AGRARIAN RESEARCH AND TRAINING INSTITUTE

THE AGRARIAN SITUATION RELATING TO PADDY CULTIVATION IN FIVE SELECTED DISTRICTS OF SRI LANKA

PART 5 - COLOMBO DISTRICT

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PART 5

COLOMBO DISTRICT

Agrarian Research and Training Institute

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FOREWORD

This is the fifth of a series of reports based on a comprehensive survey relating to paddy cultivation carried out in five of the important paddy producing Districts in the Island. The report which is being issued in six parts will contain information pertaining to all aspects of the agrarian situation in the five Districts.

The inter-disciplinary nature of the study was maintained from the time it was instituted and several of the Research and Training Staff and the FAO Advisors, have worked as a team to prepare this report. In view of the several disciplines involved in the study the report is being published under the name of the Institute. It is, however, important to place on record the names of those officers who have contributed to this work.

Introduction	*A.S. Ranatunga* *Hiran D. Dias* *Miss T. Sanmugam*
The Setting	*R.D. Wanigaratne* *A.S. Ranatunga*
Land Distribution and Tenure	*W. Gooneratne* *R.D. Wanigaratne*
Co-operatives and Credit	*P.J. Gunawardena* *A.A. Khan (FAO)*
Agricultural Extension and Communication	*S.B.R. Nikahetiya*
Management Practices and Productivity	*A.S. Ranatunga*
Labour Utilisation and Income	*P. Wickremasekera*
Summary and Conclusions	*W. Gooneratne* *A.S. Ranatunga* *P. Wickremesekera*

Special mention must be made of the efforts made by Dr. W. Gooneratne who co-ordinated the work relating to this study and Miss T. Sanmugam who helped the research staff in the preparation of statistical tables, diagrams and in the interpretation of the data.

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August 1975

ACKNOWLEDGEMENTS

With the limited resources of the Institute an exercise of this dimension would not have been possible without the unstinted co-operation of the officers in the district. Our thanks are due particularly to the Extension Staff of the Department of Agriculture who arranged for meetings with the farmers and the DAEO who made available his vehicles for this work on a number of occasions.

Finally we would like to express our appreciation of the manner in which the farmers and their families responded to our request for information.

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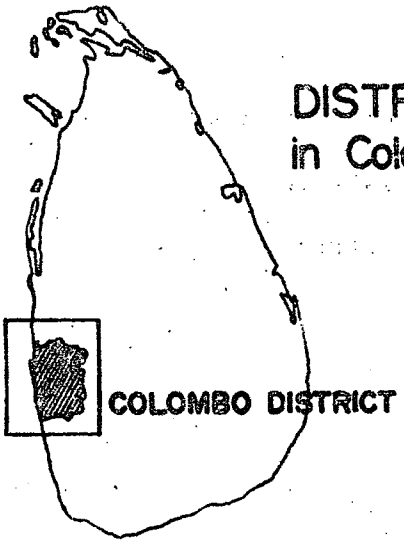

Location Map of SRI LANKA

CL I Colombo D.R.O Division
CL2 Salpiti Korale
CL3 Hewagam Korale West
CL4 Hewagam Korale East
CL5 Siyane Korale East
CL6 Siyane Korale West
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CL8 Hapitigam Korale
CL9 Aluthkuru Korale North 'B'
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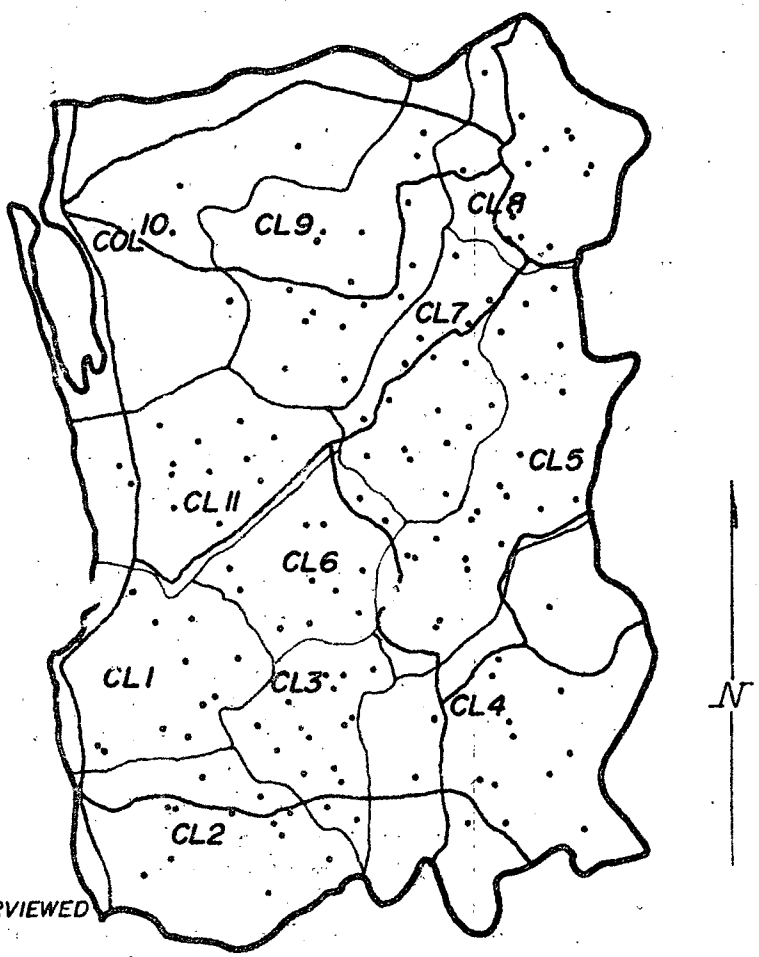

DISTRICT BOUNDARY
DIVISIONAL BOUNDARY
MAJOR ROADS
DISTRIBUTION OF FARMERS INTERVIEWED

Scale: 8 Miles to an inch

Fig.1

INTRODUCTION

Objectives and Scope of the Study

This study of the Agrarian Situation relating to paddy cultivation in the Colombo District forms part of a larger study which includes the important paddy producing districts of Hambantota, Kandy, Polonnaruwa and Anuradhapura. While the study relating to each district can be examined in its own right, it would be necessary to keep the larger design of the work constantly in view. This is relevant because the conclusions and suggestions emerging in each individual case and in their totality are of value in determining the strategies of the development programme for paddy production in the future.

The Agrarian Research and Training Institute which was officially inaugurated in February 1972, was still an infant institution building up its organisation and personnel at the time of the survey. Nevertheless, the Institute decided that even with limited resources it would be worthwhile to undertake a survey relating to paddy cultivation in some of the important paddy producing districts in the island. There were several reasons for taking this decision. The Institute has been established for the purpose of studying and evaluating the agrarian situation in Sri Lanka where the cultivation of paddy by small-holders is a dominant feature of the agrarian situation. In recent years there have been several noteworthy surveys and research studies relating to various aspects of paddy cultivation in Sri Lanka; nevertheless there is a great deal of work that remains to be done on the socio-economic aspects of paddy cultivation in different parts of the island. This study inaugurated by the Institute should therefore be treated as an introductory inquiry intended to surface the major socio-economic and environmental factors affecting paddy cultivators in the selected districts. It is intended to be a forerunner to further studies which will clarify and sharpen the situation regarding paddy production in the country.

During the last few years there have been a number of noteworthy technical achievements in the area of rice cultivation in Sri Lanka. Among them are the development of new high yielding varieties of paddy, the availability of fertiliser mixtures suitable for different agro-climatic regions and specific recommendations for the control of major pests and diseases. Yet information available on the human institutional factors involved is still very inadequate.

The declared national goal of attaining self-sufficiency in rice has to be achieved by matching the scientific and technical basis of the paddy production programme with the human and institutional factors. It is hoped that this survey will focus greater attention on the socio-economic and environmental factors conditioning paddy production programmes in Sri Lanka. In particular, this study will examine:

1. The influence of certain socio-economic, environmental and attitudinal factors on the adoption of different cultural practices, and the impact of such practices on the productivity of land;

2. Attitudes of farmers towards various tenurial arrangements;

3. Utilisation of family and hired labour in paddy cultivation;

4. The effectiveness of different extension communication media as agents of change in cultural practices.

Method of Study and Sample Design

The study has been confined to 833 farmers in the five districts mentioned below:

	District	No. of farmers interviewed
Dry Zone	Anuradhapura	201
	Hambantota	160
	Polonnaruwa	162
Wet Zone	Colombo	152
	Kandy	158
	Total	833

The number of farmers to be interviewed in each district was determined mainly in relation to the resources available to the Institute.

The Survey was based on a formal questionnaire divided into seven main sections:

1. General information about the farmer viz. family size, the land operated, sources of water, machinery and equipment, livestock, other crops cultivated, etc;

2. Tenurial arrangements and the farmer's attitude towards them.

3. Co-operatives, credit and indebtedness;

4. Cultural practices adopted in paddy production in Maha 1971/72;

5. Cultural practices adopted in paddy production in Yala 1972;

6. Paddy production expenses in Yala 1972, and

7. Agricultural information and the farmer.

The questionnaire was pre-tested by Research and Training Officers of the Institute in three different areas in the Colombo District, revised and uniformly administered in all five districts.

The sample of operators selected for the survey was taken from the sample of parcels of paddy land chosen by the Department of Census and Statistics for the crop cutting survey in Maha 1970/71, which was based on a stratified multi-stage random sampling design, the parcels of paddy within each stratum being chosen with probability proportional to the extent cultivated during the previous corresponding season.

The sample for the Colombo District was limited to 152 which was considered enough to provide representative data on the agrarian situation in the district. This sample was proportionately divided between the strata 'major irrigation,'[1] 'minor irrigation and rainfed conditions' on the basis of the area cultivated under each in Maha 1971/72. The farmers to be interviewed were taken in sequence from the list of parcels chosen for the crop cutting survey omitting the parcels where crop cutting experiments had not been carried out and the parcels cultivated by a farmer already selected. Where the list of parcels was inadequate, selection continued from a reserve list until the required number was obtained. The farmers cultivating the parcels so selected formed the sample for the survey.

As the size of the sample was too small to give reliable estimates due to the wide variability within the sample units, the appropriate estimation procedure was not followed. Instead the data was analysed as a simple random sample of operators from a population of operators.

