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WATER AND SOCIETY

HARISPATTUWA WATER DEVELOPMENT PROGRAMME

INSTITUTE OF DEVELOPMENT STUDIES
International Reference Centre
for Community Water Supply

SOCIOCULTURAL DIMENSIONS OF
WATER SUPPLY AND SANITATION

A STUDY MADE IN SRI LANKA

UNIVERSITY OF PERADENIYA

REPORT 3/83·B

INSTITUTE OF DEVELOPMENT STUDIES
UNIVERSITY OF HELSINKI

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FOREWORD

This monograph presents the results of a study of socio-economic conditions, water use pattern and health and sanitation situation of the area coming under the Harispattuwa Water and Sanitation Project undertaken within the framework of Sri Lankan-Finnish Development Co-operation Agreement. The study was sponsored by the Department of Development of Co-operation of the Ministry of Foreign Affairs, Finland, and conducted as a joint research programme by the Helsinki University Institute of Development Studies and a team of researchers from the University of Peradeniya, Sri Lanka.

I must record my deep appreciation of the initiative and the interest taken by Prof. Marja-Liisa Swantz, Director, Helsinki University Institute of Development Studies in this study. On behalf of the research team I express our gratitude to the people of Harispattuwa, particularly to the residents of the five study locations for assisting our field investigators with patience and humour. It is also my duty to thank the various

government servants especially the Assistant Government Agents of Harispattuwa, Tumpane and Pata Dumbara and their assistants, the Grama Sevakas of the villages visited by the researchers, the officials of the Kandy Kachcheri and medical personnel attached to the Health Offices, Hospitals and Dispensaries in the area.

The Finnish consultants of the Project extended to us their co-operation and assistance by providing us with relevant information regarding their work and the progress of the project. To them and to Mr. Kari Karanko, the former Counsellor of the Finnish Embassy, Colombo, who took a personal interest in this study I extend our thanks on behalf of the Sri Lankan research team.

K.H. Jayasinghe
Co-ordinator

PREFACE

This study is the result of a collective effort of a team of researchers, consultants and investigators. There were some changes in the original research team with the withdrawal of Dr. P. Wickramasekera and Dr. S. Balasuriya in August 1982 to go on their sabbatical leave. We were fortunate in getting Dr. J.S. Edirisinghe to replace the latter as our consultant on the health and sanitation aspects.

There were some changes in the original research schedule also due to an initial delay in commencing the study and certain changes in the methodology, which involved a longer period of field investigation. The study commenced on 15th June and the field investigations were conducted during the period 7th August to 19th October 1982.

In the final monograph the Chapter on Socio-Economic Structure is the work of Dr. Newton Gunasinghe assisted by Mr. M. Sinnathamby. The Chapter on Water and Rituals is based on a paper submitted by Prof. P.B. Meegaskumbura of the

Department of Sinhalese, University of Peradeniya. The Chapter on Traditional Healing Systems is an adaptation of a paper compiled by Mr. Karunatissa Atukorala on the basis of a special survey carried out by him as part of the general study of the five research locations. The Chapter on health and sanitation is based on a paper written by Dr. J.S. Edirisinghe incorporating data collected in the entire Project Area as well as the findings of the in-depth study of the five locations. The two principal researchers wrote the rest of the monograph. Dr. Dias Hewagama, the Statistical consultant guided the compilation of tables in most of the Chapters. While acknowledging the contributions of all these researchers and consultants we take the responsibility for all short-comings and errors, particularly for those that were inadvertently committed in editing and adaptation, which are often unavoidable in the preparation of combined research reports specially when fairly rigid time-schedule has to be adhered to. We also wish to express our thanks to Mr. H. Amunugama for preparing the maps and Mr. Richard Abrahams for typing the manuscript.

In addition to this monograph the two Finnish participants on the research team have submitted separate reports with special focus on one of the five locations.

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INTRODUCTION

In pursuance of the objectives of the International Drinking Water Supply and Sanitation Decade the Government of Sri Lanka has prepared and approved a plan for the Drinking Water Supply and Sanitation Sector for the decade 1981-1990 (the Decade Plan). This Plan envisages:

- (i) improvement of the quality and quantity of drinking water and making supplies accessible to the entire population;
- (ii) improvement of the quality and quantity of excreta disposal facilities and making these facilities accessible to the entire population of the country.
- (iii) establishment of strong linkages between drinking water supplies and excreta disposal facilities through health education and community participation.

For the rural sector, the Decade Plan emphasizes: the construction and/or upgrading of community wells and equipping them with hand pumps; the rehabilitation of existing piped water supply scheme; the construction and/or upgrading of single family latrines; the establishment of strong community-based operation and maintenance systems; and the establishment of primary health care information delivery mechanisms all relying

principally upon active community involvement as the means of ensuring success.

The Decade Plan calls for implementation to be done on a District basis and has rank ordered the Districts by means of the following criteria: water related diseases; infant mortality; cost of services; scarcity of water sources; economic status of the population; population density; and percentage of the population with inadequate sanitation. For rural water supplies, the five most needy districts in order of priority are Matale, Badulla, Anuradhapura, Nuwara Eliya and Kandy. The rank order position of the four districts Matale, Badulla, Nuwara Eliya and Kandy is probably due to the presence of plantations with large numbers of workers of Indian origin, who generally come rather low in the index of quality of life. The area under investigation Harispattuwa is located in Kandy district, but has a lesser number of plantations than other comparable revenue divisions.

Within the scope of the nation wide programme the Harispattuwa Water Supply and Sanitation Project has been sponsored by the Department of International Development Co-operation of the Government of Finland in association with the Government of Sri Lanka.

The Project area covers the entire Assistant Government Agent's (AGA) division of Harispattuwa and the adjoining four Grama Sevaka division from Tumpane and three Grama Sevaka divisions from Pata

Dumbara AGA divisions. The main components of the Project as originally proposed include:

- (i) provision of treated surface water drawn from Mahaweli Ganga through a network of trunk mains along the roads in the more densely populated areas coming under the project and the neighbouring areas of Polgolla and Kurunegala. The treatment plant and pumping stations were to be located near Katugastota.
- (ii) other densely populated areas to be served with piped water from separate ground water treatment plants.
- (iii) rest of the Project area to be served with shallow wells installed with hand pumps.

A major revision of this was proposed by the Appraisal Mission, Harispattuwa Water Supply and Sanitation Project, in June 1982. The components of this new proposal are:

- (i) provision of about 900 community shallow and deep wells installed with hand pumps to serve approximately 97,000 people in 1985 in low housing density areas.

- (ii) provision of about nine small piped systems using ground water sources such as springs, deep or shallow wells to serve approximately 64,000 people in high housing density areas by 1985.
- (iii) strengthening of operational and maintenance capacity of the National Water Supply and Drainage and Drainage Board (NWSDB) Regional Office, Kandy, the operating entity, through provision of vehicles, workshop facilities, tools, spare parts and training of staff.
- (iv) supplying engineering services required for studies, designs and implementation of the project.
- (v) conducting of social, economic and managerial studies which would provide:
 - (a) a basis for selection of appropriate technologies;
 - (b) an analysis of required managerial capability of NWSDB, Kandy, for operation and maintenance of facilities.

The revised proposals of the Appraisal Mission incorporated a sanitation aspect involving the

improvement of conditions of sanitations mainly by hygienic disposal of faeces through the rehabilitation of existing facilities and the provision of new latrines for about 15,000 people.

The Study : It's Scope and Objectives

In view of the significant impact expected from the provision of these facilities on the socio-economic and sanitation conditions of the people of the Project area the Institute of Development Studies of the Helsinki University, Finland, decided to sponsor this study as a joint research programme to be carried out by a team of Sri Lankan researchers drawn from related disciplines in participation with two Finnish researchers specialized in Social Anthropology and Environmental Hygiene.

This study investigates in depth the water use patterns and preference in the context of socio-economic and cultural factors such as income, occupation and educational level, ethnic and religious diversity, traditional beliefs, customs and prejudice. It will also examine the health and sanitation situation of the people particularly in relation to the diseases associated with water, their morbidity patterns and primary health care systems. In view of the higher incidence of water related diseases among infants and children the study will also cover in general the hygiene and nutrition pattern of these sections of the population. The water use pattern as well as the health and sanitation levels of the people

are closely related to traditional concepts, beliefs and healing systems. These aspects, therefore have been given considerable emphasis in the report. The existing institutional arrangements in regard to health, health education and sanitation are also subjected to critical examination with particular attention to the content and materials of health education programmes.

Problems Highlighted

1. Water

- (1) Harispattuwa is an area with a relative abundance of water from a variety of sources alternating with short periods of drought. This has had a strong influence on water use habits.
- (2) Wells form the most popular source of drinking water in the existing pattern. In the proposed water scheme too wells with hand pumps will be the predominant source of supply. The old wells in use are open, whereas the new wells being introduced are covered and installed with hand pumps. The need for a bucket and a rope in order to draw water from the old wells does not arise in the case of the new wells. Further, the new wells will not bring the water source any closer for most people. Therefore the water use patterns among the majority of the people are unlikely to register a drastic change.

- (3) The proposed water scheme offers a choice in service levels as far as the entire project area is concerned. But this flexibility does not appear to be present as far as each locality is concerned. This makes it difficult to accommodate varied geographical conditions, settlement patterns and aspiration levels.
- (4) This lack of flexibility will result in a fair section of the population being deprived of direct benefits from the Project. The deprived section is likely to be the economically more depressed and also those whose need for better sanitation facilities is the greatest.
- (5) The ideal of active community participation in the construction and maintenance of wells is clearly laid down in the Decade Plan. However, in view of the erosion of organic solidarity within the villages, accompanied by the growth of individualism and faction formation, this ideal of community participation is likely to face major obstacles in its concrete realization.
- (6) Although there isn't no general disapproval of the idea of a nominal payment for a better supply of water it will be difficult to impose a payment commensurate

with the possible cost of operation and maintenance of the new supply particularly in view of the availability of alternative sources even though such sources are hygienically unsatisfactory.

2. Health and Sanitation

- (1) Western medicine has received a high level of popular acceptance and became the predominant healing system but its science still remains virtually a terra incognita for the people.
- (2) In spite of the presence of an elaborate organization of health services the emphasis on curative rather than preventive aspects of health has resulted in a neglect of public health services, particularly those concerned with excreta and waste disposal and environmental sanitation.
- (3) National health education programme is not only grossly inadequate but has become almost non-operative despite its well-planned infrastructure.
- (4) No significant improvement in health may be expected from supplying safe and adequate drinking water without concomitant improvements in sanitation and personal hygiene. A comprehensive

programme involving the construction of sanitary latrines and proper waste disposal is essential to achieve maximum benefits of a safe drinking water supply scheme.

- (5) The proper and consistent use of such services and facilities can be guaranteed only by a health education system incorporated into the general education programme with the ultimate goal of making 'awareness of health' a part and parcel of everyday life.
- (6) A recognition of the vital role of women in regard to the health and sanitation of society and the need for their effective involvement in the infrastructure of public health services and health education are essential for the success of any comprehensive programme.
- (7) Any scheme for voluntary community participation for the implementation of such a comprehensive programme is bound to be unworkable. Sustained interest and commitment required for the success of such a programme may not be forthcoming on a voluntary basis in view of the low standard of living the bulk of the rural population and their increasing alienation from the effective political process.

Methodology

The study of "Water and Society" in Harispattuwa as outlined in the initial research proposal stipulated the selection of a stratified random sample of approximately 1500 households taking the entire project area as a statistical universe. This method of investigation was later abandoned in favour of an in depth study of a number of representative small communities. It was felt that a study based on the administration of a questionnaire to a stratified random sample, though capable of yielding quantitative data pertaining to socio-economic factors and water use and also establish correlations between various variables, will not be able to render a holistic view of social structure, trace organic linkage within this structure and lay bare the wealth of social relations. In order to get such a perspective on ideology, social structure and water use in the area, it was decided to adopt the social anthropological method of field study concentrating on an in depth study of a number of small communities.

Though a comparatively small geographical locality, Harispattuwa contains a number of different socio-economic sub-systems. After gaining a general overview of the project area based mainly on field visits, Gramodaya resource survey data, census and other official material and the feasibility reports of the Finnish Consultants, the researchers and the Consultants attempted to identify the different socio-economic sub-systems in Harispattuwa. Laying emphasis on agrarian tenure, the level of market integration, the degree and content of social class differentiation

the position in the rural-urban continuum and ethnic and religious specificities and giving due weightage to other additional variables such as the water use patterns, prevalence of water related diseases and service level variations envisaged in the Finnish Water Supply Project five sub-systems were identified as typifying the different socio-economic structures in Harispattuwa. They are as follows: (A) Peasant small-holder sub-system, (B) Landlord dominated sub-system, (C) New rural settlements sub-system, (D) Market town sub-system and (E) Commercially oriented rural community sub-system. These sub-systems are not isolated water-tight compartments, but do maintain various linkages with each other as well as the wider socio-economic system.

After identifying these sub-systems an attempt was made to trace typical communities that represent them in Harispattuwa. Twelve locations out of a total of over 160 villages in the Project area were short listed as possible representations of the five sub-systems and were subjected to close examination by the principal researchers and consultants. After a number of field visits, examination of village level files and conversations with numerous villagers the following locations were selected:

- (a) Dolapihilla
- (b) Mandandawala
- (c) Batuambe
- (d) Ankumbura, and
- (e) Uguressapitiya.

Field investigators were selected from among graduates and undergraduates of the University of Peradeniya giving preference to those who are residents

of the Project area and wherever necessary to suit the ethnic composition of the different research locations. A minimum of two investigators were stationed in each location for a period of two months. However, no investigator was stationed in his own village in order to avoid the possible prejudicial response arising from the villagers' reluctance to give out information that are generally considered confidential and sensitive to persons of the same village and also to avoid the constraints and influences of his own social status on his investigations and findings. In addition to the collection of data through interviews on the basis of questionnaires, the investigators were to obtain qualitative information by participant observation wherever possible. These investigations were carried out under the close supervision of the principal researchers and consultants who frequently visited the field locations and had discussions not only with the investigators but with numerous villagers.

The process of data collection was in two stages: first the socio-economic data obtained on the basis of a pre-tested census form with sufficient flexibility to accommodate special socio-economic characteristics and ethnic variations of each locations; second stage of the field study relating to water use, health, sanitation, nutrition and family planning was conducted through personal interviews based on structured questionnaires. A 20 per cent stratified sample of households selected on the basis of the census study was used for the second stage of the survey. A special questionnaire was used for interviews designed to obtain data on traditional healing systems in all

locations. Besides, the senior researchers and consultants carried out special surveys on aspects such as the health care system, water use pattern of new wells and problems relating to their siting and maintenance, and village level organizations, their role and effectiveness. They also maintained close contact with the research locations and the Project area in general throughout the study, particularly in establishing links with local leaders and rural and regional level officials and the conducting of pilot interviews and supervision and monitoring of the work of the investigators.

PROJECT AREA

(i) Geographical Background

The Project area consists of the present Assistant Government Agent's (AGA) division of Harispattuwa, and 4 and 3 Grama Sevaka divisions from the adjoining AGA divisions of Tumpane and Pata Dumbara respectively. The area is in Kandy district, Central Province, and lies immediately to the north-west of the Kandy town. The entire area comes within the Kandy District Development Council. Sixty two out of the 69 Grama Sevaka divisions in the Project area come within the two-member Parliamentary constituency of Harispattuwa. The 4 Grama Sevaka divisions in Tumpane belong to the Galagedera and the rest to Pata Dumbara electorates.

The north to south length of the area is 20 Kilometers and the west to east width is 16 kilometers. Out of the total area approximately 146 km², 141.1² belong to Harispattuwa. The main roads of Kandy-Matale (A 9) and Kandy-Kurunegala (A 10) cut through the Project area.

The Project area is part of the wet zone uplands* natural region and Kandy Plateau sub-region. The section along the Mahaweli river is the lowest part of the area

* The following description on the topography climate and the soil conditions is based largely on Harispattuwa Water Supply Feasibility Report, Vol. 1, pp. 3-6. 1981.

and is about 445 m. (1400 feet) above sea level. To the north and north west the general level of the valley floor rises to about 580 m. (1900 feet).

'Devildes surround the area except in the south-east where the Mabaweli and the Pinga Oya mark its limits. The dividing ridges rise upto 600-750 m. (2000-2500 feet)* Tea and rubber are generally grown on these hills.

'Geomorphologically Kandy Plateau is an arena formation and specially in the central parts of the Project area this shows as a transversally broken landscape with a criss-crossing pattern of valleys. In cross section the valleys are mostly levelled for paddies which are terraced accross the gently sloping valley axis. The hills and ridges between the valleys rise from 10-60 m. above the valley bottom. The slopes are generally steep, their inclination ranging normally from 10-40 degrees . . . In some places rock is exposed as sheer cliffs'.* Villages are located on the gentle slopes or valleys below, and they are covered with crops such as spices, coconut, cocoa or banana etc.

According to the pattern of rainfall Harispattuwa falls within the Wet Zone, its northern parts lying on the fringes of the Intermediate Zone. On average the annual rainfall of the area is about 2000 millimeters.

As in the country at large the variations in the temperature are minimum. The monthly mean temperature

* Feasibility Report, Vol. I, pp. 3-4.

ranges from 23°C. in December and January to 26°C. in April and May.

"The bedrock of the area consists of precambrian crystalline formations, mostly gneisses. These formations are generally compact, with few joints. No significant limestone areas have been found. Several quartzite sand have been located especially in the northern parts. The top soils are laterite or immature brown loam. Only limited and thin alluvial sand and gravel deposits have been located in the river valleys"

The population of the entire Project area is just over 153,000 (Census, 1981). The average population density in the Project area is thus 1045 persons per km². This is a very high density in comparison with the national average - 215 persons per km². There is considerable unevenness in the density of population with the southern and eastern parts being more thickly populated than the rest of the area.

(ii) Historical Trends

Harispattuwa, one of the five core territorial units of the Kingdom of Kandy, somewhat akin to one of the English home counties, occupied a position of importance both due to its strategic location of being sandwiched between the two northern gateways to the

* Feasibility Report, Vol. I, p. 6.

capital - Balakaduwa and Galagedara passes - and its relative prosperity and high population as suggested by the origin of the name, which indicates the obligation of the province to provide a force of four hundred (Hārasīya) soldiers for king's military service. (Knox, 3). In addition the proximity to the capital appears to have subjected the area to close administrative control and economic integration with the capital city as evidenced by extensive allocation of land in Harispattuwa for direct service requirements of the Palace, the Temple of the Tooth and the chief monastery, the Malwatte temple.

Harispattuwa's transformation under the impact of British colonialism begins with the punitive policies of the British consequent to the Great Rebellion of 1817-18. Davy, one of the early colonial officers, writes: 'Harispattoo . . . is a beautiful hill district, almost free from jungle, consisting of surrounded hills, charmingly spotted with clumps of palms and other fruit trees and of narrow valleys, laid out in paddy fields. Before the rebellion (1817-1818) it was the garden of the country, well cultivated, productive and populous; now, it is merely a wreck of what it was, and one sees nothing that does not denote its wretchedness, and the example that was made of it on account of the resistance of its inhabitants". (Davy, 1821 : 328-329).

The main feature of the economic transformation in the 19th century specific to Harispattuwa were, firstly, that unlike the adjoining Matale and Pata Dumbara, Harispattuwa did not come under the full thrust of plantation agriculture. Large scale coffee plantations

developed only in a small area, mainly in Pallegampaha and Galasiyapattuwa. In the rest of Harispattuwa peasants look to cultivation of coffee in their home gardens in addition to traditional paddy culture. Secondly, this pattern of economic change enabled Harispattuwa to sustain its high indigenous population and keep out large scale influx of South Indian labour and Low Country Sinhalese settlers serving the plantations.

The heavy dependence on coffee also had its dangers. The collapse of coffee cultivation due to the leaf disease, which spread in Harispattuwa in the early 1880s, resulted in large scale migration to the adjoining areas for employment. Table 1 shows the effects of the collapse of coffee on population in the Kandy District. Harispattuwa, Tumpane, Uda Dumbara, Udunuwara and Yatinuwara recorded a decrease in both Sinhalese and South Indian Tamil population. The highest decrease was in Harispattuwa; 9 per cent of the Sinhalese population and 60 per cent of the Tamil population. This drop was reflected in

Table 1

The Population of Kandy District : Differential Rates of Increase (per thousand)

	1871-1881	1881-1891
Sinhalese	131	13
Tamil (immigrants)	452	2
Muslims	216	-78

(Census Reports)

some of the villages selected for the study.

Table 2

The Decline of Population in Some Sample
Villages

	1881	1891
Ankumbura	1778	1434
Uguressapitiya	469	365
Dolapihilla	624	310

(Lawrie, 1898 : 59, 868, 177-178).

The collapse of coffee coincided with a period of natural disasters and epidemics. 1884 was a year of prolonged and severe drought, malaria, choleraic diarrhoea, small pox and epidemic fever throughout the island with the death rate increasing from 19.8 in 1882 to 22.26. The drought and epidemic were particularly severe in the Kandy and Matale districts. In 1885 too the drought and epidemic continued and assumed rather severe forms in 1888.

Fever has always been a common disease in the Kandyan districts. But the mass scale immigration of Indian immigrant labour brought in cholera and small pox as well. These diseases spread to Harispattuwa and other Kandyan districts along the plantations from Matale. Frequent epidemics, droughts and food shortages added to the difficulties caused by the collapse of coffee and led to mass scale migration from the villages

of Harispattuwa to Kurunegala district, where coconut plantations were spreading fast, creating a demand for Sinhalese labour. Yet, Harispattuwa retained its comparatively high density of population, its density per square mile in 1891 was 581 as compared with 309 for the adjoining Pata Dumbara. From the 1890s onwards there was a slow economic recovery, which was also reflected in the population figures.

Table 3

Population of Harispattuwa

	1891	1901
Sinhalese	25,201	28,588
Muslims	4,201	4,613
Tamils	1,070	2,887
Malays	31	24

(Census, 1901 : I, 90).

Irrespective of the slow economic recovery, the economy of Harispattuwa did not come under the dominance of the new plantation crops, tea and rubber. In 1901, as compared with neighbouring Pata Dumbara which had 83 plantations and a plantation of 14,605, Harispattuwa had only 19 plantations and a plantation population of only 2,768. Relatively limited expansion of large scale plantations however, was compensated for by the expansion of small holdings of cocoa, tea and rubber and spices.

CHAPTER I

SOCIO-ECONOMIC STRUCTURE OF HARISPATTUWA

The socio-economic structure of the Kandyan countryside today displays a complex articulation of social relations emanating from three distinct systems; (i) archaic social relations dating back to the days of the kingdom, (ii) institutions and structures introduced by colonialism and (iii) processes of capitalist penetration and incorporation of more recent origin.

(1) Historical Influence on the Contemporary Social Formation

The influence of the system of the Kandyan Kingdom is most evident in the sphere of landholding and social stratification. During the days of the Kandyan Kingdom productive land was divided into the following categories: (i) land directly held by the state (gabdagam and bisogam), (ii) land held by monasteries and temples (viharagam and devalagam), (iii) land held by feudal families (nindagam), (iv) land associated with bureaucratic office (badavadili) and (v) land held by small holders. At the top of the social pyramid was the sub-caste of the radala who monopolised all the important bureaucratic positions in the state as well as in the religious hierarchy. The chief incumbentships of the principal royal monasteries were held by the monks coming from the radala. This social stratum

consisted of a close-knit inter-marrying group of families whose power emanated from two sources, ownership or control of land and the access to bureaucratic sinecures.

With the exception of the social stratum of small-holders - who were not paying ground rent to any superior landlord - the rest of society consisted of various types of tenant cultivators who worked the land held by the landlords. The principal type of land tenure at the level of production relations was what Witold Kula would identify as the manorial system; i.e. the division of land into two unequal parts, lord's demesne and tenant's plot. The tenants cultivated their individual plots and used the product for their subsistence. In addition they cultivated the muttettuwa (lord's demesne) and rendered the total product of it to the landlord.

In spite of the social hierarchy established by the caste system, society was divided into three economic groups - landlords, smallholders and tenant cultivators. As the volume of surplus production was comparatively low, division of labour was not carried to its logical conclusion. Craftsmen and servicemen therefore, in addition to pursuing their special vocations were also cultivators. In muttettuwa type tenure craftsmen and servicemen too were allocated service tenure plots (nila pangu).

The caste system of the kingdom displays major differences in comparison with the Indian system. There is a virtual absence of a Brahmin stratum as in

this Buddhist society, religious specialisation was left to the monkhood. Only the royal family, which, in the latter period of the kingdom came from South India, counted as the kshatriya. On the other side of the spectrum there is an absence of the so called 'untouchable' castes. Rodiya who came near the bottom of the pyramid were actually a quasi-tribe who were out of the Sinhalese social organisation. The rest of the population was divided into two large camps, cultivators (goigama) within which the top radala stratum comprised a sub-caste and the craftsmen and the servicemen who were hierarchically organized. Irrespective of their differential positions in the caste hierarchy, the overwhelming majority of the people were share-croppers, service tenure men and tenant of different types.

The arrival of colonialism in the form of British conquest in 1815 unleashed forces that brought the functioning of this type as a system to an end. But it does not mean that all the archaic relations coming from the previous social formation were completely wiped out. In the colonial economic system that came into being in the mid-nineteenth century some archaic relations too found expression now fused and sub-ordinated to the dominant colonial economy. The major element of change in the rural economy was the introduction of the coffee plantations by the British. This meant the entry of British capital into the Kandyan hills; it also meant that the foundations for an export-import economy, thoroughly integrated with the world economic system, was firmly laid. The expansion of the coffee plantations took place mainly on the hills and

peripheral waste land away from the nucleus of the village. This meant that the peasant economy though seriously battered, did not become extinct. The peasant villages continued to reproduce themselves in interaction with the plantations as well as the new townships emerging to fulfil the service needs of the plantations. Coffee was grown as a peasant crop too, at the village level, eventually finding its way to the international market and in the process increasing the volume of monetary circulation in the peasant economy. The villagers came into contact with the plantation economy in two capacities: as peasant growers of the commodity coffee and as wage workers in the clearance of the land to be converted into plantations. But the bulk of the plantation workers came from the ranks of the landless South Indian peasants, as the Kandyan peasants found the plantation wage levels insufficiently attractive and, as working peasants they were not in a position to supply a regular work force which the plantations needed.

The British administration took strong steps to curtail the power of the radala especially after a major rebellion led by them in 1818 merely three years after the conquest. Some leading chieftains were executed, some were banished and still others had their land confiscated. The penetration of capital and the erosion of aristocratic authority, in this initial period led to a disintegration of the system of service tenure in land. The lower section of the peasantry consisting of the tenant cultivators and share-croppers displayed a tendency to avoid

performing their customary obligations. The rebellion of 1848, following the great European economic crisis, indicated the degree to which the region had already become an integral part of the world economic system. Unlike the rebellion of 1818 led by an aristocratic stratum oriented towards the restoration of the ancien regime, the rebellion of 1848 was led by the recent arrivals from the low-country and irrespective of certain archaic features, such as the emergence of a pretender to the Crown, indicated widespread agrarian discontent primarily caused by economic factors.

It is at this point that the colonial regime took active steps to restore the authority of the radala, as it was felt that it is precisely this stratum which would be able to rescue the peasantry from the anarchy to which it had succumbed. A number of governmental commissions which studied the problem of land tenure came out with recommendations that were designed to prolong the traditional system and together with it the authority of the radala. A system of provincial administration was gradually evolved, where a government agent, a British civil servant, sat at the apex of the provincial hierarchy assisted by local chieftains. A province was divided into a number of rata (districts), to be administered by a rate mahatmaya selected from the stratum of the radala. Rate mahatmaya in turn sat at the apex of a district hierarchy consisting of minor chieftains and headmen. Thus, by the end of the sixth decade of the nineteenth century the colonial regime successfully

evolves a system that ensures political stability, by recruiting the radala as sub-ordinate partners which leads to a system of indirect government.

In the meantime, the expansion of the plantations brought to a grinding halt by the economic crisis of 1847 and the rebellion of 1848, commences another phase of expansion from 1850. Though the early gangs of workers to come from South India were mainly seasonal migrant workers, who came to the Kandyan hill country during periods of peak demand only to return to India, thereafter, as the system expanded the need for permanently resident labourers grew. The change from coffee to tea as the major plantation crop in the region strengthened this need for permanently settled workers. In response to this, long rows of barrack type houses ('lines') were built on the plantations, one nuclear family in general being allocated one room in the barrack. Thus, a large population of workers of Indian origin, Tamil by ethnicity and mainly Hindu by religion also became permanent residents, in the Kandyan region.

In order to service the plantations and the plantation workers small bazaar towns developed from the mid-nineteenth century onwards in the nodal points of the network of roads that was being rapidly laid down. They became small trade centres of the products of the world economy that eventually encompassed the peasantry as consumers. Imported textiles, food items and metal equipment find a ready

market place here not only among the plantation workers but also among the peasants. Consequently the handicraft sector in the village economy suffers, thus proportionately increasing the dependence of the craftsmen on agriculture. Simultaneously trading becomes an important occupation as well as an avenue of capital accumulation. In this initial period it is the low-country Sinhalese arrivals and Muslims who make most out of this avenue rather than the Kandyan peasants or the plantation workers.

The basic structural form of the colonial socio-economic system develops around the 1860s, in the Kandyan region. It acquires a high degree of stability and conservative inertia and tends to reproduce itself at the same level almost till the period of the World War II. In the villages land is mainly controlled by the radala who relate to the bulk of the peasantry in the dual capacity of rentier landlords as well as the officers of the colonial state. Simultaneously, the institution of private property in land, which was already present in the kingdom, acquires universal significance. The Middle peasants establish themselves as a stratum of smallholders with property rights in land in villages not directly controlled by the radala. This is in addition to their ownership of peripheral land of the villages controlled by the radala. This stratum which manages to produce a surplus above their immediate subsistence needs, especially in the form of commercial crops establish linkages with the market centres. In the plantations, the phase of the buccaneering planter gives way to the agency houses which evolve a three tier plantation management

system: the management level which mainly consisted of British nationals, the supervisory and clerical level which consisted of the locals who were literate in English and the level of the plantation workers who were basically of South Indian origin. The plantation workers who were entirely dependant on the market for their subsistence and other needs became captives of the bazaar towns. The townships in the Kandyan region were almost entirely centres of circulation and exchange, invariably dotted with the local level offices of the colonial state, but devoid of any productive function. As such no urban working class grew in these townships, except perhaps a small layer of itinerant unskilled labourers, who resembled the landless peasantry within a semi-urban context. Each town had a hierarchy of merchants who entered into diverse types of relations with the lower echelons of bureaucracy and probably represented the nodal points of local power.

Within the local socio-economic structure these three webs of relations, the peasant village, the plantation and the commercial township represented specific concentrations located in the same social field. These spheres developed a complex structure of interactions. It is possible to speak of town-plantation interaction, town-village interaction and village-plantation interaction as entities that interact with each other. But it is also correct to speak of direct relations at the level of production and exchange that cut through these spheres. The merchants in town are linked up as sellers of commodities and lenders of money to both plantation

workers and peasants. A small section of landless peasants found part-time employment in the plantations and the English schools located in the townships produced some of the supervisors who joined the plantations. Some of the land located in the townships still belongs to the radala and various temple lords who therefore act as rentiers to the merchants. Hence, any discussion of the socio-economic structure in the Kandyan region should place due emphasis on these as webs of social relations which not only interact but also cut through to the other webs.

After the attainment of independence in 1948, the tempo of change in the peasant economy accelerated due mainly to these factors: (1) The introduction of the Paddy Lands Act in 1957 which sought to safeguard the rights of the tenants to the lands they cultivated and also to enhance their share of the produce. (ii) The introduction of early varieties of high yielding seed - especially H4 and H8 varieties - in paddy agriculture which received a high level of acceptance from the peasantry, and (iii) the continuation of the government guaranteed price for paddy which stabilized the paddy prices in the market while offering a reasonable price for the cultivator. These factors contributed towards increasing the yield and strengthening the level of market integration. Paddy ceased to be merely a subsistence crop; it simultaneously became a commercial crop as well. Risk taking on the part of the peasant tends to increase if and when alternative support mechanisms are available. The presence of a widespread welfare system to which the peasant has

access is such an alternative support mechanism. During this period, the peasant could buy rice at a subsidized price, which was distributed according to a system of rationing. Hence, one could expect the peasant to engage in risk taking behaviour. The absence of serious resistance to the high yielding varieties on the part of the peasantry reflects this.

Thus in those areas where social relations of production were not fetters on the growth of productive forces, in other words, those villages where archaic relations such as service tenure and share-cropping were by and large absent witnessed substantial increases in the paddy yield within the context of an emerging middle peasantry. With the expansion of education in the rural areas - free education was introduced in 1946 - a stratum of literati grows out mainly from the ranks of this middle peasantry. This social stratum rises above the level of the peasantry by becoming school teachers, clerks, minor government servants and Ayurvedic physicians. They became a new social force to be reckoned with and came to play an important role in the politics of rural society.

The old landholding families in the Kandyan countryside basically belonged to a single sub-caste, that of the radala. The rural middle class however, was socially heterogeneous, the elements within it coming from different castes. Some elements in the rural middle class coming from the castes traditionally associated with the crafts and

services protested against caste hierarchy, and the maintenance of social distances. Hence, the emergence of the rural middle class simultaneously implies the disintegration of the caste system as it was traditionally understood. The caste system should possess at least three structural features: (i) hierarchy, (ii) ascription of division of labour, and (iii) endogamy. Established status hierarchy, among diverse castes is now rejected by the socially mobile and educated members of the craft and service castes. Some castes, which traditionally occupied a lower position in the status hierarchy have emerged with new origin myths to advance their social position. One such caste, numerous in Harispattuwa, currently call themselves 'Bodhi Vamsa' and maintain that they are the descendants of one of those service groups that came with the sacred Bodhi sapling from India to Sri Lanka, a sapling of the tree under which the Buddha is assumed to have attained perfection. Such an origin story gives the members of this caste added social confidence and enables them to reject the claims of superiority of certain other castes. Hierarchy is not merely the assertion of superiority by one social stratum, it is also the recognition of that superiority by the other social strata. The goigama caste in general and the radala sub-caste in particular in the Kandyan area still assert their superiority over the other castes. However, this assertion no longer goes unchallenged, as the other castes for sometime have been refusing to fit into a hierarchised social order. In this sense caste hierarchy is in serious erosion.

Caste oriented division of labour too has suffered serious disintegration. The decay of the rural craft sector has compelled many people coming from the craft castes to depend more and more on agriculture or to turn to new occupations where traditional caste divisions have no significance.

Endogamy by and large continues, though marriages between youngsters coming from different caste backgrounds is not entirely unknown. When inter-caste marriage takes place, it is still an affair between two individuals. But traditionally arranged marriage where two family groups establish kinship through marital ties still happens within the caste boundaries. However, even within the context of caste endogamy important changes have occurred; the traditional sub-caste differences within the caste tend to be increasingly neglected even in the case of arranged marriages. In the Kandyan areas, the large caste of the goigama traditionally comprised of three strata, the radala at the top of the pyramid, the small community of patti (the cattle keepers) and the ordinary goigama who called themselves the "good people". In the traditional structure, the former two comprised endogamous groups and the latter being fairly large, a number of endogamous groups hierarchically organised and geographically scattered. Recently however, marriages cutting through these endogamous groups have become rather frequent. The basic form assumed by such marriages is hypogamy; an educated professional man of low status marrying a high status woman within the context of the institution of dowry. Thus sub-caste distinctions are on the wane, while

the process achieves greater homogenisation and status equality within the caste.

All these structural changes however, does not lead in the direction of the total disappearance or the dissolution of caste as a social group. Hierarchy is rejected, inter-dining taboos are violated, social distances are forgotten, traditional division of labour suffers erosion and endogamy assumes new forms. Within this context, caste acquires a new form and a new role; caste as a community, extended family groups linked to each other through marital ties and sharing an ideology of "togetherness" and a consciousness of being "one people".

(2) Social Stratification

Today in the Kandyan areas, caste organization by no means exhausts the domain of social stratification. With the expansion of production relations characteristic of the capitalist mode of production, a complex class structure not devoid of certain archaic features has emerged. If in the days of the Kandyan Kingdom, people were basically divided into three economic strata in terms of production relations, i.e. radala landlords, smallholder peasants and tenant cultivators of different grades, today a number of classes germane to the capitalist mode of production have made their appearance inter-twined with archaic social divisions. When Kandyan countryside is taken as a whole the following social classes could be identified:

(a) Radala landlord class: The members of this class claim descent from the principal noble families and courtiers of the Kandyan Kingdom. These claims could either be mythical or factual but in the ideology of domination these definitely play an important role. These landlords either own land directly or sometimes indirectly through temple trusteeships, which peasants cultivate for them. Surplus is realised in terms of ground rent, frequently share-cropping. The upper echelon of the Buddhist priesthood of the Siamese sect, which enjoys monopolistic control of all the principal land holding monasteries and temples in the Kandyan area is exclusively recruited from this class. The radala landlord class simultaneously is a class of state bureaucrats and professionals. But even when its members have made in-roads to the modern economy, they still tend to continue to control land in their ancestral villages. The land reform of 1972 and 1974 failed to make a serious impact on this pattern of landholding as the ceiling was too high. As the temple controlled land was explicitly exempted from the reform procedure, even where land ownership was heavily concentrated, it still failed to make any impact.

As far as this class is concerned, class and sub-caste fully coincides, as it is simultaneously an endogamous unit with strong internal kinship linkages. In the past, especially before 1950 its social dominance over the peasantry was almost total. But this dominance is somewhat eroded today due to the challenge on the part of the newly emergent petty bourgeois groups as explained earlier.

(b) Middle bourgeoisie: In the Kandyan area, members of this class are concentrated in the provincial townships rather than in the villages proper. The capital held by this class is diversified in a number of different operations, but principally in activities related to circulation rather than production. Trading, money lending, transport, renting agricultural machinery to the peasantry, carrying out construction work and other services to the government on contract, tourism, etc., could be taken as typical activities that forms the economic base of this class. A typical representative of this class would emerge as a small merchant with a shop near a strategic centre in a provincial township. He goes through a process of primitive accumulation through trading and money lending till he accumulates sufficient capital, which he may invest in a truck or a tractor. At this point he branches off to transport or renting agrarian machinery to the peasantry in addition to his customary activities. The profits earned through the newly opened up ventures may be used to acquire a number of tractors or trucks. He may also invest in construction work for the state which is generally thought to be highly profitable or may open up a small hotel or a guest house for the tourists.

By the nature of the enterprise that he controls, in order to prosper, the middle bourgeoisie needs state protection. Obtaining state contracts, loans from the state Banks, and permits to import agrarian machinery etc., are dependent on political patronage. The middle bourgeoisie is the class that the local politicians rely upon to finance their campaigns. The

members of this class together with the local politicians comprise important centres of local power.

Unlike the social class of landlords, the middle bourgeoisie is socially heterogeneous. Not only different castes but also the different ethnic groups are represented within it. But the dominant sections of this class are principally of non-Kandyan origin. The Sinhalese merchants from the coastal areas and the Muslims are rather numerous within its ranks.

(c) Petty bourgeoisie: This class basically coincides with what we termed the rural middle class earlier. As a class that has emerged from the middle peasantry, it still retains strong links with land and kinship ties with the peasantry. It is a stratum that comprises of teachers, clerical and other white collar occupations, small merchants, traditional medical practitioners, astrologers, etc. It is basically a social stratum of lower level professionals and petty traders with small scale land ownership.

The major avenues of social mobility in raising this stratum above the level of the peasantry have been education and the acquiring of various skills. It is a stratum of Sinhalese educated literati and as such display strong cultural nationalism. It is a socially heterogeneous class, but its roots are far more local and rural than in the case of the middle bourgeoisie. Its deep social roots in the peasantry makes it possible for it to assume a leadership role in the rural areas.

It displays hostility to the radala landlords as well as the middle bourgeoisie. The former contradiction expressed itself in the mid-fifties and the sixties as an "anti-feudal" struggle and the latter as regional and ethnic hostility to the outsiders. In forging links with the people, it emphasizes primary group links such as caste and kinship.

(d) Middle peasants: This is a rather numerous class in the Kandyan countryside. It is basically a class of small holding peasants, who generally own a paddy field and the land on which their house stands. Those peasants who are not obliged to sell their labour power in the rural context, in other words, those with sufficient land which generates enough income to sustain the peasant family fall into this class. Craftsmen who own their instruments of production and whose craft production is sufficient to sustain their families could also be taken as falling within this class.

Middle peasants cultivate their land primarily with their family labour occasionally resorting to wage labour when the traditional exchange labour networks are not in operation. They often produce a surplus which they sell in the market. Socially, this is a heterogeneous class with a number of different castes represented within it. Concentrations of Muslim middle peasants are also to be found in the Kandyan area.

(e) Poor peasants: This probably is the most numerous social class in the Kandyan countryside. Poor peasants own or enjoy cultivation rights to small patches of land. But the yield and the income generated from these small patches of land are totally inadequate to sustain their families. Hence the poor peasant is obliged to sell his labour power for wages in the rural context. Though a share-cropper cultivating the land of a landlord is the typical representative of this social class, a peasant owning a very small patch of land too falls into the same class.

Due to land fragmentation, a middle peasant household could fall into the ranks of the poor peasantry in the second generation. This class too is socially heterogeneous, but it seems that the craft and service castes contribute more than their share to its ranks.

(f) Rural workers: Rural workers are totally devoid of ownership or possession rights relating to productive land. Often they even do not own the small hut where they reside. They exist solely by selling their labour power in the rural context. Their geographical mobility has greatly increased during the last decade; they have started migrating seasonally out of the Kandyan area to work in the newly resettled dry zone, which sometimes brings them higher wages.

Rural worker is an itinerant character who works wherever he could find work and not necessarily in agriculture. He may undertake non-agricultural unskilled work in the rural sector, such as quarrying, brick making, road work, etc. There is a gradual expansion of the numbers and the proportion of the rural workers in the Kandyan area, in many villages they comprise about 25 per cent to 30 per cent of the work force.

(3) Harispattuwa : Population and Economic

Organization:

Harispattuwa, according to the census of 1981 had a population of 136,699 and it is significant that the annual growth rate between 1971 and 1981 was only 0.6 per cent compared with the national average of 1.7 per cent for the same period. This is no doubt due to two factors, internal migration and the repatriation of the plantation workers of Indian origin. Harispattuwa being a high population density area has been experiencing a steady outflow of people for a number of decades. Between 1963 and 1971, Kandy district as a whole, experienced a net out-migration of 29.1 per cent of males to other districts, particularly to the western coastal belt and the dry zone peasant re-settlement schemes. The Indian Tamils in Harispattuwa who numbered 7,086 in 1971 (5.4 per cent of the population) dropped to 1,896 (2.1 per cent of the population) by 1982. The sudden drop in their numbers is due to repatriation as well as internal

migration. Especially after the ethnic riots of 1977 large numbers of Indian Tamils started migrating to areas considered safer, either to the interior of the up-country or to the north and the east of the Island. Thus the low rate of population growth in Harispattuwa does not actually reflect the potential natural growth rate of the area which probably is between 1.2 per cent to 1.4 per cent per annum.

Table 1

The Population of Harispattuwa by
Ethnic Groups - 1981

	Population
Low country Sinhalese	5,607
Up country Sinhalese	96,539
Sri Lankan Tamils	1,577
Indian Tamils	1,896
Sri Lankan Moors (Muslims)	30,729
Burghers	192
Malays	72
Others	87
TOTAL	136,699

As indicated in the Table above the Kandyan Sinhalese are the predominant group in the area, followed by the Muslims. The Muslims are concentrated in certain villages, the Indian Tamils are confined to plantations and the Sri Lankan Tamils are scattered in the area.

Harispattuwa is a collection of small villages, plantations and the area is dotted with small townships and bazaars. Some villagers work on the plantations and some cultivate plantation crops intended for the market. Each village has a tract of paddy fields and in addition the peasants have home gardens. The common crops cultivated in these gardens are tea, rubber, coconut, vegetables, cardamoms, cinnamon, pepper, cloves and other spices intended primarily for the market. The paddy yield in Harispattuwa is modest, the average being 40-50 bushels per acre. A part of this production too finds its way to the market.

