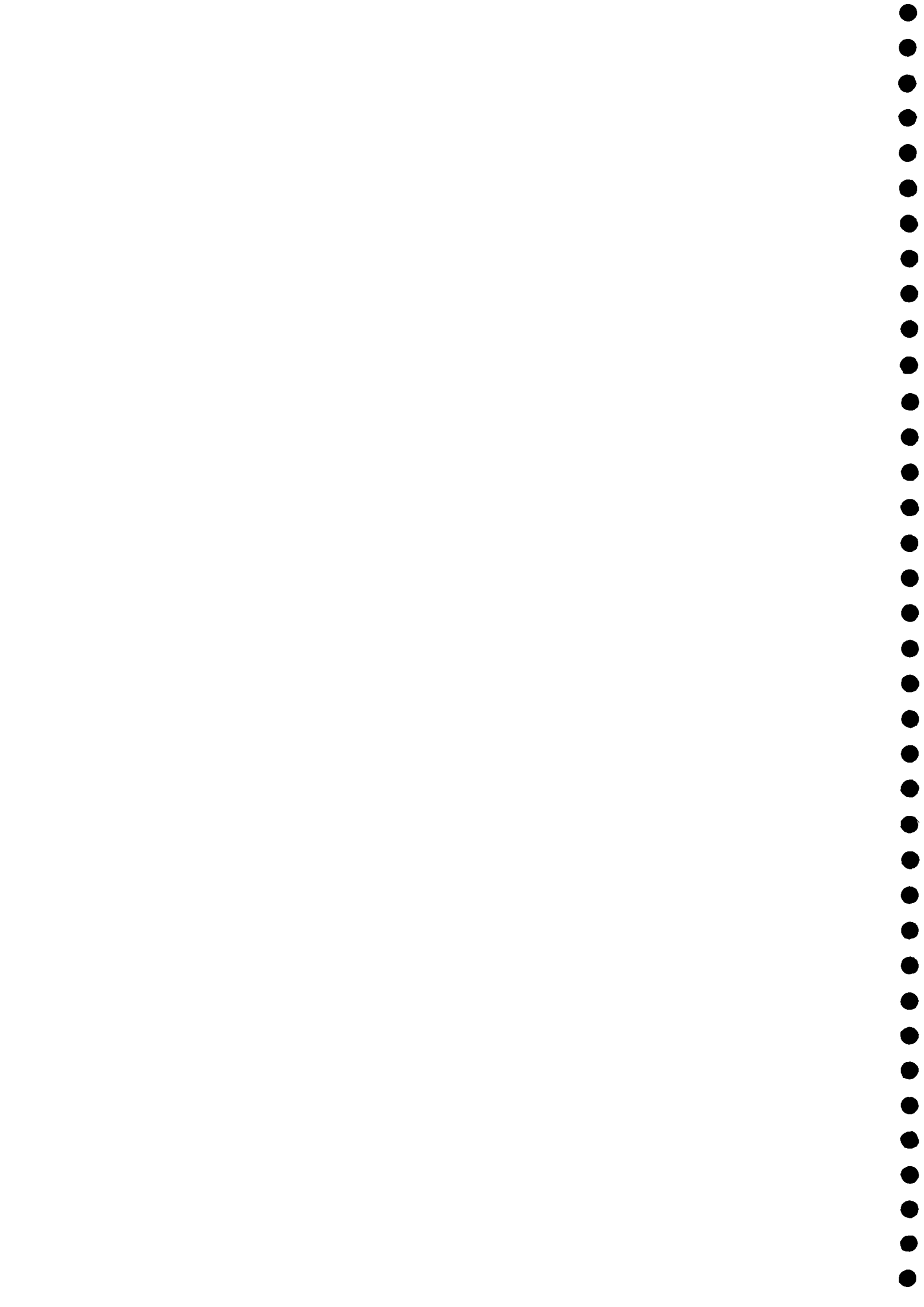
Panchayat	Response
Thrikkunnapuzha	This is a good well. It is a relief to have wells with net covering but wells are less in number in this area
Puthenchira	This is a good well with net covering, apron, platform and proper drainage. Bucket is placed of the well wall Public wells are not maintained like this. Private wells will be like this
Kuttyattoor	<i>Picture not used</i>

**Picture - 12 Unclean Well.**

Panchayat	Response
Thrikkunnapuzha	What a well is this? It's finished! Water used to bathe flows back into the well. How do we use this water to drink. Washing clothes is also near to the well. This can not be seen in this area
Puthenchira	This is a well, not at all clean. No apron, bushes all around. Somebody is bathing near the well and somebody else is washing clothes Bucket and rope is lying on slush Some wells in this area do not have net covering and apron Washing clothes near the well is also seen in this area
Kuttyattoor	<i>Picture not used</i>

**Picture - 13 a clean pond**

Panchayat	Response
Thrikkunnapuzha	This is indeed a good pond But we don't get to see such ponds in our neighbourhood Temple ponds are like this Such ponds are a boon Such ponds help in avoiding quarrels at tap point
Puthenchira	a clean pond. Ponds have steps to get in. Surroundings is also clean. There is a temple pond like this, nearby



Kuttyattoor	<i>Picture not used</i>
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**Picture - 14 An unclean pond**

Panchayat	Response
Thrikkunnapuzha	This is a dirty pond Not even good to wash cattle but if cleaned and used, the pond will be good for bathing and washing clothes There are many ponds like this in the area.
Puthenchira	This is an unclean pond a cow is seen being washed. Plenty of weeds can be seen on one side No steps to get into the pond Leaves have fallen into the pond and have started rotting a pond like this nearby is being used to wash cattle.
Kuttyattoor	<i>Picture not used</i>

**Picture - 15 Moderately clean pond**

Panchayat	Response
Thrikkunnapuzha	Neither good nor bad. Can be used if improved a little. It would have been a relief
Puthenchira	This is not a very clean pond. There are plants in the pond
Kuttyattoor	<i>Picture not used</i>

**Picture - 16 a neat tap and surroundings**

Panchayat	Response
Thrikkunnapuzha	Because it has good drainage, the tap is good
Puthenchira	Tap is good - surroundings neat, platform is good with proper drainage
Kuttyattoor	<i>Picture not used</i>

**Picture - 17 a leaking tap**

Panchayat	Response
Thrikkunnapuzha	This tap is very bad. It is leaking. Water is stagnant around which will cause diseases
Puthenchira	It is bad because it is leaking Water is stagnant without proper drainage. There are plants and bushes around the tap and the mouth piece of the tap is damaged
Kuttyattoor	<i>Picture not used</i>





**Picture - 18 a tap without proper drainage**

Panchayat	Response
Thrikkunnapuzha	Here some taps are like this with water flowing out
Puthenchira	Somewhat neat but not drainage
Kuttyattoor	<i>Picture not used</i>

**SANITATION CONDITION & HYGIENE PRACTICES**

**Picture - 1 a woman washing hands using soap, outside a latrine**

Panchayat	Response
Thrikkunnapuzha	We know this is a good practice. If water and soap is kept near the latrine, we will feel like doing this.
Puthenchira	This is a very good practice. Most of us do this.
Kuttyattoor	Some people do this. It is good to wash hands using soap, but most often we do not remember to do this. Some people said, they do not do this when in a hurry.

**Picture - 2 a woman washes her hands, outside a latrine using water only**

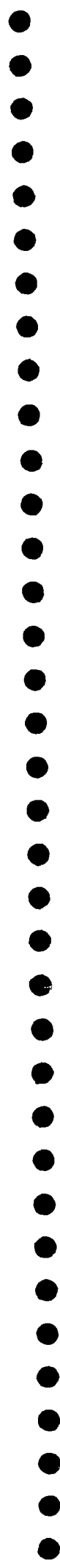
Panchayat	Response
Thrikkunnapuzha	This is very common in this area. Even though we know that soap should be used to wash hands, most people do not do this.
Puthenchira	This woman washes her hands using water only. Some other people also do it like this.
Kuttyattoor	We do it like this sometimes. Children just wash their hands. It is good to wash hands using soap.

**Picture - 3 a woman walking out of a latrine.**

Panchayat	Response
Thrikkunnapuzha	This is not at all correct. How do we know that this woman has washed her hands? She must have just wet her hands. We don't think there are people like this in this area.
Puthenchira	This woman walks out of the latrine without washing her hands. This is a dirty practice.
Kuttyattoor	No body walks out of the latrine without washing hands.

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**Picture - 4 a woman pour water out of a mug into the closet**

Panchayat	Response
Thrikkunnapuzha	This is incorrect We get satisfaction only if water is poured out of a bucket.
Puthenchira	It is alright if water is poured out of a mug, only it must be poured many times
Kuttyattoor	Some times excreta does not get washed away if water is poured out of a mug. We pour water out of a bucket

**Picture - 5 a woman pours water out of a bucket in to the closet**

Panchayat	Response
Thrikkunnapuzha	We clean latrines like this. Excreta gets cleaned if water is poured out like this
Puthenchira	The woman pours water out of the bucket from a great height Excreta gets washed away very cleanly This the correct way to clean latrines
Kuttyattoor	Excreta gets washed away very well only if water is poured from such a height

**Picture - 6 Excreta in water seal**

Panchayat	Response
Thrikkunnapuzha	This is because of carelessness. This happens when children use latrines We know this is not good
Puthenchira	This is too bad There was little water poured. This happens some times in some houses.
Kuttyattoor	Excreta left in the closet like this is bad. We clean latrines by pounng water Children do not take enough care some times

**Picture - 7 Sanitary latrine**

Panchayat	Response
Thrikkunnapuzha	This is a good latrine SEU has made such latrnes in this area.
Puthenchira	Oh! This is a very good latrne There is brush and water inside. Soap and water kept outside. Closet is sparkling Surrounding is also clean Most houses keep their latrines clean but some houses do not keep them clean
Kuttyattoor	It is good to store water and a brush in the latrne But it is not always possible to store water in the latrine



**Picture - 8 Dilapidated latrine**

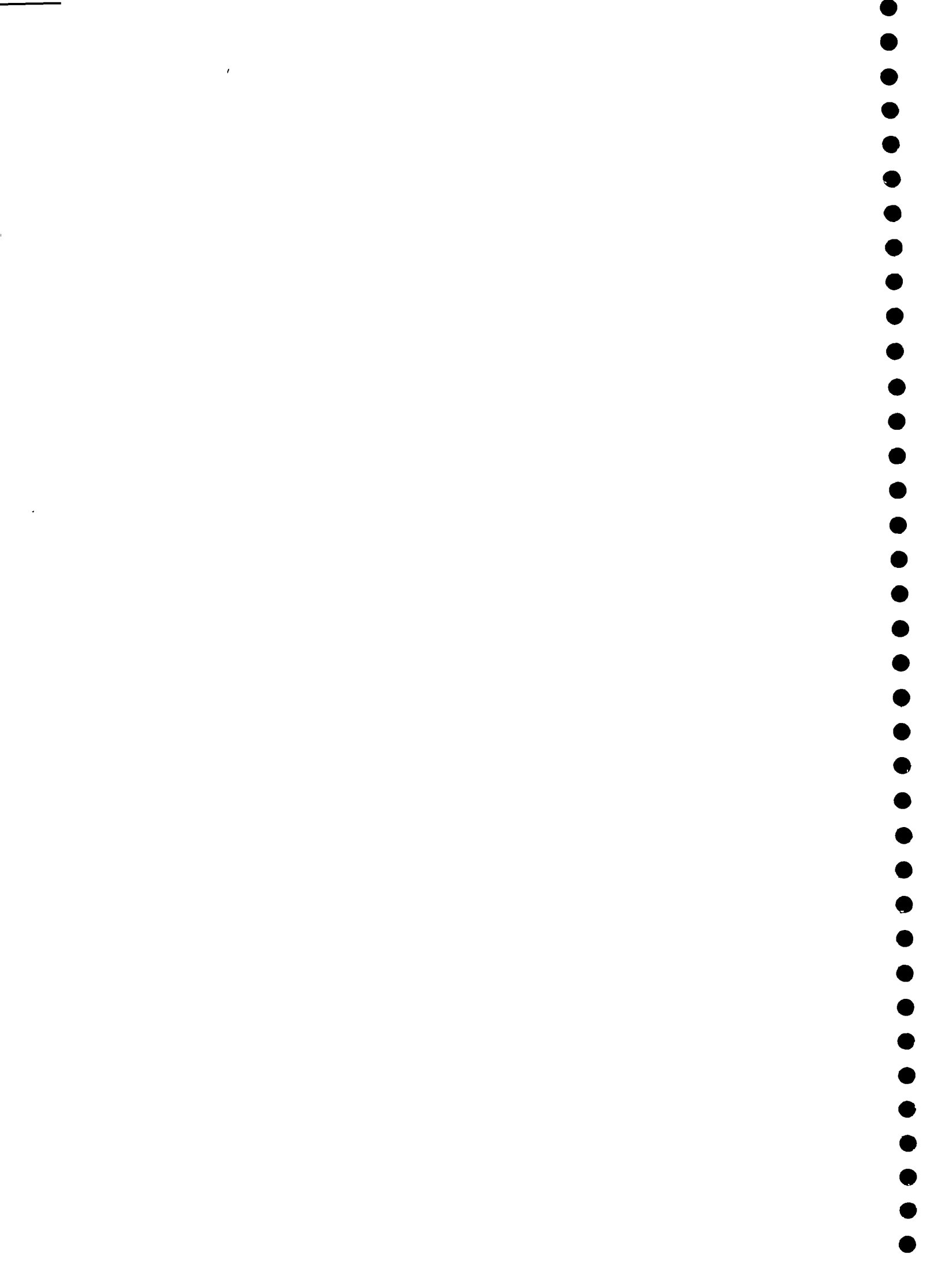
Panchayat	Response
Thrikkunnapuzha	No such latrines in this area. It is better to go open-air than going to such a latrine.
Puthenchira	Oh! What a shame, is this a latrine? No water, no soap, no brush We all have very good latrines.
Kuttyattoor	This is a dirty latrine indeed. Even if there is not enough money, it is not difficult to keep latrine clean.

**Picture - 9 Latrine structure is good. No water, soap or brush.**

Panchayat	Response
Thrikkunnapuzha	This latrine is not bad. Soap, water and brush is missing It would have been good if all these were there.
Puthenchira	Though the room is good, soap, water and brush is not there We store water in the latrine. Brush may not be present in some cases.
Kuttyattoor	This latrine can not be said as good because there is no water, soap or brush. Latrine is not bad

Three-pile sorting cards exercise was carried out in Kuttyattoor and using pictures prepared on Home hygiene for pocket chart exercise Following are the results

PICTURE	Classification	RESPONSE
Dirty kitchen,	In between	Kitchen is not good
Vessels thrown carelessly,	Bad	
Vegetables handled carefully,	Good	
Vegetables washed after chopping,	Good	
Flies on open food,	Bad	Food articles should not be left open
Food kept covered,	Good	
Children the ground,	Bad	Rarely seen
Dog dipping head on vessels,	Bad	Vessels should not be throw carelessly around Seen in many places
Waste water drainage from kitchen,	Bad	Common scene
House and cattle shed nearby,	Bad	Seen in some houses
Hand being washed using soap,	Good	
Nails being clipped,	Good	Bad if done inside house
Washing clothes,	Good	



Garbage disposal,	In between	Should have a separate place
Garbage being burnt out,	Good	Not done everyday
Washing feet,	Good	
Kitchen waste not removed	Bad	

### Gender Task Analysis

#### Picture 1 - Woman Collecting Water

Puthenchira	a B	Both males and females collect water Here only women collect water since males go for work and they don't get time
Thrikkunnapuzha	a B	90% women are collecting water Few of the men also collect water
Kuttyattoor	a B	Always women collect water Gents take water for their own needs Mostly women collect water

#### Picture 2 - a woman bathing a child

Puthenchira	a B	Only when women are absent, men do this This is a woman's job Men also do this but women do this with more responsibility
Thrikkunnapuzha	a	Women bathe the children
Kuttyattoor		

#### Picture 3 - a man giving food to a child

Puthenchira	a B	Women do it Men also should do it Both men and women do it. Here very rarely men do it
Thrikkunnapuzha		
Kuttyattoor	a B	Only women do it Usually women do it. This is the responsibility of the mother

#### Picture 4 - a man cleaning the latrine

Puthenchira	a B	Women do this. This is a woman's job Latrines will be neat only if women do it Men don't do it Usually women do it
Thrikkunnapuzha	a B	Only women do this. Recently men also started doing it but more women do this work.
Kuttyattoor	a B	Women are doing this, men don't interfere in it. Women are doing it. But it is the responsibility of both women and men.





**Picture 5 - a woman taking her child to the latrine**

Puthenchira	a	In the absence of women, men do this. Even then it is a mother's duty.
	B	Both men and women do this
Thrikkunnapuzha	a	Only woman takes the child to the latrine
	B	Both men and women do it
Kuttyattoor		

**Picture 6 - a woman building a latrine**

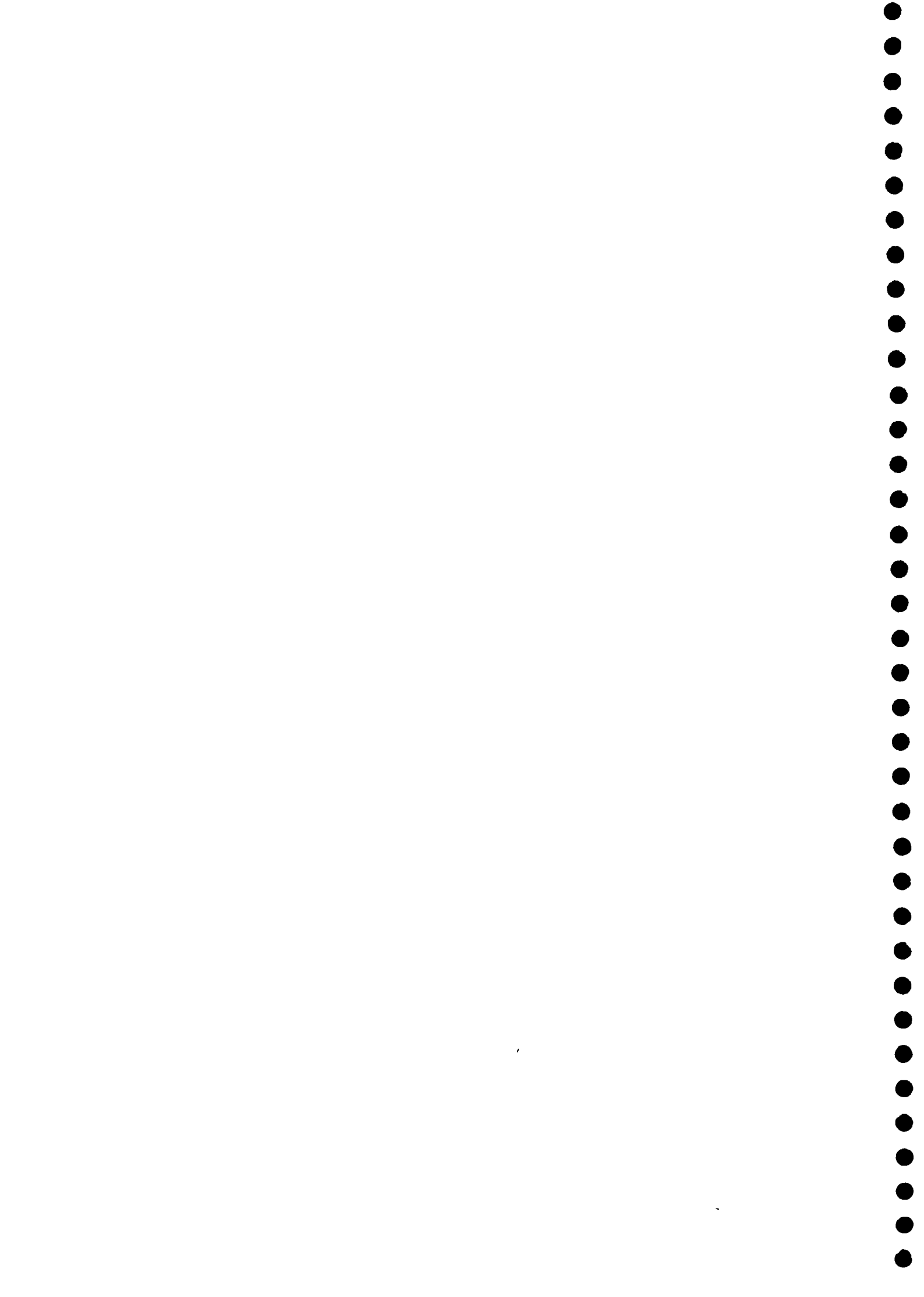
Puthenchira	a	Men do this type of work with bricks Women help them
	B	Women never do this work. This is exclusively man's job
Thrikkunnapuzha	a	Women don't do this work. It is heard only that women do it.
	B	Women do not build latrines. It is only heard
Kuttyattoor	a	Here women don't do this. But women can do this if they get trained
	B	Here women build wells, but not latrines There is nothing wrong in women doing this.

**Picture 7 - a woman cooking**

Puthenchira	a	When women are ill, men do cooking Usually women do it
	B	Only women cook Men don't even help it. It has become the responsibility of the woman Only women can cook nicely But during marriages and other functions, men do this work.
Thrikkunnapuzha	a	Women do the cooking Some times men help them
	B	This is only woman's job. Children help by carrying water
Kuttyattoor	a	Cooking is the responsibility of woman Males also help it. In place where men alone reside, they themselves do cooking

**Picture 8 - a woman cleaning the tap and surroundings**

Puthenchira	a	Men don't do it
	B	Only women do this work. Men usually don't take water, hence not cleaning also Since taking and handling water is woman's duty, she has to do the cleaning work also
Thrikkunnapuzha	a	Both men and women do this Even though women usually take water, men also help them mostly
	B	Only women are doing it. Men belonging to voluntary organisations have done it.
Kuttyattoor	a	Cleaning of taps and surroundings is done by women only Men are not interested in it



**Picture 9 - a man plastering floor with cow-dung**

Puthenchira	a B	This is women's job. Men don't do it. Men never do this Women should do work like this
Thrikkunnapuzha	a B	Women are doing this work Only women plaster the floor. Men don't do it
Kuttyattoor	a	Men never do it.

**Picture 10 - a woman removes spider-web, using a broom**

Puthenchira	a B	Men also do this. Mostly women do it. If men do this, webs recur only very less Both men and women do this
Thrikkunnapuzha	a B	Here both men and women do this work Mostly women do this Sometimes men also do it
Kuttyattoor	a	Women are doing it Men help in doing this at height If men do it, it recurs only rarely.

**Picture 11 - a woman cleaning the cattle shed**

Puthenchira	B	Women are doing this Men, since they go for work in the morning don't get time for this In some houses, men also do it
Thrikkunnapuzha	a	Here, both men and women do this
Kuttyattoor	a	Women do this work In some houses, men also do it

**Picture 12 - a woman returning from market**

Puthenchira	a B	Usually men go for shopping. This is men's job Mostly men do it When men are not busy, women do it Men bring things while returning from work in the evening Hence women need not go to market
Thrikkunnapuzha	a B	90% men go for shopping Only women go to market
Kuttyattoor	a	Usually men go to market. In a few houses, women also go for shopping.

**Picture 13 - a woman teaching in a school**

Puthenchira	a	It is good that women work as teachers Here also we have female teachers
Thrikkunnapuzha	a	Both men and women do teaching
Kuttyattoor		



2

**Picture 14 - a woman sweeping the courtyard**

Puthenchira	a	If women are away, men do it. Women do this as their first work of the day. Some men also do it.
Thrikkunnapuzha	a	Only women do this.
Kuttiyattoor		

**Picture 15 - a woman is pounding paddy**

Puthenchira	a	Both men and women do this together. Usually this is a woman's job. Some men also do it.
Thrikkunnapuzha	a	This is exclusively woman's job.
Kuttiyattoor		

**Picture 16 - a man washes vessels**

Puthenchira	a	If women are not available, men do it. In our houses, men also do it. (One group) Men don't do it (another group).
Thrikkunnapuzha	a	Usually only women do this. Sometimes men also do this. Men never wash vessels.
Kuttiyattoor		

**Picture 17 - a woman digging the ground**

Puthenchira	a	This is the work of men. Women should also do whatever they can.
Thrikkunnapuzha	a	This is entirely a man's job.
Kuttiyattoor		

**Picture 18 - a woman taking her child to hospital**

Puthenchira	a	If the child is serious, men take them to hospital. Mostly women do this.
Thrikkunnapuzha	B	Usually both mother and father take children to hospital. If man is absent, women takes the child.
Kuttiyattoor	a	Both men and women take the children to hospital. If it is a small child, better if both take the child to hospital.

**Picture 19 - a woman seen repairing a latrine**

Puthenchira		
Thrikkunnapuzha	a B	Only men do this. Here women don't do it.
Kuttiyattoor		



**Picture 20 - a man washing cattle**

Puthenchira	
Thrikkunnappuzha	
Kuttiyattoor	a Usually men do this Women also do this

**Picture 21 - a woman weaving coconut leaves**

Puthenchira	
Thrikkunnappuzha	a Here only women do this work
Kuttiyattoor	

**Picture 22 - Women making coir out of coconut husks**

Puthenchira	
Thrikkunnappuzha	Making coir is done mostly by women. Only old men do this Young men never do this.
Kuttiyattoor	

## **5 Interpretation of Results**

### **5.1 Working Hypotheses**

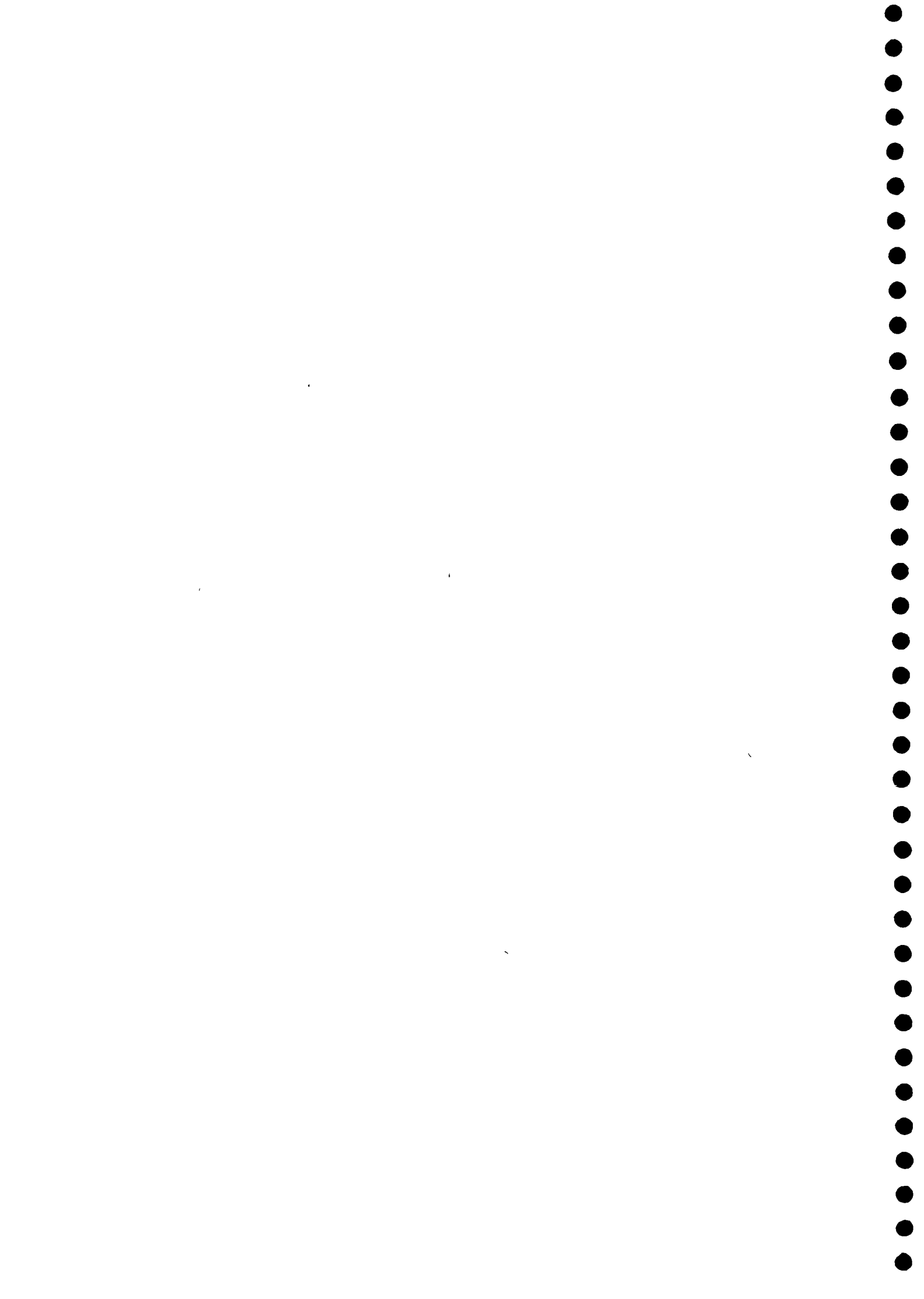
"Diarrhoeal diseases may be less prevalent in the study area because water used for drinking and cooking are stored properly"

"People in the study area very well aware of hygiene, safe water-handling and environmental sanitation practices. General neglect, heavy work-load, scarcity of adequate safe water and lack of motivation may be reasons for their present living conditions".

### **5.2 Interpretation**

Diarrhoeal diseases seems to be not at all reflected as a prominent problem in the study area. While it was environmental sanitation and related issues that was pointed out in Thrikkunnappuzha Panchayat, because of the vast stretch of water-logged area, it was scarcity of water and issues related to collection, storage and handling of water that came up in Puthenchira and Kuttyattoor panchayats. Every tool used during the study brought out the impression that people who were otherwise aware of the intricacies of environmental hazards, were careless in handling water. They did not attach importance to hygienic practices, environmental and personal, hygiene and attributed shortage of time and work load as reasons for their present practices.

It is evident from the study that people in all the three panchayats take sufficient care in storage and protection of collected water. However, during transportation of water from source to home, hands touches the water invariably. People are aware that this is not a good habit. Yet, they were not able to provide any perceivable or functional reasons. 'Dirt', in their knowledge is something that can be seen. People do not attach much importance to this aspect.





It became evident during the study that there was no dearth of awareness among the people. It was strange that they did not practice proper habits because they are either not properly motivated or they are not sure about its health implications. (Various government departments, SEU and NGOs are involved in awareness building )

Even though sanitary facilities are available, to many in the study area, in Thrikkunnappuzha, a less urbanised area (coastal) has different sanitation practices. Majority have latrine facilities but many men are not using the facilities due to various reasons. Habits related with their occupation (fishing), no bothers of disposing. It is difficult to make the people (old men) to use latrine, so the main emphasis should be given to motivation; especially youth and children. The extent of pollution caused by the use of shack latrines requires extensive research.

Though open air defecation is very prominent, people believe that defecation in shack latrine is more hazardous than open air defecation by the sea shore. The number of people using latrine in Thrikkunnappuzha is much lesser than that of Puthenchira and Kuttyattoor. It can also be seen from the information collected during house visits that the cases of diarrhoeal diseases reported, two weeks before the Study Team's visit to Thrikkunnappuzha is relatively higher than that in Puthenchira and Kuttyattoor. Whether open air defecation is the cause is not known. The reasons perceived by people in Thrikkunnappuzha is that the disease could have been caused by the fault of food and water, eating sweets etc. People in Puthenchira believe that this is because of the hot climate. In Kuttyattoor, people stated reasons such as children eating sand, breast feeding after a long gap etc. (Please see table-9).

The use of shack-latrines does not have any socio-economic relevances. Irrespective of their position in the society, people use these latrines in water-logged areas and this is basically due to the fact that there was no alternate technology available and people got accustomed to this habit. A change in the trend is taking place lately.

The people of Kerala, with a very high rate of literacy level display an equally high level of awareness and knowledge on health, hygiene, water and environmental sanitation aspects. It may be seen as a paradox that the awareness is not translated into practice.

Washing hands during critical times according to the study population are - After defecation, after cutting fish, when hands are dirty with charcoal, after washing vessels, when hands are dirty. It is also a practice in Kerala that people finish their daily chores like brushing teeth, defecation, bathing etc., in the morning and most people bathe in the morning just before leaving for work. Since defecation is performed, also in the morning, hand washing using soap happens while bathing, during which time soap is invariably used.

Most householders are not of the practice of storing water inside latrine. The reasons given were that they take water inside, whenever they visit the latrine. Some houses, where the source of water is far away, it was seen that water was stored inside latrines.

The results from the Anganwadi observation and school observation show that sources of water or collection does not have relevance in the health conditions of the population of the study area. But transportation of water from source to



home and handling of water at home definitely has implications. It may be presumed that Anganwadi assistants in some areas are not properly educated or they are not properly motivated to adopt proper hygiene practices. On the contrary, some Anganwadis display excellent conditions. Storage of water in all the Anganwadis appeared to be a mere formality. However, when it comes to handling, there is a series of flaws. It is not known whether Anganwadi practices have any health implications on children below five year age.

Mothers' meetings were instances where the level of knowledge of water-borne diseases, causes, and remedies were quoted brilliantly. This shows their level of awareness. This point gets further proved when the mothers mention precautionary measures such as the need to use boiled and cooled water, stored in clean containers, use of sanitary latrines and disposal of wastes.

School Health Club observations revealed another picture. The School Health Club members are well oriented and motivated and they also help fellow students and friends to adopt hygienic habits and practices. Exercises conducted to study the water use habits showed that all the Health Club members and at least half of the non-School Health Club members practised proper hygiene practices. Storage of water in all the schools were proper and general cleanliness was excellent. Environmental sanitation was also found to be satisfactory except that in one of the schools urination was done by students in open air.

The general finding that house surroundings were found to be clean, stems from the fact that it is common practice all over the state, to sweep house yards early in the morning. It is more a custom rather than any scientific reason.

During house visits, points that came out in group discussions or school and Anganwadi observations got cross checked. More than 50% of the households were those that practised what they said. Disposal of children's faeces, capability of children to use latrines. Children's faeces are considered hazardous by more than 60% of the householders. Almost the same percentage knew the reasons for children being affected by diarrhoeal diseases.

Purification of water before using for drinking and cooking purposes were around in Thnkkunnappuzha 90% and this was above 90% where separate vessels were used to store water for drinking and cooking. Households covering food articles and proper handling of drinking water ranged from 55 - 80%. Although most of the people are aware of the need for purification of drinking water by chlorination etc., they have, some aversion towards the odour and taste of chlorinated water. Since most people depend upon well water in most places, this point was brought up as a major aspect. People prefer well water because tap water, they say, contains chlorine, which they do not like much. A few studies conducted by SEU on these lines are also supportive of the findings.

Gender Task analyses mainly reflect cultural patterns and current practices. Very few opinions raising gender bias issues came up. However, division of labour is one aspect that comes out clearly. Water collection is mainly performed by women, however, they also admitted that men do the work if required, either to help women or for their own requirements.



