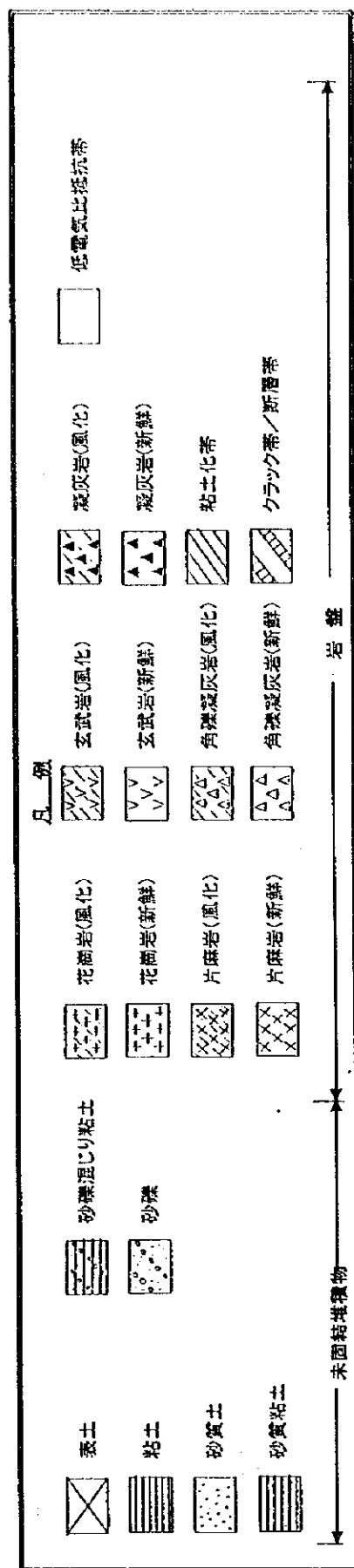
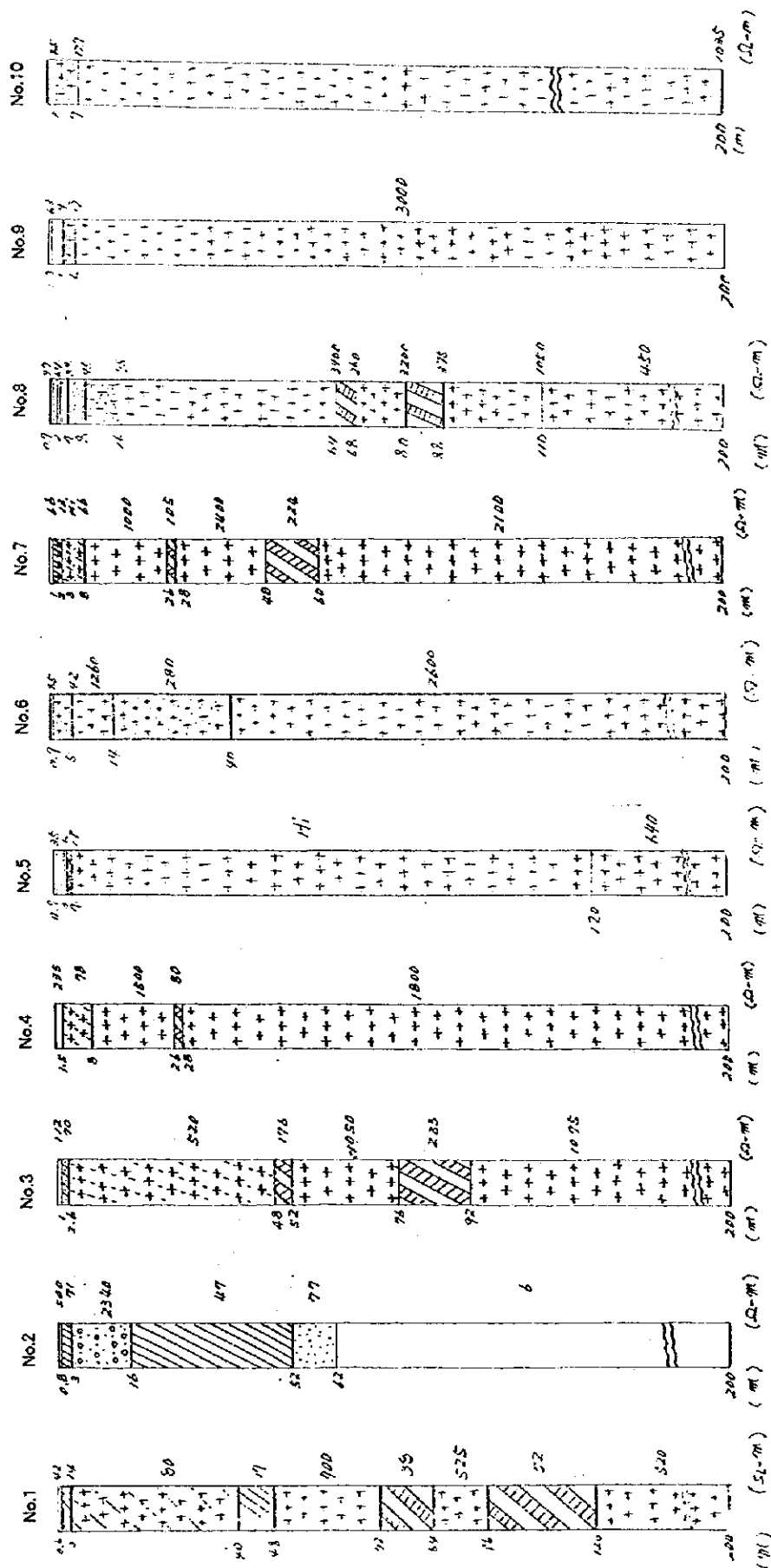


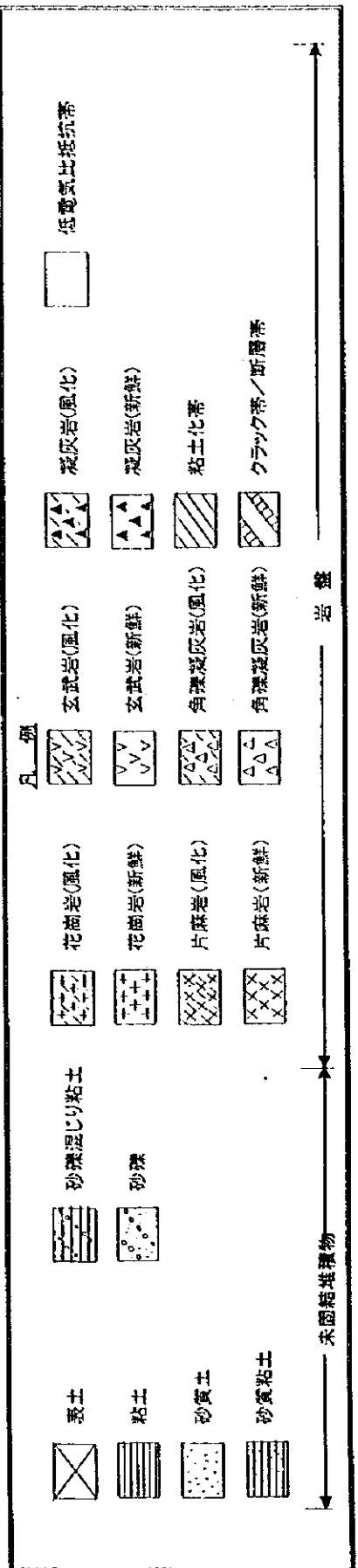
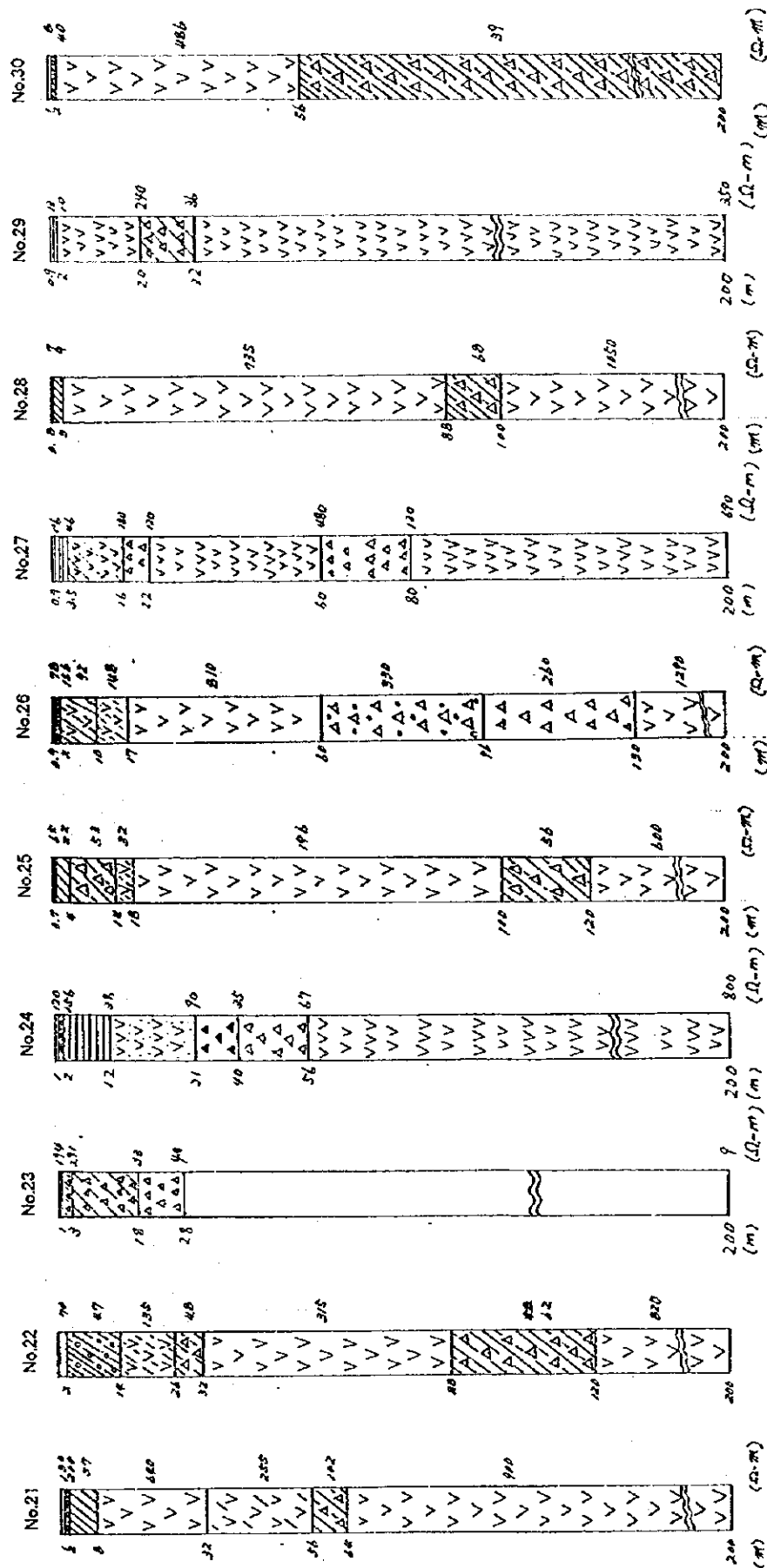
添付資料-8

比抵抗値による推定地質柱状図

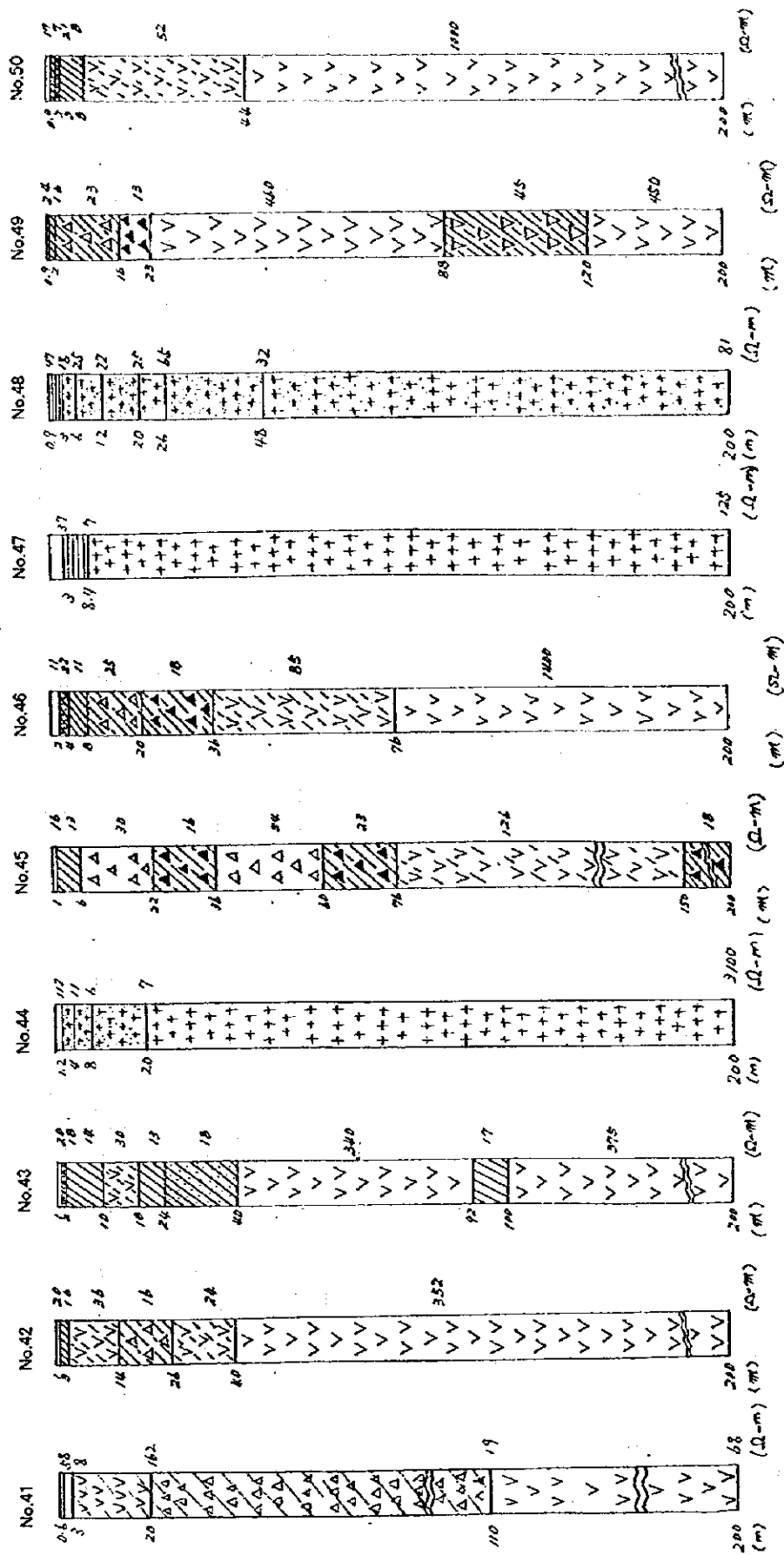




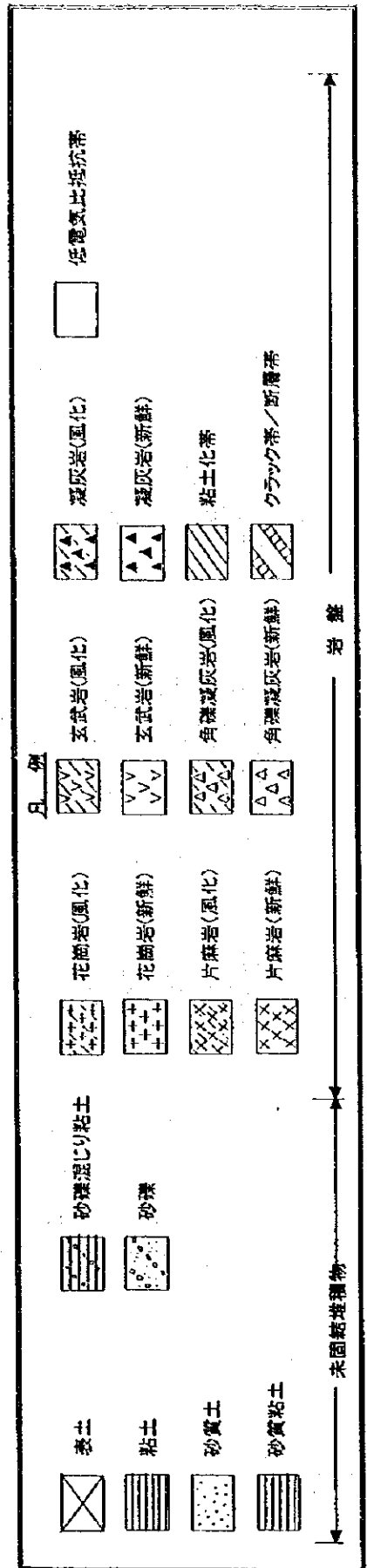
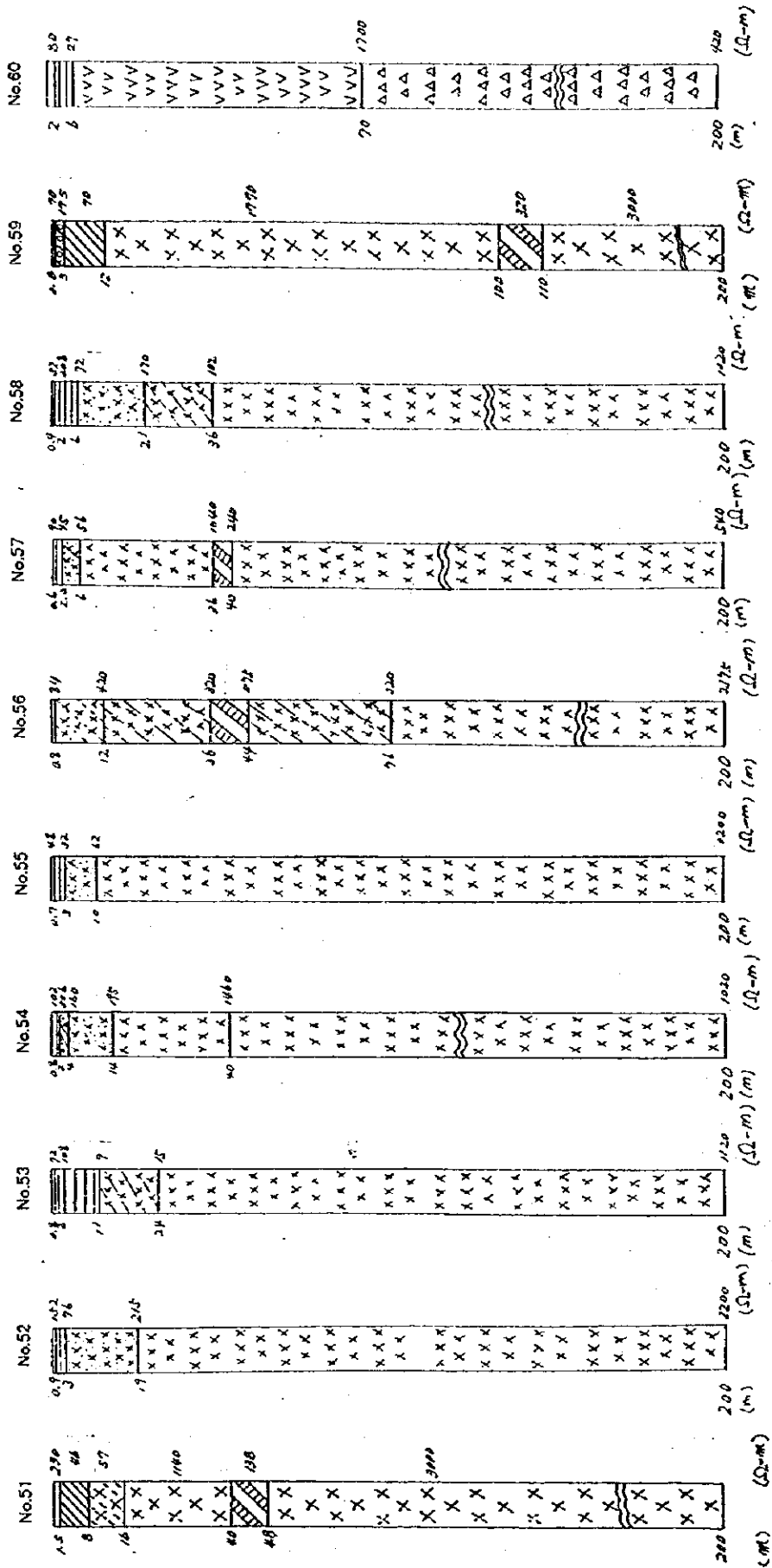