Harispattuwa covers an area of 55 square miles or 35,000 acres, with a cultivated area of 31,000 acres or 86 per cent of the area. Population density in 1981 was 2,485 individuals per square mile. Of the cultivable land 1,600 acres remain uncultivated and the bulk of it is in the hands of private individuals. The uncultivated land owned by the state barely amounts to 300 acres. The problem of a large and growing population and the static agrarian resources therefore act as constraints to the economic growth and prosperity of the area. Population growth within this context has led to an acute fragmentation of land into uneconomic units and the expansion of the number of landless rural workers.

According to the Cramodaya Mandala Resource Survey, there are 16,448 individual holdings in Harispattuwa. Over 50 per cent of these holdings are less than 1/2 an acre in extent, of this a good

proportion is less than 1/4 of an acre. Only about 8 per cent of the holdings are over 5 acres in extent. Over 50 per cent of the paddy land in Harispattuwa is owner cultivated, and 35 per cent is under share-cropping with the balance forming lease holdings.

Table 2

Size of Land Holdings in Harispattuwa

Extent	Number
Less than 1/2 acre	8192
1/2 - 1 acre	4049
1 - 3 acres	2541
3 - 5 acres	1056
Over 5 acres	610
Total number of holdings	16448

It is possible to assume that Harispattuwa has approximately 22,800 nuclear family units. If so, 6300 nuclear family units or nearly 28 per cent in Harispattuwa are totally landless. On the other hand, the minute sub-division of land which has turned a substantial number of holdings into uneconomic parcels acts as an impediment to agricultural progress. This fragmentation is primarily due to traditional customs pertaining to inheritance which lay down the division of parental property between children, both male and female, on a roughly equal basis.

Smallholders find it difficult to improve techniques of cultivation due to lack of capital resulting in low yields and low income which makes it impossible to invest in agriculture. Thus, they are caught in a vicious circle from which they find it difficult to escape. These small cultivators often derive only a meagre income from their small plots and are hence compelled to engage in diverse activities for wages.

Minute fragmentation of holdings also gives rise to various practices of rotation, which in themselves hinder agricultural production. One such practice prevalent in the area is "thattumaru", a number of owners cultivating the plot in rotation, without resorting to further sub-division. In such circumstances, cultivators do not tend to take a long-term interest in improving the irrigation and drainage facilities as they think that the benefits will accrue to those who follow them in cultivating the plot. The system of thattumaru has thus solved the problem of microscopic division by enabling a number of owners to cultivate the field in rotation, while simultaneously discouraging them to take a long term interest in the improvement of the conditions of production.

Share cropping is prevalent in paddy and a number of methods are resorted to in the division of the product. In the traditional system, the land owner provides the seed paddy to the share-cropper and also bears a part of the costs of cultivation. The share-cropper is obliged to pay back the seed paddy with an interest of 50 per cent and half of the harvest

to the land owner. Other methods have come into prominence in the recent decades where the land owner provides not only the seed paddy but also the fertilizer, insecticide and other costs of cultivation. In such cases after recovering the seed paddy with interest, the landlord recovers the money that he has spent on the field, using the current market price of paddy as the index. The rest of the harvest is then divided into two equal shares, one going to the land owner and the other to the tenant. As the plots are often less than half an acre and the yields are low (40-50 bushels per acre) after various deductions, the share-cropper often does not obtain more than 8-10 bushels of paddy per season, which is unlikely to fetch more than Rs. 560.00 to Rs. 700.00 in the market today (August 1982). Various reform legislations however, lay down that the share-cropper should pay only 1/4 of his harvest to the land owner, and makes no provision for the landowner to provide seed paddy or any other expenses. There are a few share-croppers who cultivate on this basis and pay the landowners the legally prescribed share. But by and large, the traditional method of share-cropping outlined earlier still prevails in Harispattuwa.

The range of crops is small. Nearly half the cultivated land is under paddy, tea and spices. Rubber and coconut are cultivated in about 900 acres, mostly in smallholdings. Only few plantations under these crops exceed 20 acres in extent.

Table 3Patterns of Land Use

Type of Crop	Acreage
Paddy	3686
Tea	2629
Coconut	638
Rubber	253
Others	7601
Uncultivated - State	295
Uncultivated - Private	1346
TOTAL	16,448

A fair amount of land classified as "others" in the Table is utilized for the cultivation of spices, mainly nutmeg, cloves, pepper and cardamom. These items referred to as "minor-export products", are presently fetching high prices in the overseas market. For instance, a kilogram of dried cloves that used to fetch Rs. 40.00 to Rs. 50.00 in the mid-seventies is currently (August 1982) fetching prices between Rs. 250.00 to Rs. 300.00. The common practice in the area is for the owners of spice trees to lease them out to traders every season. A fully grown clove tree currently fetches around Rs. 7000.00; but such incomes are not regular as the yields are highly variable. The "price hike" in the spices has introduced a selective income boom. But it is needless to emphasize that it is the landowners and among them the large landholders who stand to gain from this inflation.

Animal husbandry in the Kandyan villages has never taken a pronounced commercial orientation. Livestock farming for the purpose of meat production is totally absent, though some cattle and goats eventually find their way to slaughter houses through Muslim traders. But it was the established practice in traditional society to rear cattle and buffaloes as draught animals and for milk products. The increasing population and the consequent expansion of the residential and cultivated area has drastically reduced the potential pasture land available for cattle farming. Poultry keeping which does not require much space has progressed somewhat recently, and is especially associated with the Muslim villages.

Table 4

Livestock Farming in Harispattuwa

Cattle	2289
Buffaloes	1656
Goats	1426
Pigs	23
Poultry	19590
<u>TOTAL</u>	<u>24984</u>

Source: Gramodaya Mandala Resource Survey, 1982.

Though a substantial section of the people of Harispattuwa are associated with agriculture, a number of non-agricultural occupations are also acquiring prominence in the occupational distribution. Those engaged in paddy agriculture tend to go for other forms

of economic activity during the slack season. In addition, the modern economy too has made a significant impact on the current economic organization of the area and such occupations as teachers, clerks, technicians and drivers figure prominently in the occupational distribution. There is widespread unemployment and endemic under-employment. Unemployment defined as being totally out of any gainful economic activity is largely prevalent among the educated young coming within the 18-30 age cohort. Endemic under-employment is widespread among poor peasants, rural workers and artisans. Both of these features, however, are not peculiar to Harispattuwa, it is a nation wide phenomenon that has attracted much attention.

Table 5

Occupational Distribution

Professionals	243
Teachers and Clerks	2608
Technicians	676
Smiths	364
Drivers	1462
Carpenters	1913
Masons	774
Peasants	8753
Plantation workers	5440
Unemployed and under-employed	30000
Others	9823
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TOTAL	62103
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Source: Gramodaya Resource Survey, 1982.

Another avenue of economic opportunity available to the villagers of Harispattuwa is cottage industry. Handloom spinning and weaving, beedi making, carpentry, lacquer and brass work, quarrying, brick making and pottery are some of these cottage industries. Most of these industries depend on locally available raw materials. Traditional brass and lacquer works have enjoyed a boom in the recent years due to the expansion of demand for these items from the tourist trade and the urban middle class. But there is no direct linkage between the consumer and the craftsman. Tourist shops in Kandy purchase these items from the craftsmen and sell them to the consumers at a much higher price. Sometimes the tourist shop owner advances the necessary raw material to the rural craftsman with the understanding that the craftsman in turn will sell the finished product to the shop at a discount. Though the brass and lacquer workers are still not getting a reasonable price for their products, their situation has improved somewhat due to the expansion of the market. This cannot be said about other cottage industries such as spinning and weaving and the craft of the blacksmith. Spinning and weaving which enjoyed a degree of success during the import substitution phase of the Sri Lankan economy has faced almost virtual collapse due to the liberalisation of import trade. The craft of the blacksmith has been steadily declining due to competition from factory produced commodities.

The economic organization of Harispattuwa does not differ radically from that of the Kandyan country side, but for the rather important position occupied

by the spices in the economy. It is basically an area of peasant production, where some aspects of the modern economy has made in-roads.

4. Rural Communities in Harispattuwa :

Structural Variations

The discussion in the preceding section attempted to view the economic organization of Harispattuwa in general, without attempting to identify any sub-types. It was primarily based on secondary data provided by the Census reports, Kandyan Peasantry Commission Report, Basic Village Survey Data & Gramodaya Resource Survey Data. Now it is necessary to emphasize structural variations by investigating different types of rural communities in detail.

The socio-economic structure of Harispattuwa while displaying features common to the Kandyan countryside in general, also displays certain specificities. These specificities can best be analysed at the level of concrete social ensembles at the village level.

The socio-economic structure of Harispattuwa displays a structural unity in so far as the same forces and influences worked to fashion it. But the differential combinations of the same structural relations introduce diversity at the level of the concrete social formation. In order to lay due emphasis on this diversity an attempt will be made to

link up these variations with a concept of sub-systems.

(A) Peasant small-holder sub-system

This is characterised by the following features. (i) Absence of large landlords leading to the somewhat unequal distribution of productive land among the peasant families themselves; (ii) The crucial importance of subsistence oriented as well as market oriented agriculture in the village economy; (iii) Absence of traditional social hierarchies within the village context or caste homogeneity; (iv) The presence of an affluent peasant stratum in the village who retain and accumulate a part of the surplus they produce and (v) A group of literati, who have emerged from the ranks of the affluent peasant stratum and have become white collar workers, and constitute a rural middle class.

Among the villages visited and examined, Dolapihilla seems to display almost all the features mentioned above. It is a Sinhalese Buddhist village with no ethnic or religious mixture. Nearly 94 per cent of its population belongs to a single caste, the one currently called Bodhi Vamsa closely inter-linked by kinship ties. The village also has a sprinkling of drummer caste people who do not exceed 6 per cent.

Table 6Land Distribution

Acres	Paddy Land		Home & Garden	
	Number	%	Number	%
Landless	89	52.66	4	2.38
0 - 0.25	13	7.69	23	13.6
0.25 - 0.49	25	14.79	54	31.95
0.5 - 0.99	23	13.6	56	33.14
1.0 - 1.99	13	7.69	24	14.2
2.00 - 2.99	3	1.78	8	4.73
3.00 - 3.99	1	0.59	-	-
4.00 - 4.99	-	-	-	-
5.00 and over	2	1.18	-	-
TOTAL	169	100.00	169	100.00

Those who are totally landless amount only to 2.38 per cent of the population. This means that almost every family in Dolapihilla owns at least the plot of land on which the house stands, 65 per cent of the householders own a homestead compound varying between quarter of an acre and one acre. In relation to the serious problem of landlessness that the Kandyan peasants in general suffer from at least as far as residential land is concerned Dolapihilla people seem to be in a better position.

Ownership of paddy land too is not all that heavily concentrated; there are two households that own more than 5 acres of paddy and both of them

together own 12 acres. The bulk of the paddy land owners have plots varying between quarter of an acre to one acre. But the problem of landlessness is acute in the paddy sector, 89 households or nearly 53 per cent of the total number of households do not own even an inch of paddy land. But there are 42 households who work as tenant cultivators on paddy land belonging to others. It is logical to assume that the overwhelming majority of these share-croppers come from the 89 households who do not own any paddy land. If this is assumed to be 42, nearly half of those without paddy land work as share-croppers on the land belonging to others.

Table 7

Land Distribution : Annual Earnings

<u>Income Groups</u>	<u>Number</u>	<u>Total Income</u>	<u>%</u>
Less than 1000	-	-	-
1000 - 1999	2	2,968	0.29
2000 - 2999	12	29,884	1.94
3000 - 3999	11	39,180	2.54
4000 - 4999	29	126,280	8.21
5000 - 9999	73	519,628	33.73
10,000 - 19,999	30	401,214	26.04
20,000 - 50,000	11	334,774	21.73
50,000 and over	1	86,600	5.62
TOTAL	169	1,540,534	100.00

It is possible to identify three strata of income earners in Dolapihilla, (i) those who earn less than Rs. 4,000.00 per annum, (ii) those who earn Rs. 4,000.00 to Rs. 20,000.00 per annum and (iii) those who earn over Rs. 20,000.00 per annum. In Dolapihilla, those in the first category, who definitely come below the government prescribed poverty line (Rs. 4,200.00), number 25 households, which works out to 15 per cent of the income receivers. On the other hand 75 per cent of the income receivers get over Rs. 4,000.00 and under Rs. 20,000.00, whereas 7% earn more than Rs. 20,000.00 per annum. Thus a substantial section of the income earners are concentrated in the middle income group with 73 households or 43 per cent of the income earners concentrated in the Rs. 5,000.00 to Rs. 10,000.00 group. However, income distribution at the extreme ends is rather skewed; at the top 7 per cent of the income earners obtain 27 per cent of the total, at the bottom nearly 15 per cent of the income earners obtain less than 5 per cent of the total income. Nevertheless, more than three fourth of the households fall within the category of middle level income earners. (Table 8).

In Dolapihilla, 14.3 per cent of the adults are illiterate; this does not differ very much from the national average. Only 5.5 per cent of the males are illiterate, whereas illiteracy among women amounts to 21.6 per cent reflecting serious gender differences at this level. However, when one moves up the educational ladder, the gender differences diminish. Among the 84 persons (16.3 per cent) who

have obtained G.C.E. (O/L) or a higher qualification there are 40 men and 44 women. All these men and women are desirous of doing white collar jobs. But due to the scarcity of such jobs, those who succeed in obtaining white collar employment are small in number.

Table 8

Educational Levels of Adults over 18
years

	Male		Female		Total	
	No.	%	No.	%	No.	%
Illiterate	13	6.56	61	21.63	74	14.34
No schooling but literate	-	-	-	-	-	-
Grade 1-5	91	38.89	70	24.82	161	31.20
Grade 6-10	90	38.46	107	37.94	197	38.18
G.C.E. (O/L) or equivalent	34	14.53	40	14.18	74	14.34
G.C.E. (A/L) or equivalent	5	2.14	2	0.71	7	1.36
Tertiary Diploma	1	0.43	1	0.36	2	0.39
Degree	-	-	1	0.36	1	0.19
TOTAL	234	100.00	282	100.00	516	100.00

The pattern of occupational distribution cited (Table 9) partly derives from land distribution. A significant section of the householders, 16 per cent, own enough land to be classified as middle peasants. But the largest category, 31 per cent, are poor peasants

Table 9

Occupational Distribution of the Heads
of Households

	Number	%
Professional	0	0
White collar	11	6.6
Traders/Shop Keeper	14	8.3
Artisans	9	5.3
Landlords	5	2.9
Middle peasants	27	16.2
Poor peasants	53	31.5
Rural workers	32	19.2
Urban workers	14	8.3
Plantation workers	0	0
Others	0	0
Unemployed	3	1.7
	168	100.0

whose land holdings are insufficient to bring them an adequate income and therefore are obliged to work as rural workers in addition to cultivating their plots of land. But the proportion of the rural workers, who comprise about 25 per cent of the heads of households in many Kandyan villages, is rather low in Dolapihilla amounting only to 8.3 per cent. This

is due to two reasons: (i) majority of the people owning some land and (ii) widespread share-cropping. Within the context of agriculture the most typical cultivator in Dolapihilla is a person who cultivates a rented or directly owned plot of paddy land while combining it with wage work. On the other hand, the middle peasant stratum has given rise to a small group of white collar workers, who have attained their positions through education. The two most prominent jobs coming within this category are those of the teacher and clerk. The artisans, who often own productive land but generally derive their main income from their crafts amount to 5 per cent. A slightly larger section of the householders are engaged in trading and running shops. But the scope of operations and the levels of their capital accumulation vary widely; irrespective of being engaged in the same occupation they are in fact a heterogenous group. There are no householders in Dolapihilla who have attained professional status. But there are some young university graduates who have yet to establish their nuclear families. The young graduates coming from a rural background are currently facing an acute problem of unemployment. Many of them will find it impossible to find jobs with professional status; some may eventually find employment as white collar workers.

The system of issuing rice rations at a subsidized price to the consumers, which was in existence from the period of the Second World War was discontinued in 1978. To replace it a system of

"food stamps" was introduced, which unlike the former system covered only those falling below the poverty line which is defined as those who obtain an income of less than Rs. 300/= per month, per household. A monetary value is attached to these food stamps and the recipient can claim a number of stipulated food items from particular shops for the value of these stamps. In Dolapihilla 57.4 per cent of the households are currently in receipt of food stamps. Thirty five per cent of the households receive stamps worth Rs. 300.00 to Rs. 1000.00 per annum, 15 per cent receive those worth Rs. 1000.00 to Rs. 1500.00 and 6 per cent receive stamps worth over Rs. 150.00. In addition, one household was receiving a monthly allowance as social security.

This indeed contradicts the income figures cited earlier. According to the figures pertaining to income distribution only 15 per cent of the households should be receiving food stamps whereas 57.4 per cent are in fact in receipt of them. This is probably due to two factors: (i) deliberate under-estimations of income being presented to the state agencies by the householders, whereas our field investigators were able to collect more accurate data and (ii) the income estimations pertaining to the issue of food stamps were carried out in 1978, when the proportion of income earners coming below Rs. 300.00 per month would have been higher than what it is now. The high rate of inflation that prevailed during the last few years contributed to the increase in monetary income in the rural areas.

The major economic activities in Dolapihilla are oriented towards agriculture, with the overwhelming majority of the householders deriving the major portion of their income from agriculture and related activities. Those who are classified as white collar workers, traders and artisans too are not totally delinked from land. All of them either own or possess productive land and this brings them an additional income. When compared with the general conditions prevailing in the Kandyan countryside Dolapihilla could be taken as a relatively prosperous village.

(B) Landlord dominated sub-system

This is characterized by the following features:

(i) Concentration of land ownership in the hands of a few families leading to widespread landlessness among the peasantry; (ii) Presence of a high proportion of tenant cultivators, share-croppers and rural workers among the peasantry; (iii) Agriculture acquiring a position of crucial importance in the village economy; the landlords displaying a strong market orientation and the peasantry a subsistence orientation; (iv) Presence of traditional social hierarchies within the village context, hence caste heterogeneity or long established social and endogamous distinctions between the landlords and the peasantry, (v) A stratum of affluent peasants not being prominent and (vi) the absence of a literati emerging from the ranks of the peasantry.

Among the villages visited and examined Mandandawela tends to approximate the sub-system outlined above. It is an exclusively a Sinhala Buddhist village; over 95 per cent of its population belongs to a single caste, the goigama with a sprinkling of bodhivamsa people and drummers. However, the goigama in the village are divided into hierarchical status groups, the landlords maintaining a social distance from the peasant goigama and not comprising an endogamous group.

Table 10

Land Distribution

Acres	Paddy Land		House & Garden	
	No.	%	No.	%
Landless	79	79.0	14	14.0
0 - 0.25	1	1.0	12	12.0
0.25 - 0.49	7	7.0	22	22.0
0.5 - 0.99	7	7.0	26	26.0
1.0 - 1.99	5.	5.0	19	19.0
2.0 - 2.99	-	-	2	2.0
3.0 - 3.99	-	-	2	2.0
4.0 - 4.99	-	-	-	-
5.00 and over	1	1.0	3	3.0
	100	100.0	100	100.0

As far as paddy land is concerned 79 per cent of the householders do not own a single inch of land. There are a few owner-cultivators who own less than an acre and a single landlord who owns more than five acres of paddy land. In Mandandawela, there are 6 owner non-cultivators who have given their land on tenancy to 22 tenant cultivators. Thus, the concentration of paddy land at one end of the spectrum leads to widespread share-cropping at the other end.

Somewhat akin to Dolapihilla, residential land is unequally distributed among the households; only 14 per cent of the households not owning any land. On the other hand 48 per cent of the householders own less than 1/2 an acre of residential land. Twenty one per cent own 1 acre to 3 acres of highland and can be taken as a small layer of middle level land owners. At the extreme end of the spectrum there is one landlord owning 13 acres of highland and 5 acres of paddy land.

In addition to inequitable distribution it should be emphasized that the available paddy cultivated extent is rather small in Mandandawela, which is due to hilly terrain. The paddy field attached to the village barely exceeds 15 acres. Even when land is given on share-cropping, the tenant cultivator tends to receive a rather small plot seldom exceeding 1/4 of an acre, often even smaller than that. This acute fragmentation of land, not necessarily at the level of ownership units but at the level of operational units sets definite obstacles to agricultural progress.

Within the context of Mandandawela, due to the paucity of the available paddy land and due to the type of crops cultivated, highland acquires importance in the economy. Highland here is cultivated with mixed crops, coffee, nutmeg, coconut, cardamom, pepper and cloves which are all mainly commercial crops. Spices in general bring high income but in a situation of inequitable land distribution income from these too accrue to the land holding families.

Table 11

Income Distribution : Annual Earnings

Rupees

Income Groups	Number	Total Income	%
Less than 1000	2	1,208	0.1
1000 - 1999	6	9,164	1.0
2000 - 2999	11	25,705	2.9
3000 - 3999	8	27,508	3.0
4000 - 4999	16	69,256	7.7
5000 - 9999	32	254,854	28.5
10,000 - 19,999	17	225,374	25.2
20,000 - 50,000	7	231,985	25.9
50,000 and over	1	50,675	5.7
TOTAL	100	895,729	100.0

It is possible to make use of the three income groups that were used in relation to Dolapihilla to interpret the above data. (i) Low income group: those earning less than Rs. 4,000.00 comprise 27 per

cent of the households, (ii) Middle income group: those earning between Rs. 4,000.00 and Rs. 20,000.00 amount to 65 per cent of the households, (iii) High income group: those earning over Rs. 20,000.00 amount to 8 per cent of the households. In comparison to Dolapihilla there are more poor people in Mandandawela the low income group being 27 per cent compared with only 15 per cent in the former village. Consequently the middle income group in Mandandawela is smaller but still covers the majority of the households amounting to 65 per cent. The size of the high income group in Mandandawela is comparable to that of Dolapihilla, but the share of the total income going to them is higher in Mandandawela. In this village 8 per cent of the top income earners receive 31 per cent of the total income, whereas the bottom 27 per cent of the income earners have to be satisfied with 7 per cent of the total income. Hence the gap between the "haves" and the "have nots" is rather wide in Mandandawela.

In terms of levels of literacy, Mandandawela is above the national average, as only 7 per cent have reported to be illiterate. The familiar male/female difference in the proportions of those illiterate is also present, with 3.5 per cent of the males reporting illiterate compared with nearly 11 per cent of females who report illiterate. As one rises up the educational ladder their gender difference diminishes, with 30 per cent of the males and 25 per cent of the females obtaining G.C.E. (O/L) or above. (Table 12).

Table 12.

Educational Levels of Adults over 18
years

	Male		Female		Total	
	No.	%	No.	%	No.	%
Illiterate	5	3.52	17	10.69	22	7.31
No schooling but literate	-	-	-	-	-	-
Grade 1-5	26	18.31	31	19.50	57	18.94
Grade 6-10	68	47.89	71	44.65	139	46.18
G.C.E. (O/L) or equivalent	34	23.94	34	21.38	68	22.59
G.C.E. (A/L) or equivalent	5	3.52	2	1.26	7	2.33
Tertiary Diploma	4	2.82	4	2.52	8	2.65
Degree	-	-	-	-	-	-
TOTAL	142	100	159	100	301	100

In terms of levels of education attained, Mandandawela compares well with other villages, as more than 25 per cent of the adults have completed G.C.E. (O/L) or have gone further. But this is not necessarily reflected in occupational distribution as only 9 per cent of the heads of households have been successful at obtaining white collar jobs. Those with high educational qualifications are heavily concentrated in the 18-30 age group where the rate of unemployment is rather high.

Table 13

Occupational Distribution of the Heads
of Households

	number	%
Professionals	-	-
White collar	9	9.0
Trader/Shopkeeper	2	2.0
Artisans	5	5.0
Landlords	1	1.0
Mid peasants	12	12.0
Poor peasants	29	29.0
Rural workers	27	27.0
Urban workers	6	6.0
Plantation workers	-	-
Others	-	-
Unemployed	9	9.0
	100	100.0

The occupational distribution in Mandandawela is closely related to the pattern of land holding. A stratum of middle peasants are present, but their proportion is rather small. On the other hand, 56 per cent of the householders are either poor peasants or rural workers, which means that they do not own or possess enough productive land to provide

them with a livelihood and are therefore dependant either partially or solely on wage work within the rural context. A different pattern of land distribution, which assured almost everyone with some highland in Dolapihilla reduced the proportion of landless rural workers in that village to 19 per cent. In Mandandawela, where land distribution is highly unequal the proportion of rural workers amounts to 27 per cent.

The white collar stratum in Mandandawela is comparatively large (9 per cent). But unlike in Dolapihilla they do not come from the ranks of the peasantry. The white collar workers in Mandandawela are from the ranks of the landlord families. For instance, the largest landlord in the village is simultaneously a director of a state corporation. Though he should have been classified as a professional in the table he appears as a landlord as the income coming from his land far exceeds his other sources of revenue.

It should also be noted that the proportion of artisans and urban workers is rather low in this village. This further testifies to the comparative lack of prosperity in Mandandawela. In a village where the bulk of the people are poor peasants and rural workers, they are unlikely to acquire the skills needed for the above vocations. The position of an urban worker is definitely more secure than that of a poor peasant or a rural worker. An urban worker enjoys a monthly salary, job security and if his employer is the state or a large company a number of

other benefits. Two artisans, especially carpenters and masons enjoy comparatively higher wages though they do not get a monthly salary. Due to the construction boom in the recent years and the exodus to the Middle-East on the part of the skilled craftsmen, the real wage levels in this sector went up. The proportion of urban workers and artisans in Mandandawela no doubt reflects the backwardness of this village in the development of skills. Among those cited as unemployed are a number of old widows living alone in small huts, who are dependent on close relatives for sustenance.

One would expect the proportion of those receiving "food stamps" to be high in this village. This is in fact so, 61 per cent of the households are recipients of food stamps. Forty three per cent of the households are receiving food stamps worth Rs. 300.00 - Rs. 1000.00 per annum. Fourteen per cent receive stamps worth Rs. 1000.00 - Rs. 1500 and 4 per cent receive stamps worth over Rs. 1500.00. In addition, seven households are receiving a monthly allowance as social security.

Thus Mandandawela is a good representative example of a village, where land ownership is heavily concentrated in the hands of a few families. This leads to the expansion of the strata of poor peasants and rural workers on one hand and the contraction of the layer of the middle peasantry on the other. Middle peasants slide down to lower strata due to land fragmentation as laid down by the inheritance practices. As a result a skilled or an educated stratum does not arise from the peasantry.

The white collar workers present in Mandandawela are mainly from the landed families. Whereas the sub-system which Dolapihilla represents is full of trends generating social mobility, this sub-system at least as social mobility is concerned presents a static picture.

(C) New Rural Settlement Sub-System

This is characterised by the following features: (i) Settlement of landless peasants from the neighbouring villages on government allocated peripheral land; (ii) Allocation of a small plot of peripheral land often varying between a quarter of an acre and half an acre to each family for residential purposes; (iii) Small holder cultivation not being the mainstay of the economy of the settlements; (iv) The main economic orientation of the settlers tend to be wage labour both within the context of agriculture as well as out of it; (v) Social heterogeneity in terms of diverse caste origins supplemented by the softening of social hierarchy due to rough equality in the economic position; (vi) Absence of sharp class differentiation within the settlement.

Among the villages coming within the purview of this study, Batuambe tends to approximate the sub-system outlined above. This is a relatively new highland settlement established under the government sponsored village expansion scheme. Each settler family was allocated quarter of an acre of highland for homestead. Though every traditional village has a paddy field attached to it, in the new rural settlements this is not the case. Except for a handful of settlers owning one or two plots of paddy

in their ancestral villages, the resident population of Batuambe is almost landless in relation to paddy land.

Except for one Muslim household, the entire settlement is Sinhala Buddhist. But in terms of caste origin it displays a diversity that is not generally encountered in the traditional Kandyan villages. Fifty six per cent of the householders belong to the drummer's caste and 24 per cent to the bodhivamsa caste. The golgama who form the majority when the Kandyan area is taken as a whole, here forms a minority which amounts only to 14 per cent. The settlers by and large come from the ranks of the landless peasants in the neighbouring villages.

Table 14.

Land Distribution

Acres	Paddy Land		House & Garden	
	No.	%	No.	%
Landless	87	97.75	19	21.35
Less than 0.25	1	1.125	-	-
0.25 - 0.49	-	-	70	78.65
0.5 - 0.99	1	1.125	-	-
1.00 - 1.99	-	-	-	-
	89	100.00	89	100.00

The table above brings out the specificity of land distribution in Batuambe. Only two households own plots of paddy in their ancestral village; 98 per cent do not own any paddy land. However, when

share-cropping arrangements are examined it becomes apparent that ten households in the settlement are involved in share-cropping in the paddy fields located in the nearby villages. Nineteen households do not even own any residential land. A fair number of such households consists of recently established nuclear families who occupy the same compound as the parental families do. This is but an initial indication of the acute problem of land fragmentation that is bound to set in as population increases.

Table 15

Income Distribution : Annual Earnings

Rupees

<u>Income Groups</u>	<u>Number</u>	<u>Total Income</u>	<u>%</u>
Less than Rs.1000	1	674	.05
1000 - 1999	-	-	-
2000 - 2999	2	5368	.45
3000 - 3999	1	3874	.3
4000 - 4999	8	35912	3.0
5000 - 9999	30	230156	19.5
10,000 - 19,999	34	468401	39.7
20,000 - 50,000	11	268680	22.7
50,000 and over	2	167774	14.3
	89	1180839	100.00

Those who earn less than Rs. 4,000.00 are marginal in Batuambe - 4 households. Nearly 81 per cent of the households fall into the middle income group, whereas 14.6 per cent of the households belong to the higher income group earning over Rs. 20,000.00 per annum. Thus 4.5 per cent of the households who are at the bottom earn only 0.8 per cent of the total income, whereas 14.6 per cent of the income earners at the top earn 37 per cent of the total income. The income distribution is more skewed than in Mandandawela, but it is less than in Dolapihilla.

It is indeed a singular fact that over 14 per cent of a settlement like Batuambe are earning over Rs. 20,000.00 a year, as this is basically a settlement of rural workers, artisans, itinerant peddlars etc. But there are a number of special factors in operation in a settlement of this sort, which is absent in a peasant village. One such factor is that income almost exclusively comes in the form of wages, payments and profits, that is in monetary terms. In a peasant village only a part of the net income appears in the monetary form, the rest of the peasant produce being used for consumption purposes. In this sense, the income figures of a settlement of this type are more accurate as each monetary item is taken into account, whereas income in a peasant context tends to be under-estimated. It is also significant that the settlement has 14 traders and 18 artisans. The traders in this settlement are mostly itinerant peddlars and are unlikely to earn large profits. However, the wages and payments received by artisans

have recorded a significant increase in the recent years. An experienced artisan (carpenter or mason) can earn around Rs. 50.00 at present (August 1982). If a particular nuclear family has three artisans concentrated within it, father and two grown up sons for instance, the three artisans together would be able to earn an income of Rs. 30,000.00 to Rs. 40,000.00, provided they obtain regular work.

Table 16

Educational Levels of Adults over 18
years

	Male		Female		Total	%
	No.	%	No.	%		
Illiterate	16	9.36	23	13.53	39	11.44
No schooling but literate	-	-	-	-	-	-
Grade 1-5	67	39.18	59	34.71	126	36.95
Grade 6-10	66	38.6	66	38.82	132	38.71
G.C.E.(O/L) or equivalent	18	10.53	19	11.18	37	10.85
G.C.E.(A/L) or equivalent	1	0.58	3	1.76	4	1.17
Tertiary Diploma	-	-	-	-	-	-
Degree	3	1.75	-	-	3	0.88
TOTAL	171	100	170	100	341	100

Eleven per cent of the adults in Batuambe are illiterate, which is slightly lower than the national average. Here, too only 9 per cent of the males are illiterate while the proportion among women is about 14 per cent. However, this changes as one moves up the educational ladder. Among those who were successful at G.C.E. (O/L) examination or higher examinations there are nearly 13 per cent males, the percentage of females with similar qualifications being nearly 12 per cent.

In terms of qualifications that could lead to white collar employment, the levels of education in Batuambe are not satisfactory. But it should be noted that three males have completed their university degrees successfully.

Table 17

Occupational Distribution of the Heads

Households

	Number	%
Professionals	-	-
White collar	3	3.4
Traders and Shopkeepers	14	15.7
Artisans	18	20.2
Landlords	-	-
Mid peasants	-	-
Poor peasants	3	3.4
Rural workers	30	33.7
Urban workers	18	20.2
Plantation workers	-	-
Others	-	-
Unemployed	3	3.4
TOTAL	89	100.0

The occupational distribution in Batuambe derives from the virtual absence of productive land in the settlement. Only three appear as peasant households. The largest group as expected are the rural workers, who reside in the settlement and go in search of work to the nearby villages. They also tend to migrate to the dry zone of the country in the peak periods of the paddy cultivation cycle, in search of work. The settlement also has a significant proportion (20 per cent) ^{of} urban workers, who work in the nearby towns as drivers, mechanics and peons. It also has a comparable stratum of artisans, blacksmiths, carpenters, masons, brass workers etc. The stratum of white collar workers is rather thin with only three heads of household claiming this status. Batuambe is thus occupationally diverse, with non-agrarian occupation being dominant in the economic structure.

Though nearly 95 per cent of the householders have indicated that they are in receipt of an income over Rs. 4,000.00 per annum, 83.1 per cent of the households are actually in receipt of food stamps. Three households receive a monetary allowances as social security. The reasons for the disparity between the income figures cited in relation to this location earlier and this situation are similar to those cited in the case of Dolapihilla.

Batuambe, thus displays special characteristics not found in the other villages studied. As not much productive land is available in the settlement, the economy there basically depends on wage work of different types. Hence this is a settlement that is closely

inter-linked with the regional economy even more than the communities cited above.

(D) Market town sub-system

This is characterised by the following features:

- (i) It is primarily a centre of commodity exchange and circulation rather than a centre of production, in the absence of any large scale industrial ventures;
- (ii) The town relates to the villages and the plantations in the double capacity of a centre of buying and selling as well as an administrative centre;
- (iii) It is the locale of a merchant stratum internally differentiated in line with the levels of accumulation and the type of venture, who maintain exchange relations with bigger merchants in bigger towns;
- (iv) It is the locale of a lower echelon of state bureaucracy who maintain diverse relations with the merchants, peasants and plantation workers;
- (v) It is a socially heterogeneous centre consisting not only of diverse castes, but also different ethnic groups.

Harispattuwa has a number of townships, Hedeniya, Akurana, Alawatugoda, Bokkawela and Ankumbura etc. Out of these townships Akurana and Alawatugoda are located in the northern and north-eastern borders of Harispattuwa and happen to be predominantly Muslim townships. Hedeniya is located in the southern border and is a rather small township. Bokkawela which is located in the centre of Harispattuwa does not display sufficiently pronounced urban characteristics. Ankumbura, the township that was selected as a representative example of the sub-system outlined above

enjoys a number of distinctive advantages. It is located in the centre of Harispattuwa. It possesses sufficient ethnic diversity and is related to the provincial urban centres and the neighbouring countryside through a network of roads. It has a pipe borne water service and a number of government institutions such as a hospital, a police station and some administrative offices. It also relates to some tea plantations where concentrations of Tamil workers of Indian origin are found.

Ankumbura is a township with a series of shops and cafes constructed near the road junction where number of villagers and plantation workers gather daily. Eighty four per cent of the Ankumbura population are Sinhalese, 10 per cent are Muslims and 6 per cent are Tamils. In terms of religious faith, 83 per cent are Buddhists, 10 per cent are Islamic, 6 per cent are Hindus and nearly 1 per cent are Catholics.

Being a commercial township, land holding and cultivation is not central to the economy of Ankumbura. However, the township is surrounded by productive land and peasants are involved in cultivating this land as their principal economic activity. Sixty nine per cent of the householders do not own any paddy land. About 23 per cent of the paddy land owners own small plots less than 1 acre in extent. There are five householders who own more than two acres of paddy, some of whom have given their land on share-cropping to others. (Table 18).

Nearly 40 per cent of the households do not own any residential land. Over 35 per cent own small plots of residential land less than 1/2 an acre in extent. But

these plots of land located near to the bazaar may be rather high in value inspite of their size. There are two persons who own more than four acres of highland.

Table 18

Land Distribution

Acres	Paddy Land		House & Garden	
	No.	%	No.	%
Landless	146	69.2	84	39.81
Less than 0.25	9	4.27	25	11.85
0.25 - 0.49	24	11.37	49	23.22
0.5 - 0.99	17	8.06	41	19.43
1.0 - 1.99	9	4.27	8	3.79
2.0 - 2.99	3	1.42	2	0.95
3.0 - 3.99	2	0.95	-	-
4.0 - 4.99	1	0.47	2	0.95
5 and over	-	-	-	-
TOTAL	211	100.00	211	100.00

Those who earn less than Rs. 4,000.00 in Ankumbura are only 3 per cent of the income earners, whereas the largest group of income earners (57 per cent) are concentrated in the middle income group earning Rs. 4,000.00 to Rs. 20,000.00. The proportion of the high income earners who earn over Rs. 20,000.00 is rather high

in Ankumbura; their proportion amounts to 39 per cent. On the other hand nearly 19 per cent of the income earners earn only 4.56 per cent of the total income, thus emphasizing the plight of the urban poor.

Table 19

Income Distribution : Annual Earnings

Rupees

<u>Income Groups</u>	<u>Number</u>	<u>Total Income</u>	<u>%</u>
Less than 1000	6	3,080	0.14
1000 - 1999	6	9,142	0.41
2000 - 2999	11	27,871	1.26
3000 - 3999	18	56,398	2.55
4000 - 4999	23	106,426	4.82
5000 - 9999	77	551,485	25.00
10,000 - 19,999	43	590,249	26.76
20,000 - 50,000	25	733,186	33.24
50,000 and over	2	128,000	5.82
TOTAL	211	2,205,837	100.00

At the other extreme, 13 per cent of the income earners earn 39 per cent. of the total income. Thus, irrespective of the middle income earners being the largest in number, the income distribution in Ankumbura is rather skewed with those at the bottom receiving only a very small part of the total income.

As Ankumbura has a concentration of traders it is quite likely that the income figures at the top level are significantly underestimated. There should definitely be more than 27 merchants in Ankumbura who earn over Rs. 20,000.00 per annum.

Table 21

Ankumbura - Educational Levels of Adults
over 18 years

	Male		Female		Total	%
	No.	%	No.	%		
Illiterate	18	5.90	38	16.82	56	10.55
No schooling but literate	3	0.98	3	1.33	6	1.13
Grade 1-5	82	26.89	49	21.68	131	24.67
Grade 6-10	132	43.28	88	38.94	220	41.43
G.C.E. (O/L) or equivalent	38	12.46	42	18.58	80	15.07
G.C.E. (A/L) or equivalent	21	6.89	4	1.77	25	4.71
Tertiary Diploma	3	0.98	1	0.44	4	0.75
Degree	8	2.62	1	0.44	9	1.69
TOTAL	305	100.00	226	100.00	531	100.00

Nearly 11 per cent of the adults of Ankumbura are illiterate, the figure being slightly lower than the national average. Only 6 per cent of the males are

illiterate, whereas illiteracy mounts to 17 per cent in the case of women. But as one advances in the educational ladder, the gender distinctions almost disappear, with nearly 22 per cent of the men and 21 per cent of the women possessing qualifications above the level of G.C.E. (O/L).

The general levels of educational attainment is not radically different from those found in the rural areas. But it is significant that there are 9 university graduates and four diploma holders in this township.

Table 21

Occupational Distribution of the Heads
of Households

	Number	%
Professionals	1	0.5
White Collar	20	10.2
Traders and shopkeepers	81	41.6
Artisans	21	10.7
Landlords	-	-
Mid peasants	3	1.5
Poor peasants	14	7.2
Rural workers	17	8.7
Urban workers	23	11.8
Plantation workers	6	3.0
Others	1	0.6
Unemployed	8	4.1
TOTAL	195	100.0

Unlike in the other examples studied, in Ankumbura, the pattern of occupational distribution does not derive from land tenure. The bulk of the heads of households are traders and shopkeepers. But it is important to emphasize that they are not a homogeneous social group; the following strata can be clearly distinguished: (a) a stratum of entrepreneurs whose capital is invested in diverse ventures, shops, rice mills, means of conveyance (trucks, buses etc.) and also land; (b) a stratum of petty traders whose capital is invested generally in one venture who possess a permanent place for the business operations; and (c) a stratum of itinerant vendors who have no permanent place for their operations. Their income levels also vary widely. The first stratum is likely to earn more than Rs. 100,000.00 per annum. The second stratum is likely to earn Rs. 50,000.00 to Rs. 20,000.00. The stratum of itinerant vendors are likely to be in receipt of annual proceeds less than Rs. 15,000.00.

With the exception of trading, the other economic activities that have acquired prominence are clerical pursuits, craft oriented activities and urban labour. As some government offices are to be found in the township a small stratum of white collar workers has made its appearance. Craftsmen too find a ready clientele within the context of a small township. As no industrial manufactures or workshops are located in Ankumbura, the layer of urban workers is not large. There is also a stratum of itinerant workers with no skills or permanent place of work who have been classified as rural workers. One plantation 'line'

(barrack type residential quarter) too comes within the geographical limits of the township and hence a small group of plantation workers too figure in the occupational distribution table.

Among the communities studied, Ankumbura has the smallest group of food stamp receivers. Only 45 per cent of the households are in receipt of these stamps. But according to the income figures less than 3 per cent should be in receipt of food stamps. The reasons for this situation are not different from those given with regard to Dolapihilla.

Ankumbura can be taken as a typical market township in the Kandyan countryside. It is basically a centre of transport and commerce, but its character is highly influenced by the surrounding countryside. Being a small urban centre located in a rural area, it displays some rural characteristics as well.

(E) Commercially oriented rural community sub-system.

Traditional peasant social structures tend to concentrate trading and money lending in certain minority communities whom the peasantry perceives as outsiders. The role of the Jews in Europe in the middle ages, the role of the Armenians in central Asia etc. could be cited as examples. In India, the caste system provided a solution to this problem by giving rise to commercial castes such as the Seths of Gujarat and Chettiars of Tamilnad. The Kandyan caste structure

however, does not possess a commercial caste; hence the tendency has been to allocate the commercial pursuits to other minority communities. The Muslims in the Kandyan areas have engaged in commerce from the days of the kingdom. This strong commercial orientation has also alienated the Muslims from agriculture to a certain degree, though there are many Muslim cultivators. Commercially oriented rural community sub-system attempts to grasp the specificities to be found in such communities.

The basic features of this sub-system may be identified as follows: (i) Trade is the primary traditional economic activity with agriculture and handicraft occupying rather marginal places; (ii) As the bulk of the community has been historically alienated from land, as modernisation proceeds, there is a pronounced tendency to opt out for occupations in the modern sector on the part of those who do not trade or those who regard trade as a supplementary source of income; (iii) A community of traders by definition have to maintain linkages with the peasants, townsmen and plantation workers who form a clientele: hence in this sub-system external linkages are of crucial importance; (iv) Traditional society was homogeneous, kin relations more or less binding the entire community, but as time proceeds, social differentiation occurs among entrepreneurs, small merchants and vendors; (v) Consciousness and ideology as a minority group however keeps the community relations intact inspite of social differentiation.

Among the villages visited and examined Uguressapitiya comes closest to the sub-system outlined above. Nearly 94 per cent of the population of Uguressapitiya are muslims. There are a few Sinhala and Tamil families near the borders of the village. The mosque is the centre of social activity and the community is deeply aware of its ethnic and religious identity.

Table 22.