## 6 Conclusions & Recommendations

### 6.1 Conclusions

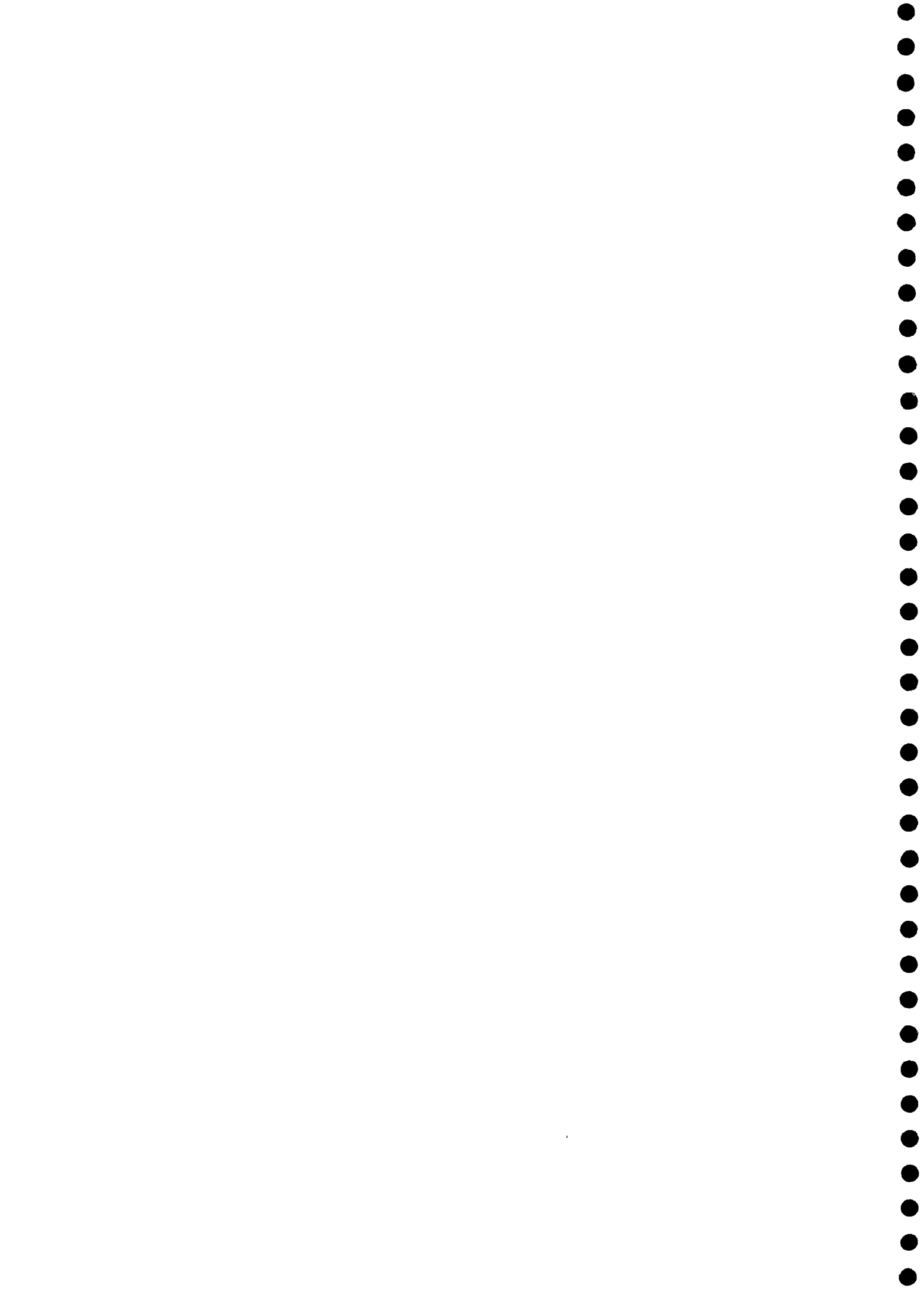
- The effectiveness of evaluation tools such as pocket chart and three pile sorting cards have been amply demonstrated in this study. Qualitative studies like the KHES can definitely put this tool to very effective use.
- The process of field testing the HEP handbook has been a highly rewarding professional experience to the KHES team and the SEU project staff.

### 6.2 Recommendations

- The cultural/psychological reasons and background for the paradox of knowledge and practice should be investigated. This could be done through a participatory promotional campaign.
- People's perception on hygienic and unhygienic situations has to be investigated as part of a follow up intervention.
- School Health Club should be given more focus as an area under water and sanitation sector.
- The results of the KHES should form the basis for conducting a series of field level seminars aimed at strengthening the concerted participatory promotional campaign.
- The whole area of *sanitation-related hygiene practices of children under five* has to be considered as a component for future health promotion activities on a priority basis.



**THROUGH THE LENS**





WATER COLLECTION & TRANSIT









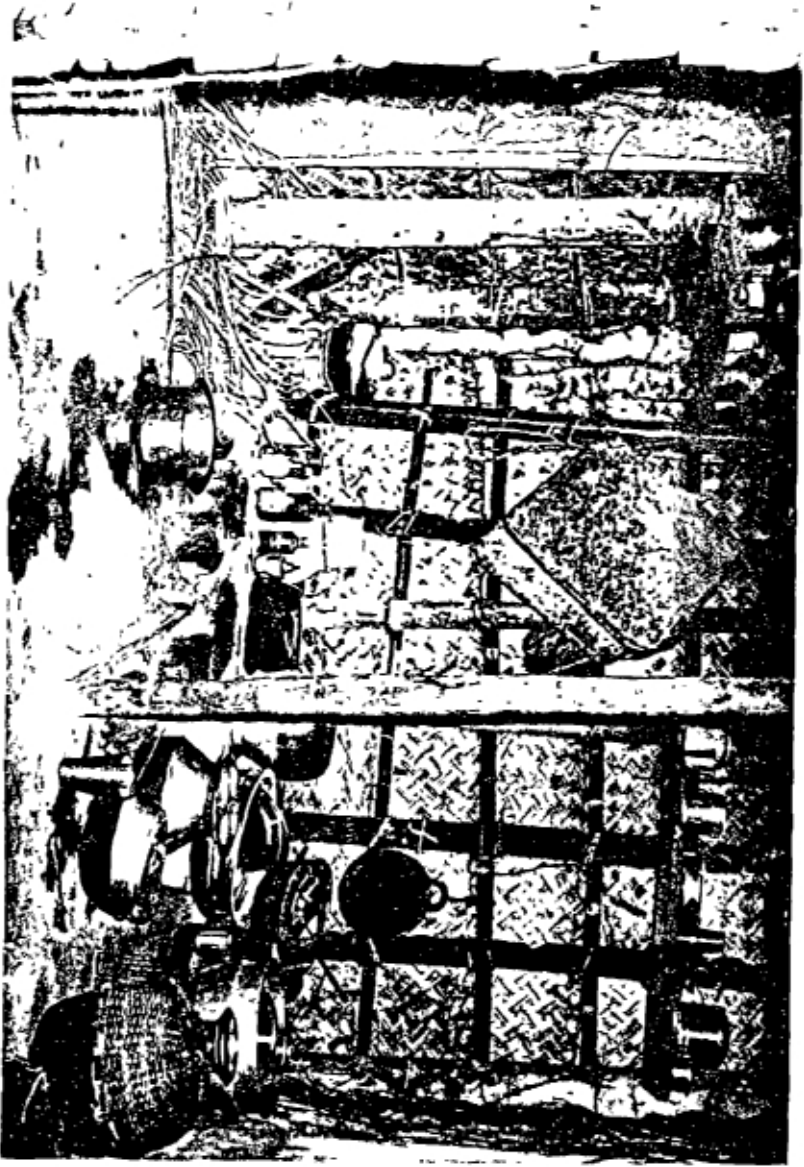
POCKET-CHART EXERCISE



THREE-PILE SORTING







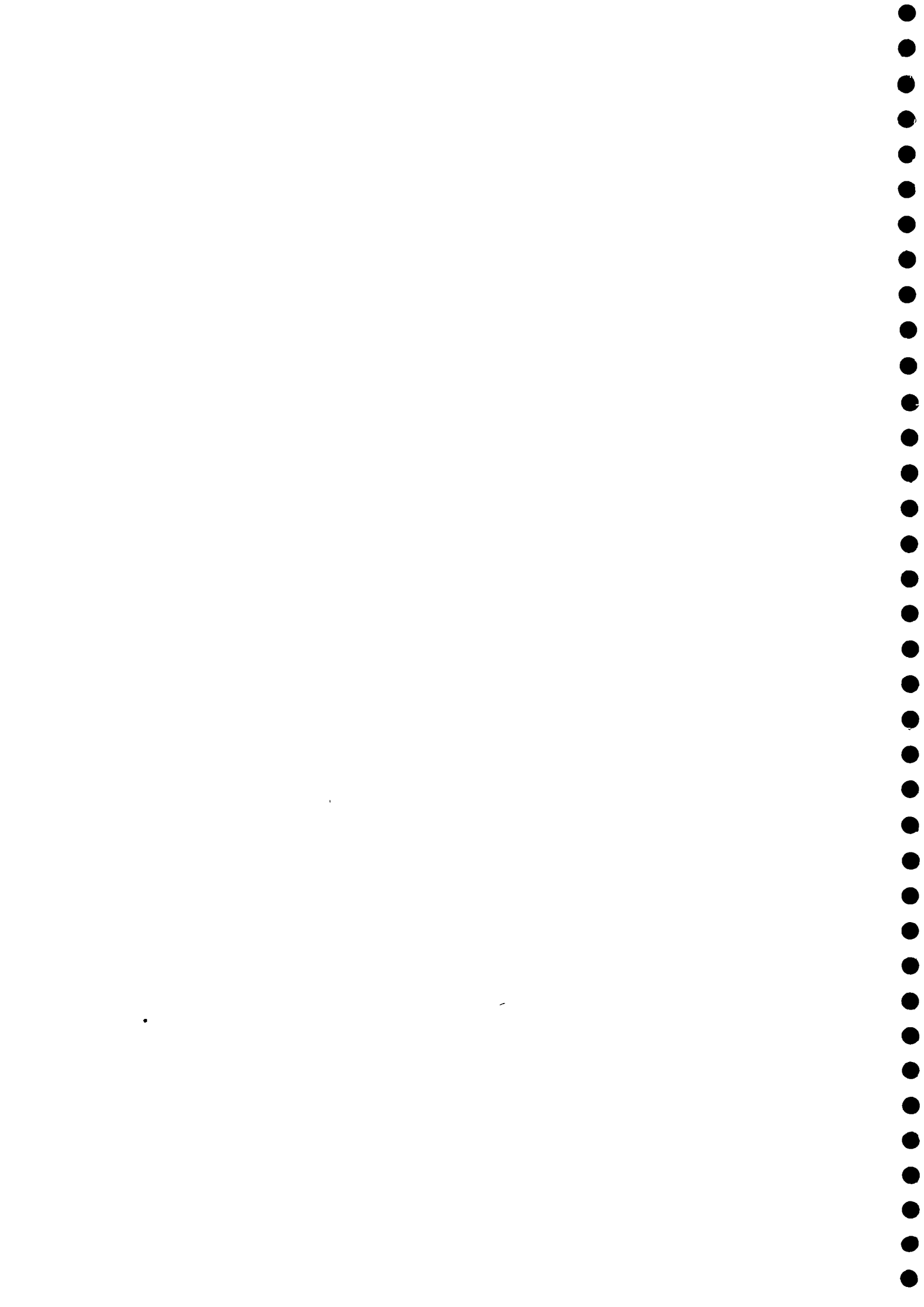
DOMESTIC SANITATION





ANGANWADI OBSERVATION

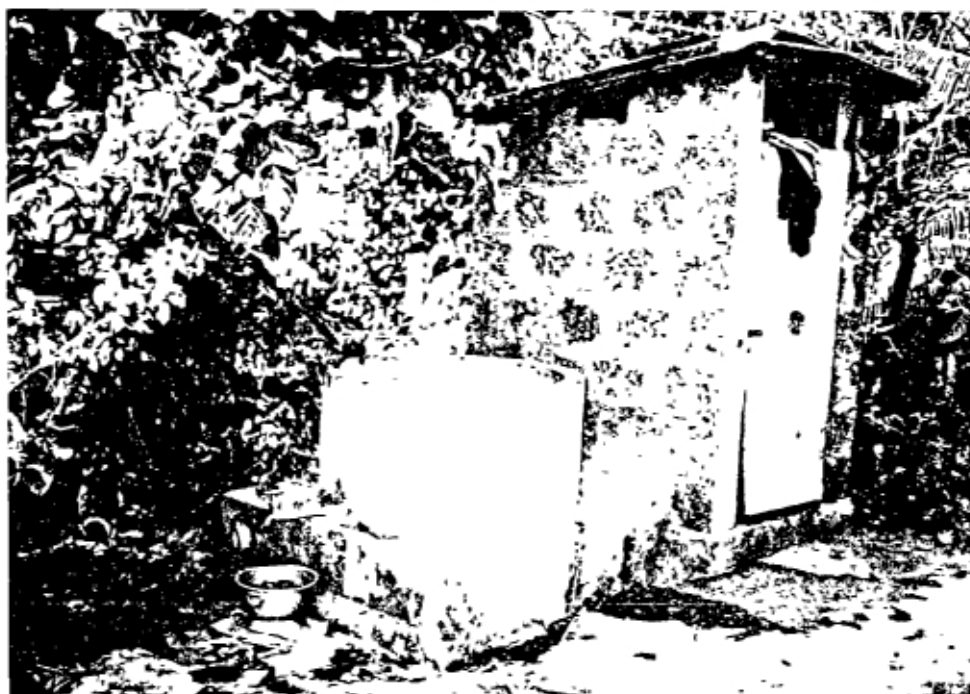


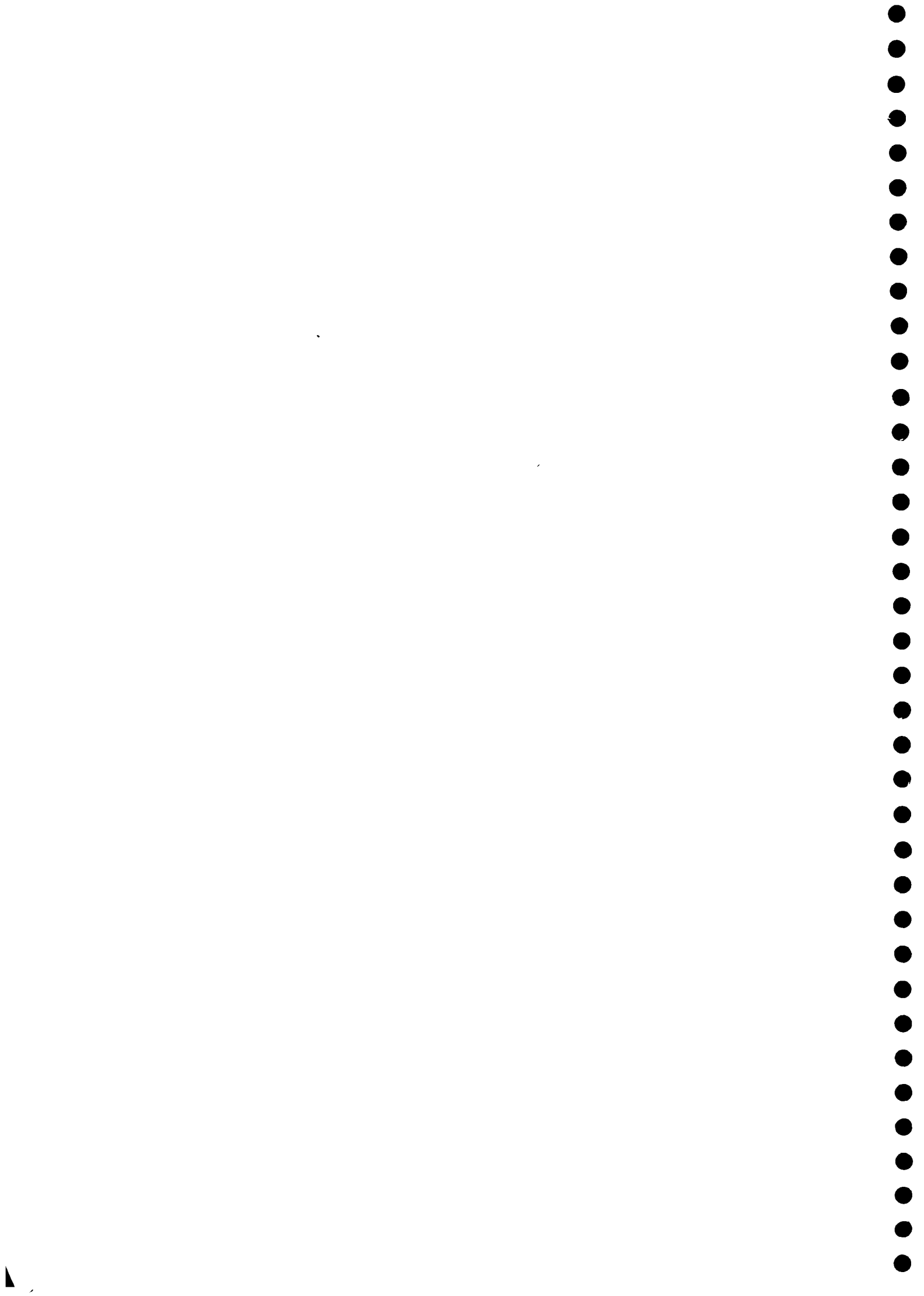


MAKE-SHIFT 'SHACK' LATRINE



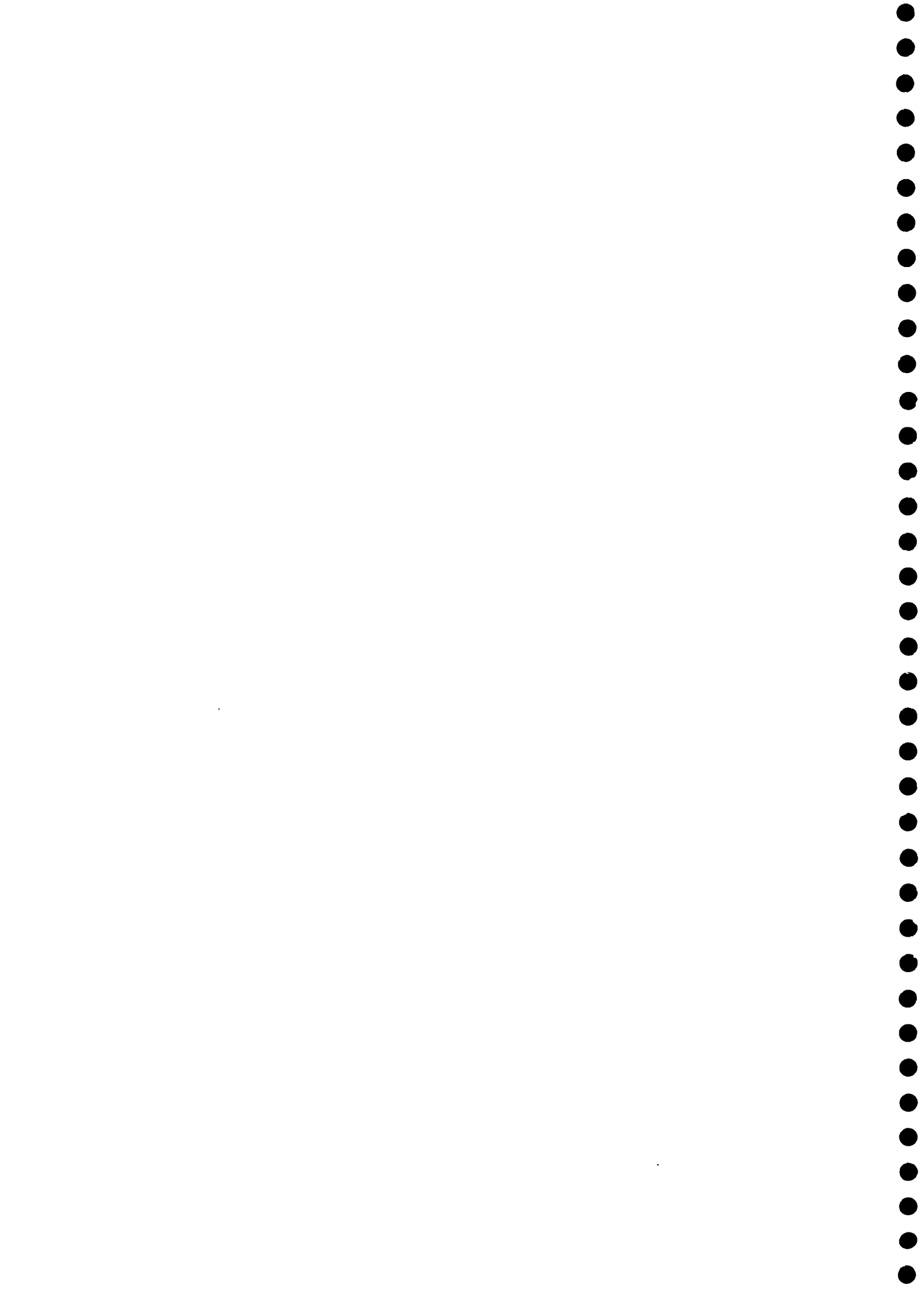
SEU LATRINE WITH A WASHING  
(LINEN WASHING PLACE ATTACHED WAS BUILT BY BENEFICIARY)





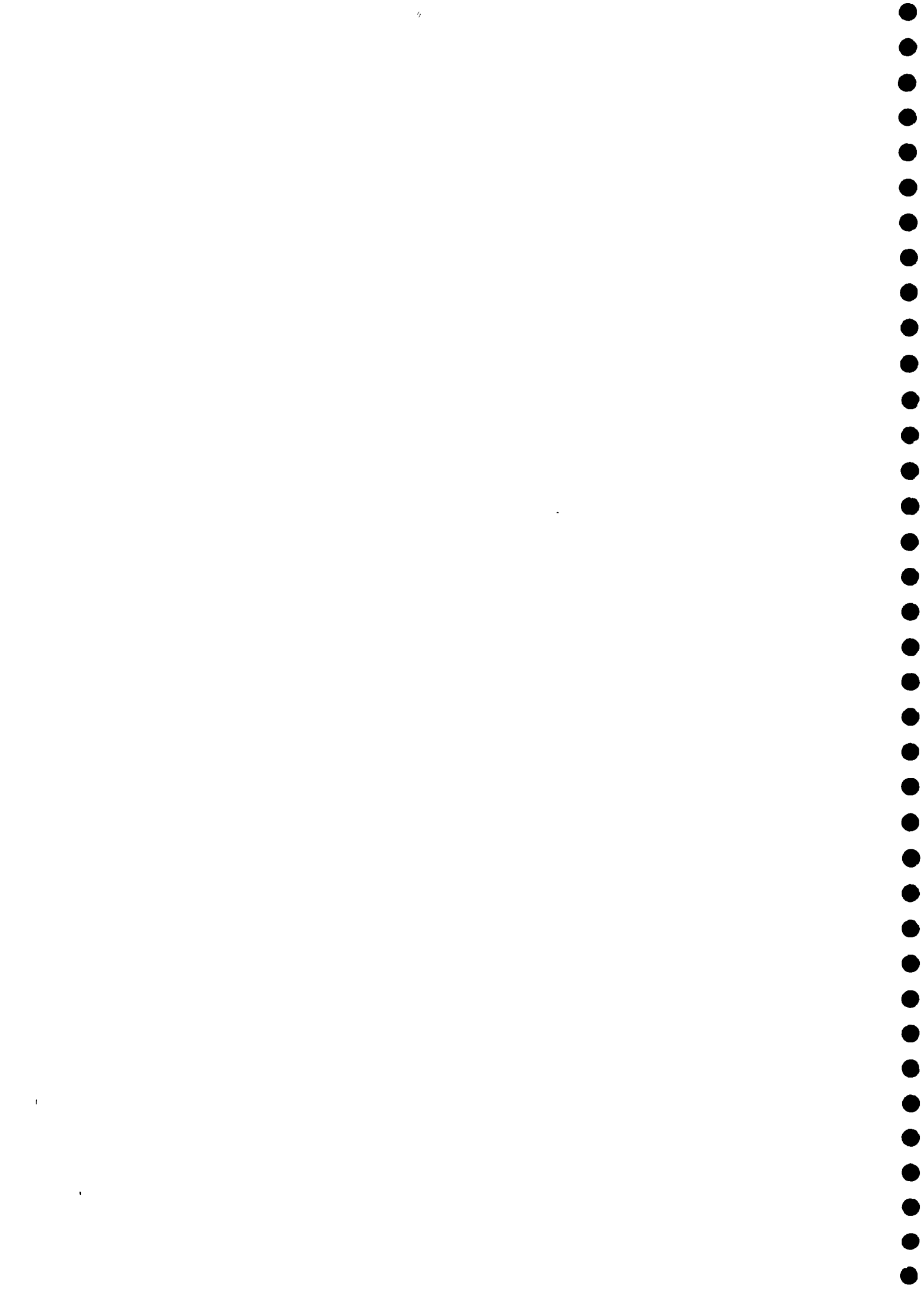
SCHOOL SANITATION





# WORK PLAN

Week programme	Specific Objectives	Methods	Tools	Remarks/Logistic arrangements.
<p>Ist week programme (4-8 Dec.)</p> <p>Material production, Workplan preparation. Combined reading &amp; discussing about the study materials.</p> <p>Pretesting the study materials.</p> <p>Reviews and debriefing of the daily activities.</p> <p>Preparation of interview schedules. structured observation guides, checklist for health walk, Anganwadi, School visits and Mothers meeting.</p> <p>Documentation.</p>	<p>To equip the study team individually and as a group to take up the responsibility of KHES in three Panchayats.</p>	<p>Group discussions</p> <p>Field visits,</p> <p>Drawings</p> <p>sharings.</p>	<p>Flash cards,</p> <p>Flip charts,</p> <p>3 pile and pocket charts etc.</p>	<p>Camera, Vehicle, Field staff supports.</p> <p>(Stationery items)</p>
<p>IInd Week (Dec. 11 - 16 95)</p> <p>Introduction to Panchayat</p> <p>Collection of preliminary data Health walk (1)</p> <p>House visit (5) Anganwadi-visit and Mothers meeting (1).</p> <p>Group meetings &amp; School visit.</p> <p>Documentation</p>	<p>To locate all existing water sources and existing sanitation facilities</p> <p>Sanitation related hygiene practices among children.</p>	<p>Health walk.</p> <p>Observation House-visits.</p> <p>Structural observation Group discussion.</p>	<p>Pocket chart</p> <p>Interview schedule.</p> <p>Pocket chart</p> <p>Three pile sorting.</p>	<p>Camera.</p> <p>"</p>
<p>IIIrd week (18-23 Dec. 95)</p> <p>Health walk (1)</p> <p>Group meetings (2).</p> <p>House visit (10)</p> <p>Anganwadi visit (1)</p> <p>Mothers meeting (1)</p> <p>Documentation.</p>	<p>Hygiene conditions of water services and domestic hygiene practices.</p>	<p>Health walk,</p> <p>Participatory-discussions Informal interviews.</p> <p>Observation Housevisits</p>	<p>Pocket chart</p> <p>Three pile sorting</p>	<p>"</p>
<p>IVth week (26-31 Dec.95)</p> <p>Health walk (1)</p> <p>Group meetings (1)</p> <p>House visit (10)</p>	<p>Collection, Storage &amp; handling of water.</p>	<p>Spot/leak observation Participatory discussion, Interviews</p>	<p>Three pile sorting</p>	<p>"</p>
<p>Ist week (1-6 Jan. 96)</p> <p>House visit (10)</p> <p>Seasonal Calendar History line Group meet (2).</p> <p>Documentation, Gender</p> <p>Task analysis</p>	<p>Functionality, Use and upkeep of latines &amp; reasons why certain hygiene practices are adopted or not adopted</p>	<p>Interview schedule</p> <p>History line</p> <p>Seasonal calendar.</p>	<p>Flip charts</p>	<p>"</p> <p>"</p>





## Diary of Activities

*Thrikkunnapuzha Panchayat*

Study Team: Mr.B.Manoharan, Mr.K.A.Francis  
 Local Assistants: Miss.Biji and Mrs.Ajitha

11 December 1995

- 9.30am Reported at SEU Office, Kollam. Study Team, together with Local Coordinator, Mrs.Vijayalakshmi proceeded to the Panchayat Office of the Study area.
- 11.00am Discussions with Panchayat President. Informed panchayat officials about the three wards, selected for the study. SEU Field Organiser Mr.Saji Sebastian and Sanitation Supervisor Mr.Rajan also attended the meeting.
- Miss.Biji and Mrs.Ajitha, both active Ward Water Committee members selected as Local Assistants for the KHES.
- Collected data on panchayat, related information from the Panchayat Office. Meeting concluded at 1.10 pm.
- 2.00pm Travel to Ward I and IX together with the Local Coordinator.
- 2.30pm Ward I - *Pathiyankara*. Visited a house.
- 2.45pm Visited an Anganwadi (#78)
- 3.00pm Visited another house
- 4.00pm Visited two houses and contacted two Ward Water Committee members.
- 5.00pm Returned to Kollam.

12 December 1995

- 9.30am B.Manoharan and K.A.Francis reported at Panchayat Office.Oriented Local Assistants for the study.
- 1.15pm Decided on tools to be used in the study and organised them, ready for use.
- 3.00pm Visited Ward I. Talked to a few ladies on the availability of water and handling water.
- 4.30pm Healthwalk in Ward I, *Pathiyankara* (coastal area).
- 5.00pm Prepared Pocket Chart.
- 7.15pm Returned to camp.
- 9.15pm - 11.15pm Documentation



13 December 1995

9.00am Reported at panchayat office. Planned work for the day with Local Assistants

9.50am Visited three houses in Ward I (first round)

12.30pm Visited Anganwadi (#78)

2.00pm 7 houses in Ward I visited (first round)

5.15pm Returned to camp

8.30 - 11.30pm Documentation

14 December 1995

7.00am Planned work for day. Organised and reset tools.

10.00am Reported at Panchayat Office.

10.10am Visit Ward IX (Kattucity) for house visits (first round and Anganwadi visit.

10.30am Anganwadi visit (#103). Discussions with Anganwadi teacher and observed surroundings (Structured observation schedules.

11.00am House visit. 11 houses (first round)

3.00pm Healthwalk Ward IX.

5.30pm Returned to camp.

8.00pm - 10.00pm Documentation

10.00pm - 11.00pm Preparation of work and materials for next day.

15 December 1995

9.45am Reported at SEU Office for Periodic Staff meeting.

16 December 1995

9.45am Reported at Panchayat Office

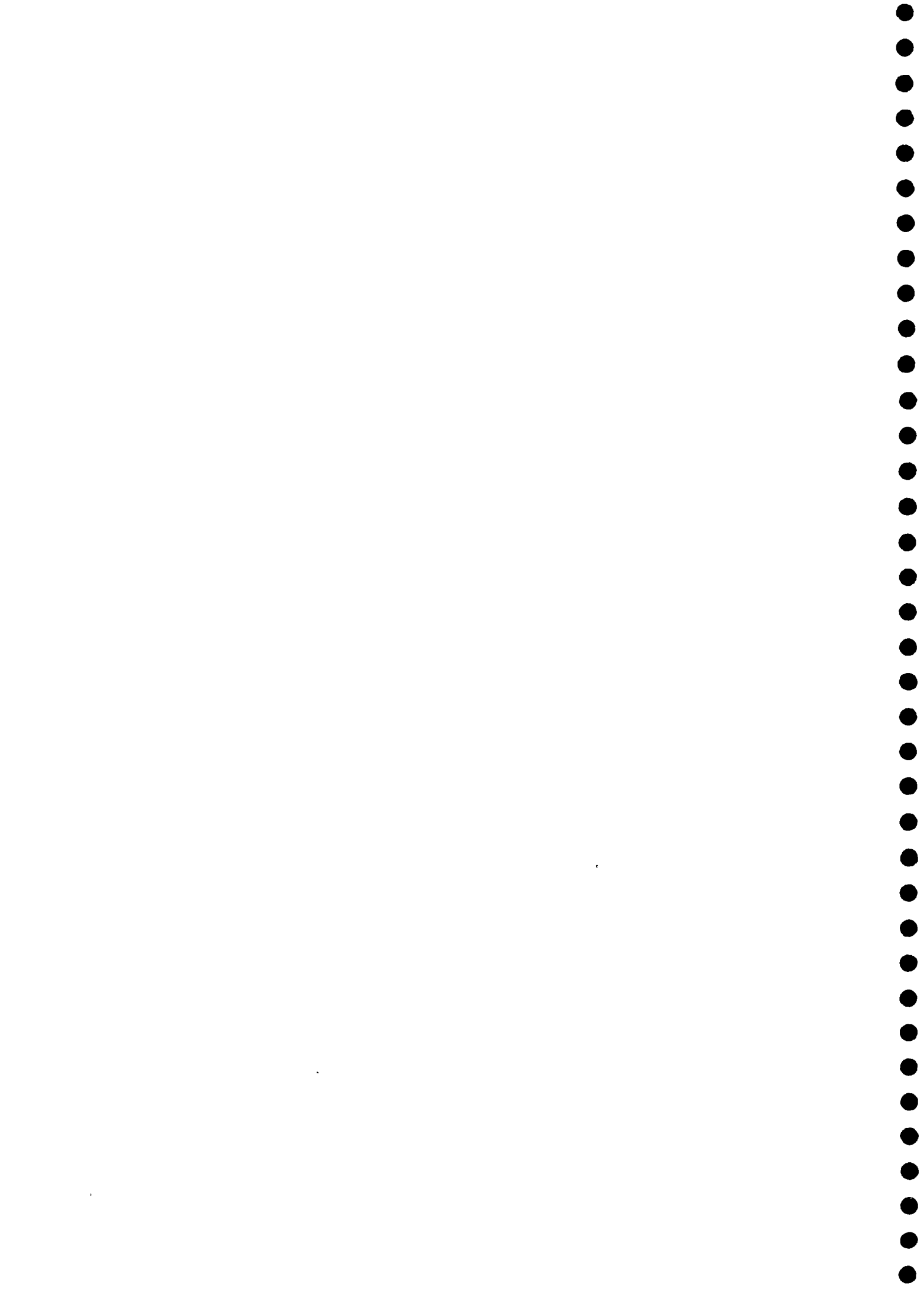
9.50am Planned work for the day together with Local Assistants

10.30am House visit three houses (second round) Ward I.

2.45pm Preparations for Mothers' meeting and Group discussions.

3.00pm Mothers meeting at Anganwadi (#78), Ward I.

4.40pm Group Discussion at Anganwadi (#78), Ward I.



6.50pm Returned to camp.

17 December 1995 (Sunday)

9.00am - 1.00pm Documentation.

18 December 1995

10.00am - 2.30pm SEU Office Kollam.

2.35pm Departure to Trichur to attend mid-term review of KHES.

8.00pm Arrived Trichur

19 December 1995

9.00am Review meeting. Presented report from Thrikkunnapuzha.

1.00pm LUNCH

1.45pm Review meeting continued

4.30pm Meeting concluded

20 December 1995

5.00am Travel to Thrikkunnapuzha

12.30pm Arrived Thrikkunnapuzha

1.30pm Lunch

2.30pm Debriefing with Local Assistants

4.00pm Planning and Preparation for next days work

21 December 1995

7.00am Healthwalk Ward IX

10.00am Housevisit Ward IX

12.00noon 2 houses visited (second round)

12.30pm Anganwadi Visit (#83) Observed noon meal proceedings.

1.00pm Continued housevisit

3.50pm Mothers' meeting - Held at Anganwadi

4.30pm Group Discussion - Held at *Kattucity*

6.15pm Return to camp.