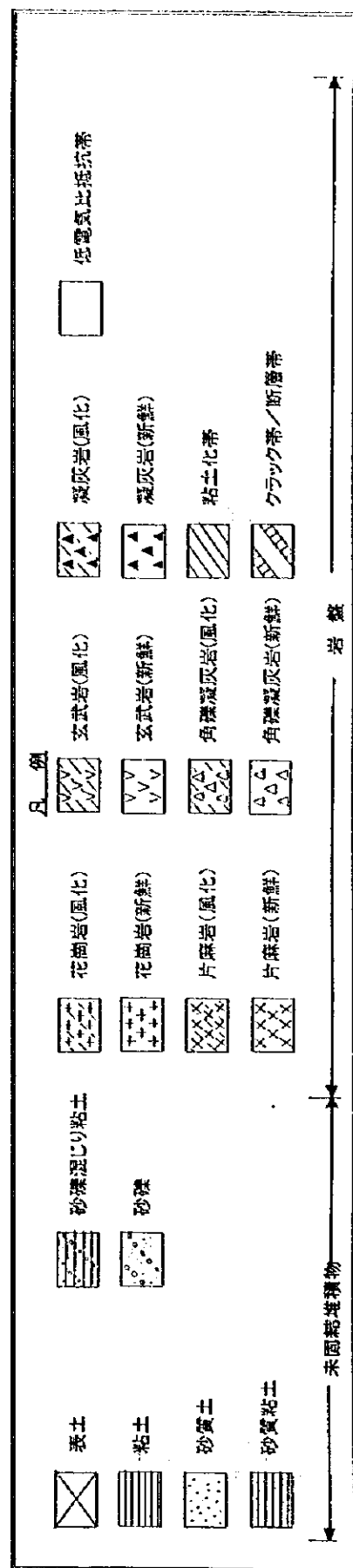
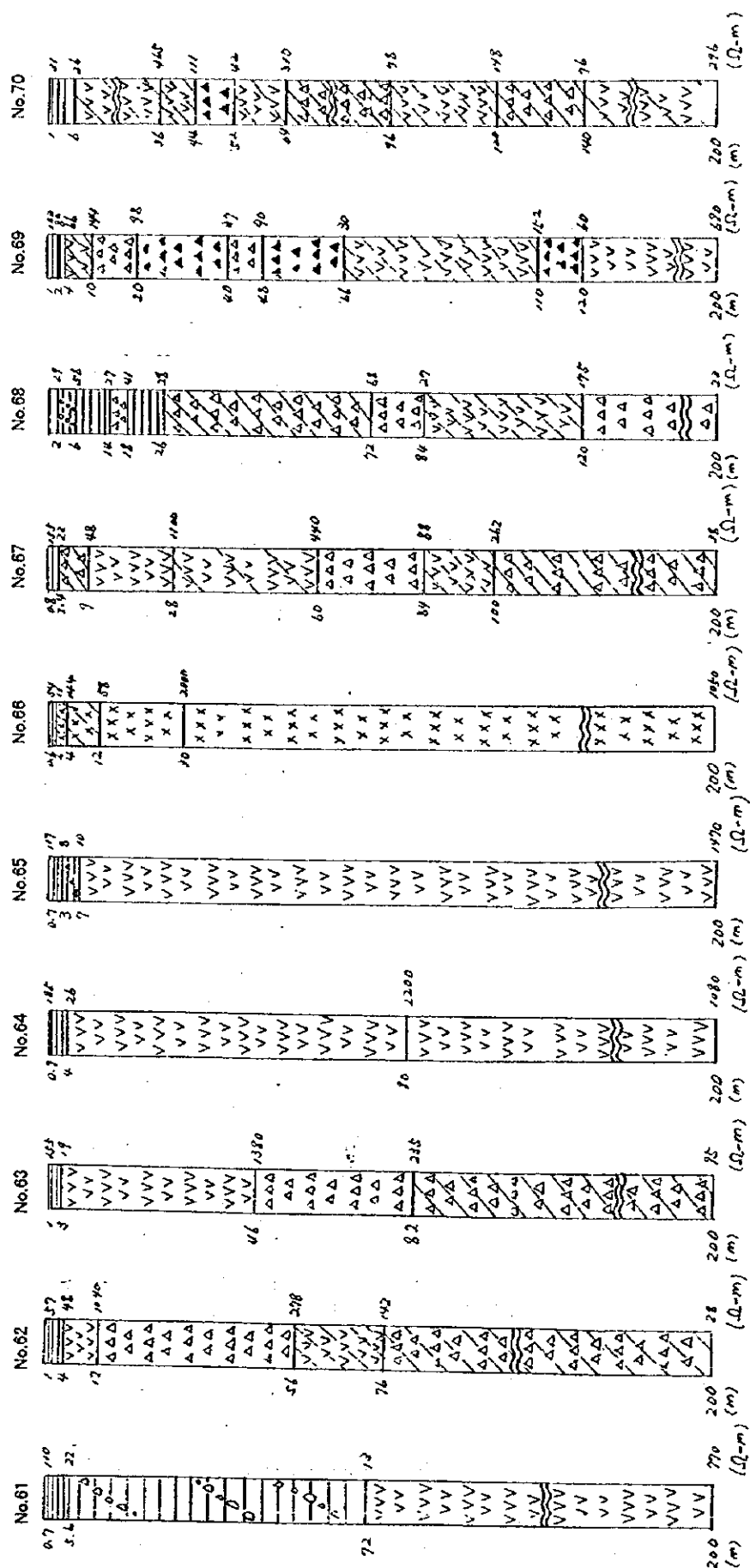


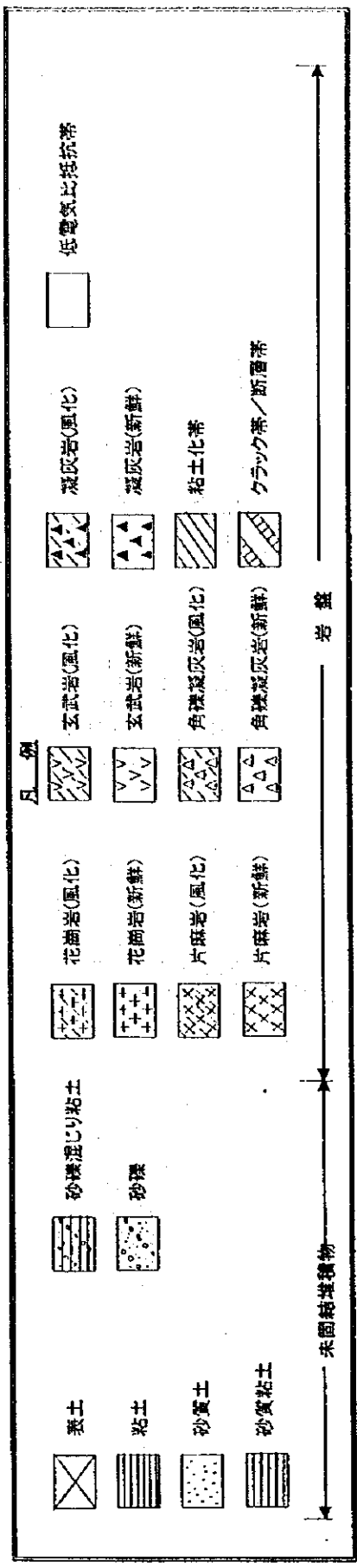
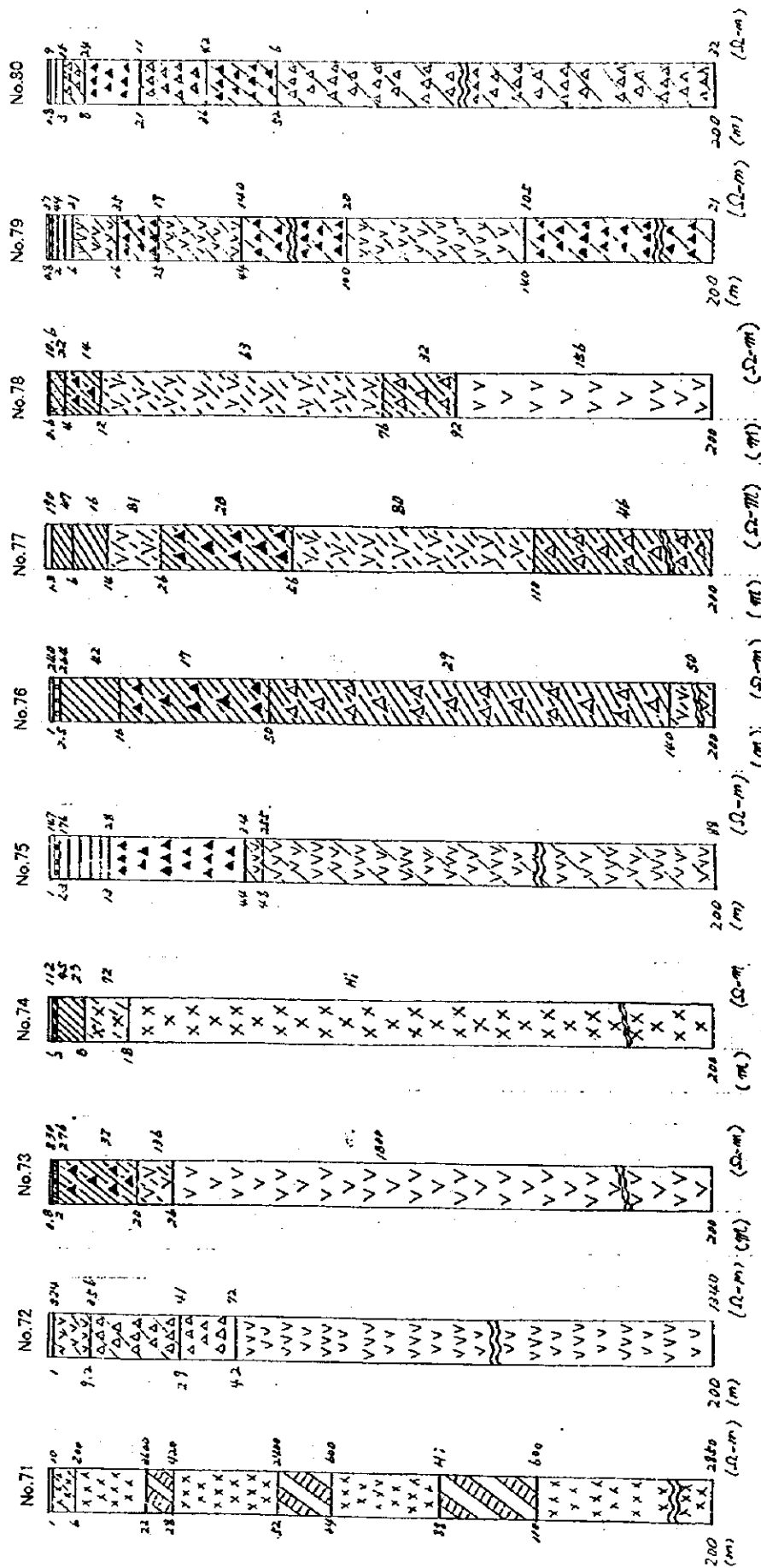


	表土		砂礫混じり粘土		花崗岩(風化)		玄武岩(風化)		凝灰岩(風化)	低電気出地帯
 粘土	砂礫		砂		花崗岩(新鮮)		玄武岩(新鮮)		凝灰岩(新鮮)	
	砂質土		片麻岩(風化)		角閃凝灰岩(風化)				粘土層	
	砂質粘土		(新)花崗磁石		角閃凝灰岩(新鮮)				クマツタケノ除	

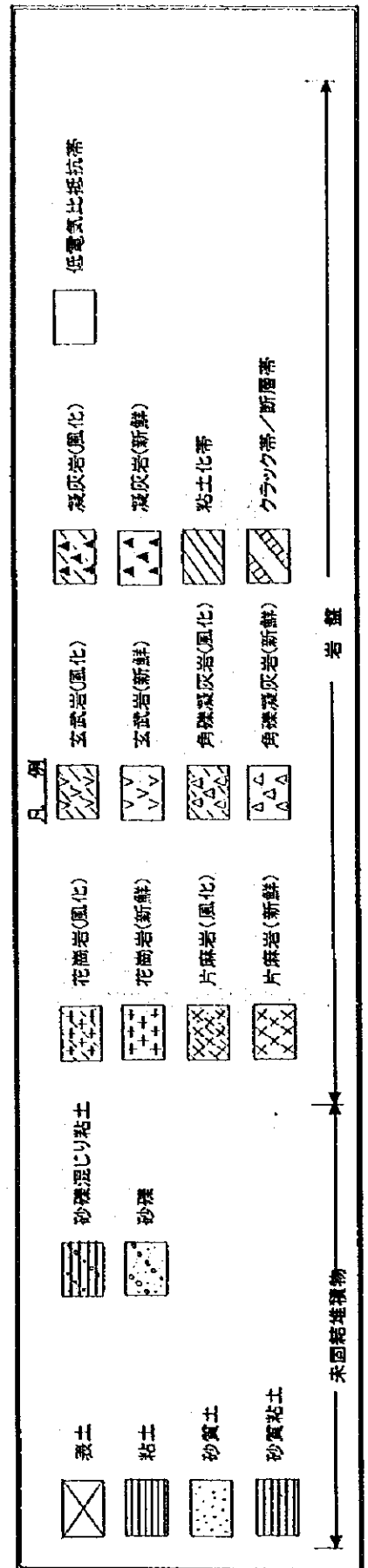
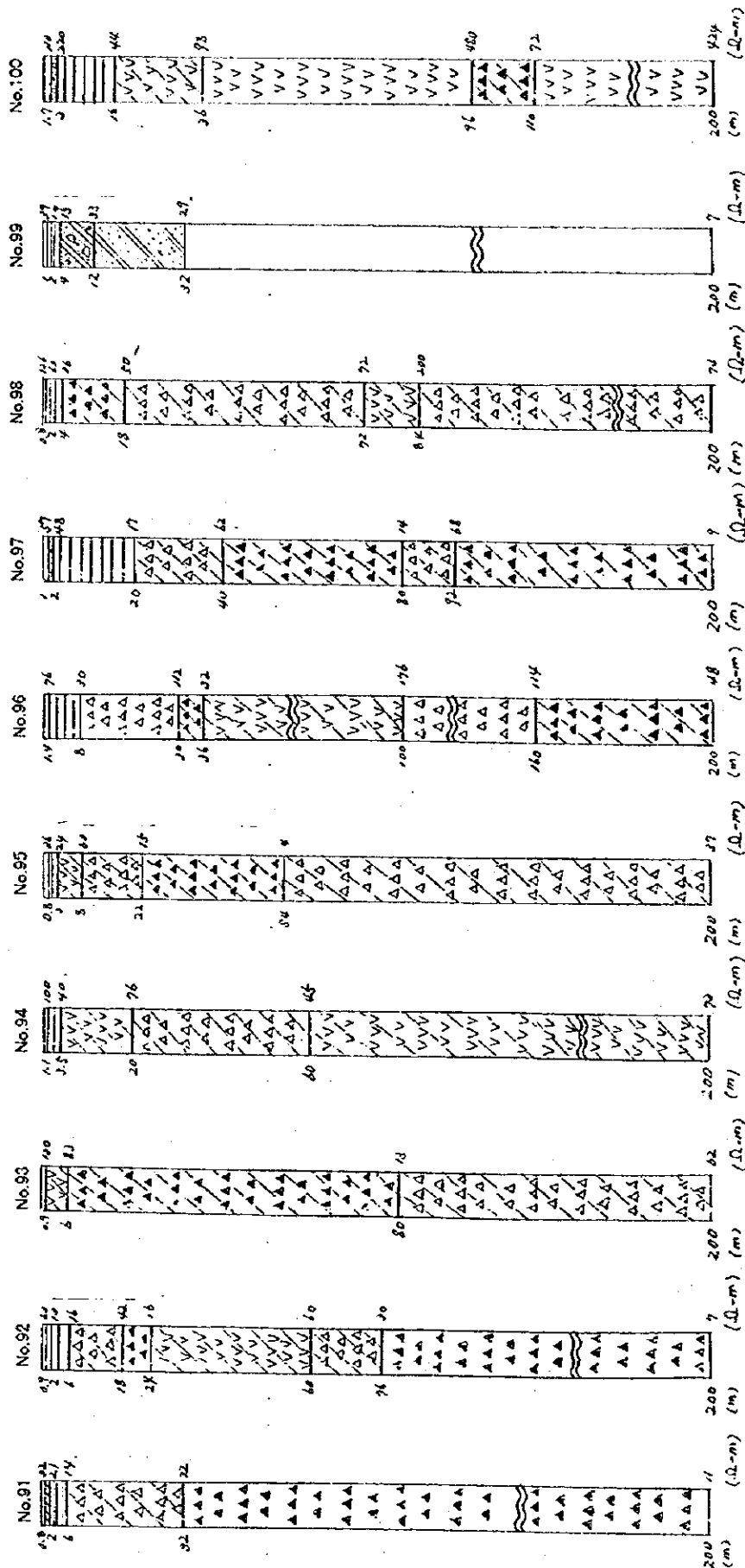


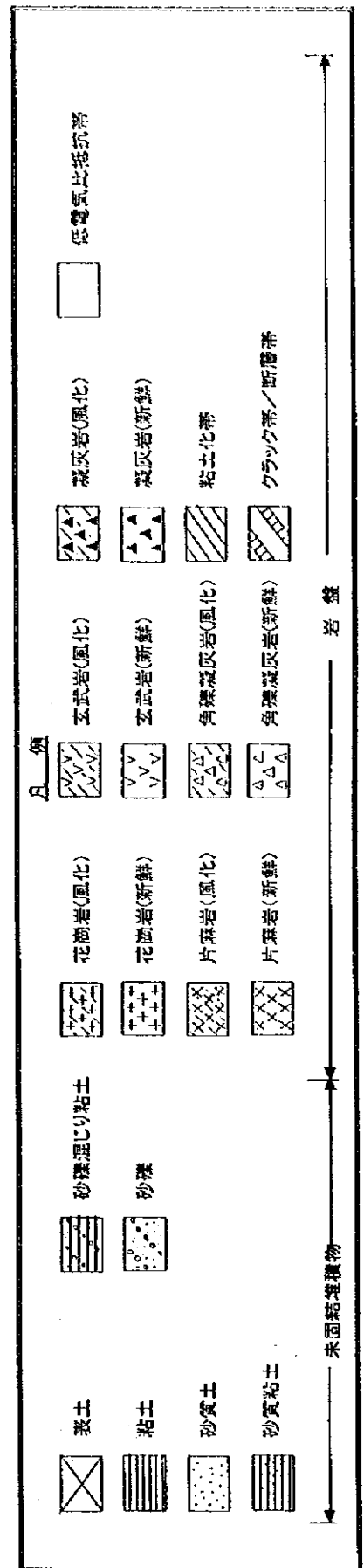
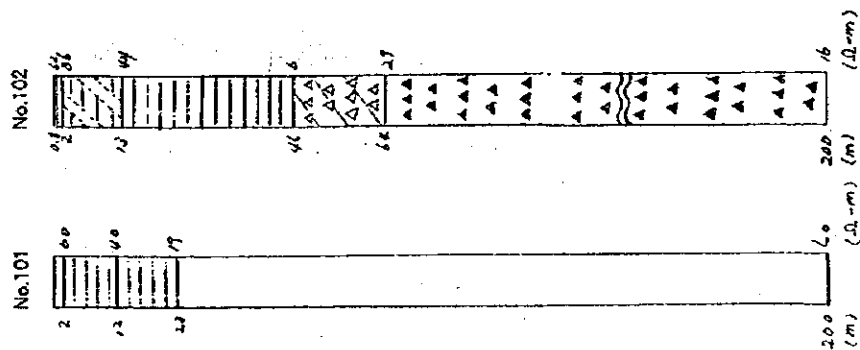