Land Distribution

	Paddy Land		House & Garden	
	No.	%	No.	%
Landless	164	87.7	81	43.32
Less than 0.25	3	1.6	11	5.88
0.25 - 0.49	4	2.14	44	23.53
0.5 - 0.99	10	5.35	36	19.25
1.0 - 1.99	3	1.6	9	4.81
2.0 - 2.99	3	1.6	4	2.14
3.0 - 3.99	-	-	-	-
4.0 - 4.99	-	-	2	1.07
5 and over	-	-	-	-
TOTAL	187	100.0	187	100.00

The paddy cultivated area in Uguressapitiya is less than 18 acres, in a community consisting of 187 households. This itself emphasizes the fact that paddy cultivation does not occupy a position of importance in the village economy. Nearly 88 per cent

of the households do not own any paddy land. The available paddy acreage is unevenly divided among 23 households, mostly in plots less than one acre. More than half the villagers own residential land, mostly in plots measuring less than one acre. This land is cultivated with spices, coffee and other commercial crops and brings in a supplementary income.

Table 23

Income Distribution : Annual Earnings

	Number	Total Income	%
Less than 1000	-	-	-
1000 - 1999	2	2,464	0.08
2000 - 2999	5	12,432	0.39
3000 - 3999	11	36,990	1.16
4000 - 4999	18	81,658	2.55
5000 - 9999	57	410,046	12.80
10,000 - 19,999	47	642,718	20.08
20,000 - 50,000	34	1,025,575	32.03
50,000 and over	13	989,676	30.91
TOTAL	187	3,201,579	100.00

The proportion of those who earn less than Rs. 4,000.00 per annum in Uguressapitiya is rather small, they amount only to 9 per cent. The majority of the households, over 66 per cent come within the

category of middle income earners with Rs. 4000.00 to Rs. 20,000 income. Slightly over 35 per cent of the income earners come within the high income bracket earning over Rs. 20,000.00 per annum. In comparison to other communities, the affluent stratum in Uguressapitiya is larger, which is probably explained by the prominence of trading as an economic activity. On the other hand, acute income inequality persists in the village; 9 per cent of the income earners receive only 1.6 per cent of the total income, whereas 25 per cent of the income earners receive nearly 63 per cent of the total income. In fact 7 per cent of the income earners at the top end get as much as 31 per cent of the total income. Uguressapitiya therefore, as a community, irrespective of its ethnic and religious homogeneity, is sharply divided into a few very wealthy households, a large group of middle level income earners and a small layer of poverty stricken families.

With 16 per cent of the adults being illiterate Uguressapitiya has a slightly higher proportion of illiterate when compared with the other villages under study. Nearly 8 per cent of the male population are illiterate; among females the proportion is as high as 24 per cent. On the other hand, 27 per cent of the males have obtained G.C.E. (O/L) or a higher qualification, as against 20 per cent among females. In all the other communities studied, the gender differences were quite pronounced among the illiterates, but these differences tended to disappear as one went up the educational ladder. But in this muslim community, not only are the gender differences quite marked at the level of illiterates, but these differences tend to persist to some extent even at the

higher levels. This is probably due to the retention of some aspects of 'Purdah' customs relating to women. In terms of educational attainments, Uguressapitiya is characterised on the one hand by a high illiteracy rate pertaining to women and on the other hand by a fairly sizeable stratum of diploma holders where women too figure. In other words, there is a high degree of inequality in the educational attainments of the population.

Table 24

Educational Levels of Adults over 18

years

	Male		Female		Total	%
	No.	%	No.	%		
Illiterate	29	7.97	87	24.87	116	16.02
No schooling but literate	3	0.82	-	-	3	0.41
Grade 1-5	68	18.68	62	17.22	130	17.96
Grade 6-10	165	45.33	137	38.05	302	41.71
G.C.E. (O/L) or equivalent	67	18.41	55	15.28	122	16.85
G.C.E. (A/L) or equivalent	5	1.37	4	1.1	9	1.24
Tertiary Diploma	24	6.60	14	3.9	38	5.25
Degree	3	0.82	1	0.28	4	0.56
TOTAL	364	100.00	360	100.00	724	100.00

Table 25

Occupational Distribution of the Heads
of Households

	Number	%
Professionals	-	-
White collar	31	16.5
Traders and shopkeepers	50	26.7
Artisans	10	5.3
Landlords	-	-
Mid peasants	6	3.3
Poor peasants	6	3.3
Rural workers	52	27.8
Urban workers	8	4.3
Plantation workers	-	-
Others (Mid-Eastern employment)	22	11.7
Unemployed	2	1.1
TOTAL	187	100.0

The two major occupational groups in Uguressapitiya are the traders and rural workers; together they make up over 54.5 per cent of the gainfully employed heads of households. Just as in Ankumbura, in Uguressapitiya too the traders are

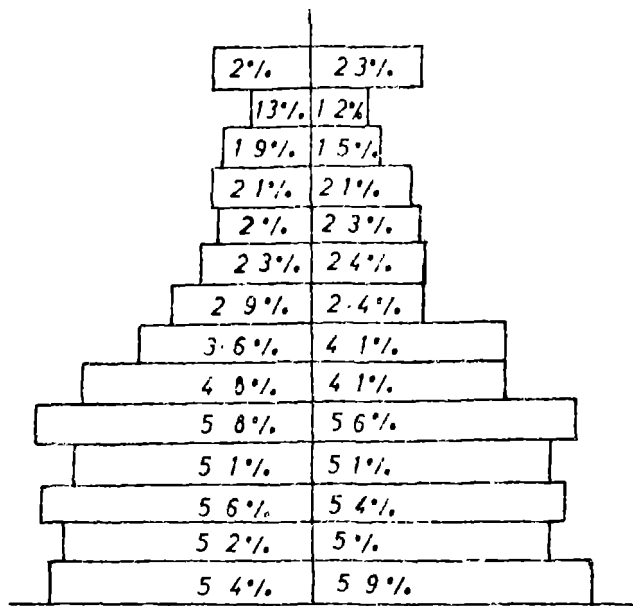
not a homogeneous group. There are entrepreneurs whose capital is invested in a number of diverse economic activities, shopkeepers who possess a permanent place of business and itinerant vendors. Rural workers of Uguressapitiya are primarily non-agricultural workers who are employed in beedi making, road work, quarrying etc. Uguressapitiya has a sizeable number of individuals who are employed in the middle eastern oil producing countries. The majority of them are young women who work as housemaids in these countries. The Arab employers prefer to employ Muslim servants in their domestic context, and thus a totally new avenue of employment was opened up for the young women of Uguressapitiya. The strong traditional values which tend to keep young women at home seems to be breaking down under economic pressure. Housemaidsworking in the Middle Eastern countries earn Rs. 2,000.00 to Rs. 3,000.00 per month and this is an attractive income for a young woman who probably has not been earning any income all her life. But it is young women from the poorest households who take up Middle Eastern employment. Men with technical skills also have found employment in the Middle East. This has definitely increased the levels of income in Uguressapitiya at the middle level, but the households at the top of the income ladder do not derive an income from this source.

Though only 9 per cent of the households receive an income of less than Rs. 4,000.00 per annum, nearly 63 per cent of the households are in receipt of food stamps. The reasons for this are no doubt not different from those advanced to explain this discrepancy in other villages. Five households are

receiving a monthly allowance as social security.

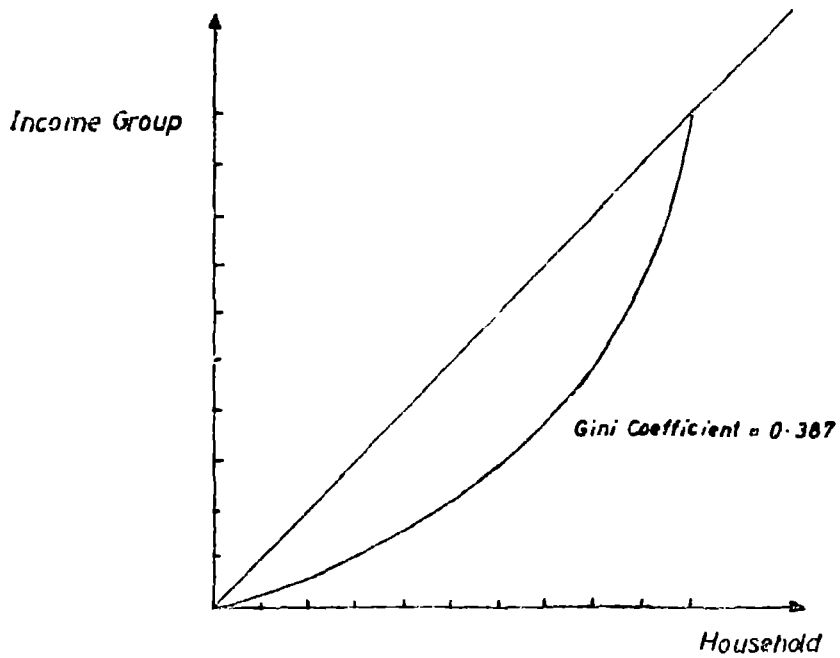
Thus Uguressapitiya is a village, where agriculture is only of marginal importance. Trading is the basis of the economy supplemented by work for wages or salaries. Middle Eastern employment does not totally alter this economic structure, but by bringing in substantial amount of money to hitherto poor families may change the nature of class relations.

The area coming within the geographical limits of Harispattuwa, thus displays a high degree of diversity, though this diversity occurs within the context of a unifying theme. Studying the socio-economic structure at the concrete level in relation to a concept of a sub-systems enables one to grasp the specific variations on this theme. The sub-systems that we identified in Harispattuwa are not necessarily limited to its geographical boundaries, but do possess some general validity in understanding the Kandyan countryside.



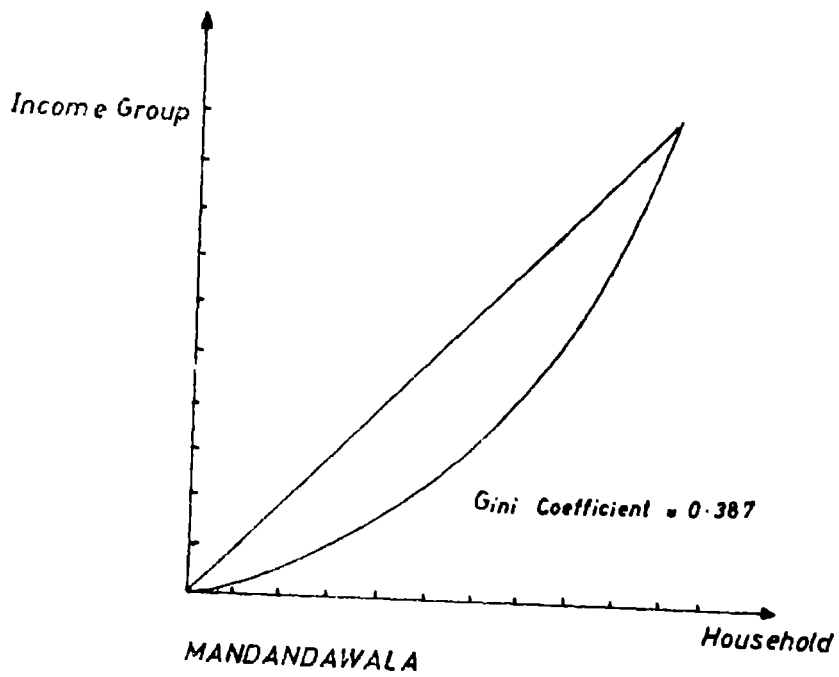
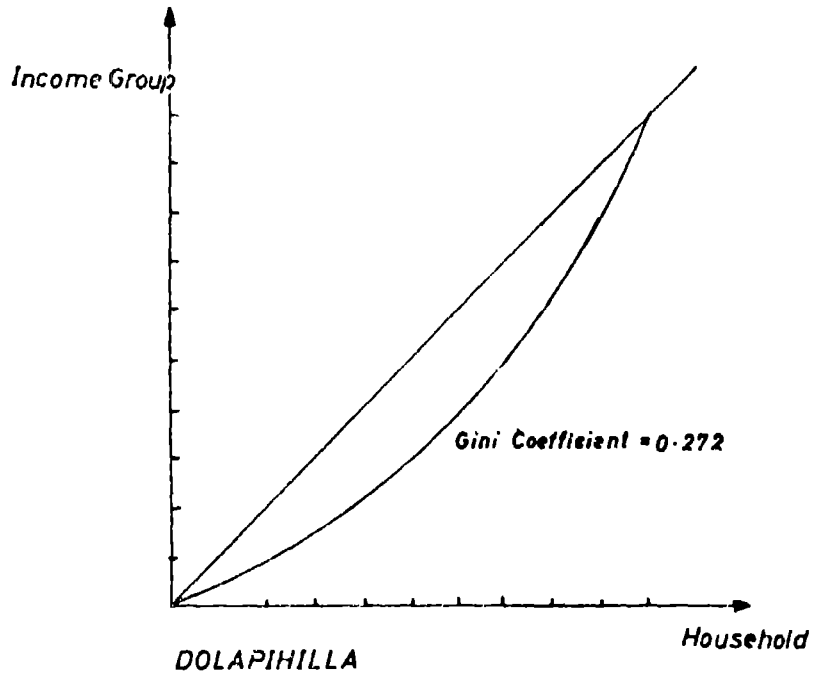
POPULATION PYRAMID OF THE PROJECT AREA

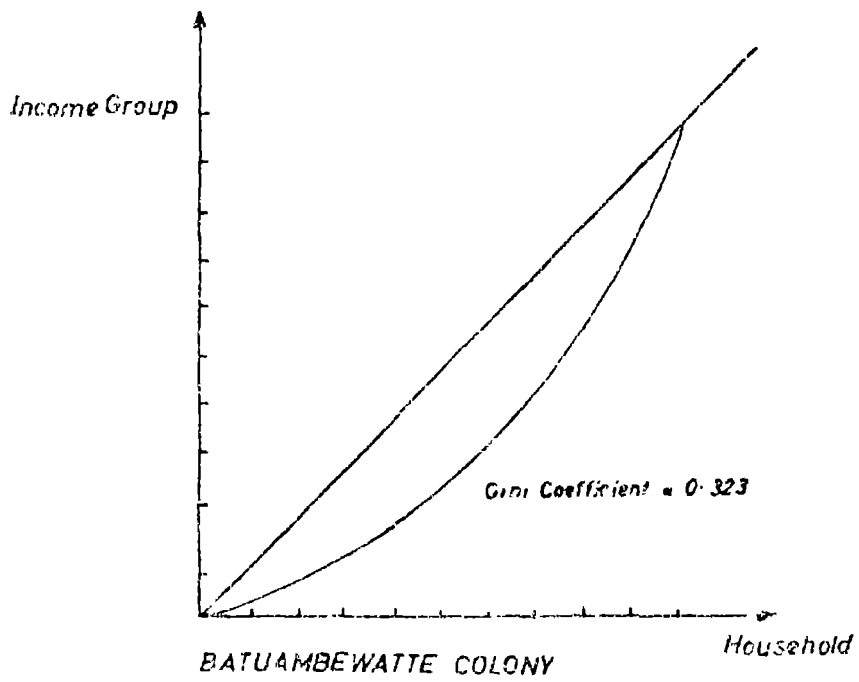
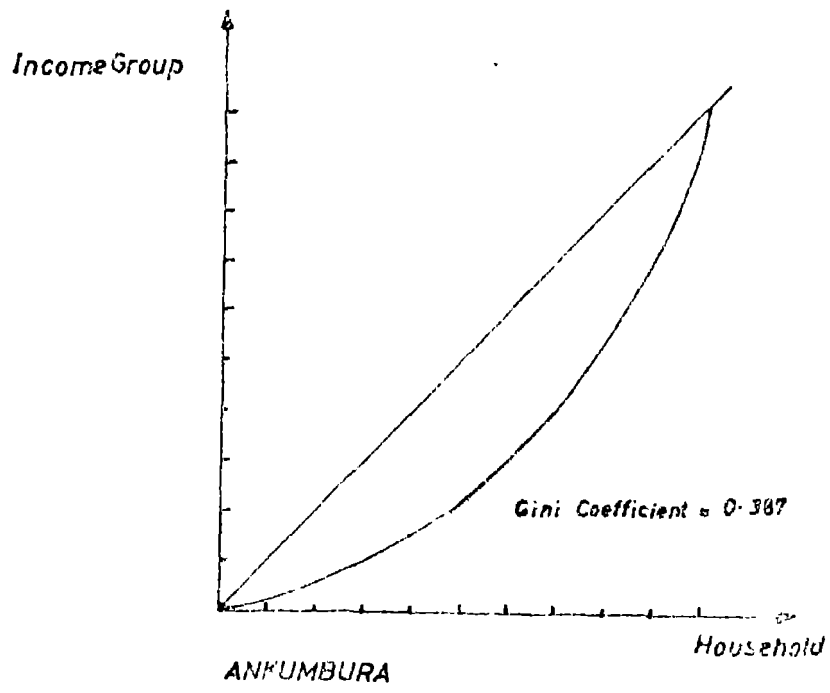
DISTRIBUTION OF INCOME

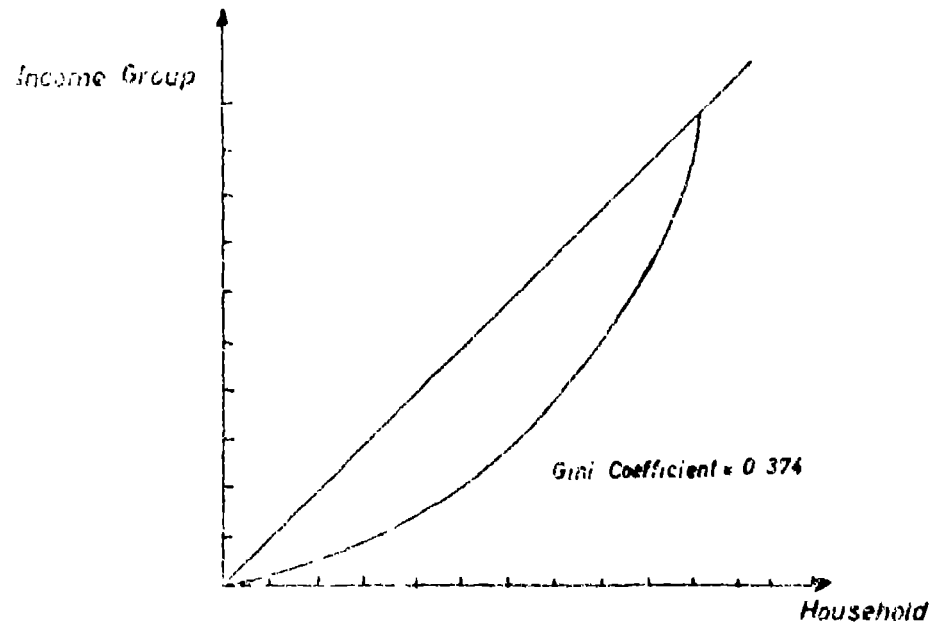


PROJECT AREA

DISTRIBUTION OF INCOME







UGURESSAPITIYA

CHAPTER II

WATER AND RITUAL

1. Traditional Concepts of water

As in many other aspects of Sri Lankan culture, customs, beliefs and rituals associated with water are intimately connected with those of the Indo-Aryan culture. This connection has been further strengthened by the strong influence that the Ayurvedic system of medicine came to exercise over Sri Lankan life. Recourse to Indian concepts is therefore necessary in explaining and understanding Sri Lankan concepts associated with water.

In the Indian tradition, water is one of the most important symbols endowed with spirituality; it is at once the real and imagined source of life.

"He who was born of old was born of water
Right from waters, the soul drew forth
and shaped a person"

(Katha Upanisad IV-6)

"Water is the life of all beings"

(Astānga-hrdaya Samhitā)

At a time when the process of rain formation was not known, people believed that water was sent from heaven through clouds. These rain clouds were referred to as 'givers of water', jalada. The Vedic god, Varuna, was the rain god and the chief of water - Jalādhipati. Rain and rain clouds were

elevated to a position of divinity. 'May god rain' - devo vassatu or pavassa deva - is a common expression in Pāli. In classical Sinhalese literature clouds are sometimes referred to as devulo or devulā, meaning 'celestial clouds'. In the Sinhalese folk lore this idea is still found in the invocations of gods to rain so as to bring about prosperity. In Sinhalese puzzle poetry, drops of water are personified as harbingers of life and prosperity. These clearly depict the attitude of the common people toward rain, the harbinger of water and also his conception of rain, his reverence and regard for it and his dependence on it.

Water is believed to sustain millions of beings living in it, most of whom are imperceivable. Besides, mythological beings are believed to haunt or live in water. The reverence and regard for water seem to arise firstly from the belief that water is something alive. If, as the Upaniṣad verse reveals, life came out of water, that which gives life should have life. According to Purānas, Siva is associated with water as Jalamūrti and goddesses such as Lakshmi, Rambhā and the sacred Cow, the Celestial Elephant and Horse, are all born of water. According to Sri Lankan beliefs, god Nātha is born of water and Diyasena, the future saviour of the country would be born of water. If a person dies by drowning it is considered a sacrifice taken by the river or tank. Although there is no river worship in Sri Lanka, as in India, the need to placate water by offerings is recognised. Traditions are there where human sacrifices were offered to rivers before constructing large dams.

The Indians, particularly the Jainas were concerned with living beings who dwell in water. For the Jainas a drop of water is a form of worm making it obligatory for them either to boil or strain water before drinking. Ayurvedic texts mention that stagnant, muddy or water from new rain is infested with kīṭa (worms) and people should therefore avoid using them.

The belief in water spirits is universal and our own myths refer to demonic spirits like diya rākus, or goddess Manimekhala who helps those who are marooned in the sea. The malevolent spirits, diya rākus, are supposed to devour humans and other beings. There are devils (yakkhas) who haunt fords, streams, rivers and wells. In Sinhalese mantras (charms) Ṭoṭayakā - devil of fords - and Bilivaddā are two such devils. Ṭoṭayakā or Ṭoṭakadavarayā is believed to possess young women who trespass into his domain and cause sickness which could be overcome only by performance of rituals and offerings of food (pideni).

2. Uses and Qualities of Water

From ancient times diverse views have been current regarding the qualities of water and its beneficial and harmful effects on the human system.

As a substance, water is considered tasteless and colourless. In Sinhalese diya-raha (watery taste) means anything that is devoid of sweet or sour taste; it is actually neutral in taste. However, as against sea water (karadiya) fresh water is considered tasty -

miridāya (miri or mīri - in Sanskrit madhura). In Ayurvedic texts the five bhūtas (earth, water, fire, air and sky) are coupled with the five sense objects.

Earth (<u>Pruthvi</u>)	:	smell (<u>gandha</u>)
Water (<u>āpas</u>)	:	taste (<u>rasa</u>)
Fire (<u>Tejas</u>)	:	form (<u>rūpa</u>)
Air (<u>vāyo</u>)	:	touch (<u>sparsa</u>)
Sky (<u>ākāśa</u>)	:	sound (<u>śabda</u>)

Of the five qualities (heaviness, moisture, sharpness (acidity, coarseness and lightness) water is associated with moisture, oiliness and softness (snigdha). In relation to other subjects, water is believed to give tastes like sweet, sour, saline, pungent, bitter and astringent. Of these sweet (madhura) is a combination of earth + water (bhumi-jala). From the point of view of taste and virtue (rasaguna) water is considered dense (gāndra), fluid (drava), cool (śīta), dull or tardy (manda), moving (sara), soft (mrdu) and lubricious (picchila).

These varied qualities of water are alluded to by the Buddhists in their pujās where water is offered to the Buddha: "May you the Noble lord, the Buddha, accept this water of good smell, cool, pure, pleasant, tasty and wholeness".

Water in its pristine form is believed to be found in rain water. Yogārnava a Sinhalese text on Ayurveda (13th century) gives an authoritative view of water in the natural state.

"Of all waters, rain water is supreme. It is light, dispenses dislike for food, works against the three humours (bile, phlegm and wind). It becomes adulterated by association with land, wells, etc. Of these river water increases wind; it is not soft, it is gross. The lake (vii) water is sweet and light; tank (vau) water dispels phlegm and wind; the pond water enhances wind; water in the stone pockets (kem) increases appetite and is coarse. Water in the stream and that of water-falls is light and destroys phlegm, counters bile. The water that comes washing down rocks and those of natural rock kettles may cause heart ailments, head ailments and goitres (gala ganda). As the water of the first rains is contaminated by coming into contact with leaves and insects it causes ailments such as cough, asthma, purging, humidity, etc. Water contaminated by worms, dirt and moss and also water that is not exposed to the rays of the sun and moon should not be used".

In Susruta Samhitā three kinds of drinks are distinguished. Those that are (1) invariably beneficial, (2) harmful and (3) variable in effect. Water falls into the first category except in the case of certain ailments where it is definitely believed to be harmful.

Apart from other qualities the curative uses of water are clearly defined in the Ayurvedic texts. Water is taken either cold, hot or after cooling depending on the ailment. Yogārnava prescribes that neither hot, cold, nor water from different sources should be mixed before drinking. Hot water,

according to Sārnagadhara Samhitā is water boiled to varying proportions ranging from 1/8 - 3/4. Hot water taken during the night is believed to alleviate ailments caused by bile, dyspeptic flatulance, cough, asphyxia and indigestion. According to Astanga Hrdaya, hot water is supposed to clean urine, make the voice soft. It is prescribed for hiccups, indigestion, wind and humour, fever, cough, constipation, sinus, asthma and vomiting. After cooling boiled water controls phlegm and is generally considered to have curative effects on ailments caused by the three humours. Cold water eliminates intoxications, fatigue, swooning, vomiting, sweating, tiredness, faintishness, thirst, heat and sanguinous bile. (rakta pitta).

Most authors maintain that water when taken while eating makes a person strong and if taken after meals makes a person bulky. Yogārnava for instance mentions that water should not be taken at night but other works are quite liberal on this. Susruta maintains that water either hot or cold should not be drunk after taking bee honey. Astānga Hrdaya observes that those who suffer from gastrics, glandular enlargements, jaundice, corpulence, dysentery, piles, malnutrition (grabani) and tumours should not drink water in excess but in small quantities to quench their thirst.

3.Purification of Water

Apart from boiling other ways of making water pure for drinking were known. There was the practice of having a layer of sand and char-coal in wells as a method of filtering of water. People also believed that roots of certain trees like kumbuk, arecanut, ketaki and bamboo would purify water. Use of water strainers has always been popular. Buddhist monks were required to strain water before using and the strainer forms one of the eight basic requirements of the bhikkhu even today. Among the people in the Dry Zone where water is scarce igini seeds were used to clean muddy water. Susruta mentions that ingini seeds, gomeda gems, lotus roots, roots of moss, clean cloth, pearls and gems can be used to clean water.

People believe that the purest water from any land source can be obtained only in the early hours of the morning, and Susruta says that the best qualities of water, coolness and purity, are found only at this time.

4.Sources of Water

Apart from rain water which has to be collected before it falls on earth there are twelve sources of water according to Susruta. They are: (1) Wells, (2) rivers, (3) lakes, (4) ponds, (5) fountains, (6) waterfalls, (7) cavities, (8) tanks, (9) fields, (10) water holes, (11) scattered water, (12) sea. Construction of wells (Kūpa sāstra) form one of the sixty four crafts mentioned in classical literature.

If the water source for a well is not known sooth-sayers were consulted, to predict the terrain, direction, distance and the relative depth of the water source. The earth is believed to have nerves of water with a central nerve (Maha sirā) which had to be discovered as the source of water for the well. According to Kūpa Sāstra even if water is reached close to the surface an ideal well has to be over 10 feet deep. Different names were given to wells according to their depth, eg. srimukha, kūpa, dundubhi. Digging the well is carried out at an auspicious hour prescribed by an astrologer. A minor ritual is performed invoking gods to protect the diggers and to guarantee the success in striking water. Offerings are made to Bahiravas, overlords of the earth, to obtain their permission. Four lamps are lighted in the four corners of the plot of land. Such rituals are more rigidly followed in areas where ground water sources are rare.

Wells are of different sizes and shapes - Ūrā lin or Ūru lin is a distinct device of making wells in marshy areas or along streams. Cylinders of clay or wood are inserted into the interior of the well to avoid sides caving in and also prevent surface drainage. It has the added advantage of having a filtering effect. Such wells are mentioned since the 4th century A.D. and were known as ura kabal ebū lin. In Tamil Ūrai means earthen pots or cylinders through which water could seep. During the 13th century King Parakramabahu II is supposed to have got 75000 wells of this type constructed. Kurunegala Vistaraya refers to 400 ūrā wells in Panduvasnuwara and 300 in Kandy.

Methods of cleaning wells are also referred to in old texts. After the water is emptied the dirt and sediments should be removed. Then the sides of the well should be cleaned with water and once this water is also removed ash made by burning of the barks of palol (*Stereospermum suaveolens*), sī (sandal wood) asun (*Terminalia alata tomentosa*), telemhu (*Sterculia foetida*), asala (*Cassia fistula*) and kumbuk (*Terminalia fibra*) should be applied inside the well. This too has to be washed with the new water of the well and emptied again.

5. Water and Cultural Symbolism

Symbolism of water finds expression in the realm of art, omens and dreams. Of the artistic symbols one of the most enduring is the pun kalasa (water pot) which generally adorns entrances to important buildings in ancient Sinhalese architecture. In all ceremonies, including marriage, water pot occupies an important place symbolising prosperity which is further emphasised by having an ear of paddy, lotuses or coconut flowers in the pot.

In the scheme of good or bad omen in traditional beliefs, a pot of water is considered auspicious as against an empty pot which is a bad omen. Success of a mission, a journey or a new enterprise will be assumed if the first by-passer on the way happens to carry a pot full of water. Similarly, a drizzle is a good omen which fore-tells success.

Texts dealing with interpretations of dreams and Avurvedic works hold the view that seeing oceans and river full of clear water in dreams fore-tells good luck while seeing muddy or dirty water portends ill luck. The popular story where Queen Mahamaya dreamt that she was taken to the mythical Anavatapta lake and was bathed by four virgin damsels was the way in which the conception of Siddharta the Buddha aspirant - was foretold. Even seeing turbulent water is considered lucky provided it is clean. For those suffering from certain diseases, such as dysentery, diabetes, dreaming themselves drinking water or floating in water amounts to bad omens. The intimate connection between water and prosperity is symbolised in the Diyasena myth where the legendary future hero and saviour of Sri Lanka is destined to be born out of water; hence his name Diyasena.

Generally the concept of land is conceived by people in contrast with water. This has led to the demarcation of land boundaries by expanses of water, such as oceans, seas, rivers, streams, lakes, ponds, etc. Such demarcation is not only confined to the physical boundaries but also serves as the demarcation of cultures and communities. In village private property is demarcated often by water sources. A different kind of demarcation of boundary exists in Buddhist monastic practices, where the monks mark off a temporary boundary at a ford to conduct their extremely sacred monastic rituals, vinaya kammās, such as higher ordination. The monks who take part in the ceremony congregate in the water of a river or lake and one of them throws water right around the

gathered monks making an imaginary boundary within which all those who take part should stay until the end. None is allowed to trespass the boundary so that the purity sanctity and decorum of the ceremony may be maintained. Those who take part in it are already ritually purified by bathing. The boundary demarcated by water throwing, udakukkhepa sima, thus symbolises the holiest situation imaginable. Presently this ceremony is followed by only some sects among the Buddhist monks, those who do follow have built permanent structures.

6. Ritual Purification

Water is undoubtedly the universal purifier, both actual and ritual. In all religious ritual bathing is done before undertaking sacred activity to cleanse oneself physically as well as to remove contagion due to ritual pollution. For the Hindus bathing or immersing in sanctified water amounts to cleansing oneself of the sins he has committed. Buddhism does not give such meaning to ritual bathing. In Buddhist rituals water is associated more with purity, fertility and prosperity.

Apart from the images and precincts of gods even religious functions like chanting Pirith are considered sacred and are vested with anubhas - supernatural power. Exposure of these to polluted conditions amounts to loss of anubhas. If mortals are to approach these objects or engage in sacred activity they should be clean or free of kili. The officiating priests at devalas must bathe before performing rituals. People may enter devala premises

without bathing, but those considered ritually polluted should not enter the inner chamber.

Ritual cleaning is referred to as Pē venava which in Sinhalese has connotations going beyond mere getting rid of bodily defilements. It amounts to the reaching of a state of physical and mental purity to be sustained until the end of the sacred act. This attitude is sanctified by bathing. Bathing or washing before religious performances and worship is common in Buddhism, Hinduism and Islam. Among the Buddhists such purification is associated more with devalas than with temples. This apparently indicate the influence of Hinduism where ritual bathing is rigidly adhered to. Most Hindu Kovils have a well in the premises and worshippers are expected to bathe on Tuesdays and Fridays in particular, before going for worship. These two days significantly are avoided by the Sinhalese for bathing as it is believed to cause illness. Deepavali is an important Hindu festival symbolising a ritual bath after applying oil on the head at an auspicious time.

Ritual bathing is an essential part of certain religious performances and pilgrimages, for instance at Kataragama, the abode of god Skanda and at Sri Pada, the peak where the foot-print of the Buddha is believed to exist. Those who make vows at these places wash their coins in the waters of the Menik Ganga and Sita Gangula respectively.

Islamic ritual purification lays emphasis on personal hygiene. Purification by bathing is

compulsory, for instance after intercourse or menstruation, when contaminated with faeces or urine or when a person has had physical contact with a dog or pig. Before Muslim prayer, normally five times a day, washing of the face, hands upto the elbow and the legs upto the ankle is compulsory. For this purpose the Mosque provide a pond or tank the minimum size of which is laid down as $2\frac{1}{4}$ x $2\frac{1}{4}$ x $2\frac{1}{4}$ feet. The water in these should be emptied and refilled periodically.

Purification by bathing on every Friday or on Ramazan and Hadji festival days is optional unless a person has been subjected to pollution. The stress on personal cleanliness is evident in numerous regulations such as that one should bathe after heavy perspiration and wash the hands before and after meals.

Islam, as a religion originating in a desert environment, also treats water as a scarce resource and prohibits its waste and sets limits on the quantity of water used. Immersing once in a river is considered sufficient for purposes of ritual purification. Washing of body more than three times a day is prohibited and there are strong strictures on pollution of water.

Nānumura (bathing) performed on Wednesdays for the Tooth Relic at the Daladā Māligāwa is an elaborate ritual. The officiating monk bathe, don new robes and the casket containing the relic is bathed symbolically by holding a mirror in front and washing the reflection of the casket. On this day all utensils used for the Buddha-pūjā (offerings to the Buddha) are also washed with specially prepared water

called hola-pan. Washing of images including that of the Buddha was an ancient custom. Such ritual as well as immersing of images in water are meant to dispel famine, pestilence and drought and more significantly to reduce rain. Some Buddhist parittas like Vahi Pirita are specifically intended to induce rain.

An important ritual among the Buddhists, using water, is the Bodhi pooja where scented water is sprinkled around the Bodhi tree while performing pradakshina (walking around the Bodhi clockwise). This ritual is expected to avert calamities, cure illnesses or offset impending bad luck caused by planetary forces or evil spirits and vouch health, prosperity and happiness. This ritual has now reached such importance that it is performed to bring about prosperity to the whole nation.

In annual festivals - peraheras - associated with devalas throughout the country the concluding ceremony is called diya kepima (water cutting) which symbolically is a prosperity ritual. As it is performed during the Daladā Perahera in Kandy, the officiating dignitary - Basnayake Nilame - goes in procession during the early hours of the morning of the last day of the Perahera to a particular place in the Mahaweli river carrying the vessel of water that has been collected during the previous year. This water is poured into the river and a new vessel of water is collected from the spot where the Basnayake Nilame 'cuts' the water with a ceremonial sword. This water is taken in procession to the Ganesa Temple and is kept until next year. If this water dries up it is

taken as a bad omen particularly of impending drought. People bathe at the spot of water 'cutting' as they believe that diseases can be cured by doing so. The ceremony originated as a fertility ritual associated with water. God Indra (god of rain) is believed to have slain the mythical serpent, ahi, by striking the water with his weapon, the thunderbolt, and released water for the benefit of mankind.

Dala Perahera commences with invoking of God Indra (kap situvina) and the ceremony ends with the ritual associated with water.

Similarly, many rituals associated with Buddhism appear to have originated with fertility cults. Poson full-moon festival for instance was originally intended for pleasing of God Indra for timely rain. The Sacred Bo-tree at Anuradhapura is believed to have rain producing powers and sprinkling the Bo tree with water is intended to invoke rain. The Tooth Relic itself is closely associated with fertility cults, as it is endowed with rain making powers. In the past the Relic was taken out accompanied with chanting Pirit during severe droughts, and even today it is believed that exposition of the Relic will result in rain.

Most Buddhist temples have annual pirit ceremonies. Pirit is believed to have originated at a time of severe drought, famine and of pestilence caused by disease and evil spirits in the ancient city of Visālā. The Buddha himself followed by bhikkhus travelled in the affected areas chanting pirit and sprinkling chanted water and freed the city of all causes of affliction. Since then the ceremony was

performed throughout the centuries for a variety of purposes ranging from ensuring good health, success in new ventures and protection from all kinds of evil as well as to induce rain during times of drought.

Pirit ceremony is generally performed inside a specially constructed chamber where bhikkus chant sutras from Buddhist texts, seated round a pot of water, taken from a new or specially dug well, with a white thread with one end attached to the pot and the rest held by the chanting bhikkus and the devotees who listen. After the chanting, which may last from one hour to several days, the water, which is believed to be imbued with anuhas, supernatural quantities capable of alleviating personal as well as social afflictions, is sprinkled where necessary and given to the devotees for drinking and applying on their faces.

Some parittas like Angulimāla, Cakka, Vattaka and Jalanandana are used as healing charms. Angulimāla paritta is chanted and the water is applied on the abdomen of women in labour to induce safe delivery. Suttas like Girimananda and Bojjhanga are believed to have special curative effects. Atanatiya sutta is particularly intended for protection against evil spirits.

Most of the traditional games in Sri Lanka are also associated with fertility cults. Kohomba kankariya, Gammaduwa and Pānmaduwa are performed to ensure good weather and protection from pestilences associated with drought. Polgasima and Ankeliya

associated with goddess Pattini are performed during droughts and pestilences.

7. Water and Social Customs

In numerous social customs water is used as a symbol of prosperity. In puberty rites the ceremonial bath is prepared after consulting the astrologers so that all ills may be alleviated and prosperity may ensue. The water used is often prepared with an addition of medicinal herbs and after the bath is over the new clay pot used is broken. When the girl comes into the house after the bath she is made to look at her reflection in a clay (koraha) dish of water.

At the wedding ceremony the bride is given away with ata pan vatkirima (pouring water over the two thumbs that are joined), by an elderly relative. This symbolises union, fertility and wish of prosperity as in the ancient custom of donation of lands where water is poured over the joined hands of the giver and the receiver.

According to Hindu custom the day after the wedding ceremony a pot of saffron mixed water is placed near the poruwa (pedestal on which the couple are ceremonially married) and household articles are placed inside. The couple are asked to put in their hands together and get one article. This is the first physical contact between the two who have been kept apart so far. They then splash the saffron water on each other and then bathe.

Giving a drop of water to a dying man is considered not only meritorious, but, according to Hindu custom of jala kriya an act which will make the dead prosper in the next birth. Even the Buddhist burial custom of pan vadīma appear to be an ancient prosperity cult. It means offering of water to the dead that he may prosper in his new life, but later transferred into a Buddhist ritual of conferring of merit. As it is practised today, prior to burial or cremation a bowl is filled with water until it overflows while the bhikkus chant gathas to express the wish that the departed will receive merit from the living in the same way as the water falls into the high ground will reach lower areas even if he is born in a lower plane will accrue the benefits of conferred merits. Similar transfer of merit is done after giving of alms to the bhikkus.

People of all religions wash the corpse before burial. The Muslims bathe the corpse immediately after death and before burial. Among Buddhists and Hindus those who attend funerals purify themselves by bathing or rubbing a piece of lime or citrus leaves on the hands. In the case of the Hindus the daughter of the deceased carries a pot of water in front of the corpse to the nearest inter-section on the road and from thereon the eldest son takes it over upto the grave-side. There his head is shaved and made to circle the grave thrice carrying the pot of water before it is finally broken.

A newly married couple is offered a glass of water by the mother of the bride or an elderly married woman with children as an expression of prosperity and fertility. An important New Year custom among the

Sinhalese and Tamils is bathing at an auspicious time after applying a specially prepared mixture of oil and herbs.

8. Water and Charms

Water plays an important role in various types of charms and exorcism. In charms water is considered to absorb qualities desired by the charmer to bring beneficial or harmful effects to the recipient of the charm. The water has to be uncontaminated - no-ndul - for the charm to be effective. Thus it is collected early morning unseen by outsiders. As in the case of pirith, mantras are chanted over the pot of water with various objects in it, sometimes over hundred times to make the charm more effective. This water is sprinkled in the houses or on persons afflicted to free them of effects of evil eye or evil mouth or of harassments of evil spirits. Charmed water is used for various purposes even to control flies, insects and rats that destroy crops and to increase the yield.

CHAPTER III

CURRENT PATTERN OF WATER USE

1. General

Among the countries classified by the United Nations the 'Most Seriously Affected' on the basis of economic conditions Sri Lanka ranks among the leading 5 per cent in the social indicators of,

- (i) infant mortality rate
- (ii) life expectancy
- (iii) percentage of literate adults.

Sri Lanka also ranks among the leading third in percentage of children in primary school and per capita calory supply as percentage of requirement. However, as regards domestic water supply and environmental sanitation Sri Lanka is far behind other least developed countries. In fact, Sri Lanka ranks among the worst third of the Most Seriously Affected and Least Developed Countries in the percentage of the total population with access to safe sources of drinking water supplies.

2. Sources and Quality

In Sri Lanka, according to 1971 census, out of 135 urban communities, only 66 had piped water systems. Of this urban population only 69 per cent had access to pipe water. In rural areas only 5 per cent of the people were served with piped water systems and 82 per cent depended on wells. The balance of 13 per

cent obtained their drinking water supplies directly from rivers, tanks, streams, canals and other sources. In some Dry Zone districts this category was as high as 47 per cent.

In Sri Lanka, wells form the predominant source of water with approximately over 1 million private and 19,000 public rural wells. 40 per cent of these public wells are used exclusively for drinking and 30 per cent exclusively for bathing.

Ecological transformation during the last two centuries appear to have given rise to problem of water shortage in the Kandyan areas. Knox while observing that the dry northern parts of the country were 'somewhat sickly' due to difficulties of obtaining water and its brackish nature commented that in the Kandyan areas "The valleys between their Hills are many of them quagmires, and most of them full of brave springs of pure water: Which watery Valleys are the best sort of Land for their Corn . . ." Though he speaks of seasonal variations there was enough water for cultivation throughout the year. "Water at the top of the Hills falling downward are let into these Allies, and so successfully running out of one into another, water all". (Knox pp. 4, 12).

Kandy comes last of the five most needy districts in regard to rural water supplies as identified in the Decade Plan. Within the district there is considerable diversity in regard to water availability, sources and services. Wells, as in

the rest of the country, form the main source of supply with an approximate total of 10,700. Of this 25 per cent are public and 75 per cent are privately owned. One third of the total number of wells dry up in the dry season. Piped services, both urban and rural form the other important source of water. Two major schemes serve Kandy and Peradeniya in addition to several medium-sized schemes serving smaller urban communities. Rural and plantation areas are served with 120 small piped water schemes.

Harispattuwa, as far as the availability of water is concerned, is one of the more fortunate area in the Kandy district with, however, a serious problem of scarcity during certain periods of the year. The total number of wells in Harispattuwa amounts to 1110 with 780 privately and 330 publicly owned. Of these 460 dry up during the dry season. On this basis there is on the average one well for about 215 persons even during the dry season. In addition, six Village Council piped water supply schemes cater to about 3650 people in certain high population density areas - Ankumbura, Alawatugoda, Bokkawala, Hedeniya and Kulugamma.

The quality aspects of the existing water supply are highly variable. According to bacteriological analyses of UNICEF assisted rural piped water supply schemes in Sri Lanka, 85 per cent of the tested water samples were unsatisfactory. In regard to urban piped water supply systems the W.H.O. tests reveal that no scheme provides sufficiently safe water.