The sample of parcels for the crop cutting survey was chosen with probability proportional to the extent under cultivation during the previous Maha season. As the sample of parcels and consequently clusters of parcels with corresponding operators were chosen with probability proportional to an auxiliary variate associated with size of holdings, the estimate obtained by treating the sample as a simple random sample could be biased. Estimates of characteristics positively associated with size of holding would tend to be over-estimated and those negatively associated are likely to be under-estimated on the assumption that size of holding is linearly correlated positively with the auxiliary variable - extent sown during Maha 1970/71. The extent of bias depends on the nature of the distribution of the auxiliary variable in the population.

The selection of the sample was based on an objective randomisation procedure the units being chosen with unequal probability. Although not the sampling design best suited to some aspects of the study, this sampling procedure was adopted to enable a comparison of reported yields with yield data obtained through crop cutting, especially since agrarian aspects connected with production and productivity were the main concern of the survey. The data analysis does, however, contain biases on estimates and conclusions in respect of characteristics related to the size of holdings. The reader's attention has been drawn to the parts of the report where such biases appeared to be significant.

The Field Survey

The field work in Colombo was conducted during the period 23rd January to 2nd February 1973. Three Investigators from the Institute assisted by seven final year Geography and Sociology students from the University of Sri Lanka interviewed the farmers. Although they had had previous experience of similar field work, the Investigators were given additional instructions on the survey objectives and the information to be collected.

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[1] Seventeen farmers were selected from the stratum 'Major Irrigation', 15 of them reported that they obtained their water from Minor Irrigation Schemes and were classified accordingly. The other 2 farmers have been excluded from the study.

The farmers in the sample were contacted with the assistance of the Government Agent and Agricultural Extension staff. The field work was supervised on the spot by four Research and Training Officers of the Institute who also scrutinised the completed questionnaires at the end of each day and in consultation with the Investigators rectified any discrepancies in incomplete recording. The response of the 152 farmers interviewed was generally good and the analysis was based on this data, except for some sections where responses were not available from all of them.

Rounding off of Figures

Figures reported have been rounded off to the nearest whole number except where it was considered important to retain decimal places. Slight discrepancies between the 'sum of components' and 'total'seen in some tables are due to rounding off of figures. Non-additivity of components due to reasons other than rounding off of figures have been specifically indicated.

Definitions

Some of the terms used in this report may require definitions.

1. Lowland/Highland/Chena

   'Lowland' refers to asweddumised wetlands normally used for paddy cultivation although other crops may sometimes be grown in Yala perhaps due to lack of water. Some of these are terraced fields which are on hill slopes and are fed from streams by means of anicuts and channels.

   'Highland'refers to dry lands, unirrigable by gravity methods which are regularly cultivated while 'Chena' refers to dry lands which are used for shifting cultivation.

2. Household/Family/Farm

   Information was collected on the basis of households, a 'Household' being deemed to include all members of a family living together. This unit is sometimes referred to as 'Family' in the text. The 'Farm' represents the collective farming activities of the individual members of the household.

3. Tenurial Status

   This refers to the operator's tenure relationship to the lowland cultivated. Where the entire cultivated lowland holding is owned by members of the household, the operator has been classified as 'Owner'. Where the entire operated lowland holding is rented in, leased in, or taken on *ande* , the operator has been classified as 'Tenant'. Where the operated lowland holding comprises both these categories, the operator has been classified as 'Owner-tenant' or 'Tenant-owner' depending on whether more than 50% of the operated lowland holding is owned or tenanted respectively. *Tattumaru* refers to periodic rotation of two or more co-owners on the same piece of land depending of their shares. *Kattimaru* refers to periodic rotation of serveral co-owners on two or more plots.

   Ande refers to the traditional system of renting out land on the basis of share-cropping. The arrangements under which such lands are cultivated vary considerably. Conditions prevailing in this district are discussed in Chapter 2.

   Attan - traditional term used for exchange labour.

Size of Holding

Operated lowland holdings have been classified into 7 classes in terms of size:

Up to 0.50 acre	-	holdings up to and including 0.50 acre
0.50 - 1.00 acre	-	" which are over 0.50 acre and up to and including 1.00 acre
1.00 - 2.00 acres	-	" which are over 1.00 acre and up to and including 2.00 acres
Up to 2.00 acres	-	" up to and including 2.00 acres
2.00 - 4.00 acres	-	" over 2.00 acres and up to and including 4.00 acres
4.00 - 6.00 acres	-	" over 4.00 acres and up to and including 6.00 acres
Over 6.00 acres	-	" above 6.00 acres

Paddy Varieties

Varieties cultivated have been classified as Old High Yielding Varieties, New High Yielding Varieties and Traditional Varieties, as follows:

Old High Yielding Varieties	- H-4, H-7, H-8, H-501.
New High Yielding Varieties	- BG 11-11, BG 34-6, BG 34-8, LD-66, MI 273, IR 264, Taichung
Traditional Varieties	- All unselected local varieties, as well as older pure line varieties like *Pachchaiperumal*.

Maha/Yala

The two main seasons during which paddy is grown are Maha and Yala. Maha sowing extends from July-August to February-March and coincides with the North East monsoon. The mid year sowing is confined mostly to fields that remain fallow during Yala due to flooding, and long aged varieties of 5-6 months duration are sown in such areas. From September onwards shorter-aged varieties of 4-4½ months duration are sown in a greater part of the district. The Maha sowing continues in restricted areas even later in the season due to inundation of fields. Both in terms of the acreage as well as productivity, Maha is the main season in this district. Yala sowing is confined to April-May and harvesting is completed by August.

Value of Paddy Produced

For purposes of valuing the paddy produced, the Guaranteed Price of Rs.14.00 per bushel has been used, which was the prevailing price at the time of the study (January 1973).

Abbreviations - the abbreviations used in this report are:

AI	- Agricultural Instructor
DRO	- Divisional Revenue Officer
HYVs	- High Yielding Varieties
KVS	- *Krushikarma Viyapathi Sevaka* (Village Level Extension Worker)
NHYVs	- New High Yielding Varieties
TDM	- Top Dressing Mixture (fertiliser)
TVs	- Traditional Varieties
V_1/V_2	- Basal Dressing Mixture (fertiliser)

Chapter 1

THE SETTING

1.1 General

The Colombo District located in the Western part of Sri Lanka covers an area of 793 square miles. For administrative purposes the district is divided into 14 Revenue Divisions.

Table 1-I Land Area, Population, and Population Densities of Colombo District

Revenue Division	Land Area sq. miles	Population	Population Density (Persons per sq.mile)
Hapitigama Korale	58	67,071	1,156
Aluthkuru Korale North (A)	37	67,951	1,837
Aluthkuru Korale North (B)	69	97,219	1,409
Aluthkuru Korale South (A)	44	81,385	1,850
Aluthkuru Korale South (B)	18	13,022	723
Siyane Korale West (A.P.)	52	140,962	2,711
Siyane Korale East (M.P.)	73	139,653	1,913
Siyane Korale East (U.P.)	49	61,549	1,256
Hewagam Korale East	103	103,215	1,002
Salpiti Korale	43	102,612	2,386
Colombo Division	35	58,312	1,666
Hewagam Korale West	59	99,632	1,689
Divulapitiya	75	82,265	1,097
Siyane Korale East (G.P.)	68	85,543	1,258
Balance: Urban areas	10	1,472,229	147,223
Total	793	2,672,620	3,374

Source: Census of Population: 1971 Preliminary Report Part 3-1, Department of Census and Statistics.

The Colombo District has some of the highest population densities, on a Revenue Division basis in Sri Lanka with the exception of the Urban areas. The Siyane Korale West (A.P. Division) recorded the highest population density and the Aluthkuru Korale (South-B) Division the lowest, among the Revenue Divisions of the district.

Agriculture is still the main occupation of the population though a high percentage is also engaged in secondary and tertiary industries as well as public service, showing the influence of the Colombo urban sprawl compared with other districts.

Agriculture is to a great extent influenced by micro-topographic and edaphic variations in the district. The land is flat to undulating and the landscape ranges from low lying marshes around Colombo city to rolling semi-hilly lands on the fringes of the central highlands.

GENERALIZED RELIEF MAP
of Colombo District

LAND- BETWEEN 500'-1000' IN ELEVATION

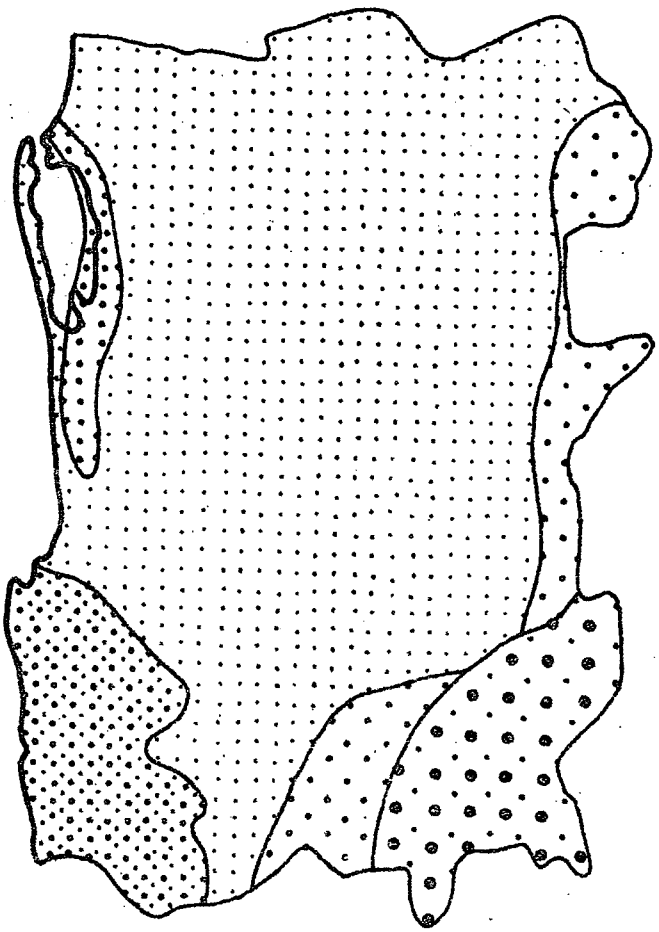
LAND- " 100'-500' "

LAND- LESS THAN 500' IN ELEVATION

Source- Adapted from Agro Ecological map & Physical map
Scale: 8 Miles to an inch

Fig.2

GENERALIZED RAINFALL MAP of Colombo District



Wet Lowland _ Moderately high rainfall (M.A.P. approx. 85"–150"; no rain shadow effect

Wet Lowland– — do —

Wet Lowland– — do —

Ultra wet Lowland - High rainfall (M.A.P. 150";) no rainshadow effect

SOURCE: Adopted from the Agro-Ecological map 1972

Fig.3

The largest segment of the district consists of gravelly loams and lateritic gravel. The eastern fringe is comprised of loamy soils and the north west fringe of deep sandy soils. The larger paddy tracts are mostly located on clay alluvial soils in association with river valleys or low-lying areas. The paddy soils in the low-lying coastal areas suffer from salinity and in other low-lying areas from poor drainage; acidity is a problem.