**添付資料- 9**

***INTERVIEW SURVEY REPORT  
ON  
PRESENT WATER SUPPLY CONDITIONS***

**INTERVIEW SURVEY REPORT**

**ON**

**PRESENT WATER SUPPLY CONDITIONS**

**IN**

**LAIKIPIA AND THE SURROUNDING AREAS OF SAMBURU ,**

**KOIBATEK AND BARINGO DISTRICTS**

**IN**

**THE REPUBLIC OF KENYA**

**AUGUST 1998**

## TABLE OF CONTENTS

### EXECUTIVE SUMMARY

### CHAPTER ONE

#### 1.0 SOCIO-ECONOMIC CHARACTERISTICS OF SURVEY AREAS

- 1.1 Introduction
- 1.2 Main occupants in study areas
- 1.3 Household & population
- 1.4 Income
- 1.5 Infrastructure
- 1.6 Public service
- 1.7 Education

### CHAPTER TWO

#### 2.0 WATER AVAILABILITY AND USES

- 2.1 Sources and uses
- 2.2 Water Projects
- 2.3 Distance to water points
- 2.4 Responsibility for fetching water
- 2.5 Water uses
- 2.6 Water shortage
- 2.7 Drinking water quality
- 2.8 Present water supply conditions

### CHAPTER THREE

#### 3.0 HEALTH AND SANITATION

- 3.1 Disposal of refuse
- 3.2 Availability of sanitary facilities
- 3.3 Knowledge and incidence of water related diseases
- 3.4 Diseases that people suffer from



## CHAPTER FOUR

### 4.0 COMMUNITY AWARENESS AND ORGANISATION

- 4.1 Knowledge of water development policy
- 4.2 Requirements for water supply
- 4.3 Community role in implementation
- 4.4 Capability to pay water tariffs
- 4.5 Conclusions and recommendations

## APPENDIX

- I - Interview Schedules
- II - Data Sets – SPSS Generated Analysis
- III - Data Entry in MS-Excel

## **<sup>1</sup>EXECUTIVE SUMMARY**

A questionnaire on the present water supply conditions was administered to respondents at proposed borehole sites. The objective of the survey was to understand public awareness related to water supply conditions in those areas as well as the ability and willingness to operate and maintain the water facility once developed and in place. The issues addressed thus ranged from socio-economic conditions, water availability and use, to community awareness and organization.

### **Socio-Economic Characteristics**

Interviewees were of various occupations, though it emerged that interviewing administrators i.e. chiefs, was more productive since they had knowledge of crucial issues like population numbers in the areas that they serve. In most areas population was below 10,000 persons per sub-location or community. It was observed that densities were especially low in the nomadic areas of Samburu and Baringo districts. Major occupations in the surveyed areas are pastoralism and small scale farming. In Samburu and parts of Baringo it is solely pastoralism that is practiced because the land is not suitable for agriculture. Average family size for all areas tended to be 10 persons to a family, but it was noted that most men have more than one wife and thus large numbers of children. The major source of incomes is from selling of livestock and to a smaller extent agricultural products and small time business-commercial activity. The people hardly engage in active salaried employment except for a few who live near large scale horticultural and wheat farms. Estimated income per household per month for the surveyed areas was found to be below 10,000 Kenya shillings. The farmers especially in Laikipia district find it difficult to peg their income on a monthly basis since their earnings from agricultural products are annual.

Most of the areas do not have electricity, piped water supply or telephones thus infrastructure is poorly developed, though public services like government offices, (chief's) schools, and commercial centers are found within most localities. Police and postal services are found within most nearby towns. School attendance of children for primary and secondary levels is quite low for Samburu, and Baringo districts, being at below 50%. Children are used to work as herdsboys. Financial limitations also hamper further education to secondary school level.

### **Water Availability and Use**

It was observed that the major source of water for most communities is rivers. Though many of rivers are seasonal and thus dry up therefore people depend on hand dug wells. Cases of piped water supply are very few and only apply to those communities within distance of major towns like Nyahururu and those with existing water projects. In many areas of Laikipia where people are settled, most use roof catchment water for drinking. There are a few boreholes in existence but some are not operational and few have been earmarked for rehabilitation. Rock catchment and dams/ponds are common in Samburu district and these water is used for all purposes i.e. domestic use and livestock feeding.

There are very few water projects in existence in all the areas visited. Most projects noted were not related to direct provision of water but rather to building of storage tanks for roof catchment

water. These programme is conducted by women groups and funded by the ASAL programme. Distances taken to particular water points are especially long in most areas. Some people walk more than 8 kilometres to get water. Those charged with these responsibility are adult women who sometimes use donkeys or bicycles to fetch water, which is normally carried in 20 litre plastic jerricans. For those close to water points this job on average is done twice a day. Most domestic work i.e washing clothes is usually done at the water point, including the feeding of livestock.

Water shortage is frequent, and this is so especially during the dry season each year. It was observed that especially in Samburu and Baringo most rivers are dry at this time. Therefore the response of people has been to go further distances in search of water or otherwise use alternative but unacceptable sources of water. There was one case observed where water use was limited or decreased to just one water point (Njogu-ini self help project – Laikipia District).

Many respondents stated that they were not very happy with the quality of the drinking water but most people did not treat it in any way. Because of the rains presently, some communities stated that their water supply was sufficient for all needs, both domestic and livestock, but note that this is only a temporary condition.

### **Health and Sanitation**

Refuse, according to respondents is normally thrown out into the garden, very few homesteads have pits or burn. But it was observed that normally people do not generate a lot of waste. In Samburu and Baringo most people do not have any form of sanitary facilities.

There are very few latrines and these are to be found at small centres/shops or progressive homes. In Laikipia the most common toilet is the pit latrine which is in virtually every home whereas the cistern flush toilets are found in town centres like Nyahururu and Nanyuki. Otherwise, those without any form of toilet normally use the bush to relieve themselves. Most of the people in all the areas cannot be said to have knowledge of water related diseases and many areas have reported cases of typhoid, dysentery and other forms of serious diarrhoea, besides cases of malaria and colds some of which have resulted in death of the victims.

### **Community Awareness and Organization**

Many areas are not aware of, nor have information about “community management of water supplies project” as a policy of the government. The administrators interviewed conceded that they are in the process of dissemination of the information. In Laikipia district, many water committees are in existence for many of the areas visited unlike Samburu, Baringo and Koibatek. In some places, people or traditional committees tend to oversee watering places, this is so in Samburu but again not very common.

Many communities indicated that development of other sources of water e.g. boreholes, and the supply of equipment for water supply e.g. pipes, storage tanks, water pumps – were their major requirements to facilitate adequate water supply in the respective areas and communities. To this end people within the communities are willing to provide labour for construction, operation and maintenance of the water facility while others are willing to even share a small part of the project cost.

Most communities also indicated that they are willing to pay a water tariff towards the maintenance and operation of the water facility, but their contribution would be limited to about 100 Kenya shillings a month.

To realize the goal of providing water to the communities in the project area, there is need to put in place effective and well organized water committees. These can be done through the district water office who will be expected together with Ministry of Culture and Social Services, to monitor their progress and ensure sustainability of the groundwater development project among communities.

## **CHAPTER ONE**

### **1.0 SOCIO – ECONOMIC CHARACTERISTICS OF SURVEY AREAS**

#### **1-1 Introduction**

Information was gathered regarding various aspects of the general livelihood of the people in the study areas and this focused on areas like main occupations, levels of income, population numbers, availability of infrastructure and public services, school attendance, and also major sources of income.

The interviewees from whom this information was gathered were of various occupations.

18% of the respondents were administrators i.e. chief and assistant chiefs, and they possess valuable information regarding issues like population numbers, and existing projects in the area, if any. School teachers also constituted eighteen percent of the respondents. Very few water committee members or representatives were interviewed, of the 81 respondents they constituted only 6.2%, thus only five representatives were interviewed. The majority, 51% of the respondents were involved in various other occupations, like farming, pastoralism and to a smaller extent business. They also varied in age, the youngest being nineteen years of age and the oldest being sixty two years of age. Eighty six percent of the respondents were males and only 13.6% of them were females, but this was also occasioned by the fact that tradition in the areas surveyed does not permit women interaction with strangers and the males are perceived to have more knowledge about things and issues than most women. Many of the respondents have resided in these areas for a long time, but these periods varied from 1 (one) year of residence to sixty (60) years in residence. Teachers and business people are the ones who tended to have shorter periods of residence in the areas.

#### **1-2 Main Occupations in Study Areas**

The main occupations for adult men and women were found to be pastoralism and cultivation or farming besides the normal domestic chores for the women. In all areas surveyed forty eight percent of the people are engaged in both pastoralism and cultivation and 25% in pastoralism. Only 11% of the adult males are engaged in cultivation only. 34% of the women in all the areas are engaged in cultivation and domestic work and 33% are engaged in purely domestic work. It is noted though that many areas do not differentiate work done on basis of sex, except for the domestic chores like cooking and looking after children. The Samburu women for example are responsible for the putting up of houses as part of the domestic responsibilities.

Table 1:

**ADULT MEN OCCUPATION BY DISTRICT (%)**

	<b>SAMBURU</b>	<b>BARINGO</b>	<b>KOIBATEK</b>	<b>LAIKIPIA</b>
Patoralism	37.5	20.0		23.8
Cultivation/Crop Farming			66.7	16.7
Pastoralism/Cultivation	37.5	55.0	33.3	50.0
Pastoralism/Cultivation/Business		5.0		
Pastoralism/Cultivation/Employment	25.0	20.0		9.5

It is evident that many people are engaged in pastoralism and crop farming. It was observed that large areas of Samburu and Baringo are not suitable for crop farming due to the hostile terrain, danger of damage to crops from elephants, and the lifestyle of the people i.e. nomadism, which does not favour growing of crops or permanent settlement in one area.

**1-3 House Holds and Population**

The fact that people keep moving also affected the distribution of households in any one particular area and made it difficult for respondents to quantify the number of households in one area. Thus the number of households given ranged from forty to one thousand in any one particular area. 19% of the respondents consistently put the number at three hundred households in their areas and 12% put it at 200 households. Thus approximate populations for many areas ranged from one hundred persons to twenty thousand persons. Sixteen percent reported population of two thousand people and seven percent reported populations of one thousand, two thousand five hundred and three thousand people respectively. Three percent reported population of ten thousand and only one percent reported twenty thousand people. Fifty percent of the people have an average family size of about ten members. It is noted though that the figures could be higher if they were to be pegged to an individual since polygamy is widely practiced in many areas of Samburu, Baringo and Koibatek and a few places in Laikipia. 30% of the people state that most homes have about five children aged below ten years. Twenty five percent state that they have about six children aged below ten years, while 17% puts it at four children.

**1-4 Income**

Many respondents found it difficult to estimate monthly incomes for the people in the area, since sources, needs and means of people are different. Others like farmers could only manage to estimate an annual income based on the harvests and sale of produce. 43% of the people in all the areas put their income at 2,500 to 5,000 Kenya Shillings per month. 38% put it at less than Kenya Shillings 2,500.00 per month. 15% put it at the 5,000 to 10,000 range, while only 4% put it at more than Kenya Shillings 10,000 per month.

Table 2: ESTIMATED MONTHLY INCOME BY DISTRICT (%)

	Less KShs.2,500.00	KShs 2,500-5,000	KShs 5,000-10,000	KShs. 10,000-20,000
SAMBURU	37.5	37.5	12.5	12.5
BARINGO	50.0	35.0	15.0	
KOIBATEK	33.3	66.7		
LAIKIPIA	33.3	47.6	17.7	2.4

The major sources of income are selling of livestock and agricultural produce. Thirty five percent of the people said they got their income from selling livestock only. 35% got the income from combined sale of agricultural produce and livestock.

Table 3: MAJOR SOURCES OF HOUSEHOLD INCOME

SOURCE	PERCENT	FREQUENCY
Agricultural Produce	7.4	6
Livestock	34.6	28
Other Products (Fish, Handicraft etc)	1.2	1
Commercial Activities	1.2	1
Salary/Part time/Wage	1.2	1
Agricultural Produce & Livestock	34.6	28
Livestock/Commercial activity (shops)	14.8	12
Produce/Commercial activity/Salary	4.9	4
Total	100.0	81

These are the major sources of income in all the areas. Livestock auctions are held weekly in Samburu and Baringo districts where a lot of other commercial activity simultaneously takes place, including barter trade.

### 1-5 Infrastructure

It was observed that generally infrastructure is poorly developed in most areas, for example many roads are impassable making many areas inaccessible, the terrain is also rough, especially so in Samburu and Baringo. There are very few all weather roads. Other aspects of infrastructure also include electricity, telephone and water supply. 60% of all the areas surveyed do not have electricity, water supply, or telephone, and all these facilities are available in only 5% of the areas. In Baringo district 85% of the areas surveyed have none of these facilities, 56% of areas surveyed in Samburu also lack the facilities, at least 17% of all the districts have some form of water supply.

## 1-6 Public Service

Some of the Public Services available to the people are Government administrative offices, commercial centres, schools, hospitals and postal and police services. Most government offices which are closer to the people are manned by chiefs and their assistants and 69% of these offices are located within the areas surveyed. 93% of schools are also within the surveyed areas, 58% of the hospitals are located in the nearest towns from the sites. 70% of the areas have a commercial center or market, but in 80% of the areas there are no postal services so they have to seek this service in the nearest towns. The police are far in many areas with only 40% of the areas having any form of police service most of whom are attached to the local administrative office, they are administration policemen also known locally as APs.

## 1-7 Education

Education as gauged by school attendance at primary and secondary school level is low especially in Samburu and Baringo. 30% of all the study areas reported a primary school attendance rate of more than 75% while 54% of the areas report a secondary school attendance record of 0-25%.

Table 4: PRIMARY SCHOOL ATTENDANCE BY DISTRICT (%)

	0-25%	25-50%	50-75%	More than 75%
SAMBURU	12.5	31.3	43.8	12.5
BARINGO	40.0	25.0	30.0	5.0
KOIBATEK				100.0
LAIKIPIA	4.8	19.0	23.8	52.4

In comparison to secondary school attendance rates, primary school attendance is higher.

Table 5: PRIMARY SCHOOL ATTENDANCE BY DISTRICT (%)

	0-25%	25-50%	50-75%	More than 75%
SAMBURU	68.8	25.0	6.3	
BARINGO	80.0	20.0		
KOIBATEK		33.3	33.3	33.3
LAIKIPIA	40.5	38.1	19.0	2.4

Many reasons are given for the low school attendance especially at secondary level. Many people cite financial constraints i.e. school fees as hindering advancement of pupils but it was also observed that many of the children are used as herdsboys, tending to the livestock. Also their nomadic nature cannot allow children proper settled education in one place.



## CHAPTER TWO

### 2.0 WATER AVAILABILITY AND USES

#### 2.1 Sources and Uses

The residents of these areas use many water sources some of which are equipped and many of which are non-equipped. 18% of the areas have piped water supply which is distributed through both individual connections and communal water points. This piped water is normally used for drinking and washing, very few people feed it to livestock, and this also applies to the water from kiosks/communal water points which is most commonly used for drinking and washing.

27% of the areas use boreholes with single water points, 10% of these boreholes are equipped by motorized pump, 10% by windmills and 7% are equipped with hand pumps. Water that is drawn from these boreholes is used for washing drinking and feeding livestock. 94% of the communities used non-equipped sources. These sources include hand dug wells, rivers, dams springs, and ponds. 50% of these sources consists of rivers/lakes/ponds, 20% include hand dug wells. Only 2% are springs. Major uses of water from here are again drinking, washing and livestock.

Other types of water sources include roof catchment, rock catchment, subsurface dams, sand dams, and others like earth pans. 60% of the people use the roof catchment water for drinking and washing purposes, though a small percentage feed it also to livestock.

#### 2-2 Water Projects

There exist several water projects some of which have individual connections and other which don't.

The projects which serve people and institutions with individual connections are:

- |    |                                  |   |          |
|----|----------------------------------|---|----------|
| 1. | Kisima Water Project             | - | Samburu  |
| 2. | Wamba Water Supply               | - | Samburu  |
| 3. | Marigat Water Supply             | - | Baringo  |
| 4. | Kimanju Water Project            | - | Laikipia |
| 5. | Ntalian Water Project            | - | Laikipia |
| 6. | Rugutu Water Project             | - | Laikipia |
| 7. | Ol Arabel Water Project          | - | Laikipia |
| 8. | Emening Water Supply             | - | Koibatek |
| 9. | Nanyuki Municipal Water Supply-- |   | Laikipia |

10. Karaba Lariak Water Project - Laikipia
11. National Pipeline Water Supply - Laikipia
12. Nyahururu Water Supply - Laikipia

12% of these projects are government owned, 4% are owned by churches and missions, whereas 1% of them are owned by the community. The sources of water for these projects are mainly rivers/lakes/dams. 2% of them get their water from springs. They serve populations that range from 12 to 2000 persons. Most of the water tariff is based on flat rates, but there is tariff also based on metering, especially so for water distributed by the Municipal Councils or government. 2% of these projects give water free of charge. Information on consumption in months or years though could not be obtained. Many respondents could not give information on levels of water tariffs. Information obtained from other sources indicate that the tariffs could be as low as KShs.10.00 per month as high as KShs.160.00 per month.

There are other water projects that serve people by other means other than individual connections. These projects are:

1. Wamba Town Borehole - Samburu
2. AIC Water Supply - Samburu
3. Kadingding Dam - Baringo
4. Twala Borehole - Laikipia
5. Kurikuri Borehole - Laikipia
6. Aljijo Borehole - Laikipia
7. Olking'ei Borehole - Laikipia
8. Ngenia Water Project - Laikipia
9. Munyaka Borehole - Laikipia
10. Wamura Borehole - Laikipia
11. Lukusero Shallow Wells - Laikipia
12. East Laikipia Water Project - Laikipia
13. Ruai/Kugeria Water Project - Laikipia
14. Segera Borehole - Laikipia
15. Njogu-ini Borehole - Laikipia
16. Mutirithia Water Project - Laikipia
17. Ngobit Water Supply - Laikipia
18. Kinamba Catholic Mission  
Water Supply - Laikipia
19. Karaba Water Project - Laikipia
20. Kisima Catholic Church Borehole- Samburu

Although 75% of the respondents could not give information on ownership of these projects it turns out that 21% of them are owned by the community while the government, church and private individuals/organization own 1% each. They have as many as 6 water points and serve population that range from 2 families to 800 families, thus they serve a population as large as 10,000 persons. Methods of charging include metering, flat rates, and consumption. Others give their water free of charge. Although no information is available on consumption, the average family pays about KShs.10-KShs.360 a month in water tariffs. There are different charges for domestic use and livestock. Most projects charge about KShs.2.00 for one cow and 50 Cents for each sheep or goat per month. So consumption depends on the head of cattle or goats one individual owns.