Samples from 19 well or minor ground water supply systems tested by the NWSDB in 1980 in the Project area shows that water in most of these were good in physical and chemical quality but bacteriologically polluted. The tests also show that the water is acidic, containing much free carbon dioxide, fluorides but little iron, manganese and organic matter.

The hygienic quality of the samples is poor. Water from four wells tested bacteriologically were clearly polluted. A sample taken from a depth of 5-6 meters in a paddy field had clear marks of pollution especially high ammonium content.

Most of the existing wells are uncovered and pollution is largely due to,

- (i) faulty construction
- (ii) washing and bathing habits of the people.
- (iii) lack of proper waste disposal methods.

Out of the 24 wells tested by the Finnish Consultants only one was found to be satisfactorily protected against contamination. Normal construction is brick or stone and masonry plastered, but often the plaster is flaked off. The vast majority of wells are shallow, unlined holes located in an around paddy fields and only 1.5-6 meters in depth. The depth generally does not reach upto the bed rock.

Harispattuwa has five piped water supply schemes.

- (i) Ankumbura scheme serves a population of 300 mainly through public stand posts and with a few house connections. The scheme depends for its supplies on two reservoirs constructed by damming two small streams. Water is supplied by gravity flow through a common distribution network.
- (ii) Alawatugoda scheme serves a total population of 1000; 300 from 9 stand posts and 200 from 13 house connections. Supply is obtained by damming a small stream and supplemented by two spring wells. One of these wells dries up during the dry periods.
- (iii) Bokkawala scheme serves 250 people with 200 getting their supplies from 3 stand posts and the rest from 5 house connections. The source is a spring well which supplies a reservoir connected to the distribution network.
- (iv) Hedeniya scheme serves 1300 people and, apart from one house connection to the Co-operative Stores, the rest of the population uses 18 stand posts, out of which only 10 are functioning. The source is a spring well situated in a paddy field surrounded by hills.

- (v) Kulugammana has two separate small schemes. The first depends on a spring well and serves only the temple and a school - a total population of about 600. The second serves 200 people through four stand posts and the source is a spring well.

All these schemes are based on gravity flow. Except one well at Kulugammana which is covered with a concrete slab all other intakes are open, the pools especially are subjected to contamination through surface run off water. Four factors make these schemes unsatisfactory

- (i) Inadequacy of supply during the dry season
- (ii) Defective planning
- (iii) Inadequate maintenance
- (iv) Non availability of treatment arrangement.

The tests conducted by the Finnish Consultants of all these schemes show that water is not of good quality except that in the Hedeniya scheme.

Spouts form the other important source of water for drinking, bathing and washing in Harispattuwa. Of the five locations under study at Ankumbura and Dolapihilla 23 per cent and 6 per cent of the people respectively depend on this source. Spouts or pillias are of various types but generally those used for drinking are constructed by building a cement enclosure to retain water from a spring and with an outlet pipe. These are invariably open for pollution as there are no protection against surface drainage.

Rivers and streams constitute the next important source of water for bathing, washing and washing of clothes. The Mahaweli flowing along the southern fringe of the Project area contains turbid and polluted water but, compared to the water of the Pinga Oya, and its tributaries spread out in the entire Project area, its water quality is better. The main tributaries of Pinga Oya are Konakalagala Oya, Ankumbura Oya and Hunan Oya. Hydrological and meteorological data are not available for the Pinga Oya. But during most parts of the year the flow is too small to supply the water needs of Harispattuwa without storage tanks. The water in these streams, though good in physical and chemical quality, is unsafe hygienically due to presence of settlements and intensive cultivation in the catchment area causing pollution from domestic and animal waste. The streams are also used in certain places as garbage dumps and outlets for domestic and hospital waste water. Nowhere in the locations covered by the intensive survey is this water used for drinking.

3. Harispattuwa - Pattern of Water Use

In all aspects of water use traditional pattern still remains virtually unchanged in Harispattuwa with the well being the main source of supply and the clay pot carried by women remaining the main vessel used for fetching and storage of water. Out of the five locations studied, only Ankumbura, as a rural town with a small piped water system, differs from this pattern. (Tables 1 and 2).

Table 1

Sources of Water - Drinking and Cooking

Type of Source	Ankumbura		Batuambe		Dolapihilla		Mandandawala		Uguresapitiya		Total	
	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%
Well	3	7.7	17	100.0	20	58.8	20	100.0	34	100.0	94	65.28
Spout	8	20.5	-	-	3	8.8	-	-	-	-	11	7.64
Public Water Scheme												
(i) House connections	6	15.4	-	-	-	-	-	-	-	-	28	19.44
(ii) Stand post	22	56.4	-	-	-	-	-	-	-	-	-	-
Private Piped Scheme	-	-	-	-	1	2.9	-	-	-	-	1	0.69
Rivers and streams	-	-	-	-	-	-	-	-	-	-	-	-
New Wells	-	-	-	-	10	29.4	-	-	-	-	10	6.94
	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

Table 2

Sources of Water : Washing of Utensils and Minor Body Washes

Type of Source	Ankumbura		Batuanbe		Dolapihilla		Mandandawala		Uguresapattiya		Total	
	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%	No. of house-holds	%
Well	7	17.9	17	100.0	20	58.82	20	100.0	34	100.9	98	68.06
Spout	9	23.1	-	-	3	8.82	-	-	-	-	12	8.33
Public Water Scheme												
i. House connections	9	23.1	-	-	-	-	-	-	-	-	23	15.97
ii. Stand post	14	35.9	-	-	-	-	-	-	-	-	-	-
Private Piped Scheme	-	-	-	-	1	2.94	-	-	-	-	1	0.69
Rivers and Streams	-	-	-	-	2	5.88	-	-	-	-	2	1.39
New Wells	-	-	-	-	8	23.53	-	-	-	-	8	5.56
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

Functional variation between wells is not very rigid. For purposes of drinking, cooking and minor body washes same wells are often used. These three functions are also considered inter-related in that generally the same fetching vessels and containers are used for all three purposes. For bathing separate wells are generally used, however, in the case of a privately owned drinking well, but used in common, the owner may retain the privilege of using it for both drinking and bathing.

Water from a good well, sufficiently deep and properly constructed is generally preferred for drinking purposes. Whenever conveniently available spouts are preferred where water can be collected directly from the spring. But, generally, where the water from the spouts is collected in ponds which are open to pollution and are also insufficiently maintained they are considered unsatisfactory sources of drinking water.

Most villagers desire to have their own private wells, though they may not debar the neighbours from using them in times of difficulty. A properly constructed well is beyond the means of most villagers and as a result the popular drinking wells generally belong to men of means in the village who in times of difficulty may expect preferential rights. Drinking wells, though privately owned are generally open to public use as concepts of merit and charity prevalent among villagers clearly lay down that drinking water should never be denied to the needy and that such deeds are highly meritorious. There are wells constructed by those with sufficient means for public use for the specific purpose of acquiring

merit or transferring merit to their departed parents or relatives. Beliefs are also prevalent that exclusive use of wells is also undesirable as they may be used as a means to poison the owners.

As in the case of drinking water, the well forms the principal source of water for bathing and washing of clothes. For these purposes generally common sources are used. Besides, bathing and washing of clothes are often done at the same time. The Project area is adequately served with streams and spouts though the supply in most may not be sufficient for bathing during the dry seasons. Of the five locations only Ankumbura is served with the four major alternative sources, wells, spouts, streams and piped water. The first preference here is the spout but this may not be considered the typical pattern. Here the piped water supply is extremely defective with only a few house connections. The stream at this location is badly polluted and those who use this source for bathing and washing of clothes have to go a considerable distance upstream. The general pattern in the five locations with 66.7 per cent using wells and 15.3 per cent using rivers and streams and 11.8 per cent using spouts appear to be more typical of Harispattuwa. The river and streams form the only alternative during the dry months for most people and during normal times the convenience both for bathing and washing of clothes makes it acceptable to a considerable number of people. Although it is commonly known that the streams are polluted in various ways the villagers believe that, as running water, they are sufficiently clean for bathing purposes. (Table 3).

Table 3

Alternative Sources of Water : Bathing

Type of alternative Source	ankumbura		Batuanbe		Dolapihilla		Mandawala		Uguressapitiya		Total No. of House-holds	%
	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%		
Well	1	2.56	7	41.18	-	-	-	-	-	-	8	5.56
Spouts	5	12.82	-	-	1	2.94	7	35.00	6	17.65	19	13.19
Rivers and Streams	-	-	-	-	5	14.71	-	-	3	8.82	8	5.56
Alternative sources not required	33	84.62	10	58.82	28	82.35	13	65.00	25	73.53	109	75.69
TOTAL	39	100.00	17	100.00	34	100.00	20	100.00	34	100.00	144	100.00

The major problem in regard to the supply of water in Harispattuwa is caused by periodic droughts. The water supply is more seriously affected during the January-March than the August-November period. Over 40 per cent of the wells in Harispattuwa dry up during the former period and water in most others become inadequate to meet the regular demand. However, in most villages there are a few perennial wells which supply the basic drinking requirements for a short period. The first response of the people appears to be to change the regular sources of water and to resort to sources that are normally considered unsatisfactory for drinking. During this time people start going to distant wells from very early hours of the morning, to collect their drinking requirements. As a result even in the perennial wells the water supply is exhausted within a few hours. At Batuambe only two out of 17 wells withstand the drought and their water supply is exhausted by 7 a.m. Even at Uguressapitiya the same pattern is noticed in regard to drinking requirements, and for bathing they walk two miles to the Mahaweli Ganga. At both these locations, the last resort of the people is to dig shallow pits in the paddy fields or stream beds for their minimum requirements, however unsatisfactory the quality of water may be.

Even in all five piped water schemes which are fed by streams or spring wells the supply is seriously affected during the dry period. Intermittent supply causes an additional risk of pollution in places like Ankumbura where a section of the supply line is placed

in a drain and is damaged at several places. Ankumbura, Hedeniya, and Alewatugoda which are built-up areas with relatively high density of population face serious difficulties due to the shortage of alternative sources nearby. (Table 4).

The wide variety of wells in Harispattuwa may be categorised under four headings on the basis of (a) style of construction and (b) susceptibility to contamination:

- (1) Wells lined with cement or concrete with a protective wall, and with an apron and drainage facilities permitting little or no contamination from surface drainage or seepage.
- (2) Wells partially lined, with a protective wall but no apron or drainage facilities. This construction provides no protection against seepage of surface water.
- (3) Wells constructed with uncemented stone lining without both a drainage-proof protective wall and an apron. This is susceptible to contamination from surface drainage and seepage.
- (4) Mud Holes and Ūra Kota
Mud holes are shallow unlined pits dug in or around paddy fields. There is generally no protection against outside contamination through surface drainage or seepage. Those in paddy fields are particularly susceptible

Table 4.

Alternative Sources of Water : Drinking and Cooking

Type of Alternative Source	Ankumbura		Batuanbe		Dolapihilla		Mandandawala		Uguressapitiya		Total No. of House-holds	%
	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%	No. of House-holds	%		
Well	3	7.69	14	82.35	4	11.77	9	45.00	12	35.29	42	29.17
Spout	6	15.38	-	-	1	2.94	-	-	-	-	7	4.86
Rivers and Streams	-	-	-	-	-	-	-	-	-	-	-	-
Alternative sources not required	30	76.93	3	17.65	29	85.29	11	55.00	22	64.71	95	65.97
TOTAL	39	100.00	17	100.00	34	100.00	20	100.00	34	100.00	144	100.00

for chemical pollution from fertilizer, weedicides and insecticides. Ūra Kota (a continuation of the traditional method of well construction in low lying muddy areas by inserting tree trunks into a shallow mud hole) provides the effect of a lining but protection against surface contamination is very minimal. (Table 5).

The category (1) by general consensus, represents the ideal type. Due to its cost of construction very few such wells are found in study locations, and these belong to the few rich families or have been constructed with government assistance or by local authorities. Many public wells have fallen into dis-use due to faulty construction or inadequate maintenance. As the accompanying table indicates majority of the wells in the study location belong to categories (2) and (3).

From the villager's point of view the ideal type may not constitute the source of best quality drinking water. According to their criteria even a mud hole may be preferable to a better protected well. Their preferences are determined by traditional concepts of good water.

4. People's Perception of Good Water

Superficially, people's criteria of good water appear to be varied but some of the traditional concepts

Table 5

Type of Wells : Percentage-wise Distribution

Type of Wells	Ankumbura	Batuambe	Delapinjilla	Mandandawala	Uguressapitiya	Total						
Type 1	33.33	11.77	20.00	12.50	20.00	25.00	14.71	33.33	17.02	18.07		
Type 2	-	-	62.50	15.00	41.67	35.00	35.00	17.65	28.57	17.02	39.76	
Type 3	33.33	50.00	47.06	37.50	20.00	41.67	40.00	57.00	23.81	40.83	34.94	
Type 4	33.33	50.00	41.17	-	45.00	4.17	5.00	5.00	17.65	14.29	25.53	7.23

* For description, see p. 122

regarding good water seem to persist unchanged. These concepts are often conditioned, by notions associated with indigenous and Ayurvedic medical systems. The quality of water is judged generally according to sensory perceptions. The popular conception of good water is that it should be (a) clear or colourless (b) odourless (c) tasteless or of neutral taste.

Clearness implies basically that there are no particles in the water, and this quality is expressed by the villagers as pedi diya as against bera diya i.e. turbid water. Water of wells which shows a bluish tinge, obviously due to exposure to the sun and reflection of the sky, is considered good. Odours that are identified as non-acceptable, are e.g. smell of mud (mada ganda), smell of fish (pili/sini ganda). As regards objectionable tastes the views appear to be more specific. Kivul raha meaning taste of hard water, mada raha - taste of mud, pal raha - taste of fermentation, malakada raha - iron taste are among the more prevalent. Ideally, water should be tasteless, but people refer to the taste of water (diya raha) and different qualities of water. Some water is believed to give a satisfying or refreshing taste. One objection to drinking boiled water is that it lacks this satisfying taste. Another desirable taste of water is associated with fresh clay pots, nevum raha, taste of freshness, to the extent that there prevails a tradition of baking the clay pots on a paddy straw fire from time to time to obtain this taste. This is also the method adopted for cleaning of pots.

Exposure to the sun is thought to make the water, particularly in wells, pure. A well which constantly overflows is also rated high in the scale

of acceptance, because constant overspilling is also thought to purify the water. The purest form of water however is spring water, because it is believed that such water is free of impurities.

For bathing, in general, same criteria as for drinking water are applied: that it should be clear, odourless and in addition it should be cool. Traditionally water in wells under kumbuk trees are believed to be cool. Wells that constantly overflow as well as water from spouts, which is also believed to be cool and fresh, are considered good for bathing. With regard to rivers and streams only those that contain water that is clear and which flows fast are considered suitable for bathing. Hard water is avoided wherever possible for bathing as well as for washing of clothes.

5. Ideas of Water Pollution

The well occupies an important place in the daily life of the family and special efforts are made to see that the well is located and maintained properly. The well should not be too close to the latrine and to sheds where animals are kept. It should not be located at an elevation lower than that of the latrine. These beliefs indicate the presence of an idea of pollution through ground seepage. It is also believed that the environment of the well should be clean and pleasant. The surroundings are often regularly swept and sometimes flowers are grown around the well.

Regarding the use of the well there are clear notions of behaviour. Drinking wells are expected to be used exclusively for that purpose. Where wells are used for drinking and bathing, it is an accepted practice that bathers and washers of clothes should draw water from the well to avoid used water draining back into the well. Even unused water should not be allowed to fall back into the well. People believe that the drawing vessel and the rope attached to it could make the water unclean and, therefore, prefer that a separate vessel and rope are maintained for common use. These are sometimes placed on a special wooden stand to prevent them from getting dirty; but this is extremely rare. In common drinking wells where such arrangements are not present, every family feels that the others are using unclean vessels.

Fetching vessels, mainly the clay pots and buckets, are normally washed at the well before collecting water. Often it is done just by rinsing the inside with water and sometimes sand is also used. At home, traditionally, there is a special arrangement to keep water containers particularly when stored in clay pots. A diya messa is constructed with sticks in the back verandah adjacent to the kitchen, about three feet high to avoid getting exposed to dust and dirt. It also makes dispensing of water easier. The vessels are always kept closed often with coconut shells which is also used to draw water from the container.

There are certain strong taboos against pollution of water. Urination, and defaecation and even spitting into wells are unpardonable offences.

Polluting even a stream by these acts is strongly disapproved of. Those who indulge in such acts are traditionally condemned to be born as water snakes.

Wells that are not perennial, need to be cleaned at the end of every drought as dried up wells are considered to collect dirt. Even those that do not dry up completely may require cleaning as the stagnant water becomes unusable. In the case of drinking wells particularly cleaning is considered a man's job but women may participate in the emptying of the well. Once the water is emptied the cleaning of the inside, particularly scraping the sides and removing sediments and decayed material is done by men. The springs of the well are considered almost sacred and people are not supposed to look at the well when the spring is bared as it is believed that it may dry up due to evil eye. It is also customary to put flowers into the cleaned well and the type of flower that is generally used is Retmal (Ixora coccinea) which in exorcist cults are commonly used to repel spirits. Owing to this ritualistic procedure women are not expected to enter the well for cleaning. At Mandandawala elders strongly held this view and even referred to an instance where the springs dried up because of women entering the well to clean it. Bathing wells are generally shallow and though periodically cleaned no ritualistic importance is attached to them. This probably explain the fact that women often clean bathing wells which may involve merely emptying them.

Cleaning wells, as in the case of constructing wells, is considered a meritorious act and communal

participation is generally forthcoming in the more traditional villages. In new settlements, as Batuanbe, where age old customs that used to guide communal activities are not so strong, similar participation for cleaning of wells have been observed to be more difficult. Such participation has to be organized through modern institutionalized means such as siramadana campaigns

6. Consumption of Water

(i) Domestic

"Their common drink is only water: ...
When they drink they touch not the Pot with their mouth, but hold it at a distance, and pour it in ...

They always wash their hands and mouth both before and after they have eaten; but for others to pour the water on their hands is looked upon as an affront. For so they do to them, whom they account not worthy to handle their Water Pot. But when they wash with one hand they pour it themselves upon the other. They are very cleanly both in their bodies and heads, which they do very often wash, and also when they have been at stool they make use of water".

(Knox p. 139)

The principal purposes for which water is used at home are drinking, cooking, washing of utensils, minor body washes and ablutions. The amount of water required for these purposes may vary due to several factors. More than the actual size of the family it is the composition of the family that has a greater bearing on the quantity of water used. Most elderly members go to the well for their morning and afternoon body washes whereas children are not generally sent to the well unless accompanied by an adult. Therefore families with a number of young children and infants tend to consume more water at home. The type of occupation also has a bearing on the consumption pattern. Workers and agricultural labourers always have their evening wash or bath at the place of work or at a convenient well or water course on their way.

Socio-economic differentiation in Harispattuwa have not led to widely different life styles. The wealthy as well as the poorest on the whole depend on the water brought home from the well and stored in containers which are not widely different either. Very few of the wealthy have separate storage tanks. The number of those who have their private domestic water systems is insignificant. Therefore, there is hardly noticeable change in consumption level on the basis of income differentiation. (Table 6).

The correlation between the distance and consumption of water is more evident. Among those who consume more than 15 litres per day per person 75 per cent live within 100 meters of the water source. Out of the sample of 144 families there was only one

Table 6

Per Capita Consumption of Water according to Family Income Level

Income Level	0 - 15 Litres		15 - 25 Litres		25 Litres		Total No of House-holds	%
	No. of House-holds	%	No. of house-holds	%	No. of House-holds	%		
Low	35	72.5	11	22.9	2	4.0	48	100
Middle	43	86.0	6	12.0	1	2.0	50	100
High	33	71.5	10	21.3	3	6.5	46	100
TOTAL	111	77.1	27	18.7	6	4.2	144	100

instance where the distance to the source was over 400 meters and the per capita consumption was over 15 litres.

However, the factor that has to be taken into account in assessing the consumption pattern is the nature of the terrain. The most places the wells are located at the level of paddy fields and the settlements are at a higher elevation. Highly eroded foot paths leading to the wells or the narrow mud banks across paddy fields, which become particularly slippery during rain, are common features in Harispattuwa. The difficulty of carrying a pot and a bucket of water along these steep and eroded foot paths or mud banks constitute a major constraint on domestic consumption. Those living at higher elevations generally visit the well only in the morning and evening and the quantity that can be carried is also considerably less than otherwise. (Table 7).

Measuring consumption where piped services are available is difficult due to the absence of water meters. At Ankumbura although a piped service is available the supply is irregular and most people avoid this source for drinking purposes and use the pihalla.

The amount of water used strictly for drinking purposes is difficult to assess as the water that is carried home and kept in the same clay or aluminium pot is used at least for both drinking and cooking purposes. No effort is generally made to keep the drinking water separately. The more affluent

Table 7

Consumption of Water : Distribution of Households by Per Capita Consumption and Distance

Consumption (In Litres)	1 - 10				10 - 20				20 - 25				25 and above				Total No. of Households	%
	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%	No. of Households	%				
0 - 100	53	61.7	26	25.5	9	8.8	4	4.0	102	100								
100 - 200	16	59.3	07	25.9	3	11.1	1	3.7	27	100								
200 - 300	5	62.5	02	25.0	1	12.5	-	-	8	100								
300 - 400	-	-	-	-	-	-	-	-	-	-								
400 and above	6	85.7	-	-	-	-	1	14.3	7	100								
TOTAL	90	62.5	35	24.3	13	9.0	6	4.2	144	100								

sometimes keep a separate clay vessel or bottles to keep drinking water, particularly when it is boiled.

ii. Bathing

Bathing habits are influenced by three major factors: the climatic pattern, beliefs and concepts associated with traditional medicine and religious rituals and practices.

People tend to bathe more frequently during hot and humid months when body perspiration is generally high, and least during the rainy seasons. As regards the time of the day, they prefer to bathe when the sun is up but not during the hottest hour of the day, which is between 1-2 p.m. Early morning is considered good for bathing for everybody for general fitness. Infants are also bathed before the sun gets hot. Bathing in the evenings is considered unsuitable for health reasons. But this pattern is often interfered by other factors like occupation and household work. Most workers take their daily baths after work in the evening. For housewives the time is determined by their domestic responsibilities. Most of them indicated that they bathe during leisure time. Women generally prefer to bathe when the sun is still hot so that there is time for their long hair to get dry. Evenings are always avoided as wet hair in the night is considered to cause colds, catarrh, etc. But leisure time of most housewives fall between 11.30 and 3.00 p.m. Considering the fact that they take a longer time for bathing, because

it also involves certain amount of washing of clothes or else bathing of children, they do select the time when they enjoy a respite from their domestic chores (Table 8-11). Fifty-two percent infants and invalids bathe at home, and 88 per cent of them use warm water.

Traditionally there are days that are expected to be avoided but such taboos are not strictly adhered to. ^{අලුතින්}Thursdays and Fridays are the two traditionally taboo days for the Sinhalese. But at Dolapihilla only 6 per cent avoid bathing on Friday, and at Ankumbura only 10 per cent avoid bathing on Tuesdays. On the average only 9 per cent avoid both Tuesdays and Fridays. In the case of Hindus there are prescribed days for temple attendance before which bathing is considered essential. 90 per cent of the Muslim males declared that they bathe regularly on Friday as they have to go to the mosque on that day.

Traditionally bathing has been associated with elaborate customs and accompanied with the application of herbal beauty care preparations. More popularly used articles for skin care were the bark of the kokum tree and sandalwood preparations. Lime, either fresh, baked in hot ash or boiled were used to clear the head and hair and is still sometimes practised in the villages. Use of soap has now become universal. Scrubbing the body is commonly done with a polished stone or with fibrous materials.

Most people tend to keep to the same bathing well and the same number of buckets of water which

Table 8

Time Spent on Bathing - Females

Time	Ankumbura		Batuambe		Dolapihilla		Mandandawala		Uguressapitiya			
	No. of house- holds	%	No. of house- holds	%	No. of house- holds	%	No. of house- holds	%	No. of house- holds	%		
Below ½ hour	19	48.7	8	47.1	9	26.5	4	20.0	4	11.7	44	30.6
½ - 1 hour	16	41.0	9	52.9	17	50.0	4	20.0	26	76.5	72	50.0
1 - 1½ hours	3	7.7	-	-	-	-	11	55.0	2	5.9	16	11.1
1½ - 2 hours	1	2.6	-	-	8	23.5	-	-	2	5.9	11	7.6
2 hours & above	-	-	-	-	-	-	1	5.0	-	-	1	0.7
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

Table 9

Time Spent on Bathing : Males

Time	Ankumbura		Batuambe		Dolapihilla		Mandandawala		Uguresapitiya		Total No. of household holds	%
	No. of household holds	%	No. of household holds	%	No. of household holds	%	No. of household holds	%	No. of household holds	%		
Below ½ hour.	31	79.5	16	94.1	23	67.6	20	100.0	22	64.7	112	77.8
½ - 1 hour	8	20.5	-	-	4	11.8	-	-	-	-	12	8.3
1 - 1½ hours	-	-	1	5.9	7	20.6	-	-	12	35.3	20	13.9
1½ - 2 hours	-	-	-	-	-	-	-	-	-	-	-	-
2 hours & above	-	-	-	-	-	-	-	-	-	-	-	-
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

Table 10

Frequency of Bathing : Adults

Frequency	Ankumbura		Batvambe		Dolapihilla		Mandandawala		Uguressapitiya			
	No. of house-holds	%	No. of house-holds	%	No. of house-holds	%	No. of house-holds	%	No. of house-holds	%		
Daily	14	35.9	5	29.4	8	23.5	7	35.0	2	5.9	36	25.0
3-4 times a week	5	12.8	12	70.6	26	76.5	13	65.0	22	64.7	78	54.2
1-2 times a week	20	51.3	-	-	-	-	-	-	10	29.4	30	20.8
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

Table 11

Frequency of Bathing : Children

Frequency	Ankumbura		Batuanbe		Dolapihilla		Mandandawala		Uguressepitiya			
	No. of house-holds	%	No. of house-holds	%	No. of house-holds	%	No. of house-holds	%	No. of house-holds	%		
Daily	18	46.1	2	11.7	16	47.0	9	45.0	3	8.8	48	33.3
3-4 times a week	20	51.4	15	88.3	14	41.3	10	50.0	21	61.8	80	55.6
1-2 times a week	1	2.5	-	-	-	-	-	-	10	29.4	11	7.6
Not responded	-	-	-	-	4	11.7	1	5.0	-	-	5	3.5
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

varies from 30-50. Certain regularity in bathing habits is considered necessary to avoid ailments such as colds and coughs. Traditional medicine is fairly rigid about bathing habits during the period of medication and convalescence. For most ailments bathing or even washing with cold water is strictly prohibited. Because of the persisting influence of theories and perceptions related to diseases traditional medicine, even those under western medical treatment control their bathing habits.

(iii) Social aspects of bathing

Bathing place is traditionally considered a meeting place for village women. This is now a fast dying tradition because of increased mobility in rural society and new avenues of communication village women often meet at working places, schools, market places, dispensaries and clinics. Besides, the pace of life has on the whole increased even in rural society making it difficult for housewives to amuse themselves at the place of bathing. Women are, however, expected to avoid going for baths alone. In the case of unmarried women this custom is stronger. In folk tales the bathing places are often associated with romantic relations among village youth. The tradition of associating bathing places as being haunted by evil spirits and that young girls should not go for bathing alone, particularly at noon and dusk, is still strong.

The study of the prevalent ritual bathing pattern in the Harisopattuwa indicates that bathing associated with religious performances among the Buddhists has declined in importance more than that

associated with social customs. Among them only 5 per cent bathe, and 29 per cent wash before going to the temple. About 30 per cent bathe before going to a devala or attend a thovil.

Muslims in Uguressapitiya appear to adhere more closely to ritual purification associated with religious practices. Ninety per cent of the respondent males declared that they bathe on Fridays apart from washing their hands legs and faces before entering the mosque. Even those who pray five times a day at home admitted to wash before praying. On the day of the Haj festival and on the last day of Ramazan 100 per cent of the sample declared that they bathe early morning although according to Islam this is strictly not compulsory unless exposed to pollution.

Eighty per cent of the women interviewed had undergone ritual baths at puberty. The same percentage of mothers admitted to have undergone ritual bathing with specially prepared water after childbirth. About 60 per cent of the people in general appear to bathe or wash after attending funerals and others rub lime or citrus leaves on their hands and head as a mode of purification.

The Sinhalese take two ritual baths during the New Year; on the last day of the old year according to the traditional Sinhalese calendar and on the first auspicious day in the New Year. This second bath has to be taken after applying specially prepared nāru on the head. This ritual is practiced by 54 per cent of the people interviewed.

(iv) Washing of Clothes

The existing habits relating to the washing of clothes considerably reduce the amount of water that is carried home. Washing of clothes is closely associated with the bathing pattern; 67.4 per cent of the people wash their clothes at the well and only 4.8 per cent do so at home. At Anlumbura this latter proportion is higher - 15.3 per cent - because of the presence of domestic pipe connections. If the service is metered this proportion is bound to be much lower particularly because of the availability of alternative sources for washing of clothes. At other four locations only 0.05 per cent wash clothes at home. Where pihallas and streams are available in close proximity people prefer those sources to the well because of the convenience. Although people generally agree that the water in the well or stream may become dirty by washing of clothes they were unaware of the possibility of spread of diseases due to washing of soiled clothes at these sources.

Washing of clothes is generally combined with bathing and therefore the source used is the same as for bathing. The time used is also determined by this combination. This function is still attributed to women or female children. However, men do wash those clothes that they regularly wear at home at the time of bathing. Those that are used for outside wear, all household linen and children's clothes are however washed by the housewives or female children. (Table 12)

Table 12

Washing of Clothes : Who Washes

	Ankumbura		Batuanbe		Dolapihilla		Mandandawala		Uguressapitiya			
	No. of Respondents	%	No. of Respondents	%	No. of Respondents	%	No. of Respondents	%	No. of Respondents	%		
Housewife	28	71.8	11	64.7	12	35.3	09	45.0	27	79.3	87	60.4
Daughters	05	12.8	02	11.8	06	17.6	02	10.0	01	3.0	16	11.1
Themselves	05	12.8	04	23.5	12	35.3	09	45.0	05	14.7	35	24.3
Servants	01	2.6	-	-	03	8.8	-	-	01	3.0	05	3.5
Others	-	-	-	-	01	3.0	-	-	-	-	01	0.7
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

Washing of clothes normally precedes bathing. Clothes are first soaked in water and then soap is applied and beaten on a slab of stone or a block of wood. Where available the cement apron of the well is also used for this purpose. Generally the people are careful not to allow the waste water to be drained back into the well. Where washing is done in streams there is no particular aversion to the fact that the water is polluted because they believe that running water purifies itself. Over 90 per cent of the people use soap for washing of clothes.

Women generally bathe during mid-day or in the early afternoon. This time is particularly suitable for washing of clothes as it makes the drying easier. After washing, clothes are spread on the ground or on shrubs around the well or the stream until bathing is over, by which time most clothes will be dry. Female under clothes are not generally washed or dried in public. Even if they are washed while bathing they are dried in the backyard of the house. Infants' clothes which require frequent washing are done at home or at the well when it is close to the house. In most families childrens' clothes are changed only when they require washing but not as a daily routine.

Servants are used for washing of clothes in the case of wealthier families but even in such instances, the washing habits do not show much difference. Male servants are generally not employed for this purpose. Besides, there is a general reluctance to entrust the washing of under clothes to servants. Use of

traditional village washermen appear to have virtually disappeared. There were no instances of traditional washermen engaged in washing of clothes in any of the study locations. This may be explained in terms of professionalization of traditional washing functions in the form of village laundry services. Even these services are utilized by only a small minority of people regularly, and some occasionally. Amount spent on laundry services range from Rs. 5.00 - Rs. 40.00 per month. (Table 13).

5. Fetching of water

" . . . to fetch both wood and water" ...
 "belongeth only to women". "The wood
 they bring upon their heads, the water in
 an earthen Pot, placing it upon their hip".

(Knox p. 141)

In Harispattuwa, this pattern remains basically unchanged three hundred years later. The principal fetchers of water are the housewives often assisted by female children. Normally, only older girls are sent to fetch water because it is not considered safe to send younger children alone to unprotected wells. In this respect older daughters are considered valuable asset by the housewives. The males fetch a bucket of water on their way back from their wash or bath at the well. In an urbanized situation, as illustrated by the two instances at Ankumbura, males, do go to the roadside stand post

Table 12

Use of Laundry Services

	Ankumbura		Batuanbe		Dolapihilla		Mandandawala		Uguresapitiya			
	No. of house- holds	%	No. of house- holds	%	No. of house- holds	%	No. of house- holds	%	No. of house- holds	%		
Used regularly	3	7.7	3	17.6	1	2.9	5	25.0	1	2.9	13	9.0
Used occasionally	10	25.6	-	-	3	8.8	8	40.0	4	11.7	25	17.4
Never	26	66.7	14	82.4	30	88.3	7	35.0	29	85.4	106	73.6
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

as the principal fetchers of water. (Table 14). Wherever domestic servants are found they are used to fetch water exclusively or to assist the housewife. Hired labour is used only in a few instances and on a basis of fixed monthly payment or according to the quantity of water fetched.

The clay pot is the main fetching utensil and at the same time the bucket that is normally used to draw water is also used to carry some water. In Harispattuwa the clay pot is being rapidly replaced by aluminium pot of the same shape and size which is more durable and requires less care in handling. Nevertheless, the initial high cost of the aluminium pot and the taste of water in the clay pot that the villagers are particular about seem to make some people cling to the habit of using the clay pot. The traditional clay pot appears to have been specially shaped to facilitate the carrying of water by women, as it can be kept on the hip with the bent arm going round its narrow neck to hold it fast. The other arm is used to carry the additional vessel or a bucket. In certain, particularly non-Sinhalese, communities a flat bottomed metal pot is used for fetching water and is carried on the head. Men normally use the buckets but when they use a pot it is generally the aluminium pot as it can be carried by holding it by its mouth, unlike the clay pot which is likely to break under the weight of water if carried in that style.

This style of carrying water by women is particularly difficult in the kind of terrain that is generally found in Harispattuwa. Seventy per cent

Table 14

Who Fetches Water

	Ankumbura	Batuambe	Delapihilia	Mandardawala	Uguressapitiya	
	No. of Respon- dents	% No. of Respon- dents	% No. of Respon- dents	No. of Respon- dents	% No. of Respon- dents	Total No. of respon- dents
Male house- holder	1	2.6	-	-	-	1 0.7
Housewife	23	58.9	11 64.7	10 50.0	22 64.7	82 57.6
Male children	2	5.1	1 5.9	-	1 2.9	4 2.8
Female children	8	20.6	5 29.4	10 41.2	7 20.6	44 30.5
Servants	2	5.1	-	3 8.8	1 2.9	6 4.2
Hired Labour	-	-	-	-	3 8.9	3 2.1
House connect- ions	3	7.7	-	-	-	3 2.1
TOTAL	39	100.0	17 100.0	34 100.0	20 100.0	34 100.0 144 100.0

of the people have their source of drinking water within 100 meters and therefore fetching water does not involve more than 15 minutes for each trip unless the terrain is particularly difficult. Only about 5 per cent of the people have to travel over 400 meters and will take at least 45 minutes for the round trip. But this pattern will be considerably altered during periods of drought.

Most families make 2-5 trips to the well daily. When the distance is longer, two trips a day appear to be normal pattern. The time spent in fetching water therefore is relatively small when compared to the time available for the average housewife. But there are instances where going to the well becomes a problem for young mothers with infants. In such cases water is fetched early morning and in the evening when the other members of the family are present.

Cleaning fetching utensils is a regular practice everytime they are used. The clay pot is rinsed with water using the hand and sometimes sand is used to scrape the inside in order to remove the sliminess and sediments. Generally no disinfectant is used to clean them. Occasionally the clay pot is baked on a paddy straw fire which amounts to a more effective process of cleaning. The inside of the aluminium pots are also cleaned in the same way although soap may be used on the outside.

The bucket is a more versatile utensil in which water is carried to be used for toilet purposes, body washes, bathing, washing of clothes, watering the

garden and for feeding or giving water to domestic animals. It is also rinsed often and sometimes scraped with an abrasive material. The habit of cleaning fetching utensils have become almost routine in the day to day water use pattern. However, it is not associated as part of a conscious effort to make the utensils bacterially clean. There appears to be no awareness that the material used to clean the utensils may themselves be agents of contamination. A locally made contraption - gotta - made of arecanut leaf which is sometimes used to draw and fetch water is more susceptible to contamination as it cannot be cleaned and also rots after a few days of use.

6. Storage of water

The same utensils that are used for fetching are generally utilized for storage of domestic water requirements. In addition there are separate cement tanks and metal barrels. At Dolapihilla and Uguressapitiya 21 per cent use cement tanks and 5 per cent metal barrels, the rest use clay or aluminium pots and fetching buckets. At Ankumbura where piped service is unreliable most houses and restaurants have large cement tanks.

In the villages even when water is stored in separate containers, drinking water is kept in clay or metal pots. Water is drawn by pouring out of the pot rather than by inserting any other utensil into it as a means of keeping drinking water clean. Generally water stored in tanks, buckets and barrels are used for cooking, washing and other requirements and rarely for drinking. This attention to cleanliness of

drinking water is evident in certain other habits such as construction of a diya messa, a special stand to keep drinking water containers in the outside kitchen verandah, and also by always keeping them covered with a cleaned coconut shell. The diya messa is however rare in the villages now. The more common practise today is to keep the water pots on the ground inside the kitchen or in the outside verandah where contamination is more easy. Most insanitary storage and use of water was observed in a restaurant in Ankumbura town. A large cement tank constructed by the side of the kitchen is filled by a rubber pipe from the main house connection. The tank is almost black with dirt and water is drawn from it by inserting every kind of utensil into it. It is difficult to believe that the tank is cleaned once in 3-4 days as was reported by the restaurant keeper. Observations at other rural towns in the Project area show that storage and water use methods in restaurants are not very much different.

CHAPTER IV

THE NEW WATER SUPPLY SCHEME

Part I

The five study locations selected encompass the three water service levels envisaged in the new water supply scheme. Ankumbura will be served by a small surface and ground water-based piped scheme. Uguressapitiya, Batuambe and Mandandawela will come under ground water-based piped system. In these locations the new supply scheme has not come into operation yet. At Dolapihilla, where hand pump installed shallow wells form the basis of the new water supply, already 10 wells have been constructed and are in use. In this Chapter an attempt is made (i) to evaluate the already implemented part of the new scheme and to examine the problems relating to the siting, construction and maintenance of the new wells, (ii) to observe the limitations of the new water supply scheme as proposed, and (iii) to analyse the difficulties that are likely to arise in the levying of a water rate.

1. The New Wells

The major component of the Project, the construction of shallow wells with hand pump is already being implemented. By the end of November 55 wells were completed. Several problems associated with the implementation of this aspect of the Project have been observed during our field investigations.

2. Siting of Wells

There appears to have been three stages in the evolution of the policy of siting of new wells. In the initial stage sites were selected by the Finnish Consultants in association with local Cultivation Officers. During the field investigations of the Consultants discussions were held with the villagers, wherever they could be reached or whenever they made representation to them. No systematic procedure was adopted during this stage. (Progress Report 1st Quarter 1982 p. 23). It appears that the final decision regarding the site was determined by the preferences of a few influential individuals in the locality and also by the convenience of the Consultants. This may explain the fact that at Dolapihilla, where many of the early wells were constructed, the sites were selected along the main road apparently without sufficient evaluation of the actual water requirements of the people. This procedure seems to have created dissatisfaction among the villagers, local leaders and the regional bureaucracy leading to the second stage in the evolution of the policy of siting of new wells. At this stage the Grama Sevaks were requested to submit lists of locations in order of preference. This list was subjected to discussion between the local A.G.A., the Consultants and the Grama Sevaks after which the Consultants decided the final sites on the basis of technical feasibility. Even this procedure was found unsatisfactory due to lack of co-ordination at district level. The main criticism appears to be that the A.G.A., who represents the

broad interests of the division as a whole, and is expected to take a more objective view of the actual water requirements of the different villages, had no initiative in deciding the sites for new wells. Secondly, the Assistant Commissioner of Local Government, who is in charge of all public amenities such as wells, had no role in the decision making process. The other criticism concerns the lack of community participation in this process. To remedy this situation a Co-ordinating Committee (Committee) was appointed to decide the sites, as well as to co-ordinate other aspects of construction and maintenance of wells. The procedure adopted currently is laid down by this Committee.

The basic criteria in recommending sites are as follows:

- (i) Population to be served by each well should not be less than 200;
- (ii) No new well should be sited less than half a mile of an existing new well.
- (iii) There should be a guaranteed supply of drinking water throughout the year;
- (iv) Priority should be given to areas where there are no drinking wells in close proximity or where the quality of water in such sources is unsatisfactory.

The procedure adopted by the Committee involves, firstly, instructing the local AGAs to submit a list of sites in order of priority. This list will be discussed by the Committee and submitted for technical tests by the Consultants. On their findings a tentative list is made and the sites will be examined by the AGAs along with Gramodaya Mandala Chairman, Special Services Officer, Cultivation Officer and the Grama Sevaka before a final priority list is prepared and submitted to the Committee for approval.

The first function of the Committee is the selection of sites on given criteria and with the participation of the community. But no specific arrangement is made for involving the community in the decision making process. The only local initiative rests with the AGA who may or may not be guided by the views of the village level officials or those of the community. The usual informal procedure is for the AGA to make his priority lists in consultation with the Member of Parliament or his agents in the area. Although the people can make representations to the AGA directly they normally channel their requests through the local party organizations or important party personnel. Therefore, direct participation of the villagers in the decision making process regarding the siting of new wells is extremely difficult.

With the creation of the Co-ordinating Committee and giving it the authority regarding the siting of wells, whatever opportunities that were there for people's participation previously appear to have been

restricted. The Committee was expected to make arrangements for people's participation, but in effect, this responsibility was entrusted to the Divisional and District level bureaucracy. Consequently the decision making process drifted further away from the villagers. In Sri Lanka, the normal tendency in the provision of services at village level is to leave the decisive voice with the officials and the influential men in the locality. Despite the intention of participating the people in a meaningful way in siting new wells the same tendency appears to have prevailed in this instance too.

3. Problems Associated with Location of New Wells

The ownership of the land selected for locating the well presented a major problem at the initial stages. The Consultants at the beginning did not give much importance to this problem. The villagers were requested to persuade the affected landowner to grant permission in writing. But the construction of wells was carried out in certain places even on verbal approval of the landowner. This caused difficulties where the landowner, after the construction of the well, attempted to exercise certain control over the well.

In view of this problem the Committee laid down clear instructions in September 1982 relating to the title of land selected for siting wells, according to which the ownership of the land should be vested in the

District Development Council on the basis of donation, purchase or acquisition. It emphasised that acquisition should be avoided as far as possible because of procedural delays. The Committee specifically laid down that new wells built on sites for which clear authority from the AGA has not been obtained should not be accepted.

4. Access to New Wells

Access to the wells is another aspect to which adequate attention has not been paid not only by the Consultants but even by the Committee. There are two aspects to this problem:

- (i) lack of free access to the new well;
- (ii) difficulty of access.

In the first instance either the landowner or the owners of the intervening lands have obstructed free access. For example well No. 23, constructed in the middle of a paddy field, can be approached only through a circuitous route as the landowner has repeatedly refused closer and easier access. This may have been avoided if it was possible to site the well 10 yards towards the edge of the paddy field. There are several instances where presently no access problem exists but could create such problem in the future as the wells are located right in front of a house or in the middle of a vegetable plot. In such instances it is difficult to expect the landowner to give convenient access from all directions. Where a

well has been constructed just in front of a house the owner has already attempted to exercise control over it. Consequently some of the neighbours, who already had misunderstandings with the owner of the land, have avoided using the well.