9.00 - 10.30pm Documentation



22 December 1995

- 8.30am Continued documentation of previous day's work.
- 11.15am Travel to SEU Kollam Office Debriefing with Programme Officer Mrs.Kochurani Mathew

23 December 1995 - 26 December 1995

CHRISTMAS HOLIDAYS (Study team took Leave)

27 December 1995

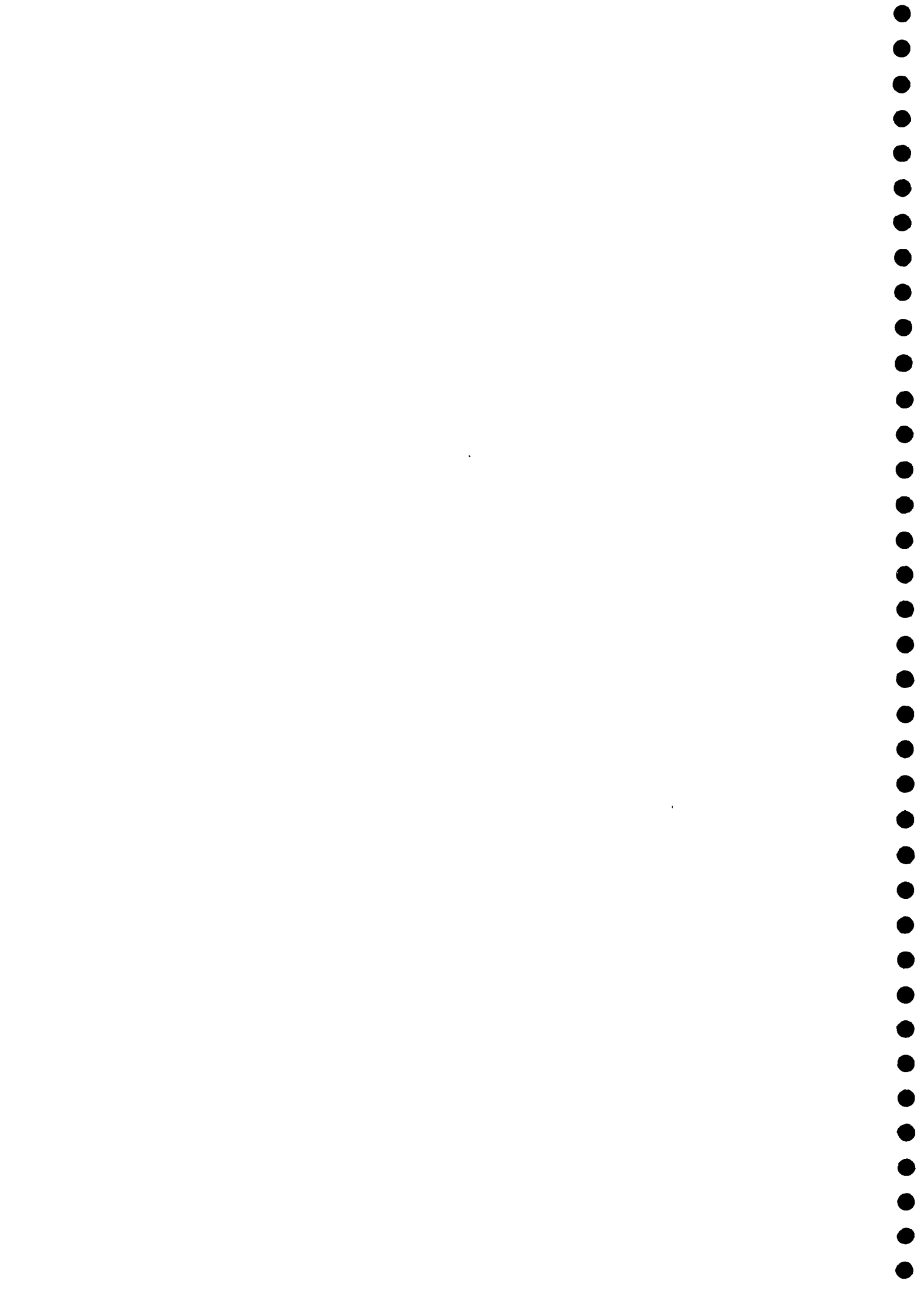
- 9.30am Reported at Panchayat Office. Discussions with Local Assistants. Plan work for the day and continuation of KHES.
- 2.45pm Anganwadi visit (#82) in Ward III
- 3.20pm House visits. Five houses.
- 9.15pm - 11.45pm Documentation

28 December 1995

- 10.00am Reported at Panchayat Office. Discussions with Local Assistants Preparations for day's work.
- 11.45am House visits
- 2.30pm Three houses visited
- 2.45pm - 3.30pm Break
- 3.30pm Housevisit continues
- 4.30pm - 7.45pm Healthwalk in Ward III
- 8.30pm - 11.45pm Documentation

29 December 1995

- 6.15am - 7.45am Healthwalk Ward I
- 9.30am Report at panchayat Office
- 10.15am Visited Anganwadi #78 to arrange venue for group discussions
- 10.30am House visits. Two houses.
- 2.45pm House visit continues. Five houses.
- 9.30pm - 12.15pm Documentation





30 December 1995

9.00am Discussions with Local Assistants  
10.00am House Visit. Four houses in Ward I.  
1.35pm - 2.30pm Break  
3.00pm House Visit continues. Three houses.  
5.45pm - 6.15pm Recapitulation of the day's work.  
6.15pm Return to camp.  
9.00pm - 11.30pm Documentation

31 December 1995

8.30am House visit. 8 houses in Ward IX visited.  
3.45pm - 4.15pm Visited a Private Hospital.  
4.30pm Return to camp.  
9.00pm - 11.00pm Documentation

1 January 1996

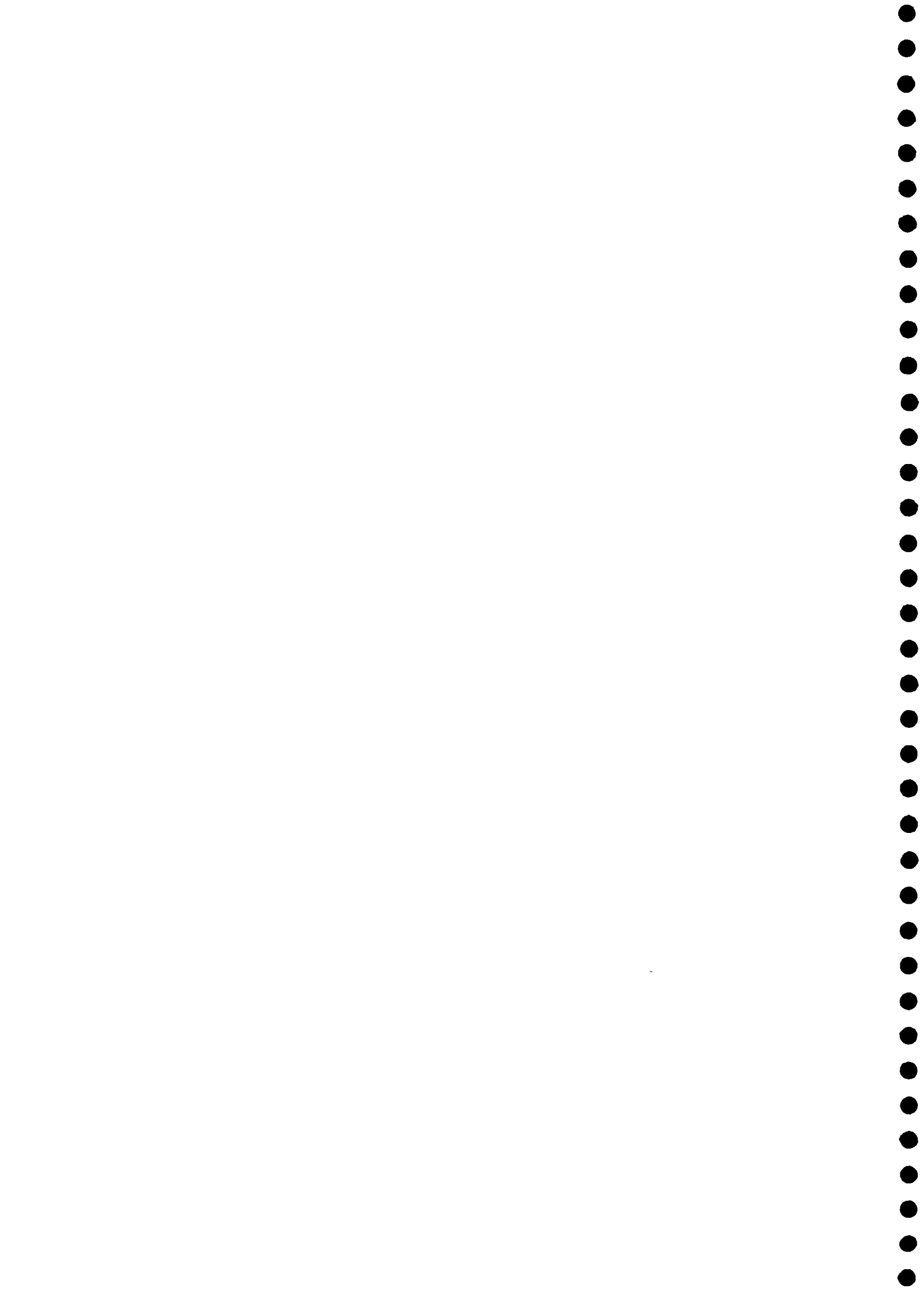
6.30am - 8.00am Documentation continues.  
9.30am Reported at Panchayat Office.  
10.00am Visited Primary Health centre (PHC)  
11.00am - 1.00pm Discussions with SEU Field staff (SEU Programme)  
1.30pm Left for SEU office Kollam. Debriefing with Programme Officer Mrs. Kochurani Mathew on KHES.

2 January 1996

9.00am Reporting at Panchayat Office. Meet Local Assistants.  
10.00am Visited PHC for Data collection.  
4.00pm - 7.00pm Healthwalk in ward IX.  
9.00pm - 11.45pm Documentation.

3 January 1996

9.00am Discussions with Local Assistants. Preparations for day's work.  
10.00am School Visit. M.T. UPS Pathiyankara.



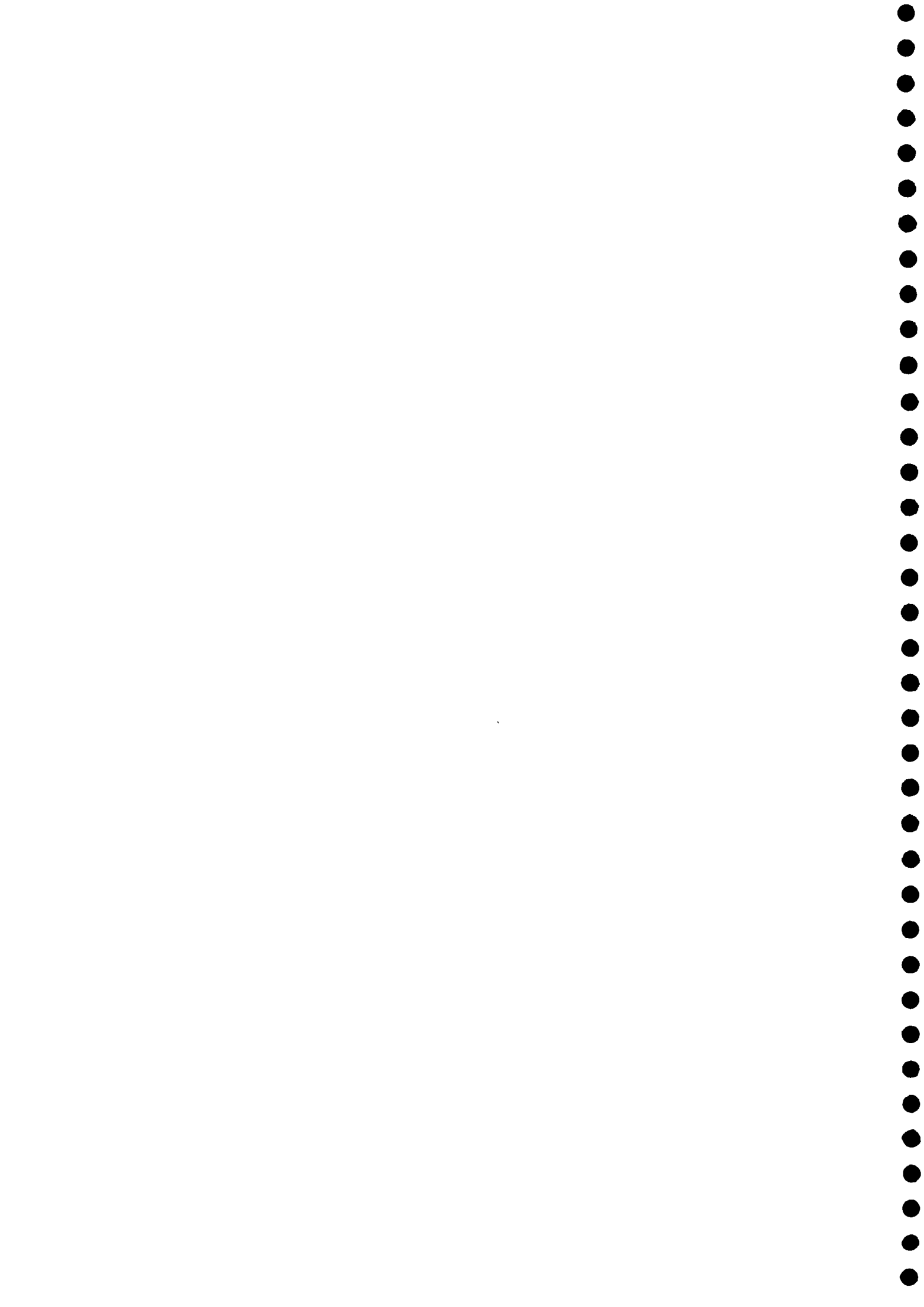
11.00am Back to Panchayat Office.  
12.15pm Attended Panchayat Committee meeting. Historyline,  
Seasonal Calendar exercises conducted.  
2.00pm Anganwadi visit at Ward III.  
2.30pm - 3.55pm Mothers' meeting  
4.25pm Group Discussion in Ward III  
7.40pm Return to camp.  
9.30pm - 12.15 Documentation.

4 January 1996

9.30am - 10.30am Discussions with Local Assistants. Preparation  
for day's work.  
10.45am - 11.45am Focus Group Discussion  
12.45 pm Visited PHC for data collection (concerned person absent)  
2.00pm Discussions with Local Assistants  
2.30pm Group Discussion Anganwadi #83  
4.30pm - 6.00pm Discussions with Panchayat personnel  
6.00pm Return to camp  
9.00pm - 1.15pm Documentation

5 January 1996

9.00am Panchayat Office. Discussions with Local Assistants and  
Panchayat Officials.  
10.15am -12.40pm School Visit MT UPS, Pathiyankara. Discussions  
with School Health Club (SHC) students, non  
SHC students and teachers.  
1.00pm PHC visit (Staff not present)  
2.30pm - 4.30pm Core Group discussion. Discussions with two groups.  
One on knowledge and practice with regard to  
environmental sanitation and the other on Changes  
in conditions of panchayat subsequent to SEU  
intervention.  
4.30pm Seasonal Calendar exercise among Core Group.  
5.15pm Return to camp.  
9.30pm -12.15 Documentation.



6 January 1996

9.15am - 1.20pm Colony visit. Five houses visited  
1.30pm - 2.00pm Discussion with Local Assistants.  
3.00pm Panchayat Office. Discussions with SEU Sanitation Supervisor.  
3.30pm Returned to camp.  
9.15pm - 11pm Documentation

7 January 1996

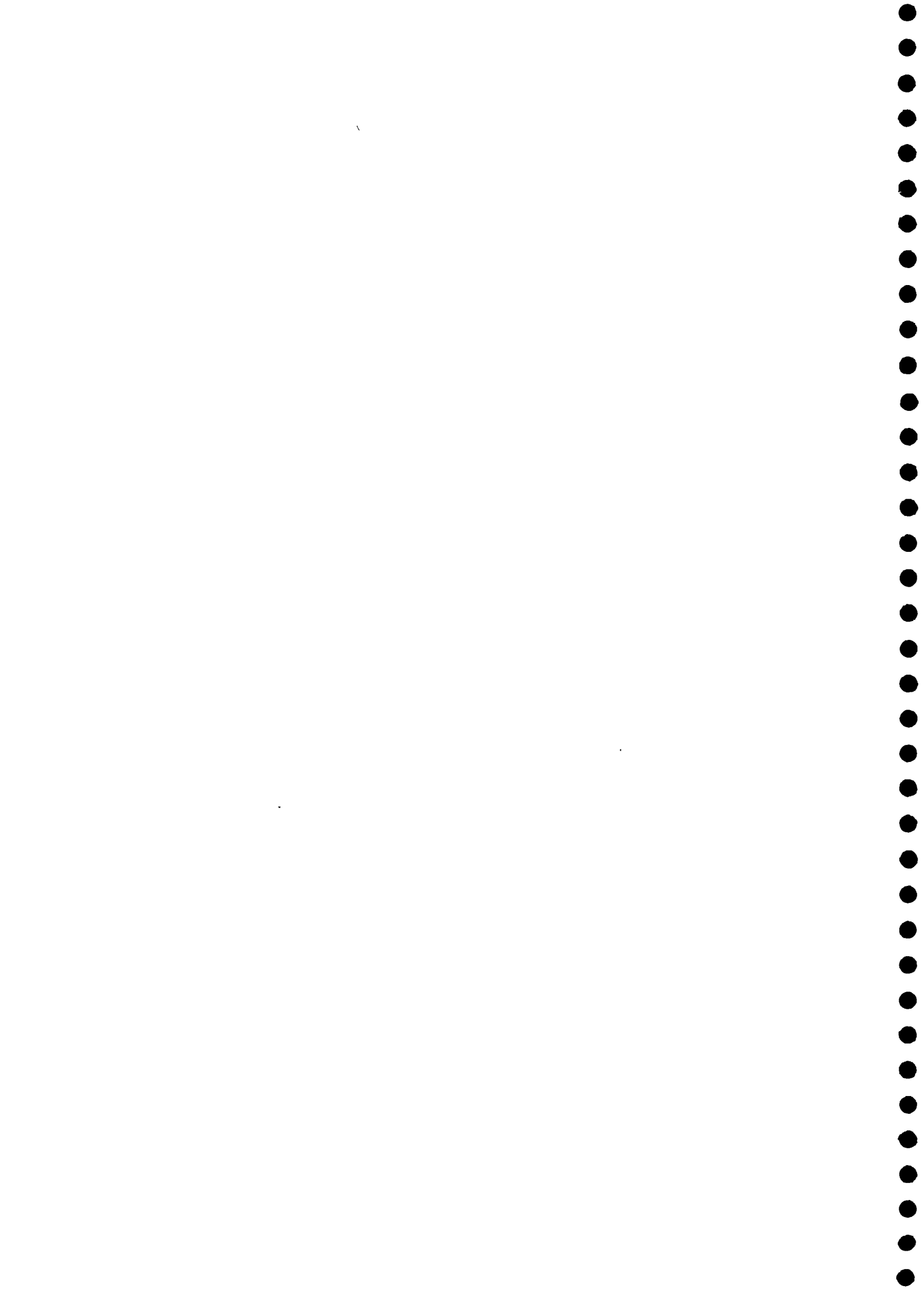
10.00am - 1.00pm Documentation continued.

8 January 1996

10.00am Block Office visited (*Harippad* Block Office)  
2.30pm Discussions with Local Assistants  
3.15pm House visit. One house in ward three.  
4.45pm Returned to camp  
5.30pm Meeting with local children (students).  
9.30pm - 11.15pm Documentation

9 January 1996

9.30am SEU Kollam Office. Debriefed Local Co-ordinator on KHES.  
2.30pm - 4.30pm Standpost Attendants' Group Discussion on Diarrhoeal diseases. Reasons attributed was - Diarrhoeal diseases occur not because of the lack of protected water but because of the manner in which water is handled.  
9.00pm - 12.15 Documentation



## ANNEXURE 2.2

### Diary of Activities

#### *Puthenchira Panchayat*

Study Team: Miss.Anila Kumary K., Miss.Lissy Paul, C.K.Nagesh  
Local Assistants: Ms.Remadevi, Ms.Savitha Devi

#### 12 December 1995

10.00am - 12.00 noon Reported at panchayat office. The study team members, SEU Field Organiser Ms.Sajini K.R., Mr.V.Manilal, Programme Officer (SEU Central) and Local Assistants Ms.Remadevi and Ms.Savitha Devi met at the panchayat office. After mutual introductions and introduction to the KHES, the study team started off with the study.

12.30pm - 1.30pm Met ward members, WWC members and Balawadi teachers of Ward II. Selected ten houses for house visits.

2.30pm - 5.00pm Visited ward III. Met ward member and WWC members.

5.00pm - 5.45pm Documentation of work of the day was done at the residence of one of the Local Assistants.

#### 13 December 1995

10.00am - 12.30pm Visited PHC for collection of data of diarrhoeal diseases.

12.30pm Returned to panchayat office.

1.30pm - 2.30pm Collection of details for panchayat profile.

2.30pm - 5.30pm House visit. Five houses in ward II.

5.30pm - 6.30pm Documentation.

#### 14 December 1995

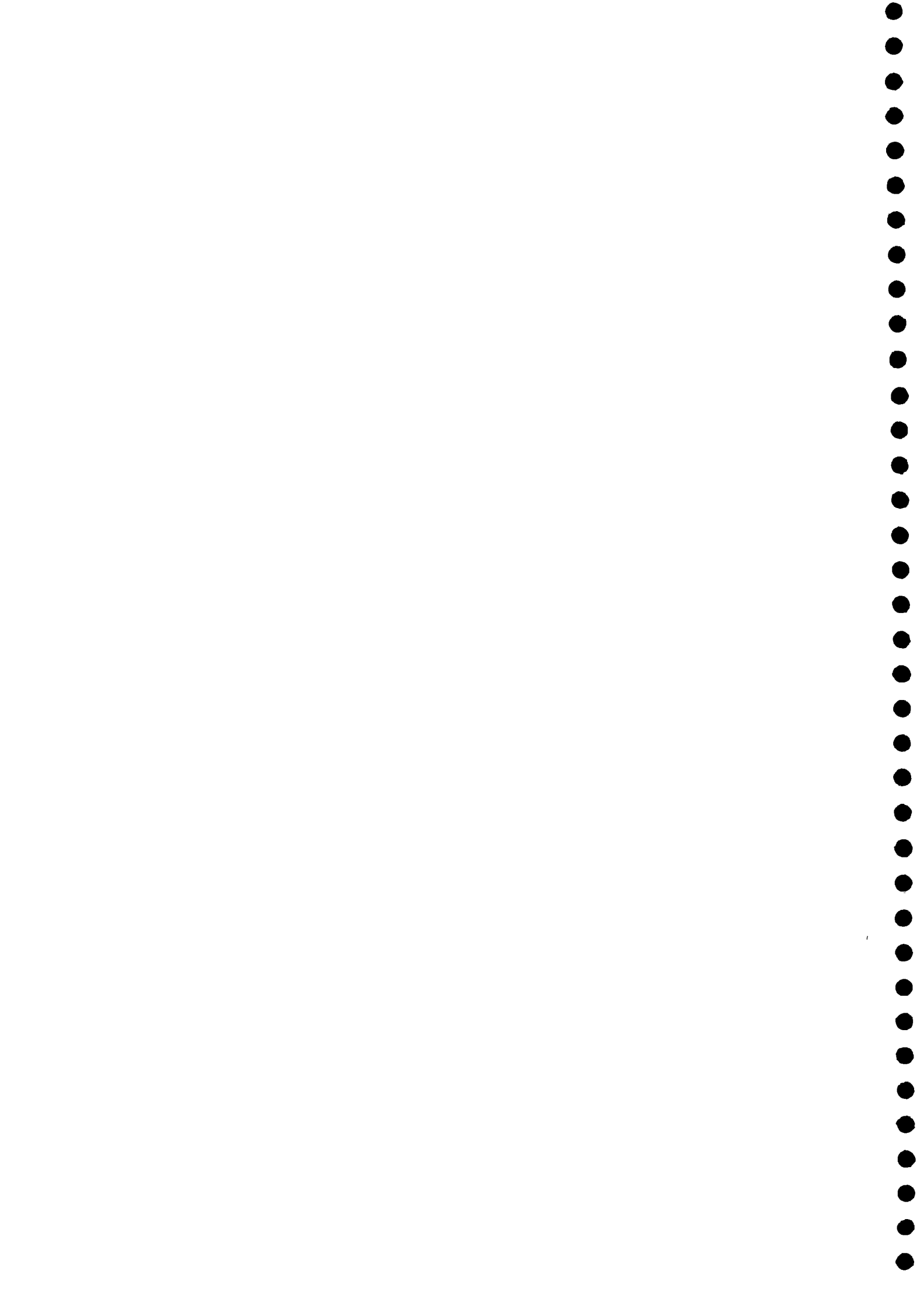
7.00am - 10am Healthwalk in ward II

10.30am - 12.00noon Documentation of Healthwalk

1.30pm - 5.30pm House visit. Four houses in ward II.

5.30pm - 6.30pm Healthwalk in Ward II.

6.30pm - 7.00pm Documentation





15 December 1995

8.00am - 10.30am House visit. Three houses in ward II  
11.00am Panchayat Office. Documentation of Healthwalk.  
12.30pm - 1.30pm Balawadi observation. Ward IV.  
2.00pm - 4pm House visit. Two houses in ward III.  
4.30pm - 6.30pm Group Discussion in Ward III.

16 December 1995

8.00am - 10.00am Documentation of the previous day's work.  
11.00am - 2.00pm House visit. Four houses in Ward II.  
2.30pm - 5.30pm House visit: Six houses in Ward II.  
5.30pm - 6.45pm Documentation.

17 December 1995

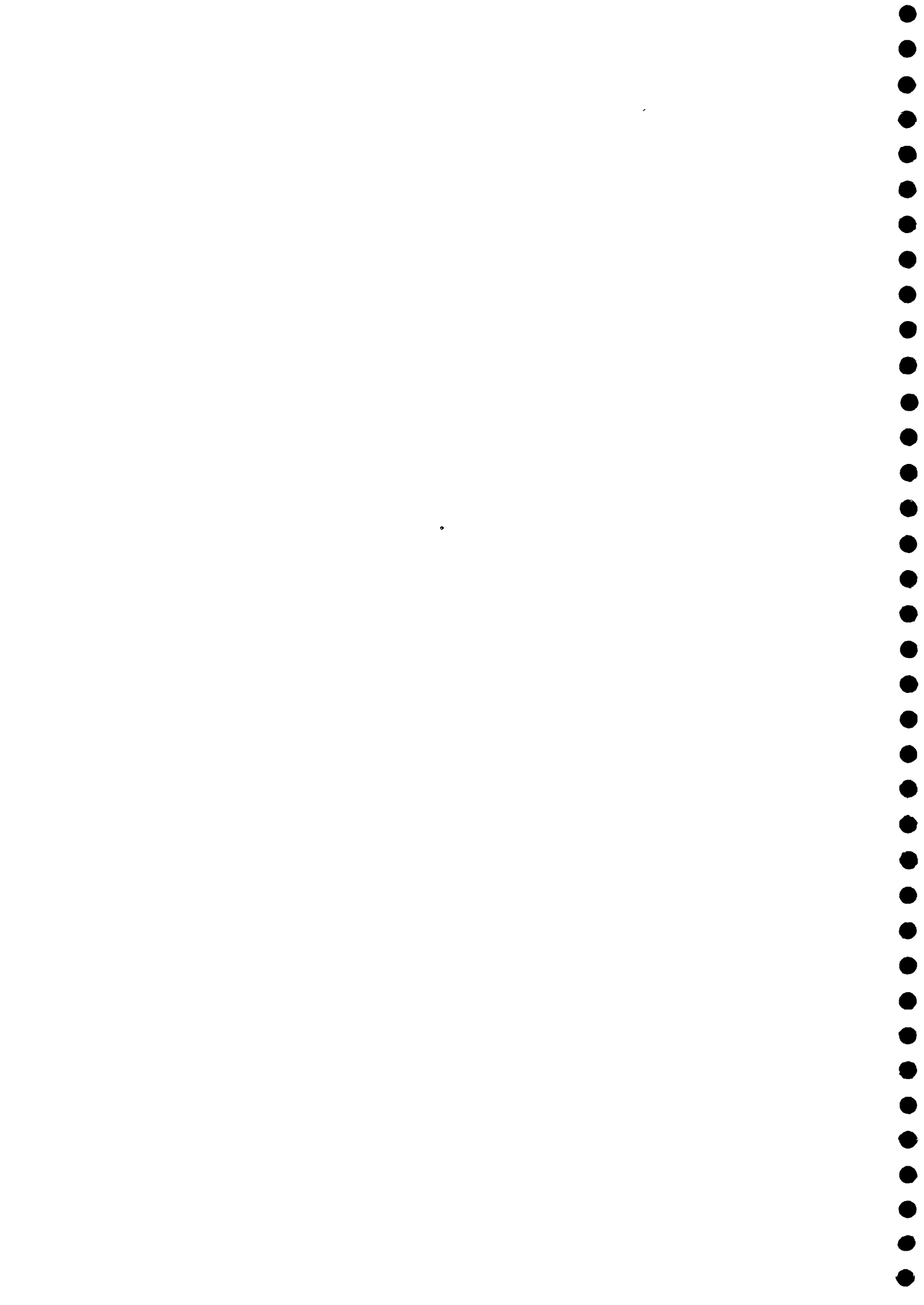
7.00am - 9.00am Healthwalk in Ward III  
9.00am - 11.00am Documentation of Healthwalk.  
11.30am - 2.00pm House visit. Four houses in Ward III  
2.30pm - 5.00pm Mothers meeting in Ward III.  
5.15pm - 6.15pm House visit. One house in Ward II  
6.15pm - 7.15pm Documentation.

18 December 1995

9.00am - 11.30am House visit. Two houses in Ward III  
11.30am - 5.00pm Debriefing Programme Officer Mr.V.Manilal at  
SEU Office, Trichur.

19 December 1995

9.00am Review meeting. Presented report from Puthenchira.  
1.00pm LUNCH  
1.45pm Review meeting continued  
4.30pm Meeting concluded



20 December 1995

9.00am - 1.00pm House visit. Ward II, together with Mrs.Vijayalakshmi, Local Co-ordinator KHES and Mrs.Kochurani Mathew, Programme Officer.

2.30pm - 4.00pm Documentation of house visits.

4.30pm - 6.00pm Group Discussion. Ward II.

21 December 1995

8.00am - 10.30am Documentation of previous day's activities.

12.00 - 1.30pm Anganwadi observation Ward III.

3.00pm - 6.00pm House visit. Four houses in ward III.

6.00pm - 7.00pm Documentation

22 December 1995

SEU Office. Periodic staff meeting.

23 December 1995

10.00am - 2.00pm House visit. Six houses in Ward II.

3.00pm - 6.00pm House visit. Six houses in ward III

6.00pm - 7.00pm Documentation

24 December 1995

7.00am - 11.30am Healthwalk in ward IX.

12.00 - 1.30pm Documentation

1.30pm - 5.00pm Group discussion Ward II

5.00pm - 6.30pm Documentation

25 December 1995

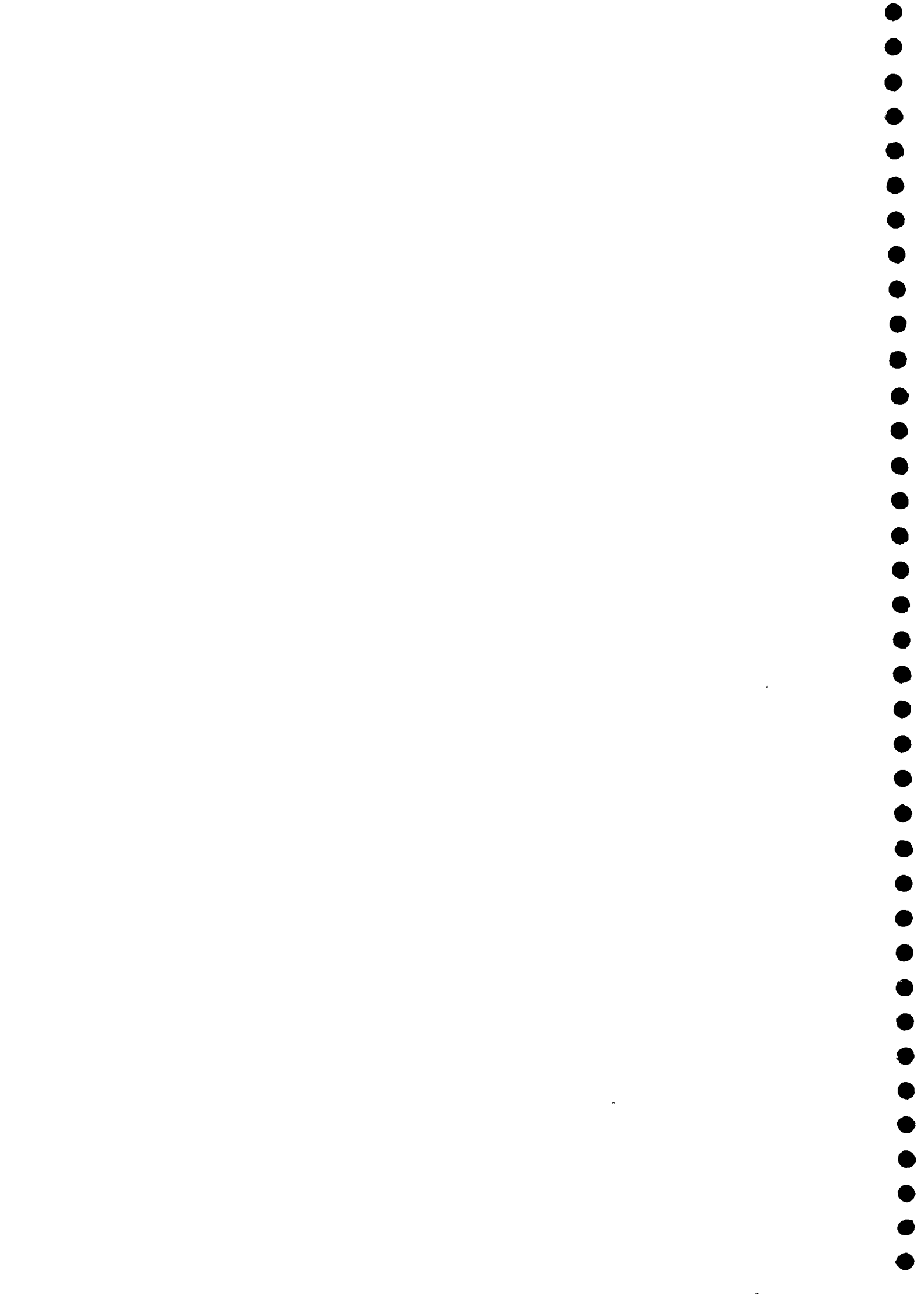
CHRISTMAS HOLIDAY - BREAK

26 December 1995

10.00am - 2.00pm Colony visit. Five houses in colony of Ward V

3.00pm - 5.00pm Documentation

5.00pm - 6.30pm Group Discussion in Ward III.