### 2-3 Distance to Water Points

Many people walk long distances to reach particular water points, although presently because of the el-nino effects, thus much rain, there is comparatively plenty of available. On average it takes one fetching water 1-2 hours one way to get to a water point.

Table 6: AVERAGE DISTANCE TO A WATER POINT

DISTANCE	PERCENT	FREQUENCY
0 - 0.5 Km (less than 30minutes)	6.2	5
0.5 - 2 Km (30 min - 1 hour)	22.2	18
2 - 4 Km (1-2 hours)	40.7	33
4 Km (More than 2 hours)	30.9	25

Maximum distances are rather long, it is reported that some people walk about 8 kilometres to get to water whereas some take half-day (about 6-8 hours) to get to particular water points. Eighty three percent (83%) of the respondents indicated that maximum distances taken involve walking more than 4 kilometres to get to water points.

### 2-4 Responsibility for Fetching Water

Information concerning the responsibility for fetching water showed that a big proportion of this activity is conducted by women. On the overall, within the four districts, adult women alone accounted for 45.7%, whereas adult women assisted by young girls accounted for 27.2%. Women are involved in all water fetching responsibilities, whereas only 2.5% of the respondents reported the involvement of men and women in fetching water. Where men and boys are involved in fetching water, they normally use bicycles or donkeys to carry the water on their backs, though in a few places especially in Laikipia, they also use bicycles and donkeys. It was noted that in all the districts, the responsibility for fetching water was mainly for the woman only. This demonstrated by percentages as follows; Samburu 56.3%,

Baringo 40% and Laikipia 47%. It was noted that men are mostly involved in fetching water when there are severe shortages, otherwise in normal times is mainly left to women.

## **2-5 Water Uses:**

Water uses for domestic and livestock purposes within the project area varies depending on the specific type of use. For washing clothes most people, 53.1% go to the river or communal water points. Rivers and communal water points are also popular for bathing especially in Samburu, Baringo and pastoral areas of Laikipia districts. In the highly settled areas of Laikipia and Koibatek districts, most people bathe in the houses. This can be attributed to the fact that these areas are more developed in terms of settlement patterns compared to the rest. Springs are few in all the districts and where they occur, they are mainly used for drinking water and livestock watering. Livestock are mainly taken to rivers to drink. 80.2% of the surveyed communities use rivers to feed their livestock with water. No communities reported that they provided water for their livestock within the homes except for the calves and young goats and sheep. The prevalence of using rivers, lakes and ponds for livestock significantly contributed to the movement of cattle over long distances in search of water. There are few communal water points in the project area. This can be explained by the small number developed water sources e.g. boreholes in the whole of the project area.

## **2-6 Water Shortages**

Water shortages within the project area mainly occur during the dry season. 80.2% of the communities experience water shortages each year during the dry season. 12.3% of the communities reported shortages throughout the year, while 7.4% experience water shortage only during severe droughts. Some parts of Samburu, Baringo and Laikipia such as Wamba (Samburu) Nginyang and Kolowa (Baringo) and Mukogodo (Laikipia) water shortages are experienced almost throughout the year. The upper parts of Samburu (Poro), Koibatek, (Mumberes) and Laikipia (Kinamba) have higher annual rainfall amounts and are affected by water shortages mainly during the dry season.

People within the project area have few options when there are water shortages. According to the field survey results, over 90% of the people go to other water sources that may be nearest to them regardless of the quality of the water. In Samburu, 12.5% of the people try to decrease water uses because alternative water sources are not available. In Laikipia, about 9% of the people also decrease water, use in the case of shortages as they are in the permanent settlements and cannot move to water sources in times of drought. Many communities who are pastoralist in the project areas such as in Samburu and Baringo move to the nearest water points in times of shortages. This causes overcrowding in such areas and leads to environmental degradation.

## **2-7 Drinking Water Quality:**

Based on the local people assessment, the quality of the water that they use for drinking purposes is not good. Over 69% of the respondents reported that the water that they use for drinking is not clear and it would require some form of treatment such as filtration, precipitation or boiling to improve its quality. Another 12.3% were of the opinion that even though the water they used for drinking was clear, it still required boiling to improve its quality. 18.5% of all the respondents reported that the water they used for drinking was clear and it did not require boiling before drinking.

This was emphasized by the fact that only 38% of the people reported that they boiled water before drinking while only about 4% filtered their water before drinking. The highest percentage of people who boil their water before drinking is in Laikipia and Baringo, where 45% of the respondents reported that people boil their water before drinking. In Samburu, 81% of the people do not boil their water before drinking.

## **2-8 Present Water Supply Conditions:**

Presently, water is available within the project area. This can be attributed to the fact that the study was conducted in a relatively wet season (August). There is sufficient water at present but this only lasts up to the end of the wet season. Most of the rivers in the area are seasonal and dry up as soon as the wet season is over. Over 60% of the people reported the lack of sufficient water for both domestic and livestock purposes. Even during the wet season, availability of good quality drinking water is a problem especially in areas where there are no roof catchment practices such as Samburu and much of Baringo.

## **CHAPTER THREE**

### **3.0 HEALTH AND SANITATION**

#### **3-1 Disposal of Refuse:**

Availability of sanitary facilities is an important aspect of the health status of a community. Within the project area, the disposal of household refuse by the communities is by throwing it into the garden or bushes which is practiced by about 52% of the people. About 14% of the people have rubbish pits where they dispose of their refuse. Another 14% throw their refuse into rubbish pits and later burn, while 12% reported that they throw some of their refuse into the garden, rubbish pits and also burn when necessary.

#### **3-2 Availability of Sanitary Facilities:**

Sanitary facilities for use by the people in the project area are not diversified. On the overall, about 60% of the people have pits latrines, while about 40% do not have sanitary facilities. Most of the people in Samburu (68.8%) and Baringo (60%) districts do not have sanitary facilities, in Laikipia, 76.2% of those interviewed said that they have pits latrines. As a result of lack of sanitary facilities such as toilets, most of the communities in the project area defecate in the bush. 100% of all the surveyed communities in Samburu district defecate in the bush, while 95.0% of the communities in Baringo also defecate in the bush. In Laikipia, 31% of the surveyed communities (mainly in Mukogodo division) defecate in the bush. It was noted that pastoralist communities in the project area do not construct latrines mainly due to the fact that they keep moving from place to place in search of pasture (Nomadism). However, those who have settled in specific places especially near urban centers have constructed pit latrines. In Koibatek, one out of the three communities interviewed i.e. 33% defecate in the bush.

#### **3-3 Knowledge and Incidence of Water Related Diseases:**

Peoples knowledge of water related diseases in the four districts (project area) was found to be low. About 57% of those surveyed in the four districts indicated that most people do not have knowledge of water related diseases, while 44% indicated that most people know of water related diseases 56%, 60%, 100% and 50% in Samburu, Baringo, Koibatek and Laikipia respectively do not have knowledge on water related diseases. Laikipia has the highest number of people with knowledge on water related diseases who comprise 50% of all those surveyed in the district.

#### **3-4 Diseases That People Suffer From:**

Malaria and diarrhea are the two most common diseases that affect people in the project area. 42% of the surveyed communities said that malaria and diarrhea are the most common diseases they suffer from. However, when considering each

diseases separately, about 25% of the people indicated that malaria was the main disease in their area, with about 10% saying the same for serious diarrhoea. About 20% of the people indicated that they were affected by malaria, serious diarrhoea and other diseases such as eye ailments.

On numbers of malaria and diarrhoea reported in the last one year it was found that these were difficult to estimate among the local people. For the number of deaths that can be associated to serious diarrhoea, about 24% of the surveyed communities estimated between 2 – 10 people had died in the last one year. 65% of the surveyed communities were not able to estimate the number of deaths attributable to these diseases.

Other diseases that affect people in the project area include colds and pneumonia, which accounted for 43% of reported cases and typhoid and amoebae related infections which accounted for 17% of the reported cases. Colds and pneumonia are prevalent in Laikipia, where they represent about 55% of other diseases, while typhoid and amoeba is common in Baringo, representing 25.0 of all other diseases reported. Kalazar and other eye related ailments were also reported in Baringo where they represented 15.0% of other diseases that affect people (other than malaria and diarrhoea).

## **CHAPTER FOUR**

### **4.0 COMMUNITY AWARENESS AND ORGANISATION**

#### **4-1 Knowledge of Water Development Policy:**

Awareness among communities of policies relating to their overall development is important. This is because such awareness would make communities more responsive and willing to play a role in development activities, in the process contributing to the sustainability of development projects in the future. Among the communities in the project area, there is an awareness level of government policy on water development. 70% of those surveyed indicated that they are aware of policy on water development. However, this varied significantly across districts, 80% in Baringo and 79% in Laikipia indicated that they were aware of government policy, while only 37% of the people in Samburu are aware of government policy on water development. In 68% of the communities visited, there existed water committees 49% of which are assisted by the government, 2.5% assisted by NGOs or churches and 16% based on traditional customs of the people. It was noted that existence of such committees in some areas was because of past or present existence of another water project near the proposed sites. Otherwise in areas where there had been no past or present water, there were no water committees in existence. Laikipia recorded the highest number of water committees assisted by the government which represented 75% of all the water committees in the project areas. In Samburu 25% of the surveyed communities had water committees based on traditional customs.

#### **4-2 Requirements for Water Supply:**

The people in the project areas expressed at least some form requirement for the development of water supply in their community. About 51% require both the development of a water source and the provision of equipment for water supply. From the filed observations, it was noted that most of the people would like the water supply to be extended through individual connections or to various convenient water points which would be close to the consumers. This would reduce distances to water sources and overcrowding at water points. Approximately 30% of the people in the project area would also require the development of water, provision of equipment building of an organization (water committees) and providing necessary management training to the water committees to make them more effective.

At the districts level, 44% in Samburu, 25% in Baringo, 67% in Koibatek and 64% in Laikipia expressed that they would require the development of a water source and provision of equipment.



**Table 7: COMMUNITY REQUIREMENTS FOR WATER SUPPLY IN THE PROJECT AREA:**

<b>Requirement</b>	<b>Percent</b>	<b>Frequency</b>
Water source and equipment	50.6	41
Water source, equipment and training	14.8	12
Water source, equipment and organization	14.8	12
Water source, equipment and awareness	9.9	8
Water source only	4.9	4
Water source and financial assistance	3.7	3
Provision of equipment only	1.2	1
	100	81

Development of water source, provision of equipment and awareness creation was required by 20% and 12.5% of the people in Baringo and Samburu respectively; while 45% in Baringo, 37% in Samburu, 33% in Koibatek and 19% in Laikipia required development of water source, provision of equipment, building of organization and training for water supply in their communities.

It is therefore evident that development of water source, provision of equipment establishment of water committees and provision of management training are important requirements for water supply in the project area.

#### **4-3 Community Role in Implementation:**

Community participation by the local stakeholders is essential in any development undertaking. Participation can be assessed by the role that the community are willing and are capable to undertake at specific periods of project implementation, operation and management.

From the field study, it was found that there is a high level of willingness by the local communities to participate in the development of the groundwater resource in their areas. 56% of the people in the project areas are willing to share a part of the project cost and provide labour force for construction, operation and maintenance of the project. 31% of the people were willing to provide labour force for construction, operation and maintenance only. The rest of 13% would be willing either pay registration fees and water tariff in addition to providing labour and management.

**Table 8: ROLE THAT COMMUNITIES WOULD ACCEPT IN IMPLEMENTATION:**

Role	Percent	Frequency
Share project and provide labour	55.6	45
Provide labour, management and operation	30.9	25
Share cost, registration fee and labour	7.4	6
Pay registration fee and water tariff	2.5	2
Pay water tariff and provide labour	3.7	3
	100	81

Considering the role that community would be willing to play in implementation at the district level, 50% in Samburu, 70% in Baringo, 100% in Koibatek and 47.6% in Laikipia would be willing to share a part of the project cost and provide labour force for construction, operation and maintenance of the project. 40.5% in Laikipia, 20.0% in Baringo and 25% in Samburu would like to be involved only in the provision of labour force for construction, operation and maintenance of the project.

#### **4-4 Capability to pay water tariffs:**

To sustain the water project, there would be a need to pay water tariffs by the communities. Most of the people (73%) in the project would be capable to pay less than Kshs.150 per month. They specifically expressed the ability to pay between Ksh.50 to Ksh.100 per month as a water tariff. It was observed that this is the amount of money that is normally paid by those communities with existing water projects in the project area. 18.5% of the people would be willing to pay Kshs. 5 – 10 per day (Kshs. 150 – 300 per month) as water tariff. Only about 7% of the people would afford to pay between Kshs. 10 – 20 per day as water tariff. 1.2% of the people were not willing to pay water tariff for the water project.

In Samburu, about 19% of the communities would be willing to pay between Kshs. 10 to Kshs 20 (Kshs. 300 – 600 per month) as water tariff, while the Baringo 10% of the communities would be willing to pay as much.

#### **4-5 Conclusions and Recommendations:**

Based on the result of the field survey, it is evident that the communities in the project areas mainly rely on rivers for all their daily water needs. The quality of the water that is available to them is low which can be a direct cause to the incidence of diarrhoea diseases. The lack of sanitation facilities in Samburu, most parts of Baringo and in some parts of Laikipia (Mukogodo division) could also cause contamination to the available water sources for community use.

Peoples knowledge of government policy still needs improvement to ensure sustainability of water projects. The study team noted several water projects that have stalled due to lack of community involvement in their operations. Though about 68% of the communities reported the existence of water committees in their

area, it is important to note that most of the committees have been set up to manage some specific projects that already exist or are expected near future. It is therefore necessary to set up water committees for water projects before they are implemented to ensure full involvement of the people, at all stages of projects development.

Most communities expressed the need to develop water sources, equip them and put in place a management committee to oversee its operations. This is strengthened by the fact that the majority of the people are willing to share in the project cost, and provide labour for construction, management and operation. Over 98% of the people are also willing to pay a monthly fee (water tariff) to ensure that they get sufficient water for their needs. In view of these, the following activities are recommended.

1. A one week training of trainers workshop involving district level officers from the water office, chiefs and community development assistants (CDAs) be conducted. Its aim would be to mobilize the local people to form water committees.
2. The district level officers together with the (CDAs) and chief mobilize communities to form and officially register water committees for each proposed area.
3. The water committee members be offered training on water management to ensure sustainability of the projects.
4. Decisions on the level of involvement (especially and amounts involved) and the monthly water tariffs should be decided upon by the communities themselves through facilitation by the district water office, consultants and the Community Development Assistants.
5. All these activities should preferably be implemented alongside the drilling activity. If possible it could be completed before the drilling starts.
6. Overall supervision of these activities would best be done by the consultancy firm together with the JICA study team/Nippon Koei.

## **APPENDIX**

INTERVIEW SCHEDULE – SAMBURU DISTRICT

DATE	SITES	VILLAGE/COMMUNITY	REMARKS
31-7-98	SUB-LOCATION		
	SIAMBU	SIAMBU	DONE
	PARTUK	PARTUK VILLAGE	DONE
	LONKEWAN	LONKEWAN	DONE
	AMAYA	AMAYA	DONE
1-8-98	TINGA	NKOPELIANI	DONE
	GARMA	NKURDAI	DONE
	ILKILORITI	LEKEMANJA	DONE
	NAUNERI	NONOTO	DONE
	NENKEREPU	NENKEREPU	DONE
2-8-98	SESA	NGUTUKOLMUGET	DONE
	DIKIR	DIKIR	DONE
	ILPUS	ILPUS	DONE
	WAMBA	WAMBA TOWN	DONE
	MATAKWANII	WAMBA TOWN	DONE
3-8-98	MATAKWANII	MATAKWANII	NO RESIDENTS
	KOTING	LENGUSAKA	DONE
	NGONGOTIAN	NGONGOTIAN	NOT ACCESSIBLE
	ILMISIGOYI	ILMISIGOYI	NO RESIDENTS
	OPIROI	OPIROI	CANCELLED DUE TO INSECURITY IN THE AREA
4-8-98	MABATI	MABATA	CANCELLED - INSECURITY
	MBUKOI	MBUKOI	CANCELLED - INSECURITY
	NKEJEMUNY	NKEJEMUNY	DONE

INTERVIEW SCHEDULE - BARINGO DISTRICT

DATE	SITES	VILLAGE/COMMUNITY	REMARKS
5-8-98	SUB-LOCATION		
	KISERIAN	KISERIAN CENTRE	DONE
	ARABEL	BARATALUK	DONE
	LUGUS	LELERAI	DONE
6-8-98	LORUK	LORUK	DONE
	SIBILO	SIBILO	DONE
	YATOI	MARIGAT	DONE
	TILINGWO	TILINGWO	DONE
7-8-98	BARPELO	BARPELO	DONE
	NGINYANG EAST	ORO	DONE
	KOSITEI	KATUKUMWOK	DONE
	LORUK	NGARATUKO	DONE
8-8-98	NGINYANG EAST	NGINYANG	DONE
	CHEBINYING	NYIMBEI	DONE
	CHECINYING	CHEBINYING	DONE
	TANGULBEI	SERONI	DONE
9-8-98	KAPTUYA	NANG'ARWA /	DONE
	ORUS	KOKWAPANG'A	DONE
	CHURO	CHURO	DONE
	KASIELA	KASIELA	DONE
NOT DONE	KASIELA	SINONI	DONE
	KOLOA	KOLOA	LACK OF TIME
	AKORET	AKORET	INACCESSIBLE
	AMAYA	AMAYA	ALREADY DONE IN SAMBURU DISTRICT

INTERVIEW SCHEDULE -- KOIBATEK DISTRICT

DATE	SITES	VILLAGE/COMMUNITY	REMARKS
	SUB-LOCATION		
10-8-98	EQUATOR	MUMBERES	DONE
10-8-98	EMENING	EMENING	DONE
10-8-98	TORONGO	TORONGO	DONE

INTERVIEW SCHEDULE – LAIKIPIA DISTRICT

DATE	SITES	VILLAGE/COMMUNITY	REMARKS
12-8-98	SUB-LOCATION		
	TURA	TURA/KIMANJO	DONE
	EWASO	EWASO	DONE
	TURA	TURA	DONE
13-8-98	ILPOLEI	ILPOLEI/TWALA	DONE
	OLOI BORSOIT	OLOI BORSOIT	DONE
	KURIKURI	KURIKURI	DONE
	TURANA	SOITONDO	DONE
	ALJJO	ILGWESI	DONE
	KING'EI	NKWERINITO	DONE
	NAIBOR	NAIBOR	DONE
	UMANDE	NGENIA (SECONDARY SCHOOL)	DONE
	UMANDE	MWIRERI	DONE
	MUHONIA	WITHARE	DONE
14-8-98	NGOBIT	WAMURA	DONE
	WIYUMIRIRIE	IMENNTI (I)	DONE
	WIYUMIRIRIE	IMENNTI (II)	DONE
	MUHONIA	SEGERA	DONE
	WITHARE	MWITURIA (PRIMARY SCHOOL)	DONE
	MUHONIA	NGOBIT CENTRE	DONE
	KARAI	WAICHKEHERI	DONE
	TIGITHI	NGARING'IRO	DONE
	MATANYA	THOME	DONE



	SUB-LOCATION	VILLAGE/COMMUNITY	
15-8-98	NGARE NDARE	NGARE NDARE (ANADUNGURU)	DONE
	NGARE NDARE	LUKUSERO	DONE
	ETFI	WYUMIRURIE	DONE
	NTURUKUMA	NTURUKUMA	DONE
	RUGUTU	MUTIRITHIA	DONE
	MARURA	SWEET WATER	DONE
	MATANYA	TIGITHI (SECONDARY SCHOOL)	DONE
16-8-98	THIGIO	SERIA/OL'NGARUA (SECONDARY SCHOOL)	DONE
	THIGIO	KIAMBOGO	DONE
	MITHIGA	TANDARE (PRIMARY SCHOOL)	DONE
	MITHIGA	MITETA	DONE
	MITHIGA	KAMOGI	DONE
	KINAMBA	KINAMBA TOWN	DONE
	MWENJE	NDINDIKA	DONE
17-8-98	KINAMBA	NAIGERI	DONE
	CHERETA	CHERETA	DONE
	MUHOTETU/MUTANGA	MUTANGA CENTRE	DONE
	MERWA	GATUNDIA	DONE
	MERWA	CHUNGUTI	DONE