Table 1-II Rainfall in the Colombo District

Station	Average Annual Rainfall 1931-60 (inches)	No.of rainy days (average of 30 years) 1931-60
Ambepussa	100.78	156
Angoda	99.57	147
Colombo Observatory	93.31	188
Elie House Res.	86.58	167
Fort (1)	82.52	170
Maligakanda Res.	93.16	166
Negombo - PWD	77.26	136
Negombo - Western	81.92	155
Dompe	123.33	158
Henerathgoda B.G.	93.45	167
Walpita	88.90	129

Source: Department of Meteorology

The average annual rainfall based on the experimental station averages for 1931 to 1960, was above 75" which places it in terms of the climatic zones of Sri Lanka, the wet lowland type. Maximum precipitation occurs during the South-West monsoon season (between late May and late July). A secondary precipitation maximum occurs between the months of November and late January which coincides with the North East monsoon. During the rest of the year, thermal convection determines the rainfall rhythm.

The district as a whole experiences sufficient rainfall for agricultual purposes throughout the year. However, a major problem is the lack of water control in terms of both irrigation and drainage.

1.2 Paddy Cultivation

Paddy is still the mainstay of village agriculture.

Table 1-III Asweddumised Paddy Acreage - Maha 1971/72

	Major Irrigation	Minor Irrigation	Rainfed	Total
Extent (acres)	5,570	6,289	56,086	67,945
%	*8*	*9*	*83*	*100*

There was only one major irrigation scheme in the District (Attanagalla).

The over-dependence on rainfall for paddy cultivation is reflected in the relative extents sown in the Yala and Maha seasons. For example, for the period 1968-1971 the acreage sown in Maha was 86% of the asweddumised extent and in Yala only 44%.

The heavy South West monsoonal rainfall experienced during Yala drastically reduces the extent cultivated as much of the area is affected by long periods of inundation of the paddy lands and sometimes by floods.

Table 1-IV Number of Cultivation Committees in the Colombo District (By DO's Division)

DO's Division	No.	Total Paddy (Acreage)
Mirigama	22	3,825
Piliyandala	32	6,498
Homagama	32	6,885
Divulapitiya	27	5,116
Minuwangoda	33	6,778
Hanwella	30	5,862
Yakkala	38	8,343
Kirindiwela	44	7,926
Kandana	33	7,290
Kadawatta	34	6,907
Total	325	65,430

The number of Cultivation Committees varied according to the paddy acreage, the highest (44) being found in Kirindiwela and the lowest (22) in Mirigama.

58% of the number of holdings occupy only 27% of the total paddy acreage. 44% of the paddy acreage is in holdings of 1-2½ acres, constituting 34% of the total holdings. Only 12% of paddy land is in holdings over 5 acres. This indicates the limited amount of paddy land available for either landless workers or to increase the holdings of the smaller farmers (Table 1-V).

Table 1-V Asweddumised Paddy Acreage according to Size of Holding

Size of Holding	No.of Holdings No.	%	Extent Acres	%
Less than 1 acre	31,345	*58*	15,241	*27*
1 to under 2½ acres	18,260	*34*	25,413	*44*
2½ " " 5 "	3,249	*6*	9,521	*17*
5 " " 10 "	862	*2*	4,210	*7*
10 " " 25 "	296	..	1,733	*3*
25 and over	15	..	1,114	*2*
Total	54,027	*100*	57,232	*100*

Source: Census of Agriculture 1962, Vol.III, Asweddumised Paddy land.
.. *less than 1 per cent*

Table 1-VI Tenurial Status of Paddy Cultivators

D O Division	Tenant Cultivators		Owner cultivators	Land owners using hired labour	Total
	On *Thattu-maru* land	On other land			
Mirigama	201	1,978	3,506	27	5,712
Piliyandala	81	2,601	5,839	24	8,545
Homagama	125	2,241	6,381	13	8,760
Divulapitiya	6	2,177	4,242	23	6,448
Minuwangoda	3	2,482	5,214	52	7,751
Hanwella	258	2,368	5,644	79	8,349
Yakkala	129	2,822	9,464	144	12,559
Kirindiwela	299	3,473	6,819	119	10,710
Kandana	52	1,596	3,752	27	5,427
Kadawatta	69	2,824	5,441	173	8,507
Total	1,223	24,562	56,302	681	82,768
%	*1*	*31*	*67*	*1*	*100*

Source: Department of Agrarian Services Records 1972

Owner cultivators as a tenurial category were in the majority, the ratio of tenants and owners to the total number of cultivators being 31% and 67% respectively. The dominance of owner cultivators is also seen in the extent of land cultivated according to tenurial categories. Of the 66,375 acres of paddy land, 41,142 acres were cultivated by owners, which is 25% more than the area operated by tenant cultivators.

Table 1-VII Cultivated Land according to Tenurial Category

D O Division	Tenant Cultivators		Owner cultivators	Land owners using hired labour	Total
	On *Thattu-maru* land	On other land			
Mirigama	194	1,371	2,205	55	3,825
Piliyandala	362	1,933	4,173	29	6,497
Homagama	189	2,004	4,677	15	6,885
Divulapitiya	25	1,989	3,031	70	5,115
Minuwangoda	14	2,149	4,549	65	6,777
Hanwella	649	1,570	3,560	83	5,862
Yakkala	217	3,685	5,177	214	9,293
Kirindiwela	857	2,107	4,843	118	7,925
Kandana	36	2,214	4,961	78	7,289
Kadawatta	130	2,685	3,966	126	6,907
Total	2,673	21,707	41,142	853	66,375
%	*4*	*33*	*62*	*1*	*100*

Source: Department of Agrarian Services Records 1972

The total number of four-wheel and two-wheel tractors in working order reported in the district at the end of 1972 was 995, in the ratio of 2:1. No accurate data was available on the number of buffaloes.

Table 1-VIII Availability of Tractors at the end of 1972

Type	Number available	Number operable
Four-wheel	780	639
Two-wheel	387	356
Total	1,167	995

1.3 Sample Population

The total number of persons in the 144 respondent households was 893. The average size of a family was 6.2. Persons of 14 years of age and over were categorised separately (Table 1-IX) to estimate the man-power available for farm work.

Table 1-IX Distribution of the Sample Population

DRO Division	No.of families	No.of persons 14 years of age and over	Average No.per family 14 years and over
Hapitigam Korale	11	46	4.2
Aluthkuru Korale North (A)	4	13	3.3
Aluthkuru Korale North (B)	15	65	4.3
Aluthkuru Korale South (A)	12	55	4.6
Aluthkuru Korale South (B)	2	10	5.0
Siyane Korale West (A.P.)	12	53	4.4
Siyane Korale East (M.P.)	17	92	5.4
Siyane Korale East (U.P.& G.P)	22	98	4.5
Hewagam Korale East	14	67	4.8
Salpiti Korale	9	39	4.3
Hewagam Korale West	15	73	4.9
Divulapitiya	11	56	5.1
Total	144	667	4.6

The average number of members per family of 14 years of age and over was 4.6.

In the 14 years and over age group, 48% were found to be working only in their farms, and 44% were engaged in outside employment, with or without own farm work. There were altogether 96 students in this age group but only 20% of them were found to be engaged in farming activities on a part-time basis. Because of the higher concentration of schools (on a per sq.ml basis) in this district students are probably drawn away from family farm activities.

Table 1-X Nature of Employment of Sample Population

DRO Division	Persons aged 14 years and above: No.of persons	Working only on the farm	Working on the farm and outside	Working only outside farm	Disabled	Not specified
Hapitigam Korale	46	22	11	8	2	3
Aluthkuru Korale North (A)	13	4	5	4	-	-
Aluthkuru Korale North (B)	65	34	20	5	5	1
Aluthkuru Korale South (A)	55	31	17	7	-	-
Aluthkuru Korale South (B)	10	3	4	3	-	-
Siyane Korale West (A.P.)	53	27	13	8	1	4
Siyane Korale East (M.P.)	92	46	28	12	3	3
Siyane Korale East (U.P. and G.P.)	98	45	33	14	4	2
Hewagam Korale East	67	38	16	7	3	3
Salpiti Korale	39	14	15	5	4	1
Hewagam Korale West	73	33	21	15	4	-
Divulapitiya	56	22	12	10	3	9
Total No.	667	319	195	98	29	26
%	*100*	*48*	*29*	*15*	*4*	*4*
Average per farm	4.6	2.2	1.3	0.7	0.2	0.2

Household water supply was reported to be entirely from wells. 35% of households received some form of minor irrigation for cropping and the remainder depended entirely on rainfall (See Table 5-11).

1.4 Machinery and Equipment

Light iron ploughs and village ploughs are used widely for preparing paddy fields. Animal drawn implements are popular due to (a) the smallness of individual plots making tractor usage impracticable and (b) the marshy nature of much of the paddy land which makes the land unsuitable for tractors.

Table 1-XI Availability of Machinery and Equipment

Equipment and Machinery	No. of farms that own implements	No.of implements owned
Tractor 4-wheel	1	1
Tractor 2-wheel	3	3
Trailers	3	3
Sprayers	4	5
Dusters	1	1
Ploughs:		
(a) light iron	53	123
(b) village plough	23	57

1.5 Livestock

Of the 144 farmers interviewed only 31 (22%) reported owning buffaloes the total number being only 66 (i.e. considerably less than the number of ploughs). A greater proportion of farmers (51%) have neat cattle for milk as well as for draught purposes. Poultry rearing though common is not systematically organised.

Table 1-XII Livestock Population Reported by Sample Farmers

	No.of farmers reporting	Total Number of livestock
Buffaloes (working)	31	*66*
Buffaloes (calves)	6	*11*
Cattle (milk and working)	74	*160*
Cattle (calves)	45	*62*
Poultry	48	*703*

1.6 Land Use

A large majority of those interviewed had coconut palms in their home gardens - on the average about 60 palms per operator; many had jak, mango and plantains. Rubber as a plantation crop was next in importance to coconut. Much of the Colombo District falls within the Class II coconut belt of Sri Lanka with coconut as the predominant crop on highlands.