27 December 1995

8.00am - 10.30am	Discussion with Local Assistants and completion of documentation - previous day's work.
12.00 - 1.30pm	Balawadi observation
2.30pm - 4.30pm	Mothers' meeting. Ward IV.
5.00pm - 6.30pm	Documentation

28 December 1995

8.00am - 10.30am	House visit. Six houses in ward III.
10.45am - 1.00pm	House visit. Four houses in ward IX
2.00pm - 4.30pm	House visit. Two houses in Ward II, two houses in ward III
4.30pm - 6.00pm	Group discussion. Ward IX.
6.00pm - 7.00pm	Documentation

29 December 1995

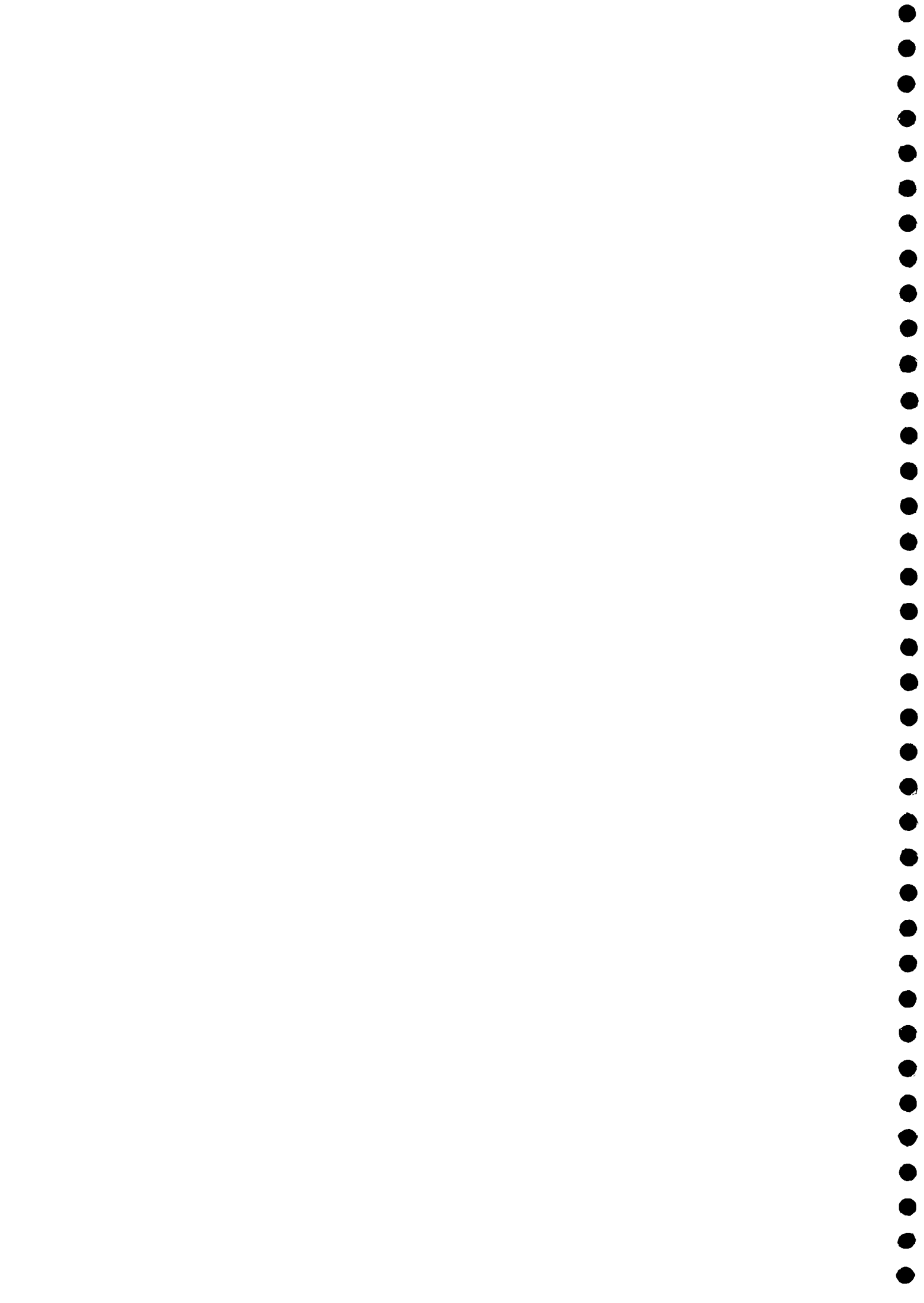
10.00am - 1.00pm	House visit. Five houses in Colony of Ward V.
1.30pm - 2.30pm	Documentation
2.30pm - 6.00pm	House visit. Four houses ward IX.
6.00pm - 7.00pm	Documentation

30 December 1995

8.00 am - 10.00am	Documentation continues.
10.00am - 12.00	House visit. Two houses in Ward II and Two houses in ward III
12.30 - 1.30pm	Balawadi observation ward IX
2.30pm - 5.30pm	House visit. Two houses in Ward IX.
5.30pm - 7.00pm	Documentation

31 December 1995

10.00am - 1.00pm	House visit. Five houses in colony of ward V.
2.30pm - 4.30pm	Mothers' meeting in Ward Ward IX
4.30pm - 6.30pm	Documentation



1 January 1996

10.00am - 1.00pm	House visit ward IX
2.00pm - 3.00pm	PHC visit.
4.30pm - 6.00pm	Group Discussion in Ward IX
6.00pm - 7.00pm	Documentation

2 January 1996

10.00am - 1.30am	SPA meeting 3-pile sorting, Pocket Chart Exercise, Group Discussions etc. Mrs.Vijayalakshmi observed the proceedings.
2.30pm - 4.30pm	Panchayat Committee and discussions as part of Historyline and Seasonal Calendar
4.30pm - 6.30pm	Documentation

3 January 1996

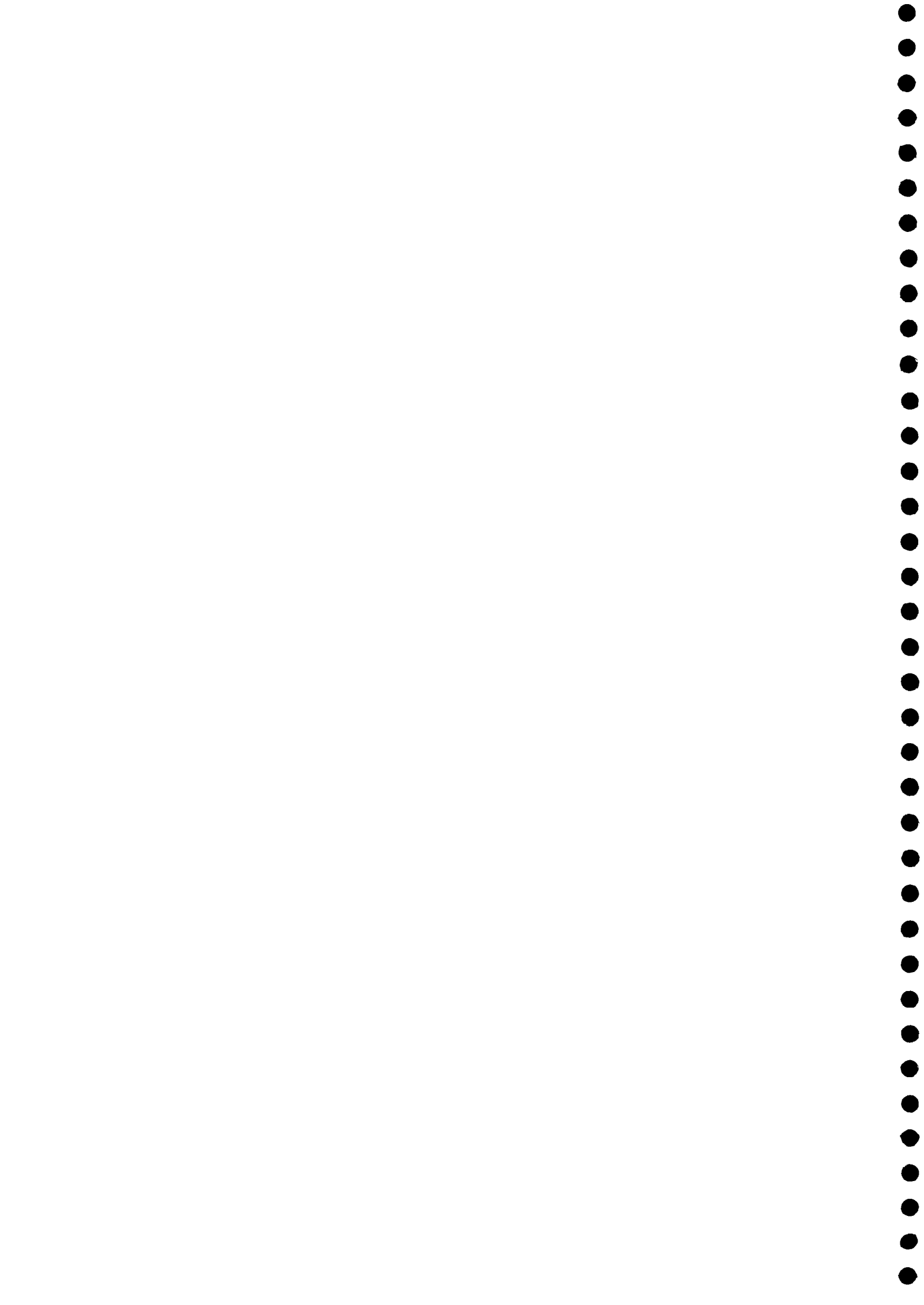
8.00am - 10.30am	House visit. Five houses in ward IX.
11.00am - 12.00	Documentation
12.30pm - 2.00pm	School Observation Government UPS Puthenchira.
2.00pm - 3.00pm	Pocket Chart exercise with School Health Club members.
3.00pm - 4.00pm	Pocket Chart exercise with non SHC members
4.30pm - 6.00pm	Documentation

4 January 1996

10.00am - 1.00pm	House visit. Four houses in Ward IX
1.30pm - 6.00pm	Visit to Devil's island ( <i>Chekuttaan Thuruthu</i> ) in Ward IX together with Mr.V.Manilal, Programme Officer (SEU Central), Four WWVC members and the Ward member of Ward IX

5 January 1996

9.00am - 1.00pm	Colony visit. Five houses in Ward IX
2.00pm - 5.00pm	Group Discussion for Seasonal Calendar
5.00pm - 7.00pm	Documentation





6 January 1996

10.30am - 12.30pm Group Discussion in Colony of Ward V on diarrhoeal diseases for Seasonal Calendar.

2.00pm - 4.00pm Group Discussion in Ward IX.

4.00pm - 6.00pm Documentation

7 January 1996

(Sunday)

10.00am - 1.00pm Documentation continued

8 January 1996

10.00am - 12.00 Panchayat Office. Debriefing at SEU (Central) office, Trichur with Mr.V.Manilal, Programme Officer. Review and recapitulation of KHES.

2.30pm - 6.30pm House visits. Four houses in ward IX

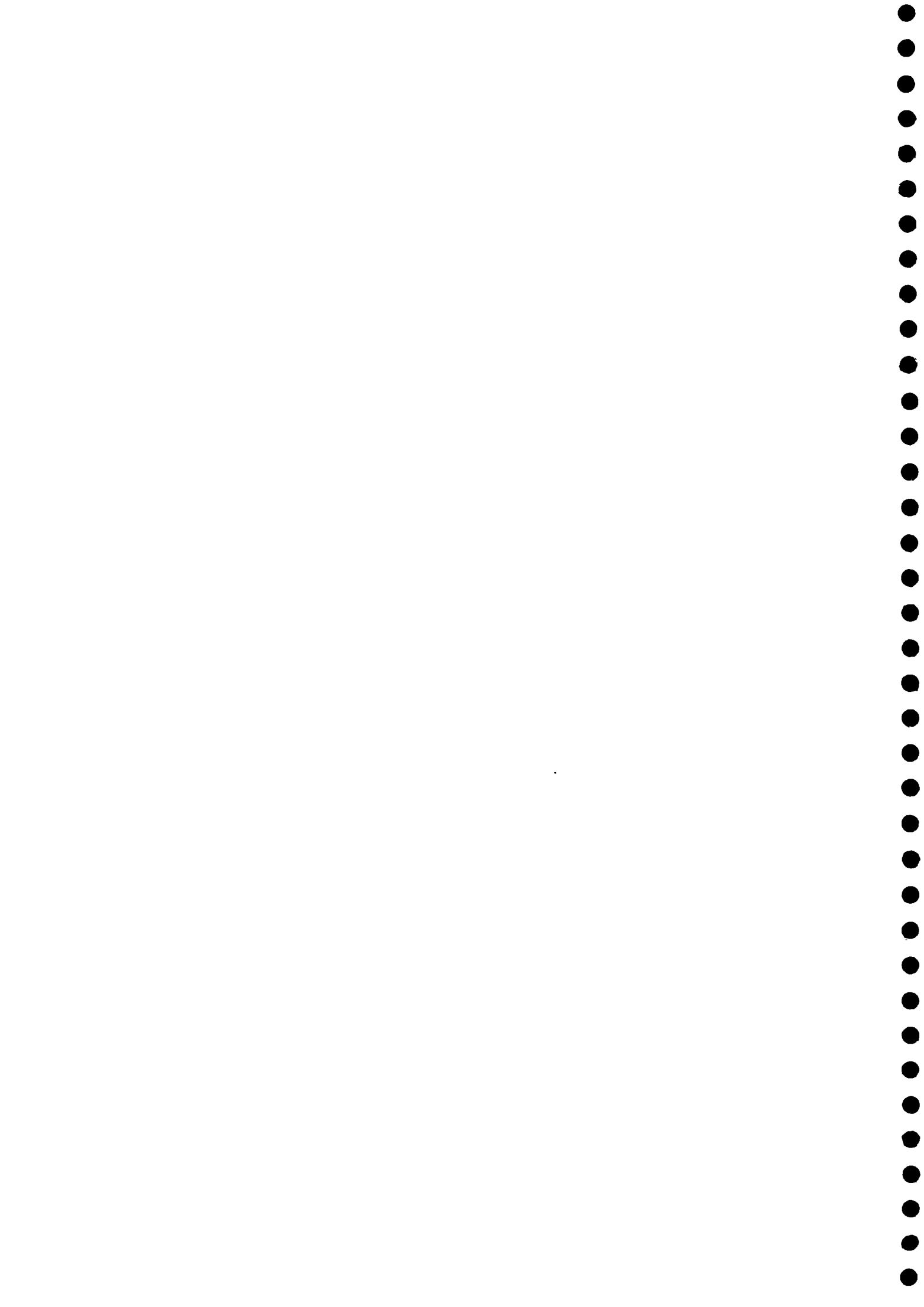
9 January 1996

10.00am - 1.00pm House visit. Two houses in Ward IX

2.00pm - 5.00pm Documentation.

10 January 1996

10.00am - 12.00 Documentation continued.



Diary of Activities

ANNEXURE 2.3

*Kuttyattoor Panchayat*

Study Team: Mr.K.N.Suresh Babu, Mr.P.V.Lalachan, Ms.Nisha K.  
Local Assistants: Ms.K.P.Usha, Ms.T.Sujatha

11 December 1995

- 10.00am Meeting at SEU (North), Calicut Office with Programme Officer Mrs.O.T.Remadevi. Daily plan of activities were also charted.
- 11.00am Orientation to Local Assistants and discussion with them about the study and their role in the study.
- 2.30pm Departure to study area (Study area is about 105 kms from the SEU Office).

12 December 1995

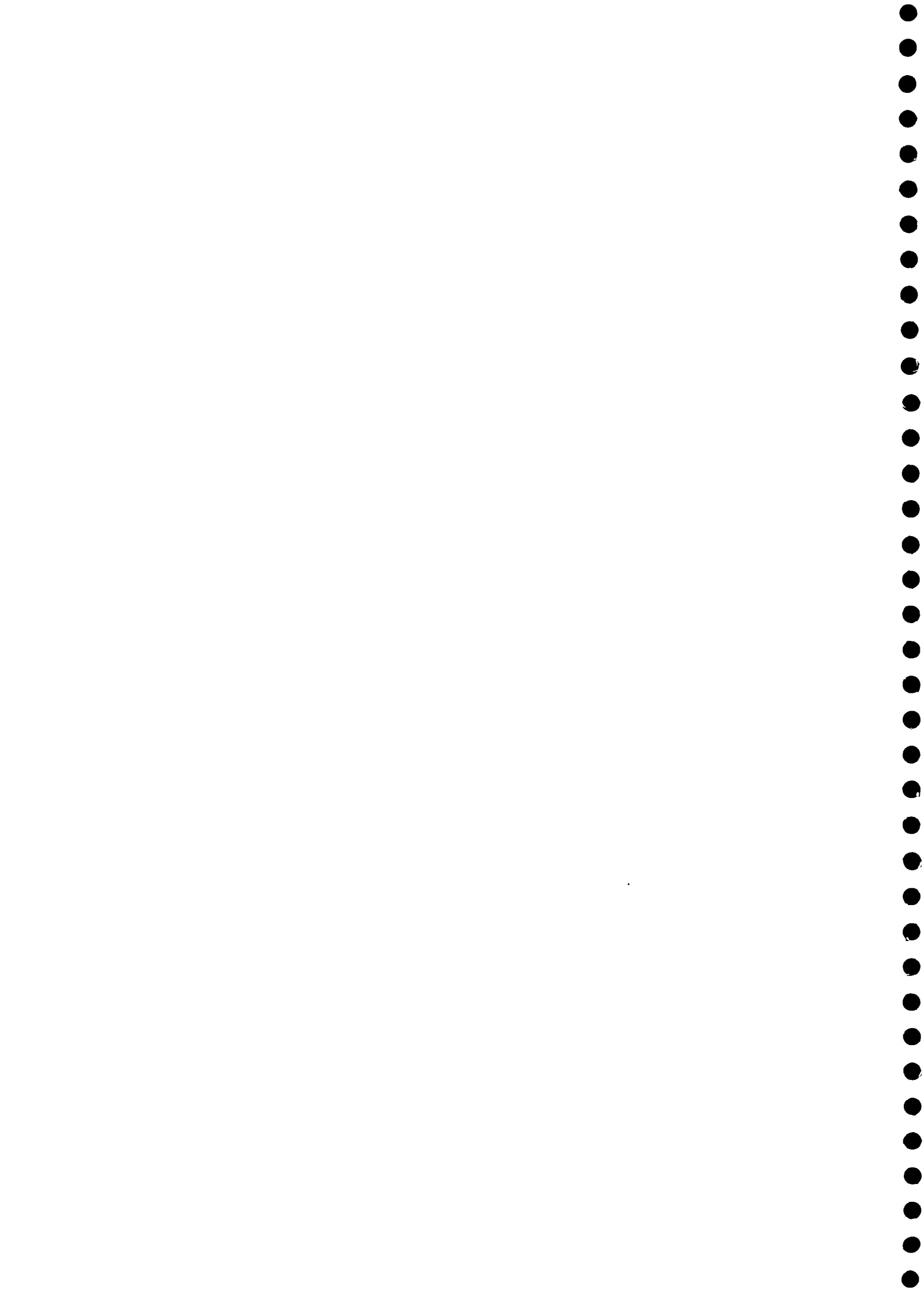
- 10.00am Discussion with Panchayat Officials. Introducing KHES to Panchayat and Local Assistants. Collection of general information on panchayat.
- 11.00am Visit to PHC to collect information of diseases.
- 11.30am Visited IPP subcentre. (Cheruvathalamotta) In ward III.
- 12.00 House visits. Used interview schedules together with Local Assistants.
- 2.00pm Study team split into two groups. One group went to Ward III to make arrangements for Anganwadi and Mothers' meetings and the other group went to ward VI to arrange School meeting.

13 December 1995

- 7.00am - 10.00am Healthwalk in ward III.
- 10.30am Discussions to recapitulate Healthwalk observations and findings.
- 2.00pm House visits. Two houses in Ward III.
- 3.00pm Meeting with WWC members and ward members to organise Group Discussions in Ward III.
- 6.30pm - 8.30pm Documentation

14 December 1995

- 9.00am House visits. Four houses in ward III.
- 12.00pm Discussions about House visits in Panchayat office.



2.30pm	Study team split into two. One group went to organise Group discussions in Ward III and the other group went to prepare Pocket Chart.
7.00pm - 7.30pm	Documentation
<u>15 December 1995</u>	
9.00am	House visits. Two houses in Ward III.
12.15pm	Reached Anganwadi in Ward III for Anganwadi observation.
3.30pm - 4.30pm	Mothers' meeting at Anganwadi Ward III. Mrs.O.T.Remadevi, Programme Officer attended this meeting
7.00pm - 9.00pm	Documentation
<u>16 December 1995</u>	
10.00am	House visit. One house in ward III
11.00am	Discussion at panchayat Office on house visit and preparation for Group Discussions at Ward III.
3.30pm - 5.00pm	Group Discussion Ward III at Maniyoor Central LPS, Cheruvathalamotta
5.00pm - 5.30pm	Discussions on Group Discussions.
7.00pm - 8.30pm	Documentation
<u>17 December 1995</u>	
10.30	Visit to ward VI to organise group discussions.
2.00pm	Documentation
<u>18 December 1995</u>	
8.30am	House visits. Two houses in ward III.
1.30pm	Departure to Trichur for mid-term review meeting.
<u>19 December 1995</u>	
9.00am	Review meeting. Presented report from Puthenchira.
1.00pm	LUNCH
1.45pm	Review meeting continued
4.30pm	Meeting concluded



20 December 1995

12.00 Reeturned from Trichur. Reported at Panchayat office.

3.00pm Reached Anganwadi *Chattukappara* for Group Discussion in ward III.

4.00pm - 5.45pm Group Discussion in Ward III.

8.00pm - 9.45pm Documentation

21 December 1995

9.30am House Visit. Two houses in Ward VI

12.00 Discussion on housevisit. Anganwadi, *Kuttyattoor* Ward VI Anganwadi observation conducted simultaneously.

3.00pm -4.30pm Mothers' meeting in wrad VI at *Kuttyattoor* Anganwadi

4.30pm - 5.00pm Discussion on mothers meeting.

8.00pm - 9.00pm Documentation

22 December 1995

Periodic SEU Staff meeting at SEU (North), Calicut.

23 December 1995

Documentation of previousdays' work.

24 December 1995 - 25 December 1995

CHRISTMAS HOLIDAYS (Study team took Leave)

26 December 1995

9.45am - 12.40pm House visit. Three houses in ward III.

2.00pm - 3.00pm Discussion on House visits at Panchayat Office.

3.00pm Visit Ward VI to meet WWC members and Ward member. Visit Anganwadi, *Vaduvankulam* to organise Group Discussions.

27 December 1996

9.45pm Reported at Panchayat Office.

10.15am House visits. Two houses in Ward III.





1.30pm - 2.30pm Discussion on house visit at panchayat Office.  
3.00pm Visit to ward VI to meet ex-Ward member and WWC member.

7.00pm - 8.00pm Documentation

28 December 1996

6.00am - 8.30am Healthwalk in Ward VI.

10.30am Discussion on Healthwalk at WWC member's residence.

12.30am Preparation for Group Discussion in Ward VI

2.00pm Reached venue for Group Discussion at Vaduvankulam Anganwadi

3.30pm - 4.45pm Group Discussion at Ward VI. Mrs.O.T.Remadevi, Programme Officer also attended this meeting.

4.45pm - 5.15pm Discussion on Group Discussion

7.30pm - 9.30pm Documentation

29 December 1995

9.30am -12.45pm House visits. Two houses in Ward VI.

2.00pm Discussion on House visits.

2.30pm Reached venue for group Discussion in Ward VI.

3.30pm - 5.15pm Group Discussion Ward VI at AUP School Kuttyattoor

5.15pm -5.45pm Discussion on Group Discussion

9.30pm - 10.30pm Documentation

30 December 1995

9.30am - 2.45pm House visits. Four houses in Ward VI

3.00pm - 4.30pm Discussion on House visits

31 December 1995

Documentation of previous day's work

1 January 1996

Periodic Staff meeting at SEU North, Calicut.



2 December 1995

10.00am Reported at panchayat Office. Discussion on programme for the week

11.00am Ward IX for house visits.

12.10pm House visits. Two houses in Ward IX (Houses in Ward IX area are roughly 10kms away from Panchayat Office)

3.00pm Study Team split into two. One group visited Anganwadi Ward IX to organise Mothers' meeting. Another group went to meet WWC member and Ward member to organise Group meeting.

8.30pm - 9.30pm Documentation

3 December 1995

6.30pm - 8.45pm Helathwalk in Ward IX.

10.00am - 11.30am Discussion on Healthwalk at Ward member's residence

11.30am - 2.20pm House visits. Two houses in Ward IX

3.00pm Visit to colony to know about colony situation and to organise colony meeting.

4 January 1996

9.30am - 12.00 House visits. Two houses in Ward IX

12.15pm Reached Anganwadi Pazhassy in Ward IX for observation

3.15pm - 5.15pm Mothers' meeting at Anganwadi Pazhassy in Ward IX.

9.30pm - 10.30pm Documentation

5 January 1996

8.30am - 10.45am House visits. Two houses in Ward VI

11.00am Reached AUP School Kuttyattoor for school observation and Students' meeting.

11.20am - 1.00pm Non SHC members' meeting

1.00pm - 1.30pm Observation, noon meal session.

2.10pm - 3.40pm SHC members meeting. Local Co-ordinator Mrs.Vijayalakshmi joined the Study Team and observed students' meeting.



8.30pm - 10.30pm Documentation

6 January 1996

9.45am Panchayat Office. Discussion with Local Co-ordinator.

10.45am House visit. Two houses in Ward IX. Local Co-ordinator also joined the Study Team.

2.00pm Reached venue for Group Discussions in Ward IX.

4.30pm - 6.00pm Group Discussions in Ward IX at Pazhassy LP School. Mrs.Vijayalakshmi and Mrs.O.T remadevi observed the proceedings.

7 January 1996

Documentation

8 January 1996

10.30am Reached *Porolam Colony* in Ward IX for House visits and Group Discussions. Visited five houses in the Colony.

2.00pm - 4.00pm Colony Group Discussions.

9.00pm - 10.30pm Documentation

9 January 1996

10.30am Reached Ward IX for house visits. Visited two houses.

1.30pm - 2.30pm Discussions on House visits.

4.00pm - 5.20pm Group Discussion ward IX at Porolam Reading room

10 January 1996 - 11 January 1996

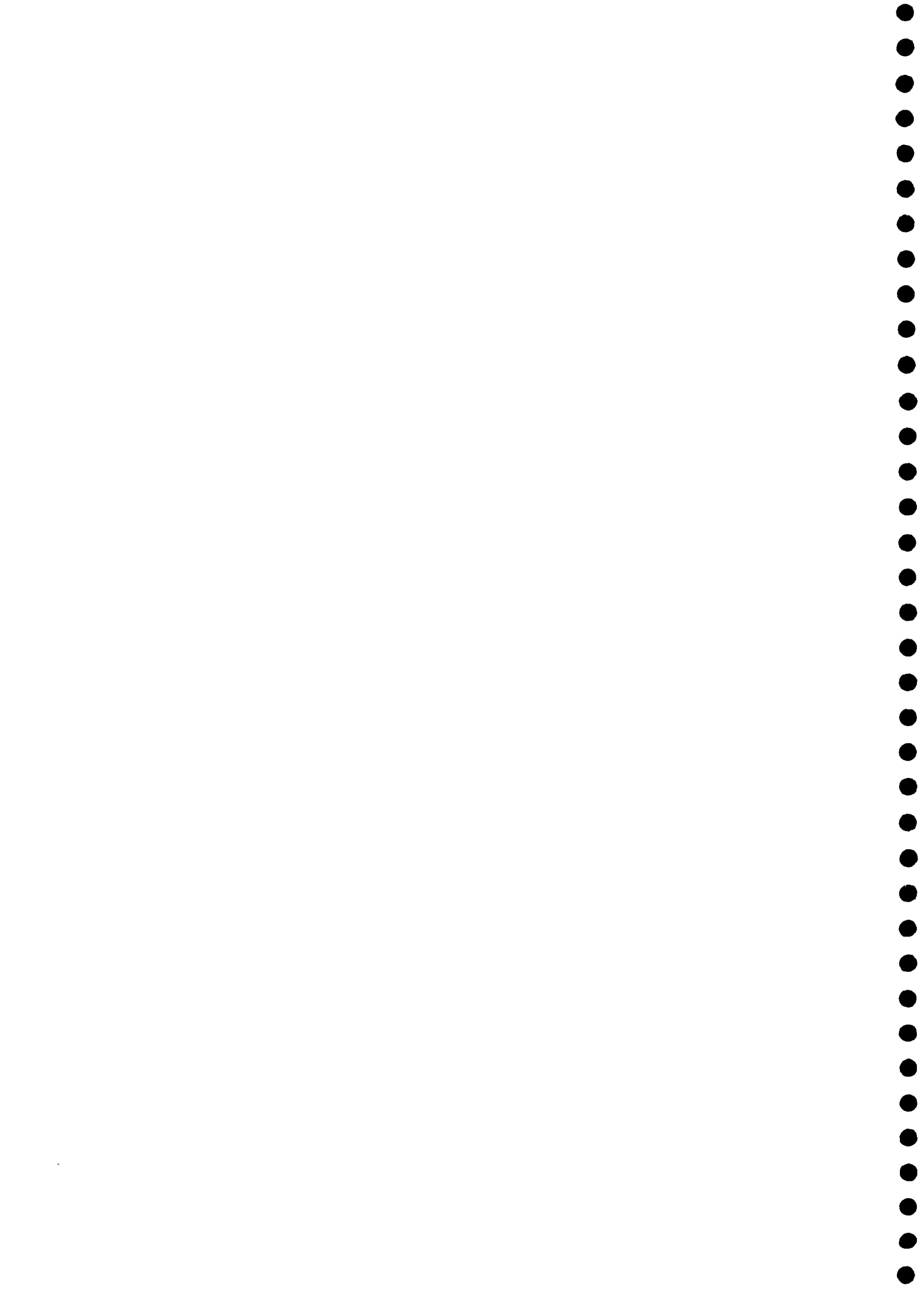
Documentation



HEALTHWALK  
OBSERVATION SCHEDULE

Water

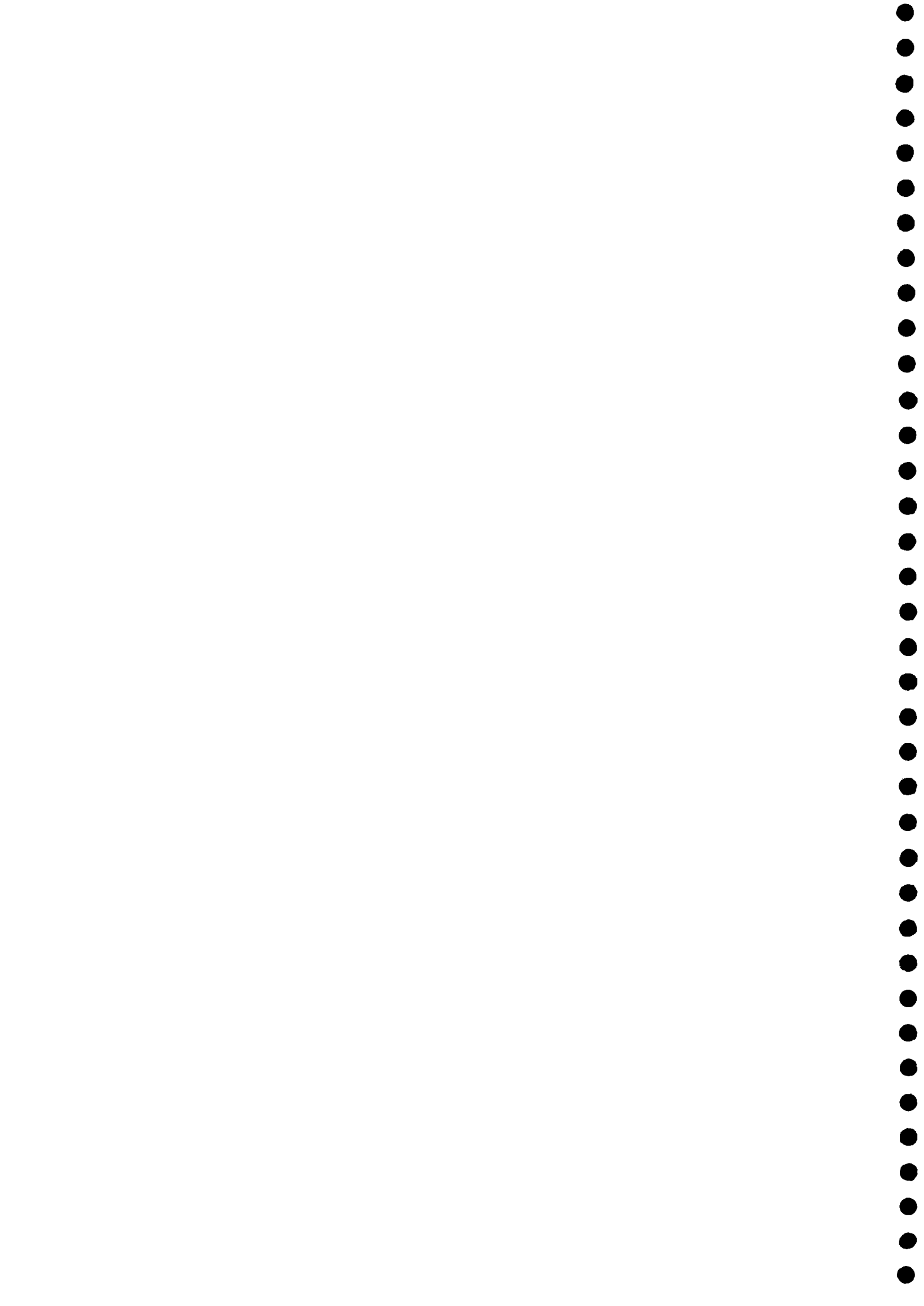
1. Which are the available water sources?
  - a. Spring
  - b. Rain water
  - c. Pond
  - d. Piped water
  - e. Well
  - f. River
  - g. Lake
  - h. Canal
  - I Borewell
  
2. Are these Water sources protected?
  - a. Yes
  - b. Partly
  - c. No
  
3. How far is the water source away from household?
  - a. Below 100 metres
  - b. 100-200 metres
  - c. 200-400 metres
  - d. Above 400 metres
  
4. What activities take place near the water source?
  - a. Cleaning utensils
  - b. Washing linen
  - c. Bathing
  - d. Bathing animals
  - e. Washing vehicles
  - f. Gardening
  - g. Ablutions
  - h. Others
  
5. Who collects water?
  - a. Women
  - b. Children
  - c. Men
  
6. What kind of vessels are used for collection of water?
  
7. How is the collected water reached home from the water source?
  
8. Are the water sources purified? If yes, how?
  - a. Filtering
  - b. Chlorination
  - c. Seepage
  - d. ~~Others~~ sedimentation
  - e. Others.





Hygiene

1. Where all could (human) excreta be found?
  - a. Road
  - b. Footpath
  - c. Near water source
  - d. Backyard and surroundings
  - e. Outside the house
  - f. Inside the house
  
2. Whose could the excreta have been?
  - a. Children
  - b. Adults
  - c. Animals
  - d. Others
  
3. Could you notice somebody defecating during observation?  
If yes,
  - a. Who
  - b. Where (describe)
  
4. How many houses out of those visited by you had latrines?
  
5. Where is the latrine located?
  - a. Close to the house
  - b. Far away from house (Give reasons for the distance)
  
6. Observation of latrines -
  - a. Was the latrine good?
  - b. Is the foundation strong?
  - c. Does it have a slab?
  - d. Is it usable by children?
  - e. Does it have sufficient privacy?
  - f. Anything else worth mentioning?
  
7. Is the latrine being used?
  - a. Is the pathway clean?
  - b. Is the latrine clean?
  - c. Is it free from odour?
  - d. Were there any latrine-cleaning implements? (Give details)
  - e. Was water kept?
  - f. Was soap kept?
  - g. Any other evidence that the latrine is being used?
  
8. How near are facilities to clean hands (soap, ash, water)?
  - a. Close to the latrines
  - b. A little farther
  - c. Inside the house



ഒപ്പൻവേക്കൻ ക്ഷേത്രം

(Health Walk)

വെള്ളി

1. ലഭ്യമായ ജലസ്രോതസ്സുകൾ ഏതെല്ലാം?

- (എ) അരുവി
- (ബി) മഴവെള്ളം
- (സി) കുളം
- (ഡി) പൈപ്പുവെള്ളം
- (ഇ) കിണർ
- (എഫ്) നദി
- (ജി) തടാകം
- (എച്ച്) കനാൽ
- (ഐ) കുഴൽകിണർ

2. ഈ ജലസ്രോതസ്സുകൾ സുരക്ഷിതവെടുത്തുണ്ടോ?

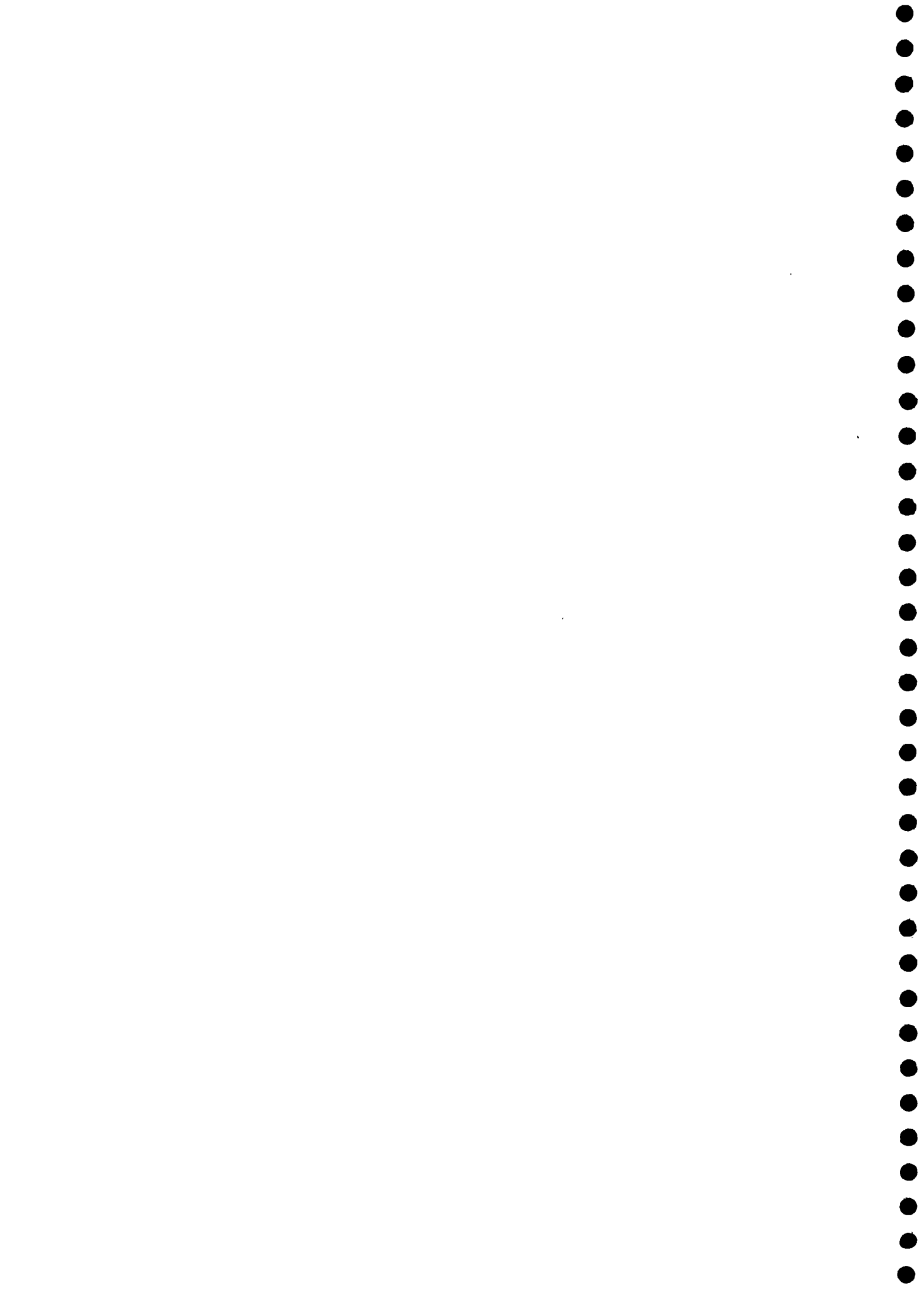
- (എ) ഉണ്ട്
- (ബി) ഭാഗികം
- (സി) ഇല്ല

3. വീടിൽനിന്നും എത്ര അകലെയാണു ജലസ്രോതസ്സ്?