Inadequate attention paid to the nature of the terrain where the well is constructed has also caused difficulties of access. The problem of carrying the pot of water over a steep hill or a precipice or even over narrow mud banks of paddy fields, which are particularly impassable during rainy weather or during cultivation time, has not received due consideration in siting new wells. The well intended to serve the Delapihilla school (No. 13) has been sited at the bottom of a precipice without direct access from the school and as a result it has been virtually abandoned. Even well No. 19 at Godahena, intended to serve the Home of the Aged and the Central Dispensary, remains unused because of difficult access.

5. Construction of Wells : People's Participation

The shallow wells are constructed by sub-contractors to the Consultants. They are supplied with the key components such as concrete cylinders and lids and hand pumps. The villagers are only marginally involved in the construction as wage labour and mostly in the digging of the well or transporting material. The sub-contractors are from outside Harispattuwa. Consequently there is a strong sense of

alienation among the villagers from the process of well construction, which has traditionally involved community participation. This has given rise to a series of complaints, such as that the material used is sub-standard and the construction is defective. The people sometimes associate the bad quality of water in certain wells with defective construction. They try to substantiate these complaints by saying that the villagers were not allowed even to watch the construction of wells by the sub-contractors. The latter, however, explains that the contractors work is hindered when there is a large crowd of onlookers in addition to the risk of accidents. The truth of the villager's complaints cannot be ascertained except where the outside apron or the steps are damaged due to defective construction. However, this sense of alienation aggravates the bitterness of the people caused by their non involvement in the decision-making process regarding the new wells. According to the villagers, at the early stages at least, there were more than one instance where they pointed to locations which would serve their requirements better, but their preference was rejected primarily on the question of difficulty of access. Even when the villagers offered to move the equipment themselves to the location of their preference there was no positive response from the Consultants.

The Committee recognized the need for community participation in the construction of wells and recommended that the local people should be involved at least as hired labour in the digging of the well. But this was not implemented. The participation of the

local community may be desirable in several ways. It will facilitate the acceptance of the well and secondly it is possible that the construction itself will be carried out with more care because of the benefits of a better constructed well will accrue to themselves. Village participation in the maintenance of the well will also be easier when they have been involved in its construction. However, the machinery for such participation may not be easily forthcoming in all villages. At Medagoda the digging of the well has been given on sub-contract to the Chairman of the Local Gramodaya Mandalaya who employed the villagers on a wage basis. In this instance there were dozens of villagers participating in the work voluntarily and there was no restriction on watching the construction. The enthusiasm of the villagers indicated the possibility of mobilizing closer participation in the construction work.

The Co-ordinating Committee envisages that the Community Centres will be capable of not only handling maintenance but also the construction of new wells. But as they are now constituted, it is doubtful that these Committees will be able to handle such work at the moment. The function of the Gramodaya Mandalas include supervision and approval of village construction works. These functions can be extended to cover the supervision of the construction of new wells. This will give at least a sense of association with the construction of new wells to the voluntary bodies represented in the Gramodaya Mandalas. The most recent arrangement however is to appoint well caretakers who will be involved from the initial stage

of siting of the well (below p. 167). This appears to be merely an excuse for community participation.

6. Attitudes towards New Wells

The villagers of Harispattuwa in general feel that the new wells provide a satisfactory solution to a long felt need for a permanent and clean source of water. "At last we can drink some water without fear or revulsion. What we drank all this time is dirty and is hardly suitable for even bathing". This statement of some elderly villagers at Waldeniya sums up the satisfaction of many communities supplied with new wells.

Apart from the reliability and the safety of the new supply of water the new wells also have several other advantages. The dangers posed by traditional open wells both in regard to the possibility of children getting drowned while fetching water and also of being accidentally or wilfully polluted are no longer associated with the new wells. Sealed wells also assure the people that different vessels will not be used to draw water, a feature that is often resented in the case of old wells. There are instances where both the satisfaction as well as the acceptance of new wells have been overtly expressed in the form of growing flowers and hedges around the new wells.

The reservations of the people regarding the new wells are also important. There are several instances where the wells are located without sufficient

consideration as to where the need is felt most acutely. Similarly accessibility has not received sufficient attention in other instances. Dissatisfaction with the taste and quality of water in the new wells, as perceived by them, is not infrequent.

7. Quality of Water in New Wells

Villagers tend to apply their own perceptions of good water in judging the quality of water in the new wells (see above p.126). By the end of November 1982, 55 wells have been completed and our investigations covered 27 wells, of which 7 are not used for drinking purposes due to bad quality (Well Nos. 12, 13, 14, 19, 26, 37, 46). The reasons given by the people are that some have a rusty or muddy taste. In one instance there is a filmy layer on the surface of water. Water in one well has a smell of fermentation and fine floating particles. Our own examinations of these wells proved that the complaints of the villagers are justifiable. Of these 7 wells, 5 are not used for any purpose, even for washing of clothes (Nos. 14, 19, 26, 37, 46). Villagers stated that it was difficult to use the water in these wells, even after boiling, as there was an 'oil-like layer' on the surface of the water. Well No. 13 is used for washing of clothes and No. 12 both washing of clothes and bathing of children. The villagers' complaints regarding the taste and physical and chemical quality of water are on the whole sustained by scientific tests carried out by Auli Keinānon. According to her iron and ammonium concentrations in certain new wells are higher than in

traditional wells. Further, in some wells there have been a surprisingly high level of coli bacteria content. (Auli Keinänen, Chapter 4).

The villagers own explanations for bad taste and odour of water in the new wells are varied. According to some, it is due to faulty construction where cylinders have not been properly sealed allowing for seepage of bad quality water. Bad odour is particularly attributed by some to the fact that the wells are closed which prevents the sun's rays falling on to the water. These assumptions receive credibility from the fact that old drinking wells in which the taste of water is good and acceptable are present side by side with the new wells.

Despite these shortcomings the people are pleased with the quality of water in most new wells and are relieved that one of their long standing problems has been solved satisfactorily. Some of those who were used to boil their drinking water feel that there is no need for it now. In one instance the housewife goes a fair distance to fetch water from the new well bypassing the traditional well which is still being used by all her neighbours because she has noticed that the water from the new wells does not leave "white sediment" in the kettle when boiled. This for her is a distinct test of good quality.

8. Changing Pattern of Water Use

Special investigations were carried out to compare the pattern of water use associated with the old and new wells and to ascertain whether any significant

changes are taking place. As far as the quantity of water consumed there appears to be no significant change. In fact, there is less water taken from the new wells because even children are now sent to the new wells for washing as the risks associated with the open wells are no longer there in the case of the new wells. It has been observed by the investigators that children come to the new wells for their morning wash before going to school. This also implies that children are used for fetching water from new wells much more than in the case of old wells.

A significant feature however, is that there is no rush to shift from the old to the new wells except in a very few instances. Some people are still attached to the old wells because of the taste of water they are used to or else because they are either very close to their houses or conveniently accessible. Where there is a traditional well in close proximity to the new well, even with no particular complaints as regards quality of water, there is a hesitation to change their source of water. This is particularly observed in relation to two new wells, No. 2 at Kudugala and No. 25 at Kabaigastanne, Godahena.

Such hesitation may not be a persistent feature in the future because the people so far have not experienced a serious drought since the new wells were established, and therefore are not compelled to rely on the new wells. The period of our investigation coincided with abundance of water in traditional wells owing to continuous rain. The true test as the acceptability of new wells has to await a prolonged drought.

9. The Maintenance of New Wells

The Co-ordinating Committee delegated this function in each village to the Community Centres, which are recognized as the "leading voluntary organization for community participation" in water supply and sanitation. The first step in the implementation of this decision had been taken by the Community Centres Officer of the Department of Local Government, by establishing centres in villages where new wells have already been constructed. Already 20 Community Centres have been formed. The procedure adopted for this purpose is, firstly, the AGA notifies the villagers through Grama Sevakas and the Special Services Officers in the form of a notice of a meeting. At this meeting, chaired by the Community Centres Officer or the AGA if he is present, a committee is selected. Generally, the attendance at these meetings is between 10-25 and the names of office bearers are informally decided by the leaders beforehand. In the case of the twenty centres already established there had been no competition for offices. Here it should be noted that none of these Centres has held a meeting so far, other than the inaugural meeting.

The duties and responsibilities of the Community Centres relating to maintenance of new wells have been specified as follows:

- (i) Supervision of work of the well caretakers;
- (ii) To be responsible to the Gramodaya Mandalaya, the DOC and other relevant authorities for the maintenance of the new well;

- (iii) Organizing necessary voluntary labour and collecting voluntary contributions from the users.

The maintenance of the wells is entrusted to voluntary caretakers. These are to be trained by the NWSDB. The duties of the well caretaker are: (i) to ensure the security of the well, (ii) to keep the general surroundings clean, (iii) to attend to simple maintenance activity, (iv) to keep maintenance of records, (v) to keep the relevant voluntary organizations informed regarding the maintenance of the well, etc. Their work will be supervised by a hierarchy of technically qualified paid officials at local and district levels. There will be a pump mechanic for 100-150 wells, who will be provided with a motor cycle and be eligible to claim travelling and subsistence expenses. His immediate supervisor would be the Technical Officer attached to the District Development Council (DDC) sub-office (equivalent to old Village Council office). This officer will be trained by NWSDB. Over the technical officer of the DDC will be the technical officer attached to the Office of the Assistant Commissioner of Local Government. His duties are keeping the relevant officers and institutions informed of the policy of the government in the water supply sector, supervising the maintenance of community wells, and especially the organizing of district level training programme and seminars.

Over these officials is the Mechanical Engineer and Chemist of the NWSDB Regional Office. The duties of this officer are as follows:

- (i) Provision of assistance for major repairs;
- (ii) Testing of water quality;
- (iii) Organizing the training of the Local Government staff and well caretakers;
- (iv) Giving technical advice on maintaining water quality;
- (v) Maintaining records.

The overall responsibility for the maintenance lies with the DDC. The following are among its duties and responsibilities in this regard:

- (i) Recruitment and maintenance of staff;
- (ii) Making necessary institutional arrangement;
- (iii) Arranging for any water rate or levies to cover maintenance cost;
- (iv) Making payments for services and supplies connected with maintenance;
- (v) General co-ordination of all well maintenance work in the District.

The programme of appointing and training of well caretakers is now under-way. Already (January 1983) over 100 well caretakers have been selected. The first set of caretakers, numbering about 50, were nominated by the Community Centres at the inaugural meetings in accordance with the procedures laid down in relation to the maintenance of wells. Recently, it has been noticed that well caretakers are being appointed

outside this procedure by the AGAs merely by consulting the relevant Grama Sevakas and Special Services Officers. The circumvention of the earlier established procedure in order to give the officials the authority to appoint the well caretakers has been justified on grounds of expediting the procedure in making appointments. It also reflects the opinion of the officials regarding the efficacy of the Community Centres for this purpose. Caretakers are now being appointed to wells where construction has not even commenced. This may be a desirable development because the caretakers will now be able to acquaint themselves with all aspects of the well from the initial phase of construction.

The criteria adopted in selecting the caretakers are not specified. It has, however, been agreed that the caretaker should be a person who lives close to the well. Because of this requirement, more often than not the selected person happens to be the owner of the plot in which the well is built. The ownership of the plot (or previous ownership, in the case of acquired land) may give a certain degree of authority to the caretaker, but such authority may not be desirable from the point of view of free and unhindered use of the well by all the neighbours. It may also be useful to appoint well caretakers from among those who possess, at least, above - primary level - education and those who work in the village itself.

Training classes for well caretakers have already commenced, one in Vereilegama and another at Bokkawala.

At these one-day sessions, attended by representatives from the Office of the MOH, the Consultancy Firm and the NWCDB, basic instruction on health and sanitation, significance of community participation, and the technical aspects of the pumps and the maintenance of wells is given. Some of the well caretakers interviewed by us in Welicalle and Waldeniya appeared to be in need of further instruction on these matters.

The proposed organizational structure for well maintenance appears to be too elaborate and top heavy. The effective decision making has drifted away from village level with the involvement of a good part of the district level bureaucracy in these functions. The responsibility for maintenance is diffused with several organizations ~~involved~~ and with a hierarchy of technical officers responsible to different bodies. A strong argument in favour of shallow wells is its low cost of operation and maintenance. This proposed machinery could result in increasing the cost of maintenance considerably particularly in the form of travelling, subsistence and salaries of middle and lower level technical officers. Besides, the procedure may be cumbersome and cause delay. This arrangement envisages an unpaid caretaker whose role is vital and hierarchy of paid officials above him. This is bound to be a disincentive to voluntary participation in maintenance of wells at village level.

A less cumbersome and more effective machinery would be to entrust the responsibility of looking after

the wells to the Gramodaya Mandalas in their respective villages, which could appoint a voluntary caretaker for each well. The actual technical aspects of maintenance may require a centralized technical service with a qualified senior technician and a few skilled workers for the entire project area which is only 146 square kilometers and is served by a relatively good road network. This staff may be expanded in keeping with the work load, and it will come under the supervision of the NWSDB. This will minimise the number of institutions involved in the maintenance and thereby reduce paper work and red tape.

The main argument against using the Community Centre as the 'leading voluntary organization' in this sector is that it is one of the least effective organizations at village level. Apart from being directly government sponsored, hitherto, the functions of the Community Centres were mostly associated with recreational activities which meant that participation and control was largely in the hands of the youth whose interests have been generally transitory. The very fact that they had to be created by officials for the purpose of well maintenance shows that they had never been active organizations at village level. Even once they were created they could not be activated for this purpose. Gramodaya Mandala, on the other hand have now come to be the recognized organisation encompassing all voluntary societies and activities in the village area. Most of the key village level officers are also ex-officio members of the Gramodaya Mandala. Its Chairman, who has to be President of one of the recognized village associations, is also directly linked with other institutions and

officers of the decentralized administration at divisional level. The Gramodaya Mandala is obviously associated with political factionalism, but taking into consideration the political reality that no voluntary organization can play an effective role in rural society without links with the party in power, it is more appropriate that this body is recognized as the "leading organization" in the arrangement for maintaining new wells.

10. The Harispattuwa Co-ordinating Committee
and its Functions

The Harispattuwa Co-ordinating Committee was established for the purpose of co-ordinating the work relating to the water supply and sanitation project at district level. It is composed of the Chairman of the DDC, Kandy District, as ex-officio-Chairman and the following officials:

- (i) Assistant Commissioner of Local Government, Kandy;
- (ii) Medical Officer of Health, Kandy;
- (iii) Regional Manager, NWSDB, Kandy;
- (iv) A representative from NWSDB;
- (v) A representative from the Finnish Consultancy Firm;
- (vi) The Assistant Government Agent of Harispattuwa;
- (vii) The Additional Assistant Government Agents at Pujapattiya and Akurana.

It was also agreed that the Assistant Commissioner of Agrarian Services and the Authorised Officers of the Development Council Sub-Offices were to be invited for meetings. The function of the Committee are:

- (i) Collecting information concerning the sector number of wells, water quality, the number of latrines and their use by people;
- (ii) Functioning as a channel of communication to communicate policies and programmes to other voluntary organizations involved in the sector.
- (iii) Directly handling the construction and maintenance of community wells, appointment of well caretakers and having a group of Health Volunteers in the village.
- (iv) The training of caretakers and health volunteers.

For its operation this Committee was made responsible to the Kandy District Development Council.

This composition may facilitate some form of co-ordination between various governmental institutions and other agencies associated with the Project at district level. However, it is relevant to note here that there are no officers in the Committee to represent two of the areas affected by the Project, but located in the adjoining AGA divisions of Pata Dumbara (3 Grama Sevaka Divisions and Tumpane (4 Grama Sevaka Divisions.)

Being a body consisting predominantly of officials with only one elected representative (the Chairman of the District Council) this Committee may not be the most suitable organization to serve the other specified function i.e. to arrange for peoples' participation on a voluntary basis in the implementation of the Project. So far, this Committee has held 7 meetings and several decisions regarding the siting and maintenance of shallow-wells have been taken. As already mentioned, the important problem of regularising ownership of well sites has been solved by this Committee. It has also adopted a proposal to establish another Co-ordinating Committee where divisional level field officials would be present. This Committee includes the AGA, Authorized Officers, Public Health Inspector, Special Services Officer, Grama Sevaka, Chairman/Secretary of Rural Development Society and Chairman/Member of Gramodaya Mandalaya. The tasks of this Committee are yet to be defined.

The Co-ordinating Committee has also been involved in the examination of selected well sites as well as some of the wells completed before the establishment of the Committee for their suitability. Ten such wells were examined and it decided to disapprove of one well (No. 13) and recommended the construction of an alternative well at a better location in the same vicinity. The Committee has also authorised a technical officer, who will be paid travelling expenses, to inspect wells while being constructed. A scheme for the recruitment and training health workers (at the rate of 1 for 7-8 families)

suggested by the Committee has not been implemented yet due to problems regarding funds.

The Co-ordinating Committee appears to have taken notice of some of the major problems regarding siting, construction and maintenance of wells. However, we would like to observe that it would be more suitable to hand over these functions to a lower level (divisional) organization once the guiding policy lines are laid down.

Part II

Limitations of the Project

In most rural water supply schemes it is unavoidable that certain sections of the population will be denied of better quality and improved supplies. The effort, however, should be to minimize the size of this deprived population and to accommodate as much as possible those whose water requirements are more acute. This makes it necessary that the objectives of rural water supply schemes and the technologies adopted be more flexible to ensure that where ideal water supplies may not be feasible at least improved supplies may be provided to a greater number of people. The major limitation of the Harispattuwa Project arises from this lack of flexibility.

A closer look at the water problems of certain study locations helps to understand the implications of this lack of flexibility. The two village locations, Mandandawala and Dolapihilla present basically similar water problems. In both the relatively affluent sections of the populations live around the low-lying paddy fields and along the main road. The economically depressed have gradually got pushed to the higher elevations where the drinking water and bathing problems are most acute.

In Mandandawala 27 out of the 96 households are on the hill called Talagahakanda. They are technically squatters on a land supposed to belong to the Malwatta Temple in Kandy. Only 3 out of 27

families own an average of $1/2$ an acre of paddy land and another three families cultivate about $1/2$ an acre of paddy each as tenants. All others do not own or have tenancy rights over land and therefore depend on wage labour, mostly outside the village. Their average days of employment varies from 9-15 per month and average income is less than Rs. 500.00 per month. Most of their houses fall into the lowest category - thatched huts - and the latrines are small pits, sometimes without proper covering. Communication facilities in this area is extremely poor with only highly eroded and rocky footpaths. Socially too the people of Talagahakanda occupy a lower position in the villages though there is no caste difference. They are often referred to as 'Kande minissu' (people from the hill) and treated as socially inferior.

For drinking and bathing they depend mainly on 11 wells at the bottom of the hill, around the paddy fields. Of these only 5 can withstand normal dry months. The best perennial source for bathing is a well belonging to the richest man and also the largest landowner of the village. The people are permitted to use this well for bathing but not for washing of clothes. At upper levels of the hill 14 families use two springs for drinking purposes and the water is open to pollution by surface drainage. The rest have to walk between $1/4$ - $1/2$ kilometer for their regular water requirements. Observations indicate that a fair number of people, and particularly children do not use latrines in this locality and the general hygienic conditions are most unsatisfactory.

Under the proposed water supply scheme Mandandawala will be served by a main line along the road with provision for plot connections up to 150 meters from the road on either side. This would mean that the people on Talagahakanda whose water requirements are most acute and whose conditions of sanitation and personal hygiene need improvement will not benefit from the Project. Even if there is going to be stand-posts by the main road they will have to walk at least 1/2 - 1 kilometer. The people of Talagahakanda, therefore, show no enthusiasm about the new water supply scheme. Their overwhelming preference is for the improvement of the existing wells, by deepening them and constructing protective walls.

In Dolapihilla the same correlation between depressed socio-economic conditions and acute water problems is evident. Pathkoladeniya, Waulagala, Liyangastenna and Medakattiya are high-elevation settlement areas where at least 30 out of the 186 families live. Out of the 30 families 6 derive their income as owner cultivators, 10 as tenant cultivators and the rest as agricultural labourers. There is a higher concentration of lower caste people in these areas. Their water requirements are served by a few wells at the bottom of the hills and mainly by two pihillas - Liyangastenna pihilla and Iriyagahadeniya pihilla. Both these are unsatisfactory as the settlements are often at a higher elevation and pollution by surface drainage is easy. Access to the wells around the paddy fields is extremely difficult along the narrow and steep footpaths.

In Dolapihilla none of the 10 new wells constructed can be used by the people of these settlements because of the distance. Most wells at Dolapihilla serve the relatively affluent along the main road and it appears that the people in the above mentioned settlements will not derive any benefit from the Project as far as their water requirements are concerned.

In the adjoining village of Godahena, the problem of water is even more acute. This is a colony (village expansion settlements) with 120 households located on a hill served with only narrow and steep foot paths. Presently, drinking water is obtained from several springs and shallow wells. During the dry months (January-February) three to four springs supply the basic drinking water requirements of the entire colony. All these sources are open to pollution by various means. To obtain water from the closest new well (out of 8 in the village) constructed below the main road at the bottom of the hill and colonists will have to descend about 300-400 meters.

Uguressapitiya will be served by a mainline along the road but the most seriously affected by water shortages live 1/2 to 3/4 kilometers away from the main road. As in the earlier mentioned locations those who live on the outskirts of the village are the economically most depressed. Over 40 such families live in Weliadde, Madumgala, Bomaluwa and Uggala. All their wells, which are generally shallow, go dry with 2-3 weeks of dry weather. No deep wells are

possible because of the presence of a layer of rock very close to surface with frequent rock outcrops. During the dry months they did temporary wells in the paddy fields, but these have to be filled up in time for the cultivation work to start. Villagers in these areas will not be able to afford plot connections or else to travel a distance of $1/2 - 3/4$ kilometers to obtain water from stand-posts (if provided) along the main road.

Batuambe is a relatively recent colony, established in 1960-61. Eighty five households were given $1/4$ acre of land to build houses. Presently, less than 10 families are engaged in agriculture as tenant cultivators. Excluding a few clerks, teachers and craftsmen all others depend on wage labour outside the colony.

Under the village expansion scheme the government used to offer Rs. 400 per family for the construction of a well, only one family in Batuambe made use of this offer. The government has constructed two protected wells but now they are all in a bad state of disrepair and only a few families use them, mainly for washing and bathing. Out of the 17 private wells in the area, mostly outside the colony, only two can withstand a drought. During drought they walk $1/2$ kilometer or more to fetch water from wells that are used for both drinking and bathing.

The proposed water supply scheme will provide a mainline along the road $3/4$ kilometer from the colony but in view of their economic condition none will be able to afford plot connections.

These instances illustrate that the levels and distribution pattern of services envisaged in the Project require greater flexibility to meet the complexity of the problem of water. Broad areas ear-marked for piped supplies with house and plot connections will largely cater to the affluent along the main communication lines. Locating shallow wells in convenient spots along the motorable roads in the areas ear-marked for wells will also leave out a considerable population whose requirements need priority. If the principal objective of the Project is promotion of health and sanitation, services must reach those whose problems are more acute and whose economic and educational levels do not permit them to take even minimum precautions against water-related diseases. The often-used Biblical adage "to him that hath shall be given" seems to apply to the Water Supply Project as a whole as it stands presently.

In regard to the piped services there is need for flexibility whereby provision could be made for installation of stand-posts at carefully selected locations along the road or within a reasonable distance from the main road to serve high concentrations of low-income households. Batuambe and certain areas in Ugurusapitiya are examples of locations that deserve such special services. Voluntary caretakers selected with the participation of the community, as in the case of shallow wells, can be entrusted with the tasks of looking after these stand-posts and ensuring their proper use.

The locations referred to in Mandandawala and Delapihilla may be served with shallow wells with hand pumps in close proximity to these settlements. The

only obstacle appears to be the lack of motorable roads to transport the components of the wells. This difficulty may be overcome by obtaining the villagers' co-operation wherever such co-operation will help to transport concrete cylinders and lids. Or else arrangements may be made to turn out these components at the location itself. At present it is the rigidity of the technology adopted and considerations of convenience of site investigations and well construction that appear to be the determining criteria in the location of wells. Feasibility tests were not carried out outside easily accessible locations because the technology adopted ruled out location of wells in such areas.

Situations as presented by Godahena colony may require an entirely different solution. In highly inaccessible and hilly areas without any possibility of permanent supply of ground water but where adequate supplies of spring water is present during at least 10 months of the year adjustments may be required in both the technology and the ideal objectives. The water in the springs may be collected in medium size tanks constructed so as to prevent surface pollution and with periodic purification by chlorination to supply fairly safe water at least for 10 months of the year. This will certainly be a better alternative to using water from the springs and small rock pockets and shallow wells which may be highly polluted. The internationally recognized ideal standards of bacteriological quality of water may not be possible but if the present level of bacterial pollution can be reduced to a safe level at least during 10 months of the year there is bound to be beneficial results on conditions of health and sanitation of people on higher elevation.

Such adjustments may be even more feasible where perennial pihillas are available, e.g. Irya, nahadeuniya and liyanastenna pihillas in Dolapihilla. Even the Co-ordinating Committee took a decision to exploit these pihillas for supply for the neighbouring households and instructed the AGAs to make a list of such pihillas in their respective divisions. The Finnish Consultants too recognized the feasibility of this idea, but no further action was taken.

Depending on the circumstances, a variety of methods may be adopted to ensure a fairly good supply of water even where the ideal supply may not be feasible. This will require an exhaustive survey of the project area to assess the existing water resources and to decide the appropriate service level.

Part IIIPayment for Water

Heavy 'opportunity costs' involved in water development projects is the justification for a tariff system to recover capital, operation and maintenance costs. The policy of the Sri Lankan government has been to consider water supply and sanitation projects as part of the welfare services and therefore to subsidize not only the entire capital costs but sometimes even the operation and maintenance costs, in part or in full. Harispattuwa water supply system being an outright donation from the Government of Finland, the Sri Lankan government is concerned only with the recovery of recurrent expenditure.

The major component of the Project consists of shallow wells with hand pumps where operation and maintenance costs are expected to be minimal. The other component of the Project envisages 9 small piped schemes where the supply will be mainly from ground water. These will serve relatively high density areas with stand posts at public places, plot

and house connections. The two components of the project therefore, involves four levels of service which will complicate the system of tariff.

Any tariff policy has to be guided by several policy consideration. In an area like Harispattuwa, with a majority of people having a low standard of living and poor sanitary conditions water pricing has to be taken into account the need for income and distribution, economic stability and general encouragement of complementary investment by consumers as well as the vital objective of promotion of sanitation, which, in the long run is expected to be the most valuable social investment in view of the heavy costs on health services. Further, the nature of the terrain and the fairly dispersed settlement pattern as well as the limitation of the service components will result in a clear unevenness in the benefits that will accrue to the people of the area. Under these circumstances a system of subsidization of lower income groups is unavoidable.

In regard to the Harispattuwa Water Supply Scheme the policy of recovering all operation and management costs has been strongly recommended and the

government has accepted it. But it has agreed to fully subsidize the maintenance of hand pumps for the first three years after they are put into operation in order to encourage the users to abandon traditional sources. The precise cost of maintenance will be determined after this and the government will direct the local authorities to recover the charges jointly with other taxes and pay regularly to the NWSDB for providing maintenance services.

┌ In the case of piped systems all consumers will be gradually provided with metered plot or house connections. To recover the operation and management costs the NWSDB is expected to impose a block-type tariff which would provide certain minimum consumption for a family, about 6000-10000 litres on a subsidized basis and charge a higher price for consumption over this level.

The Appraisal Mission estimates that the maintenance of hand pumps would be equivalent to 5 per cent of the cost and the operation of the entire well programme would cost about Rs. 480,000.00 per year by 1985. In the case of the piped services

all individual users will be metered with only a restricted number of stand posts in public places like temples, schools, dispensaries and market places; this service will be subsidized by the government. The operation and management costs of¹ the piped services is estimated around Rs. 1.8 million. On the basis of the assumption that 70 per cent of the users will have plot connections and 30 per cent house connections the Appraisal Mission estimates a charge of Rs. 100 per year from each household with plot connections and Rs. 300 per year from those with house connections. The operation and maintenance costs of similar services according to NWSDB calculations are considerably higher and the charges on users will be Rs. 60 per family per year in the case of shallow well services and Rs. 240 per family per year in the case of small piped services based on ground water with only 10 per cent house connections.

The feasibility of these general propositions relating to the recovery of operation and maintenance costs of different levels of services has to be viewed from the point of view of the ability of the people to pay and in relation to the prevailing water rates in Harispattawa and the neighbouring areas.

Investigations to assess the actual preparedness to pay for water from shallow wells indicated a positive response with over 50 per cent expressing their willingness to pay amounts ranging from Rs. 5-40. But to consider this as a commitment to pay or even as an indication of their ability to pay is difficult. Such expressions are fairly common among villagers when the questions asked amount to a test of their social respectability. More important is their feeling that a negative response would jeopardize their chances of getting a new service altogether.

□ The willingness of the people to pay was however, qualified sometimes by their ability to pay very nominal amounts. A fair number of respondents who were more frank admitted that their economic situation would not permit them to make any payment for a water service. Some were shocked at the idea and were unable to conceive of a situation where they will be paying for 'one of the few remaining gifts of nature'.

A fair proportion of the respondents expressed their unwillingness to pay particularly for the service from the hand pump wells. A well, in people's perception is provided for free and unrestricted use of all and the government has always considered the provision of wells as a part of its welfare services. In this instance announcements have already been publicly made by the responsible members of the government that the 'Finnish wells' constitute a part of the welfare services programme of the present

government for the people of Harispattuwa. Therefore, apart from the difficulty of imposing a water rate to recover the maintenance costs of the new wells, political considerations will also impose constraints on such a policy.

For most people of Harispattuwa who have been depending on unsatisfactory wells subject to vagaries of weather a new source of supply is invariably associated with a pipe-borne water system. The preference for such a system with house connections is, therefore, not surprising. (Tables 1, 2 and 3). It is also generally understood that such a service has to be paid for. Our investigations to ascertain the willingness to pay in relation to the level of service shows clearly the scale of preference:

Hand pump wells	52.8%
Plot connections	56.3%
House connections	83.3%

Of those who prefer a service with house connections 27.5 per cent are prepared to pay less than Rs. 10 / month / family. 36.8 per cent are prepared to pay less than Rs. 20 / month / family. Among them 3.5 per cent are willing to pay "small amounts" which probably means around Rs. 5.00 per month. A good proportion, however, is prepared to pay "any reasonable amount" (46.5 per cent); this category is as high as 74.4 per cent in Ankumbura. (Table 4). It is very difficult to quantify this expression exactly. At Ankumbura, at least, the amount they have

Table 1.

Whether Prepared to Pay : For Service with Plot Connections

	Ankumbura		Eatuambe		Dolapihilla		Mandandawala		Uguressapitiya		Total	
	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%
Yes	26	66.7	12	70.6	11	32.4	14	70.0	18	52.9	81	56.3
No	13	33.3	5	29.4	12	35.3	6	30.0	4	11.8	40	27.8
Not decided	-	-	-	-	11	32.3	-	-	12	35.3	23	15.9
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

Table 2

Whether Prepared to Pay : For Service with Household Connections

	Ankumbura		Batuanbe		Dolapihilla		Mandandawala		Uguressapitiya		Total	
	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%
Yes	31	79.5	12	70.6	30	88.2	18	90.0	29	85.3	120	83.3
No	8	20.5	5	29.4	4	11.8	2	10.0	5	14.7	24	16.7
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

Table 2

Whether Prepared to Pay : For Service with Hand-Pump Installed Common Well

	Ankumbura		Batuanbe		Dolapihilla		Mandandawala		Uguresapitiya		Total	
	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%	No. of res- ponses	%
Yes	26	66.7	10	58.8	14	41.2	15	75.0	11	32.3	76	52.8
No	13	38.3	7	41.2	10	29.4	5	25.0	7	20.6	42	29.2
Undecided	-	-	-	-	10	29.4	-	-	16	47.1	26	18.0
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

Table 4
Payment for Water : How Much for Service with Household Connections

	Ankumbura	Batuambe	Dolapihilla	Mandandawala	Uguressapitiya	Total						
	No. of res- ponses	% No. of res- ponses	No. of res- ponses	% No. of res- ponses	No. of res- ponses	% No. of res- ponses						
Below Rs 5	1	2.5	6	33.3	1	2.9	4	20.0	2	5.9	14	9.7
Rs. 5 - 10	1	2.5	2	11.8	2	5.9	10	50.0	3	8.8	18	12.5
Rs. 10 - 15	-	-	1	5.9	6	17.6	2	10.0	-	-	09	6.25
Rs. 15 - 20	-	-	-	-	1	2.9	-	-	6	17.6	07	4.86
Small amount -	-	-	-	-	-	-	-	-	5	14.7	05	3.5
Any reason- able amount	29	74.4	3	17.6	20	58.8	2	10.0	13	38.2	67	46.5
Not prepared to pay	8	20.6	5	29.4	4	11.7	2	10.0	5	14.7	24	16.67
TOTAL	39	100.0	17	100.0	34	100.0	20	100.0	34	100.0	144	100.0

in mind appears to be related to the amounts they pay presently for the existing water service, i.e. Rs. 2.50 / month / family. One respondent at Anku bura explained that by 'any reasonable amount' he meant only about Rs. 3.00 above what he pays as assessment rates.

In order to ascertain the actual ability to pay it is necessary to examine the income and expenditure pattern of the people. Table 5 only attempts to correlate the expression of willingness to pay with their declared assets and income. This [obviously shows that the willingness to pay, particularly for a piped service increases with income. But 13.29 per cent of those who are willing to pay for a service with house connections are living below the recognized 'poverty line'. As low income families they are provided with food stamps by the government. 23.63 per cent have an income between Rs. 5,000 - 10,000 per year. Some of the respondents coming within these two categories have mentioned specific amounts they can afford to pay for water. Among them the majority is prepared to pay amounts ranging from Rs. 3.00 - 10.00 per month. Only a few mentioned amounts between Rs. 15 - 20. Thus, both on their ability to pay and their expressed range of payment it is unrealistic to expect a water rate commensurate with the operation and management costs from these sections of the population.

[The water rates in the existing five piped schemes in Harispattuwa are highly subsidized by the by the local authorities and there is no system of

Table 2

Willingness to Pay for Water in Relation to Landownership and Income

Income Groups Annual	Ownership of land		Upto 0.5 acres		0.5 - 5.0 acres		5.0 - 10 acres		10 acres & above		Total			
	No	Yes	H.C.	P.C.	H.P.	H.C.	P.C.	H.P.	H.C.	P.C.	H.P.	V.C.	P.C.	H.P.
Below Rs.5,000	10	4	5	9	6	-	-	-	-	-	-	19	10	11
	11.6	4.7	5.8	17.6	11.9	11.9	11.9	11.9	11.9	11.9	11.9	13.2	6.9	7.6
5,000- 10,000	13	19	16	6	9	9	9	9	9	9	9	19	28	27
	15.1	22.1	20.9	11.8	17.6	17.6	17.6	17.6	17.6	17.6	17.6	13.2	19.5	18.8
10,000- 15,000	24	11	14	9	5	7	1	1	1	1	1	34	16	21
	27.9	12.8	16.3	17.6	9.8	13.7	33.3	33.3	33.3	33.3	33.3	23.5	11.1	14.6
15,000 and above	13	26	23	6	10	8	1	1	1	1	1	19	37	32
	15.1	30.2	26.7	11.9	19.6	15.7	33.3	33.3	33.3	33.3	33.3	13.2	25.8	22.2
10,000- 15,000	11	7	6	7	4	3	5.9	5.9	5.9	5.9	5.9	18	11	9
	12.8	8.1	7.0	13.7	7.8	7.8	7.8	7.8	7.8	7.8	7.8	12.5	7.6	6.3
15,000 and above	3	7	8	9.3	3	4	7.8	7.8	7.8	7.8	7.8	3	10	12
	3.5	8.1	9.3	9.3	5.9	7.8	7.8	7.8	7.8	7.8	7.8	2.1	6.9	8.3
15,000 and above	8	5	4	12	5	5	2	1	1	1	1	25	14	13
	9.3	5.8	4.7	23.5	9.8	9.8	66.7	33.3	33.3	33.3	33.3	75.0	17.4	9.7
15,000 and above	4	7	8	2	9	9	1	1	1	1	1	7	18	19
	4.7	8.1	9.3	3.9	17.6	17.6	17.6	17.6	17.6	17.6	17.6	4.9	12.5	13.2
Sub-Total	53	27	29	37	20	21	3	1	1	3	3	96	51	54
	61.6	31.4	33.7	72.5	39.2	41.2	100.0	33.3	33.3	33.3	33.3	65.7	35.4	37.5
T O T A L	33	59	57	14	31	30	2	2	1	1	1	48	93	90
	38.4	68.6	66.3	27.5	60.8	58.8	66.7	66.7	66.7	66.7	66.7	33.3	64.6	62.5
T O T A L	86	86	86	51	51	51	3	3	4	4	4	144	144	144
	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

H.C. = House Connections; P.C. = Plot Connections; H.P. = Hand Pump.

metering the consumption. It is likely that the respondents thinking on the question of payment is conditioned by the changes in these schemes.

(Table 6).

To arrive at a more realistic water rate it will be useful to examine the tariffs in areas adjoining Harispattuwa. Village Council level piped services in the surrounding areas have different rates ranging from Rs. 5.00 - 12.50 per tap per month irrespective of the amount consumed. More systematic water rates are found in the two adjoining sub-urban areas of Katugastoda and Kadugannawa. Katugastoda is served by the Kandy Municipal mains and the rates are:

1 : Family dwellings:

First	6,000 gallons/quarter	- Free.
Next	15,000 gallons/quarter	- Rs.2.00/1000 gallons
Next	10,000 gallons/quarter	- Rs.5.00/1000 gallons
Each	1,000 gallons/quarter above this	Rs.7.50/1000 gallons

Stand posts completely subsidised by the Municipality.

Water rates at Kadugannawa are based on the NWSDB charges:

Table 5

Current Water Rates in Piped Schemes in Harispattawa

Service	Location			
	Ankumbura	Alawatuwoda	Bokkavala	Hedeniya
				Kulagammana
1. Standposts	No charge	No charge	No charge	No charge
2. House connections in built-up areas	Rs. 2.50/tap/ month)	Rs. 3.00/tap/ month)	Rs. 3.00/tap/ month)	Standposts only)
3. House connections	Rs. 5.00/tap/ month)			
4. Hospital	Rs. 200/tap/ month	-	-	-
5. Tea Factory	Rs. 85/tap/ month	-	-	-
6. School	Rs. 10/tap/ month	-	-	-
7. Commercial Establishment	-	-	Rs. 5.00/tap/ month	-
8. Co-operative Stores	-	-	-	Rs. 30/tap month

2 : Domestic and religious institutions

First 10,000 litres	- Rs.0.20/1000 litres
Second 10,000 litres	- Rs.0.75/1000 litres
Over 20,000 litres	- Rs.1.75/1000 litres
Standposts	- Rs.0.80/1000 litres (Subsidized by the local authority)

In addition Katugastota consumers pay Rs. 7.50 meter charge quarterly and at Kadugannawa it is Rs. 7.50/month. Both places charge higher rates for commercial establishments.

In view of the fact that all stand posts and plot and house connections in the Harispattuwa water service will be metered, it is necessary to assess the average consumption levels in order to estimate the probable water rates. According to NWSDB calculations the average consumption levels are:

i. Stand posts	-	44 lcd
ii. House with one indoor tap	-	88-132 lcd
iii. Urban house with indoor plumbing	-	176-220 lcd

Taking roughly three levels of consumption 44, 100 and 200 lcd and applying the Municipal rates as operative at Katugastota the cost of water to the consumer will be as follows:

- i. 44 lcd - Rs. 16.33/month/family.
(This will come under the free allowance)
- ii. 100 lcd - Rs. 36.66/month/family.
- iii. 200 lcd - Rs.171.66/month/family.

On the basis of NWSDB charges as in Kadugannawa

- i. 44 lcd - Rs. 9.10/month/family
- ii. 100 lcd - Rs. 15.50/month/family
- iii. 200 lcd - Rs. 37.50/month/family

These rates are much higher than the tax the Appraisal Mission had in mind; Rs. 100/year for plot connections and Rs. 300/year for house connections. The rates envisaged by the Mission are low because the basis of its calculations is unrealistic.

According to the Mission's own projections the total population of the 9 localities that will be served with small piped schemes will be 62,000, i.e. approximately 11,214 households (at 5.6 average size of family). The rates envisaged by the Mission are worked out on the highly theoretical assumption that all these households will have either plot (70 per cent) or house connections (30 per cent). Thus, at the rate of Rs. 100/year for plot connections and Rs. 300/year for house connections the estimated operation and maintenance cost of Rs. 1.8 millions per year could be realised. In the case of hand pump wells the estimated operation and maintenance cost of Rs. 480,000 can be realized by taxing at the rate of Rs. 5.00 per person per annum the entire projected

population of 96,600 by 1985 in the areas that will be served by these wells.

In regard to piped services the Mission's estimate of probable level of taxation is highly unrealistic. It is more likely that only about 50 per cent of the families will obtain pipe connections (35 per cent plot and 15 per cent house connections) by 1985. If the entire operation and maintenance cost are to be recovered from the consumers the rates will be twice as high as what the Mission calculates. Considering the economic level of an average family in Harispattuwa such high water rates will only amount to denial of improved water services to the vast majority of the people. Except along the main roads leading to Kurunegala and Matale there will be relatively a few households opting for house connections in the interior locations selected for piped services.

Therefore, it is highly unlikely that the operation and maintenance can be recovered through water rates alone, unless very high rates are levied. One of the possible solutions is to raise additional revenue in rural areas to supplement the revenue from water rates so that the operation and maintenance cost could be met. There is in fact sufficient scope for revision of rural taxation to generate considerable revenue to meet part of the costs of water supply and sanitation requirements. Rural taxation system has remained without significant revision for a few decades. In the Harispattuwa area improvements in income from highland commercial

crops, particularly spices, and expanding commercial activity have remained inadequately taxed.

The principal sources of revenue in rural areas is the acreage tax and the Agrarian Services tax. In addition there are special taxes on commercial and industrial enterprises. The amount levied often varies between different Village Committee divisions, but the range is not very great. On the basis of a recent revision of taxes in one Village Council division within the Kandy District Development Council the acreage tax remains at Rs. 2.00 per acre per year on all permanently cultivated land above 5 acres. And all land between 1-5 acres, 50 cents per acre per year. This tax can be increased by even 500 per cent without any adverse impact on production in view of the high value of produce of these lands. In Harispattuwa there are nearly 5,000 holdings above one acre in extent. All current special taxes range from Rs. 1 - 50 per year except in the case of timber mills (Rs. 200), power looms (Rs. 100) and dairies (Rs. 100). These are highly inadequate in view of the income generated by most of these ventures. The current property assessment rates in built-up areas vary between 4 per cent to 6 percent of the assessed value. It is only in the case of the Agrarian Services tax that an increase may not be advisable in view of the highly increased cost of production and low yields in these areas. With a realistic revision and a systematic collection of rural taxes a considerable

revenue may be generated to subsidise the entire hand pump well programme and to provide partial subsidy for the low income groups in piped water service areas.

The policy of raising the entire operation and maintenance cost of water services locally may not be feasible without such radical increases in taxation to supplement the revenue from water rates. A more rational approach to the problem is presently being tried out by the government.

The government is seriously considering the abolition of the water rate component of the consolidated assessment rate in urban and built up areas and replacing it with an equitable system of water tariffs. These tariffs could be district wide or may encompass an entire Province with urban-rural variations and charges from house connections to high and middle income groups will be higher than the cost of supply. The differential will be used to subsidize the water supply of low income groups.

In keeping with this policy the government has already implemented sliding water tariffs in the South-West Coastal Water Supply Project area where the rates are calculated on the following basis:

House connections:

First 2500 gallons	- Rs. 2.50/1000 gallons.
Next 2500 gallons	- Rs. 5.00/1000 gallons.
Thereafter/at	- Rs.12.44/1000 gallons.
Commercial users	- Rs.12.44/1000 gallons.