Table 1-XIII Crops (Other than Paddy) Reported by Farmers

Types of Crops	Total No.of operators	Trees / Plants		Extent	
		No.of farmers reporting	No. of trees/ plants	No.of farmers reporting	Acres
Plantation Crops:					
Rubber	26	1	15	25	128.25
Coconut	139	81	5,144	58	301.25
Cacao	2	2	3	-	-
Permanent Crops:					
Coffee	13	12	237	1	1.5
Arecanut	16	16	356	-	-
Cinnamon	3	1	150	2	1.25
Fruit Trees:					
Jak fruit	118	118	587	-	-
Pineapple	13	12	12,008	1	0.5
Mango	70	70	226	-	-
Orange	17	17	40	-	-
Lime	28	28	127	-	-
Papaw	2	2	16	-	-
Butter fruit	1	1	2	-	-
Passion "	24	24	145	-	-
Plantains	89	86	1,615	3	1.95
Temporary Crops:					
Types of Yams	9	6	685	3	2.25
Onions	10	4	290	6	1.02
Chillies	33	29	6 430	4	.96
Betel	23	21	13,492	2	.30
Vegetables	14	2	110	12	3.54

Chapter 2

LAND DISTRIBUTION AND TENURE

2.1 Land Distribution

The sample units were selected with probability proportional to size. This factor introduces a bias towards larger holdings. Thus, the figures relating to central tendency (such as average and median) tend to be somewhat over-estimated. The above considerations need to be noted in examining the random characteristics relating to the distribution and tenure of land cultivated by the sample of farmers.

The total extent of land (both highland and lowland) operated by the 144 cultivators was 717.61 acres; making an average of 5.0 acres per operator. Much of the land was highland which accounted for 61% of the total extent. The remainder was lowland (Table 2-1).

Table 2-1 Classification of Operated Land by Tenurial Status and Type of Land

Type of Tenure	Lowland Acres	%	Highland Acres	%	Total Acres	%
Owned/Allotted	163.86	*63*	399.89	*88*	563.75	*79*
Rented in/Leased in	97.49	*37*	54.37	*12*	151.86	*21*
Encroached/Chena	-	-	2.00	..	2.00	..
Total	261.35	*100*	456.26	*100*	717.61	*100*

.. less than 1%

A large segment of the total extent was operated by owner cultivators. *The extent of land held under the above tenure system was appreciably g ater in highland (88%) than in lowland (63%).*

2.2 Landlessness

All tenants of paddy land owned some highland though most of them owned extents of 1/2 acre or less. 12 tenant-owners (67%) owned less than 1/2 acre of paddy and 12 less than 2 acres of all land. Of the 144 cultivators 72% owned only lowlands below 1 acre in extent of whom 39% had no land of their own; 42% owned only highlands below 1 acre in extent of whom 5% did not own any land. The level of landlessness is shown in Table 2-II.

Table 2-II Number of Operators Owning Little or No Land

Tenurial Category	Lowland Operators				Highland Operators				Lowland and Highland Operators			
(acres)	No land	Up to: 0.5	1.0	2.0	No land	Up to: 0.5	1.0	2.0	No land	Up to: 0.5	1.0	2.0
Owners	0	14	34	50	1	8	13	28	0	4	7	12
Tenants	39	39	39	39	2	33	31	37	2	33	31	37
Tenant-owners	0	12	17	18	0	5	8	13	0	0	4	12
Others	1	6	13	19	0	6	9	15	0	1	3	8
Total	40	71	103	126	3	52	61	93	2	38	45	69

2.3 Distribution of Lowland

Much of the lowland was reported as cultivated by owners themselves. Of the 261.35 acres of lowland operated under various tenurial conditions, 47% was operated by owners, and 20% by tenants. 17% was operated by tenant-owners, and a further 16% by other forms of operators, mostly joint owners. *Of the 144 operators falling into the above categories 40% operated at least some leased-in/rented-in land,* showing the importance of the *'ande'* system in the District. 37% of the total area operated was cultivated on this basis.

Table 2-III Distribution of Operated Land among Tenurial Categories

Tenurial Category	No.of operators		Lowland		Highland Owned	Rented in	Leased in	Chena	Total
	No.	%	Acres	%	Acres	Acres	Acres	Acres	Acres
Owners	63	*44*	123,09	*47*	259.49	-	-	-	382.58
Tenants	39	*27*	53.08	*20*	29.72	1.00	3.25	-	87.05
Tenant-owners	18	*12*	44.56	*17*	51.62	-	50.00	-	146.18
Others	24	*17*	40.62	*16*	59.06	0.12	-	2.00	101.80
Total	144	*100*	261.35	*100*	399.89	1.12	53.25	2.00	717.61

When the distribution of lowland holding by size of holding (Table 2-IV) is taken, operators of low to medium size holdings (1.00-2.00 and 2.00-4.00 acres) predominate. 45% of the cultivaters operated holdings falling into the above categories. *Though only 3% of the cultivators fall into the largest size category (over 6.00 acres) they operated nearly 1/5 of the lowland extent. By contrast 17% of the cultivators fell into the smaller size category (up to 0.50 acres) and they cultivated only 3% of the lowland extent.*

2.4 Distribution of Highland

Farmers with the larger lowland holdings (i.e. above 4 acres) also operated proportionately more highland while farmers with the smallest lowland holdings (i.e. below 2 acres), were less favourably placed with regard to the distribution of highland. Thus, 7% of lowland operators in the above 4.00 acre holdings operated 21% of all highland, whereas 48% of lowland operators below 1.00 acre operated only 26% of the highland.

Table 2-IV Distribution of Operated Land according to Size of Lowland Holding

Size of Holding (acres)	Operators No.	%	Operated lowland Acres	%	Operated highland Acres	%	Total Extent Operated Acres	%
Up to 0.50	25	*17*	8.92	*3*	32.78	*7*	41.70	*6*
0.50 - 1.00	46	*31*	39.61	*15*	85.26	*19*	124.87	*17*
1.00 - 2.00	35	*25*	57.11	*22*	120.74	*27*	177.85	*25*
2.00 - 4.00	29	*20*	82.30	*32*	122.48	*27*	204.78	*29*
4.00 - 6.00	5	*4*	23.16	*9*	25.50	*6*	48.66	*7*
Over 6.00	4	*3*	50.25	*19*	69.50	*15*	119.75	*17*
Total	144	*100*	261.35	*100*	456.26	*100*	717.61	*100*

2.5 Size Characteristics of Lowland Holdings

The average of 1.81 acres for the lowland holdings encompassed holdings ranging in size from 0.06 to 25.50 acres. Standard deviation for the holdings was 2.47 which shows that there is much variation in the size of holding. The median size for the holdings was 1.01 acres, with the average for the holdings smaller than the median being only 0.68 acres, and 2.94 acres for holdings larger than the median. *The cultivators with holdings larger than the median were operating on an average more than four times as much land as cultivators with holdings smaller than the median.*

The average size of holdings did not vary very much among different tenurial categories (see Table 2-V). The average size was largest among tenant-owners (2.48 acres) and smallest among tenants (1.36 acres) with the average holding of tenant-owners 91% larger than the average holdings of owners.

2.6 Joint Ownership

The tenurial category classified as 'others' formed an important group in the tenure pattern in the Colombo District. Among the 144 operators interviewed, 24 (17%) were found to be operators of land under numerous forms of joint ownership. These operators were placed under a separate tenurial category designated 'others'.

The average size of holding of 4.24 acres operated by the 'others' category was composed of 1.69 acres lowland, 2.46 acres highland and 0.09 acre of rented-in highland.

Table 2-V Size Characteristics of Lowland Holdings

Tenurial Category	Average Size of Holding	Median Size of Holding	Average size of holding for		Standard Deviation of size of Holding	Lower quartiles of size of holdings	Upper quartiles of size of holding	Rang of Size of Holding
			Smaller than median	Larger than median				
Owners	1.95	1.00	0.62	3.29	3.41	0.62	2.00	0.06-25.50
Tenants	1.36	1.00	0.69	2.03	0.98	0.75	2.00	0.37- 5.00
Tenant-owners	2.48	1.88	1.08	3.87	2.03	1.12	3.00	0.75- 7.75
Others	1.69	1.68	0.76	2.63	1.08	0.74	2.50	0.33- 4.00
Overall	1.81	1.01	0.68	2.94	2.47	0.75	2.20	0.06-25.50

Table 2-VI Distribution of Operators and Size Characteristics of Land under Joint Ownership

Type of Joint ownership	Up to 0.50	0.50-1.00	1.00-2.00	2.00-4.00	4.00-6.00	Over 6.00	All size Classes
Thattumaru	2	2	1	2	-	-	7
Kattimaru	-	-	-	1	-	-	1
Thattimaru and *Kattimaru*	1	-	-	2	-	-	3
Other joint ownership	2	3	3	5	-	-	13
Total	5	5	4	10	-	-	24

Cultivators of the 'others' tenurial category with holdings larger than the median (1.66 acres) were operating on the average more than three times as much land as cultivators with holdings smaller than the average. Though the number of operators on cultivable land was high in the 'others' category, on the basis of size of holding, nearly 42% of the operators and 69% of the extent cultivated belonged to the 2.00-4.00 acres category.

Although joint ownership signifies the fragmentation of ownership of cultivable land the holding operated may be relatively large. This is probably why most of the operators and operated lands in this category belong to the 2.00-4.00 acres category (Table 2-VI). However, this does not signify that the operator of jointly owned land cultivates it every year or season or gets the entire produce of the holding. Under *Thattumaru* and *Kattimaru* systems the operator may cultivate the land only at intervals and under joint ownership one shareholder may operate the holding belonging to several co-owners who receive their share of the produce from the land minus operating cost of the cultivating co-owners. The latter in this case is really a tenant of other co-owners. The ownership generally acts as a deterrent to investment, but may prevent fragmentation of the land.

2.7 Distribution of Lowland among Different Size Holdings

The distribution of lowland holdings among different tenurial categories by size of holdings is shown in Table 2-VII.

79% of the owners operate holdings of less than 2.00 acres; the amount of land falling into this class however, is only 39% of the total extent in this tenurial category.

Among the tenants 84% operate holdings of less than 2 acres, or 60% of the land operated by this tenurial category. Among tenant owners 89% have holdings between 0.50 to 4.00 acres accounting for 67% of the land in that category.