- (എ) 100 മീറ്ററിനു താഴെ
- (ബി) 100 - 200 മീറ്റർ
- (സി) 200 - 400 മീറ്റർ
- (ഡി) 400 മീറ്ററിനു മുകളിൽ

4. ജലസ്രോതസ്സുകളുടെ സമീപം എന്തെല്ലാം പ്രവൃത്തികളാണ് നടക്കുന്നത്?

- (എ) പാത്രം കഴുകൽ
- (ബി) വസ്ത്രം കഴുകൽ
- (സി) കുളിക്കുക
- (ഡി) മൂശങ്ങളെ കുളിപ്പിക്കുക
- (ഇ) വാഹനം കഴുകുക
- (എഫ്) തോടം നന്നാക്കുക
- (ജി) ശൗചം ചെയ്യുക
- (എച്ച്) മരണശേഷികീലും?



5. ഞാൻ വെളിച്ചം ശേഖരിക്കുന്നത്?

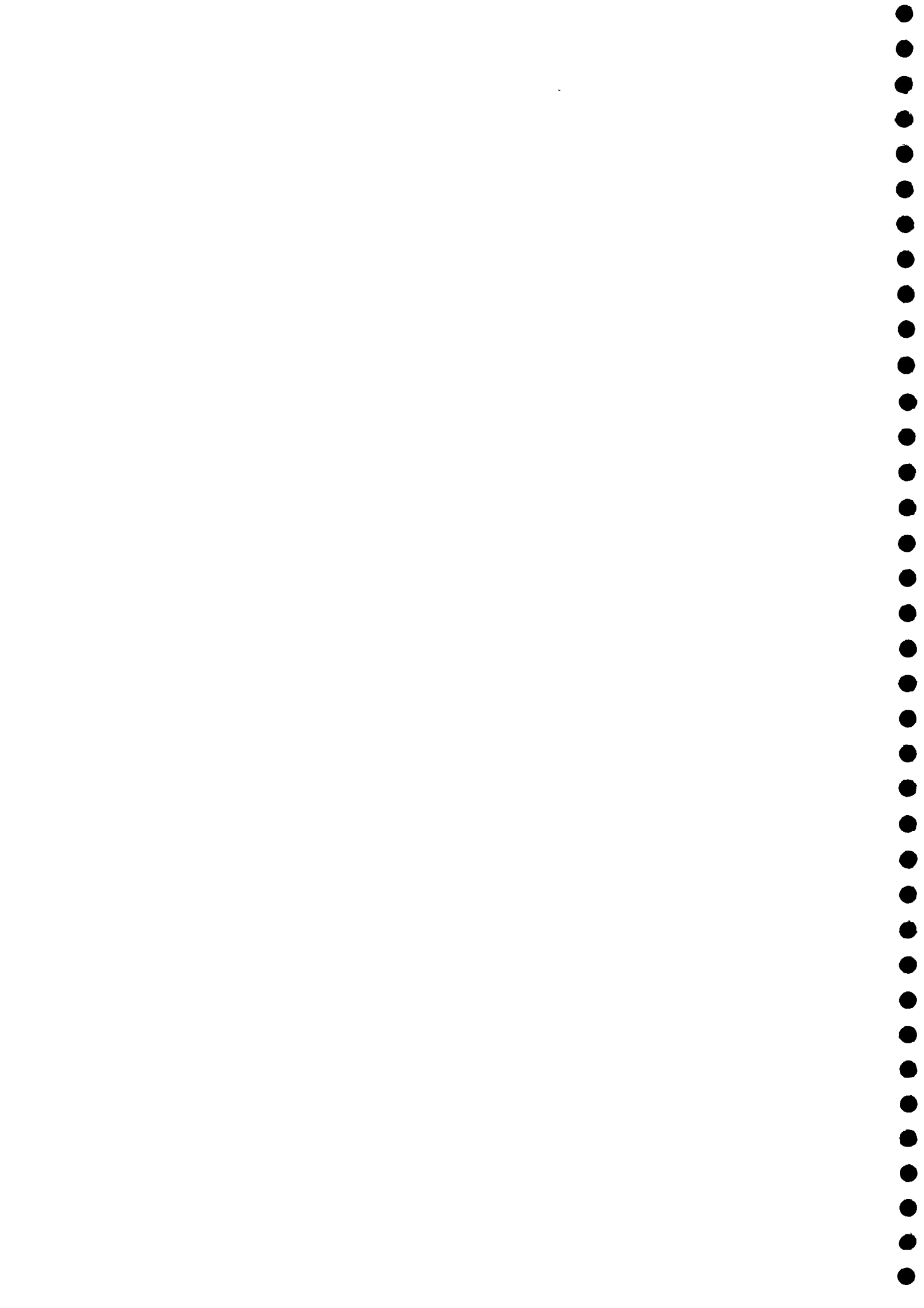
- (എ) സ്ത്രീകൾ
- (ബി) കുട്ടികൾ
- (സി) പുരുഷന്മാർ

6. വെളിച്ചം ശേഖരിക്കുന്നതിന് ഏതുതരം പാത്രങ്ങളാണ് ഉപയോഗിക്കുന്നത്?

7. ജലസ്രോതസ്സുകളിൽ നിന്നു ശേഖരിച്ച വെളിച്ചം എങ്ങനെയാണ് വീടുകളിൽ എത്തിക്കുന്നത്?

8. ജലസ്രോതസ്സുകൾ ശുദ്ധീകരിക്കാൻ ഏതെങ്കിലും ഏതെങ്കിലും എങ്ങനെ?

- (എ) അരികൾ
- (ബി) ക്ലോറിനേഷൻ
- (സി) ഉപ്പാൽ
- (ഡി) അടിവർ
- (ഇ) മൈക്രോബയോളജി?



ശുചിത്വം

1. ഹിന്ദുവിന്റെ മതം (മതം) എന്താണ്?

- (എ) ഹിന്ദു
- (ബി) സമ്രാജ്യം
- (സി) ജലസ്രോതസ്സിനടുത്ത്
- (ഡി) പരമേശ്വരൻ സമീപത്തും
- (ഇ) വീടിനു വെളിയിൽ
- (എഫ്) വീടിനകത്ത്

2. ഹിന്ദുവിന്റെ വിശ്വാസങ്ങൾ എന്താണ്?

- (എ) ശിശുക്കളുടെ/കുട്ടികളുടെ
- (ബി) മുതിർന്നവരുടെ
- (സി) ധനം
- (ഡി) മരണത്തെക്കുറിച്ചും?

3. നിരീക്ഷണവേളയിൽ ഏതെങ്കിലും മതമൂലം വിശ്വാസം നടത്തുന്നത് എന്താണ്?

- ഉണ്ടെങ്കിൽ (എ) ഹിന്ദു
- (ബി) ഹിന്ദു? (വിശദീകരിക്കുക)

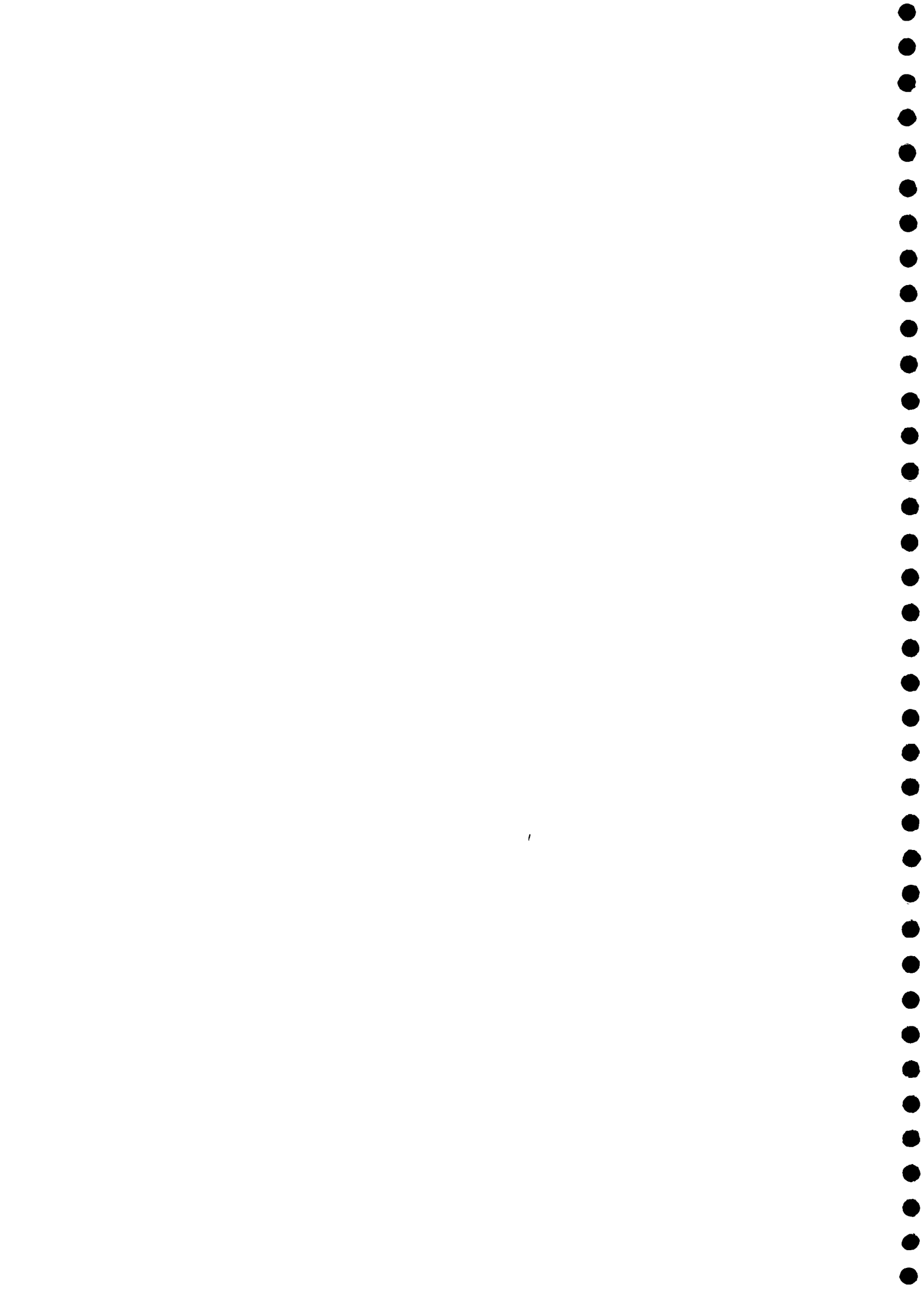
4. നിങ്ങളുടെ സമൂഹത്തിലെ വീടുകളിൽ എത്ര വീടുകളിൽ കമ്മ്യൂണിറ്റി ഉണ്ട്?

5. കമ്മ്യൂണിറ്റി ഹിന്ദുവിന് സഹായം ചെയ്യുന്നത്?

- (എ) വീടിനു ചേർന്ന്
- (ബി) വീടിനകത്തു നിന്നും
- (കാരണങ്ങൾ വ്യക്തമാക്കുക)

6. കമ്മ്യൂണിറ്റി നിരീക്ഷിക്കുകയും ചെയ്യുകയും -

- (എ) കമ്മ്യൂണിറ്റി നൽകാതെ?
- (ബി) ഏതെങ്കിലും ഉറപ്പുള്ളതാണോ?
- (സി) സഹായം ഉണ്ടോ?
- (ഡി) കുടുംബവും ഉപയോഗിക്കാൻ പര്യാപ്തമാണോ?
- (ഇ) ജനസംഖ്യയെ സ്വീകരിക്കുന്നുണ്ടോ?
- (എഫ്) മരണത്തെക്കുറിച്ചും പ്രത്യേകതയുണ്ടോ?



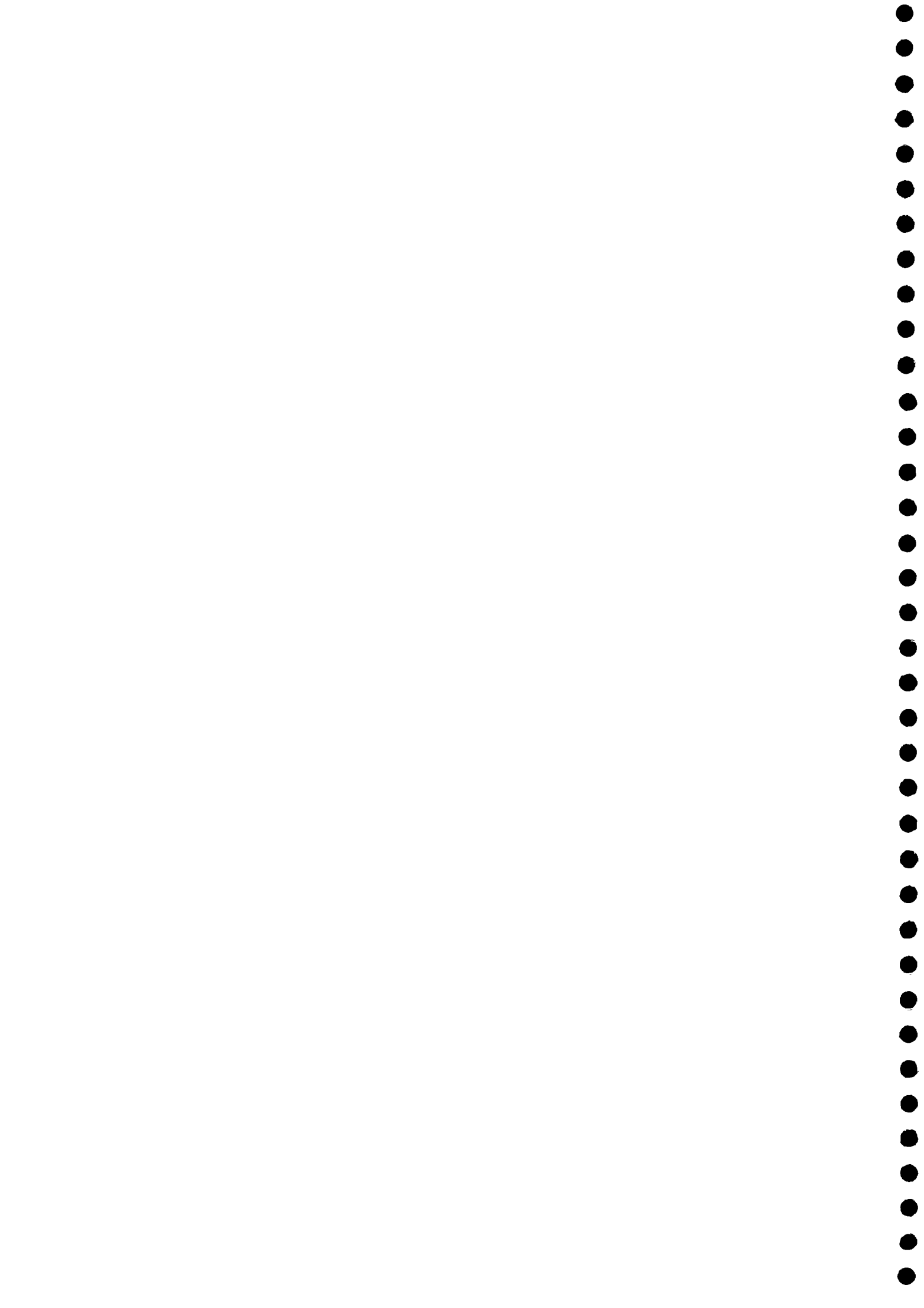


7. കകൃസ ഉപജോഗികൃനുണ്സൊ?

- (എ) നടമിത വൃത്തിഷുഉളതാണൊ?
- (ബി) കകൃസ് വൃത്തിഷുഉളതാണൊ?
- (സി) ദുർഗന്ധരഹിതമാണൊ?
- (ഡി) ശുചിഷാകാനുളള സാധനങ്ങളുണ്സൊ?  
ഉണ്സെങ്കിർ ഏതെല്ലം?
- (ഇ) വെളളം വെച്ഛിട്ടുണ്സൊ?
- (എഫ്) സോപ്സവെച്ഛിട്ടുണ്സൊ?
- (ജി) ഉപജോഗികൃനു എന്നതിന് മരൈന്തെന്കിലും തെളിവുകൾ?

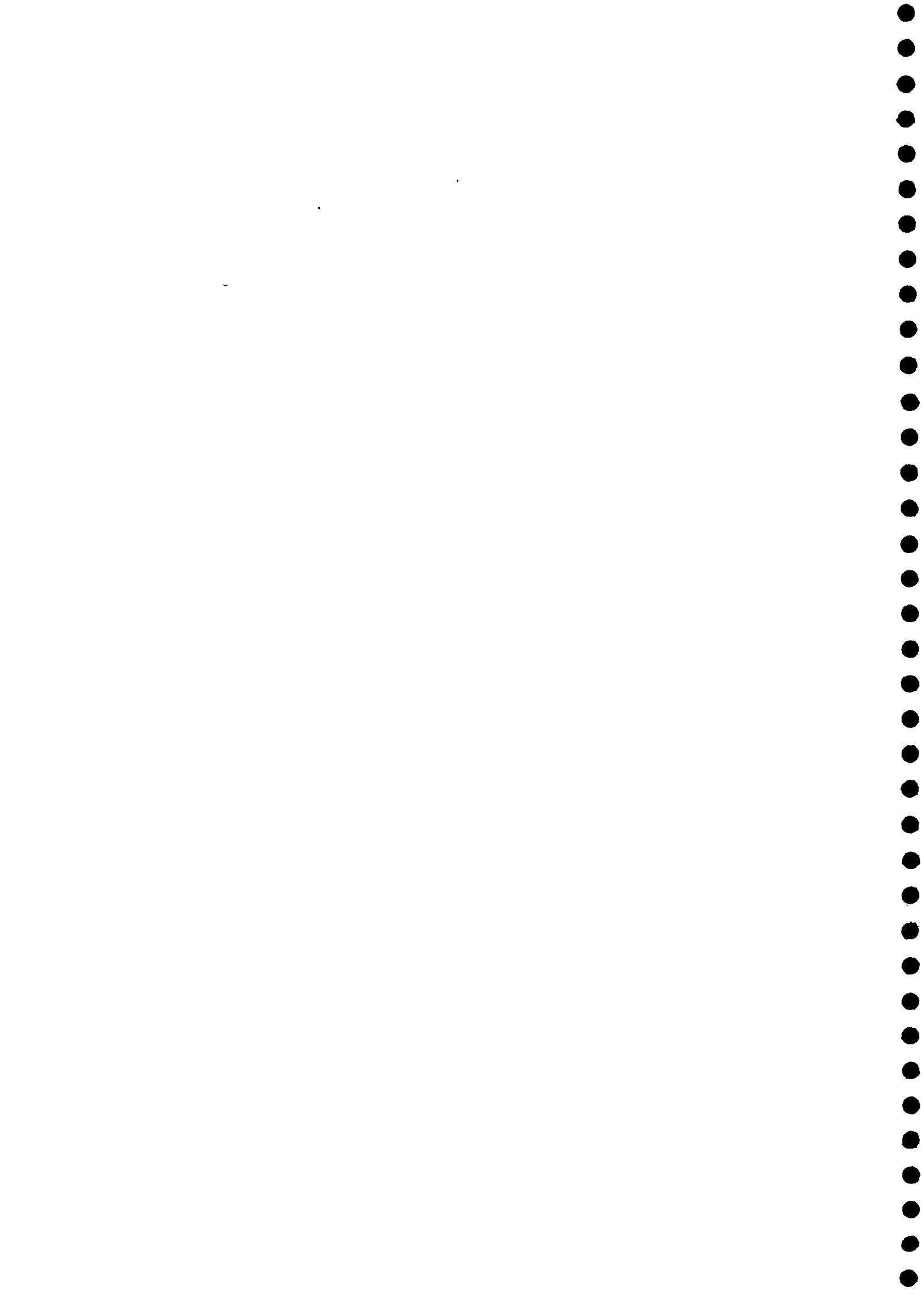
8. നൈക കഴുകാനുളള സഹിധനങ്ങളൾ (സോപ്, മരം, വെളളം) കകൃസിനോട് എത്ര അടുത്തുണ്ട്?

- (എ) കകൃസിനോട് ചേർന്ന്
- (ബി) അല്പം അകന്ന്
- (സി) വീടിൻറെ അകത്ത്



**Mothers meeting**

1. Self introduction
2. Objectives of the meeting
3. How many mothers send their children to anganwadi
4. Which are the common diseases occurring to your children ?  
In which months do this occur ?  
Are the above diseases occurring intermittently  
what is the interval between two incidences of the diseases?
5. do you know the reasons for these diseases?  
How do these diseases spread? Please explain
6. from where do you collect water for drinking and cooking?
7. Do you know what are the water-borne diseases?  
How can we prevent these? Can you suggest some methods to prevent this?
8. How many of your houses do have latrines?  
If not why?
9. Where do you and your children defecate?
10. Are you aware that open air defecation spread diseases?  
If yes which are the diseases?
11. I did any of your children suffer from diarrhoea since the last two weeks?
12. What are the ways to prevent Water-borne diseases and diseases caused by open air defecation
13. Open discussion
14. Thanks giving



6  
MOTHER'S MEETING  
രോഗിമാരുടെ യോഗം

ANNEXURE 4.2  
(MALAYALAM)

1. പരിചയപ്പെടൽ
2. വീട്ടിനകത്തു ഉദ്ദേശ്യലക്ഷ്യങ്ങൾ.
3. ഏതു രോഗങ്ങൾ നമ്മുടെ കുട്ടികളെ ബാധിക്കാൻ പറ്റിയീടാൻ  
• തടയാനാകുമോ ?  
ഇല്ലെങ്കിൽ എന്തുകൊണ്ട് ?
4. നിങ്ങളുടെ കുട്ടികൾക്ക് നല്ലൊരു ഉണർച്ചയുള്ള രോഗവൃത്തം  
ഏതൊക്കെയാണത് ? ഏതു മരുന്നുകളിലാണ് ഇത് ഉണ്ടാവുന്നത് ?  
ഇടവിട്ടിടവിട്ട് രോഗം ഉണ്ടാവുമോ ? രോഗമുണ്ടാവുന്നതിനിടയ്ക്കുള്ള  
കുഴപ്പങ്ങൾ എന്താണ് ?
5. ഈ രോഗങ്ങളുമുണ്ടാവുന്നതിനു കാരണങ്ങൾ തിരിയാമോ ?  
മരുന്നുകൊണ്ട് ഇത് പഠിക്കുന്നത് ? വിവരിക്കുക
6. നിങ്ങളുടെ കുട്ടിക്ക് അതിൽ മുതലാകാൻ രോഗം ഉണ്ടായാൽ  
നിങ്ങൾ എന്തു ചെയ്യും ?
6. കുടികാരം പാലം ചെയ്യണം വേണ്ട വെള്ളം നിങ്ങൾ എവിടെ  
നിന്നാണ് എടുക്കുന്നത് ?
7. വെള്ളത്തിൽ കൂടി പകരുന്ന രോഗങ്ങൾ മുതലാകാൻ  
നിങ്ങൾക്കറിയാമോ ? ഇത് എങ്ങനെ തടയാം ? ചില കുട്ടികൾ  
പഠിക്കുക.
8. നിങ്ങളുടെ കുട്ടിക്ക് പാലം വീട്ടിൽ കിട്ടിയിട്ടുണ്ടോ ?  
ഇല്ലെങ്കിൽ എന്തുകൊണ്ട് ?
9. നിങ്ങളുടെ കുട്ടികളെ എവിടെയാണ് പ്രവേശിപ്പിക്കണം നടത്തുന്നത് ?
10. ഇന്നത്തെ സാഹചര്യം മെച്ചപ്പെടുത്താനും രോഗങ്ങൾ  
പഠിക്കാൻ നിങ്ങൾക്കറിയാമോ ?  
തിരിയാമെങ്കിൽ ; മുതലാകാൻ രോഗങ്ങൾ ?
11. നിങ്ങളുടെ കുട്ടികൾക്ക് പലതരം രോഗം ഉണ്ടാവുമോ ?  
കുട്ടിയെ രോഗമുക്തമാക്കുവാൻ ഉണ്ടാവുമോ ?

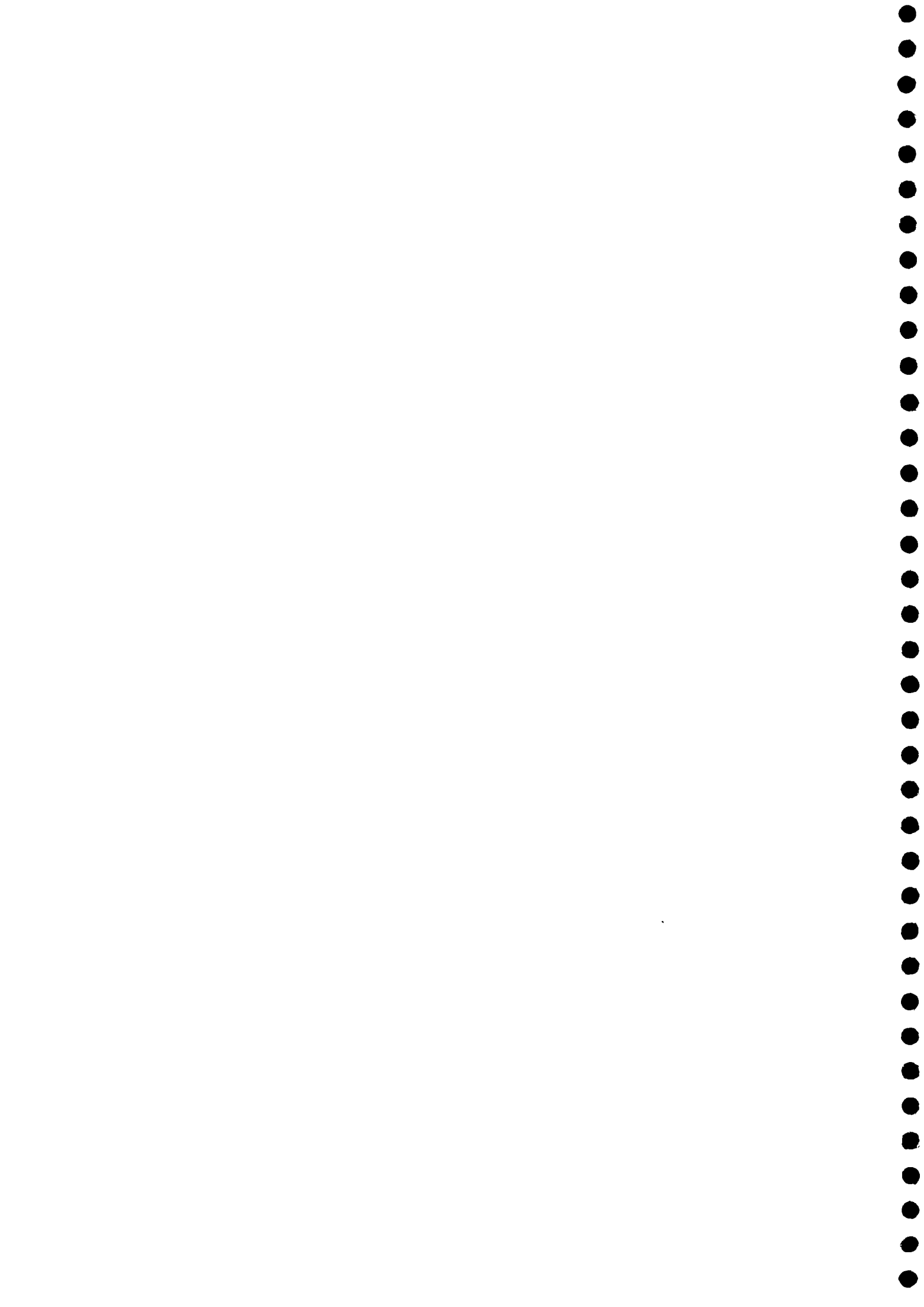


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12. ജ്ഞാനപ്രദാനങ്ങളും തുറന്ന സുലഭങ്ങളും ചെറുചെറുവിട്ടും  
വഴി പങ്കുവെക്കാനും തയ്യാറാക്കിയിട്ടു  
കൊടുക്കുക മനോഹരമാണ്?

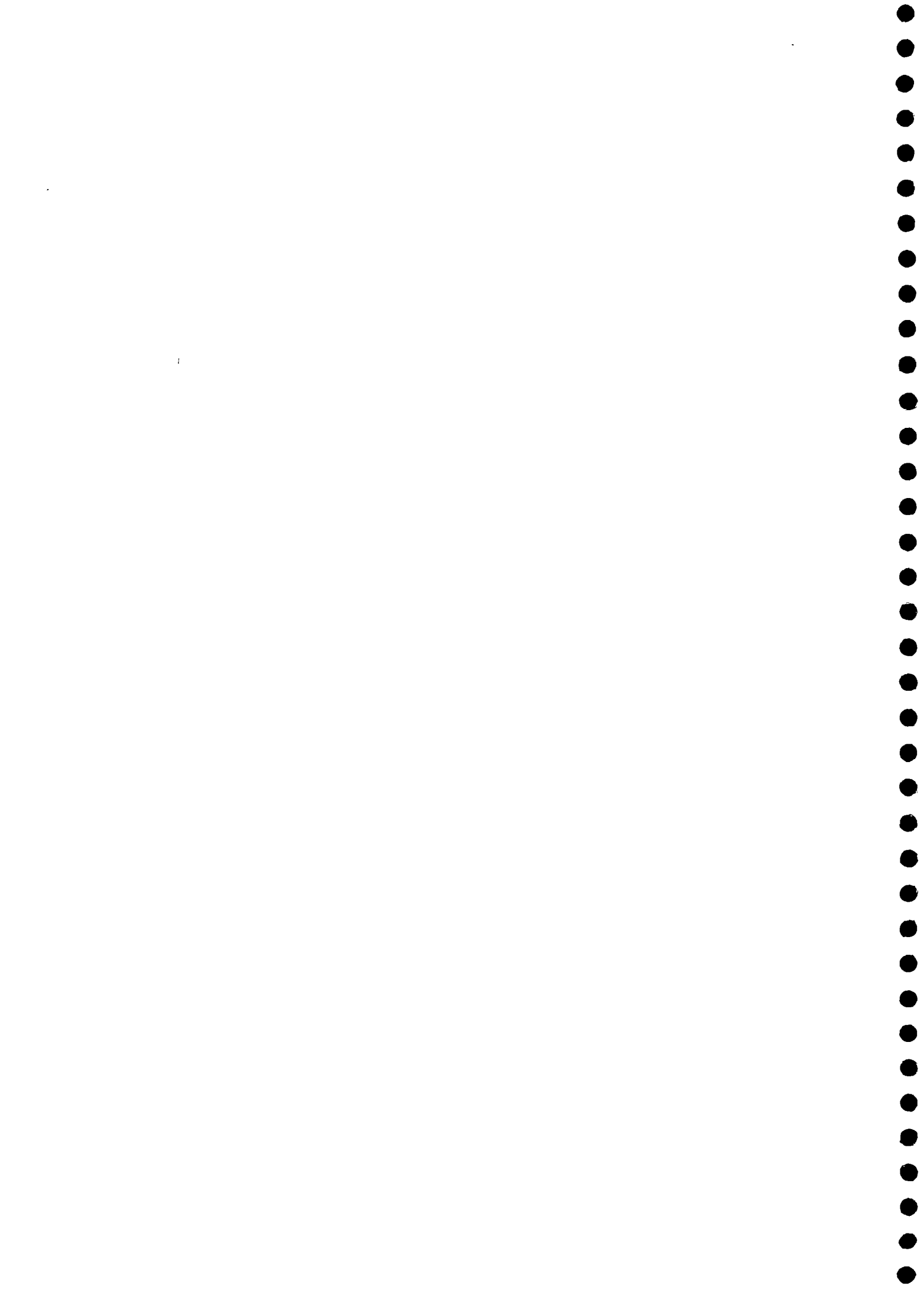
ഉവ്വ,

നന്ദി പ്രഭാതം





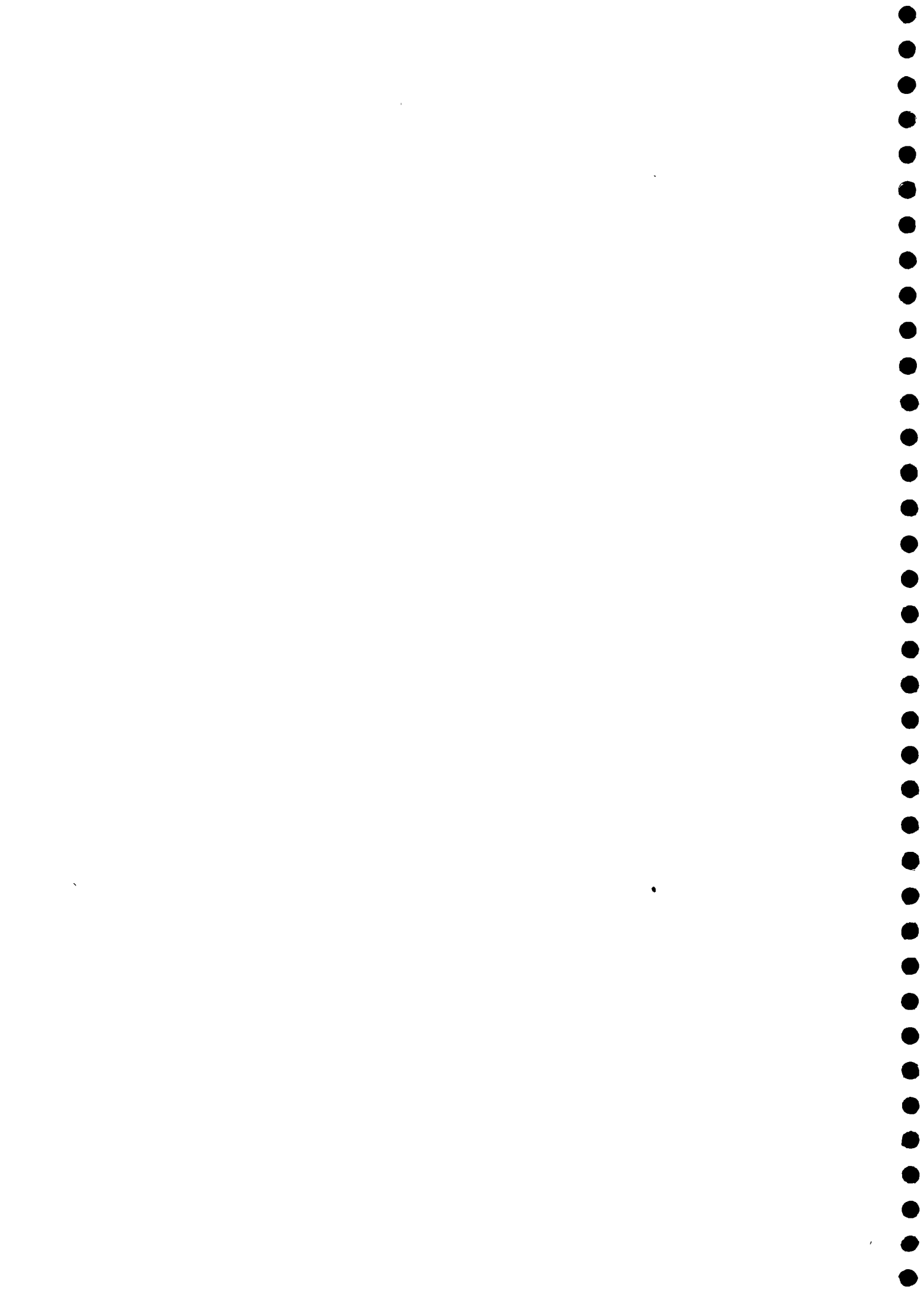
1. നൂറ്റാണ്ടിന്റെ ചരിത്രം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
2. നൂറ്റാണ്ടിന്റെ ചരിത്രം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
3. ഇന്ത്യയിലെ വിവിധ ഭാഗങ്ങളിലെ സാമ്രാജ്യങ്ങൾ? ഉത്തരം / ഇല്ല.
4. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
5. മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
6. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
7. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
8. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
9. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
10. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
11. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
12. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
13. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
14. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
15. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
16. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
17. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
18. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
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21. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
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23. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
24. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.
25. ക്രൈസ്തവ മതം എന്തായിരുന്നു? ഉത്തരം / ഇല്ല.