There is no minimum charge or a maximum allowance of water. However, all connections including stand posts are metered. Stand posts are provided for the lowest income groups in view of their health and sanitation requirements and the government will subsidize their consumption. This system envisages the provision of adequate and safe water for low income groups while industrial, commercial, institutional and other users will be charged higher rates for both to meet the subsidy to the low income groups and also to encourage conservation. This policy is more in keeping with the overall objectives of the Decade Plan of the government.

Our observation is that the policy of recovering the entire operation and maintenance cost of the water services from water rates is impracticable. The policy of making the community responsible for recovering the entire operation and management cost even to the extent of denying improved services where it is not possible has been advocated by some foreign consultants. (Kamsax-Kruger, Draft Final Report, Chapter 6, Sociology and Socio-Economy). Such rigid policies will only defeat the declared objectives of programmes of supplying improved water supplies. The hand pump well service in particular needs to be

completely subsidized and in the case of piped services water rates should not be levied with the intention of recovering the operation and maintenance cost in its entirety. Until the new government policy is implemented to cover the Kandy District other sources of revenue should be utilized to meet part of the operation and maintenance cost of the entire service.

CHAPTER V

RURAL ORGANIZATIONS

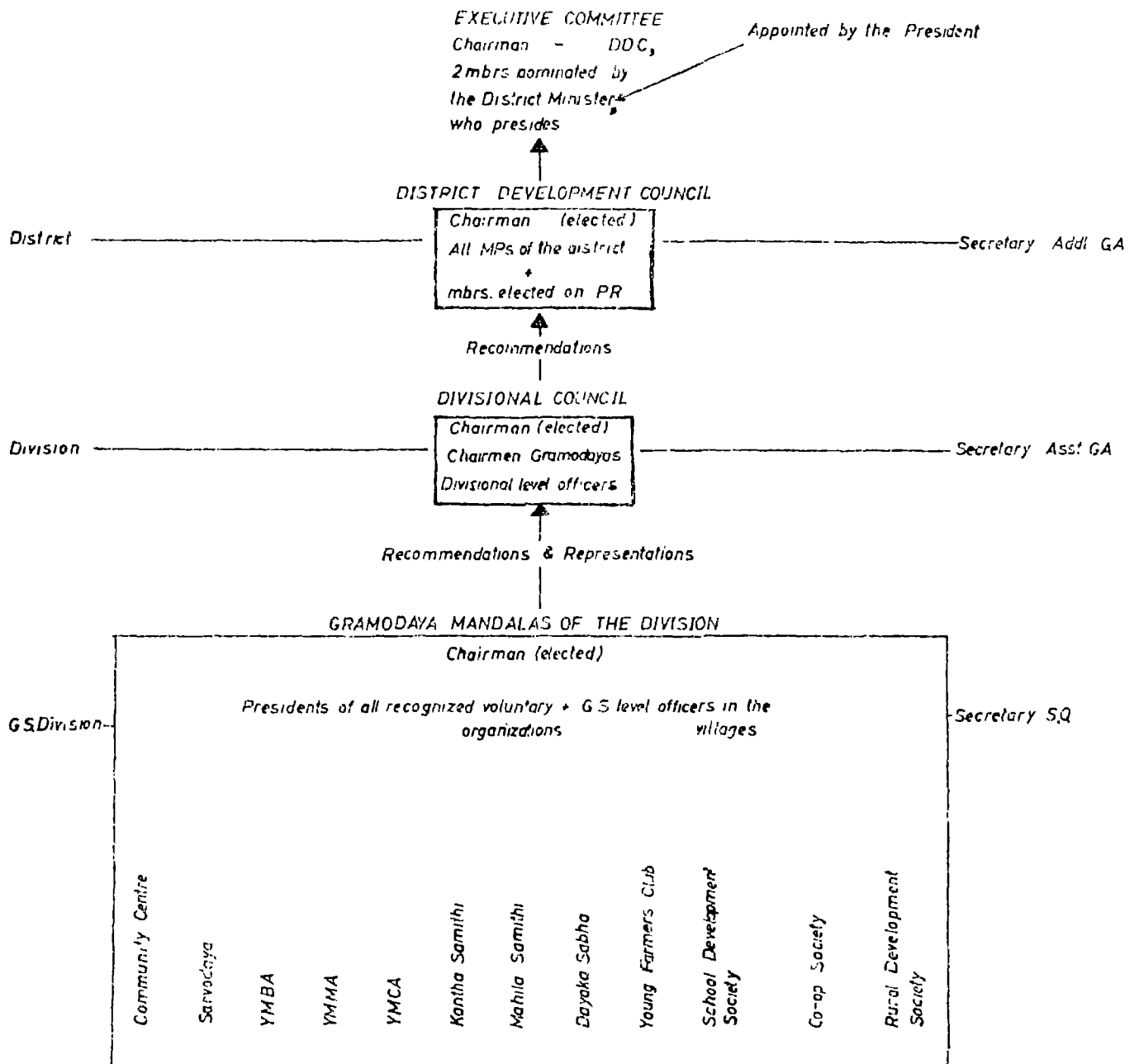
The variety and multiplicity of voluntary organizations in rural society is a comparatively recent phenomenon. The decline of the traditional socio-economic system and the emergence of a competitive society created the need for mutual self help services during the nineteenth century. Early government sponsored societies in the villages were related to problems of peasant agriculture and rural indebtedness. With the depression the government encouraged the function of rural societies to absorb part of the economic and social strain at village level. Rural Development Societies, which in fact remains the most active rural organizations even today, were sponsored by the government during the Second World War. The proliferation of both voluntary and government sponsored rural organizations however stands with Sri Lanka gaining independence.

Societies presently functioning in Harispattuwa may be divided into three broad categories, (i) Statutory, (ii) Government sponsored, and (iii) Voluntary.

1. Statutory Organizations

The only statutory organization, the Gramodaya Mandalaya, forms the base of the newly instituted District Administration System and the apex of the

DECENTRALIZED ADMINISTRATION: ORGANIZATIONAL STRUCTURE



village level societies. Each Wasama will have a Gramodaya Mandalaya composed of representatives of all officially recognized non-political societies that exist within the wasama and all the public officers functioning there. The public officers, however, will not have the vote. The Chairman is selected from among the representatives of the societies. The Special Services Officer of the wasama functions as the Secretary, ex-officio. The initiative of the Gramodaya Mandalaya is limited to recommending welfare and service requirements of the area to the Pradesiya Mandalaya (Divisional Council). It controls no funds at all and its functions are confined to supervision of village works carried out by the DDC, the only body that controls a budget.

The functions of the Gramodaya Mandalaya as they are defined presently, will not infringe on the activities of the village level voluntary societies. But through their representation in the Gramodaya Mandalayas the voluntary societies have for the first time been incorporated into the formal power structure in the villages. The obvious implication of this development is the tendency to politicise the voluntary organizations and draw them into local political factionalism. The intention of the government to transfer certain powers and provide a budget for Gramodaya Mandalayas would make these developments inevitable.

Gramodaya Mandalaya have been functioning only for little over an year and their effectiveness in providing welfare and service requirements of the

villages is yet to be proved. What has been proved during this short period is the fact that the village level voluntary societies recognized for representation in the Gramodaya Mandalayas are rapidly becoming politicised. The Chairmanships of virtually all Gramodaya Mandalas in the Project area are being held by the leading officials of the branch organizations of the party in power. There are instances in the study locations where the existing voluntary societies were refused recognition on account of political differences and new ones were created instead to ensure the support of their representatives for the election of a Chairman belonging to the party in power.

2. Government Sponsored Societies

The Rural Development Societies, Co-operative Societies and the Community Centres are the more prevalent in this category. All registered households in the area are eligible for membership in these societies and theoretically any member is eligible to be elected to the Committee. In the case of Co-operative Societies formal membership is required. Procedures governing the memberships, elections and finances are laid down by the government and they all come under the supervision of relevant government departments and specially appointed officials.

Rural Development Societies were sponsored in an early 1940s "to mobilize the self-help resources of the rural people to improve their conditions of living with the participation and assistance of the government".

Their activities are mostly focussed on improvements to the physical infrastructure of the villages, such as roads, minor bridges, community wells, school buildings, community halls, minor water schemes etc. Their participation also extend to several related fields such as environmental sanitation, adult education, promotion of cottage industries, social welfare schemes and agricultural development.

The Rural Development Societies held a position of importance as long as social service and welfare remained principal objectives of the government in rural society. They lost their significance with the emphasis an 'development' and became superfluous with the decentralization of district level administration.

The Co-operative societies which were originally designed to provide for co-operative endeavour in village level economic activity have now in effect become government institutions working as purely servicing agencies. Almost every village has a consumer society for the purpose of distribution of consumer goods. The office holders are theoretically elected by the members but they have no control over those who run the retail outlets. The managers and other employees are appointed and paid by the divisional level co-operative unions which are directly under the control of the Co-operative Department. Thus, there is no effective village level participation in these societies. This is even more so in the case of Multi-Purpose Co-operatives which were expected to play a more active role in rural

economic development. Wherever active they only function as servicing agencies. Co-operative Credit Societies have on the whole retained their popular base and initiative. The membership is limited to those who subscribe to the funds and they have an effective voice in the election of the office bearers and in the control of funds.

The Community Centres are supervised by a special officer attached to the office of the Commissioner of Local Government and limited funds are provided for them by the government. However, they function entirely on local initiative and enthusiasm. The activities are generally limited to recreational, literary and cultural fields and the participation is mostly among the youth of the area. These characteristics make the Community Centres ephemeral than other village local organizations.

3. Voluntary Organizations

These are of three main types:

- (i) Those organized on purely local initiative.
- (ii) Those coming with an Island-wide organization.
- (iii) Branch organizations of national political parties.

Of these coming under the first category Funeral Assistance Societies (Maranadhara Samithi) are perhaps the most active in the village today. Some of them

had their origin in various types of mutual aid societies. They are intended to help the villagers in meeting the increasing expense of funerals by providing food and labour requirements, equipment etc., and also the emotional and psychological support by community participation at local funerals. Of the five study locations only in Uguressapitiya that no such society exists presently. There too, discussions have already taken place to organise one. The explanations offered by the villagers for the absence of an organization is that according to Muslim rites the dead has to be buried within 24 hours with very simple ritual and therefore funerals do not involve high expenses and elaborate ceremony. The functions of these societies indicate that assistance that was spontaneously forthcoming in traditional society has now to be institutionally organized.

The Membership of Funeral Assistance Societies is Voluntary and few vary from place to place - between Rs. 2.50 - Rs. 10.00 per month. The highest level of participation in rural society is noticed in these organizations. At Mandandawala 68 out of 108 households are members and the Dolapihilla (wasama) society has a total of 247 members. Sometimes there is tendency to drop out once benefits have been obtained but this is not very frequent.

A significant feature observed in relation to these societies is the tendency among the more affluent in the villages to keep aloof of them. Both at Mandandawala and Dolapihilla the rich have avoided becoming members of the local Funeral Assistance

Societies, though they individually help the affected families fairly generously sometimes. This behaviour is largely due to the fact that they need not depend on voluntary assistance from villagers as they independently command labour and resources necessary for their funerals and also because such dependence is generally considered not in keeping with their social status.

The second type of village level voluntary organizations is associated with religious institutions. All Buddhist temples in the study locations have Dayaka Sabhas where there is no rigid system of election of membership. The patron is always the chief bhikkhu of the temple and the office bearers are selected generally on the basis of the extent of patronage extended to the temple by the particular individuals. Thus the Dayaka Sabhas are generally dominated by the more affluent Buddhists of the village. The functions are firstly to see that the subsistence and other requirements of the resident bhikkhus are provided for, secondly to undertake necessary maintenance and improvements of the temple, and thirdly to organize the performance of customary religious rituals. Funds are collected on a voluntary basis from all households attached to the temple. These organisations are generally confined to males and formal participation is extremely limited. It is however possible to have separate womens' organizations associated with the temple - Kulagana Samithi. In addition there are Buddhist Associations not directly linked to the temple and also not restricted to

religious activities. Most religious associations cut across political divisions particularly when the temple maintains an apolitical position.

At Uguressapitiya the society associated with the Mosque performing similar functions as the Dayaka Sabha is referred to as the Trustee Board. In composition and participation too it is similar to the Dayaka Sabha. The functions of the Trustee Board involve greater control over the fund ; the payment of the Maulavi of the mosque and his appointment are under its control. Besides, it takes an active interest in the problems of the community. Contributions are collected from the co-religionists on the basis of income with a minimum of Rs. 2.00 per month. Unlike the Dayaka Sabha the Trustee Board is registered as a recognised religious body with the Muslim Cultural Affairs Department.

Social Service Societies which were fairly common a few generations back are virtually unheard of now in rural society. Only in Uguressapitiya that such a society appears to be active while at Mandandawala it has been dormant for many years. These societies are generally organized by the affluent and the educated and express their patronising attitude towards the villagers.

Womens organizations with local initiative are also rare. Of the two societies in the five locations only one is active at Uguressapitiya with a regular membership participation. The membership fee is almost

nominal with a payment of Rs. 1.00 per month; participation is generally confined to the younger generation with high employment aspirations. Therefore the work of the society is focussed on training them in some skill for self employment such as making artificial flowers, sewing and batik printing.

Economic and professional organizations at village level are even rare. The need for an association of brass workers is strongly felt at Batuambe in view of their exploitation by the brassware dealers in the cities. At Ankumbura, there was a short-lived traders association which was formed for the purpose of bargaining with the Land Reform Commission which owns most of the buildings in the town. Only active village level economic organisation in the five locations is the Dolapihilla Tea Small Producers Association. This type of association is fairly common in areas with a heavy concentration of medium level producers of commercial crops. The Dolapihilla Association was organized to avoid the middlemen in marketing green tea leaves. Participation in the Association is necessary in order to get the benefit out of the government regulated price of green leaves. Interestingly in Dolapihilla, all the rich landowners who avoid other voluntary social organizations are principal participants in this Association.

The second category of voluntary organizations - those with island-wide linkages are not very common in the villages. Mahila Samithi which was active among rural women a generation back is virtually unheard of at rural level now. At Mandandawala a Mahila Samithi

was started in 1952 and in the early years it followed the objectives of the parent organization particularly in promoting income generating activity among rural women. Its present activity is confined to running a nursery school. Membership of the Samithi is confined to about 45 mothers who send their children to the nursery and attendance at meetings range between 20 and 30.

Sarvodaya comes under this category of organizations. In the Project area it is active only in Dolaphilla perhaps due to special circumstances. The chief monk of the Dolapihilla temple, who is the live-wire in the movement has been a personal friend of the Sarvodaya national leader. The movement therefore seems to be related to his personal popularity in the village and is therefore associated closely with the temple. This explains the popular acceptance of the movement in Dolapihilla.

The objectives of the Sarvodaya movement in general are highly idealistic and vague. Sarvodaya meaning 'awakening for all' intends transforming the present social structure through Sharmadana (Sharing of labour) and creating a 'non-violent social order'. The process involved is referred to as 'self development' which involves an 'awakening' within individuals, families and communities in which their needs are first satisfied without polluting the mind, poisoning the body, destroying the ecological balance, violating the cultural boundaries, widening prevailing disparities or demeaning "human nature".

In Dolapihilla a branch Shramadana Samithiya - Sarvodaya's principal instrument was formed in 1968 to organize free labour for cleaning wells and construction of latrines. But in both these endeavours it has virtually failed; not a single latrine is reported to have been constructed. However, Sharamadana Samithiya has been successful in supporting construction work at the temple.

Sarvodaya's principal strategy is to organize villagers at all age levels. Singithi Hamuwa, a nursery for pre-school children was started in 1974 with about 50 children (presently 30) and two teachers. There is no system of fees or payment for the teachers. Singithi Hawula provides a forum for children between 5-16 years to develop their talents in debating, drama etc. The children are also given instructions on Sarvodaya ideology. Every Saturday a childrens' fair is held with locally collected items and the proceeds are deposited in the Sarvodaya Savings scheme under each child's name. About 35-40 participate in the Singithi Hawula. Younn Hawula, meant for those above 15 years did not succeed at all. Maw Hawula, the association of mothers also did not last long. At the time it was active it organized a few singing, speech making and home gardening competitions for the village mothers.

A most recent Sarvodaya in Dolapihilla is a Savings and Credit Society for different age levels. There are 390 members presently within the entire Dolapihilla wasama and the savings amount to about Rs. 8,000.00. The scheme provides for fixed deposits

and savings accounts with interest rates comparable to those of established Banks. There is also a new scheme, still not in operation, to give loans to cultivators to be repaid in cash or grain. The grain that is collected will be marketed locally at a comparative price. Shanti Sena, the latest Sarvodaya organization is intended to mobilize voluntary labour to help the needy particularly in thatching of roofs, helping the sick and assisting in cultivation. It has a committee of 11 including a bhikkhu, 6 girls and 4 young men.

Nearly 15 years of Sarvodaya activity has had no significant impact on Dolapihilla. It has failed to generate the idealism that is necessary to motivate large scale community participation in voluntary basis for the general upliftment of society.

Increasing politicization of rural society has made branch organisations of national political parties a common feature in the villages. Though intended to be a two way channel between the party centre and the masses the branch organization now operates as the local agency for mobilizing political support at times of elections and for the exercise of government patronage. All branch organizations have become creatures of the local members of Parliament of the party representatives stunting whatever initiative they could marshal in the promotion of the interests of the villages they represent. The branches of the party in power naturally command greater influence and participation as they have become the principal channel for obtaining

government employment and service and welfare requirements, of the villages. This has reduced the branch organisations of opposition parties to a position of complete inactivity. During the recent years the party in power has systematically undermined the support base of the opposition parties by various methods apart from the use of government patronage. At Batuambe the erosion of SLFP* base during the last few months has been dramatic. Prior to the Presidential Election 20 per cent of Batuambe voters were estimated to belong to the SLFP organization. After the UNP victory at the election the SLFP organization appears to have disintegrated. Its members have established their own control over all other voluntary and government sponsored societies at village level.

Branches of the United National Party are found active in all study locations and those of the Sri Lanka Freedom Party, which were active under the previous government, have become dormant or disintegrated except in Dolapihilla. The other national party active in the Project area is the Janata Vimukthi Peramuna. Its membership is restricted to the youth with a high level of motivation and dedication. Though there are no JVP organizations in the study locations its presence in the area is strongly felt everywhere.

The participation level in the local party organization is at its height during the election times. Although annual election of office bearers are mandatory the choice is limited by extraneous factors

* Sri Lanka Freedom Party

such as the pressure of the M.P. of the area. Participation at election times become virtually compulsory for those seeking government employment; the membership card of the party in power is a minimum qualification for virtually all public sector employment. At Uguressapitiya there was almost total participation of membership of the UNP organization during the recent election campaign and Referendum but it has now been reduced to about 25 per cent. The Chairman of Uguressapitiya branch of the UNP is a trader in tobacco and spices and simultaneously holds the chairmanships of the local Rural Development Society, Co-operative Society and the Gramodaya Mandalaya. He claims that the UNP branch was instrumental in obtaining employment for 80 residents of the village in the country and for 34 in the Middle East. Besides, services and amenities like two public wells, a school building and a water pump to serve the school and mosque are claimed to be the results of its initiative. This illustrates how social and economic power in rural society is enhanced and stabilized through associations with parties in power.

4. Observations

Our survey of village level organizations leads to the following general observations:

1. In rural society there is a variety and a multiplicity of societies which are essentially welfare and service oriented.

2. The leadership in these societies is largely concentrated among those of higher economic standing either businessmen or landowners except where a conscious attempt is made to involve the lower strata of society in leadership roles, as in the case of Sarvodaya, as well as in instances where particular skills and aptitudes are involved e.g. sports societies. In most locations a few wealthy persons control most societies at the same time.
3. Though exclusively caste oriented societies are not found most organizations are dominated by the predominant caste group and the minor castes are only marginally represented.
4. Popular participation in the regular activities is extremely limited. In all locations it is a minority of active members who function in several societies at the same time. Optimum participation is in societies where concrete benefits are assured.
5. Participation of women is clearly disproportionate to their numbers and even where they participate in fair numbers their roles are generally of secondary importance. It is only in Delapihilla that women occupy about 30

per cent of the positions in the executive committees of the societies. Exclusively womens' organizations are few and less active. In the case of open societies womens' participation is greater in certain types such as religious and social welfare societies. Participation of Muslim women in organized activity is generally confined to their exclusive societies.

6. General feeling among most villagers is that there is apathy and disinterest among villagers which makes collective effort on a voluntary basis difficult particularly where sustained interest is required.
7. The vitality and even the survival of most village level societies are becoming increasingly linked with the balance of power at the centre. As a rule the control of all government sponsored societies change hands along with change of power at the centre.
8. This tendency towards political control of village level societies has been brought to its logical conclusion by the institution of Gramodaya Mandalas. They will not only complete the process of politicization of all recognized village level societies but make political factionalism and rivalry and even possible violence essential features of these societies. This trend is bound to undermine local initiative, the essential feature of all village level voluntary organizations.

CHAPTER VI

TRADITIONAL HEALING SYSTEMS

Healing systems are an integral part of all known cultures. A patient's cultural framework and cosmological beliefs often influence his response to sickness, perception of disease and the decisions regarding methods of treatment. Traditional healing systems, therefore, tend to combine psycho-social and bio-medical aspects of healing.

The co-existence of several types of practitioners, with complementary roles, is characteristic of traditional healing systems in Sri Lanka. Traditional medicine encompasses the indigenous practices and the more systematic Ayurvedic medicine with both having common Indian roots. In the indigenous system knowledge of healing is handed down from generation to generation with sometimes 'schools' of practitioners trained in a particular tradition of family medicine. This was true of Ayurvedic practitioners too in the past but now they are professionally trained by colleges. In practice the two systems do not exist as virtually exclusive categories as some of the basic concepts are common to both. Often it is difficult to distinguish one from the other.

The concept of polarities, that good health is a product of regular balance of certain properties and their imbalance is therefore the cause of ill health, is common to both indigenous and Ayurvedic medicine. Thus they ascribe disease mainly to the disharmony of

the three basic humours - tridosā, vā, pith, sem. These three dosa, are for convenience referred to as wind, bile and phlegm, but according to the treatises on Ayurveda they have different manifestations within broad functional roles. Vā maintains the entire unity of the human system, makes it work and controls the work of all organs. Pith is energy or heat and is essential to maintain body heat and the functioning of all organs. Sem is that which controls heat and keeps the body heat in equilibrium and makes the body grow.

In Ayurveda there are in addition the doctrines of the bhutas - the basic elements of the universe (akasa - ether, apo - water, vayo - wind and pathavi - earth), and the seven dhatus or components of the body (Rasa - essence of food, rakhta - blood, Mansa - flesh, medha - fat, asti - bones, majja - marrow and sukra - semen, which, cause or contribute towards illness.

In both indigenous and Ayurvedic medicine there are five main categories of diseases.

1. Vātarōga - caused by excessive 'wind'.
2. Pithrōga - caused by an imbalance of 'bile'.
3. Semrōga - caused by an imbalance of phlegm.
4. Sannipāta rōga - caused by an imbalance of all three humours.
5. Agantuka rōga - caused by external factors.

In addition to these physical factors diseases may be caused by supernatural forces, gods, devils, and spirits. Epidemics and pestilence may be due to disturbances in the five elements but it could also be the result of unrighteousness of rulers leading to the abandonment of the area by the gods which may cause droughts, famine and epidemics. Above all Ayurveda as well as all other traditional healing systems accept the theory of karma, the fundamental cause of all suffering.

The practitioners of the two traditional systems of medicine often treat all these diseases - sarvanga vedakama but at the same time there are specialists in certain branches of ailments such as as vedakama (eye diseases) handi vedakama (bones and fractures), gedi vedakama (boils and wounds) etc.

In addition to these there are numerous medical practitioners versed in treatment of particular types of diseases whose knowledge is based purely on experience. To this category may be added the fast disappearing village midwife. Folk medicine or home remedies - at beheth - also occupy an important place in the traditional system of medicine. Most common diseases are attended to by the elders of the village or of the family with at beheth or folk medicine. Kem, where treatment is believed to be effective only if carried out in secrecy and silence, is a popular form of folk medicine. Here the treatment has the effect of distracting a persons mind from the pain and discomfort of purely temporary kinds of ailments and often has no rational or scientific relationship to the ailment,

though in certain cases they do have curative qualities. In the past village practitioners and folk medicine played such a role in Kandyan society that Knox observed:

"Here are no professed Physicians no Chyrurgeons but all in general have some skill that way, and are Physicians and Chyrurgeons to themselves".

(Knox p. 181)

Ayurveda and indigenous medicine are not confined to purely physical medicine. Their underlying ideas have permeated religion, ritual and myth. These practitioners often play complementary roles as meta-medical practitioners, astrologers and soothsayers, all forming essential elements of the traditional healing systems.

"But to cure inward diseases they are not excellent. But generally when they are sick they apply themselves to their gods. But their chief supplications they make to the Devil, as being God's instrument, sent to punish and afflict whom he pleaseth".

(Knox p. 184)

The functions of the metamedical system is to define, rationalize, explain and treat physical and mental disorder in psycho-cultural terms. The credibility of the healing system depends on the

amount of faith in the abilities of the practitioner whose role is to act as the intermediary of a supernatural power which is believed to be the real agent of healing.

Metamedical healing practitioners are also of several types and as in traditional medicine there are specialists and many who are skilled in minor charms. Broadly their diagnosis of disease is based on the assumption that it is caused by malign influence of supernatural beings such as yakshas, prethas and kumbandas or by the anger of gods and harmful planetary influences. Where the symptoms do not lend themselves to easy identification of the affliction, people see a soothsayer or an astrologer who will not only explain the causes but often prescribe medicine, charms or exorcism and even recommend a competent medical practitioner. In the same way the medical practitioner will not only diagnose the disease and prescribe medicine according to his own expertise but will also examine the horoscope of the patient and recommend, or himself perform, charms and rituals to counter malign influences of spirits, demons or planets.

"When a person is sick he carries to these men (astrologers) his Nativity, which they call Hanna hom pot (Handahampot - horoscope), upon the perusal of which they tell his destiny".

(Knox, p. 177)

Kattadiya specializes in exorcism and charms; he could intercede with the gods and evil spirits to cure a person and also has powers to influence these forces to cause good or harm to others. Black magic (huniam) is performed by Kattadiyas to cause illness death, destruction of wealth and property, break-up of marriages, etc. He also has power to counter the huniam of another Kattadiya by a seth santhi or white magic. Black magic is resorted to when legal or other forms of vengeance on an enemy is not feasible or socially desirable. Seth santhi and wearing charmed talisman are popular methods of protection against evil caused or intended by humans or supernatural forces.

Bali adura, generally performs similar functions but specializes in treatment of afflictions caused by graha apala or evil planetary influences.

Kapurala is the principal functionary at the devalas - the shrines of various gods. The most popular gods are Skanda (Kataragama), Saman, Nātha, Dedimunda, Gale Bandara and goddess Pattini. He intercedes with the particular god or goddess in the devalaya to bring relief to the sick or to those in distress.

Apart from these professional healers the Buddhist monks perform religious rituals which are believed to have healing qualities. Pirith and Bodhi Pooja are the more popular forms of healing rituals. The Buddhist monks also often practice

traditional medicine, astrology and seth kavi (a kind of chanting of specially written verses to bring beneficial effects on people with illnesses or in distress).

Traditional healing systems in Harispattuwa

The following observations are made on the basis of a special survey of the prevalent healing methods in Harispattuwa. For this purpose 93 families were selected out of a total of 717 in all five study locations (13 per cent) by the stratified random sampling method. Three different types of questionnaires were used for collection of information. The first was administered to those who had some knowledge of kem and at beheth in the villages. The second questionnaire was used by the investigators to collect data from various types of traditional practitioners in the five locations in order to understand their points of view. The third was administered to the selected sample of households to collect data on the views and practices of the people on traditional healing methods. Apart from administering the questionnaires investigators collected data by participating in village functions and ceremonies and interviewing informally useful informants.

Table 1 : Survey Sample

Village	Total No. of Families	Sample Size	Sample Size %	Male respondents Total	Female respondents Total
Ankumbura	182	19	10.43	16	03
Batuambe	94	20	21.27	20	00
Dolapihilla	168	19	11.31	17	02
Mandandawala	96	15	15.62	12	03
Uguressapitiya	177	20	11.30	16	04
TOTAL	717	93	13.00	81	12

Perception of Disease

The survey shows that even the vast majority of people who prefer western medicine (88 per cent) are influenced by traditional norms, concepts and values relating to perception of disease.

According to the theory of humoral imbalance, for instance, catarrh, asthma, fever and cold are thought to be results of imbalance of phlegm or a phlegmatic reaction and the patient is expected to refrain from bathing, exposure to cold and ingestion of food normally considered 'cold'. Such imbalances

causing diseases may be triggered by outside factors. Water therefore plays a significant role in the causation or prevention of illnesses. The special survey of the Harispattuwa study locations shows that in the perceptions of the people, water plays a significant role as a factor causing humoral imbalances. Most common ailments such as fever, cold and coughs are believed to be the outcome of bathing too much or too little, or due to a change in the quality of water, the style and place of bathing. Those who suffer from asthma and catarrh avoid bathing in the morning or evening and generally select a time when there is bright sun light. Change of the normal bathing well or stream may involve a change of quality of water and cause illness. Those used to bathing in the well with buckets may fall ill if they dip themselves in the river or stream. Fever and bronchial diseases are often believed to have been caused by such changes in bathing habits.

In keeping with the theory of seven dhatus in Ayurveda, food habits also are believed to play an important role in causing disease. Belief in 'heaty' and 'cooling' food pervades all sections of the population and have a significant impact on food habits in rural society. Excessive use of 'heaty' food is believed to cause certain diseases and also to have adverse effects on many other ailments.

Table 2 : Causes of common ailments as perceived
by the respondents

Reasons	Ankum- bura	Batu- ambe	Dolapi- hilla	Mandan- dawala
Bathing, change of water, or change of bathing place, getting wet, etc.	50.5	44.6	42.2	38.8
Carelessness	3.5	5.5	3.5	2.3
Doing heavy work	2.2	5.7	0.0	2.0
Heatiness of the body	29.6	27.5	34.2	31.5
Eating beef	5.5	5.6	4.0	3.0
Old age and general debility	3.4	5.6	6.1	3.9
Undefined reasons	5.3	5.5	10.0	18.5
TOTAL	100.0	100.0	100.0	100.0

Table 3 : Percentage of people who believe
that they are under the spell of
Huniam

Village	% Yes	% No
Ankumbura	29	71
Batuambe	64	36
Dolapihilla	38	62
Mandandawala	42	58
Uguressapitiya	(4 cases)	No information
TOTAL	40	60

Table 4 : Nature of damage/illness that may be
caused by Huniam

Damage	Ankum- bura	Batu- ambe	Dolapi- hilla	Mandan- dawala	Uguress- apitiya	Total
Kill	3	1	2	2	2	10
Madness	0	2	1	0	1	4
Illnesses	7	11	7	8	2	35
Damage to Property	1	1	1	1	1	5
Obstruct progress	2	7	1	7	1	18
Create domestic disharmony	0	1	4	0	1	6
Others	3	1	1	0	4	9

Even in a situation where the overwhelming preference is for western treatment ideological perception of disease still remains strong. Out of 60 respondent families 24 (40 per cent) believe that there are under the spell of huniams which have caused ill health, family disharmony and general obstructions to progress. (Tables 3 and 4)

Tables 5(A) and 5(B) show that even in locations which are not typically rural the belief in the effectiveness of huniam is fairly prevalent.

Huniam is resorted to in a situation where direct physical retaliation against a real or imagined enemy is either not feasible or socially unacceptable form of behaviour. In rural society huniam is generally believed to be directed against those who are considered to be on the ascendant in wealth and prominence and are therefore subjected to the jealousy of the neighbours. Huniam involves the interaction between several individuals. If 'A' wants to do a huniam on 'C' he needs an intermediary 'B' who is the professional Kattadiya. If 'C' believes that he is under a spell of huniam he goes to 'D' who is a soothsayer, medium man (Pena balanna) or a 'Lamp reader' (Anjanam karaya) who is believed to be able to trace the source of the huniam. Then 'C' seeks the help of 'E' who is capable of nullifying the effect of the huniam or turn it back on 'A'. 'E' can also perform a 'white magic' or seth santhi for greater protection of 'A'. There are also those who take preventive measures in the form of seth santhi, charms or talismen.

Table 5(A) - Information on Huniam

ANKUMBURA

Object used	Results	What can be done with <u>Huniam</u>	How they got to know - who told	Measures taken to neutralize charm	Results of 'cutting' of charm	Reason for Charming	Who did it
Charm buried in garden	Ill health lameness etc.	Create diseases	Ill-health, Soothsayer told	Removal of charm	No progress	-	-
Human ash	Ill health	Create dis-harmony and ill-health	Soothsayer told	-	-	-	-
Charm buried in garden	Ill health; products did not sell.	No progress, Increase in expenditure	Diviner	Thovil by <u>Kattadiya</u>	Relief from problem	-	-
Charm buried	Fell from tree. Ill health	No progress, Ill health	Soothsayer	No	-	Anger	Enemies
<u>Huniam</u>	Sudden injuries. Bars progress to family. Dizziness.	No progress. Ill health	Suspect due to ill health	<u>Kattadiya</u> did <u>Tnovil</u> .	Cured	Anger	Neighbours
Human ash added to bricks & used in construction of house.	no progress	No progress. Ill health.	-	No	-	-	-

Table 5(B) - Information on Huniam

BATUAMBE

Objects used	Results	What can be done with <u>Huniam</u>	How they got to know - who told	Measures taken to neutralize	Results of 'cutting' of charm	Reason for Charming	Who did it
Human ash	-	Obstruct progress	Soothsayer	Nothing yet	-	-	-
Fence post placed on top of charmed egg.	Spine and chest trouble for two years and then died	Cause illness and destroy life	Sickness: Soothsayer told	-	-	Land dispute	Land owner
Husked coconut in garden charm for destroy- in proper- ty.	Loss of employment, family dis- ill-health. harmony	Ill-health and family dis- harmony	Ill-health and loss of employment. Soothsayer told	Removed charm	Gain employ- ment, good health.	-	-
Charmed lime	Female child- ren fell ill	-	Any kind of disease	Tying charmed thread	Good Health	-	-
-	Labour delayed (pregnant woman)	-	Kapurala told delay in labour	Seth Shanthi	Good Health	-	-

Prevalence of traditional healing
methods in Harispattuwa

In assessing the role of traditional healing systems in Harispattuwa several factors have to be taken into account; social differentiations, diseases commonly prevalent in the area and the availability of facilities for different types of treatment.

Harispattuwa does not constitute a typical rural area as far as the availability of western and traditional treatment facilities is concerned. Intrusion of plantation economy resulted in early establishment of western medical services and for over a century the population has been exposed to western health care system particularly to immunization programmes against cholera and small pox and for preventive campaigns against viral fevers. Relatively efficient communication network has linked the area with urban, state and private western medical facilities. In addition to these factors the usual processes of social change have lowered the standing of the traditional practitioners in Harispattuwa to an extent that they feel that the practice of traditional medicine as professionally non-viable.

To analyse the pattern of the prevalence of traditional medical practices three broad social categorizations on the basis of income and types of dwellings are adopted. There is a significant relationship between income group and the amount of money spent as medicine. The average monthly expenditure on medicine in the five locations amounts to 10.54 per cent of the total expenditure.

Ankumbura	2.84
Batuambe	2.52
Dolapihilla	23.62
Mandandawala	5.4
Uguressapitiya	15.36
Average	<u>10.54</u>

The higher income group, constituting 26.4 per cent of the sample, spend only 6.1 per cent of their monthly expenditure on medicine, the middle group (17.6 per cent) spend 8.5 per cent and the poor (56 per cent) spend 11.5 per cent. It is difficult to assess statistically the extent to which the people use different systems of medicine or metamedical practices. Government western medical services, used particularly by the middle and lower income groups, are largely free. In the case of some traditional medical practitioners, consultation is free. In both cases most of the money that is spent is on medicine, herbs and travelling. (Table 6).

People's preference between Western and traditional appear to be clear. About 88 per cent prefer Western medicine as against 7 per cent for traditional medicine, and 3 per cent are inclined to make their decision on the basis of the kind of ailment.

The preference for Western medicine is mainly determined by its convenience and effectiveness, 32 per cent believe it is easy to obtain and 29 per cent believe it gives quick results. Still, some strongly

Table 6 : The average amount of paid to
different medical practitioners
in the village

Village	Western private doctor	Ayurvedic physician (private)	Indigenous practitioner (local)
Ankumbura	17.00	10.00	5.50
Batuambe	19.00	13.25	7.50
Dolapihilla	24.00	20.00	5.00
Mandandawala	10.00	12.50	6.25
Uguressapitiya	20.00	11.50	5.00
Overall Average	19.00	13.40	5.85

believe that traditional medicine is more effective for certain ailments, such as eye and rheumatic ailments. But, for these ailments treatment is not conveniently available and the long distances that have to be travelled to consult specialists involve very high expenditure. Strong views prevail on the long term beneficial effects and effectiveness of traditional medicine, particularly in the case of prolonged ailments. It is believed by some that traditional medicine can be trusted to give a complete cure and will have no adverse side effects. Western medicine is also known to treat the symptoms of the disease whereas traditional medicine deals with its cause. But best traditional expertise is considered rare and the treatment may be long drawn and expensive.

Purely economic reasons also determine the choice of treatment. For ordinary colds, coughs and fevers, many people believe home remedies are sufficient but the process of cure is long drawn. This makes it impracticable for peasants and workers, especially, and those in regular employment to rely on home remedies which would involve several days off work. They prefer quick relief from western drugs. Traditional medicine generally involve a long period of treatment which, apart from the elaborate process of collecting herbs and preparation of the medicine, is also expensive.

There is general consensus of opinion on the categories of diseases that respond effectively to different kinds of treatment.

<u>Western</u>	<u>Traditional</u>	<u>Metamedical</u>
Cold	Boils and Sores	Nervous disorder
Fever	Rheumatic disorders	Lunacy
Diarrhoea	Vomitting	Shock due to fright.
Vomitting	Snake bites	
Pregnancy and Child Birth	Diarrhoea	<u>Sannidosa</u> (ailments caused by spirits)
Accidents	Eye diseases	<u>Dēvadosa</u> (ailments caused by gods)
Chest diseases	Fractures and sprains	
Heart diseases	Hepatitis.	

A survey of Dolapihilla in some greater detail helps to understand the declining role of the traditional healing systems in rural society. There are 10 traditional medical practitioners and healers in Dolapihilla with a total of 168 households.

7 traditional medical practitioners

2 metamedical practitioners

1 Buddhist monk

Of the 7 traditional practitioners three have learnt medicine from their fathers and two from uncles, one from another outside practitioner. This indicates that indigenous medical knowledge still tend to be handed down largely within bonds of consanguinity. None of them had undergone professional training and none have students under them. These practices as well as the reluctance of most traditional practitioners to part with highly specialized knowledge (gurumushtiya) explain to some extent the decline in the profession.

None of these practitioners demand money for their services though some accept nominal cash presents when offered with the customary sheaf of betel leaves. The attitude of the people towards traditional practitioners shows that while they recognize their social importance their expertise is not highly valued in terms of money. The villagers give the western medical practitioner a higher standing as a professional and believe that the drugs he supplies are of higher value than the herbal preparations supplied by the traditional practitioner.

In Dolapihilla all traditional medical practitioner derive their principal income from other

sources. The oldest of them, 95 years, has an annual income of Rs. 100,000 from his lands. Another practitioner also has adequate income from lands and therefore does not expect a payment. Others have jobs or other sources of livelihood but do not reject money if offered. They all maintain that healing the sick is a meritorious act and therefore do not wish to make it their main source of income. Healing, according to Buddhism, is one of the ways in which the highly valued virtue of compassion towards fellow beings may be practiced. Socially too the services of the traditional practitioner, as members of the community, are highly appreciated as they help the poor and the needy particularly in a situation of emergency. Traditionally these practitioners have always occupied a place of high social influence and even today at Dolapihilla this is clearly evident. At least three of the seven traditional practitioners hold positions in most village voluntary organizations and are consulted on all matters of common interest.

The chief monk of the temple at Dolapihilla is a highly venerated person and as in all Buddhist villages he is expected to play the role of healer by chanting pirith or performing bodhi poojas. He is the key figure in village social welfare work and the chief organizer of the Sarvodaya Movement. Sarvodaya work has added a new dimension to his social role and has enhanced his traditional role as a religious healer.

The close affinity between metamedical and Ayurvedic practices and Buddhist thought is clearly

illustrated in Dolapihilla. Belief in the healing methods for malign influences of demons and for ailments caused by gods are still fairly strong. In addition to the two metamedical practitioners the chief traditional medical practitioner also practices certain types of charms. He uses charmed oils and chants charms as exclusive treatments of certain ailments or to supplement herbal treatment. Swellings and toothaches in particular are treated with charms. Another medical practitioner use charmed oil for rheumatic complaints. More serious cases of demonic influences are handled by the two Kattadiyas. They use charmed oil or threads or cutting of charmed limes in the case of minor complaints caused by frightening or 'āruda' and bali thovil for cases of more serious illnesses. He is also versed in hunian. 60 per cent of the respondents in Dolapihilla believe in his healing powers and the effectiveness of his destructive magic.

In addition beliefs in kem, at beheth and folk remedies at Dolapihilla are still prevalent. Certain types of at beheth and folk remedies are now commercialized and are available in packetted form in most village stores. The efficacy of kem depends on the secrecy with which it is practised. The kema for indigestion is to drink little lime juice heated by inserting a red hot iron into it without speaking to anybody. A sty on the eyelid may be cured by applying the juice of a blade of tnuththiri (a type of grass) without speaking to anybody.

This study of Harispattuwa shows that the traditional medical and healing systems exist as an integral part of people's culture but their roles have declined considerably due to the impact of western medicine and to changing life styles.

However on the whole while metamedical system has failed to withstand these onslaughts traditional medicine has shown a greater resilience. The weakness of the system of traditional medicine had not been due to its lack of acceptance and effectiveness, at least in certain areas of illness, but in its failure to adapt itself to modern competitive ethos. During recent times more traditionalist forces in Sinhalese society have exerted pressure on the state to extend its patronage to traditional medicine and to make it more professionally competitive. This has resulted in establishment of training institutions and research on Ayurveda and indigenous medicine and also in attempts to co-ordinate the two. Greater co-operation between western and traditional practitioners to supplement each others knowledge is also being promoted. More professionalized traditional practitioners are adopting western diagnostic methods and the use of western drugs. It is therefore possible that, as in certain Asian countries, at least a limited fusion between the two may take place in the future.

CHAPTER VII

HEALTH AND SANITATION

Introduction

On the basis of conventional health indicators, Sri Lanka occupies a leading place among the developing countries. While the crude birth rate (per 1000 population) has steadily declined since 1960 to 27.5 per cent in 1974 with a slight increase by 1979 (28.7 per cent) the death rate dropped dramatically in the last four decades (21.9 per cent in 1945 to 6.5 per cent in 1979). Infant mortality rate was 140 (per 1000 live births) in 1945 and 31.1 per cent in 1978. Maternal mortality rate (maternal deaths/1000 total births) dropped from 16.5 per cent to 0.8 per cent during the period 1945-1978. During the same period the expectancy of life at birth increased from 46.8 per cent to 64.2 per cent in males and 44.7 per cent to 67.0 per cent in females.

These indicators, however, do not provide a realistic picture of the health situation of a population. While the mortality rate has declined dramatically the morbidity pattern of diseases, particularly those related to environmental conditions, shows no appreciable decline. The diarrhoeal diseases morbidity rate (according to hospital statistics)

remained practically constant from 1952 to 1976. These and helminthiasis formed the third highest cause of hospital morbidity in 1980. (Health Ministry Epidemiological Unit).

The principal objective of the improvement of water supply is to help overcome the high incidence of water borne and water related diseases, which are estimated to amount to about 80 per cent of the ailments in developing countries. Apart from the relatively high mortality rate associated with these diseases, their debilitating effects are calculated to take about one tenth of the average persons potentially productive time and undermine also the capacity for risk taking and initiative. This disrupts education of children, hinders the growth and stunts their general physical development.