ENUMER NAME OF ENUMERATOR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Kanau	1	40	49.4	49.4	49.4
Ondiege	2	41	50.6	50.6	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

DIST NAME OF DISTRICT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
samburu	1	16	19.8	19.8	19.8
baringo	2	20	24.7	24.7	44.4
Koibatek	3	3	3.7	3.7	48.1
Laikipia	4	42	51.9	51.9	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

DIVIS NAME OF DIVISION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
kirisia	1	4	4.9	4.9	4.9
lorroki	2	7	8.6	8.6	13.6
wamba	3	5	6.2	6.2	19.8
kipsaraman	4	3	3.7	3.7	23.5
tangulbei	5	4	4.9	4.9	28.4
mukutan	6	1	1.2	1.2	29.6
muchongoi	7	4	4.9	4.9	34.6
nginyang	8	3	3.7	3.7	38.3
kolowa	9	2	2.5	2.5	40.7
marigat	10	3	3.7	3.7	44.4
numberes	13	1	1.2	1.2	45.7
torongo	14	1	1.2	1.2	46.9
mukogodo	15	10	12.3	12.3	59.3
rumuruti	16	3	3.7	3.7	63.0
ngarua	17	9	11.1	11.1	74.1
lawuria	18	12	14.8	14.8	88.9
central	19	7	8.6	8.6	97.5
nkarone	20	1	1.2	1.2	98.8
	59	1	1.2	1.2	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

LOCATION NAME OF LOCATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
poro	3	1	1.2	1.2	1.2
loosuk	4	1	1.2	1.2	2.5
kisima	7	3	3.7	3.7	6.2
wamba	8	3	3.7	3.7	9.9
londungokwe	10	1	1.2	1.2	11.1
loyamorok	12	2	2.5	2.5	13.6
churo	14	1	1.2	1.2	14.8
kolowa	16	1	1.2	1.2	16.0
marigat	19	1	1.2	1.2	17.3
mukutan	21	1	1.2	1.2	18.5
emenining	24	1	1.2	1.2	19.8
nanyuki	25	2	2.5	2.5	22.2
tigithi	26	2	2.5	2.5	24.7
segera	27	2	2.5	2.5	27.2
ngobit	28	1	1.2	1.2	28.4
sirrma	29	9	11.1	11.1	39.5
daiga	30	3	3.7	3.7	43.2
mukogodo	31	1	1.2	1.2	44.4
ilngwesi	32	3	3.7	3.7	48.1
ildigiri	33	2	2.5	2.5	50.6
marmanet	34	2	2.5	2.5	53.1
gituamba	41	2	2.5	2.5	55.6
muhotetu	42	2	2.5	2.5	58.0
kinamba	43	6	7.4	7.4	65.4
amaya	44	2	2.5	2.5	67.9
kirimon	45	1	1.2	1.2	69.1
baawa	46	1	1.2	1.2	70.4
lodokojek	47	1	1.2	1.2	71.6
arabel	48	1	1.2	1.2	72.8
nkarone	49	1	1.2	1.2	74.1
sibilo	50	3	3.7	3.7	77.8
loiwat	51	1	1.2	1.2	79.0
kositei	52	3	3.7	3.7	82.7
chebinyiny	53	4	4.9	4.9	87.7
sirata oirobi	54	3	3.7	3.7	91.4
ilpolei	55	2	2.5	2.5	93.8
mumunyt	57	1	1.2	1.2	95.1
makurian	59	1	1.2	1.2	96.3
kiserian	61	1	1.2	1.2	97.5
numberes	63	1	1.2	1.2	98.8
torongo	64	1	1.2	1.2	100.0

Total 81 100.0 100.0

Valid cases 81 Missing cases 0

## SUBLOC NAME OF SUBLOCATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
siambu	1	1	1.2	1.2	1.2
partuk	2	1	1.2	1.2	2.5
lonkewan	3	1	1.2	1.2	3.7
amaya	4	1	1.2	1.2	4.9
tinga	5	1	1.2	1.2	6.2
qarwa	6	1	1.2	1.2	7.4
ilkiroriti	7	2	2.5	2.5	9.9
nauneri	8	1	1.2	1.2	11.1
nenkerepus	9	1	1.2	1.2	12.3
sesia	10	1	1.2	1.2	13.6
dikir	11	1	1.2	1.2	14.8
wamba	13	1	1.2	1.2	16.0
matakwanii	14	1	1.2	1.2	17.3
koiting	15	1	1.2	1.2	18.5
kiserian	18	1	1.2	1.2	19.8
arabel	19	1	1.2	1.2	21.0
lugus	20	1	1.2	1.2	22.2
loruk	21	2	2.5	2.5	24.7
sibilo	22	1	1.2	1.2	25.9
Yatoi	24	1	1.2	1.2	27.2
tilingwo	25	1	1.2	1.2	28.4
barpelo	26	1	1.2	1.2	29.6
ngiyang east	27	2	2.5	2.5	32.1
chebinyiny	28	2	2.5	2.5	34.6
tangulbei	29	1	1.2	1.2	35.8
kaptuya	30	1	1.2	1.2	37.0
orus	31	1	1.2	1.2	38.3
churo	32	1	1.2	1.2	39.5
kasiela	33	2	2.5	2.5	42.0
equator	35	1	1.2	1.2	43.2
emening	36	1	1.2	1.2	44.4
torongo	37	1	1.2	1.2	45.7
tura	38	2	2.5	2.5	48.1
ewaso	39	1	1.2	1.2	49.4
ilpolei	40	1	1.2	1.2	50.6
oloi borsoit	41	1	1.2	1.2	51.9
kurikuri	42	1	1.2	1.2	53.1
turana	43	1	1.2	1.2	54.3
aljijo	44	1	1.2	1.2	55.6
king'ei	45	1	1.2	1.2	56.8
naibor	46	1	1.2	1.2	58.0
umande	47	2	2.5	2.5	60.5
muhonia	48	3	3.7	3.7	64.2
ngobit	49	1	1.2	1.2	65.4
wiyumiririe	50	2	2.5	2.5	67.9
withare	51	2	2.5	2.5	70.4

karai	52	1	1.2	1.2	71.6
tiqithi	53	1	1.2	1.2	72.8
matanya	54	2	2.5	2.5	75.3
ngare ndare	55	2	2.5	2.5	77.8
ethi	56	1	1.2	1.2	79.0
nturukuma	57	1	1.2	1.2	80.2
rugutu	58	1	1.2	1.2	81.5
marura	59	1	1.2	1.2	82.7
thigio	60	2	2.5	2.5	85.2
mithiga	61	3	3.7	3.7	88.9
kinamba	62	2	2.5	2.5	91.4
muhotetu/mutanga	64	1	1.2	1.2	92.6
nerwa	65	2	2.5	2.5	95.1
kositei	66	1	1.2	1.2	96.3
nkejemuny	67	1	1.2	1.2	97.5
nwenje	68	1	1.2	1.2	98.8
chereta	69	1	1.2	1.2	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

VILLAGE NAME OF VILLAGE\AREA\COMMUNITY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
sianbu	1	1	1.2	1.2	1.2
partuk	2	1	1.2	1.2	2.5
lonkewan	3	2	2.5	2.5	4.9
anaya	4	1	1.2	1.2	6.2
nkopeliani	5	1	1.2	1.2	7.4
lekemanja	7	1	1.2	1.2	8.6
nondoto	8	1	1.2	1.2	9.9
nenkerepus	9	1	1.2	1.2	11.1
ngutukolmuget	10	1	1.2	1.2	12.3
dikir	11	1	1.2	1.2	13.6
wamba	13	2	2.5	2.5	16.0
lengusaka	15	1	1.2	1.2	17.3
kiserian centre	18	1	1.2	1.2	18.5
bartaluk	19	1	1.2	1.2	19.8
lelerai	20	1	1.2	1.2	21.0
loruk	21	1	1.2	1.2	22.2
sibilo	22	1	1.2	1.2	23.5
marigat	23	1	1.2	1.2	24.7
tilingwo	24	1	1.2	1.2	25.9
barpelo	25	1	1.2	1.2	27.2
oro	26	1	1.2	1.2	28.4
katukumwok	27	1	1.2	1.2	29.6
ngaratuko	28	1	1.2	1.2	30.9
nginyang	29	1	1.2	1.2	32.1
nyimbei	30	1	1.2	1.2	33.3
chebinyiny	31	1	1.2	1.2	34.6
seroni	32	1	1.2	1.2	35.8

nang'arwa	33	1	1.2	1.2	37.0
kokwapang'a	34	1	1.2	1.2	38.3
churo	35	1	1.2	1.2	39.5
kasiela	36	1	1.2	1.2	40.7
sinoni	37	1	1.2	1.2	42.0
munberes	39	1	1.2	1.2	43.2
emening	40	1	1.2	1.2	44.4
torongo centre	41	1	1.2	1.2	45.7
ewaso	43	1	1.2	1.2	46.9
tura	44	2	2.5	2.5	49.4
ilpolei twala	45	1	1.2	1.2	50.6
oloi borsoit	46	1	1.2	1.2	51.9
kurikuri	47	1	1.2	1.2	53.1
soitoundo	48	1	1.2	1.2	54.3
ilqyesi	49	1	1.2	1.2	55.6
nkwerinito	50	1	1.2	1.2	56.8
naibor	51	1	1.2	1.2	58.0
ngenia secondary sch	52	1	1.2	1.2	59.3
nwireri	53	2	2.5	2.5	61.7
withare	54	2	2.5	2.5	64.2
wamura	55	1	1.2	1.2	65.4
imenti 1	56	1	1.2	1.2	66.7
imenti 2	57	1	1.2	1.2	67.9
segera	58	1	1.2	1.2	69.1
nwituria primary sch	59	1	1.2	1.2	70.4
ngobit centre	60	1	1.2	1.2	71.6
waichakeheri	61	1	1.2	1.2	72.8
ngare ngiro (lanuria	62	1	1.2	1.2	74.1
thone	63	1	1.2	1.2	75.3
ngare ndare	64	1	1.2	1.2	76.5
nturukuma	66	1	1.2	1.2	77.8
kinamba	72	1	1.2	1.2	79.0
chereta	73	1	1.2	1.2	80.2
muhotetu/mutanga	74	1	1.2	1.2	81.5
kisima town	76	1	1.2	1.2	82.7
nkejemuny	77	1	1.2	1.2	84.0
lukusero	78	1	1.2	1.2	85.2
wiyumiririe	79	1	1.2	1.2	86.4
mutirithia	80	1	1.2	1.2	87.7
sweetwaters	81	1	1.2	1.2	88.9
tigithi school	82	1	1.2	1.2	90.1
kianbogo	84	1	1.2	1.2	91.4
ndindika	85	2	2.5	2.5	93.8
muteta	86	1	1.2	1.2	95.1
kamugi	87	1	1.2	1.2	96.3
naigera	88	1	1.2	1.2	97.5
chunguti	89	1	1.2	1.2	98.8
gatundia	90	1	1.2	1.2	100.0

Total	81	100.0	100.0
-------	----	-------	-------

Valid cases	81	Missing cases	0
-------------	----	---------------	---

GEOSER GENERAL OBSERVATION BY ENUMERATOR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
A small township	1	27	33.3	33.3	33.3
A village	2	25	30.9	30.9	64.2
Population center no	3	29	35.8	35.8	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q1INTOCC INTERVIEWEE'S OCCUPATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Administrator (Chief	1	15	18.5	18.5	18.5
School teacher	2	15	18.5	18.5	37.0
clergyman	3	4	4.9	4.9	42.0
Water Committee Repr	6	5	6.2	6.2	48.1
Other (farmer, pasto	7	42	51.9	51.9	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q1AGE INTERVIEWEE'S AGE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	19	1	1.2	1.2	1.2
	20	3	3.7	3.7	4.9
	21	2	2.5	2.5	7.4
	22	2	2.5	2.5	9.9
	25	6	7.4	7.4	17.3
	27	1	1.2	1.2	18.5
	28	2	2.5	2.5	21.0
	29	2	2.5	2.5	23.5
	30	5	6.2	6.2	29.6
	31	4	4.9	4.9	34.6
	32	4	4.9	4.9	39.5
	33	2	2.5	2.5	42.0
	34	3	3.7	3.7	45.7
	35	3	3.7	3.7	49.4

36	2	2.5	2.5	51.9
37	5	6.2	6.2	58.0
38	3	3.7	3.7	61.7
39	2	2.5	2.5	64.2
40	4	4.9	4.9	69.1
42	4	4.9	4.9	74.1
43	3	3.7	3.7	77.8
45	1	1.2	1.2	79.0
46	2	2.5	2.5	81.5
47	1	1.2	1.2	82.7
48	2	2.5	2.5	85.2
49	2	2.5	2.5	87.7
50	3	3.7	3.7	91.4
52	2	2.5	2.5	93.8
53	1	1.2	1.2	95.1
56	2	2.5	2.5	97.5
60	1	1.2	1.2	98.8
62	1	1.2	1.2	100.0

Total	81	100.0	100.0
-------	----	-------	-------

Valid cases 81 Missing cases 0

Q1SEX INTERVIEWEE'S SEX

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Male	1	70	86.4	86.4	86.4
Female	2	11	13.6	13.6	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q1RESI INTERVIEWEE'S PERIOD OF RESIDENCE IN THE AREA

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	1	1.2	1.2	1.2
	2	3	3.7	3.7	4.9
	3	2	2.5	2.5	7.4
	4	2	2.5	2.5	9.9
	5	3	3.7	3.7	13.6
	6	4	4.9	4.9	18.5
	7	1	1.2	1.2	19.8
	8	5	6.2	6.2	25.9
	10	5	6.2	6.2	32.1
	11	2	2.5	2.5	34.6



12	1	1.2	1.2	35.8
13	1	1.2	1.2	37.0
14	1	1.2	1.2	38.3
15	1	1.2	1.2	39.5
18	2	2.5	2.5	42.0
19	1	1.2	1.2	43.2
20	5	6.2	6.2	49.4
22	2	2.5	2.5	51.9
24	2	2.5	2.5	54.3
25	5	6.2	6.2	60.5
26	1	1.2	1.2	61.7
27	2	2.5	2.5	64.2
28	2	2.5	2.5	66.7
29	1	1.2	1.2	67.9
30	7	8.6	8.6	76.5
32	1	1.2	1.2	77.8
33	1	1.2	1.2	79.0
34	2	2.5	2.5	81.5
35	1	1.2	1.2	82.7
36	1	1.2	1.2	84.0
37	2	2.5	2.5	86.4
38	1	1.2	1.2	87.7
40	1	1.2	1.2	88.9
42	1	1.2	1.2	90.1
43	1	1.2	1.2	91.4
45	1	1.2	1.2	92.6
46	1	1.2	1.2	93.8
48	1	1.2	1.2	95.1
50	1	1.2	1.2	96.3
52	1	1.2	1.2	97.5
56	1	1.2	1.2	98.8
60	1	1.2	1.2	100.0

Total	81	100.0	100.0
-------	----	-------	-------

Valid cases 81 Missing cases 0

# Q2MENOC ADULT MEN'S OCCUPATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Pastoralist	1	20	24.7	24.7	24.7
cultivator/crop farm	2	9	11.1	11.1	35.8
pastoralist/cultivat	6	39	48.1	48.1	84.0
pastoralist/cult/emp	7	1	1.2	1.2	85.2
past./cult./emp./bus	8	12	14.8	14.8	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2WOCC ADULT WOMEN'S OCCUPATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
cultivator/crop farm	2	4	4.9	4.9	4.9
Other	5	27	33.3	33.3	38.3
pastoralist/cultivat	6	3	3.7	3.7	42.0
pastoralist/cult/emp	7	3	3.7	3.7	45.7
past./cult./emp./bus	8	2	2.5	2.5	48.1
pastoralist/domestic	9	5	6.2	6.2	54.3
cultivator/domestic	10	28	34.6	34.6	88.9
cultivator/pastorali	11	9	11.1	11.1	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2NEHS APPROXIMATE NUMBER OF HOUSEHOLDS IN THE SUBLOCATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	40	1	1.2	1.2	1.2
	48	1	1.2	1.2	2.5
	55	1	1.2	1.2	3.7
	68	1	1.2	1.2	4.9
	100	6	7.4	7.4	12.3
	150	6	7.4	7.4	19.8
	200	10	12.3	12.3	32.1
	230	1	1.2	1.2	33.3
	250	3	3.7	3.7	37.0
	300	15	18.5	18.5	55.6
	350	2	2.5	2.5	58.0
	364	1	1.2	1.2	59.3
	400	6	7.4	7.4	66.7
	500	8	9.9	9.9	76.5
	600	4	4.9	4.9	81.5
	800	4	4.9	4.9	86.4
	1000	5	6.2	6.2	92.6
	1500	1	1.2	1.2	93.8
	2000	5	6.2	6.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2POPW APPROXIMATE POPULATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	100	2	2.5	2.5	2.5
	400	1	1.2	1.2	3.7
	500	1	1.2	1.2	4.9
	600	1	1.2	1.2	6.2
	670	1	1.2	1.2	7.4
	800	2	2.5	2.5	9.9
	1000	6	7.4	7.4	17.3
	1057	1	1.2	1.2	18.5
	1500	8	9.9	9.9	28.4
	1550	1	1.2	1.2	29.6
	1600	1	1.2	1.2	30.9
	2000	13	16.0	16.0	46.9
	2036	1	1.2	1.2	48.1
	2400	3	3.7	3.7	51.9
	2500	6	7.4	7.4	59.3
	2700	1	1.2	1.2	60.5
	3000	6	7.4	7.4	67.9
	4000	6	7.4	7.4	75.3
	5000	7	8.6	8.6	84.0
	6000	3	3.7	3.7	87.7
	7000	2	2.5	2.5	90.1
	8000	3	3.7	3.7	93.8
	8500	1	1.2	1.2	95.1
	10000	3	3.7	3.7	98.8
	20000	1	1.2	1.2	100.0
-----					
Total		81	100.0	100.0	

Q2FAMILY AVERAGE FAMILY SIZE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	3	1	1.2	1.2	1.2
	4	1	1.2	1.2	2.5
	5	5	6.2	6.2	8.6
	6	6	7.4	7.4	16.0
	7	2	2.5	2.5	18.5
	8	20	24.7	24.7	43.2
	9	6	7.4	7.4	50.6
	10	38	46.9	46.9	97.5
	12	2	2.5	2.5	100.0
-----					
Total		81	100.0	100.0	

Q2NCF AVERAGE NUMBER OF CHILDREN BELOW 10 YEARS OF AGE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	2	2.5	2.5	2.5
	2	6	7.4	7.4	9.9
	3	10	12.3	12.3	22.2
	4	14	17.3	17.3	39.5
	5	25	30.9	30.9	70.4
	6	20	24.7	24.7	95.1
	7	2	2.5	2.5	97.5
	9	1	1.2	1.2	98.8
	10	1	1.2	1.2	100.0
	-----				
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2HHINC ESTIMATED MONTHLY INCOME FOR AVERAGE FAM

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Less than 2,500 kshs	1	31	38.3	38.3	38.3
2,500 to 5,000 kshs	2	35	43.2	43.2	81.5
5,000 to 10,000 Kshs	3	12	14.8	14.8	96.3
10,000 to 20,000 Ksh	4	3	3.7	3.7	100.0
	-----				
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2HINSOU MAJOR SOURCES OF HOUSEHOLD INCOME