## Anganwadi Observation

Through observation

- |     |  |                    |
|-----|--|--------------------|
| I   | Panchayat  | II Ward            |
| III | SI no of Anganwadi                                     | IV Name of teacher |
| V   | No Of children   |                    |
| 1   | Environment of Anganwadi                               |                    |
|     | Good   |                    |
|     | satisfactory   |                    |
|     | Bad  |                    |
| 2   | Courtyard kept clean                                   | Yes/no             |
| 3   | The room and verandah of Anganwadi clean               |                    |
|     | Yes/no   |                    |
| 4   | Collection of drinking water                           |                    |
|     | Well/tap/others  |                    |
| 5   | Water source and environment are neatly kept           |                    |
|     | Yes/no   |                    |
| 6   | Place where children sit                               |                    |
|     | Floor/bench  |                    |
| 7   | Place where drinking water is kept                     |                    |
|     | Stand/floor  |                    |
| 8   | Vessels/drinking water/food                            |                    |
|     | whether kept properly                                  | Yes/no             |
| 9   | Whether the teacher/helper                             |                    |
|     | washes hands before                                    |                    |
|     | feeding children                                       | Yes/no             |
| 10  | Do children wash their hands before food               |                    |
|     | Yes/no   |                    |
| 11  | Are the vessels used by the children to eat kept clean |                    |
|     | Yes/no   |                    |
| 12  | How is the water used for washing vessels              |                    |
|     | Satisfactory/bad                                       |                    |
| 13  | Is there a latrine in the anganwadi                    |                    |
|     | Yes/no   |                    |
| 14  | If yes, general cleanliness                            |                    |
|     | Good/satisfactory/bad                                  |                    |
| a   | Water in bucket  | yes/no             |
| b   | soap   | yes/no             |



- c brush yes/no  
d faeces in waterseal yes/no
- 15 Place where children sleep mat/ clean floor/ dirty floor
- 16 Have the children cut their nails yes/no
- 17 Is faeces seen in the anganwadi Environment Yes/no
- 18 Is there hen or dog nuisance in the Anganwadi environment Yes/no
- 19 Is the cooking place neatly kept Yes/no
- 20 General cleanlinessof children Good/satisfactory/bad

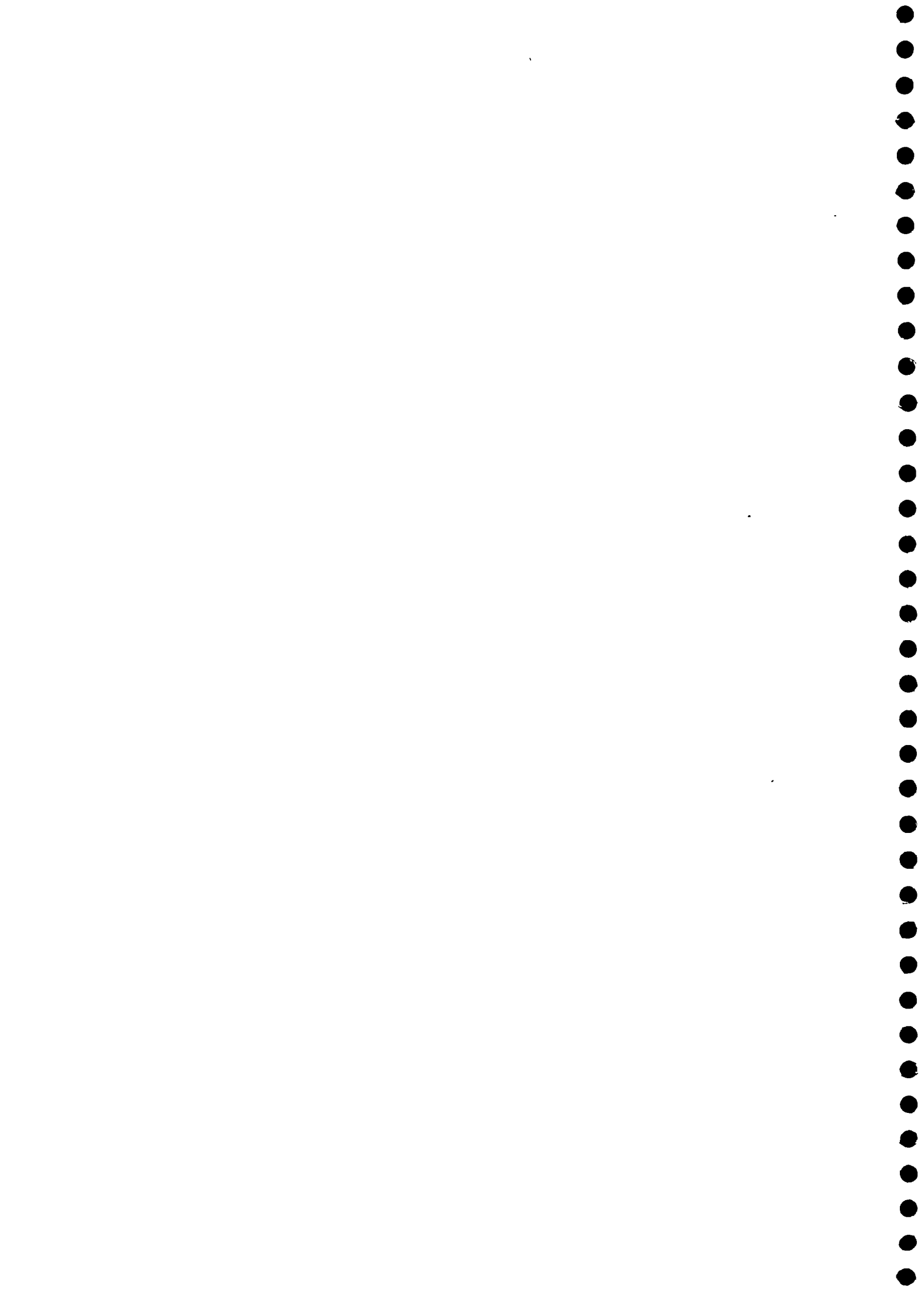


ANGANWADI  
അംഗനവാടി

നിരീക്ഷണ കുയിലുകൾ

- 1. ചമ്പലാചാര്യ
- 2. വാൾസ്
- 3. അംഗനവാടിനമ്പർ
- 4. ടീച്ചറുടെ പേര്.
- 5. കുട്ടികളുടെ എണ്ണം.

- I. അംഗനവാടിയുടെ പരിസരം.
  - മെമ്പർഷിപ്പ്
  - അധികാരം
  - ഭവനം.
- II. മൂന്നു കുട്ടികളുടെ പരിചരണം. അമ്മ/അമ്മ.
- III. അംഗനവാടിയുടെ പ്രവർത്തനങ്ങൾ } അമ്മ/അമ്മ.
- IV. കുട്ടികളുടെ പെരുമാറ്റം. ടീച്ചർ/ടീച്ചർ/മുൻപുള്ളി
- V. കുട്ടികളുടെ പെരുമാറ്റം പരിസരം } അമ്മ/അമ്മ.
- VI. കുട്ടികൾ തിരിയുന്ന സമയം. അമ്മ/അമ്മ.
- VII. കുട്ടികൾ പെരുമാറ്റം പരിസരം } അമ്മ/അമ്മ.
- VIII. പാഠങ്ങൾ/കുട്ടികൾ/കുട്ടികൾ: ശരിയായ രീതിയിൽ സൂക്ഷിക്കുക ഉണ്ടു/ഇല്ല.
- IX. കുട്ടികൾക്ക് കുട്ടികൾ ഉണ്ടാകുന്നതിനുള്ള ടീച്ചർ/അമ്മ-യർ മൈ മിറ്റിംഗ്.
- X. കുട്ടികൾക്ക് കുട്ടികൾ ഉണ്ടാകുന്നതിനുള്ള ടീച്ചർ/അമ്മ.
- XI. കുട്ടികൾ ഉണ്ടാകുന്ന പാഠത്തിന് പ്രവർത്തനം. ഉണ്ടു/ഇല്ല.
- XII. പാഠം ഉണ്ടാകുന്ന പാഠത്തിന്റെ നിലവാരം/പ്രവർത്തനം. അമ്മ/അമ്മ.





XIII അംഗൻവാടിക്കിടക്കുന്ന ഉണ്ടോ.

ഉണ്ട്/ഇല്ല.

XIV ഉണ്ടാകാത്ത ചെറുവായ പൂന്തി.

നല്ലത്/മുട്ടിച്ചിട്ടുള്ളത്/മോശം.

XV

(a) ബെങ്കാളിൻ സെന്റർ? ഉണ്ട്/ഇല്ല.

(b) സോഷ്യൽ ? ഉണ്ട്/ഇല്ല.

(c) ബ്രഷ് ? ഉണ്ട്/ഇല്ല.

(d) വെള്ളപ്പൊക്കത്തിൽ മരം ? ഉണ്ട്/ഇല്ല.

XVI കുട്ടികൾ ഉറങ്ങുന്ന സ്ഥലം.

പാർക്ക്/പുരയിടുക്കിനരികിലോ/പുരയിടുക്കിനകത്തോ

XVII കുട്ടികൾ പാർക്ക് വെട്ടിയിട്ടുണ്ടോ?

ഉണ്ട്/ഇല്ല.

XVIII അംഗൻവാടിക്കിടുടെ പരിസരത്ത് മലപ്പാടിന്റെ കോശം  
കാണാൻ ഉണ്ടോ.

ഉണ്ട്/ഇല്ല.

XIX അംഗൻവാടി പരിസരത്ത് കോഴി/നായ തുടങ്ങിയവയുടെ  
ശബ്ദം ഉണ്ടോ.

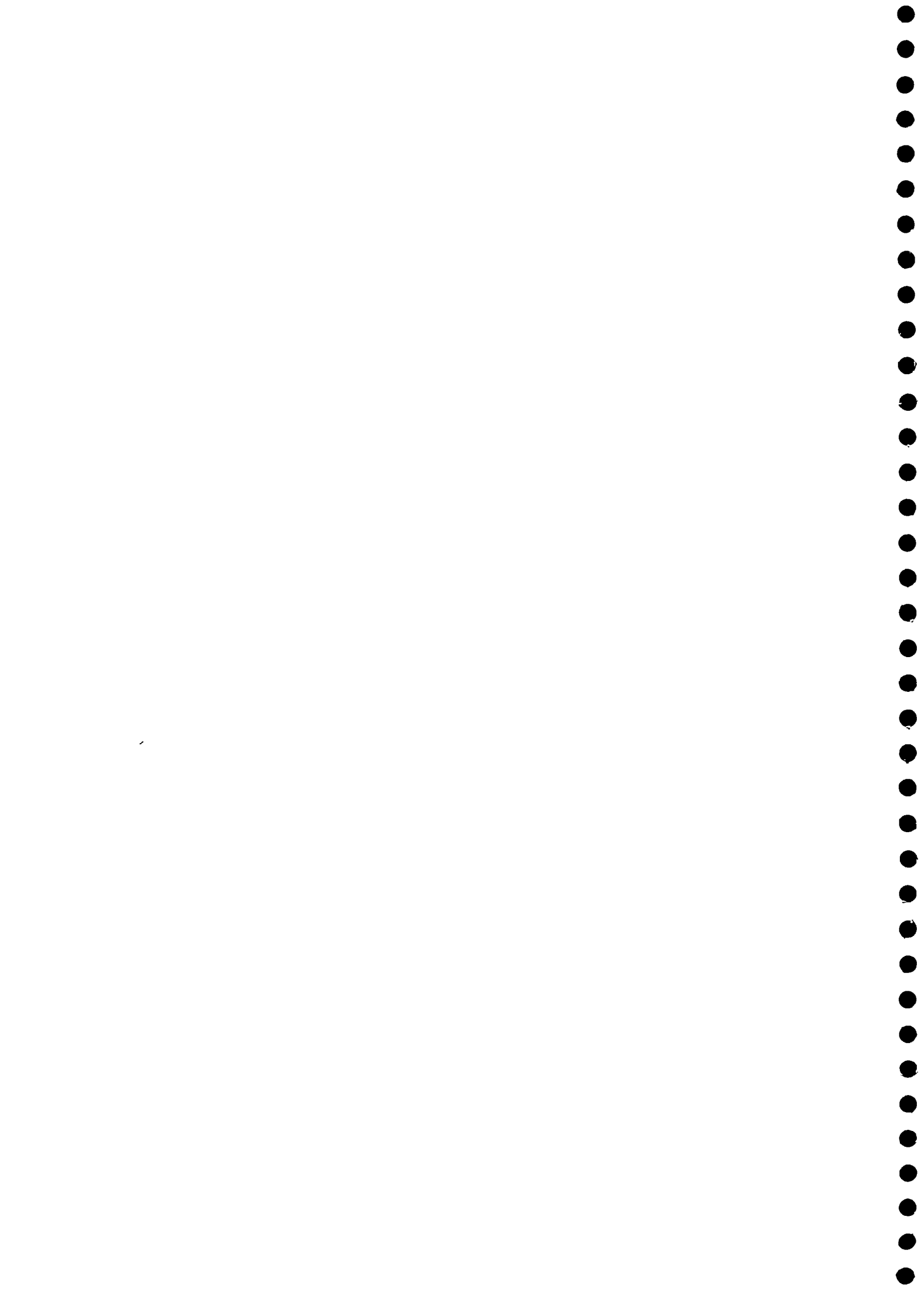
ഉണ്ട്/ഇല്ല.

XX പാർക്ക് വെട്ടുന്ന സ്ഥലം പുരയിടുക്കിലോ?

മെന്ത്/താൽപ്പര്യം/മോശം.

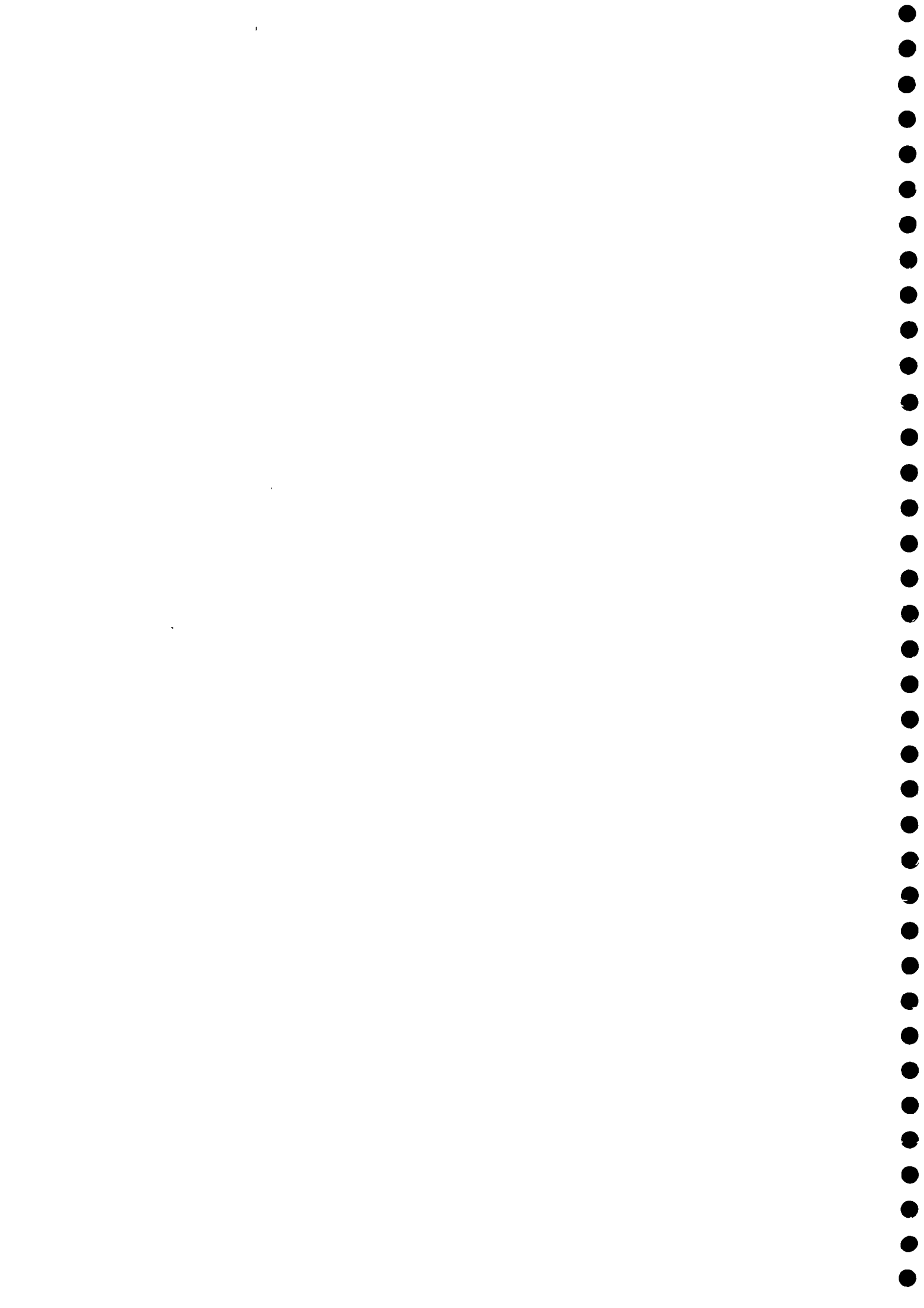
XXI കുട്ടികളുടെ ചെറുവായ പൂന്തി.

മെന്ത്/താൽപ്പര്യം/മോശം.

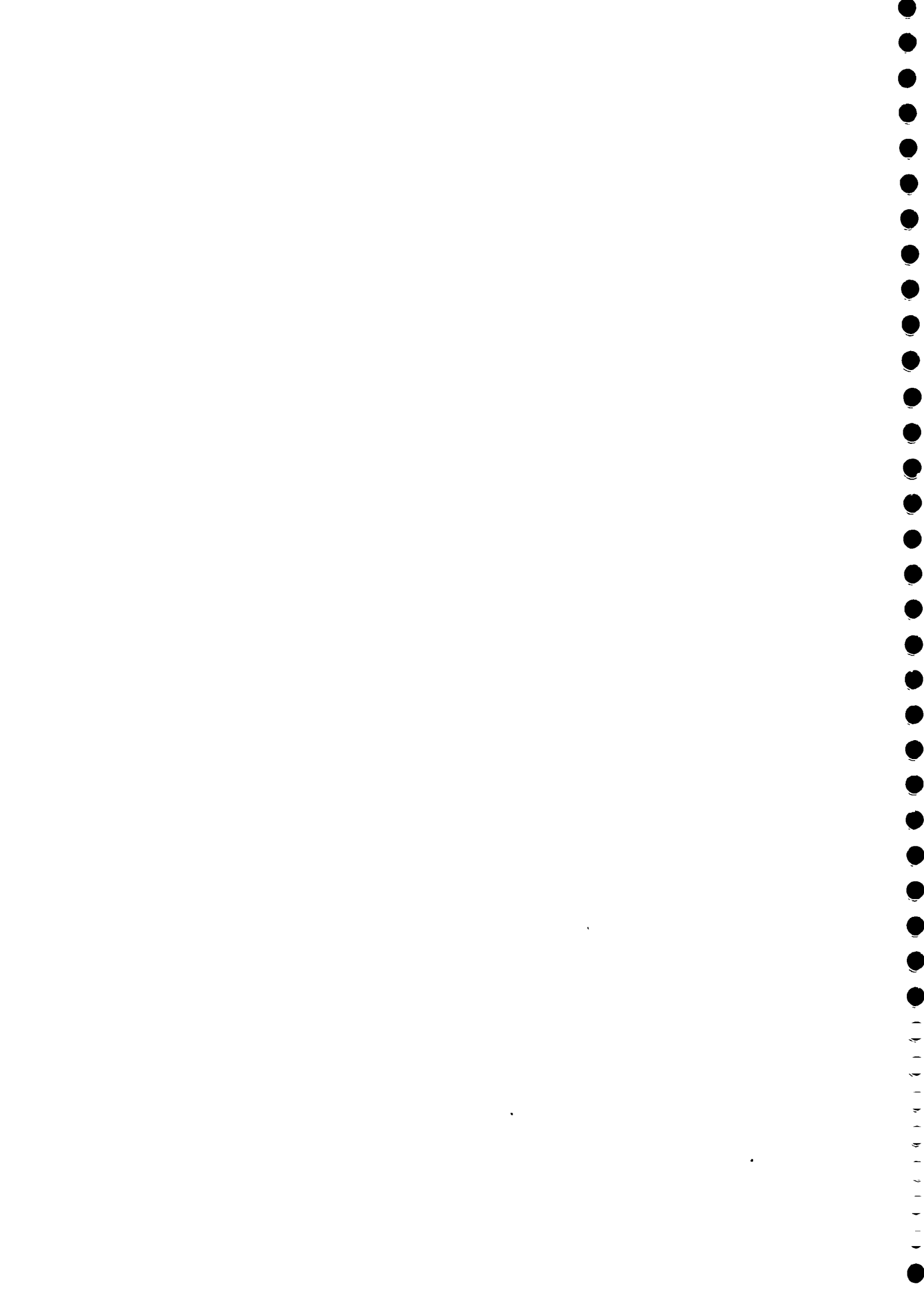


## School observation- Checklist

- A Compound wall Yes/no
- B Is the surrounding clean? Yes/no  
 Nofaecal particles  
 Nofoul smell  
 No rubbish  
 No stagnant water
- Care the classrooms clean? Yes/no  
 Dis there a latrine/urinal  
 If yes is it useful?  
 Eis latrine/urinal clean Yes/no  
 Cleanliness of latrine/urinal  
 Soap is kept  
 Brush  
 Water inside  
 Clean waterseal  
 No foul smell  
 Is the latrine locked?
- g Is there separate latrine/urinal for teachers and students
- h Do the children defecate/urinate in the open air without using sanitary facilities  
 Boys/Girls  
 Availability of water  
 well/Tap/others
- I Is it a sanitary well or not?  
 Sanitary well-Apron,Platform,drainage separate place for keeping rope and bucket
- J Is there any Public Taps inside or outside the school?  
 Is it clean Good/satisfactory/bad  
 good conditions mean-  
 Generally clean surroundings  
 drainage facility  
 no stagnant water  
 no leak  
 no rubbish around the tap  
 satisfactory
- k School kitchen
- l Is the kitchen clean  
 (Are the vessels in the kitchen clean  
 Is there any stagnant water)
- 2 Is the cooking being done hygeimically  
 Are hands washed before commencement of cooking



- Are the vessels washed properly
- Are the food articles washed properly
- Is the cook wearing clean clothes
- 3 Is the cooked food being served hygeinically
- Are the vessels used for cooking kept clean
  
- 4 How clean is the kitchen store
- Does the store has the rat and cocroach nuisance
- Are the food articles kept carelessly
- Any fly nuisance
  
- 5 Does the school have dust-bin
- Is there a bunk shop outside the school
- If there is one what is the hygeinic conditions
- Are food articles kept opened
- Is the shop-keeoer clean
- Are the food articles given hygeinically by the shop keepers
- General hygeine of children
- Good/ satisfactory/ bad
- Clipped nails,took bath, wearing clean clothes









- ...
- ...
- ...
- ...
- ...

6/12/19

Satisfactory

... conditions ...

... conditions ...

(K) ...

...

(1) ...

(2) ...

(3) ...

(4) ...

(5) ...

(6) ...



(4) പുസ്തകം വായിച്ചുകൊണ്ടിരിക്കുമ്പോൾ ഏതു സമയം ഉപയോഗിക്കേണ്ടതാണ്? 6/12/15

(5) പുസ്തകം വായിക്കുമ്പോൾ എന്തിനാണ് വായിക്കേണ്ടത്?

(6) പുസ്തകം വായിക്കുമ്പോൾ ഏതു സമയം ഉപയോഗിക്കേണ്ടതാണ്?

a) പുസ്തകം വായിക്കുമ്പോൾ എന്തിനാണ് വായിക്കേണ്ടത്?

b) പുസ്തകം വായിക്കുമ്പോൾ എന്തിനാണ് വായിക്കേണ്ടത്?

(7) പുസ്തകം വായിക്കുമ്പോൾ എന്തിനാണ് വായിക്കേണ്ടത്?

(8) പുസ്തകം വായിക്കുമ്പോൾ എന്തിനാണ് വായിക്കേണ്ടത്?

(9) പുസ്തകം വായിക്കുമ്പോൾ എന്തിനാണ് വായിക്കേണ്ടത്?

(10) പുസ്തകം വായിക്കുമ്പോൾ എന്തിനാണ് വായിക്കേണ്ടത്?



HOUSE VISIT

ജാതിമുഖ ഹോസ്റ്റലിലൂടെ ഒരു മാതൃക.

പേര്:

ഗ്രാമം:

നമുസ്കാരം

- 1. താല്കർമ്മം കൂടുതലാക്കുവാൻ സുഖമല്ലേ?
- 2. താല്കർമ്മം എത്ര കുടികളുണ്ട്?

ജാതിമുഖം	-----	പെൺകുടികൾ	-----
പേര്	വയസ്സ്	പേര്	വയസ്സ്
-----	-----	-----	-----

- 3. കുടികൾ തണിച്ച് കെട്ടിയിട്ടുണ്ടോ? പ്രാപ്തമാണോ?
- 4. ഹോസ്റ്റലിലെ എങ്കിൽ ജവർ എവിടെയാണ് മലവിതരണമെന്നും നടത്തുന്നത്?
- 5. ജവരുടെ മലം എങ്ങനെ/എവിടെ മറയ്ക്കപ്പെടുന്നു?
- 6. വീട്ടിൽ ജവർലോം കെട്ടി ഉപയോഗിക്കുന്നു?
- 7. താല്കർമ്മം കെട്ടി ഉപയോഗിക്കാറുണ്ടോ?
- 8. തുല്യമായി എന്തുകൊണ്ട്?
- 9. കുടികളുടെ മലം അപകടകാരി/രോഗകാരിയാണെന്നു തോന്നുന്നുണ്ടോ?
- 10. ഉണ്ടെങ്കിൽ എന്തുകൊണ്ട്?
- 11. കഴിഞ്ഞ രണ്ട് മാസം ദിവസങ്ങൾക്കുള്ളിൽ നിങ്ങളുടെ കുടിക വലിപ്പം ഉണ്ടായിട്ടുണ്ടോ?
- 12. ഉണ്ടെങ്കിൽ എന്തായിരിക്കാം കാരണം?
- 13. മേൽപ്പറഞ്ഞ ചികിത്സയാണ് നടത്തിയിട്ടുണ്ടോ?




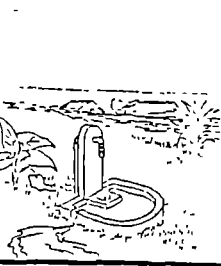











14. കുടികളെ കൂടാതെ മറ്റ് അർക്കലോം വലറിലകം ഉണ്ടാമിടുന്നു?
15. അവർക്ക് എന്തു ചികിത്സ നൽകി?
16. നിങ്ങൾ എവിടെനിന്നാണ് വെള്ളം എടുക്കുന്നത്?
17. എത്രമാത്രം? എപ്പോഴൊക്കെ?
18. ഇത് എന്തിനെപ്പറ്റി ഉപയോഗിക്കുന്നു?
19. കുടിക്കുന്നതിനും, മറ്റ് അവശ്യങ്ങൾക്കും എടുക്കുന്നതിനു മുമ്പായി വെള്ളം ശുദ്ധീകരിക്കുന്നത് എങ്ങനെ?
- 4 (എ) അരികൽ
  - (ബി) ഊരൽ
  - (സി) കരികട ഇട് ശുദ്ധീകരിക്കുന്നു
  - (ഡി) തിളപ്പിച്ചത്
  - (ഇ) മറ്റ് ഏതെങ്കിലും രീതിയിൽ
20. വെള്ളത്തിന് വില നൽകുന്നുവെങ്കിൽ നിങ്ങൾ ഒരു ബക്കറ്റ് വെള്ളത്തിന് എന്തു വില നൽകും?
21. സോഫ്റ്റ് ഹാരമാ ഉപയോഗിച്ച് കൈ എപ്പോഴൊക്കെ കഴുകാറുണ്ട്?
22. എന്തുകൊണ്ട്/എന്തുകൊണ്ടിലെ?

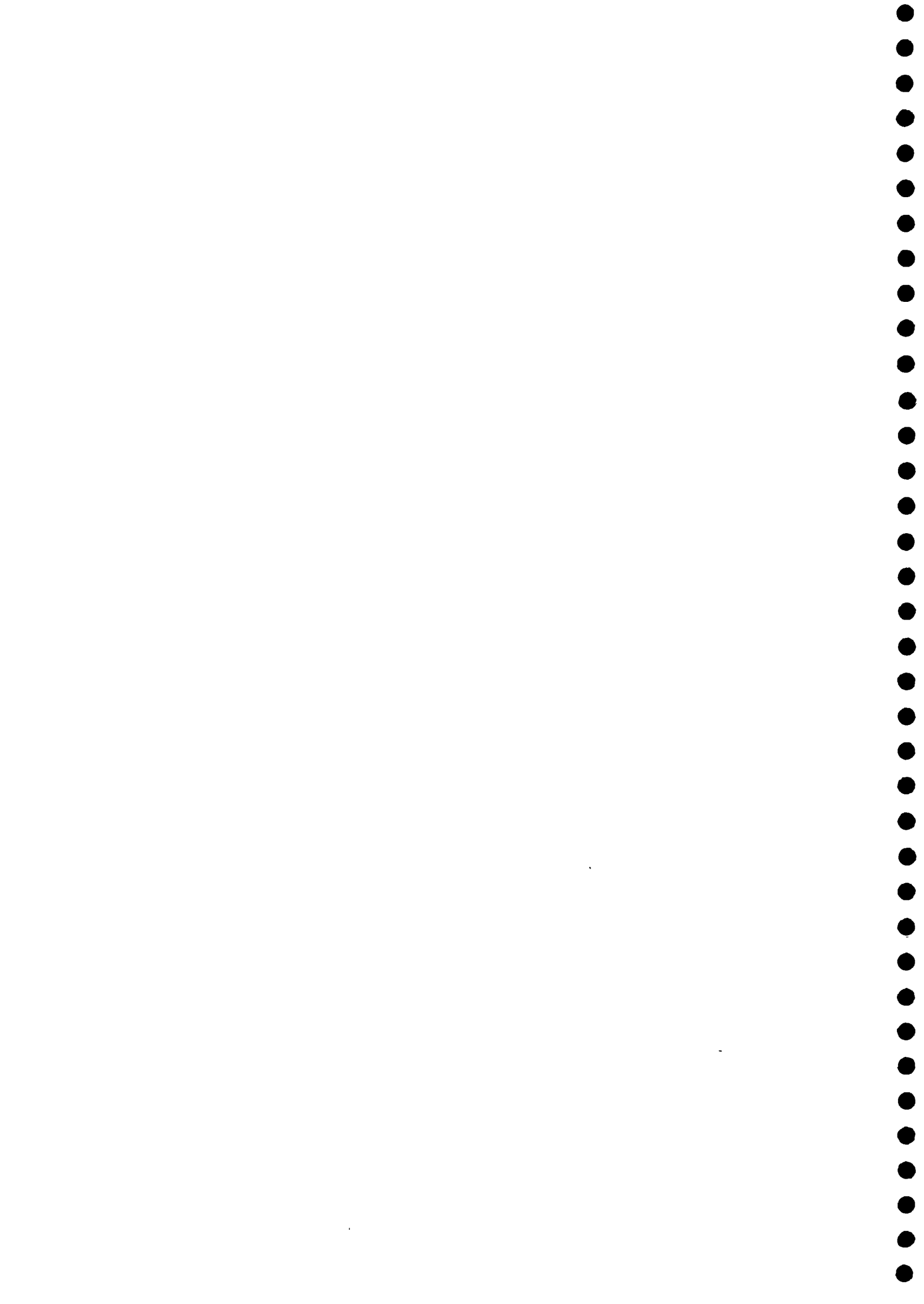
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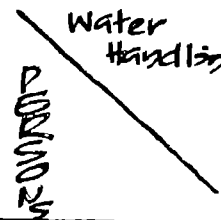









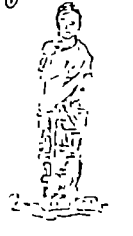


# DRAWINGS USED IN THE POCKET CHART

WATER SOURCE / USE					
					
					
					
					
					
					
					
					