Water borne diseases represent a major health problem in Sri Lanka as in many developing countries. The rapid progress achieved in more affluent countries in controlling these diseases is not due primarily to intensified and massive medical care services, but to improvements in the quality of drinking water and sanitation.

The Decade Plan of the Government of Sri Lanka has set two goals in this regard: (a) the improving of the quality and quantity of excreta disposal facilities and to make these facilities accessible to the entire population and (b) to establish a strong linkage between drinking water supplies and excreta disposal facilities through health education and community participation.

In the implementation of this programme the Plan has identified 5 districts on a priority basis; these being, Matale, Mannar, Anuradhapura, Ratnapura and Badulla. The district of Kandy does not figure in this list. However, prevalence of water related diseases in Kandy district appears to be sufficiently high to justify an integrated programme of water supply and sanitation. During the third quarter of 1981, 20 per cent of the 345 notified cases of enteric fevers (typhoid and para-typhoid) and 15 per cent out of the 468 notified cases of viral hepatitis of the entire country came from the Kandy Health Division.*

The Harispattuwa water supply project has initially placed no great importance on sanitation. But in view of the significant correlation between water supply and sanitation the Appraisal Mission proposed a study of the sanitation situation in Harispattuwa and of technical implementation of improvement, as a clause in the revised terms of reference concerning the Project. Accordingly, the Finnish Consultants have proposed a programme where the main component is the provision of squatting slabs/pans and other material not available locally, as well as supervision of the construction of latrines. This is to be accompanied by a programme of health education.

Our survey attempts to study in general the level of health and sanitation, the health care and

* For a detailed breakdown of data on the incidence of water borne diseases in Harispattuwa see Auli Keinänen, Chapter 3.

health education systems in the Project area and to highlight problems relating to these spheres. The methodology adopted has already been referred to.

As Knox observed in the 17th century (Knox, pp. 139-40) the villagers always had a relatively high awareness of personal and domestic cleanliness. Regular bathing and washing, washing of hands before and after meals and after toilet were generally routine practices. "In dressing their victuals they are not to be discommented : for generally they are cleanly and very handy about the same". In the case of the king the food was served by a person with a muffler round his mouth to prevent breathing on to the food. (Knox, p. 59, 139). In Ayurvedic medicine, personal and domestic cleanliness is stressed, particularly in sickness. Sprinkling of saffron mixed water was practised as a cleansing process for prevention of spread of diseases.

The traditional practices relating to the construction of houses reflect certain perceptions about sanitary conditions of living. It is believed that the houses should face east as the morning sun is considered beneficial to health. Generally, traditional architecture lays down rules relating to the number and sizes of doors and windows. The adherence to these requirements has always been determined by economic conditions. The poorer houses generally have a verandah with a common bedroom and a separate kitchen. Ventilation in these is often inadequate. The people in the villages irrespective

of the nature of the house have standards about maintaining cleanliness of their dwellings. Regular sweeping of the house and the surrounding is often the first item of the daily routine. Keeping animals, including pets, indoors is generally avoided. Annual white-washing and in the case of clay floors, applying a fresh coating of clay and cow-dung mixture (cow-dung is believed to have a purifying effect) is normally practised.

However, such awareness of personal and domestic cleanliness have not been intimately related to a theory of causation and spread of diseases in the system of traditional medicine and beliefs. In actual practice, therefore, adherence to these standard appear to have been lax.

1. Sanitation

Personal and domestic hygiene, and facilities available in the community for sanitary disposal of domestic waste and excreta have a direct relationship to the prevalence of diseases such as enteric fevers, dysentery, viral hepatitis and helminth (worm) infections. Diseases like typhoid dysentery and viral hepatitis spread by the faeco-oral route usually through contaminated hands, food, flies and water. In the case of helminth infestations (round worm - ascaris lumbricoides and whip worm - Trichuris trichura) the eggs are passed out into the external environment with the faeces of the infected persons. These eggs require a period of development in the soil before

becoming infective. Similarly in the case of hook-worm (Necator americanus) the eggs excreted by the infected persons develop into the infective larvae in the soil. The most important method of controlling these infections is the prevention of indiscriminate defaecation in the home surroundings. As long as faeces are deposited in a latrine the chances for the infective stage of the helminths reaching a human host is removed. Similarly, cyst passers (passers of the infective stage) of amoebiasis (Entamoeba histolytica) or carriers) frequently contaminate the environment by indiscriminate defaecation. These infective stages of amoeba and helminths are able to remain viable for long periods of time in the soil and could get washed or flushed into sources of drinking water through surface drainage.

Table 1

Trend of Selected Infectious and Parasitic

Diseases in Sri Lanka : 1965-1980

(Discharged Cases/100,000 Population)

Disease	1965	1970	1975	1980
Typhoid and Paratyphoid Fevers	37.4	44.4	77.0	47.0
Bacillary Dysentery	46.0	56.3	15.8	52.6
Food Poisoning	18.3	15.6	23.9	17.1
Amoebiasis	152.4	177.6	142.0	145.0
Viral Hepatitis	47.7	62.3	107.0	32.0

Source: Annual Health Bulletin. Ministry of Health, Sri Lanka, 1980.

The average standard of sanitation in the study locations was very low. The outward appearances of the houses often give the impression of neatness and cleanliness, sometimes inspite of very low standards of living. But often the inside of the house, particularly the condition of the kitchen gives a different impression. The kitchen always appears to have received low priority in building the house. It is often an improvisation with mud walls, thatched roofs and clay floors whereas the rest of the house may be properly completed. As a result the kitchen floors are dirty and even muddy, walls are black with soot and pots and pans are sometimes left exposed. Where domestic water is stored is often muddy, kitchen water is thrown on to the outside yard, left-over food thrown to the pets and birds and garbage dumped in the immediate surroundings. All these often create a picture of unawareness^{of} or disregard for basic standards of cleanliness. There are, of course, instances where, with extreme conditions of poverty, neatness and cleanliness is maintained in and around the house but in the case of waste disposal the same standards are not given much importance.

In preparing food for cooking, vegetables, rice, etc., are rinsed several times to get rid of the mud and sand rather than as a process of improving their hygienic quality. For preparations of food, kitchen tables are very rarely used; it is done by women seated on the floor or on a low stool.* Habits relating to domestic water use have already been referred to.

* For a general picture of standard of sanitation in villages see Auli Keinänen, Chapter 6.

The intensive cultivation of spices and fruit trees, cocoa, coffee and arecanut in the immediate surroundings of the house allows very little sun light on the ground, and during most months of the year the soil is moist. These conditions are made worse by throwing waste water into the garden and having no drainage facilities for rain water, creating ideal environment for the development of nematode larvae which require fairly moist environment. A wet muddy yard will conceal any faeces deposited and will promote development of worm eggs and larvae. These also provide ideal conditions for Culicine mosquitoes and dumping of garbage leads to breeding of flies as well.

The sanitation survey of the five locations shows that the disposal of household refuse and waste water is not given any importance. Sixty five per cent of the sample merely threw the waste water to the back yard or garden. Only 20 per cent have drains for disposal of waste water. Forty nine per cent dumped the household refuse in the garden or by the roadside and 12 per cent utilized them to produce compost manure by merely putting them in shallow pit for decomposition. The others either bury them (14 per cent) or burn them (20 per cent). During the rainy weather the smell of decomposing refuse and the flies that breed immediately following rain are fairly common features of the environment.

Our survey focuses attention on the pattern of disposal of excreta. As stated earlier the villages in the study area share many characteristics and features common to other rural communities in the

country. Peoples' perception of faeces as something dirty and foul smelling and not something closely associated with spread of diseases seems to explain their toilet habits and excreta disposal practices to some extent. The habit of defaecation in the bushes is traditional. A fair proportion of the people interviewed (9 per cent) did not have a latrine of their own. This figure was as high as 20.5 per cent ⁱⁿ Ankumbura and 15 per cent in Mandandawala. Some of these shared their neighbour's latrine and some admitted defaecating in the bush.

A large proportion of the sample population, (70 per cent) had never received any information regarding the construction of a sanitary latrine, and only 5 per cent of the sample was aware of the assistance, in the form of advice, material and financial, provided by the Department of Health Services for constructing latrines. In Sri Lanka it is compulsory by law for every house and business premises to have a latrine (Quarantine and Prevention of Diseases Ordinance of 1897) but in the case of dwelling houses and very seldom, even in the case of small business premises is this law implemented.

Forty eight per cent of the latrines in the study area are crudely dug pits with a few planks or logs placed over them. This construction left large portions of the pit exposed. Many of such latrines were without a proper superstructure. In many places crude attempts to conceal, at least a part of the latrine, with a few cadjans were observed, but they barely concealed a person squatting at the pit. Only 3 per cent of the sample possessed a latrine built on

a permanent basis, i.e. with a concrete or wooden squatting plate completely covering the mouth of the pit and with a superstructure. Most of the latrines were poorly constructed wattle and daub structures with cadjans for the roof. In many families it appeared that the construction of a latrine occupied a low position in their list of priorities.

A little over 15 per cent of the sample possessed waterseal type latrines. Although the proportion with waterseal latrines in Harispattuwa seems to be above the average for rural society in Sri Lanka (4 per cent), in most of the households where this type of latrine was used no facilities for storing water for flushing and ablutions were present. Because of the fact that sufficient water is not used for flushing, the expected purpose of having water-seal latrines is not served. It may in fact be worse than having a pit latrines as excreta may be exposed to flies. (For illustrations of different latrine types see Chapter 6 of Auli Keinänen). In most houses (64 per cent) there is no separate storage of water to be used in the latrine. Water stored in pots and buckets for all domestic purposes are very often used for this purpose. Separate vessels e.g. small bucket or a can are generally used to carry water to the latrines. Normally the capacity of these containers on the average is between 2-3 pints, which is hardly adequate to perform the ablutions hygienically.

Of the latrines 13.2 per cent are used only for defaecation while the garden behind the house is used

for urination. Children use the latrine very rarely. This is obvious when we consider the type of pit latrine that the majority of the people possess, which are unsafe for use of children. Children's faeces are generally considered harmless. Even where proper latrines are available children are not trained to use them until they are about 8-9 years old. They use the garden around the house for defaecation and faeces are sometimes thrown onto the garbage heap or to an open pit. Another common practice is to allow the child to defaecate at different places in the garden and cover the faeces with a sod of soil which gets washed away by rain. Diapers are generally washed at home in the backyard and no special care is taken in disposing of this waste water.

Our study sample included nine families of plantation workers of Indian origin living in two adjoining labour 'lines' in Ankumbura. The level of personal and environmental hygiene among these plantation workers is much lower than that among the villagers.

Their living quarters are extremely compact and ventilation is inadequate. They are provided with electricity, piped water and toilet facilities. Presently nine families use one tap and the supply is irregular. There is only one pit latrine which is now abandoned. The women use a small thicket closeby and the men use the tea plantation around while the children defaecate right round the highly congested quarters. There are no drains for disposal of waste water.

This may not be atypical picture of sanitation level of plantation workers. In theory they are provided with modern amenities that the villagers are denied of. According to national statistics the plantation sector has far superior latrine facilities than the rural sector.* There is always a wide gap between the provision of facilities and their proper and continuous operation and maintenance.

In the survey sample 93.1 per cent declared that they wash their hands as a habit after defaecation. But of this number only 37.5 per cent used any kind of soap for this purpose. The habit of cleaning the latrine is related to the type of latrine they possess. Improvisations such as open pits with wooden planks are believed to require no cleaning. 40.7 per cent of the sample admitted that they did not clean their latrines at all. A small proportion (11.9 per cent) declared that they wash the latrine daily while 16.8 per cent cleaned them two to three times and 17.1 per cent four to five times a week. It was done as a weekly routine by 15.5 per cent. Only a few appear to make a distinction between washing the toilet with a bucket of water and cleaning it. The use of disinfectants was practised by only 12.5 per cent but most of them not regularly.

* According to the Housing Survey, 1971, Department of Census and Statistics, the relative position with regard to facilities for excreta disposal in the rural and estate sectors were as follows: Figures for the estate sector are given in parenthesis - Flush toilets 2.18 (8.22); Waterseal 9.9 (33.9); Bucket latrines .98 (4.1); Pit latrines 44.4 (38.13); No latrines 41.5 (13.4).

The general preference is for locating of the latrine away from the house. 77.2 per cent of all types of latrines are located within 10 meters of the house. Only 5.9 per cent of the total number of waterseal latrines are attached to the house. The rest are between 10-30 meters away from the house. The location of the latrines in relation to the source of water is determined largely by the nature and extent of the land. The smallness of the plots did not allow most villagers a distance of more than 25 meters between the well and the latrine (42.8 per cent); 32.8 per cent are located at a distance of 25-100 meters and the rest range from 100 to over 175 meters. As observed earlier, the people are aware of the possibility of ground seepage if latrines and drinking wells are located close together but where the land area is limited and the terrain is unsuitable, the maintenance of a reasonable distance between the two may not be possible. Generally the nature of the wells and the latrines, and the habits of defaecation outside or dumping of excreta and garbage in the garden allow pollution of water by surface drainage. The well has to be located at the lowest spot in the garden and the house and latrine are generally on a higher slope. Thus during the rainy season the open pit latrines could overflow and the sullage as well as the household waste dumped outside could get washed down and contaminate the water in the unprotected well. At Batuambe where the landholdings are limited to $1/4$ of an acre the latrine is located at the edge of the land to keep it as far away from the house as possible. But this often makes it extremely close to the neighbours

house. The soft soil at Batuambe does not permit deep pits for latrines and during heavy showers most of them overflow with sewage sometimes draining out onto the foot-paths and the foul smell making life intolerable in certain sections of the settlement. One of the major complaints of the residents, even more than their water difficulties, concerns the problem of constructing good latrines. Deep pits with at least lining upto 10-15 feet below the surface are necessary for a fairly permanent and sanitary latrine but the expense cannot be borne by most of the householders.

Excreta and waste disposal methods in rural towns and market centres within the Project area constitute more serious health hazards than those in the villages. None of them provide adequate amenities for the hundreds of villagers who gather at these centres or pass through them daily. At Ankumbura the two small public waterseal (male/female) latrines located on a steep slope were clogged within a short time of construction due to lack of water supply and the public use the surroundings for defaecation and urination. During heavy rain the sullage from the pits were reported to have been oozing out of the slopes below on to the backyards of the shops along the road. Except the few public buildings none of the shops and boutiques and restaurants have latrines or even proper urinals. For defaecation they use the bush along the Pinga Oya and use the water of the Oya for ablutions. This stream also serves as the dumping place for garbage of the town; all drains are directed to the stream, including the main waste water disposal drain of the Ankumbura

Hospital. Pinga Oya at the same time serves as the most popular bathing stream for thousands of Harispattuwa residents below. The Ankumbura residents, however, use a spot on the stream above the town.

At Hedeniya on the Kandy-Kurunegala road, with resident population of 500-700, there are only two private small pit latrines. The residents, visitors and those employed in the town use the bush along the stream a branch of the Pinga Oya for defaecation and use the stream for ablutions. Until recently the garbage was collected by the local authority and dumped in this stream, which is also used for bathing.

Bokkawala, another rural town like Ankumbura, serving the surrounding villages as a transport and marketing centre with approximately 500-600 people daily visiting the town there are two public waterseal latrines but the tank installed for water supply has not been functioning for years. The users of the latrine have to depend on road side standposts which are dry during most hours of the day or borrow water from adjoining boutiques. The garbage is collected by the local authority and dumped by the roadside a few hundred meters away.

Another aspect of village life that contributes towards deterioration of environmental sanitation is animal husbandry, which is generally practised for domestic use or a little extra income. Cattle, goats and poultry are kept more often like domestic pets and are generally housed, for reasons of security in a shed constructed by extending the roof of the house. In

67.8 per cent of the cases the sheds were within 10 feet from the house. 31 per cent of the sample kept poultry, 20 per cent and 7.3 per cent reared cattle or goats respectively. Only a small percentage 1.8, among non-Muslim population, kept pigs. Some rear cattle and poultry (21.8 per cent) goats and poultry (3.6 per cent) and poultry and others (1.8 per cent).

There appears to be no awareness that animal excreta and waste may be associated with spread of diseases. Apart from the fact that animals and poultry are kept close to the house there is no particular attention paid to excreta disposal, generally all such waste is either dumped around plants and trees as manure or put into a pit to be used later as manure, without any covering. Invariably these conditions lead to breeding of flies which could easily constitute a health hazard in a relatively densely populated area like Harispattuwa. In a domestic environment where the food is often left uncovered and disinfectants are rarely or never used in cleaning latrines, floors or drains, flies could act as common carriers of germs.

2. Family Health

The majority of children (59.72 per cent) were born in hospital or a maternity home. Delivering the first, and sometimes the second child also, in hospital has become the common practice. Many of the subsequent children are born at home. In our sample there are only a small proportion of home deliveries (6.97 per cent). The majority of these were attended by a

qualified midwife. In 1981, 14 infant deaths (under 1 year of age) were reported in Harispattuwa (MOH Werallagama). The traditional village midwife appears to have virtually disappeared in these areas.

Breast feeding is the traditional way of feeding infants in the area. Ninety per cent of our sample said they breastfed their infants while another 66 per cent supplemented this with powdered milk or fresh cow's milk. A common reason for not breastfeeding infants appeared to be the lack of milk or early drying up of mother's breasts. (7.6 per cent). Instructions given to mothers at clinics seem to be fairly well followed in respect of reconstituting powdered milk. Some mothers followed the instructions and directions given on the milk powder package when reconstituting powder. There are 74.0 per cent in the above two groups. Yet, there is a small proportion (0.7 per cent) who used unboiled water for reconstituting milk powder. As regards personal hygiene of mothers there is no appreciable improvement; very few mothers washed their breasts before feeding the child.

The ineffectiveness of the health education programmes is well illustrated by the fact that 74.3 per cent of mothers have not received information from any source regarding correct nutrition of children. The majority of mothers interviewed (94.4 per cent) is aware of immunization against infectious diseases and 43 per cent of these received their information from the health clinic. Immunization of children with Triple Vaccine (Diphtheria, Pertussis, Tetanus), oral polio

vaccine and BCG (against tuberculosis) in the survey area is not satisfactory. Only 72.9 per cent have received all three at the time of the survey. There are some children (3.4 per cent) who had received the triple vaccine and BCG while 0.7 per cent have received only the triple vaccine and oral polio vaccine. The official figures from MOH Werellagama (for Harispattuwa electorate) of the immunization programme indicate a favourable trend. But the need for a more intensified effort to bring all the children 'at risk' under the programme still exists.

Table 2

Completed Immunizations of Infants,

Harispattuwa, 1981

(Total Infant Population - 3640)

Vaccine		Number	%
Oral Polio Vaccine :	1st dose	3077	84.6
	2nd dose	3066	84.5
	3rd dose	2392	65.6
B.C.G.		3018	82.9
Triple Vaccine (D.P.T.)	1st dose	3338	91.7
	2nd dose	3203	87.9
	3rd dose	2425	66.6

Source: M.O.H. Werellagama.

Many children seem to suffer from several communicable diseases early in life. In the survey area 31.2 per cent of the children has had measles while 2.0 percent had contracted mumps and another 2.0 percent Chicken Pox. There are 10.6 per cent who had suffered from both mumps and chicken pox while 11.1 per cent has had measles and chicken pox.

A large proportion of the population interviewed (93.7 per cent) have heard about dysentery, typhoid fever and viral hepatitis. 40.2 per cent of the people attribute the cause of these diseases to 'impure water'; 7.2 per cent believe that 'unclean food' brought about these diseases. Significantly, only 4.8 per cent knew that these diseases are caused by 'germs' while 20.8 per cent had no idea about their causation. Furthermore, when asked 17.3 per cent did not know that dysentery, typhoid fever and viral hepatitis could spread by contaminated water. These figures illustrate that despite a high literacy rate (84.5 per cent) and exposure to western medicine for over a century and half a significant proportion of the population remain ignorant of the causes of some of the common diseases and of basic preventive measures.

The survey investigated the practices, attitudes and beliefs in relation to minor epidemics of communicable diseases such as chicken pox, mumps or measles. A large proportion of the people interviewed (82.04 per cent) said they would take precautions such as avoidance of infected households. Some would invoke the blessings of gods by making vows at the temple while 3.47 per cent thought they would do both. In case

of a patient in the family, isolation of him in a separate part of the house would be the first step for 95.83 per cent of the respondents. For these illnesses it is not customary to seek medical aid from either Western or Ayurvedic physicians; 29.19 per cent would administer 'home remedies' which are thought to be more supportive than curative. A significant group (15.97 per cent) said they would seek divine blessings and guidance while 6.25 per cent definitely resorted to charms. For many people who answered our questionnaire (30.56 per cent) diseases like, chicken pox, mumps and measles are 'god's diseases' which may afflict people due to 'wrath of gods'. The diseases are believed to be caused by 'germs' by 27.78 per cent while 16.67 per cent think they are due to both. The decision for a particular type of treatment, aid or assistance is usually taken by the elders in the family (75.69 per cent).

Many people believe that their children are having 'worms'. A large proportion of the children in the area (94.4 per cent) have been treated one time or other for 'worms'. About 79.86 per cent of these received their treatment from Government Health Centres (Western) while 10.42 per cent were treated by Ayurvedic practitioners. The others were given home remedies. One interesting fact highlighted in the survey, is the belief by 32.64 per cent of adults that 'worms' are due to the habit of eating 'sweets'. Some (25 per cent) believe that 'unclean food' is the main cause and another 12.5 per cent attribute them to

'unclean habits'. Only 1.39 per cent think water is the agent involved in causing 'worm' diseases. A considerable proportion (32.64 per cent) is unaware that poor personal hygiene, lack of facilities for sanitary disposal of faeces and poor environmental sanitation lead to spread of worm infestations. In Batuambe 52.94 per cent of the people interviewed did not know how worm infestation spread.

Western system of medicine was exclusively preferred by 48.6 per cent of the adult population in the survey area and 0.7 per cent sought Ayurvedic treatment exclusively when ill while 1.4 per cent first tried home remedies. The others did not have a special preference. The reasons for this situation have been referred to previously. During the course of last year (1981) 29.17 per cent of the people interviewed suffered from illnesses serious enough to be hospitalized. Despite the fact that many people were unaware of all the existing health facilities in their areas, 63.36 per cent thought that they were inadequate.

3. Food and Nutrition

People in the survey sample were interviewed as to their attitudes, beliefs and practices regarding food, food preparation and consumption.

Beliefs about 'good' and 'bad' food are common to most cultures. In Sri Lanka the concepts relating

to food are directly associated with traditional medical system and was referred to earlier. Some food items are designated 'hot' and therefore are avoided because they either cause illness or are bad for certain illnesses. 'Cold' or 'cooling' food are generally recommended to maintain the humoral balance. They are especially preferred particularly when feeding children, for pregnant mothers and convalescents. In many instances this practice leads to faulty nutrition of the recipients. These beliefs may also lead to avoidance of cheap but nutritious food items in favour of more expensive food of poor nutritional quality. Furthermore, multiplicity of food habits associated with age old traditions and customs and religious and ethnic differences are prevalent in Sri Lanka. But these food habits do not constitute a serious obstacle to the promotion of nutrition.

Our sample was first asked to list items of food they considered as 'good food'. The variety of items and their combinations listed do not permit easy statistical analysis. However, a considerable proportion of the sample thought rice, yams, breadfruit and jak as good food. Two people considered vegetables such as cabbage and knol khol as good food. The majority however listed a combination of above with meat, fish, eggs and milk as 'good food'. Some responded with vague answers like 'food with lot of vitamins' as good. Many failed to include fruits in their lists.

To determine the frequency of consumption of nutritious food (good food) our own list of popular food

items was presented to the respondents. 45.14 per cent of those who responded (94.44 per cent) declared that they could afford to have such items of food daily. 17.36 per cent could afford these only 3-4 times a week; 10.41 percent twice a week and 12.05 per cent once a week. Seventy five per cent of the sample felt that the amount of 'good food' they consumed was adequate while 19.44 per cent felt the amount was grossly inadequate. Among those who did not take 'good food' the majority explained that they could not afford such food. There were some (3.47 per cent) who did not like some items of 'good food' while only 1.39 per cent of the sample avoided certain items on religious grounds.

To ascertain the views of the people on their understanding of a balanced diet (good meal) alternative combinations of food items were presented through the investigators. A large proportion (91.67 per cent) of our sample thought that a 'good meal' should include either rice, yams, jak, breadfruit or bread with vegetables and fish, meat, dry fish and lentils. The rest thought a 'good meal' would be one with rice, bread, jak, breadfruit or yams with vegetables only. 40.97 per cent of the sample consumed a 'good meal' once in 3-4 days while 14.58 per cent could afford it only once in 7-8 days. There was a considerable proportion (30.55 per cent) who had 'good meals' daily. 13.9 percent had a 'good meal' very rarely.

Those who responded admitted that they have received information on 'good food' sometime or other

(84.42 per cent). Out of this about 45.14 per cent had received information from several sources, e.g. school, radio, newspapers and magazines. Significantly the schools have been the source of information for only 4.17 per cent while 4.86 per cent obtained information from newspapers. Various voluntary organizations were responsible for information for only a insignificant minority (0.69 per cent). The rest (22.22 per cent) could not recall the source of information.

These answers disclose that the majority of them possessed a general idea of 'good food' or a 'good meal'. What appears to prevent them from having a 'good meal' frequently is not the lack of knowledge but that of means. Many people did not plan the meal ahead as it was not practicable. Some did not know what they were going to have for the next meal.

There were many fruit trees in the home garden; bananas, mangoes and citrus fruits thrive well in the area. 30.56 per cent of the sample cultivated fruit trees exclusively for their consumption. Only a small proportion (5.55 per cent) grew them for commercial purposes. The rest did not cultivate them. Only a minority (26.39 per cent) in the sample consumed fruits regularly. 71.53 per cent did so occasionally while 2.08 per cent did not consume fruits at all.

As mentioned elsewhere there are people who kept cows/goats (2.78 per cent) and poultry (13.18 per cent). Milk and eggs were either consumed by the family members

or sold to neighbours or in the market. None of the people included in the sample keep animals for meat.

There were people in the sample population who consumed milk regularly (66.69 per cent) while 13.19 per cent would drink milk if offered. Only 20.14 per cent of the sample said they never consumed milk. It was revealed at interview that the majority (47.91 per cent) in the population sample was in the habit of consuming powdered milk. 15.28 per cent consumed fresh cows milk while 15.28 per cent used both. Goats milk does not appear to be favoured by many; only 1.39 per cent used it. Goats are reared for milk only in Dolapihilla and Mandandawala. Out of these who did not consume milk 31.25 per cent did so due to financial reasons while 2.08 per cent did not like the taste.

There are many beliefs, food fads and taboos regarding consumption of various food items. A considerable proportion (58.33 per cent) did not consume at least one type food. 31.94 per cent did not consume any form of flesh; only 16.67 of the sample were vegetarians. The reasons for avoiding meat are: (a) religious (15.97 per cent), (b) do not like the taste (4.86 per cent), (c) cannot afford (0.69 per cent), (d) not good for health (0.69 per cent), (e) a combination of reasons (3.47) per cent) and the rest could not give a definite reason.

Our observations of the food habits of the people show that there are no strong taboos except perhaps the prohibition on consumption of pork in Islam. Hindus generally avoided eating beef but not as a rigid religious

taboo. In village homes the Buddhists had a tradition of refraining from eating beef mostly due to Hindu influences. Buddhism prohibits taking of life but eating meat is not considered a sin. In most handvan homes dried fish has always been a popular item of food. On the whole the level of consumption of meat and fresh fish is very low in Harispattuwa because of the cost and the difficulty in obtaining them. The village diet has always been simple, rice, jak, yams, vegetables and plenty of greens and rarely fish, dried fish or meat.

Although, according to their responses, a good percentage of the people consumed milk regularly (66.69 per cent), what this really amounts to is taking little milk in their tea, and that too once or twice a day. Even those who keep cattle consume very little milk, except what is given to children and the sick. Most of the milk is sold to the restaurants or to the government Milk Board which runs a collection service in the villages. Even in the case of fruits most what they produce is for the market. It is only by managing with the absolute necessities and selling everything extra they produce that most poor peasants can maintain their living.

Preparation of food is most important day to day function of the women folk. We inquired about washing and cleaning of raw food items prior to cooking. All those who were interviewed washed all vegetables, meat, fish or pulses before cooking. 53.47 per cent said they follow this procedure because these items are usually

not clean. There were some who washed vegetables, fish and meat to remove 'germs' (21.53 per cent). 7.64 per cent washed their vegetables to get rid of mud, sand or grit. Some were used to washing raw food materials without even knowing why they did so (2.08 per cent). 13.2 per cent gave a combination of above mentioned reasons.

The knowledge of the people about nutrition and malnutrition was extremely vague. 98.6 per cent responded and gave different views as to what they meant by malnutrition: (a) bad nutrition (32.64 per cent), (b) lack of adequate amounts of food (27.08 per cent), weakness of body and inability to work (12.5 per cent), (d) scarcity of food leading to lack of vitamins (5.56 per cent), (e) result of consuming indigestible food (0.69 per cent), (f) state of poor health (0.69 per cent), (g) loss of appetite (0.69 per cent). 13.75 per cent did not know what malnutrition is.

People in the sample also had extremely vague and widely different views on the outcome of lack of good food. 59.71 per cent responded to this question and gave the following views: (a) anaemia and wasting of the body (6.25 per cent), (b) retardation of growth (6.25 per cent), (c) weakness (6.95 per cent), (d) weakness, abdominal upsets and eye diseases (3.47 per cent), (e) abdominal upsets (3.47 per cent) (f) lack of blood (2.78 per cent), (g) eye problems (3.08 per cent), (h) problems in blood circulation (1.39 per cent), (i) mental retardation (1.39 per cent), (j) abdominal problems, eye problems, and rheumatic ailments (1.39 per cent), (l) skin diseases (0.69 per cent) and (m) eye diseases and anaemia (0.69 per cent).

The survey indicates that despite minor discrepancies in answers to related questions the majority of the people are under the impression that they know what good food and good meals are. However, many of the views they held are not in keeping with the modern concepts of correct nutrition. More than half the population sample are aware of serious consequences of malnutrition even when their views of malnutrition are vague.

4. Health Care Systems

Two principal systems of medicine, Western (Allopathy) and Ayurvedic, provide virtually all the medical care in the country. Both systems of medicine are offered by the government as well as the private sector. The national health policy is governed by the fundamental principle that the government is committed to provide comprehensive health care to the entirety of the population. The Health Care Delivery System of the government is based on the Western system of medicine with only marginal utilization of the Ayurvedic system. In 1980 there were 12 Ayurvedic Hospitals and 2 dispensaries maintained by the government. In addition to there were 238 free Ayurvedic dispensaries sponsored by local authorities.

Table 3Hospital Statistics - Sri Lanka, 1980

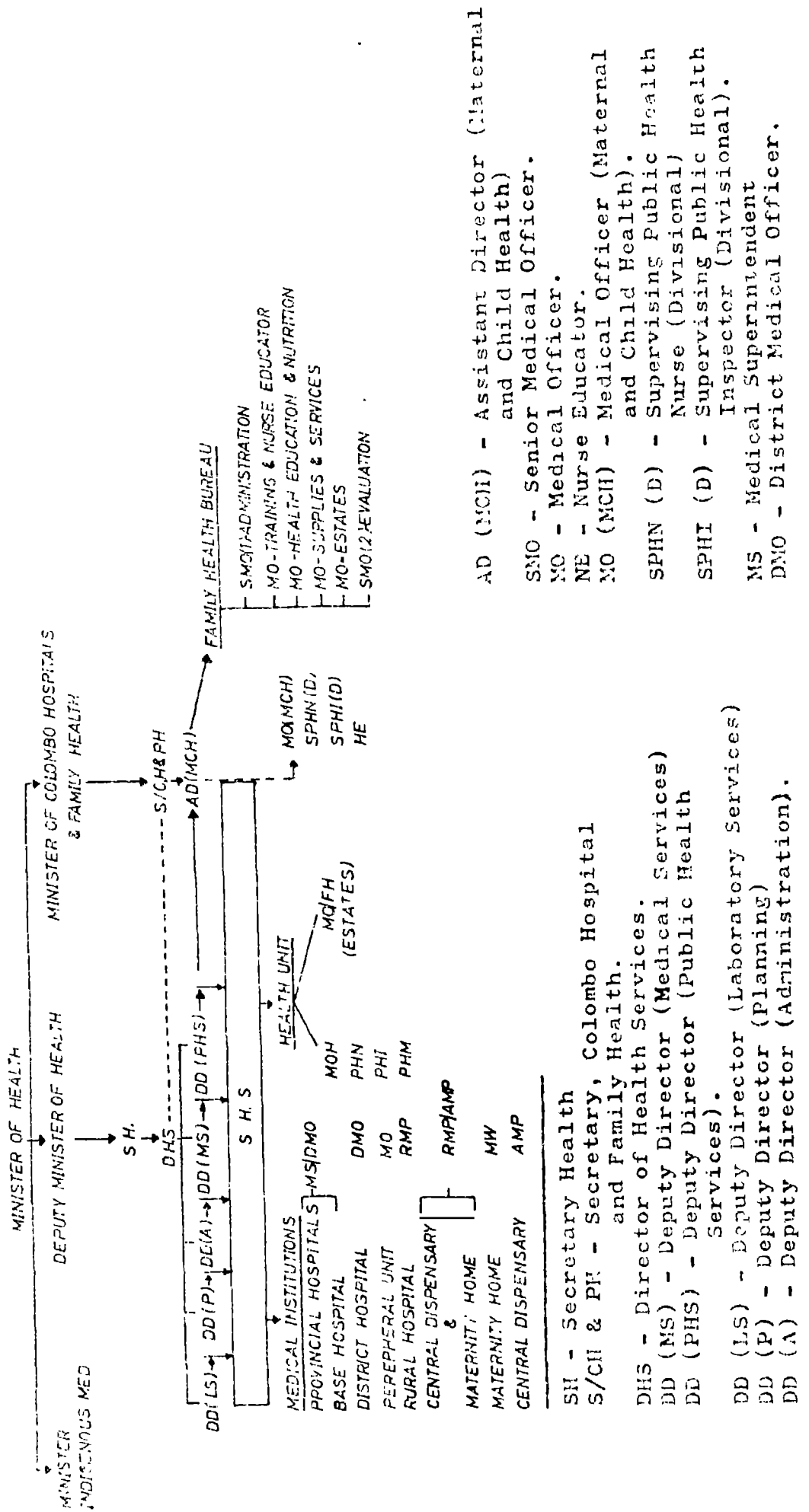
Type of Institution	Number Treated	General OPD Attendance
All Government Hospitals (Western Medicine) (including Special Hospitals and Central Dispensaries)	23,604,422	31,891,833
All Government <u>Ayurvedic</u> Hospitals.	14,216	1,066,630

Source: Annual Health Bulletin 1980, Ministry of Health,
Sri Lanka.

The organization of health services and Family Health Programme (Chart I) incorporates a variety of institutions ranging from small dispensaries to large hospitals. (Table 4).

In addition, a considerable number of privately managed hospitals and clinics operate throughout the country. There are also specialized centres, sponsored by the government, for dealing specific problems, e.g. maternity hospitals, centres of tuberculosis, leprosy, psychiatric illnesses, dental care, cancer and infectious diseases throughout the country. The access to a health care unit is relatively easy in Sri Lanka, compared to many other developing countries. This is well illustrated by Simeonov (1975):

ORGANIZATION OF HEALTH SERVICES AND FAMILY HEALTH PROGRAMME / SRI LANKA



AD (MCH) - Assistant Director (Maternal and Child Health)
 SMO - Senior Medical Officer.
 MO - Medical Officer.
 NE - Nurse Educator.
 MO (MCH) - Medical Officer (Maternal and Child Health).
 SPHN (D) - Supervising Public Health Nurse (Divisional)
 SPHI (D) - Supervising Public Health Inspector (Divisional).
 MS - Medical Superintendent
 DMO - District Medical Officer.

SH - Secretary Health
 S/Cll & PH - Secretary, Colombo Hospital and Family Health.
 DHS - Director of Health Services.
 DD (MS) - Deputy Director (Medical Services)
 DD (PHS) - Deputy Director (Public Health Services).
 DD (LS) - Deputy Director (Laboratory Services)
 DD (P) - Deputy Director (Planning)
 DD (A) - Deputy Director (Administration).

Table 4

Availability of Health Services as at
13.12.1980

Institutions (By Type)	Number of Units	Number of Beds
Provincial Hospitals*	12	10,687
Base Hospitals	17	5,323
District Hospitals	111	11,903
Peripheral Units	111	4,323
Rural Hospitals	103	2,364
Maternity Homes**	100	1,114
Maternity Hospitals	2	690
Mental Hospitals	2	2,599
Chest Hospitals	3	1,278
Leprosy Hospitals	2	450
Cancer Hospitals	1	434
Childrens Hospitals	1	614
Eye Hospitals	1	471
Dental Hospitals	1	42
Others***	13	1,097
N.O.H. Offices	105	-
Central Dispensaries	347	-
TOTAL	932	43,389

* Includes General Hospital Colombo and Teaching Hospital, Peradeniya.

** Includes Maternity Homes and Central Dispensaries.

*** Police, Prisons, Rehabilitation and Teaching Schools for young offenders hospitals.

In addition there were about 358 visiting stations where AMP is normally available once a week or once a fortnight.

Source: Annual Health Bulletin 1980 - Ministry of Health, Sri Lanka.

"Everybody in Sri Lanka has some kind of health service within 0.8 miles from his home. In the average a Government Western-type health institution (barring the offices of Public Health Midwife and Public Health Inspector) can be reached within 3 miles from any home in Sri Lanka (allowance being made for the uneven distribution of population)".

The distribution of health care units is organised in an orderly pattern. The core is formed by the large Provincial Hospitals with all specialist facilities surrounded by several Base and District Hospitals, which in turn form the centres for a number of peripheral units, maternity homes and dispensaries. Provincial and Base Hospitals are 'specialist' institutions with diagnostic (including all laboratory facilities), curative and preventive functions. Those patients who do not require specialist care are treated in District Hospitals. Nevertheless, some district hospitals offer visiting and sometimes resident specialist facilities. A combination of a maternity home, a central dispensary and a rural hospital is called a peripheral unit. These are usually located in the periphery of the region and are essentially for 'general practitioner' work. In actual practice there is a tendency to by-pass the smaller health centres which are capable of providing basic medical care, in favour of larger District, Base and Provincial hospitals, with specialist facilities. This undoubtedly has led to severe over-crowding in larger hospitals with people seeking care for minor and trivial ailments. Failure and/or breakdown in the

strict enforcement of the referral system, among other things, seems to be the major reason.

5. Public Health Services

The Public Health Services are responsible for promotion of health and prevention of diseases in the community. At present there are 105 (1980) health units in the country providing public health services, each administered by a Medical Officer of Health (M.O.H.). The MOH leads a health team comprising of: Registered Medical Practitioner (RMP)/ Assistant Medical Practitioner (AMP), Public Health Nurse (PHN), Institutional Nurse(IN), School Health Nurse (SHN), Public Health Inspector (PHI) and the Family Health Worker (formerly Public Health Midwife - FHM). The team is responsible for maintaining and promoting health, hygiene and sanitation in the community. The specific duties include the following:

- (i) Anti-natal and Post-natal care;
- (ii) Assistance at delivery;
- (iii) Childrens' Clinics (full baby clinics);
- (iv) School health programme;
- (v) Immunizations;
- (vi) Follow up of contacts of communicable diseases;
- (vii) Promotion of personal hygiene;
- (viii) Nutrition programmes;
- (ix) Domestic and Environmental Sanitation;
- (x) Family Planning (Advise and Materials);

- (xi) Safe Drinking Water;
- (xii) Health Education.

In addition the PHH is responsible for inspection of premises with particular emphasis on sanitation and hygiene, latrine construction and provision of safe drinking water. He is entrusted with the provision of facilities to improve sanitation through education, advice and financial assistance. The link between the clinic and the community is maintained by the PHH.

The Health Department also provides a well organized dental service (both curative and preventive) throughout the island. Dental clinics providing advice and treatment are found in all Provincial, Base and District Hospitals. The School Dental Service inaugurated in the 1950s is primarily concerned with dental care for school children between the ages 5-13 years as well as pre-school children. Dental nurses, under the guidance of Dental Surgeons staff the school dental clinics. A limited adolescent dental service for school children between the ages 13-18 years is conducted in Colombo and Kandy.

There are five specialized campaigns of the Department of Health Services, namely: (i) Anti-Malaria Campaign, (ii) Anti-Filariasis Campaign, (iii) Anti-Leprosy Campaign, (iv) Anti-Tuberculosis and (v) Anti-Veneral Disease Campaign. These campaigns are independently organized. Nevertheless, some have, upto a certain extent, integrated their activities with the general medical care and public health services.

For a developing country, Sri Lanka can boast of a vast social infrastructure network in which health is the foremost. According to the views of the government the health status of the country as indicated by life expectancy, infant mortality, maternal mortality, death rates, morbidity and mortality patterns are satisfactory. (Annual Health Bulletin 1980, Ministry of Health, Sri Lanka).

6. Health Care System in Harispattuwa

This area had been exposed to the Western medical system for over one and a half centuries. Frequent epidemics of smallpox, cholera and various kinds of fevers resulted in immunization programmes as well as village level campaigns to improve environmental sanitation by filling water pools, burning garbage etc., as early as the 1880s. From that time it was observed that the villagers in these areas were presenting themselves for immunization, and accepting Western drugs without hesitation. There was, however, no consistent effort to improve the general health and sanitation of the people. Western medical facilities on a more permanent basis reached the villagers only from the 1930s, but the general emphasis on the curative rather than on the preventive aspect explains most of the problems of health and sanitation in Harispattuwa.

The five survey locations share the general features and characteristics of Kandyan countryside. Most villages are easily accessible being served by a network of motorable roads. Easy accessibility,

particularly to and from larger townships like Kandy, Matale and Kurunegala had contributed significantly to the changes in the pattern for demand for medical care, many villagers preferring the larger Provincial or Base Hospitals, by-passing the health centres providing basic care in their own areas. However, some areas in the interior of the villages were served only by well-worn foot-paths leading from the main access roads. People would encounter great difficulties when transporting severely ill patients from the interior of the villages to a medical centre, under the circumstances.

Table 5

Health Institutions* by Type in Kandy District
1980

Type of Institution	Number
Provincial Hospitals	2
Base Hospitals	1
District Hospitals	10
Peripheral Units	11
Rural Hospitals	18
Maternity Homes**	8
Other Hospitals	1
Central Dispensaries	16
Total	67
MCH Divisions	8

* Excluding specialized hospitals.

** Includes maternity homes and central dispensaries.

Health care services in Hartspattuwa electorate are administered by the DHS, Kandy. The public health services are directed by the MOH, Werellagama. The four villages in the Patha Dumbura electorate fall within the range of MOH, Wattegama.

Table 6 HEALTH CARE SERVICES IN HARTSPATTUWA

Location	Type	Number of Beds
Ankumbura	District Hospital	82
Akuruana	Peripheral Unit	18
Medawala	Peripheral Unit	31
Thiththapajjala	Rural Hospital and Maternity Home	41
Bokkawala	Central Dispensary and Maternity Home	12
Pujapitiva	Central Dispensary	-
Giribhagama	Central Dispensary	-

A monthly antenatal and children's clinic is also conducted in Alawatugoda. A proposal for a health centre in Dolapihilla is being implemented. A privately run Hospital with a bed strength of 40 is situated in Morakanda, Bokkawala. This is a well equipped modern hospital run by a Christian organization financed by subscription from outside the country. It is severely under-utilized at the moment.

One important feature highlighted by the survey is the longstanding shortage of health personnel in the institutions in the area. Only Ankumbura and Akurana have qualified medical officers. A United Nations volunteer doctor is in charge of Ankumbura District Hospital. The second important feature is the poor quality of drinking water available to health institutions of the area. The water appeared unsatisfactory with regards to colour, odour and taste. A brief outline of the water supply to health centres in Harispattuwa is given below.