2.8 Highland Operated by Paddy Cultivators

The distribution of highland holdings among 144 cultivators is shown in Table 2-VIII. The Tenant-owner category had the largest average extent amounting to 5.64 acres: tenants had the smallest average (0.87 acre),

Table 2-VII Distribution of Lowland Holdings according to Tenurial Categories and Size of Holding

Size of Holding (acres)	Owners				Tenants				Tenant-owners				Others			
	Operators		Extent		Operators		Extent		Operators		Extent		Operators		Extent	
	No.	%	acres	%	No.	%	acres	%	No.	%	acres	%	No.	%	acres	%
Up to 0.50	14	22	4.00	3	6	15	2.87	5	-	-	-	-	5	21	2.05	5
0.50 - 1.00	20	32	17.94	15	18	46	15.12	29	3	17	2.25	5	5	21	4.30	11
1.00 - 2.00	16	25	26.21	21	9	23	17.00	32	6	33	7.44	17	4	17	6.46	16
2.00 - 4.00	7	11	21.28	17	5	13	13.09	25	7	39	20.12	45	10	-	27.81	69
4.00 - 6.00	4	6	18.16	15	1	3	5.00	9	-	-	-	-	-	42	-	-
Over 6.00	2	3	35.50	29	-	-	-	-	2	11	14.75	33	-	-	-	-
Total	63	100	123.09	100	39	100	53.08	100	18	100	44.56	100	24	100	40.62	100

Table 2-VIII Distribution of Highlands among Operators by Tenurial Category and Size of Holding

Size of Holding (acres)	Tenurial Categories: Owners No. of operators	Owners Extent owned (acres)	Owners Extent leased (acres)	Owners Total (acres)	Owners Avg. Extent	Tenants No. of operators	Tenants Extent owned (acres)	Tenants Extent leased (acres)	Tenants Total (acres)	Tenants Avg Extent	Tenant-owners No. of Operators	Tenant-owners Extent owned (acres)	Tenant-owners Extent leased (acres)	Tenant-owners Total (acres)	Tenant-owners Avg. Extent
Up to 0.50	14	20.37	-	20.37	1.46	6	4.41	-	4.41	.74	-	-	-	-	-
0.50 - 1.00	20	56.62	-	56.62	2.83	18	17.26	2.50	19.76	1.09	3	2.25	-	2.25	0.75
1.00 - 2.00	16	102.00	-	102.00	6.37	9	3.31	1.75*	5.06	0.56	6	5.25	-	5.25	0.88
2.00 - 4.00	7	48.00	-	48.00	6.85	5	3.74	-	3.74	0.75	7	32.62	-	32.62	4.66
4.00 - 6.00	4	24.50	-	24.50	6.12	1	1.00	-	1.00	1.00	-	-	-	-	-
Over 6.00	2	8.00	-	8.00	4.00	-	-	-	-	-	2	11.50	50.00	61.50	30.75
All size categories	63	259.49	-	259.49	4.12	39	29.72	4.25	33.97	0.87	18	51.62	50.00	101.62	5.64

Size of Holding (acres)	Others No. of operators	Others Extent owned (acres)	Others Extent leased (acres)	Others Total (acres)	Others Avg. Extent	All tenurial categories No. of operators	All tenurial categories Extent owned (acres)	All tenurial categories Extent leased (acres)	All tenurial categories Total (acres)	All tenurial categories Avg. Extent
Up to 0.50	5	8.00	-	8.00	1.60	25	32.78	-	32.78	1.31
0.50 - 1.00	5	6.51	0.12†	6.63	1.33	45	82.64	2.62	85.26†	1.89
1.00 - 2.00	4	8.43	-	8.43	2.11	36	118.99	1.75	120.74*	3.35
2.00 - 4.00	10	36.12	-	36.12	3.61	29	120.48	-	120.48	4.15
4.00 - 6.00	-	-	-	-	-	5	25.50	-	25.50	5.10
Over 6.00	-	-	-	-	-	4	19.50	50.00	69.50	1.74
All size categories	24	59.06	0.12	59.18	2.47	144	399.89	54.37	454.26	3.15

* Includes 1 acre rented-in land

† Includes 0.12 acre rented-in land

Tenants who had smaller lowland holdings tended also to have smaller highland holdings. *Generally, cultivators with lowland holdings between 1.00-6.00 acres also had large highland holdings (on an average 3.8 acres) and cultivators with lowland holdings below 0.95 acre had smaller highland holdings (1.31 acres).*

2.9 Tenancy Conditions

37% of all operated paddy land is under some form of tenancy and 40% of the operators work at least a part of their holdings under the ande *system.* The economic conditions of a tenant depend to a large extent on his power of negotiation which, among other things, is affected by:

a) the extent of land (lowland and highland) owned by the tenant;

b) the pressure for land in the area, especially for agriculturally productive land;

c) the extent of outside family income, etc.

It is also affected by the relationship of the tenant to his landlord and the nature of the landlord himself. The rent paid by the tenant or that demanded by the landlord and the collateral help offered by the latter are all in one way or the other affected by this relationship.

In the discussion that follows the total number of tenants reported in the Tables does not tally with the number of tenants reported in the other sections of this report as the tenants have been multiple counted once for each landlord. This was made necessary owing to the fact that certain tenants had obtained parcels of paddy land from more than one landlord and the arrangements with different landlords had varied considerably.

2.10 Occupation of Landlords

The salaried employees (20%) and land owners (21%) constituted the two important landlord categories. The traders accounted for 9% of all landlords and the peasant landlords 11%.

The traders seem to control a larger proportion of the tenanted area compared to their numbers, with an average of 2.4 acres given on *ande* (Table 2-XI). Land owners, however, do not control large extents of paddy land. The 15 landlords rented out only an average of 1.1 acres. A similar situation was also observed for those in professional employment.

Table 2-IX Distribution of Operated Lowland by Tenurial Category according to Water Supply

Water Supply	Owners				Tenants				Tenant-owners				Others				Total			
	Operators No.	%	Extent Acres	%	Operators No.	%	Extent Acres	%	Operators No.	%	Extent Acres	%	Operators No.	%	Extent Acres	%	Operators No.	%	Extent Acres	No.
Minor Irrigation	14	*22*	47.19	*38*	17	*44*	28.09	*53*	9	*50*	22.39	*50*	11	*46*	19.43	*48*	51	*35*	117.10	*45*
Rainfed	49	*78*	75.90	*62*	22	*56*	24.99	*47*	9	*50*	22.17	*50*	13	*54*	21.19	*52*	93	*65*	144.25	*55*
Total	63	*100*	123.09	*100*	39	*100*	53.08	*100*	18	*100*	44.56	*100*	24	*100*	40.62	*100*	144	*100*	261.35	*100*

Table 2-X Occupation of Landlords and their Relationship to Tenants

Relationship		Occupational Categories																	
		Salaried employment		Non-salaried employment		Skilled workers		Land owners		Farmers		Traders		Pensioners		Priests		Others		Unspecified		Total *	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Friend	No.	6	35	3	60	2	40	6	38	3	30	2	22	2	33	-	-	-	-	3	38	27	32
	%	22		11		7		22		11		7		7		-		-		11		100	
Neighbour	No.	1	6	-	-	-	-	1	6	-	-	1	11	-	-	-	-	-	-	-	-	3	4
	%	...		-		-		...		-		...		-		-		-		-		...	
Total of 1 and 2	No.	7	41	3	60	2	40	7	44	3	30	3	33	2	33	-	-	-	-	3	38	30	36
	%	23		10		7		23		10		10		7		-		-		10		100	
Relatives	No.	3	18	-	-	1	20	8	50	4	40	3	33	-	-	-	-	4	80	3	38	26	31
	%	12		-		4		31		15		12		-		-		15		12		100	
Others	No.	7	41	2	40	2	40	1	6	3	30	3	33	4	67	3	100	1	20	2	25	28	33
	%	25		7		7		4		11		11		14		11		4		7		100	
Total	No.	17	100	5	100	5	100	16	100	10	100	9	100	6	100	3	100	5	100	8	100	84	100
	%	20		6		6		19		12		11		7		4		6		10		100	

* 5 operators had 3 landlords each and 6 operators had 2 landlords each

... percentages not reported as they are based on very small numbers

Table 2-Xl Distribution of Tenanted Paddy Land according to Occupation of Landlords *

		Occupation of Landlords										
		Salaried Employment	Non-salaried Employment	Skilled workers	Landowners	Farmers	Traders	Pensioners	Priests	Others	Un-specified	Total +
Land-lords	No.	14	3	4	15	8	6	6	3	5	6	70
	%	*20*	*4*	*6*	*21*	*11*	*9*	*9*	*4*	*7*	*9*	*100*
Total Extent	Ac.	18.66	3.75	3.75	16.28	8.60	14.25	9.75	2.25	2.67	10.43	90.39
	%	*21*	*4*	*4*	*18*	*10*	*16*	*11*	*2*	*3*	*12*	*100*
Tenanted Paddy holdings	Ac.	1.3	1.3	0.9	1.1	1.1	2.4	1.6	0.8	0.5	1.7	-

* 5 operators had 3 landlords each and 6 operators had 2 landlords each.

\+ Information about paddy acreage was not available in respect of 14 landlords.

Although there are no large paddy owners it is important to note that a *sizeable proportion of the limited paddy acreage is controlled by highland owners or those in salaried professions and business.*

2.11 Residence of Landlords

Almost all the landlords live within the district (Table 2-XII). The 45% of the landlords living outside the village but within the Colombo District are really absentees, residing either in the capital or in other urban centres, who have secured control of village paddy lands.

Table 2-XII Residence of Landlords

Residence	All landlords		Landlords who received half produce as rent		one fourth as rent	
	No.	%	No.	%	No.	%
Same village	43	*51*	30	*48*	7	*58*
Same district	38	*45*	28	*45*	5	*41*
Outside district	3	*4*	4	*6*	-	-
Total	84	*100*	62	*100*	12	*100*

Tenants who had more than one landlord have been multiple counted once for each landlord.

2.12 Relationship of Landlords to Tenants

The different categories of landlords have varing relations with the tenants (Table 2-X).

67% of the landlords are either friends, neighbours or relatives. The rest had no specific relationship suggesting the control of a sizeable proportion of the village paddy land by outsiders. Only 30% of the landlords were relatives.

2.13 Landlords' Contribution to Tenants

Table 2-XIII shows that a *high proportion of the tenants of all categories (70%) received collateral help from their landlords though the proportion of pure tenants who benefited from such help was the lowest. The majority of tenants (80%) who paid half share of produce received some collateral help. (A larger proportion of tenants who paid less than half share of produce or a fixed rent received no inputs at all).*

Table 2-XIII Landlords' Contribution to Tenants

Tenurial Category	Total No.*	No.who received collateral help	% who received Collateral help
Tenants	51	34	*67*
Tenant-owners	21	15	*71*
Other tenants	12	10	*83*
All tenants	84	59	*70*

* Tenants who had more than one landlord have been multiple-counted once for each landlord.