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
selling agricultural	1	6	7.4	7.4	7.4
selling livestock	2	28	34.6	34.6	42.0
selling other products	4	1	1.2	1.2	43.2
commercial activities	5	1	1.2	1.2	44.4
salary, part-time/te	7	1	1.2	1.2	45.7
agric. prod/livestock	8	28	34.6	34.6	80.2
selling livestock/comm.	9	12	14.8	14.8	95.1
agric/comm/salary	10	4	4.9	4.9	100.0
	-----				
	Total	81	100.0	100.0	

Q2INFRA AVAILABILITY OF INFRASTRUCTURE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
electricity	1	4	4.9	4.9	4.9
water supply	2	14	17.3	17.3	22.2
telephone	3	3	3.7	3.7	25.9
none of above	4	49	60.5	60.5	86.4
all available	5	4	4.9	4.9	91.4
water and telephone	7	6	7.4	7.4	98.8
electricity and telephone	8	1	1.2	1.2	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2GOVOFF AVAILABILITY OF GOVERNMENT ADMINISTRATIVE OFFICE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
within this area	1	56	69.1	69.1	69.1
nearest town	2	25	30.9	30.9	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2SCHO AVAILABILITY OF SCHOOL

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
within this area	1	75	92.6	92.6	92.6
nearest town	2	6	7.4	7.4	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2HOSP AVAILABILITY OF HOSPITAL / CLINIC

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
within this area	1	34	42.0	42.0	42.0
nearest town	2	47	58.0	58.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2COMM AVAILABILITY OF COMMERCIAL CENTER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
within this area	1	57	70.4	70.4	70.4
nearest town	2	24	29.6	29.6	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2POL AVAILABILITY OF POLICE STATION/POST

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
within this area	1	32	39.5	39.5	39.5
nearest town	2	49	60.5	60.5	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2POST AVAILABILITY OF POSTAL SERVICES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
within this area	1	16	19.8	19.8	19.8
nearest town	2	65	80.2	80.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Q2SCHATP PRIMARY SCHOOL ATTENDANCE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
0-25%	1	12	14.8	14.8	14.8
25-50%	2	18	22.2	22.2	37.0
50-75%	3	23	28.4	28.4	65.4
more than 75%	4	28	34.6	34.6	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q2SECON SECONDARY SCHOOL ATTENDANCE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
0-25%	1	44	54.3	54.3	54.3
25-50%	2	25	30.9	30.9	85.2
50-75%	3	10	12.3	12.3	97.5
more than 75%	4	2	2.5	2.5	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3PWS PIPED WATER SUPPLY FOR DAILY CONSUMPTION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1	18	22.2	22.2	22.2
no	2	63	77.8	77.8	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3D1R PIPED WATER DISTRIBUTED BY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
individual connections	1	8	9.9	9.9	9.9
kiosk/communal point	2	6	7.4	7.4	17.3
both	3	4	4.9	4.9	22.2
No information/NA	99	63	77.8	77.8	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WSIC WATER USES FOR INDIVIDUAL PIPED WATER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	3	3.7	3.7	3.7
drinking and washing	2	7	8.6	8.6	12.3
drinking only	3	1	1.2	1.2	13.6
not yet operational	5	1	1.2	1.2	14.8
No information N/A	99	69	85.2	85.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WSKC USES FOR KIOSK /COMMUNAL WATER POINTS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	3	3.7	3.7	3.7
drinking and washing	2	4	4.9	4.9	8.6
drinking only	3	3	3.7	3.7	12.3
No information N/A	99	71	87.7	87.7	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0



Q3BSWP COMMUNITY USING BOREHOLE WITH SINGLE WATER POINT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1	22	27.2	27.2	27.2
no	2	59	72.8	72.8	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3BEB BOREHOLE EQUIPPED BY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
motorized pump	1	8	9.9	9.9	9.9
windmill	2	8	9.9	9.9	19.8
handpump	3	6	7.4	7.4	27.2
No information N/A	99	59	72.8	72.8	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3BWP USES OF WATER FROM MOTORIZED PUMP

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	2	2.5	2.5	2.5
drinking and washing	2	6	7.4	7.4	9.9
No information N/A	99	73	90.1	90.1	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3BWL USES OF WATER FROM WINDHILL BOREHOLE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	6	7.4	7.4	7.4
drinking and washing	2	1	1.2	1.2	8.6
No information N/A	99	74	91.4	91.4	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	
Valid cases	81	Missing cases	0		

Q3BHP USES OF WATER FROM HANDPUMP BOREHOLE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	2	2.5	2.5	2.5
drinking and washing	2	5	6.2	6.2	8.6
No information N/A	99	74	91.4	91.4	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	
Valid cases	81	Missing cases	0		

Q3NEWS COMMUNITY USING NON EQUIPPED SOURCES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1	76	93.8	93.8	93.8
no	2	5	6.2	6.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	
Valid cases	81	Missing cases	0		

Q3TONES TYPE OF NON-EQUIPPED SOURCES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
hand dug well	1	6	7.4	7.4	7.4
river/lake/pond	2	41	50.6	50.6	58.0
spring	3	2	2.5	2.5	60.5
handdug well and river	4	16	19.8	19.8	80.2
handdugwell and spring	5	4	4.9	4.9	85.2
well, spring and river	6	4	4.9	4.9	90.1
river/spring	7	5	6.2	6.2	96.3
No Information N/A	99	3	3.7	3.7	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3HDW USES OF WATER FROM HAND DUG WELL

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	24	29.6	29.6	29.6
drinking and washing	2	2	2.5	2.5	32.1
No information N/A	99	55	67.9	67.9	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3RLP USES OF WATER FROM RIVER/LAKE/POND

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	59	72.8	72.8	72.8
drinking and washing	2	1	1.2	1.2	74.1
drinking only	3	1	1.2	1.2	75.3
livestock only	4	8	9.9	9.9	85.2
No information N/A	99	12	14.8	14.8	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3SPRING USES OF WATER FROM SPRING

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	13	16.0	16.0	16.0
drinking and washing	2	2	2.5	2.5	18.5
drinking only	3	1	1.2	1.2	19.8
No information N/A	99	65	80.2	80.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q30TWAS COMMUNITY USING OTHER WATER SOURCES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1	75	92.6	92.6	92.6
no	2	6	7.4	7.4	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3TOSOW TYPES OF OTHER WATER SOURCES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
roof catchment	1	42	51.9	51.9	51.9
rock catchment	2	7	8.6	8.6	60.5
subsurface dam/sand	3	9	11.1	11.1	71.6
other eg earth/water	4	3	3.7	3.7	75.3
roof catchment/rockc	5	7	8.6	8.6	84.0
roof,rock and subsur	6	2	2.5	2.5	86.4
roof catchment/subsu	7	4	4.9	4.9	91.4
rock cathment/subsur	8	1	1.2	1.2	92.6
No information N/A	99	6	7.4	7.4	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3RCAT USES OF ROOF CATCHMENT WATER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	15	18.5	18.5	18.5
drinking and washing	2	27	33.3	33.3	51.9
drinking only	3	11	13.6	13.6	65.4
livestock only	4	1	1.2	1.2	66.7
No information N/A	99	27	33.3	33.3	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3ROCK USES OF WATER FROM ROCK CATCHMENTS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	12	14.8	14.8	14.8
drinking only	3	2	2.5	2.5	17.3
livestock only	4	1	1.2	1.2	18.5
No information N/A	99	66	81.5	81.5	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3SSDA USES OF WATER FROM SUBSURFACE DAM / SAND

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livestock	1	16	19.8	19.8	19.8
No information N/A	99	65	80.2	80.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q30TSOC USES OF WATER FROM OTHER SOURCES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
drinking, washing and livetsock	1	3	3.7	3.7	3.7
drinking and washing	2	1	1.2	1.2	4.9
No information N/A	99	77	95.1	95.1	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3NWP NAME OF WATER PROJECTS (INDIVIDUAL CONNECTIONS)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
Kisima water project	1	1	1.2	1.2	1.2
Wamba water supply	2	2	2.5	2.5	3.7
Marigat water supply	3	1	1.2	1.2	4.9
Kimanju water projec	5	1	1.2	1.2	6.2
Ntalian water projec	6	1	1.2	1.2	7.4
Rugutu water project	7	1	1.2	1.2	8.6
Ol Arabel water proj	8	1	1.2	1.2	9.9
Emening water supply	9	1	1.2	1.2	11.1
Nanyuki municipal wa	10	2	2.5	2.5	13.6
Karaba/lariak water	11	1	1.2	1.2	14.8
National pipeline wa	12	1	1.2	1.2	16.0
Nyahururu water supp	13	1	1.2	1.2	17.3
No Information N/A	99	67	82.7	82.7	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Q30WN WATER PROJECT OWNED BY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
government	1	10	12.3	12.3	12.3
community	2	1	1.2	1.2	13.6
church/mission	3	3	3.7	3.7	17.3
No Information N/A	99	67	82.7	82.7	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Q3WSOU WATER SOURCE FOR WATER PROJECTS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
borehole	1	1	1.2	1.2	1.2
spring	2	2	2.5	2.5	3.7
river/lake/pond	3	10	12.3	12.3	16.0
other	4	1	1.2	1.2	17.3
No Information N/A	99	67	82.7	82.7	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3CONNS NUMBER OF INDIVIDUAL CONNECTIONS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	1	1.2	1.2	1.2
	3	1	1.2	1.2	2.5
	5	1	1.2	1.2	3.7
	7	1	1.2	1.2	4.9
	10	1	1.2	1.2	6.2
	11	1	1.2	1.2	7.4
	12	1	1.2	1.2	8.6
	20	2	2.5	2.5	11.1
no information N/a	99	68	84.0	84.0	95.1
	100	1	1.2	1.2	96.3
	120	2	2.5	2.5	98.8
	200	1	1.2	1.2	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3PERS NUMBER OF PERSONS SERVED

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	12	1	1.2	1.2	1.2
	50	1	1.2	1.2	2.5
No information N/A	99	72	88.9	88.9	91.4
	100	1	1.2	1.2	92.6
	120	2	2.5	2.5	95.1
	300	2	2.5	2.5	97.5
	400	1	1.2	1.2	98.8
	2000	1	1.2	1.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WTC WATER TARIFF BASED ON

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
metering	1	4	4.9	4.9	4.9
flat rate	2	7	8.6	8.6	13.6
none/free of charge	5	2	2.5	2.5	16.0
No information N/A	99	68	84.0	84.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WCPH WATER CONSUMPTION PER MONTH

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No information N/A	99	81	100.0	100.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0



Q3WCMS WATER CONSUMPTION PER SPECIFIC NUMBER OF MONTHS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No information N/A	99	81	100.0	100.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	
Valid cases	81	Missing cases	0		

Q3WCOY WATER CONSUMPTION PER YEAR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No information N/A	99	81	100.0	100.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	
Valid cases	81	Missing cases	0		

Q3WTPM AMOUNT OF WATER TARIFF PER MONTH

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	10	1	1.2	1.2	1.2
No information N/A	99	76	93.8	93.8	95.1
	100	1	1.2	1.2	96.3
	160	3	3.7	3.7	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	
Valid cases	81	Missing cases	0		

A3WTPMS WATER TARIFF IN SPECIFIC NUMBER OF MONTH

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No information N/A	99	81	100.0	100.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Q3WTPV WATER TARIFF PER YEAR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No information N/A	99	81	100.0	100.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	
Valid cases	81	Missing cases	0		

Q3NOP NAME OF WATER PROJECT OTHER THAN INDIVIDUAL CONNECTIONS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
wamba town borehole	1	1	1.2	1.2	1.2
AIC water supply kol	2	1	1.2	1.2	2.5
Kadingding dan	3	1	1.2	1.2	3.7
Twala borehole	4	2	2.5	2.5	6.2
Kurikuri borehole	5	1	1.2	1.2	7.4
Aljiro borehole	6	1	1.2	1.2	8.6
Ol King'ei borehole	7	1	1.2	1.2	9.9
Ngenia water project	8	1	1.2	1.2	11.1
Munyaka borehole	9	1	1.2	1.2	12.3
Wamura borehole	10	1	1.2	1.2	13.6
Lukusero shallow wel	11	1	1.2	1.2	14.8
East laikipia water	12	1	1.2	1.2	16.0
Ruai/kugeria water p	13	1	1.2	1.2	17.3
Segera borehole	14	1	1.2	1.2	18.5
Njoquini borehole	15	1	1.2	1.2	19.8
Mutirithia water pro	16	1	1.2	1.2	21.0
Ngobit water project	17	1	1.2	1.2	22.2
kinamba Catholic mission	18	1	1.2	1.2	23.5
Karaba water project	19	1	1.2	1.2	24.7
No information N/A	99	61	75.3	75.3	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

\*\*\*KISIMA TOWN CATHOLIC MISSION BOREHOLE SERVES THE PUBLIC IN KISIMA AREA

Q3OWNER OWNERSHIP OF THE PROJECT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
government	1	1	1.2	1.2	1.2
community	2	17	21.0	21.0	22.2
church/mission	3	1	1.2	1.2	23.5
private	4	1	1.2	1.2	24.7
No information N/A	99	61	75.3	75.3	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Q3NUP NUMBER OF WATER POINTS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	11	13.6	13.6	13.6
	2	4	4.9	4.9	18.5
	4	1	1.2	1.2	19.8
	5	1	1.2	1.2	21.0
	6	1	1.2	1.2	22.2
No information N/A	99	63	77.8	77.8	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Q3NOF NUMBER OF FAMILIES RELYING ON WATER POINT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	2	1	1.2	1.2	1.2
	5	1	1.2	1.2	2.5
	6	1	1.2	1.2	3.7
	20	2	2.5	2.5	6.2
	50	3	3.7	3.7	9.9
No information N/A	99	63	77.8	77.8	87.7
	100	1	1.2	1.2	88.9
	150	2	2.5	2.5	91.4
	200	5	6.2	6.2	97.5
	600	1	1.2	1.2	98.8
	800	1	1.2	1.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3NOPER NUMBER OF PERSONS SERVED BY WATER POINTS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	2	1	1.2	1.2	1.2
	5	1	1.2	1.2	2.5
	40	1	1.2	1.2	3.7
	50	1	1.2	1.2	4.9
No information N/A	99	64	79.0	79.0	84.0
	150	1	1.2	1.2	85.2
	200	1	1.2	1.2	86.4
	250	1	1.2	1.2	87.7
	800	1	1.2	1.2	88.9
	1000	3	3.7	3.7	92.6
	1500	2	2.5	2.5	95.1
	2400	1	1.2	1.2	96.3
	4000	1	1.2	1.2	97.5
	6000	1	1.2	1.2	98.8
	10000	1	1.2	1.2	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Q3WCB METHOD OF CHARGING USED

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
metering	1	2	2.5	2.5	2.5
flat rate	2	6	7.4	7.5	10.0
other	4	1	1.2	1.3	11.3
none/free of charge	5	7	8.6	8.8	20.0
No information N/A	99	64	79.0	80.0	100.0
	.	1	1.2	Missing	
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases 80 Missing cases 1

Q3WACH WATER CONSUMPTION BY AVERAGE FAMILY PER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no information N/A	99	81	100.0	100.0	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Q3WACHS WATER CONSUMPTION BY AVERAGE FAMILY IN SPECIFIC MONTHS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no information N/A	99	81	100.0	100.0	100.0
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WACY WATER CONSUMPTION BY AVERAGE FAMILY PER YEAR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no information N/A	99	81	100.0	100.0	100.0
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WAPM AMOUNT OF WATER TARIFF PAID BY AVERAGE FAMILY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	1	1.2	1.2	1.2
	10	2	2.5	2.5	3.7
	20	1	1.2	1.2	4.9
no information N/A	99	76	93.8	93.8	98.8
	360	1	1.2	1.2	100.0
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WAPMS AMOUNT OF WATER TARIFF IN SPECIFIC NUMBER OF MONTHS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no information N/A	99	81	100.0	100.0	100.0
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WAPY AMOUNT OF WATER TARIFF PER YEAR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
no information N/A	99	81	100.0	100.0	100.0
	Total	81	100.0	100.0	
Valid cases	81	Missing cases	0		

Q3AVWP AVERAGE DISTANCE TO WATER POINT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
0-0.5 km (less than 30 Mins)	1	5	6.2	6.2	6.2
.5 -2km (30min - 1 hr)	2	18	22.2	22.2	28.4
2-4 km (1-2 hours)	3	33	40.7	40.7	69.1
4 km (more than 2 hrs)	4	25	30.9	30.9	100.0
	Total	81	100.0	100.0	
Valid cases	81	Missing cases	0		

Q3MAXWP MAXIMUM DISTANCE TO WATER POINT

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
0-0.5 km (less than 30 mins)	1	1	1.2	1.2	1.2
.5 -2km (30min - 1 hr)	2	4	4.9	4.9	6.2
2-4 km (1-2 hours)	3	9	11.1	11.1	17.3
4 km (more than 2 hours)	4	67	82.7	82.7	100.0
	Total	81	100.0	100.0	

Q3TPFW NUMBER OF TIMES THAT PEOPLE GO TO FETCH WATER IN A DAY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
once	1	17	21.0	21.0	21.0
twice	2	43	53.1	53.1	74.1
three times	3	17	21.0	21.0	95.1
four times	4	4	4.9	4.9	100.0
	Total	81	100.0	100.0	

Q3TOC WHAT IS USED TO FETCH WATER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
container(20 litres)	1	80	98.8	98.8	98.8
other	2	1	1.2	1.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3AWT APPROXIMATE AMOUNT TAKEN (LITRES)

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	20	80	98.8	98.8	98.8
	40	1	1.2	1.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3NOC NUMBER OF CONTAINERS TAKEN AT ONCE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	45	55.6	55.6	55.6
	2	27	33.3	33.3	88.9
	3	5	6.2	6.2	95.1
	4	3	3.7	3.7	98.8
	5	1	1.2	1.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3RFW RESPONSIBILITY FOR FETCHING WATER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
adult women	2	37	45.7	45.7	45.7
girls	4	1	1.2	1.2	46.9
women and girl	5	22	27.2	27.2	74.1
women, boys and girls	6	18	22.2	22.2	96.3
all	7	1	1.2	1.2	97.5
adult men and women	8	2	2.5	2.5	100.0
<hr/>					
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WPWC WHERE PEOPLE WASH CLOTHES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
house	1	14	17.3	17.3	17.3
communal water point	2	2	2.5	2.5	19.8
spring	3	1	1.2	1.2	21.0
river/lake/pond	4	43	53.1	53.1	74.1
house and river/lake	5	10	12.3	12.3	86.4
spring/river	6	4	4.9	4.9	91.4
spring/house	7	1	1.2	1.2	92.6
water point/river	8	3	3.7	3.7	96.3
communal point /river	9	2	2.5	2.5	98.8
communal point/ spring	10	1	1.2	1.2	100.0
<hr/>					
Total		81	100.0	100.0	

Q3WPTB WHERE PEOPLE TAKE A BATH

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
house	1	25	30.9	30.9	30.9
communal water point	2	1	1.2	1.2	32.1
spring	3	1	1.2	1.2	33.3
river/lake/pond	4	37	45.7	45.7	79.0
house and river/lake	5	11	13.6	13.6	92.6
spring/river	6	2	2.5	2.5	95.1
water point/river	8	1	1.2	1.2	96.3
communal point /rive	9	2	2.5	2.5	98.8
communal point/ spri	10	1	1.2	1.2	100.0
<hr/>					
Total		81	100.0	100.0	