DRAWINGS USED IN THE POCKET CHART - Water Handling and Transit







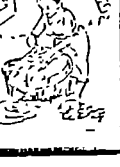

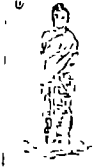

<p>Water Handling</p> 									
									

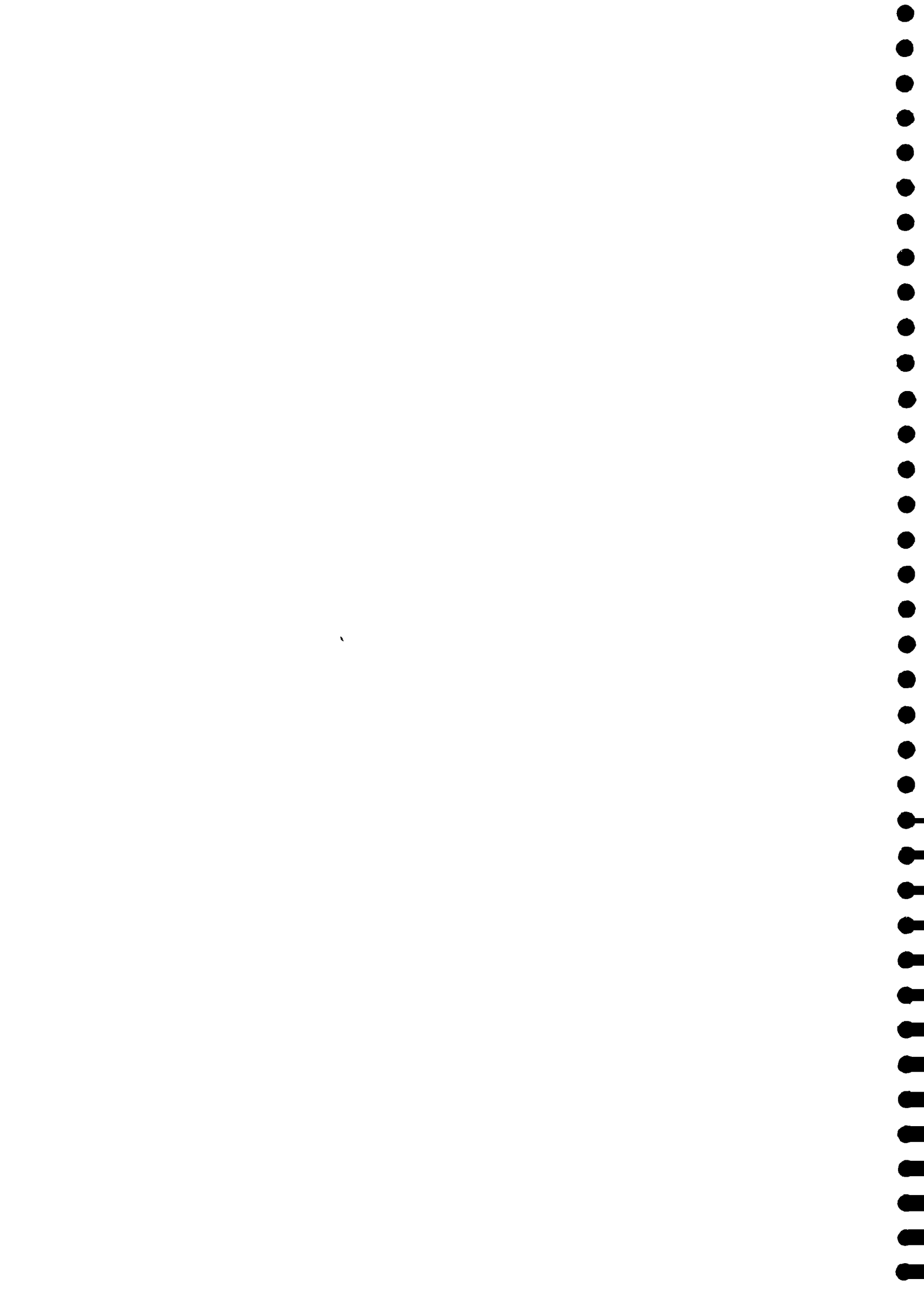






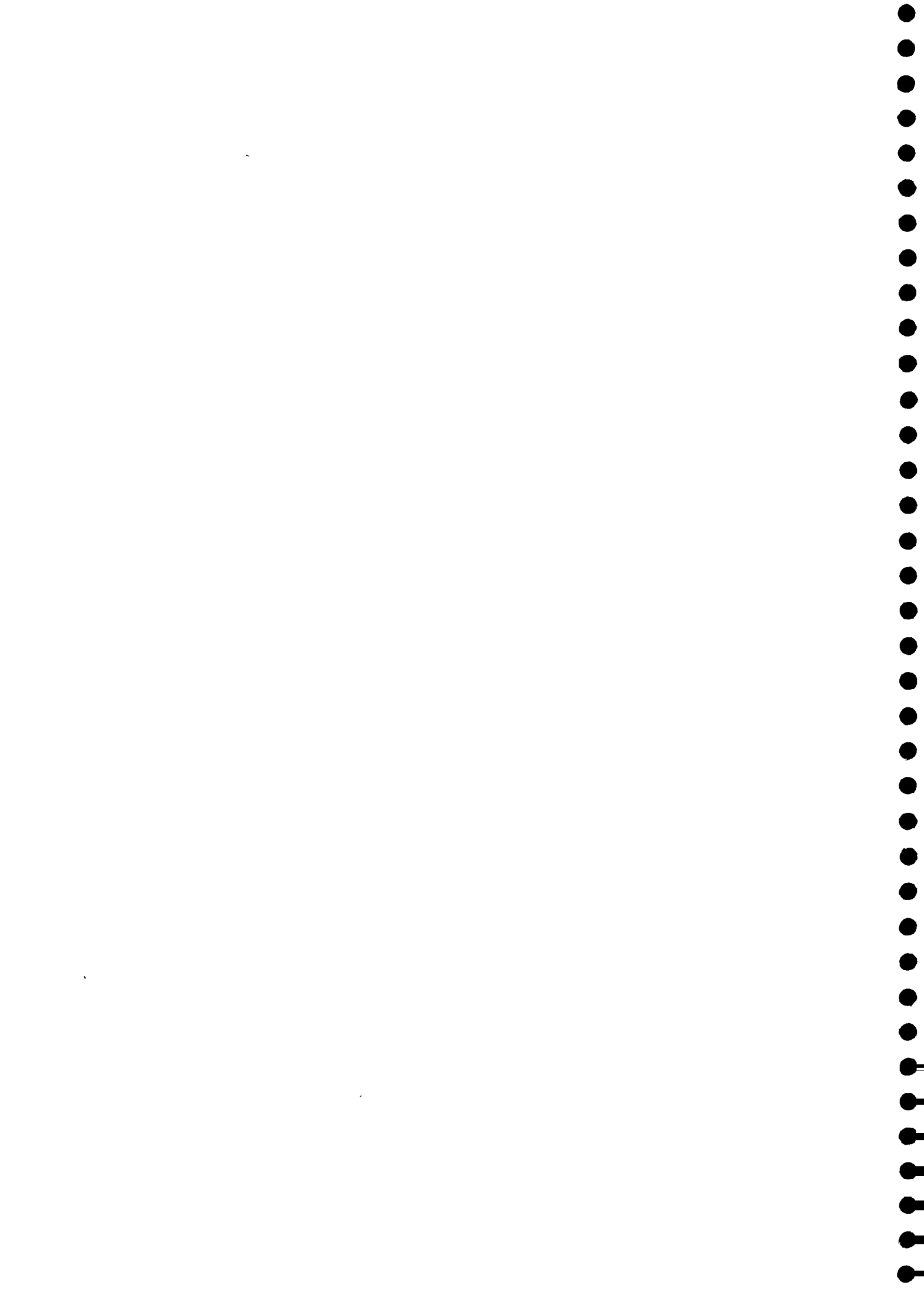
PICTURES USED IN THE POKET CHART  
DOMESTIC Hygiene practices

HYGIENE PRACTICES DISORDER								
								
								




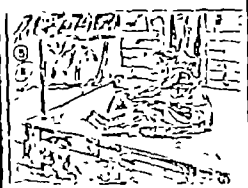








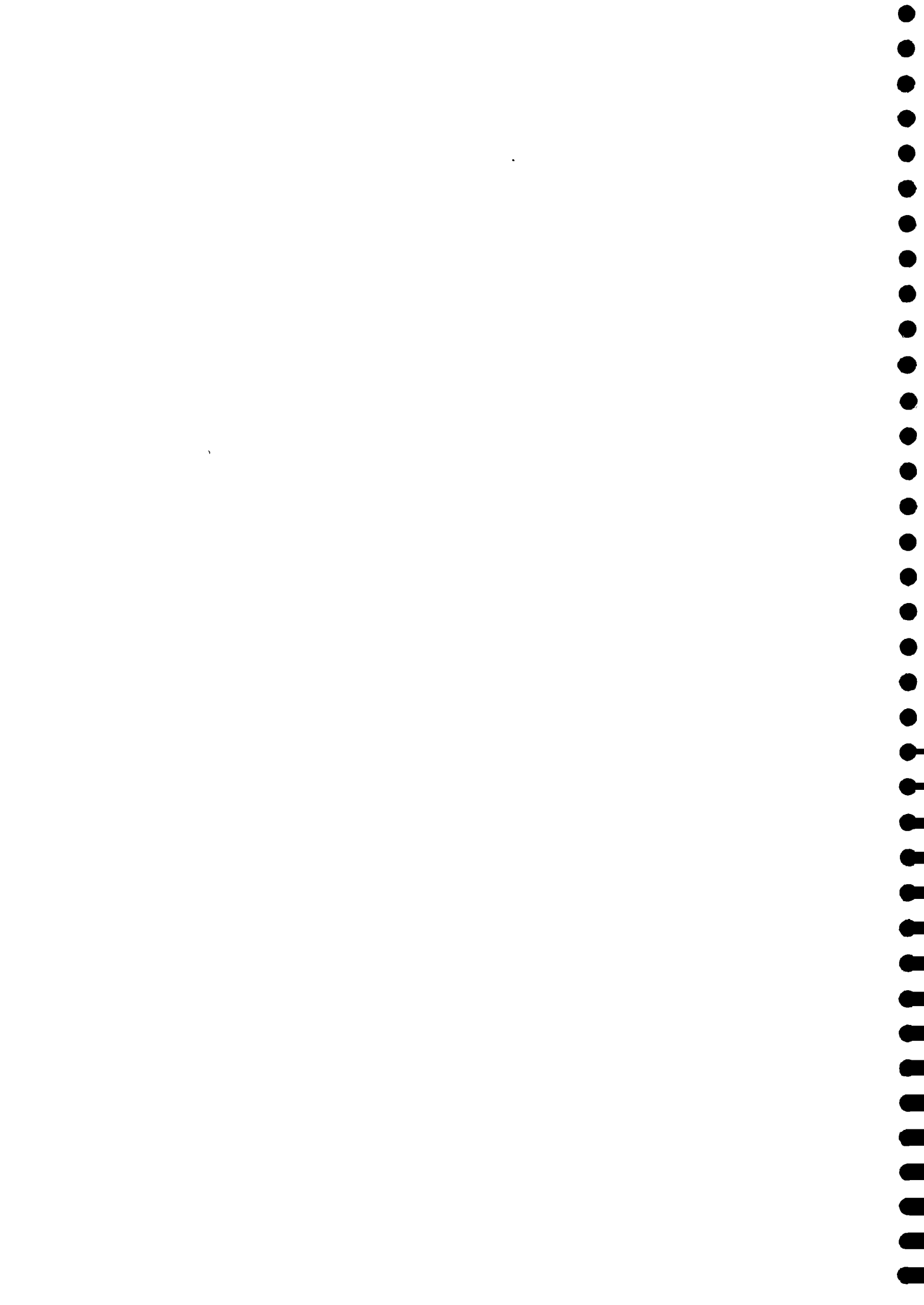






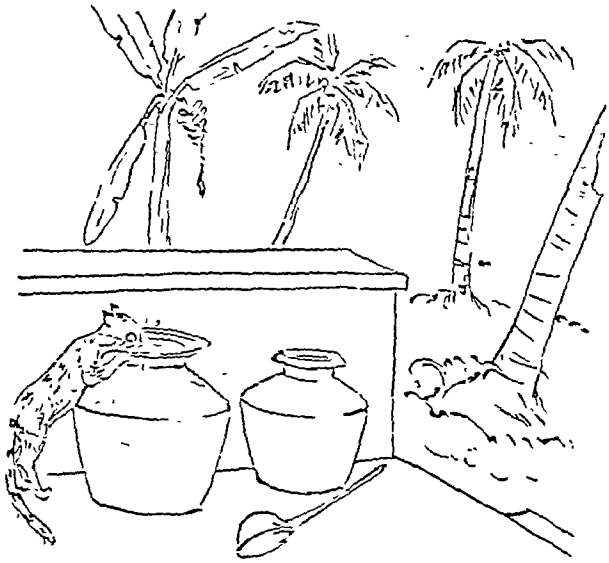
# DRAWINGS USED IN THE POCKET CHART sanitation facilities

sanitation facilities 1 	2 	3 	4 	5 	6 	7 	8 
9 							
10 							



Picture no. 2

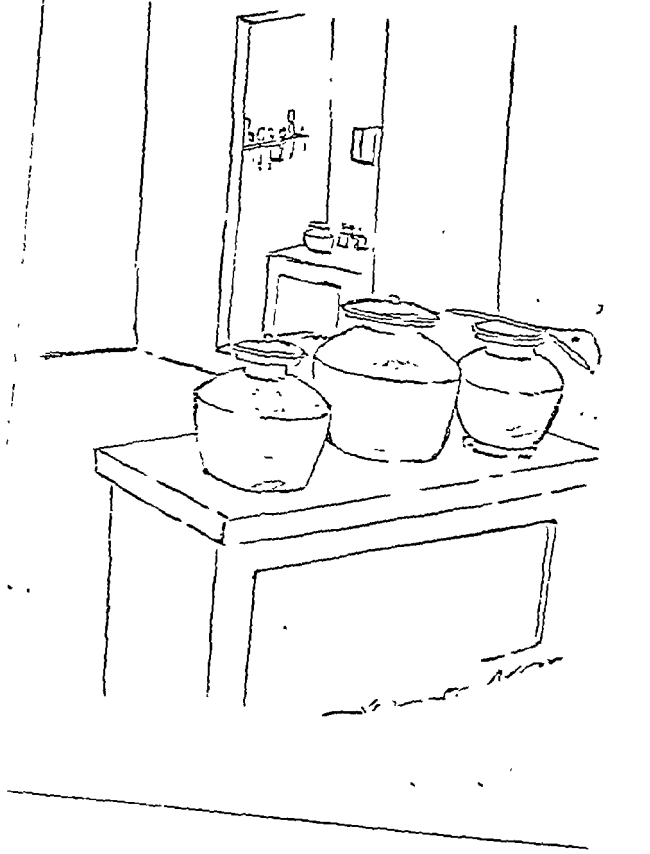
3P  
WH/s 2



# WATER STORAGE

Picture no. 1

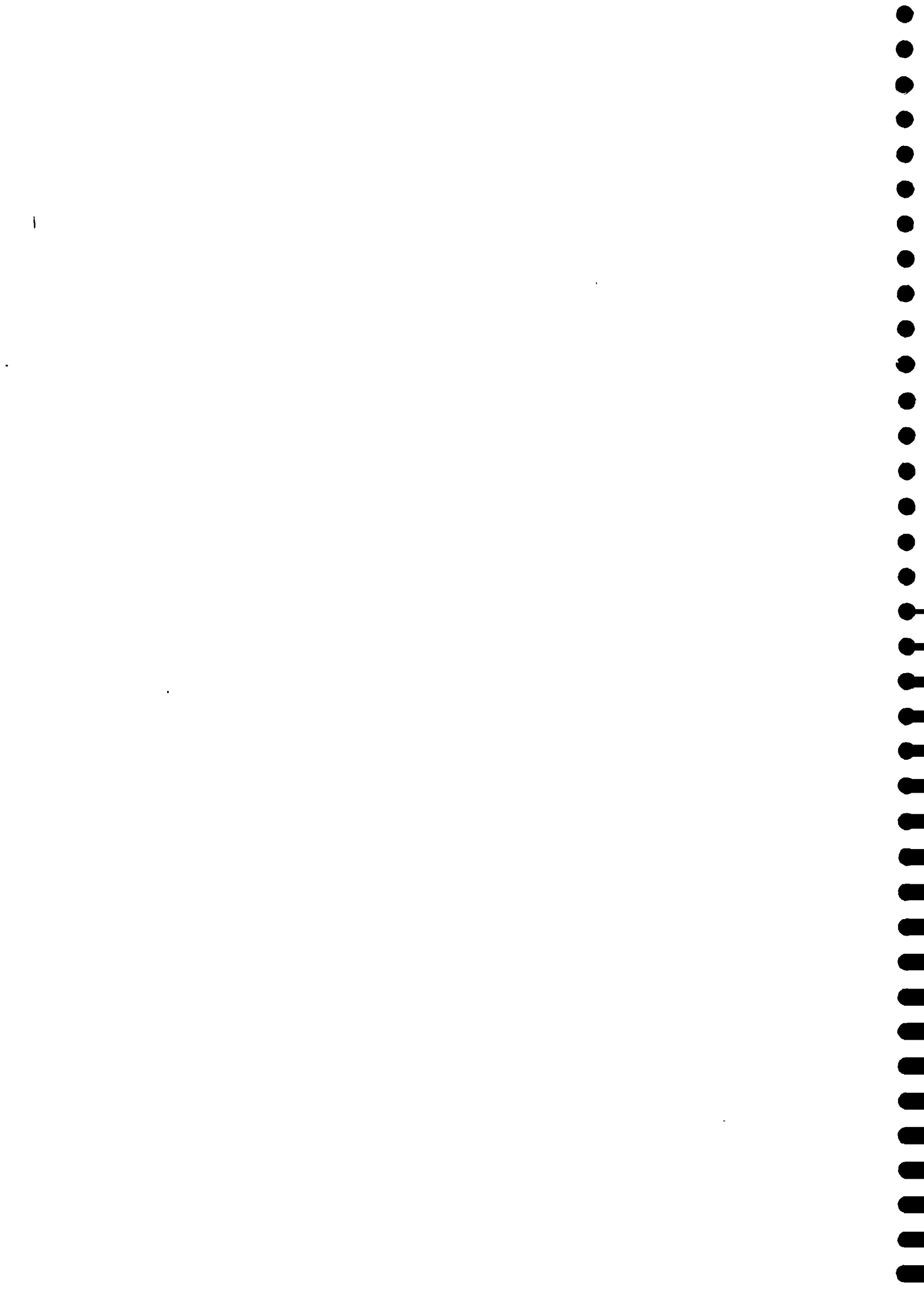
3P  
WH/s 1



Picture no. 3

3P  
WH/s 3





# CONDITION OF WATER SOURCES

ANNEXURE 8.2a

Picture no.1



Picture no.2



Picture no.7



Picture no.8



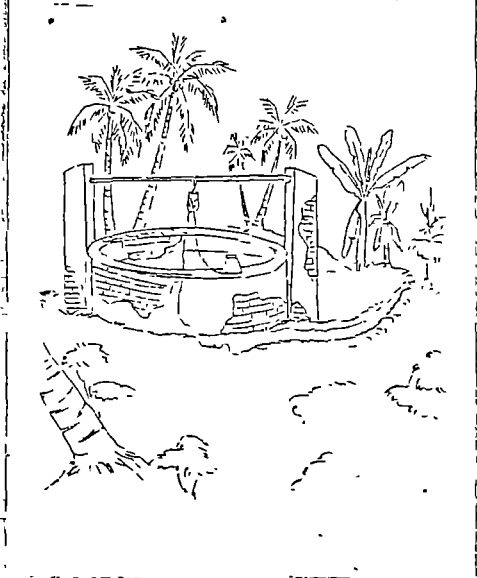
Picture no.9



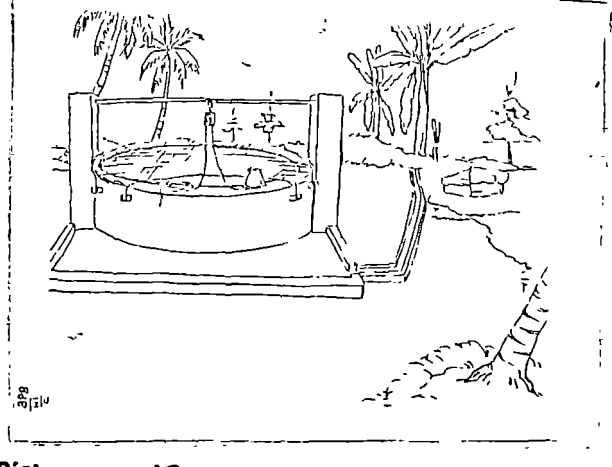




3P7  
Picture no. 10



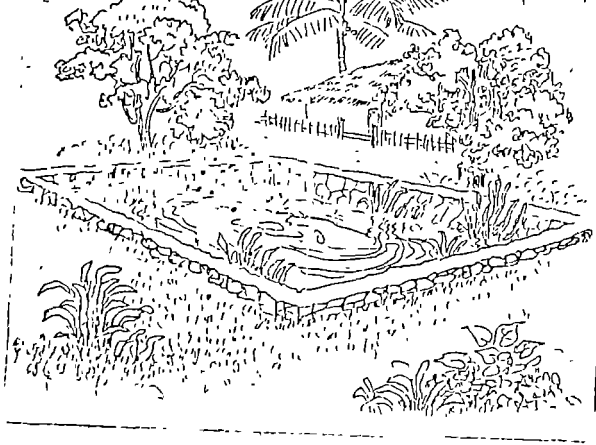
Picture no. 11



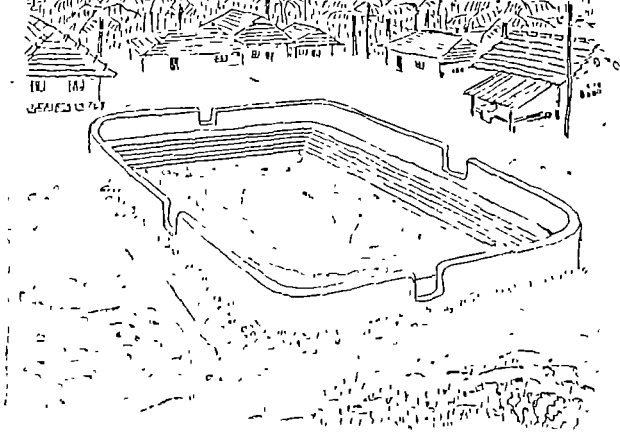
3P10  
Picture no. 12



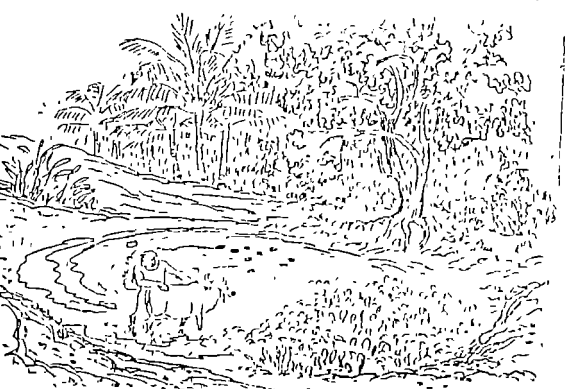
3P12  
Picture no. 15

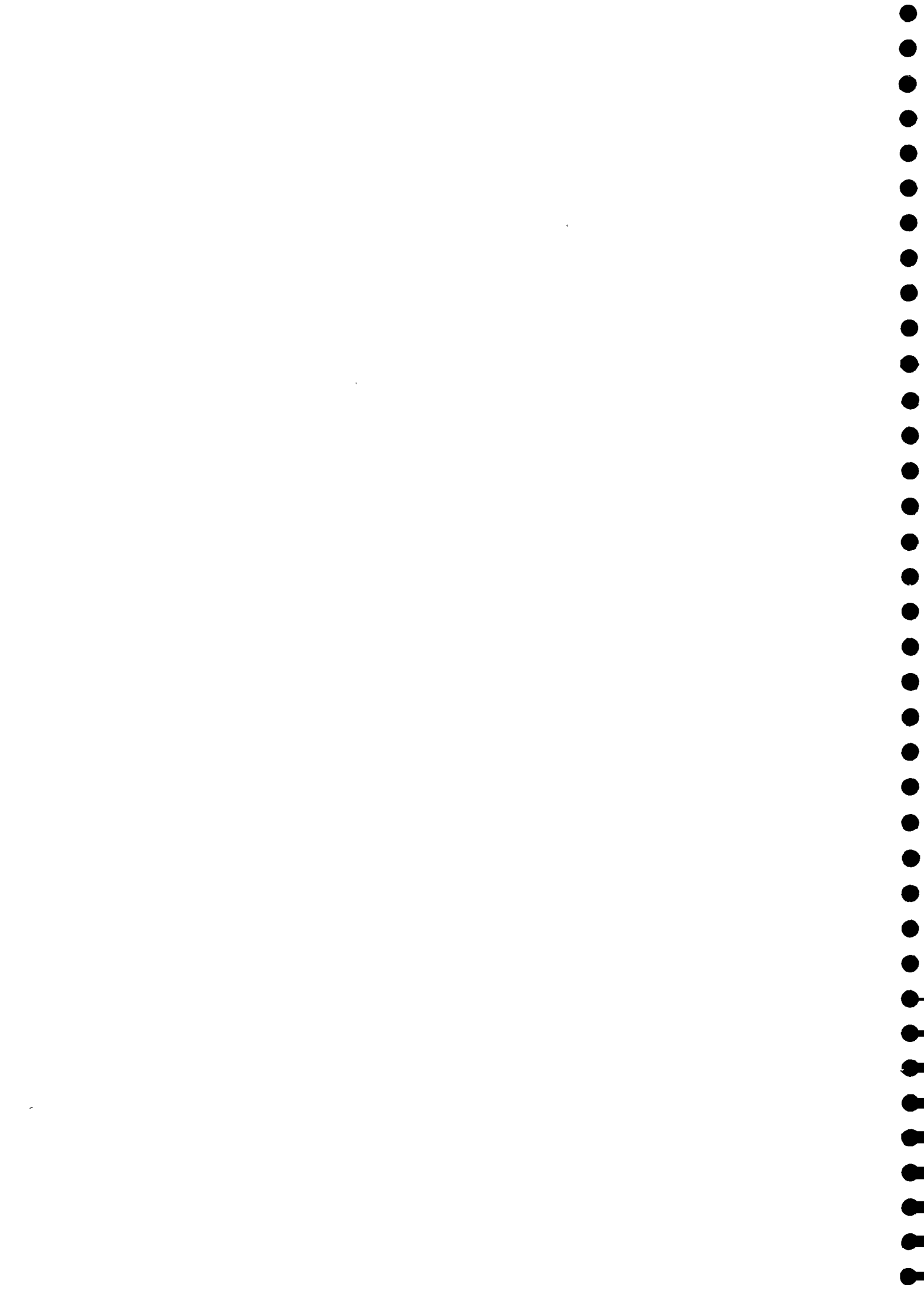


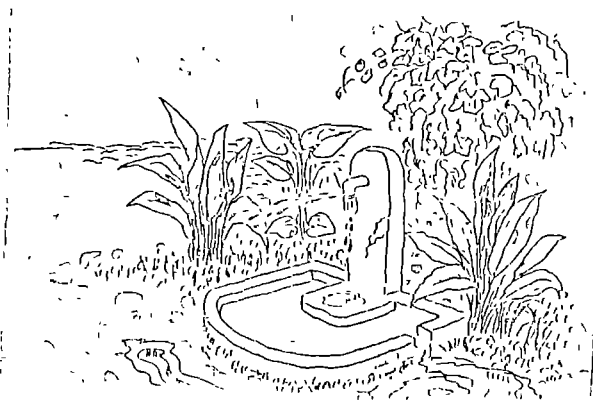
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Picture no. 13



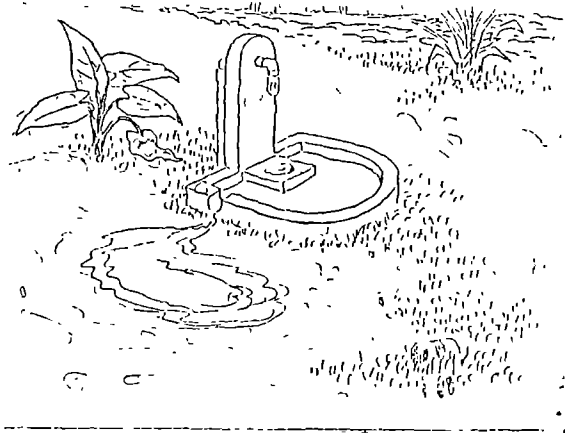
Picture no. 14



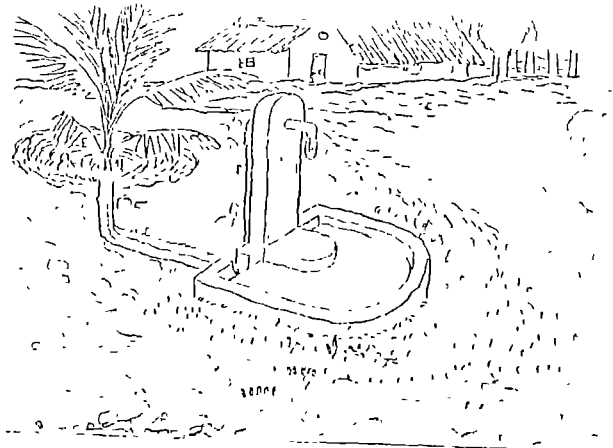


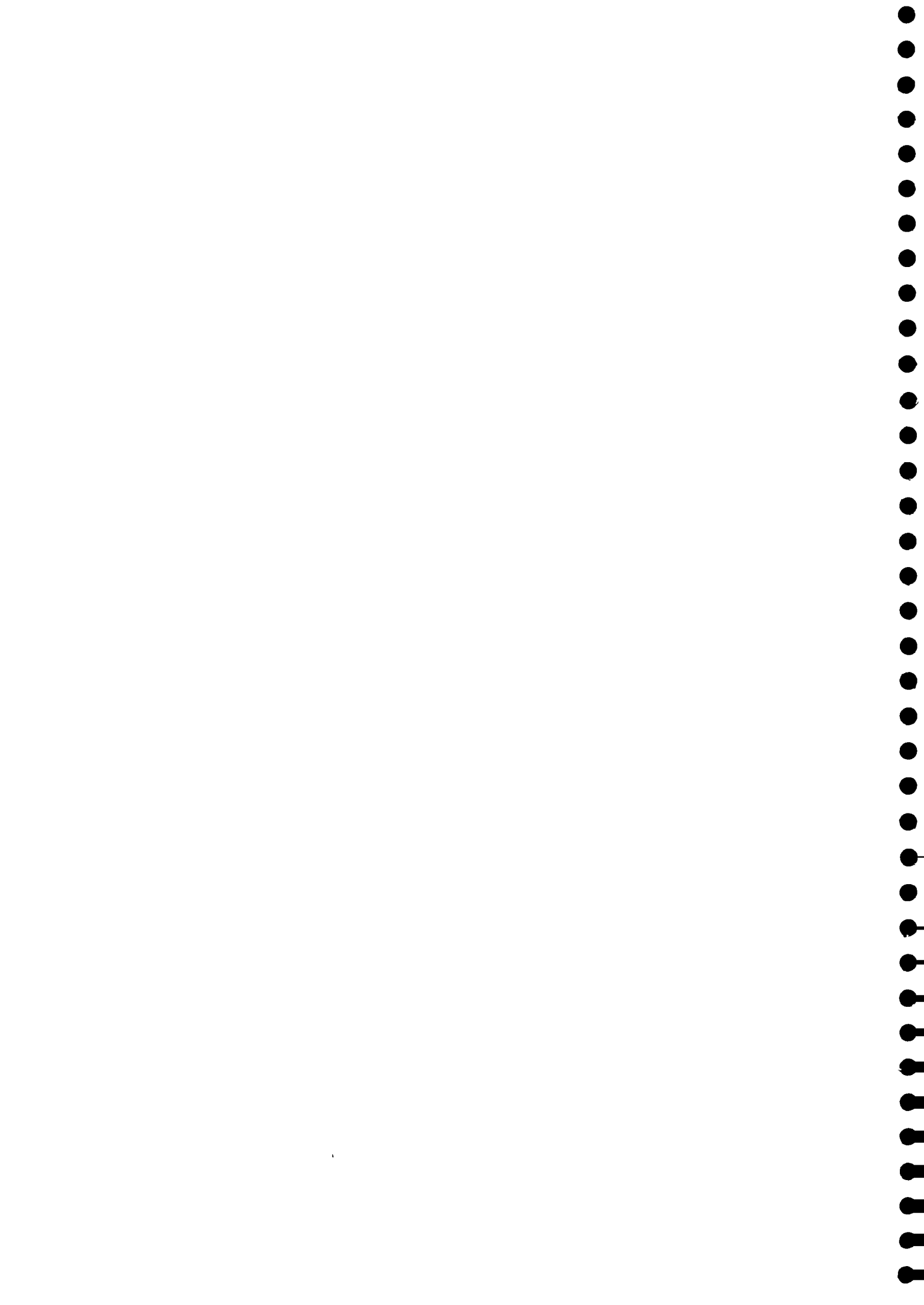


Picture no. 18



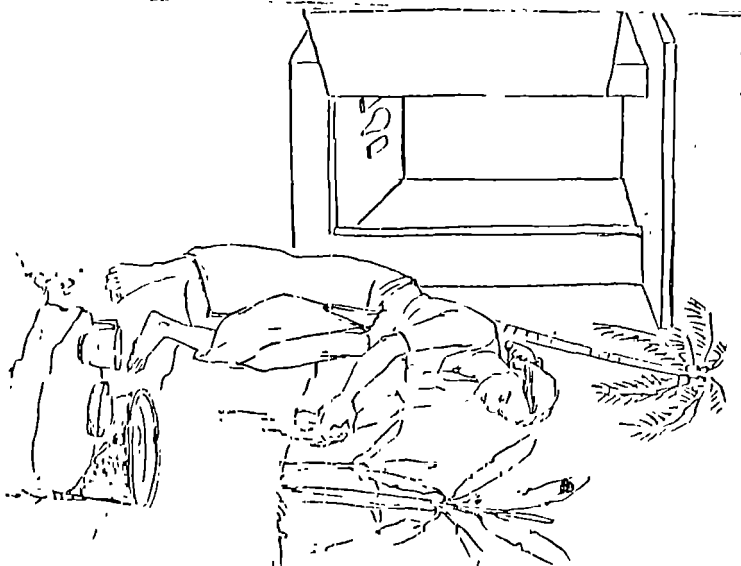
Picture no. 16





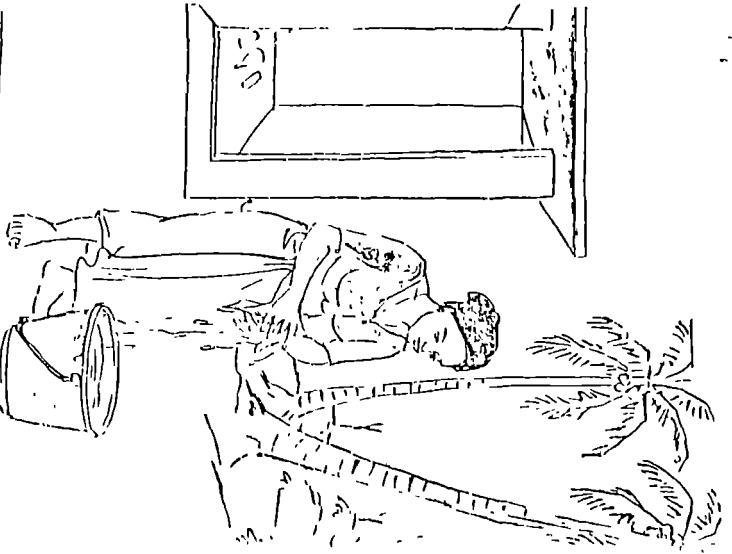
# SANITATION PRACTICES AND HYGIENE CONDITIONS