The relationship between the type of landlord and the collateral help offered does not appear to be very clear, though the proportion of 'others' group which did not provide any inputs is much smaller than that for relatives. Table 2-XIV presents the relevant data for tenants paying half share of produce.

Table 2-XIV Relationship to Landlords and Nature of Collateral Help received by Tenants Paying Half Share of Produce as Rent

Relationship	Tenants who pay half the produce as rent							
	Total		Tenants who receive one input		Tenants who receive more than one input		Tenants who receive no inputs	
	No.	%	No.	%	No.	%	No.	%
Friends	19	*100*	10	*53*	5	*26*	4	*21*
Neighbours	1	*100*	-	-	1	*100*	-	-
Relatives	24	*100*	7	*29*	10	*42*	7	*29*
Others	18	*100*	11	*61*	6	*33*	1	*6*
Total	62*	*100*	28	*45*	22	*35*	12	*19*

*Tenants who had more than one landlord have been multiple-counted once for each landlord.

It might be expected that more relatives would provide collateral help to their tenants than outsiders. However, nearly *30% of relatives did not provide any inputs and only 6% of the 'others' group did not do so. A larger percentage of relatives offered more than one input while a larger percentage of friends and outsiders gave only one input.* The difference between friends and outsiders is negligible.

In the case of tenancy transactions between relatives, the half share arrangement and the extent of collateral help offered are determined to a large extent by certain social obligations arising out of kinship ties, the economic situation of both the landlord and the tenant, etc. The tenant in this case, by viture of such obligations, enjoys a certain degree of security on the land. In many cases, this security factor is sufficient incentive for the tenant to be satisfied with retaining half share of produce without receiving any collateral help.

In the case of land obtained from outsiders. The tenant enjoys much less security. Such landlords continue to offer inputs but insist on half share of the produce.

The different input combinations provided by the landlords to their tenants paying half share of produce are shown in Table 2-XV. *Fertiliser was provided by nearly 90% of landlords offering collateral help and seed paddy by 52%.* Both seed and fertiliser were provided by 42% while another 42% provided only fertiliser. The provision of draught power by landlords to tenants was not reported.

Table 2-XV Landlords' Contribution to Tenants Paying Half Share of the Produce as Rent

Contribution	Landlords who contributed	
	No.	%
	50	*100*
Seed only	4	*8*
Fertiliser only	21	*42*
Agro-chemicals only	1	*2*
Others only	1	*2*
Seed and fertiliser	21	*42*
Fertiliser and others	1	*2*
Seed, fertiliser and others	1	*2*

2.14 Land Rent Paid by Tenants

Land Rent is still dominated by the widespread prevalence of the payment of half share of produce, almost 75% paying this rent. Only 14% and 4% paid 1/4 share of produce or a fixed rent respectively. The land rent paid does not seem to be directly associated with landlord-tenant relationship though a larger percentage of relatives received half share of the produce than either friends or 'others' (Table 2-XVI).

Table 2-XVI Land Rent Paid by Tenants*

Tenurial Category		Operators 1/2 share of produce	1/4 share of produce	1/3 share of produce	2/5 share of produce	Fixed Rent	Total
Tenants	No.	36	8	5	-	2	51
	%	*71*	*16*	*10*	-	*4*	*100*
Tenant-owners	No.	17	2	1	1	-	21
	%	*81*	*10*	*5*	*5*	-	*100*
Other tenants	No.	9	2	-	-	1	12
	%	*75*	*17*	-	-	*8*	*100*
All tenants	No.	62	12	6	1	3	84
	%	*74*	*14*	*7*	*1*	*4*	*100*

* Tenants who had more than one landlord have been multiple-counted once for each landlord.

Nearly 20% of tenants paying half-share received no collateral help while 45% received only one input.

The provisions of the Paddy Lands Act meant for rent regulations seem to have been ineffective in this district. This tendency has been strengthened by the scarcity of paddy land in the district and by the very high population pressure on it. There is an acute competition for land among the landless, which keeps the rent at a high level. Tenants were aware that the Paddy Lands Act was not very effective in safeguarding their rights if the landlord tried to terminate the security illegally.

2.15 Attitudes of Tenants to Rents Paid

Only 28% of the tenants paying half share of produce felt that the rent they pay is excessive. The rest considered it as fair. A larger proportion of pure tenants consider the rent as excessive.

In the case of payment of half share of produce the burden of rent on the tenant is closely tied to the extent of collateral help he receives from the landlord - the more collateral help received the less it becomes a problem for the tenant to provide himself with critical inputs. Table 2-XVII shows that *the proportion of tenants who consider the half share as excessive increases with the reduction of collateral help offered. This indicates that many tenants are continuing to pay the half share of produce due to lack of any other alternative. The inability of the Paddy Lands Act to protect the tenants from eviction and the failure of the Cultivation Committees to help the tenants ascertain their rights seem to have prevented them from attempting to pay the legal rent.*

Table 2-XVII Attitude to Rent of Tenants who Pay Half Share

	Tenants receiving: No help		One Input		More than one input		Total	
	No.	%	No.	%	No.	%	No.	%
Fair	6	*55*	19	*70*	19	*83*	44	*72*
Excessive	5	*45*	8	*30*	4	*17*	17	*28*
Total	11	*100*	27	*100*	23	*100*	61	*100*

Of the 44 tenants who expressed that the half share is reasonable 86% received at least one input from their landlords as collateral help (43% received more than one input). Tenants who receive no inputs at all from their landlords or only one input may have considered the payment of half share as reasonable in relation to the economic conditions of the landlord and their relationship towards him. Obviously *some landlords are themselves small owners giving a piece of land on* ande *to less fortunate family members purely as a gesture of help. At times the inability of such landlords to cultivate the land themselves owing to old age, illness, etc., also results in renting out the land. In such cases the payment of half share of produce is considered reasonable by the tenant. However, in a substantial number of cases, the tenant continues to pay a high rent purely for fear of eviction. Once evicted the cultivator is reduced to a much worse situation than paying a high rent.*

Of the 11 tenants who paid 1/4 share, all except one received no inputs at all and all of them considered the rent they pay as reasonable. These obviously are the tenants who have firmly ascertained their tenancy rights by getting themselves legally registered in the Paddy Lands Register maintained by the Cultivation Committees. Landlords in this case are mostly non-relatives.

2.16 Security of Tenure

A detailed study on the question of security of tenure was not attempted in this survey. However, a few comments may be made on the data available.

Table 2-XVIII Security of Tenure

Tenurial Category	Responding farmers	Respondents who felt their tenancy rights are:					
		Secure		Insecure		Doubtful	
	No.	No.	%	No.	%	No.	%
All	83	54	*65*	17	*20*	12	*15*
Paying half share of produce	62	35	*56*	15	*24*	1	*19*
Paying 1/4 share of produce	11	10	*91*	1	*1*	-	-

65% of all tenants reported that they enjoy security tenancy rights. The rest felt that their rights were either insecure or were in a doubtful state. *Almost all the tenants paying 1/4 share of produce stated that their rights were secure;* this is why they are able to act at least partially in accordance with the Paddy Lands Act. But nearly 45% *of those paying 1/2 share of produce did not feel secure on their land. Obviously why they continue to pay a high rent is because of the possible threat of eviction. The rest, in a majority of the cases, may be depending entirely on the goodwill of the landlord for their security.*

2.17 Need for More Land to Cultivate on *Ande*

54% of the tenants of all categories indicated their desire to cultivate additional land on ande (Table 2-XIX). *The tenants and the 'others' who are economically less well placed than the part*

tenants, had a greater necessity to do so.[1] These two categories also own comparatively little highland capable of giving them an adequate income; nor are such holdings large enough to provide the family members with sufficient work throughout the year.

Table 2-XIX Tenants Paying Half Share and Quarter Share of Produce willing to cultivate more land on *Ande* if available

Size of holdings (acres)	Willing to cultivate more land: Tenants No.of operators	Tenants No.	Tenant-owners No.of operators	Tenant-owners No.	Others No.of operators	Others No.	Overall No.of operators	Overall No.	Overall %
Up to 1.00	23	18	3	2	2	1	28	21	*75*
1.00- 2.00	12	4	6	4	3	3	21	11	*52*
Over 2.00	9	7	10	2	6	4	25	13	*52*
Total	44	29	19	8	11	8	74	45	*61*

Tenants who had more than one landlord have been multiple-counted once for each landlord.

The Table shows that a larger percentage of tenants (75%) paying half share or quarter of the produce in the less than 1 acre holding size class desired to cultivate additional land on ande *than in the bigger size classes.* Those with smaller holdings needed such extra land to increase their family incomes (49%) and to provide work to excess family members (43%). The pattern exhibited by different tenurial categories is, however, not very clear.

Table 2-XX Possibility of Tenants Becoming Owners

Tenurial Category	Total No.of respondents	Respondents who stated that it was: Possible to become owners No.	%	Not Possible to become owners No.	%
Tenants	38	8	*21*	30	*79*
Tenant-owners	9	2	*22*	7	*78*
Other tenants	10	4	*40*	6	*60*
Total	57	14	*25*	43	*75*

Only 14 responding tenants saw the possibility of becoming owners of paddy lands (Table 2-XX). The majority expected to own paddy land by virtue of the Paddy Lands Act and not by purchase out of their own funds or from a loan. The bulk of the tenants could not aspire to become owners in the future.

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[1] Tenants have no owned paddy land at all while those classified as 'other tenants' had only jointly owned land cultivated at intervals depending on the number of co-owners. Hence, the latter are virtually landless when the other co-owners are operating the land.

Chapter 3

CO-OPERATIVES AND CREDIT

3.1 Membership in Co-operatives

Out of 144 respondents 35 (24%) were not members of the co-operative society at the time of interview. The lack of adequate information about co-operatives is found to be the most important reason for non-membership. The possibility of deriving more benefits from private sources, lack of proximity and mismanagement of the co-operatives are other reasons given for non-menbership.

Table 3-I Reasons for Not being Members of the Co-operative†

	Farmers	
	No.	%
Does not know about the Co-operative	9	*22*
Derive more benefits from private traders ..	8	*19*
Had no opportunity of becoming a member ..	8	*19*
Too far from the co-operative	6	*15*
Mismanagement of the co-operative	6	*15*
Landlord or a family member is a co-op member	2	*5*
Other reasons *	2	*5*
Total	41	*100*

† Some farmers have mentioned more than one reason.
* Other reasons:
1. Co-operative loans not needed;
2. Wish to open up his own boutique.