(i) Ankumbura District Hospital

The hospital is connected to the piped water distribution system of Ankumbura. As the supply had been unsatisfactory two wells were dug in the hospital premises. Water from one well is used for all purposes including drinking. There is a small stream flowing close to the well into which open all the drains of the hospital. Garbage and household refuse have been detected on the banks. The sewage pit of the hospital is located about 50 meters south-west of the wells.

(ii) Akurana - Peripheral Unit

The quality of water supplied to this hospital is grossly inadequate. The water is pumped from a well located about 200 yards from the hospital. The abattoir where cattle is slaughtered is situated close to the well. Drains from houses, boutiques and the abattoir are directed to the small stream that runs close to the well. Large quantities of garbage and

refuse are dumped in the stream. During the dry season the stream often becomes stagnant and becomes almost an open 'cess pit'. Inmates of the hospital expressed their aversion to drink the water supplied by the hospital.

(iii) Medawala - Peripheral Unit

Water is being pumped from the well in the hospital premises. The quality of water is unsatisfactory and there is a tendency for water from outside draining into the well.

(iv) Thittapajjala - Rural Hospital and
Maternity Home

Water from an old well, in the hospital premises is used for all purposes. This well dries up during the dry season. The quality of water appeared satisfactory. As the quantity of water is not adequate the supply is controlled.

(v) Bokkawala - Central Dispensary and
Maternity Home

A small shallow well is the source of water. The water level is said to remain remarkably constant. Despite much criticism by the users, water seemed satisfactory with regards to colour, odour and taste.

(vi) Central Dispensaries in -Alawatugoda, Pujapitiya and Girihagama

Alawatugoda dispensary is connected to the piped water distribution network of the area. The colour and the taste of water vary often and the quality is not satisfactory. Pujapitiya Central Dispensary obtains its water requirements from a nearby well. This water is also not satisfactory with regard to colour, odour and taste. The Central Dispensary at Girihagama gets its supplies from a well. The physical characteristics of water is satisfactory. Biological tests of water in these hospitals and also in the Katugastota hospital carried out by Auli Keinänen show that the quality is bad in every case. (Auli Keinänen, Chapter 4.3).

7. Family Planning

Much has been done to educate the community of the importance of planned parenthood. Advice on this subject is easily available from any government health unit, and there are several non-governmental agencies specialising on family planning. In our population sample 82.64 per cent had heard about family planning. The sources of information were varied: (a) Family planning clinic (22.22 per cent), (b) neighbours using some form of family planning method (9.72 per cent), (c) schools (22.05 per cent) (d) newspapers, magazines and journals (2.05 per cent) and (e) radio (2.05 per cent). The majority of the interviewed mentioned several of the above sources. Despite this high awareness of family planning, 28.77 per cent thought that it was unnecessary.

Of the large proportion of the sample who responded to the question whether they were following any 'family planning' method only 22.22 per cent gave positive answers. There were instances where the decision to adopt a family planning method was taken by the wife alone (2.78 per cent), but generally it was a decision made jointly by both wife and husband. A very small fraction of those who were following family planning methods (1.4 per cent) found to be dissatisfied with the method they have selected. There was a similar number (2.7 per cent) of users who expressed doubts about the efficacy of the methods they followed. Among those who used some form of appliance for family planning only about half obtained their supplies from the clinics and the rest had to buy theirs from the shops.

We asked our sample the reasons for the non adoption of family planning methods. The respondents were offered several reasons, the reasons mentioned and the responses received are as follows: (i) feeling shy to talk about these matters (3.47 per cent), (ii) the need for a large family (3.47 per cent), (iii) the wife/husband does not agree (3.43 per cent), (iv) they do not know about these matters (1.39 per cent), (v) for religious reasons (1.39 per cent), (vi) due to several reasons mentioned above (5.55 per cent). A fair proportion had other reasons (20.14 per cent) which were not specified. A considerable number (26.4 per cent) of the interviewed had never heard of permanent sterilization.

3. Health Education

(i) Organizational Structure

The Health Education Bureau (H.E.B.) with an Assistant Director as its head at the Ministry of Health is in overall charge of health education programme in the country. The activities of the H.E.B. are organized under eight sub-units:

- (i) community health education
- (ii) hospital health education
- (iii) training in health education
- (iv) special diseases campaign: anti-T.B.
anti V.D., leprosy, malaria and
filariasis.
- (v) research and evaluation
- (vi) mass communication and media
- (vii) school health education
- (viii) dental health education.

The first four of these are under the direction of specialist medical officers, dental health education is supervised by a specialist dental surgeon qualified in preventive dentistry. The responsibility for research and evaluation, mass communication and media, and school health education is given to trained health workers who are social science graduates. In addition to the above sections the Family Health Bureau also maintains a sub-unit dealing with health education under the direction of a medical officer.

The implementation of the health education programme, however, is highly decentralised and is in the hands of district, divisional, and village level health personnel. The Health Educators attached to each district SHS Office, the number of whom varies from district to district, are responsible for guiding and co-ordinating the implementation of the health education programme. The H.E.B. provides them with technical and professional support.

The health educators were recruited at first from among the PHIs and PHNs who were already in the health department. Later the need to have a set of more qualified health educators was felt, and consequently a scheme was prepared to recruit graduates from within the department and to have them trained here and abroad, before being appointed as confirmed health educators. They are expected to guide and direct the work of health personnel in the field and in institutions in the sphere of health education.

The primary responsibility for taking health education to the people rests with this set of health officials (health team) who are closest to the field. In their different capacities in the organizational structure of the health administration they perform a vital function in furthering health education of the community. Even among them it is the Public Health Midwife (Family Health Worker) who has become the front line health educator. She is close to the field and often lives among the people and she is much trusted by the villagers. She also has ready access to women in the community who form the key to any meaningful health education programme.

The last link in the chain of health personnel involved in health education is the voluntary health worker. The operation of the health education programme is based on the principle of self-reliance and self-help, and as such closely linked with voluntary service and community participation. Consequently, the 'health volunteer' is assigned a significant role in promoting health education at grass roots level. The health volunteers are selected, with the help of the village leaders and health workers in the field, from among the relatively young people with some education and are given an initial training in general hygiene, sanitation, nutrition, family health, family planning, infectious diseases and maternal and child care. They are also given a knowledge of the primary health care system of the country and of any prevalent health problems particularly in the locality concerned. The training of the volunteers is the responsibility of the 'health team'. The PHI and the PHN will introduce the volunteers to the field and give them the necessary field training. During this training the volunteers will be shown methods of identifying common health problems such as scabies, malnutrition and anaemia. Those volunteers who complete this programme of training are awarded certificates, and they will be assigned some selected households in the village (between 10-15 according to the HEB). The volunteers thus form a link between the official health workers and the community. Although their primary function is one of the health education, they also help the families to get the services needed by referring them to the health workers, health centres or nearby medical institutions, thus becoming the first link in the referral system.

(ii) Health Education Programme and
Health Education Work in Harispattuwa.

The programme of health education is formulated on the general assumption that the individual should be made responsible for his own health. He should be motivated and made health conscious through health education. The individual for this purpose is approached as a member of a family. The family, in turn, is considered to be in need of being educated and motivated to assume responsibility for its health. Making family the basic unit for providing health education is very relevant particularly in view of the nature of the areas covered by the health education programme:

- (i) communicable diseases with special reference to bowel diseases.
- (ii) nutrition.
- (iii) immunization.
- (iv) maternal and child care.
- (v) family planning.

The major emphasis in health education has been on specific target audiences such as mothers in maternity wards, or attending maternity and child welfare clinics, school children and community groups. As has been mentioned elsewhere the M.O.H. Office at Werellagama is responsible for all field health services, including health education in Harispattuwa. The HEB in Colombo has direct contacts with this office. However, the SHS Office in Kandy, being

responsible for extension work in health in the whole district, influences the health educational work of the Werellagama division as well. The 3 health educators assigned for the district (one of whom covers Harispattuwa and two other MOH areas) are attached to this office and they help and guide the MOH in matters related to health education.

According to the MOH, every year an 'advance programme' i.e. a general programme of work for the following year, is prepared by him in conjunction with the health educator and other field health officers. These programmes embrace many aspects of health education work, such as general health campaigns, school health education, maternal and child health care clinics and health volunteers. The targets in each of these fields will also be formulated in the advance programmes. Our investigations, however, reveal that in reality most of these programmed activities never take place. During the last year it was only in the sphere of maternal and child care that at least a part of the 'advance programme' was implemented.

The personnel in the health team carry out health education work in their day to day activities. The maternal and child care clinics are a regularly used channel for this purpose. Under this programme anti-natal, post-natal and "well-baby" clinics are also held quite frequently. Attendance at these clinics appear to be good mainly in response to the distribution of triposha a ready mixed wheat and soya preparation intended for expectant mothers and children under three

years. The public health midwife is expected to educate expectant mothers and those with new born babies not only of mother and child care problems but also of other aspects of health and sanitation, while on her rounds. The success of this work is, naturally, dependent to a large measure on the strength of the staff available.

Table 7

The Staff Position at MOH Werellagama
(Harispattuwa) 1982

Cadre		Present Position
MOH	1	1
PHI	9	7
PHN	3	3
FHW	54	40

According to this there is no cadre provision for a School Health Nurse, who should play a leading role in school health education programme. The increased cadre strength of family health workers (from 27 to 54) has still not been filled completely. The available staff may be capable of carrying out the routine health work but would be grossly inadequate for attending to any special health education work as the MOH Office claims to be undertaking.

The health teams are required to carry out special health education programme in selected villages. This is

being done in Harispattuwa, but not very frequently. In January 1983 two villages in the Project area Mugunudeniya (Medawala) and Batugoda were selected for this programme by the Health Educators attached to Kandy SHS Office. Even in these rare occasions the ideal of comprehensive health education coverage is not given, due to problems of lack of personnel, funds, educational material etc. According to one of the health educators in Kandy only those villages which are fortunate enough to be sponsored by an outside funding agency, viz. UNICEF, WHO for this purpose, gets the benefits of comprehensive coverage.

During the investigations we were informed that the selection of villages was done at monthly conferences where the relevant divisional level field officers and the health educators are present. It was also mentioned that the selection would be made on the basis of indicators of health, such as incidence of diseases. We however, felt that the selections are done very informally, and at random.

The village health education campaign is conducted jointly by the field health officers and health volunteers selected from each village. Ideally this programme covers all aspects included in health education, but as mentioned earlier only a few of the selected villages get the benefits of this ideal programme.

Immunization, nutrition, family health, family planning and mother and child care are the commonly covered aspects in the programme. According to one of

the health educators in Kandy the people of Harispattuwa no longer need persuasion or education with regard to immunization. It is said that about 60 per cent of the children there, are immunized against common infectious diseases. The fact that the child qualifies to get the quota of triposha only with the beginning of the immunization schedule, may be serving as an added incentive for this. There appears to be a possibility of raising this figure further, but the scarcity of vaccines is a major constraint. In nutritional education the emphasis is on (i) showing the link between health and nutrition (ii) advising on the manner of preparing a nutritionally adequate meal from the home environment (iii) an encouraging people to maintain a home garden where greens and pulses could be grown. The consumption of items of food, such as meat, fish, milk generally considered as good food (but expensive) is not emphasised. In this programme too an attempt is made to popularise the use of triposha.

Family planning education is also supposed to be quite popular among the villagers, and it is said that often more than half the number summoned for sessions turn up. The majority of the participants at these sessions are women. All the family planning methods are demonstrated in very simple manner with the help of diagrams, posters and flash cards in this programme. Our field survey showed that there is a high degree of awareness and receptiveness with regard to family planning in Harispattuwa, which is, however, not peculiar to this area alone. Family planning is a field in which

the government and numerous non-governmental agencies have been carrying out a well funded campaign for several years in the past.

This has been a continuing theme appearing frequently in discussions ranging from health and family to resource allocation and economic development. There is also provision for financial incentives for those who opt for such family planning measures as permanent sterilization. The high level of awareness of family planning prevalent in the country at large is due to these special campaigns. It is often argued that these have been very effective in reducing the rate of natural increase of population. The educational campaign in family planning may have helped to reduce the family size at least in certain segments of the population, however, we feel that the current trend of declining fertility rate may have played a far more important role in this process.

(iii) School Health Education Work

Besides the special village campaign the MOH also organizes school health education programmes. As in the case of village campaigns these are also held very infrequently, and when held the coverage will not be extensive. In 1982 for instance no school health education programme took place in Harispattuwa. In the previous year, however, a limited schools campaign was carried out; and the MOH Office provided the following statistical breakdown of their work.

Table 8

School Health Activities, Harispattuwa
Electorate, 1981

Details	Number
Total number of schools	86
Number taken up for inspection	25
Number of children examined - Boys	1,037
Girls	938
Defects detected in - Boys	634
Girls	578
Major defects - Malnutrition	607
Dental	632
Scabies	34
Defects corrected - Malnutrition	174
Dental	137
Scabies	34

It appears from this table that of the 1,975 children examined 30.7 per cent were found to be suffering from malnutrition, 32.0 per cent from dental problems and 1.7 per cent scabies and only a fraction of them received any cure for their problems.

Normally school health education campaigns includes all aspects of diseases, health and sanitation

excluding family planning. The divisional and field officers of health take part in them and are expected to visit schools in the area periodically for comprehensive medical inspections of children. The purpose of the inspections is to detect health problems prevalent among the children and either to remedy them or to channel the affected to the relevant institutions elsewhere for treatment. The officers will also educate children in matters of health and sanitation by means of lectures. Although Medical Officers themselves are expected to take part in these campaigns, this never happens now, because their time is devoted for other more pressing work. In the case of Harispattuwa there is not even a School Health Nurse, the work of the campaign, therefore, is carried out by PHIs and PHNs trained for this task. As a consequence the purpose of the medical inspection is now confined only to detecting minor and visible defects among children such as skin diseases, malnutrition and dental defects.

If carried out properly health education work among school children will be one of the most effective ways of improving the awareness of health and sanitation within the community. Health is taught in the schools as an integral subject in grades I-V and as a special subject in grades VI-X. Thereafter in grades XI-XII it is optional. The emphasis in health teaching at schools has been knowledge-oriented. Recently an attempt was made jointly by the HEB and the Curriculum Development Centre of the Department of Education to review and revise the health curriculum. The revised curriculum lays greater emphasis on the child learning

habits and practices. In this it is also envisaged to train teachers to work as first-line health screeners of school children. These changes are yet to make their appearance in schools and school curricula.

The inadequacy of qualified personnel, non-availability of literature, films, and projectors and the absence of such logistic support as transportation etc., are cited as reasons that have hamp the health education programme in schools. The lack of interest on the part of school authorities also appear to affect this work. Apparently the larger schools do not show much enthusiasm in health education work, partly because of the heaviness of the normal and extra-curricula work, and partly because of the low priority given to health education.

The much relied upon method of communication in health education work is the most traditional interpersonal method by health workers. The mass media is generally used to create the necessary awareness in the population of the prevalent health problems and needs. The media is used particularly in special campaigns conducted at times of outbreaks of diseases, diseases situations like floods etc. Considering the fact that the government controls the radio, the television and the largest group of newspaper publishers in the country it would be observed that only very limited use is made of mass media for the dissemination of health educational knowledge. There is one periodical published quarterly by the HEB devoted for health education and it usually contains articles from

experts as well as from peripheral health workers. This periodical is distributed free to health workers, schools, libraries and rural and other organizations.

iv. Problems of Health Education

On the basis of our field investigations in the study area and interviews with relevant health officials and field workers we have identified the following as the main problems with regard to health education.

The problems relating to staff appears to be a significant structural constraint. As noted earlier the health staff for its specialized work. This staff is already over burdened with their other duties. The head of the division, the Medical Officers of Health is involved in running clinics and may not have much time left for organizing health education programmes or supervising the work of the health workers. The PHI whose regular duties include the inspection of sanitary conditions in the area under him and supervising the implementation of relevant government and local authority regulations and be in-charge of immunization programmes may find it difficult to devote time for direct health education work, which from his point of view may not appear as very pressing. The area and the population to be covered by each PHI is rather wide (in Harispattuwa there are only 9 PHIs) and quite often they fail to perform their regular duties as well. On the other hand they are not provided with adequate transport facilities or reasonable travelling allowances which are essential to carry out extensive health

education work. A PHI using a motor bicycle gets only Rs. 250.00 per month as travelling allowance. The Health Educator responsible for Harispattuwa at the Kandy SHS Office gets only Rs. 575/00 per month. The mileage for which he is entitled to claim travelling is subjected to a ceiling of 250 miles which is considered only sufficient to cover the conference rounds within the field that a health educator has to attend normally. According to the officers concerned the incentives provided, in terms of financial compensation and promotional prospects are grossly inadequate. The shortage of staff is also a continuing problem. The MOH area of Harispattuwa does not have even a cadre position for school health nurse who really should be the pivot of school health education work. There is also a number of unfilled vacancies in the grade of Public Health Midwife for Harispattuwa.

The shortage of material is also a perennial problem faced by the health education programme. There is a dearth of films, educative posters, leaflets and other literature. Most of the available material are out of date and often irrelevant to the socio-economic and cultural realities of Sri Lanka's rural areas. Projectors and such other teaching aids are also very scarce. The provision of up-to-date and relevant material with the necessary facilities for using them in villages could have a good impact on the health educational level in the community. Such measures are likely to help overcome the alleged disinterestedness of the people regarding health educational knowledge.

The system of utilising volunteers as grass roots level health educators is also posing many important problems. Ideally, in a context where community participation in health and sanitation work is stressed the volunteers may have a significant role to play. But the practical difficulties in this regard should not be under-estimated. At the moment there is only a small number of volunteers in the villages, and our survey findings indicate that they have not made a significant impact on the level of health education in the villages. For instance, of the sample interviewed for information on sanitation, only 3 per cent had heard of sanitary latrines, a task normally expected from voluntary health workers or other field health workers.

For most of the volunteers the association with health education work is a transitory stage between being unemployed and getting a paid job. For young girls often marriage marks the end of their volunteering career. With no incentives in the form of financial rewards, the volunteers will have no binding interest in their work. Strong ideological motivation, if present, could have overcome problems as the absence of monetary rewards. But there exists no such motivation at present. The assigned task of the volunteers is to instruct the people in sanitary and hygienic ways of living. If instruction of this kind, mostly amounting to changing generations old customs and practices, to be accepted by the villagers, the giver of such advice must be someone who is respected, trusted and listened to by the villagers. The typical voluntary health worker is a young person with some

education but no job and often coming from relatively low income groups of the village society, and as such may not command much respect among villagers. With no official position or a recognized status in the village, his advice is seldom taken seriously. Volunteers are answerable to the community on behalf of the officials and taken to task for failures and lapses of the health officials often.

In any case it is not reasonable to expect volunteer worker system to succeed in a context where there is so much competitiveness, unemployment etc. A person with some education will always be looking for a paid job commensurate with his education. An often heard complaint of the volunteers is that the certificate they get after their training and even their experience are not recognized when they are considered for recruitment for other jobs in the health service. It appears, therefore, that the volunteer health worker system may not be able to deliver the results expected from it.

CHAPTER VIII

OBSERVATIONS

Problems highlighted in the foregoing study in relation to water use, health and sanitation have already been referred to. Taking into account the overall socio-cultural context pertaining to these aspects the following observations are made in the light of the research experience in Harispattuwa.

Harispattuwa may not be considered a high priority area for water supply and sanitation programmes when compared to some Dry Zone districts of Sri Lanka. Although there is no persistent scarcity of water, as a high density rural area with a high morbidity of water related diseases the need for good quality drinking water and hygienic sanitation facilities is strongly felt in Harispattuwa.

The Project area encompasses some of the typical features of rural Kandyan society with a predominance of poor peasants and agrarian labourers, having low standards of living, and restricted opportunities for employment and economic advancement. Therefore, the provision of improved water supplies and better sanitation facilities has to be viewed primarily in this context of poverty affecting the majority of the people. The realization of the objectives of the United Nation's Decade of Water Supply and Sanitation and those of the Decade Plan of the Government of Sri Lanka makes the intervention of public authorities and international agencies in the

form of provision of subsidies for such facilities unavoidable.

As a country with a long established civilization, strong rituals, beliefs and customs associated with water use, health and sanitation practices are prevalent in Sri Lanka. The prevalence and continuing influence of such cultural practices in Harispattuwa society, however, has not presented a barrier to the acceptance of new ideas and patterns of behaviour. Traditional concepts of water and the high ritualistic importance given to it are not in serious conflict with modern science and may even make the acceptance of modern concepts relating to water related diseases easier.

As regard the healing systems the existence of traditional medical and metamedical practices have not impeded the acceptance of Western medicine. In practice traditional concepts of disease and behavioural pattern associated with diseases play only secondary and often supportive roles. Strong adherence to traditional healing methods are prevalent where they have proved to be effective medically or socio-culturally. More often than not they are used in addition to Western treatment merely as means of psychological assurance.

Even in respect of food habits there are no strong religious or social taboos that could have a serious impact on the nutritional level of the people. Their notions of 'good food' are not basically in

conflict with modern concepts of nutritious food. People's food habits, however, are determined by their economic conditions. Meat, fish, eggs and milk have always been luxuries in the diet of most villagers but their notions of social respectability often make them declare that they frequently consume such items of food. Their intake of nutrition has always been from locally available sources such as greens and pulses, which are inadequate particularly in the case of children. Therefore, any improvement of the health conditions of the people necessarily involve the improvement of their economic conditions.

Western medical facilities and the health care system in Sri Lanka have evolved with a high level of responsiveness to the elitist character of society. There is an over-emphasis on urban high technology medical facilities and specialists while the primary health care system in the peripheries have received little attention. Besides the health care system stresses the curative aspect and gives a high priority for administrative functions and procedures. Environmental sanitation, nutrition and health education are aspects which have received very low priority, although the well-structured organization provides personnel and facilities for these. In actual practice the virtual isolation of health care from health education appears to be the crucial weakness of the system. Problems confronted by Western medical system in Sri Lanka have not been due to any serious challenge posed by traditional medicine. The actual problems were due to its Western orientation and its inability to reach the people in their day to

day lives. The erosion of the acceptance of the traditional healing methods and the concepts and beliefs associated with them created almost a lacuna in the belief system relating to diseases. And, while the people readily accept the superiority of Western treatment, the perceptions of disease and process involved in the spread of diseases associated with Western medicine remain still foreign to them. A reorientation of Western medicine is necessary to make it less alien and to ensure that its theories and concepts penetrate to the lower strata of society. This will require a health education programme closely integrated to the health care system.

Both water supply and sanitation programmes are confronted with the problem of determining socially and environmentally appropriate and inexpensive technologies. As already pointed out, the inflexibility of the technology adopted in the water supply scheme will amount to a denial of improved water supplies to a large proportion of the people. The limitation of the water supply programme, both in the siting of wells and in the non-utilization of other water sources such as springs and pihillas to supply inaccessible places, indicate the insufficient attention paid to environmental conditions in designing technology.

In regard to excreta disposal, adoption of complicated technologies involving the use of large amounts of water and heavy demands on the peoples resources will not be acceptable. There are instances of public waterseal latrines been broken and converted

into pit latrines in order to obviate the problems created by inadequate supply of water. Even where piped water supply will be available the water tax will discourage the adoption of flush toilets. For most people in Harispattuwa a pit latrine with a more permanent construction and a concrete squatting slab would provide an adequately sanitary latrine. The flies and odour could be controlled by the simple device of a wooden cover with a handle. People have been accustomed to the habit of putting burnt limestone periodically into the pit which has the combined effect of controlling the smell and the flies and also precipitating the decomposition of excreta.

The government policy of providing partial financial and material assistance for lower income groups earning less than Rs. 750/- per month has been virtually in abeyance. Procedural problems and the total inadequacy of the funds provided (Rs. 225/- for pit latrine and Rs. 250/- for waterseal latrine to the people, while for a similar latrine the government pays the contractors Rs. 2,100/-), has discouraged the use of the facility. The vast majority of those who have made use of this belong to the higher income groups who could normally afford to build a latrine on their own. Apart from the inadequacy of the assistance, in the actual operation of the policy those for whom it is actually intended are being by passed.

The defaecation habits of children and methods adopted for their excreta disposal present a more difficult problem in Sri Lanka, where health education alone may not be effective. As a first step in facing

the problem a specially designed waterseal type 'pre-school' latrine (concrete plate, bowl and syphon) are being distributed among lower income groups through the M.O.H. offices. This is a simple contrivance that can be fitted to the outside wall under the eaves at a spot which can be conveniently watched by the mother when the child is at toilet. The plate can also be used as a bathing stand for the child so that the water can be used to flush and clean the toilet. Another advantage is that this latrine can be passed on to a neighbour once the children are old enough to use the household latrine.

Health education is the vital link between all aspects of health and sanitation. This is particularly important in the context of Sri Lanka where the predominant form of medicine is alien to the traditions and culture of the bulk of the people. Health education is also the weakest link in the entire structure of health care in Sri Lanka. Its weakness lies not in its organizational structure, and in the content of the programmes but in the inadequacy of qualified and motivated personnel and the lack of emphasis resulting in insufficient funds and material. The attitude towards health education has on the whole been patronising with a tendency to lecture to the people on better habits of sanitation, good food, birth control etc., ignoring the conditions of the people and their level of education and knowledge. The school programme in particular is knowledge oriented and has no relevance to the environment and the actual health and sanitation practices of the students.

The subject of community participation in rural water supply and sanitation and health care programmes has been given considerable importance by international organizations and agencies. The basic assumption appears to be the existence of a 'community consciousness' and a 'collective identity' in rural societies in the developing countries which could be harnessed for improvement of the conditions of life of the people. But in actual practice the processes of class differentiation and polarization have not by passed the rural communities in these countries. Inter-class and intra-class conflicts and competition are not less intense in these societies than elsewhere though they may be less manifest. Therefore, reliance on community participation for the success of health and sanitation programmes may not be very realistic.

In instances where the rewards or benefits are related to the peoples immediate problems and are more tangible, community participation is readily forthcoming. The high level of enthusiasm and participation in projects and programmes of self-help at the initial stages do not last very long. This is not due to an absence of interest so much as due to preoccupations with the day to day problems of the individuals. The belief that villagers are generally less busy than the urban dwellers and can afford to devote their time for community activity is untenable in reality. The poorer villager often wishes to withdraw from community activity which tend to consume his time that he can otherwise utilize to attend to his own work. It is often the more affluent, who can employ

labour to attend to their work, and therefore could afford to devote more time for community work. But the pre-occupation with their own economic activity, occupations and social and other involvements outside the village makes their participation more formal than active. Very often community participation does not materialise spontaneously, it has to be organized and sustained by a few leading individuals, and their interests may not look as dispassionate as would have been expected. Often they have ulterior political motives or a desire to play leadership roles which may be harmful to the general objectives. In village level community participation political factionalism has come to play a decisive role. The competition among political groups to play the dominant roles in every community activity is a permanent feature today. Recent trends in politicization of rural society where dominance of one group is also accompanied with the use of power and the state machinery to undermine the strength of opposition groups have caused permanent damage to ideas of peaceful and democratic competition at village level. All these features make community participation, though laudable as an ideal objective, highly unreliable as a basis for projects and programmes which require sustained interest.

The participation of women in the implementation of programmes of health, sanitation and water-supplies is much emphasized today. In view of the important place they occupy in day to day life and in relation

to every aspect of health and sanitation their active participation in these programmes is highly desirable. Appointment of women as well-caretakers is already being experimented in Polonnaruwa. In Harispattuwa too there are signs of interest among women to volunteer as well-caretakers. However, in Sri Lanka, the idea is not received with much enthusiasm. There is a strong prejudice within the male dominated bureaucracy against employment of women, particularly in roles that are not traditionally assigned to them. This appears to be the most difficult hurdle that has to be overcome in the implementation of this idea in general.

The participation of villagers on a voluntary basis in health care and sanitation programmes and in the maintenance of community wells is also an idea that has received considerable attention of local authorities as well as international advisers. This again is based on out-moded concepts of rural society and the assumption that rural men and women have more leisure time available for community work than urban dwellers and that there is greater motivation for such voluntary activity in rural society. Rural housewife, unlike most of the urban Mahila Samithi workers have to take part in income generating activities in addition to attending to all household work. The aspirations of the rural youth with basic education are such that participation in voluntary work is viewed by him as a temporary involvement and a qualification for some form of employment.

Among voluntary well caretakers those who have been selected in Harispattuwa there is an implicit belief that their voluntary work will be recognized as a qualification for government employment. Some firmly believe that they will soon be paid salaries. In view of these aspirations they cannot be expected to meet the expectations of those who rely on voluntary participation for well maintenance. In a situation where they will be supervised by highly paid technicians it is difficult to expect these well caretakers to remain committed to the ideal of volunteerism. Besides, if the authorities envisage imposing a tax on the wells there will be even less motivation for voluntary work.

The idea of voluntary primary health care workers is even less feasible. Those who are selected will require some basic educational qualifications and their employment aspirations are generally high. Already those who have worked in this capacity are clamouring that the certificates they have received as voluntary health workers should be recognized for employment in the health service, but these claims have been ignored leading to certain amount of hesitation in accepting voluntary roles in health care.

x Better quality water and health and sanitation facilities, are no doubt, urgent requirements of societies as represented by that in Harispattuwa, but viewed from their preferences and priorities they are only secondary. Their struggle against deteriorating conditions of living over-shadows all other related problems. If new facilities are going to impose additional burdens on their resources expected results may be limited.

QUESTIONNAIRE 1 : WATER

Village: Hamlet: Serial Number:

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & Washing of Clothes
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(1) Water Source

1. Type of Water Source
2. If it is a well, describe the type and location.
3. Distance of water source from home (yards)
4. Is the water source owned publicly or privately?
5. If owned privately, who owns it?
6. Is water from this source available in all seasons?
7. If not, what are the alternative sources? (Describe)
 1. Location:
 2. Type:
 3. Distance:

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & Washing of Clothes
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8. Are you satisfied with the quality of water of the regular source? Give reasons:
9. Are you satisfied with the quality of water in the alternative source? Give reasons
10. How many households use the regular water source?
11. Do you like the existing water source improved or a new water source?
12. If you prefer improvements on the existing water source describe them.
13. If you prefer a new water source describe your preference.

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & Washing of Clothes
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(2) Fetching of Water

1. Who fetches in your household?
 - (1)
 - (2)
 - (3)
2. Is hired labour used?
3. If employed only for fetching water what is the wage?
4. What are the containers used for fetching water?
 - (1)
 - (2)
 - (3)
5. How many trips are made per day to the water source?
6. How long does each trip take?
7. Do you think that it takes too much of your time?

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & Washing of Clothes
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8. How many trips are made per day to the alternative water source during drought?
9. How long do these trips take?
10. If you do not have to spend so much time for fetching water, for what other purpose do you devote this time?
11. How frequently do you clean the fetching utensils?
 - 1.
 - 2.
 - 3.
12. Do you use any cleansing agent in washing them?
13. Do you use these utensils for any other purpose?
 - 1.
 - 2.
 - 3.

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & Washing of Clothes
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(3) Storage of Water

1. Do you use separate containers to store water at home?
2. If so, describe the type of container and its location.
3. Do you keep the stored water covered? Explain how and why?
4. How frequently do you use the storage container?
5. Do you use any cleansing agent in washing them?
6. Do you use these containers for other purposes?
7. If so, for what?
8. Do you think that there are better ways of storing water?
9. Normally how much water is stored at home?

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & Washing of Clothes
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(4) Consumption of Water

1. How much water is used per day in the household?
 1. Drinking
 2. Cooking
2. How much more water will you consume if the source of water were closer?
 1. Drinking
 2. Cooking
3. How do you drink water?
 1. After boiling
 2. after warming
 3. after filtering
 4. Without doing any of the above.
4. If you boil water, is it for the entire household or for the infants and the infirm only?
5.
 1. If you do boil water, why?
 2. If you do not boil water, why not?

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & Washing of Clothes
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(5) Payment for Water

1. Do you currently pay for water?
2. If so, how much per litre/gallon?
3. Do you consider it too much?
4. Are you prepared to pay more for a convenient and better supply of water?
5. If yes, how much?
6. If you do not pay for your water currently,
 1. how much are you prepared to pay for piped service with house connections?
 2. how much more rates are you prepared to pay for service from a public well fitted with a hand pump?
 3. how much more rates are you prepared to pay for service from a plot connection?

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & Washing of Clothes
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(6) Further information
on washing of cooking
utensils and minor
body washes:

1. Where do you wash .
your cooking
utensils?
2. When do you
normally wash your
cooking utensils?
3. How many times a
day?
4. Do all members of
the household wash
their bodies at
home?

If so,
 1. When?
 2. How many times?
 3. Where?
 4. How is waste
water disposed
of?

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & Washing of Clothes
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(7) Further information
on washing of
clothes:

1. Who washes clothes
in your household?
 - 1.
 - 2.
2. Where is washing
of clothes done?
3. How many times do
you wash your
clothes in a week?
4. Do you wash
children's clothes
after each wear?
5. Do you use soap or
washing powder?
6. Do you use the
services of a
laundry or a
village
washerman?
7. If so, how much do
you pay?
 1. Laundry
 2. Washerman
8. Where do they wash
the clothes?

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & washing of Clothes
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(8) Further information
on bathing

1. How many times do the members of the household bathe per week?
 1. Adults
 2. Children

2. Do you abstain from bathing on any particular day of the week?
 1. If so, on what day or days?
 2. Give reasons.

3. At what time of the day do you normally bathe?
 1. Adult males
 2. Adult females
 3. Children

Give reasons for your preference?

4. How much time do you spend for bathing?
 1. Adult males
 2. Adult females
 3. Children

5. How are the bathing needs of the infants and the infirm met? Describe.

Drinking and Cooking	Washing of utensils & minor body washes	Bathing & washing of Clothes
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(9) Ritual bathing and
washing

1. Do members of
your household
observe ritual
bathing on
following
occasions?
 1. Before and
after New
Year.
 2. After child-
birth.
 3. After puberty
 4. After funerals
 5. After infect-
ious diseases
 6. Before going
to places of
worship.
 7. Other - specify.

QUESTIONNAIRE 2 : SANITATION

1. Do you have a latrine of your own?
2. If yes, what type?
3. If no, where do you go for defaecation?
4. Is the latrine used for urination as well?
 - (i) always
 - (ii) sometimes
5. Do all members of the household use the latrine?
6. If no, who are the members not using it?
 - 1.
 - 2.
 - 3.
 - 4.

Why?
7. How are the excreta of infants and children disposed of?
8. (1) Do members of your family wash their hands after toilet?
 - (2) How is washing done?
9. How often do you clean the latrine?
10. Are disinfectants used in cleaning?
11. Is water brought and stored separately for toilet purposes?
12. Where is the latrine located?
 - (1) in relation to the house
 - (2) in relation to the source of water
 - (3) in relation to the neighbouring house

13. (1) Do you find it difficult to use the latrine at night due to its location?
(2) If so where do you go for urination and defaecation?
14. (1) Do you prefer a latrine inside the house?
(2) If not, give reasons.
15. Have you received any form of assistance (financial/material/advice) to build a latrine from the Health Department, Social Services Department, Rural Development Society or any voluntary organization? Describe.
16. Are you aware of any schemes of assistance?
17. Has anyone from the Health Services (Social Services, Rural Development or Voluntary Organization) visited and advised you on the necessity of a proper latrine?
18. How is household refuse disposed of?
(1) buried
(2) burnt
(3) made into fertilizer (compost)
(4) dumped in the garden or by the roadside
(5) Other. Specify.
19. Do you keep
(1) poultry (4) pigs
(2) cows (5) other
(3) goats
20. If yes, where are they housed?
(1) location in relation to house
(2) location in relation to source of water.

21. How are their waste products disposed of?
22. Are flies/rats/mosquitoes, a problem/nuisance in your household?
23. If so, what do you do to control these pests?
24. Do you have a home/kitchen garden?
25. Do you use fertilizers in your garden?
 - (1) cow/goat dung
 - (2) compost
 - (3) chemical - specify.
 - (4) insecticides
26. Where are the fertilizers/insecticides stored?

QUESTIONNAIRE 3 : HEALTHFAMILY

1. Where were the children born?
 - (1) home
 - (2) maternity home
 - (3) hospital
 - (4) others
2. If at home, did a qualified midwife attend to the delivery?
3. Were there any still births/deaths in infancy or childhood in your family?
Cause, if known
4. Were all the children breastfed?
5. If not why?
6. Was milk powder/cow's milk or any other milk preparation used exclusively or as supplements for your children?
7. Explain the procedure of reconstituting milk powder preparation.
8. Have you received any information/advice from any individual/organization on correct methods of infant feeding? (Types of food and the method of feeding).
9. Have you heard of immunization?
10. If yes, what is the source of information?

- (1) parents
- (2) school
- (3) clinic/maternity home/hospital
- (4) visiting health personnel
- (5) neighbours/voluntary organizations
- (6) newspapers/books/magazines
- (7) radio, television
- (8) other - specify

11. Are your children immunized against

- (1) Polio
- (2) Tetanus)
- (3) Diphtheria) DPT triple vaccine
- (4) Whooping Cough)
- (5) T.B.

12. If not, why?

- (1) did not think important
- (2) did not know
- (3) facilities not available
- (4) refused immunization
- (5) other - specify

13. Do you take your children to clinics?

- (1) only when they are ill
- (2) regularly for check-ups

14. What are the common childhood diseases in your village? (Communicable diseases)
eg. measles, mumps, chickpox.

15. Did any of your children suffer from any of these illnesses? Name them

- (1)
- (2)
- (3)

16. Have you heard of infective hepatitis, typhoid fever, dysentery?
17. How do you think these diseases spread?
18. Are you aware that these diseases could spread via contaminated water?
19. What do you do in case there is an outbreak of a communicable disease (eg. measles, mumps, chickpox) in your village?
 - (1)
 - (2)
 - (3)
 - (4)
 - (5)
20. In case of such a disease in the family are the patients isolated?
21. If yes, how and who looks after them?
22. What help would you seek?
 - (1) Western doctor's
 - (2) Ayurvedic doctor's
 - (3) 'medicine man'
 - (4) home/folk remedies
 - (5) charms/exorcisms
 - (6) religious help (eg. pirith)
23. Normally who takes the decision regarding the mode of treatment?
24. In case of (3) (4) (5) and (6) describe.
25. Do you consider a communicable disease (eg. chickenpox, mumps, measles, dysentery) as due to
 - (1) pollution
 - (2) godly punishment
 - (3) evil spirits
 - (4) germs/infective agents

26. Did your children receive 'worm treatment'?
 - (1) from hospital/central dispensary
 - (2) Ayurvedic doctor
 - (3) home treatment
27. What in your opinion is the cause of worm infestations?
28. Are you aware that worm infestations spread when personal hygiene and environmental sanitation are not satisfactory?
29. What are the common illnesses among adults in your family?
30. Do these restrict their earning capacity?
31. What do you do in case of an illness in an adult?
 - (1) home remedies
 - (2) hospital/Western doctor
 - (3) Ayurvedic doctor
 - (4) charms/exorcism
32. Who decides to call in the particular type of help?
33. Do you consider the health facilities in your area adequate?
34. Were there any serious illnesses (that needed hospitalization for example) in the family during the past year?
35. If yes, (1) what is the illness
 - (2) who suffered
 - (3) what treatment was given
 - (4) what was the outcome (complete cure/partial cure/death).

QUESTIONNAIRE 4 : FOOD AND NUTRITION

1. What food items do you consider as 'good food'?
List them - (1)
(2)
(3)
2. Why do you consider above as 'good food'?
3. Have you ever received information/advice on 'good food' from health personal/organizations/papers and pamphlets/ radio/films/TV.
4. Do all members of your household consume any of the food items mentioned above?
If yes - (1) what are they?
(2) how often
(3) how much/person
(4) do you think the amount consumed adequate.
5. If not, are these items of food prepared exclusively for some members of the family?
(1) infants and children
(2) invalids or convalescents
(3) adult members
(4) old and infirm
(5) other
6. If no member of the household consumes such food items explain why?
7. What food items do you consider should constitute a 'good' meal for your family? (eg. rice/yams/jak/bread fruit/bread/roti : vegetables/green leaves : meat/fish/dry fish/dhal : other).

8. How often do you consume such a meal?
9. Do you consume fruits?
- a. What kind
 - b. regularly
 - c. infrequently
 - d. only by children
 - e. do not consume
10. Do you grow any vegetables/fruits?
- a. for consumption only
 - b. for consumption and selling
 - c. only for selling
 - d. do not grow
11. Do you consume any of the animal products from your own animals?
- a. milk
 - b. eggs
 - c. meat
12. Do you wash your vegetables before cooking or preparing (salads, etc.)?
- a. yes, always
 - b. several washings
 - c. one washing
 - d. How do you wash them
13. If you do, explain why?
14. Do members of your family consume milk?
- a. cow's milk
 - b. goat milk
 - c. powdered milk
 - d. sterilized milk

15. (1) How much per day?
- (1)
 - (2)
 - (3)
 - (4)
- (2) If powdered milk is used, how do you prepare it
- (1) with boiled water
 - (2) with water used for drinking normally.
16. How is cow's milk/goat's milk prepared for drinking?
17. If you do not drink milk, why not?
- (1) do not like the taste
 - (2) cannot afford
 - (3) not necessary
 - (4) not readily available
 - (5) bad for your health
 - (6) other - specify
18. (1) Are there any food items you avoid in your household? List them.
- (2) why do you avoid them?
- (1) not good for health
 - (2) cannot afford
 - (3) don't like the taste
 - (4) religious taboo
 - (5) do not know
 - (6) non availability
 - (7) other - specify.
19. Do all members avoid them?
20. Do these members avoid them

- (1) always
 - (2) sometime of the year
 - (3) during an illness in the family
 - (4) other occasions
21. (1) Have you ever received information/advice on preparation of a balanced diet from
- (1) health workers
 - (2) parents
 - (3) school
 - (4) newspapers and pamphlets
 - (5) radio
 - (6) TV and films?
22. What information have you received?
23. What do you understand by the term "malnutrition"?
24. Are you aware of any nutritional diseases (or are you aware that improper nutrition could lead to serious ill health)?
25. Have members of your family suffered/are suffering from following ailments?
- (1) Failure to thrive/wasting/stunting
 - (2) Anaemia and severe malnutrition
 - (3) Inability to see in dim light
 - (4) White patches on the conjunctiva (Bitot spots)
 - (5) Soreness at the corners of the mouth (Angular Stomatitis)
 - (6) Bleeding Gums/Swollen Gums/Glossitis
 - (7) Dental caries.
 - (8) Goiters.
26. Have you heard of 'worm infestations' in children and also adults?
27. Do you consider the food you provide for your family adequate in respect of
- (1) quality
 - (2) nutritional value

QUESTIONNAIRE 5 : FAMILY PLANNING

1. Have you heard of family planning?
2. If yes, what is the source of information?
 - (1) neighbours
 - (2) patients
 - (3) school
 - (4) health workers
 - (5) newspapers/pamphlets
 - (6) radio/TV/films
 - (7) voluntary organizations
3. (1) Do you agree that people should plan their families?
 - (2) If not, why?
4. Do you, your husband/wife practice any family planning methods?
5. If yes, who advised you to accept this method?
6. Who decided to accept, wife/husband/both?
7. Are you satisfied with the method you have accepted?
8. Do you have any misgivings about the method you have adopted?
9. Who fetches the family planning appliances (eg. condoms, diaphragm, tablets, etc.)?
 - (1) wife
 - (2) husband
 - (3) whoever happens to visit the clinic

10. From where do you fetch them?

- (1) clinic
- (2) shops
- (3) other - specify.

11. If you do not use any family planning techniques,
why?

- (1) don't know about them
- (2) no one told you
- (3) you are embarrassed to ask
- (4) don't believe in them
- (5) on religious grounds
- (6) you need a large family
- (7) husband/wife does not approve of it
- (8) other - specify.

12. What do you consider the size of an ideal family?

13. Have you heard of permanent sterilization?

14. What are your views on permanent sterilization?

Appendix iii.

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