SPS  
CHP  
1



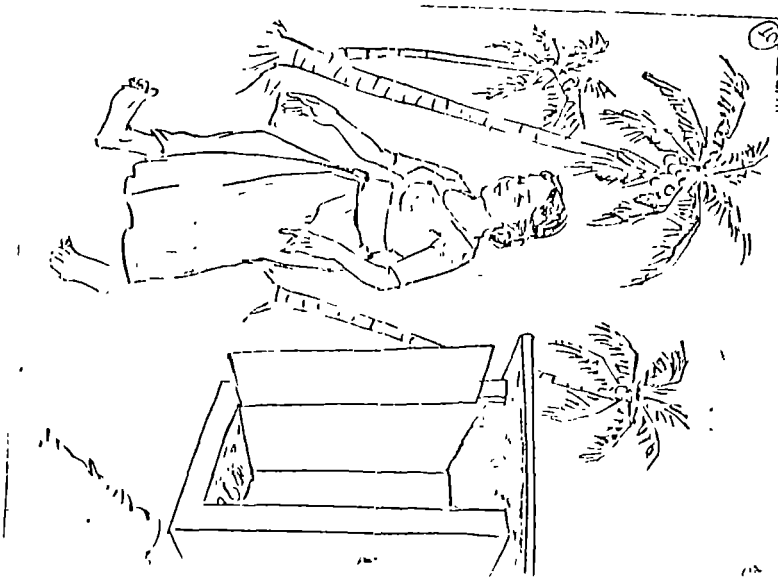
Picture no.1

SPS  
CHP  
2



Picture no.2

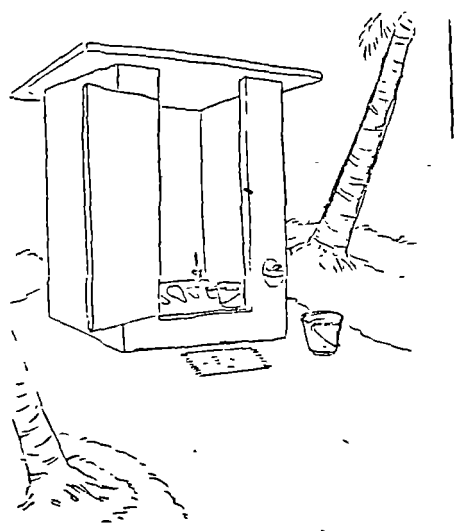
SPS  
CHP  
3



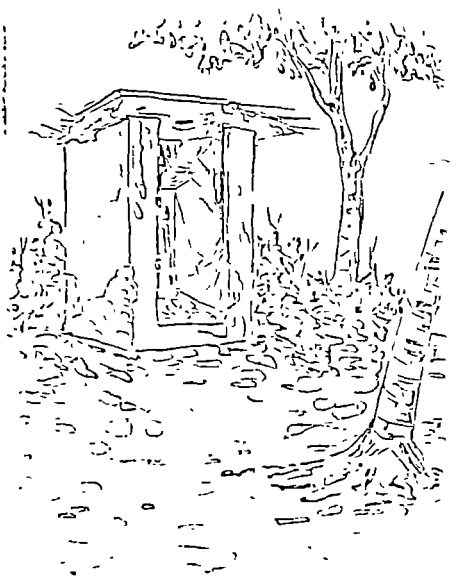
Picture no.3



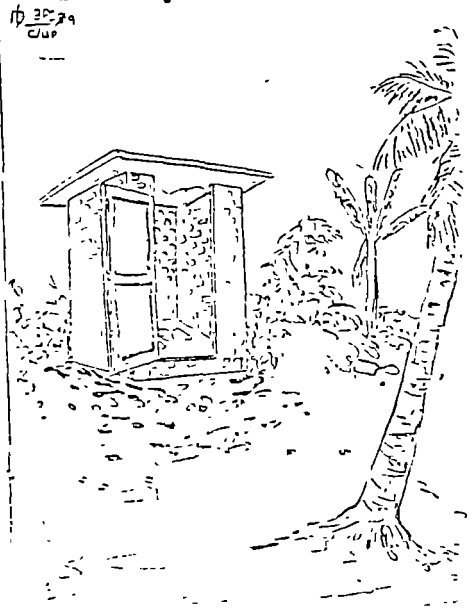
Picture no.7



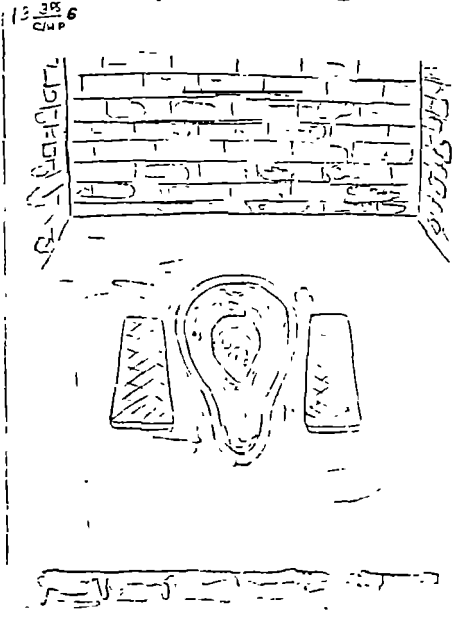
picture no.8



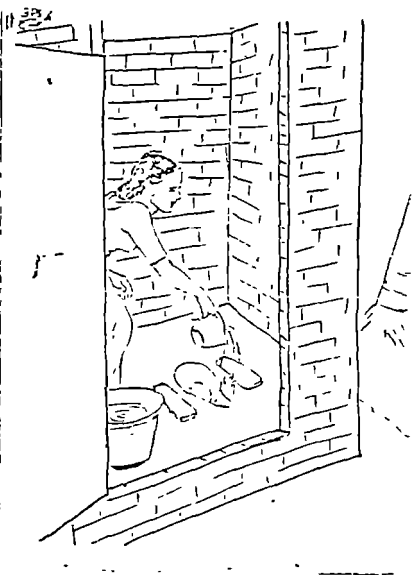
picture no.9



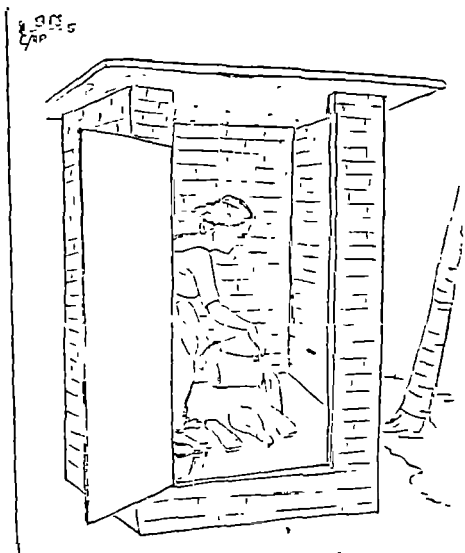
picture no.6

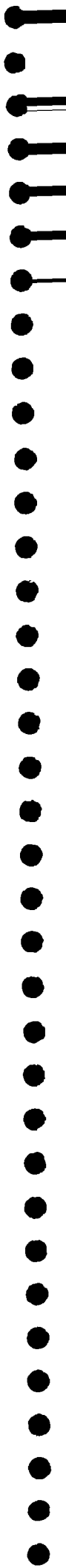


Picture no.4



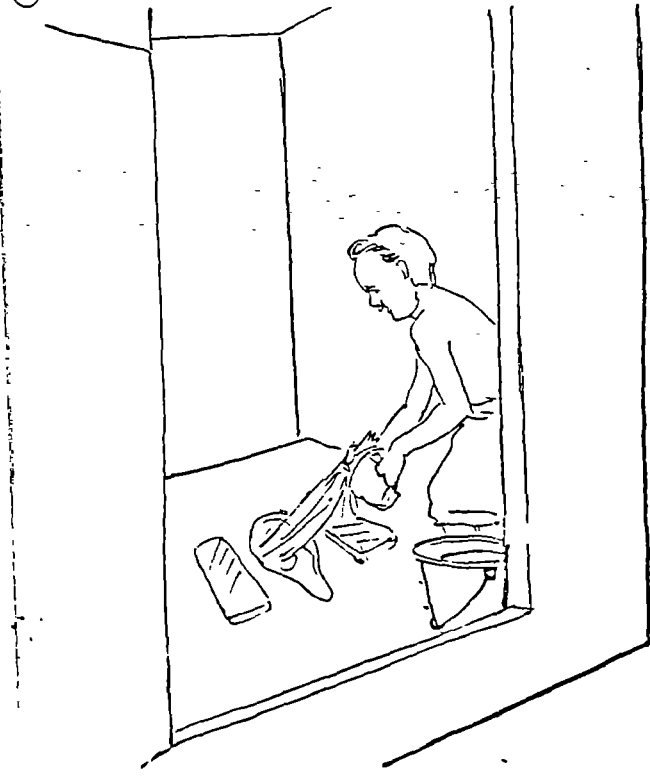
picture no.5



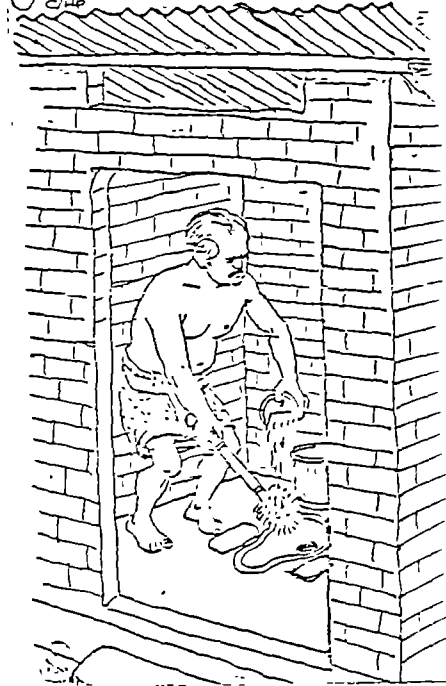


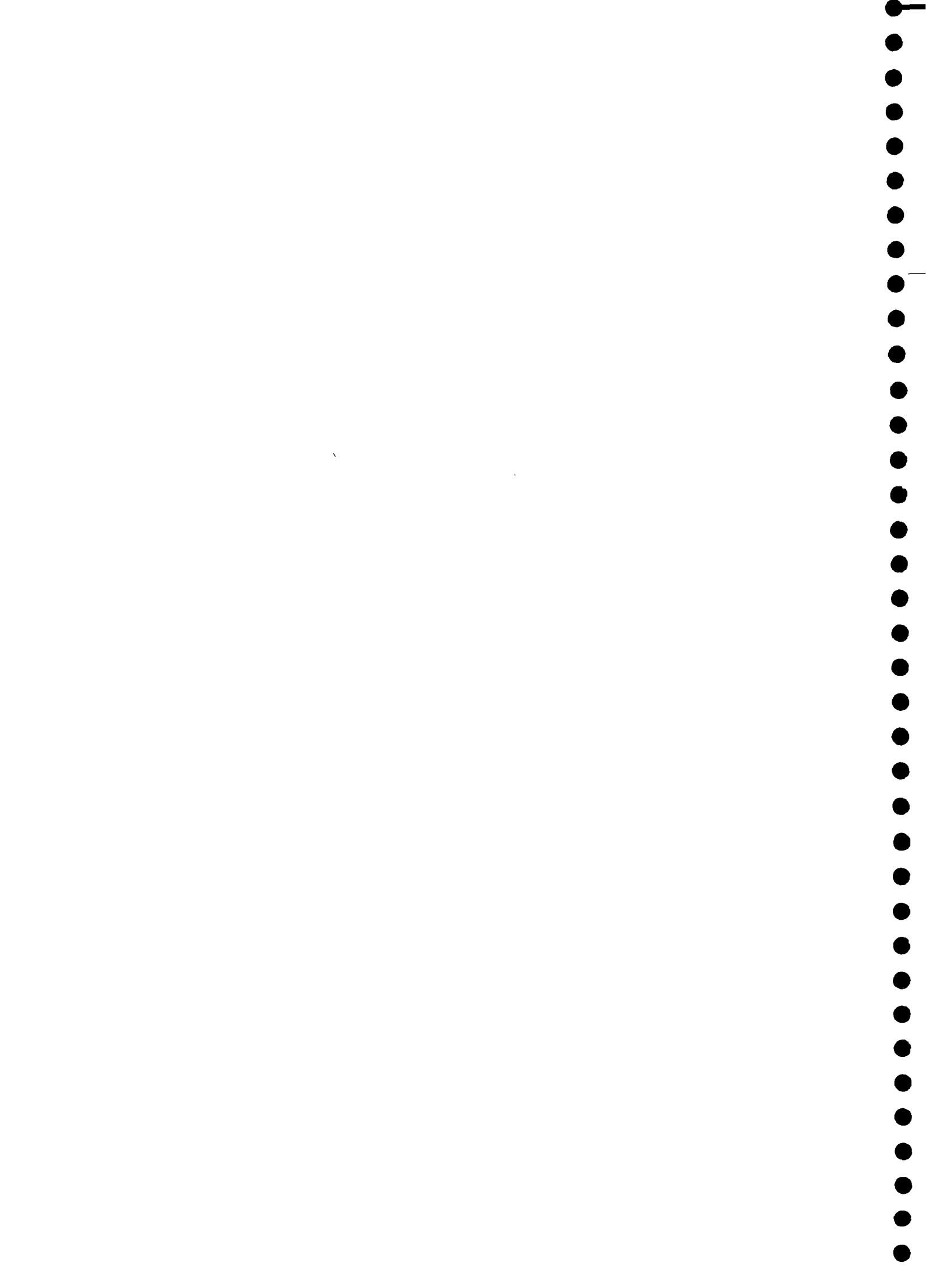


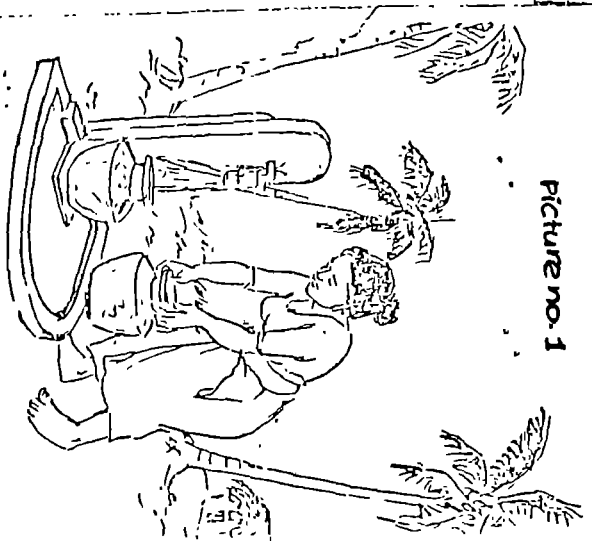
2 Ps  
11/8



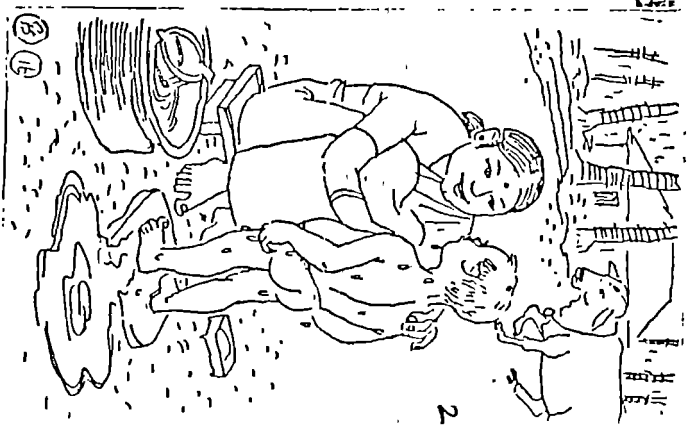
2 Ps  
11/8





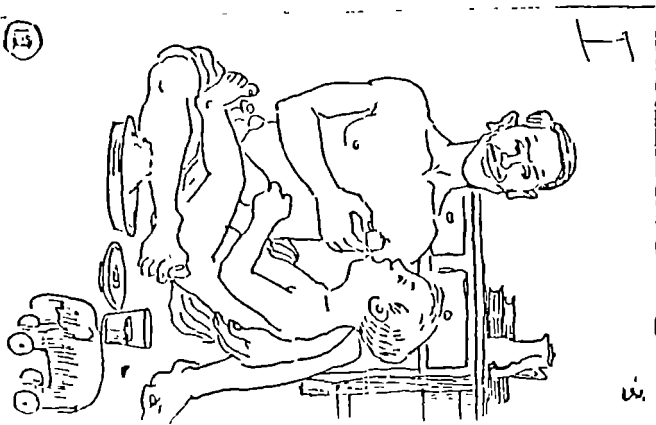


# GENDER TASK



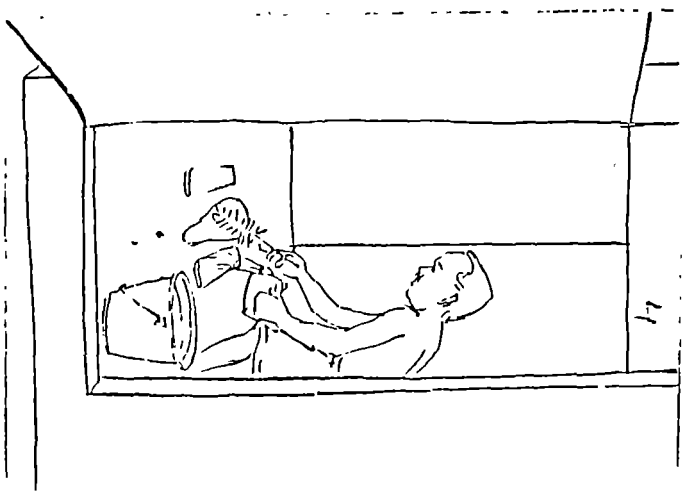
2

Picture no. 3



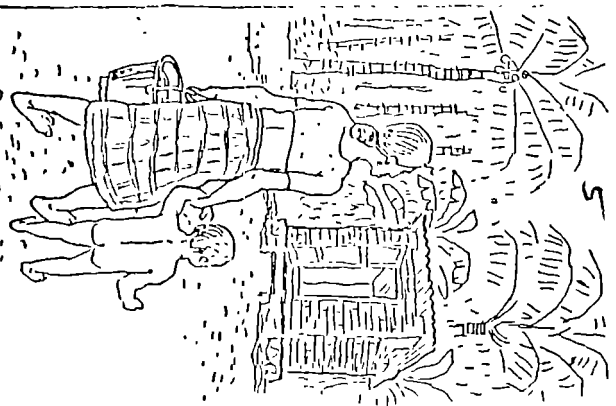
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Picture no. 4



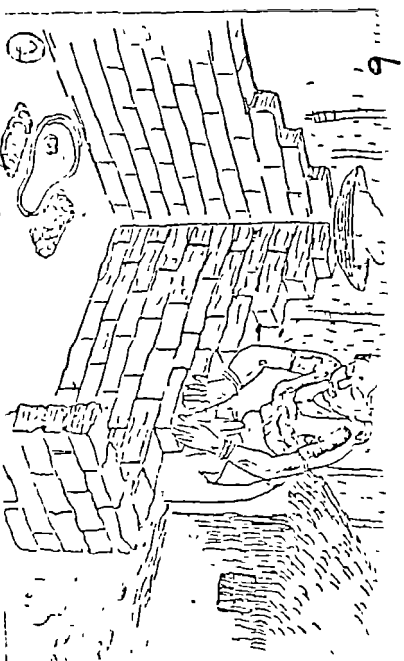
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Picture no. 5

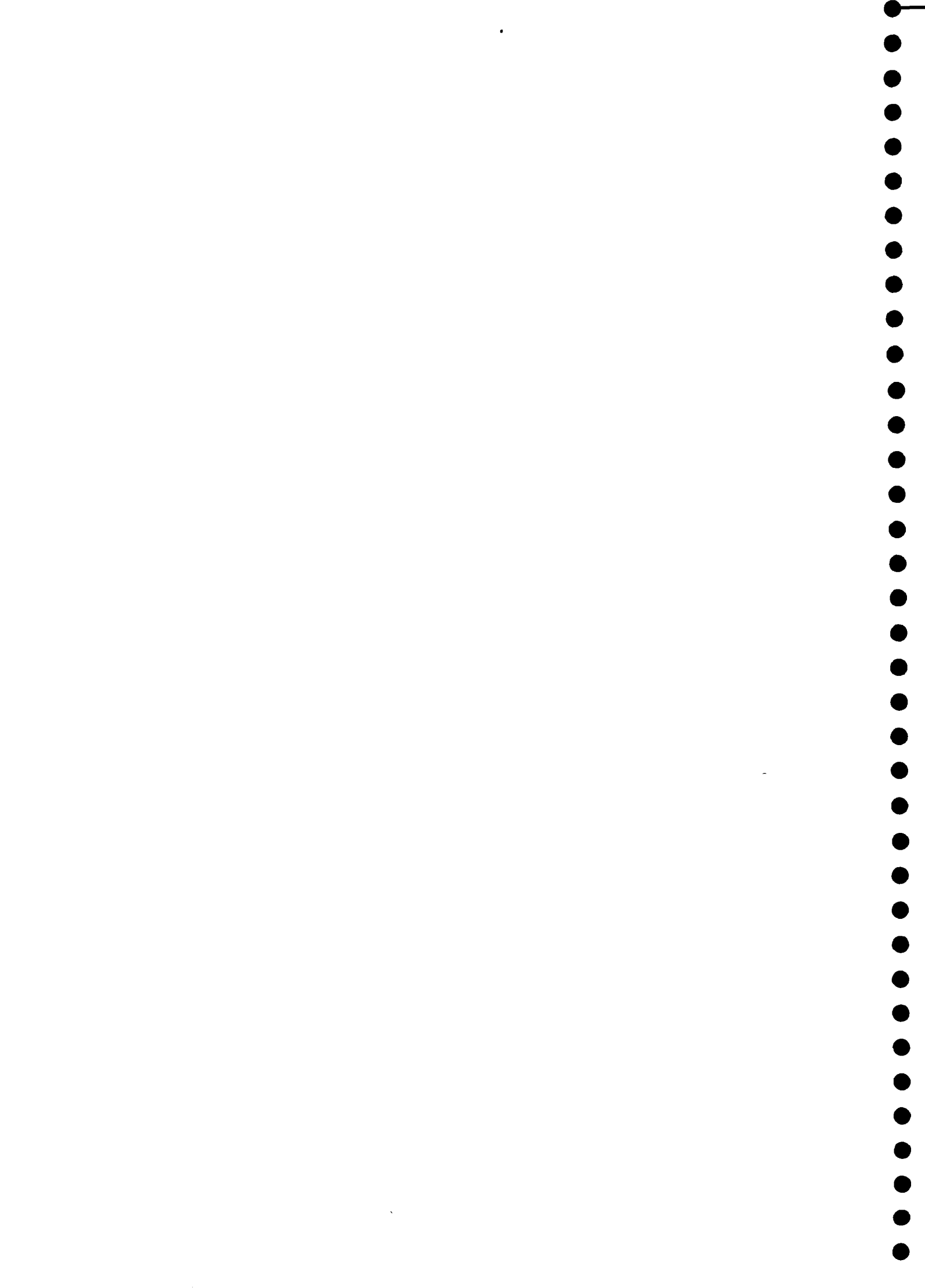


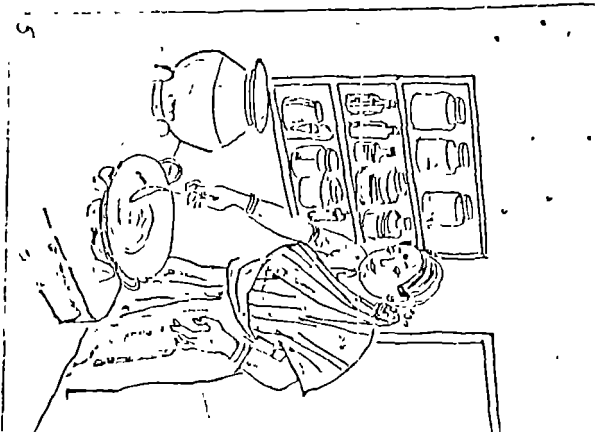
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Picture no. 6

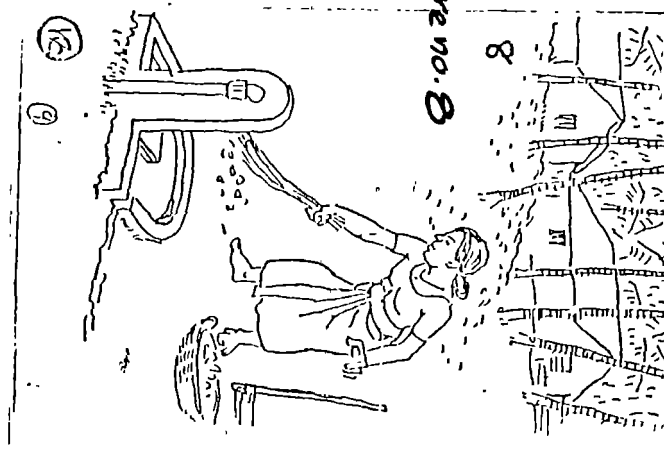


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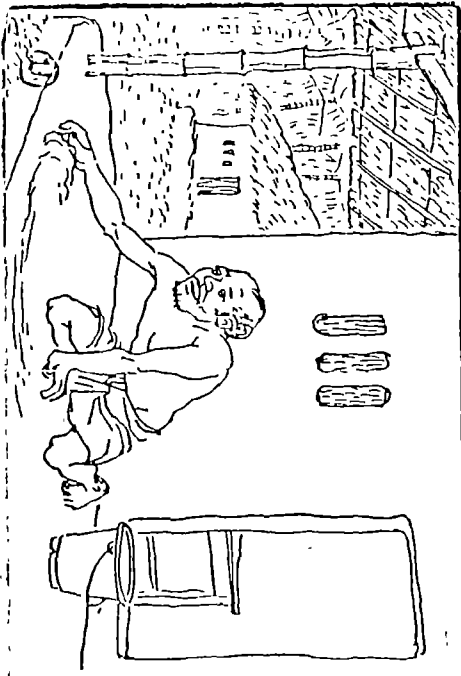




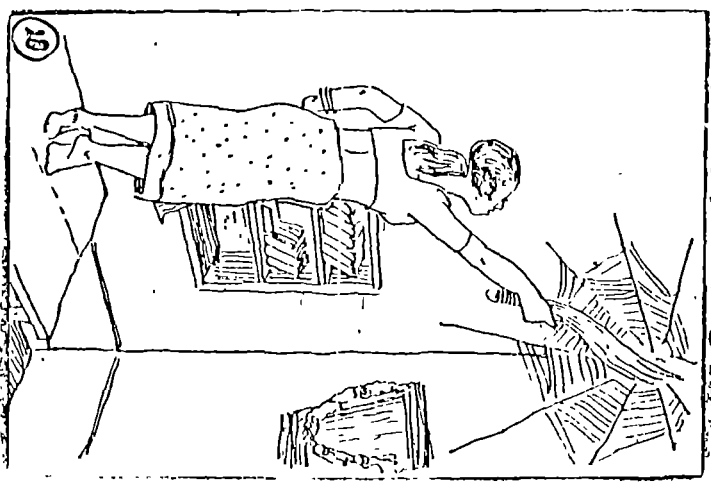
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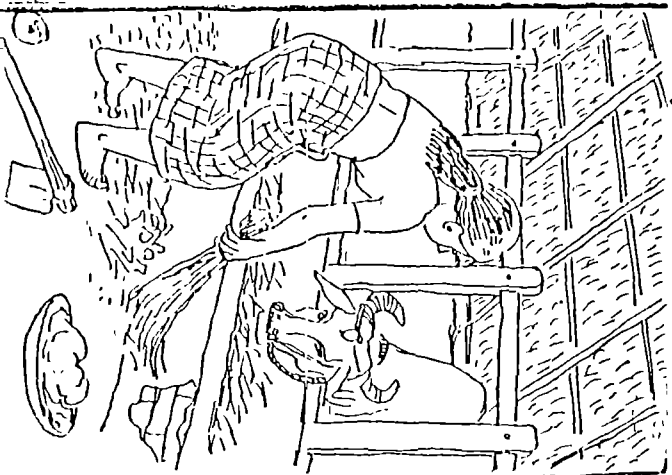
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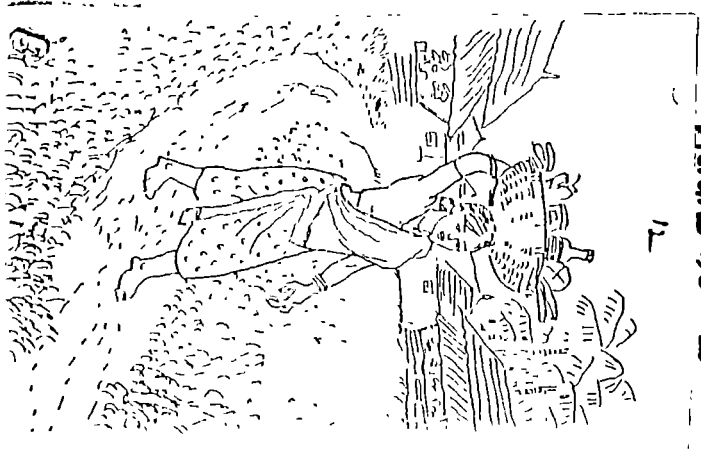
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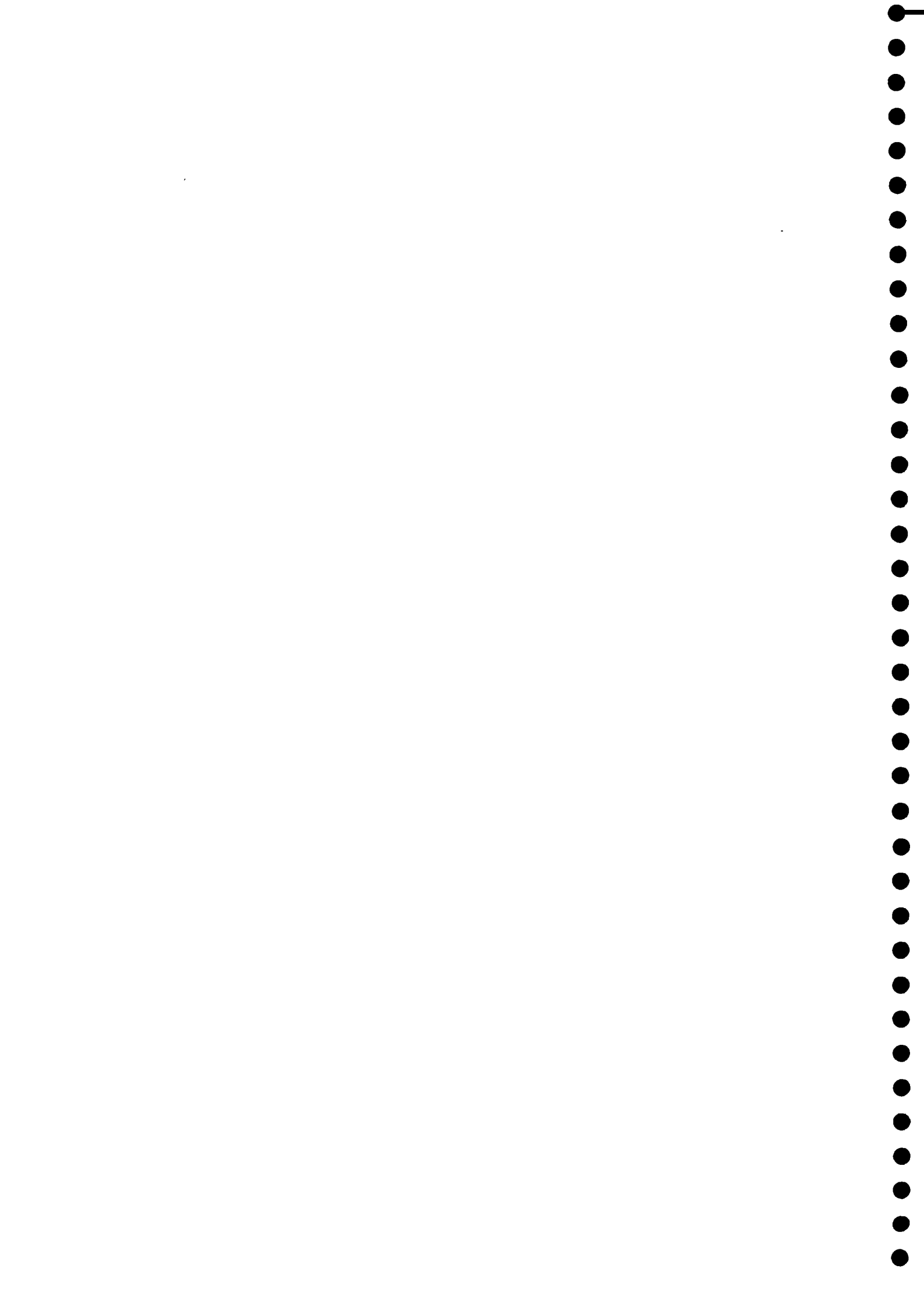
Picture no. 12



Picture no. 11



12



13  
Picture no. 13



ANNEXURE  
A.4c

Picture no. 14



Picture no. 15



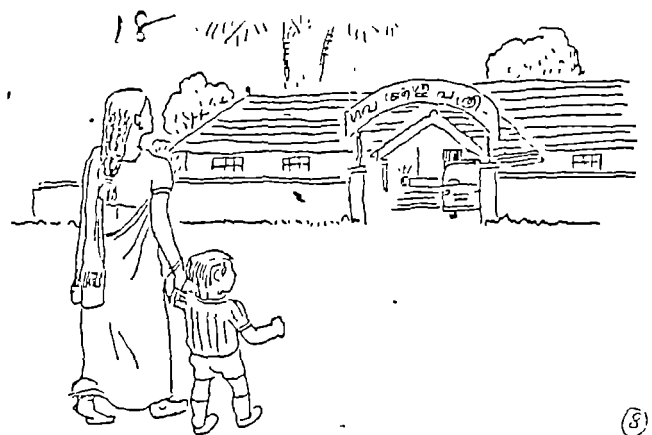
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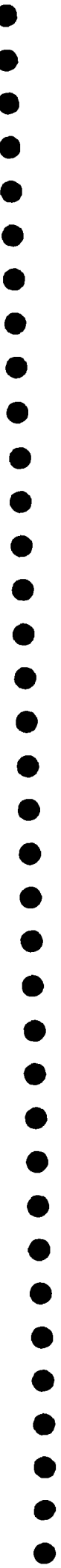


Picture no. 17



Picture no. 18







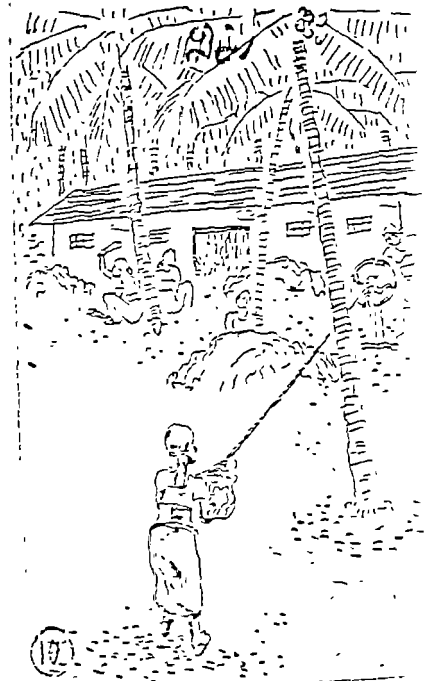
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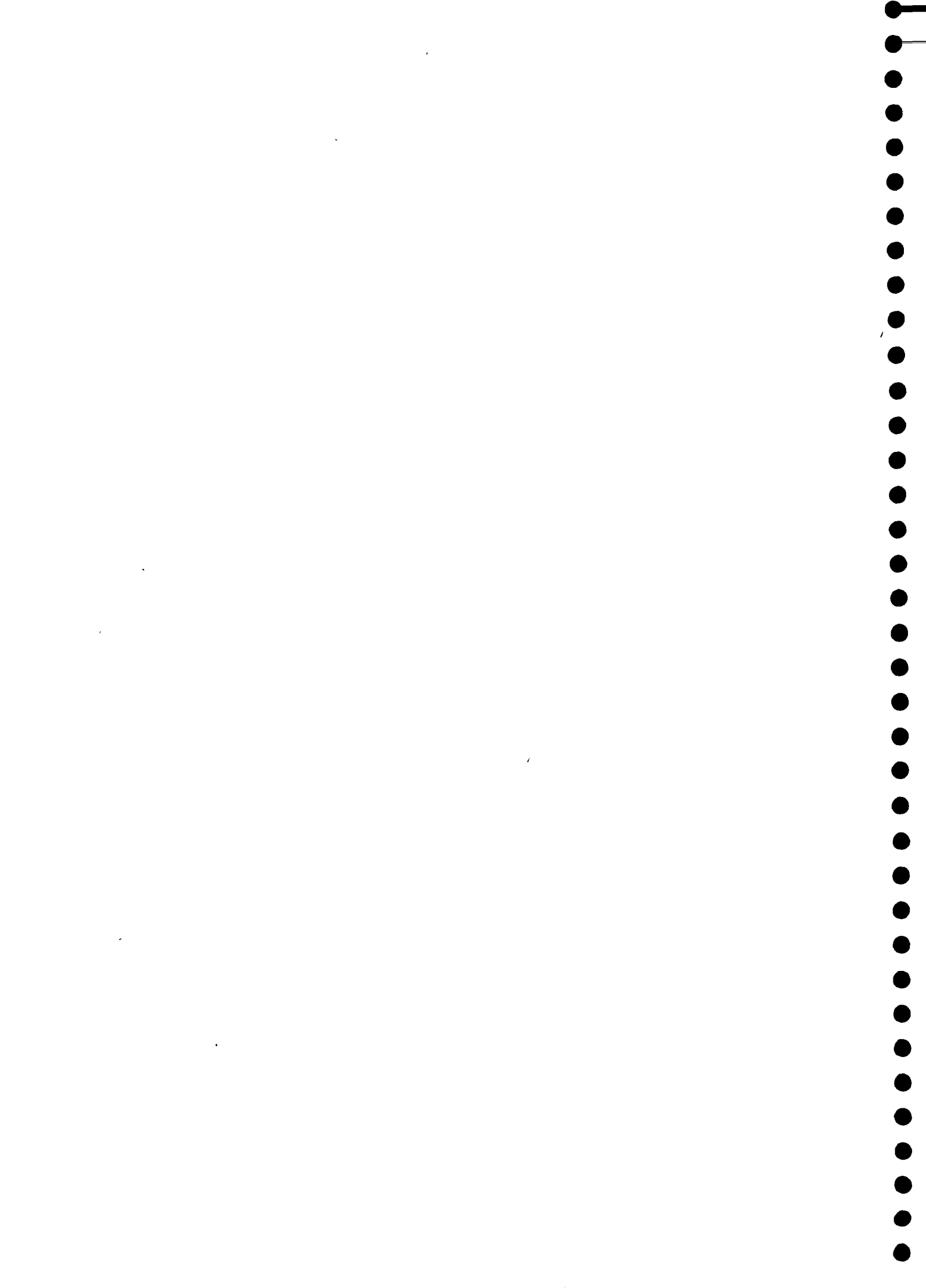


Picture no. 21



Picture no. 22







3