However, it may generally be inferred that some farmers were not really interested in joining the co-operatives as members. The group who mentioned that they had no opportunity to get membership may well fall into this category.

3.2 Provision and Utilisation of Co-operative Services

The data given in Table 3-II gives some idea about utilisation of services of the co-operatives by the respondents. It should be stressed that the 'provision' of services indicated here reflects only the awareness of these facilities or services. It does not imply that co-operatives actually provided the services. Even as an indicator of awareness, these figures may not be highly reliable, as some services may be interconnected, e.g. subsidised fertiliser and cultivation loans.

However, some comments can be made on the actual utilisation of the services based on the available data.

The highest proportion of farmers (about 90% of the sample) made use of the subsidised fertiliser facility compared to other services. 75% of farmers in land size classes up to 2.0 acres made use of this facility. 54% obtained their agro-chemicals from the co-operatives. *Farmers made little use of loan facilities made available by the co-operatives. The percentage of farmers who marketed their paddy through the co-operatives was also very small (Table 3-II).*

In terms of tenurial status, 100% of the owner-tenants have utilised subsidised fertiliser. The corresponding figures for owners and tenants are 90% and 87% respectively (Table 3-II).

87% of farmers in land size classes up to 2.0 acres made use of this facility compared with 96% in land size class 2-4 acres and 100% in the class 4 acres and above.

Table 3-II Provision and Utilisation of Co-operative Services Classified by Tenurial Category

Types of Services		Tenurial Category: Owners Provided	Owners Utilised	Tenants Provided	Tenants Utilised	Owner Tenants Provided	Owner Tenants Utilised	Others Provided	Others Utilised	All tenurial categories Provided	All tenurial categories Utilised
Cultivation Loans	No.	13	1	4	2	-	-	6	1	23	4
	%		*8*		...		-		...		*17*
Certified Seed Paddy	No.	9	3	2	1	4	1	5	2	20	7
	%		...		...		...		...		*35*
Subsidised Fertiliser	No.	58	52	31	27	17	17	22	19	128	115
	%		*90*		*87*		*100*		*86*		*90*
Agro-chemicals	No.	27	13	13	6	10	8	13	7	63	34
	%		*48*		*46*		*80*		*54*		*54*
Marketing of Paddy	No.	24	9	10	2	10	2	10	3	54	16
	%		*38*		*20*		*20*		*30*		*30*
Other facilities	No.	13	8	14	6	3	2	7	1	37	17
	%		*62*		*43*		...		...		*46*

... percentage not reported as they are based on small numbers

3.3 Indebtedness

Only 29 respondents (20% of the sample) reported that they borrowed during Maha 1971/72 for paddy cultivation. Such a small percentage of borrowers makes generalisation on the borrowing situation unreliable.

Only 10% of the borrowers obtained their credit from institutional sources. The rest were indebted to private sources. Of the various

tenurial groups borrowing from different sources, 36% of the tenants borrowed during Maha 1971-72, this constituted the highest percentage of borrowers for any group. All the tenant borrowers, except one who got money from the co-operatives, borrowed from one private source only (Appendix II).

Table 3-III Loans Obtained During Maha 1971/72 from Different Sources Classified by Tenurial Category of Borrowers

Tenurial Category		Sources of Loan: Co-op and Bank Rs.	Money lenders Rs.	Traders Rs.	Friends* and Relatives Rs.	Total Rs.	All Sources: No. of borrowers	Average per borrower Rs
Owners	Amt	2,250	-	1,125	600	3,975	9	442
	%	*56*	-	*28*	*15*	*100*		
Tenants	Amt	150	50	600	684	1,484	14	106
	%	*10*	*3*	*40*	*46*	*100*		
Tenant-owners	Amt	-	-	500	570	1,070	4	268
	%	-	-	*47*	*53*	*100*		
Others	Amt	-	-	-	300	300	2	150
	%	-	-	-	*100*	*100*		
Total	Amt	2,400	50	2,225	2,154	6,829	29	236
	%	*35*	*1*	*33*	*31*	*100*		

* Including neighbours

Borrowings from Co-operative and Bank, traders, friends and relatives were almost equal, but only 3 loans were obtained from Co-operative and Bank.

The average loan per borrower from all sources for the group owners, tenants, tenant-owners and others works out to Rs.442/-, Rs.106/-, Rs.268/- and Rs.150/- respectively.

The highest average loan per borrower was obtained by the holding size classes 2.00-4.00 acres, i.e. Rs.527/-, while the lowest average amount of loan was reported by the up to 0.5 acre group. This demonstrates that the extent of land influences the volume of credit obtained (Appendix III).

3.4 Reasons for Not Borrowing from Co-operatives

Of the various reasons given by the respondents for not borrowing from Co-operatives, the lack of a need for co-operative loans was cited as the most important. It accounted for 43% of all the reasons given by non-borrowing respondents. The second important reason was the absence of any organisation at the co-operatives for granting loans (40%). Other important reasons are the lack of adequate knowledge about the Co-operative credit scheme and the inconveniences associated with the lending procedure of the co-operatives.

Table 3-IV Operators who Did Not Obtain Loans During Maha 1971/72 Classified by Tenurial Category and Most Important Reasons for Not Obtaining Co-operative Loans

Most Important Reasons for Not Obtaining Co-operative Loans	Tenurial Category: Owners No.	Owners %	Tenants No.	Tenants %	Tenant-Owners No.	Tenant-Owners %	Others No.	Others %	All Tenurial Categories * No.	All Tenurial Categories * %
1. No organisations for loans	19	32	23	60	8	44	6	25	56	40
2. No knowledge about the credit scheme	2	3	4	10	2	11	1	4	9	6
3. Too difficult procedure	1	2	1	3	-	-	-	-	2	2
4. Not applied in time	-	-	-	-	-	-	1	4	1	..
5. Outstanding Loans	-	-	1	3	-	-	-	-	1	..
6. Loans not needed	33	56	6	16	8	44	13	54	60	43
7. Unable to repay if loans were taken	1	2	2	5	-	-	3	12	6	4
8. Loans were taken from friends	1	2	-	-	-	-	-	-	1	..
9 Not interested in HYVs, etc.	1	2	-	-	-	-	-	-	1	..
10. Reasons not specified	1	2	1	3	-	-	-	-	2	2
Total	59	100	38	100	18	100	24	100	139	100

* 3 operators did not respond

.. Indicates less than 1 per cent

3.5 Rates of Interest

The rates of interest charged by non-institutional sources varied from 0%-112% per annum. The average rate of interest was about 20% per annum. Of 29 borrowings, 17 were interest-free obtained mostly from friends, relatives and neighbours (58.6%).

The borrowers might prefer friends and relatives to co-operatives due to the fact that most borrowings from the former could be obtained easily and interest-free. Farmers in this area may have had a distinct advantage in having friends and relatives who earn income from sources other than cultivation due to the location of the area in the vicinity of the capital city. The normal interest rate on loans from People's Bank and Co-operatives was as in other districts 7½% and 9% respectively.

3.6 Repayment of Loans

The available data was insufficient to generalise on the rate of repayment. However, one borrowing made from the bank and 7 other loans from non-institutional sources had not been repaid. *The amount not repaid as a percentage of total amount of borrowings was 27% or Rs. 1,870/- of Rs, 6,828/-. Two loans were partly repaid. Except one loan which was repaid in kind (3 bushels of paddy), all were repaid in cash.*

Reasons for non-repayment of non-institutional loans were asked and only 4 out of 7 responded. Crop failure and unavoidable expenses like funerals and sickness were the main reasons for non-repayment.

The data reveals that the average indebtedness among farmers is relatively low in this district.

APPENDIX I

Provision and Utilisation of Co-operative Services
Respondents Classified by Size of Holding and
Type of Service

Type of Services		Size of Holdings (Acres)													
		Upto 0.5		0.50-1.00		1.00-2.00		2.00-4.00		4.00-6.00		Over 6.00		Overall	
		Provided	Utilised	Provided	Utilised	Provided	Utilised	Provided	Utilised	Provided	Utilised	Provided	Utilised	Provided	Utilised
Cultivation Loans	No.	5	-	6	1	7	1	4	2	-	-	1	-	23	4
	%	-	-		...		...		...		-		-		*17*
Certified seed paddy	No.	3	-	6	3	6	2	4	1	1	1	-	-	20	7
	%		-		...		...		...		...		-		*35*
Subsidised fertiliser	No.	21	17	42	36	29	27	28	27	5	5	3	3	128	115
	%		*81*		*86*		*93*		*96*		...		...		*90*
Agrochemicals	No.	13	5	20	10	13	7	13	9	2	1	2	2	63	34
	%		*38*		*50*		*54*		*69*		...		...		*54*
Marketing of paddy	No.	8	3	12	3	14	4	16	5	1	-	3	1	54	16
	%		...		*25*		*29*		*31*						*30*
Other facilities	No.	6	1	11	4	9	7	8	4	3	1	-	-	37	17
	%		...		*30*		...		...		...		-		*46*

... *Percentages not reported as they are based on small numbers*

Other facilities mentioned are as follows:

Types of Service		Provided	Utilised
Mammoties	No.	20	10
	%		*50*
Agricultural Equipment ..	No.	3	3
	%		...
Not specified	No.	14	4
	%		*29*
Total	No.	37	17
	%		*46*

APPENDIX II

Borrowers Classified by Tenurial Category and Source of Loan

Tenurial Category	No.of Operators	All sources		Co-operative only		One Private source only		Bank Only	
		No.	%	No.	%	No.	%	No.	%
Owners ..	63	9	*14*	1	*11*	7	*78*	1	*11*
Tenants ..	39	14	*36*	1	*7*	13	*93*	-	-
Tenant-owners..	18	4	*22*	-	-	4	*100*	-	-
Others ..	24	2	*8*	-	-	2	*100*	-	-
All tenurial categories ..	144	29	*20*	2	*7*	26	*90*	1	*3*

APPENDIX III

Loans Obtained During Maha 1971/72 from Different Sources Classified by Size Category of Operational Lowland Holdings

Size of Holding (acres)		Source of Loan: Co-op and Bank	Money Lenders	Traders	Friends * and relatives	Total	No.of borrowers	Average per borrower
		Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
Up to 0.50	Amt.	-	-	-	260	260	4	65
	%	-	-	-	*100*	*100*		
0.50 - 1.00	Amt.	250	50	1,125	580	2,005	10	200
	%	*12*	*2*	*56*	*29*	*100*		
1.00 - 2.00	Amt.	150	-	600	449	1,199	6	149
	%	*12*	-	*50*	*38*	*100*		
2.00 - 4.00	Amt.	2,000	-	500	665	3,165	8	527
	%	*63*	-	*16*	*21*	*100*		
4.00 - 6.00	Amt.	-	-	-	200	200	1	200
	%	-	-	-	*100*	*100*		
Over 6.00	Amt.	-	-	-	-	-	-	-
	%	-	-	-	-	-	-	-
Total	Amt.	2,400	50	2,225	2,154	6,829	29	236
	%	*35*	*1*	*33*	*31*	*100*		

* Including neighbours

APPENDIX IV

Repayment of Loans Borrowed during Maha 1971/72
(Borrowers Classified by Tenurial Category, Source and Repayment of Loans).