Q3WPWL WHERE LIVESTOCK ARE WATERED

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
communal water point	2	2	2.5	2.5	2.5
spring	3	2	2.5	2.5	4.9
river/lake/pond	4	65	80.2	80.2	85.2
house and river/lake	5	3	3.7	3.7	88.9
communal water point	6	3	3.7	3.7	92.6
water point/river	8	1	1.2	1.2	93.8
communal point/river	9	4	4.9	4.9	98.8
communal point/sprin	10	1	1.2	1.2	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3FOWS FREQUENCY OF WATER SHORTAGES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
occurs during severe drought	1	6	7.4	7.4	7.4
occurs only in dry season	2	65	80.2	80.2	87.7
occurs throughout year	3	10	12.3	12.3	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WPD WANT PEOPLE DO IN TIMES OF SHORTAGES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
decrease water use/n	1	7	8.6	8.6	8.6
get acceptable quality	2	1	1.2	1.2	9.9
get any available water	3	73	90.1	90.1	100.0
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WQD WATER QUALITY FOR DRINKING

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
water clear/no boiling	1	15	18.5	18.5	18.5
water clear but needs boil	2	10	12.3	12.3	30.9
water not clear	3	56	69.1	69.1	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3WDBD WHAT PEOPLE DO BEFORE DRINKING WATER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
boiling	1	31	38.3	38.3	38.3
filtration	2	3	3.7	3.7	42.0
none of these	4	47	58.0	58.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3SWD SUFFICIENCY OF DRINKING WATER

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1	32	39.5	39.5	39.5
no	2	49	60.5	60.5	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Q3SWB SUFFICIENCY OF WATER FOR WASHING HANDS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1	30	37.0	37.0	37.0
no	2	51	63.0	63.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3SWB SUFFICIENCY OF WATER FOR BATHING

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1	30	37.0	37.0	37.0
no	2	51	63.0	63.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3SWC SUFFICIENCY OF WATER FOR WASHING CLOTHES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1	29	35.8	35.8	35.8
no	2	52	64.2	64.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q3SWL SUFFICIENCY OF WATER FOR LIVESTOCK

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1	32	39.5	39.5	39.5
no	2	49	60.5	60.5	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Q4RDIS HOW REFUSE IS DISPOSED OFF

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
thrown in garden	1	42	51.9	51.9	51.9
rubbish pit	2	11	13.6	13.6	65.4
burning	3	7	8.6	8.6	74.1
garden/pit/burning	5	10	12.3	12.3	86.4
pit/burning	6	11	13.6	13.6	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Q4SANF SANITARY FACILITIES THAT PEOPLE HAVE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
none	1	32	39.5	39.5	39.5
pit latrine	2	48	59.3	59.3	98.8
cistern flush WC	3	1	1.2	1.2	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q4WPD WHERE PEOPLE DEFECATE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
neighbours shared la	1	2	2.5	2.5	2.5
bush	2	49	60.5	60.5	63.0
N/A	99	30	37.0	37.0	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q4KWRD PEOPLES KNOWLEDGE OF WATER RELATED DISEASES

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
most people do not have	1	45	55.6	55.6	55.6
most people have	2	36	44.4	44.4	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q4DPES DISEASES THAT PEOPLE HAVE SUFFERED IN LAST 1 YEAR

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
malaria	2	20	24.7	24.7	24.7
serious diarrhoea	3	8	9.9	9.9	34.6
malaria and diarrhoe	5	34	42.0	42.0	76.5
malaria,diarrhoea,others	6	16	19.8	19.8	96.3
No information N/A	99	3	3.7	3.7	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Q4NOEVM NUMBER OF MALARIA EVENTS REPORTED

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	2	3	3.7	3.7	3.7
No information N/A	99	77	95.1	95.1	98.8
	200	1	1.2	1.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q4NOEVD NUMBER OF EVENTS DUE TO SERIOUS DIARRHOEA

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
No information N/A	99	81	100.0	100.0	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q4NODM NUMBER OF DEATHS AS A RESULT OF MALARIA

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	1	1	1.2	1.2	1.2
	7	1	1.2	1.2	2.5
	10	1	1.2	1.2	3.7
No information N/A	99	78	96.3	96.3	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

Q4NODD NUMBER OF DEATHS DUE TO DIARRHOEA

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
	2	1	1.2	1.2	1.2
	3	4	4.9	4.9	6.2
	4	1	1.2	1.2	7.4
	5	3	3.7	3.7	11.1
	6	3	3.7	3.7	14.8
	7	1	1.2	1.2	16.0
	10	6	7.4	7.4	23.5
	16	1	1.2	1.2	24.7
	20	1	1.2	1.2	25.9
	27	1	1.2	1.2	27.2
	30	3	3.7	3.7	30.9
	32	1	1.2	1.2	32.1
No information N/A	99	52	64.2	64.2	96.3
	100	2	2.5	2.5	98.8
	200	1	1.2	1.2	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Q4OTDI OTHER DISEASES THAT AFFECT PEOPLE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
colds and pneumonia	1	35	43.2	43.2	43.2
typhoid and amoeba	2	14	17.3	17.3	60.5
kalazar and other eye inf.	3	3	3.7	3.7	64.2
bleuresis (milk related)	4	2	2.5	2.5	66.7
No information N/A	99	27	33.3	33.3	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Q5CPAWS COMMUNITY'S GOVERNMENT POLICY AWARENESS

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes	1	57	70.4	70.4	70.4
no	2	24	29.6	29.6	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases 81 Missing cases 0

Q5COWS    EXISTENCE OF CO-OPERATIVE OR ORGANIZED WATER COMMITTEE

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
yes, committee assisted by government	1	40	49.4	49.4	49.4
yes, committee assisted NGOs	2	2	2.5	2.5	51.9
yes, committee based on traditional customs	3	13	16.0	16.0	67.9
no water committee	4	26	32.1	32.1	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases      81      Missing cases      0

Q5RWSC    COMMUNITY REQUIREMENTS FOR WATER SUPPLY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
development of water source	1	4	4.9	4.9	4.9
provision of equipment	2	1	1.2	1.2	6.2
water source and equipment	7	41	50.6	50.6	56.8
water source, equipment	8	8	9.9	9.9	66.7
water source, finance	10	3	3.7	3.7	70.4
water source, equipment	13	12	14.8	14.8	85.2
source,equipment and training	14	12	14.8	14.8	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Valid cases      81      Missing cases      0

Q5RPWA    ROLE THAT COMMUNITY WOULD ACCEPT IN IMPLEMENTATION

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
labour, management	4	25	30.9	30.9	30.9
share cost, reg. fee	6	6	7.4	7.4	38.3
share cost, labour	7	45	55.6	55.6	93.8
reg. fee and water tariff	8	2	2.5	2.5	96.3
water tariff, labour	9	3	3.7	3.7	100.0
		-----	-----	-----	
Total		81	100.0	100.0	

Q5WTFW WATER TARIFF THAT THE COMMUNITY IS WILLING TO PAY

Value Label	Value	Frequency	Percent	Valid Percent	Cum Percent
not willing/not capable	1	1	1.2	1.2	1.2
less than Kshs 5 per day	2	59	72.8	72.8	74.1
Kshs 5-10 per day(Ks	3	15	18.5	18.5	92.6
Kshs 10-20 per day (	4	5	6.2	6.2	98.8
<Kshs 20 per day (<K	5	1	1.2	1.2	100.0
		-----	-----	-----	
	Total	81	100.0	100.0	

Valid cases 81 Missing cases 0

-----



Q1NUM	ENUMER	DIST	DIMS	LOCATION	SUBLOC	VILLAGE	GEOSER	Q1INTOC	Q1AGE	Q1SEX	Q1RES	Q2MENOC	Q2WOC	Q2EHS	Q2POP	Q2FAMLY	Q2CZF	Q2FEND	Q2MNSOU	Q2AFRA
1	2	1	1	3	1	1	3	7	22	1	22	8	10	100	2000	8	5	1	2	2
2	2	1	1	7	2	2	3	7	48	1	48	8	10	800	1500	10	8	1	2	2
3	2	1	2	44	3	3	1	6	39	1	39	8	10	500	6000	10	5	1	8	4
4	1	1	2	44	4	4	1	3	33	2	33	8	7	1000	4000	10	10	4	2	4
5	2	1	1	4	5	5	2	1	45	1	45	8	10	88	400	8	5	2	8	4
6	1	1	2	45	6	3	3	3	31	1	8	8	8	300	10	8	1	3	4	2
7	1	1	2	7	7	7	1	8	82	1	24	8	5	300	3000	10	8	1	9	5
8	2	1	2	48	7	7	3	1	38	1	38	1	5	400	2500	8	4	2	2	2
9	2	1	2	7	8	8	3	1	47	1	8	1	5	200	870	8	5	1	2	4
10	2	1	2	47	9	9	2	2	28	1	28	1	5	400	2000	8	5	3	9	4
11	2	1	3	10	10	10	2	7	37	1	30	1	9	100	4000	8	4	2	2	4
12	2	1	3	49	11	11	3	7	20	1	20	8	10	40	1000	8	5	2	8	4
13	1	1	3	8	13	13	1	6	31	1	2	8	8	2000	10000	5	3	2	9	7
14	2	1	3	8	14	13	1	2	30	1	2	1	5	800	7000	10	8	1	2	7
15	1	1	3	8	15	15	2	7	38	1	8	1	9	500	5000	10	5	4	2	4
16	2	1	1	54	67	77	2	1	35	1	30	8	5	300	800	10	8	2	8	4
17	2	2	10	61	18	18	2	1	43	1	30	8	8	384	2038	8	5	1	8	2
18	1	2	10	48	19	19	3	2	21	1	18	8	9	55	800	10	7	1	2	4
19	1	2	6	21	20	20	1	7	89	1	80	8	10	100	1500	10	5	1	2	4
20	2	2	4	50	21	21	1	1	42	1	42	8	5	800	4000	7	8	2	9	4
21	2	2	4	50	22	22	1	1	34	1	34	8	5	500	2000	10	8	2	9	4
22	2	2	10	19	23	23	1	1	37	1	37	8	7	250	2500	8	2	2	8	5
23	1	2	9	51	25	24	2	1	27	1	27	8	10	200	1057	10	8	1	2	4
24	1	2	9	16	26	25	1	1	43	1	43	8	5	250	8500	12	9	1	2	4
25	1	2	8	12	27	28	3	1	52	1	52	1	5	280	2400	8	4	1	2	4
26	1	2	8	52	28	27	3	7	37	1	37	8	8	300	4000	10	5	3	2	4
27	1	2	4	50	21	28	1	2	40	1	40	7	5	300	1000	8	3	1	9	4
28	2	2	7	53	28	30	2	2	25	1	25	8	5	400	2500	8	5	2	2	4
29	1	2	7	53	29	31	2	7	22	1	22	8	5	400	1000	8	5	1	2	4
30	2	2	5	54	29	32	3	1	32	1	10	1	5	230	3000	10	8	3	2	4
31	2	2	8	12	27	29	1	1	52	1	24	1	5	1500	8000	10	8	2	9	3
32	2	2	8	55	30	33	2	7	25	1	25	8	10	200	2000	10	4	2	8	4
33	1	2	5	54	31	34	3	7	19	2	13	1	8	150	800	10	7	3	2	4
34	1	2	5	14	32	35	1	7	25	1	3	8	7	100	1000	8	8	1	8	4
35	1	2	7	53	33	36	2	2	25	1	25	8	10	300	1000	8	2	2	8	4
36	2	2	7	53	33	37	2	3	25	1	25	8	9	48	500	10	8	1	8	4
37	1	3	14	64	37	41	1	2	29	1	8	2	10	300	2000	7	8	1	1	3
38	1	3	13	63	35	38	3	2	39	1	1	2	2	400	2400	8	8	2	9	1
39	2	3	20	24	38	40	1	3	38	1	3	8	5	300	5000	9	5	2	9	5
40	1	4	15	33	38	44	1	1	50	1	50	1	5	500	1550	9	3	3	8	2
41	1	4	15	33	39	43	3	7	25	1	25	1	8	200	2000	10	8	1	8	4
42	1	4	15	33	36	44	3	7	42	1	14	1	5	250	2500	10	8	3	2	4
43	2	4	15	95	40	45	2	1	37	1	30	1	5	800	4000	10	4	4	9	2
44	2	4	15	52	41	46	3	7	58	1	58	1	5	200	2000	10	8	2	2	4
45	1	4	15	31	42	47	2	8	48	1	48	1	5	800	7000	8	5	1	2	7
46	2	4	15	57	43	48	3	7	38	1	38	1	5	150	3000	10	8	3	2	4
47	1	4	15	59	44	48	3	7	34	1	34	8	10	150	1500	10	6	1	2	2
48	2	4	59	32	45	50	3	7	28	1	28	1	5	200	2000	10	6	3	2	4
49	1	4	19	27	46	51	1	7	29	1	29	2	10	300	2500	9	3	2	8	2
50	2	4	19	30	47	52	1	2	34	1	5	8	10	800	8000	8	5	2	10	5
51	1	4	19	30	47	53	1	7	40	1	20	8	2	500	2700	12	4	1	10	4
52	1	4	18	29	48	54	3	7	33	1	15	8	10	1000	6000	8	2	1	5	4
53	2	4	18	29	49	55	3	7	21	1	7	8	10	360	3000	10	5	2	8	4
54	1	4	18	28	50	56	3	7	30	2	30	8	10	800	8000	10	4	2	8	4
55	2	4	18	29	50	57	3	2	48	2	5	8	11	150	2000	10	5	2	2	4
56	1	4	18	29	48	58	2	7	35	1	20	8	10	500	5300	10	3	1	8	4
57	2	4	18	29	51	59	3	8	49	1	4	8	11	300	1500	5	2	2	8	2
58	1	4	18	29	51	54	3	7	30	1	8	8	10	300	2000	9	6	1	8	4
59	2	4	18	29	48	60	1	7	40	1	27	8	10	1000	5000	5	3	2	8	2
60	2	4	18	29	52	61	1	7	42	1	19	1	10	300	2400	8	3	2	2	4
61	2	4	18	29	53	62	1	7	20	1	10	8	11	300	2000	8	4	2	8	3
62	1	4	18	26	54	63	3	7	20	1	11	8	10	2000	10000	9	4	2	8	4
63	1	4	15	32	55	64	3	7	35	1	35	1	5	200	1800	8	3	1	2	4
64	2	4	15	32	55	78	3	7	30	2	30	8	11	200	1500	8	8	2	2	4
65	2	4	19	30	58	79	2	7	36	1	5	8	11	100	1500	10	5	2	8	2
66	1	4	19	25	57	86	1	7	42	2	18	8	5	300	3000	10	4	3	10	7
67	2	4	19	27	58	80	3	7	40	1	8	2	10	150	1000	8	3	1	1	4
68	1	4	19	25	59	81	2	7	50	2	11	8	8	400	4000	10	4	1	8	2
69	1	4	18	29	54	82	2	7	46	1	20	8	8	500	5000	10	5	2	8	4
70	2	4	17	41	80	83	2	2	30	1	8	6	11	150	1500	6	3	2	1	4
71	1	4	17	41	80	84	2	2	31	2	4	2	10	2000	20000	10	5	1	1	4
72	2	4	17	43	81	85	1	7	32	1	12	8	11	2000	8000	4	2	1	8	1
73	1	4	17	43	81	86	3	2	31	2	2	8	2	2000	10	3	1	1	7	1
74	2	4	17	43	81	87	2	7	49	1	20	8	11	100	1500	10	5	2	8	7
75	1	4	17	43	82	72	1	7	50	2	10	2	10	390	2500	8	4	2	10	8
76	2	4	17	43	88	85	2	7	56	1	8	6	11	200	2000	8	4	3	8	4
77	1	4	16	42	89	73	1	7	37	1	28	8	10	1000	10000	10	5	3	8	4
78	2	4	17	42	64	74	1	7	32	1	10	6	10	800	8000	10	8	2	8	4
79	1	4	17	43	82	88	2	7	32	2	32	2	2	300	2000	10	8	2	1	4
80	2	4	16	34	85	90	2	2	53	1	10	2	10	500	5000	10	8	2	1	7
81	1	4	16	34	85	89	2	2	43	1	8	2	10	1000	5000	5	2	1	8	2

Q307WAS	Q31CGOWW	Q3RCAT	Q3ROCK	Q3SSDA	Q30T50C	Q3WAP	Q3OWN	Q3WSOU	Q3CONNS	Q3PERS	Q3WTC	Q3WCPM	Q3WCPMS	Q3WCONY	Q3WTPM	Q3WTPMS	Q3WTPY	Q3WOP	Q3OWNE
1	5	3	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	5	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	2	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	8	1	99	1	99	1	1	4	100	400	1	99	99	99	99	99	99	99	99
1	5	3	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	3	99	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	5	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	3	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	6	1	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	5	2	1	99	99	2	1	2	120	120	2	99	99	99	150	99	99	1	1
1	2	99	1	99	99	2	1	3	120	120	2	99	99	99	150	99	99	99	99
1	2	99	3	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	3	99	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	3	99	99	99	8	1	3	12	12	2	99	99	99	10	99	99	99	99
1	4	99	99	99	2	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	3	99	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	3	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	2	99	99	99	3	1	3	11	99	2	99	99	99	160	99	99	4	2
2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	3	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	4	99	99	99	1	99	99	99	99	99	99	99	99	99	99	99	99	3	2
1	3	99	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	7	3	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	7	99	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	4	99	99	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99
2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	3	99	99	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	3	99	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	3	99	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	2	3
1	5	3	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	2	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	7	1	99	1	99	5	1	3	23	38	38	99	99	99	99	99	99	99	99
2	99	99	99	99	99	8	3	3	1	300	5	99	99	99	99	99	99	99	99
1	8	99	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	2	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	2	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	3	99	99	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	2	99	99	99	7	1	3	7	99	2	99	99	99	99	99	99	99	99
1	1	2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	2	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
1	1	1	99	99	99	99	99	99	99	99	99	99	9						

[illegible]



OSRPA	OSATPW
7	3
4	3
7	4
7	2
7	4
4	2
8	2
9	2
7	2
6	3
7	2
4	2
6	2
4	3
7	3
7	4
7	2
7	2
7	2
9	3
7	2
7	2
7	2
7	2
4	1
7	3
7	2
4	4
7	2
7	2
7	2
7	2
7	3
7	2
4	2
6	4
7	2
7	3
7	2
4	2
7	3
7	2
4	3
7	2
6	2
7	3
4	3
4	2
4	3
4	2
4	2
7	2
7	2
7	2
4	2
7	2
6	2
7	2
4	5
4	3
7	2
4	2
7	2
7	2
4	2
7	2
7	2
8	2
4	2
7	2
7	2
9	2
7	2
4	2
6	2
4	2
7	2
4	2
7	2

## 資 料

1. 調査団員氏名・所属
2. 調査日程
3. 相手国関係者リスト
4. 当該国の社会・経済事情
5. 協議議事録
6. 収集資料リスト

## 1. 調査団員氏名・所属

調査団員氏名・所属

インセプション・レポート説明調査団及び現地調査実施調査団

(1998年7月13日～1998年8月26日)

総括／団長（現地調査）	丸尾 祐治	国際協力事業団 国際協力専門員
計画管理	松下 雄一	国際協力事業団 無償資金協力調査部 調査審査課
業務主任／運営・維持管理計画	島崎 斉	日本工営株式会社
水理地質Ⅰ	富田ゆきし	日本工営株式会社
水理地質Ⅱ	坂田 篤稔	日本工営株式会社
物理探査Ⅰ	内澤 精孝	日本工営株式会社
物理探査Ⅱ	島山 忠	日本工営株式会社
給水施設計画	荻野 正之	日本工営株式会社
機材計画／調達計画	岡田 徳治	日本工営株式会社

基本設計概要書説明調査団

(1998年10月26日～1998年11月6日)

総括／団長（基本設計概要書説明）	山本 敬子	国際協力事業団 国際協力専門員
計画管理	松下 雄一	国際協力事業団 無償資金協力調査部 調査審査課
業務主任／運営・維持管理計画	島崎 斉	日本工営株式会社
水理地質Ⅰ	富田ゆきし	日本工営株式会社
給水施設計画	荻野 正之	日本工営株式会社



## 2. 調査日程



調査日程（インセプション・レポート説明及び現地調査：1998年7月13日～8月26日）

No.	月/日	移動	宿泊地	活動内容
1	7/13 月	丸尾/松下/島崎/富田/内澤/ 島山/荻野 東京～ロンドン～ナイロビ	機中	移動
2	14 火	ナイロビ着	ナイロビ	大使館、JICA事務所および水資源省表敬
3	15 水		ナイロビ	水資源省との協議
4	16 木	丸尾/松下/島崎/富田/荻野 ナイロビ～ナニユキ 内澤/島山	ナニユキ ナイロビ	水資源省ライキピア県事務所訪問、現地踏査 電気探査地点の図上確認
5	17 金	丸尾/松下/島崎/富田/荻野 ナニユキ～サンプル 内澤/島山	サンプル ナイロビ	現地踏査 電気探査地点の図上確認
6	18 土	丸尾/松下/島崎/富田/荻野 サンプル～マラルル～ニャフルル 内澤/島山	ニャフルル ナイロビ	水資源省サンプル県事務所訪問、現地踏査 電気探査地点の図上確認
7	19 日	丸尾/松下/島崎/富田/荻野 ニャフルル～マリガット～ナイロビ 内澤/島山	ナイロビ ナイロビ	マリガットにて水資源省バリンゴ県/コイバテック県 事務所スタッフと面談、現地踏査 電気探査地点の図上確認
8	20 月	丸尾/松下/島崎/富田/荻野 内澤/島山	ナイロビ ナイロビ	水資源省との協議 電気探査地点の図上確認
9	21 火	丸尾/松下/島崎/富田/荻野 内澤/島山 ナイロビ～ナニユキ	ナイロビ ナニユキ	水資源省との協議 移動
10	22 水	丸尾/松下/島崎/富田/荻野 内澤/島山	ナイロビ ナニユキ	ミニッツサイン 電気探査（ライキピア県）
11	23 木	丸尾/松下 ナイロビ～ロンドン 島崎/富田/荻野 内澤/島山	機中 ナイロビ ナニユキ	団内打ち合わせ、移動 団内打ち合わせ 電気探査（ライキピア県）
12	24 金	丸尾/松下 ロンドン～東京 島崎/富田/荻野 内澤/島山	機中 ナイロビ ナニユキ	移動 資料収集・分析 電気探査（ライキピア県）
13	25 土	丸尾/松下 東京着 島崎/富田/荻野 内澤/島山		移動 資料収集・分析 電気探査（ライキピア県）
14	26 日	島崎/富田/荻野 内澤/島山	ナイロビ ナニユキ	資料収集・分析 電気探査（ライキピア県）
15	27 月	島崎/富田/荻野 内澤/島山	ナイロビ ナニユキ	資料収集・分析、水資源省と調査打ち合わせ 電気探査（ライキピア県）
16	28 火	島崎/富田/荻野 内澤/島山 坂田/岡田 東京～ロンドン～ナイロビ	ナイロビ ナニユキ 機中	資料収集・分析 電気探査（ライキピア県） 移動
17	29 水	島崎/富田/荻野 内澤/島山 坂田/岡田 ナイロビ着	ナイロビ ナニユキ ナイロビ	資料収集・分析、団内打ち合わせ 電気探査（ライキピア県） 団内打ち合わせ

No.	月/日	移動	宿泊地	
18	30 木	島崎/荻野	ナニユキ	移動、既存施設調査、維持管理状況調査 (ライキピア県)
		ナイロビ〜ナニユキ		
		富田/坂田	マララル	移動、水理地質調査、水質サンプリング、インタビュー調査 (サンプル県)
		ナイロビ〜マララル		
		内澤/島山	ナニユキ	電気探査(ライキピア県)
19	31 金	岡田	ナイロビ	資料収集・分析
		島崎/荻野	ナニユキ	既存施設調査、維持管理状況調査 (ライキピア県)
		富田/坂田	マララル	水理地質調査、水質サンプリング、インタビュー調査 (サンプル県)
		内澤/島山	ナニユキ	電気探査(ライキピア県)
		岡田	ナイロビ	資料収集・分析
20	8/1 上	島崎/荻野	ナイロビ	既存施設調査、維持管理状況調査 (ライキピア県)、移動
		ナニユキ〜ナイロビ		
		富田/坂田	マララル	水理地質調査、水質サンプリング、インタビュー調査 (サンプル県)
		内澤/島山	ニャフルル	移動、電気探査(ライキピア県)
		ナニユキ〜ニャフルル		
21	2 日	岡田	ナイロビ	資料整理
		島崎/荻野/岡田	ナイロビ	資料整理
		富田/坂田	サンプル	水理地質調査、水質サンプリング、インタビュー調査 (サンプル県)
		マララル〜ワリンバ〜サンプル		
		内澤/島山	ニャフルル	電気探査(ライキピア県)
22	3 月	岡田	ナイロビ	調査先および価格調査
		内澤/島山	ニャフルル	電気探査(ライキピア県)
		サンプル〜ワリンバ〜マララル		
		富田/坂田	マララル	水理地質調査、水質サンプリング、インタビュー調査 (サンプル県)
		ナイロビ〜マララル		
23	4 火	マララル		
		島崎/荻野	マララル	移動、既存施設調査、維持管理状況調査 (サンプル県)
		富田/坂田	バリント	移動
		マララル〜バリント		
		内澤/島山	ナイロビ	移動
24	5 水	ニャフルル〜ナイロビ		
		岡田	ナイロビ	調査先および価格調査
		内澤/島山	ナイロビ	資料整理
		富田/坂田	バリント	水理地質調査、水質サンプリング、インタビュー調査 (バリント県)
		島崎/荻野	マララル	既存施設調査、維持管理状況調査 (サンプル県)
25	6 木	岡田	ナイロビ	調査先および価格調査
		内澤/島山	マララル	移動
		富田/坂田	バリント	水理地質調査、水質サンプリング、インタビュー調査 (バリント県)
		マララル〜バリント		
		島崎/荻野	バリント	移動
26	7 金	岡田	ナイロビ	調査先および価格調査
		内澤/島山	マララル	電気探査(サンプル県)
		富田/坂田	バリント	水理地質調査、水質サンプリング、インタビュー調査 (バリント県)
		島崎/荻野	バリント	既存施設調査、維持管理状況調査 (バリント県)

No.	月/日	移動	宿泊地	活動内容
27	8 土	島崎/荻野	バリント	既存施設調査、維持管理状況調査 (コイパッテック県)
		バリント～ナイロビ		
		富田/坂田	バリント	水理地質調査、水質サンプリング、インタビュー調査 (バリント県)
		内澤/島山	マララル	電気探査(サンプル県)
28	9 日	岡田	ナイロビ	資料整理
		島崎/荻野/岡田	ナイロビ	資料整理
		富田/坂田	ナイロビ	水理地質調査、水質サンプリング、インタビュー調査 (コイパッテック県)、移動
		バリント～ナイロビ		
29	10 月	内澤/島山	マララル	電気探査(サンプル県)
		島崎/荻野/富田/坂田/岡田	ナイロビ	水資源省との調査打ち合わせ
		内澤/島山	マララル	電気探査(サンプル県)
		島崎/荻野/岡田	ナイロビ	現地調査結果とりまとめ、調達先および価格調査
30	11 火	富田/坂田	ナニユキ	移動
		ナイロビ～ナニユキ		
		内澤/島山	マララル	電気探査(サンプル県)
		島崎/荻野/岡田	ナイロビ	現地調査結果とりまとめ、調達先および価格調査
31	12 水	富田/坂田	ナニユキ	水理地質調査、水質サンプリング、インタビュー調査 (ライキピア県)
		内澤/島山	ナイロビ	移動
		マララル～ナイロビ		
		島崎	ナイロビ	追加資料収集・分析
32	13 木	荻野/岡田	バリント	補足現地調査
		ナイロビ～バリント		
		富田/坂田	ナニユキ	水理地質調査、水質サンプリング、インタビュー調査 (ライキピア県)
		内澤/島山	ナイロビ	資料整理
33	14 金	島崎	ナイロビ	追加資料収集・分析
		荻野/岡田	ボゴリア	補足現地調査
		富田/坂田	ナニユキ	水理地質調査、水質サンプリング、インタビュー調査 (ライキピア県)
		内澤/島山	バリント	移動、調査打ち合わせ
34	15 土	ナイロビ～バリント		
		島崎	ナイロビ	資料整理
		荻野/岡田	ナイロビ	移動
		バリント～ナイロビ		
35	16 日	富田/坂田	ナニユキ	水理地質調査、水質サンプリング、インタビュー調査 (ライキピア県)
		内澤/島山	バリント	電気探査(バリント県)
		島崎/荻野/岡田	ナイロビ	資料整理
		富田/坂田	ナイロビ	水理地質調査、水質サンプリング、インタビュー調査 (ライキピア県)、移動
36	17 月	ナニユキ～ナイロビ		
		内澤/島山	バリント	電気探査(バリント県)
		島崎/富田/坂田/荻野/岡田	ナイロビ	水資源省との調査打ち合わせ
		内澤/島山	バリント	電気探査(バリント県)
37	18 火	島崎/富田/荻野/岡田	ナイロビ	現地調査結果のとりまとめ
		坂田	ナニユキ	現地補足調査
		ナイロビ～ナニユキ		
		内澤/島山	バリント	電気探査(バリント県)
38	19 水	島崎/富田/荻野/岡田	ナイロビ	現地調査結果のとりまとめ
		坂田	ナニユキ	現地補足調査
		内澤/島山	バリント	電気探査(バリント県)
		島崎/富田/荻野/岡田	ナイロビ	現地調査結果のとりまとめ

No.	月/日	移動	宿泊地	活動内容
39	20 木	島崎/富田/荻野/岡田	ナイロビ	現地調査結果のとりまとめ
		坂田	バリング	現地補足調査
		ナニユキ〜バリング		
		内澤/島山	バリング	電気探査(バリング県)
40	21 金	島崎/富田/荻野/岡田	ナイロビ	現地調査結果のとりまとめ
		坂田	マララル	現地補足調査
		バリング〜マララル		
		内澤/島山	バリング	電気探査(コイバテック県)
41	22 土	島崎/富田/荻野/岡田	ナイロビ	資料整理
		坂田	ナイロビ	移動
		マララル〜ナイロビ		
		内澤/島山	ナイロビ	移動
42	23 日	バリング〜ナイロビ		
		島崎/富田/坂田/内澤/島山/ 荻野/岡田	ナイロビ	団内打ち合わせ
43	24 月	ナイロビ〜ロンドン	機中	水資源省との調査打ち合わせ、大使館・JICA 事務所 報告、移動
44	25 火	ロンドン〜東京	機中	移動
45	26 水	東京着	東京	移動

調査日程（基本設計概要書説明：1998年10月26日～11月6日）

No.	月/日	移動	宿泊地	活動内容
1	10/26 月	山本/松下/島崎/富田//荻野 東京～アムステルダム	アムステル ダム	移動
2	27 火	アムステルダム～ナイロビ	ナイロビ	移動
3	28 水	ナイロビ着	ナイロビ	大使館、JICA事務所表敬
4	29 木	ナイロビ	ナイロビ	水資源省表敬、基本設計概要書説明・協議
5	30 金	ナイロビ	ナイロビ	水資源省表敬、基本設計概要書説明・協議
6	31 土	ナイロビ	ナイロビ	団内打ち合わせ
7	11/1 日	ナイロビ	ナイロビ	団内打ち合わせ
8	2 月	ナイロビ	ナイロビ	ミニッツ協議
9	3 火	ナイロビ	ナイロビ	ミニッツサイン
10	4 水	ナイロビ～ロンドン	機中	大使館、JICA事務所報告 移動
11	5 木	ロンドン～	機中	移動
12	6 金	～東京		移動

### 3. 相手国関係者リスト



## 相手国関係者リスト

### 在ケニア日本大使館

青木 盛久	特命全權大使
川戸 英騎	二等書記官

### JICA ケニア事務所

田上 実	所長
松本 淳	次長
成瀬 猛	次長
松山 哲	所員
石原平八郎	JICA 専門家 (給水計画)
E. Kinyangi	Administration Officer

### 水資源省

#### (Ministry of Water Resources)

E. K. Mwongera	Permanent Secretary
P. N. Machiri	Director of Water Development
M. K. Migwi	Senior Deputy Director, Water Development
D. N. Stower	Senior Deputy Director, Water Development
S. M. Wambua	Deputy Director, Water Development
G. W. Gichuki	Assistant Director, Water Development
S. C. M. Ochieng	Deputy Director, Groundwater Investigation
E. K. Mwango	Deputy Director, Groundwater Investigation
E. O. Donde	Deputy Director, Operation and Maintenance
G. J. Anyango	Deputy Chief Economist
T. W. Kibaki	Assistant Director, PP
K. Wathobio	Engineer
E. F. A. Onyuna	Deputy Secretary Development
P. L. Ombogo	Deputy Director, CO
P. K. Njurumba	Deputy Director, WC

### 水資源省ライキピア県事務所

#### (District Water Office, Laikipia District)

J. M. Wainaina	District Water Engineer, Laikipia District
J. B. Kariuki	
J. Nderito	Geologist, Laikipia District

水資源省サンプル県事務所

(District Water Office, Samburu District)

K. Mutua	District Water Engineer, Samburu District
H. K. Gitau	Geologist, Samburu District
W. K. Karani	Water Officer, Wamba Division, Samburu District

水資源省バリngo県事務所

(District Water Office, Baringo District)

J. K. Tomno	District Water Engineer, Baringo District
I. G. Kimani	Geologist, Baringo District
Kiplagat	

水資源省コイバテック県事務所

(District Water Office, Koibatek District)

I. K. Chesire	District Water Engineer, Koibatek District
J. M. Wawrem	Geologist, Koibatek District

ASAL 開発プログラムライキピア県事務所

(ASAL Development Programme Laikipia District)

T. A. J. Hendriksen	Programme Adviser
---------------------	-------------------

渇水対策・復興プログラムサンプル県事務所

(Drought Preparedness Intervention and Recovery Programme, Samburu District)

M. N. Lesoloyia

#### 4. 当該国の社会・経済事情



国名	ケニア共和国
	Republic of Kenya

1998. 03 1/2

一般指標				
政体	共和制	*1	首都	ナイロビ *
元首	President Daniel T. arap MOI	*1	主要都市名	ムンバキ、キル、ナクル *
独立年月日	1963年12月12日	*1	経済活動可人口	13,000千人 (1995年) *
人種(部族)構成	ルハ族22%、ルハ族14%、ルハ族13%、他	*1	義務教育年数	8年間 (1997年) *
			初等教育就学率	% (年) *
言語・公用語	スワヒリ語、英語	*1	初等教育終了率	% (年) *
宗教	クリスチアン28%、イスラーム38%、地域信仰	*1	識字率	77% (1994年) *
国連加盟	1963年12月	*2	人口密度	49.50人/Km <sup>2</sup> (1996年) *
世銀加盟	1964年02月	*3	人口増加率	2.3% (1996年) *
IMF加盟	1994年06月	*3	平均寿命	平均55.61 男55.53 女55.69 *
面積	582.65千Km <sup>2</sup>	*1	5歳児未満死亡率	90/1000 (1995年) *
人口	28,176,686千人(1996年)	*1	カロリー供給量	2,075.0 cal/日/人(1992年) *

経済指標				
通貨単位	ケニア・シリング	*1	貿易量	(1996年) *
為替(1US\$)	1US\$=62.68 (1997年12月)	*8	輸入	2,067.0百万ドル *
会計年度	7月~6月	*1	輸出	2,912.0百万ドル *
国家予算	(1994年)	*9	輸入カバー率	1.2月 (1995年) *
歳入	1,609.4百万ドル	*9	主要輸出品目	茶、コーヒー、石油製品 (1994年) *
歳出	2,028.9百万ドル	*9	主要輸入品目	機械、輸送機器、鉄鋼 (1994年) *
国際収支	-142.00百万ドル(1995年)	*9	日本への輸出	27.6百万ドル(1996年) *
ODA受取額	707.00百万ドル(1995年)	*7	日本からの輸入	182.0百万ドル(1996年) *
国内総生産(GDP)	9,095.00百万ドル(1995年)	*4		
一人当たりGDP	280.0百万ドル(1995年)	*4	外貨準備総額	579.3百万ドル(1997年12月) *
GDP産業別構成	農業 29.0% (1995年)	*4	対外債務残高	765.0百万ドル(1995年) *
	鉱工業 17.0% (1995年)		対外債務返済率	25.7% (1995年) *
	サービス業 54.0% (1995年)		インフレ率	24.5% (1993年) *
産業別雇用	農業 80.0% (1990年)	*7		
	鉱工業 7.0% (1990年)			
	サービス業13.0% (1990年)		国家開発計画	第6次5ヵ年計画実施中 *
経済成長率	1.4% (1995年)	*4		

気象(1961~1990年平均)					場所:Nairobi					(標高 1,820 m)				
月	1	2	3	4	5	6	7	8	9	10	11	12	平均 / 計	
最高気温	25.0	26.0	25.0	24.0	22.0	21.0	21.0	21.0	24.0	24.0	23.0	23.0	23.3℃	*1
最低気温	12.0	13.0	14.0	14.0	13.0	12.0	11.0	11.0	11.0	13.0	13.0	13.0	12.5℃	*1
平均気温	19.3	20.1	20.5	20.2	19.1	17.7	16.9	17.2	18.5	19.7	19.3	19.1	19.0℃	*1
降水量	38	64	125	211	158	46	15	23	31	53	109	86	959mm	*1
雨期乾期														

\*1 CIA World Fact Book 1997-1998

\*2 States Members of United Nations

\*3 International Financial Statistics Yearbook 1996

\*4 World Development Report 1997

\*5 UNESCO Statistical Yearbook 1997

\*6 Status and Trends 1997

\*7 Human Development Report 1997

\*8 International Financial Statistics February 1998

\*9 International Financial Statistics Yearbook 1997

\*10 Global Development Finance 1997

\*11 世界の国一覧表 1997年版

\*12 最新世界各国要覧 97年版

\*13 The Times Book World Weather Guide, Update Edition

\*14 理科年表, 国立天文台(1997)

国名	ケニア共和国
	Republic of Kenya

1998.03 2/2

\*15

我が国におけるODAの実績					
項目	年度	1992	1993	1994	1995
技術協力		2,699.97	2,892.93	3,087.67	2,796.65
無償資金協力		2,194.95	2,244.22	2,456.48	3,256.28
有償資金協力		5,852.05	3,939.97	4,352.21	3,878.11
総額		10,746.97	9,077.12	9,896.36	9,931.04

\*15

当該国に対する我が国ODAの実績					
項目	年度	1992	1993	1994	1995
技術協力		30.13	33.31	37.94	46.05
無償資金協力		27.56	23.75	40.15	47.72
有償資金協力		70.98	84.59	50.84	104.66
総額		128.67	141.65	128.93	198.43

\*16

OECD諸国の経済協力実績					(支出純額、単位：百万ドル)
	贈与 (1)	有償資金協力 (2)	政府開発援助 (ODA) (1)+(2)=(3)	その他政府資金 及び 民間資金 (4)	経済協力総額 (3)+(4)
二国間援助 (主要供与国)	350.80	107.90	458.70		458.70
1. 日本	93.80	104.60	198.40		198.40
2. ドイツ	43.70	8.60	52.30		52.30
3. オランダ	45.30	-8.90	36.40		36.40
4. アメリカ	36.00	0.00	36.00		36.00
多国間援助 (主要援助機関)	112.20	159.00	271.20		271.20
1. IDA					
2. CEC					
その他	0.40	1.40	1.80		1.80
合計	463.40	268.30	731.70		731.70

\*17

援助受入れ窓口機関	
技術	関係各省庁→経済企画省→大蔵省
無償	
協力隊	

\*15 Japan's ODA Annual Report 1996

\*16 Geographical Distribution of Financial Flows to Aid Recipients 1991-1995

\*17 国別協力情報(JICA)