Tenurial Category		Co-op and Bank		Money Lenders		Traders		Friends and Relatives*		Total	
		Re-paid	Not Re-paid	Re-paid	Not Re-paid	Re-paid	Not Re-paid	Re-paid	Not Re-paid	Re-paid	Not Re-paid
Owners	No.	2	-	-	-	1	1	3	2	6	3
Tenants	No.	-	1	-	1	2	-	8	2	10	4
Tenant-owners	No	-	-	-	-	1	-	2	1	3	1
Others	No.	-	-	-	-	-	-	2	-	2	-
Total	No.	2	1	-	1	4	1	15	5	21	8
	%									*72*	*28*

* including neighbours

APPENDIX V

Borrowers and the Amount of Loans taken from Co-operatives Classified as Current and Old Loans

	No.of borrowers	Amount Rs	Average per borrower Rs
Current Loans only ..	2	400	200
Old Loans only ..	3	969	323
Total ..	5	1,369	274

APPENDIX VI

Repayment of Loans

	Source							
	Co-op	Money lend-ers	Friends	Rela-tives	Bank	Trad-ers	Neigh-bours	Total
Amount borrowed	400	50	1,220	230	2,000	2,225	704	6,829
Amount repaid ..	250	50	810	30	2,000	1,225	594	4,959
Amount not " ..	150	-	410	200	-	1,000	110	1,870
Total No.of Loans	2	1	11	3	1	5	6	29
Repayment ..	1	1	8	1	1	4	3	19
Non-repayment ..	1	-	3	2	-	1	1	8
Part repayment..	-	-	-	-	-	-	2	-
Amount not repaid as a % of amount borrowed ..	38	0	34	87	0	45	16	27

APPENDIX VII

Distribution of Loans (Other than Co-operative Loans) by the Rate of Interest Range and Source

	Co-op	Money lend-ers	Friends	Rela-tives	Bank	Trad-ers	Neigh-bours	Total
No interest	-	-	7	3	-	2	5	17
0-10 per cent	2	-	4	-	1	1	-	8
11-20 " "	-	1	-	-	-	1	-	2
21-30 " "	-	-	-	-	-	-	1	1
112 " "	-	-	-	-	-	1	-	1
Total	2	1	11	3	1	5	6	29

Chapter 4

AGRICULTURAL EXTENSION AND COMMUNICATION

4.1 Extension Organisation and Activity

The District Agricultural Extension Officer heads the district extension organisation with an office at Narahenpita. He is assisted at district level by two headquarters Agricultural Instructors, and subject matter specialists like Agricultural Instructor - Paddy, Agricultural Instructor - Plant Protection, and Agricultural Instructor - Young Farmers' Clubs.

At Divisional Level the Technical Staff consists of 13 Agricultural Instructors and 68 *Krushikarma Viyapthi Sevakas*, working in the various ranges.

4.2 Sources and Agencies of Agricultural Information

The most common form of contact between farmers and extension staff was personal communication as shown in Table 4-I. 67% of the respondents received information from extension personnel visiting them while 45% had it from neighbours and 28% received agricultural information by visiting extension centres. Radio programmes had been heard by 20% of the farmers but only 6% and 8% of them reported visiting agricultural farms and cultivation committees respectively for their information.

Table 4-I Utilisation of Different Sources of Agricultural Information

Source	General Agricultural information		Information that influenced adoption of NHYVs		Fertiliser recommendations for NHYVs	
	No.	%	No.	%	No.	%
	115	*100*	26	*100*	24	*100*
Extension personnel visiting farmer ..	77	*67*	12	*46*	16	*67*
Farmer visiting extension centre ..	32	*28*	10	*39*	5	*21*
Farm neighbours ..	52	*45*	9	*35*	2	*8*
Farmer visiting classes	17	*15*	6	*23*	7	*29*
Demonstration plots ..	16	*14*	8	*31*	–	–
Advisory leaflets ..	20	*17*	7	*27*	6	*25*
Radio programmes ..	24	*21*	5	*19*	–	–
Agricultural film shows	11	*10*	–	–	–	–
Newspaper articles ..	–	–	2	*8*	–	–
Visiting Dept.of Agriculture farms ..	7	*6*	–	–	–	–
Cultivation Committees	9	*8*	–	–	–	–
Other reasons ..	2	*2*	–	–	1	*4*

No. of non-respondents = 29

Total No. of operators = 144

Total No.of operators who adopted NHYVs = 26

The sources that provided general agricultural information also influenced the adoption of new high yielding varieties (NHYVs) (though not in the same order). *Here again the most popular source was the extension personnel visiting farmers* as 46% reported this, while 39% reported their visits to the extension centre as the source of information. Demonstration plots seemed to be of some importance here as 31% reported this as a source of information on NHYVs.

As for sources of information on fertiliser recommendations for NHYVs extension personnel visiting farmers, was the most popular source with 67% respondents reporting it. 25% of respondents got information on fertiliser recommendations for NHYVs from the Agricultural Department advisory leaflets.

Table 4-II Use of Extension Contact Methods by Operators - Yala 1972

No. of Operators = 74

Method	Respondents who used the method of contact	
	No.	%
Personal Contact:		
Visiting Extension Centre	29	*39*
Visited by Extension Personnel	43	*58*
Attended farmer training classes	16	*22*
Impersonal Contact:		
Had seen demonstration plots	30	*41*
Had read advisory leaflets	29	*39*
Listening to radio programmes	50	*68*
Had seen agricultural film shows	22	*30*

4.3 Farmer Contacts with Extension Services

Extension workers visiting farmers was the highest frequency among the personal methods of contact (58%), while farmers visiting extension centres was 39%. *Of the impersonal contacts, radio programmes (67%) was the most frequent while seeing demonstration plots came second with 41%.* Reading advisory leaflets was almost as frequent as seeing demonstration plots with 39%.

78% of the farmers knew the location of the extension centre while 39% of them visited it in Yala 1972 for various reasons as shown in Table 4-III. The table also shows that the main reason for the visits was for the purchase of inputs other than seed paddy (41%) while 28% was for general advice. About a quarter of the farmers visited the centre for the purchase of seed paddy.

Table 4-III Farmer Relationship with the Extension Centre - Yala 1972

	Farmers No.	Farmers %
A. Awareness of and visits made to Extension Centres:	74	*(100)*
No. of farmers who knew the location of Extension Centre	58	*78*
No.of farmers who visited it in Yala 1972 ..	29	*39*
B. Reasons for Visiting Extension Centres		
To buy seed paddy	7	*24*
To buy other inputs	12	*41*
For advice in general	8	*28*
Others	3	*10*
Total No. of farmers who gave reasons for visiting..	29	*100*

4.4 Farmer Relationship with Extension Personnel - Yala 1972

The relationship between farmers and the Krushikarma Viyapthi Sevaka (KVS) seemed to be satisfactory as 76% of the farmers knew how to contact the KVS when necessary while almost half of them (42%) actually knew him by name (Table 4-IV). 58% of the farmers were visited by extension personnel either on request made by farmers or on the extension workers'own initiative. However, *all farmers preferred more visits by extension personnel showing a definite demand among farmers for closer and more frequent contact with extension workers.*

Table 4-IV Farmer Relationship with Extension Personnel - Yala 1972

Method	No. of Visits No.	No. of Visits %
	74	*100*
Farmers visited by Extension Personnel	43	*58*
Total No. visits made:	44	
On request of farmer	11	
On their own initiative	33	
Average No.of visits/farmer visited	1.5	
Farmers who preferred more visits	74	*100*
Farmers who knew how to contact KVS in need ..	56	*76*
Farmers who knew him by name..	31	*42*

Table 4-V Farmers' Contact with Extension Services according to Tenurial Category and Holding Size

Contact with Extension Services		Tenurial Category				Size of Holding					
		Tenant	Tenant-owner	Owner	Others	0-2.00 acres	2.00-4.00 acres	4.00-6.00 acres	6.00-8.00 acres	8.00-10.00 acres	Over 10.00 acres
Total	No.	18	10	33	13	13	22	16	18	3	2
	%	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*	*100*
Knew the location of the Extension Centre	No.	14	9	28	7	5	15	15	18	3	2
	%	*77.8*	*90.0*	*84.8*	*53.8*	*38.5*	*68.2*	*93.8*	*100*	...	...
Visited Extension "	No.	7	4	15	3	1	7	9	9	2	1
	%	*38.9*	*40.0*	*45.4*	*23.1*	*7.7*	*31.8*	*56.3*	*50.0*	...	...
Visited by Extension Personnel ..	No.	9	7	19	8	8	8	10	13	3	1
	%	*50.0*	*70.0*	*57.6*	*61.5*	*51.5*	*36.4*	*62.5*	*72.3*	...	...
Knew the name of KVS	No.	5	4	19	3	1	9	6	11	3	1
	%	*27.8*	*40.0*	*57.6*	*23.1*	*7.7*	*40.9*	*37.5*	*61.1*	...	...
Contacted him in need	No.	12	7	29	8	8	16	11	16	3	2
	%	*66.7*	*70.0*	*90.9*	*61.5*	*61.5*	*72.7*	*68.8*	*88.9*	...	...
Had attended farmer training classes ..	No.	6	3	7	-	-	5	5	5	-	1
	%	*33.3*	*30.0*	*21.2*	-	-	*22.7*	*31.3*	*27.8*	-	...
Had seen demonstration plots ..	No.	10	5	12	3	4	8	9	8	-	1
	%	*55.5*	*50.0*	*36.4*	*23.1*	*30.8*	*36.4*	*56.3*	*44.4*	-	...
Read Advisory Leaflets	No.	7	5	13	4	1	7	10	9	1	1
	%	*38.9*	*50.0*	*39.4*	*30.8*	*7.7*	*31.8*	*62.5*	*50.0*	...	...
Had listened to radio programmes ..	No.	9	7	25	9	7	11	13	15	2	2
	%	*50.0*	*70.0*	*75.8*	*69.2*	*53.8*	*50.0*	*81.3*	*83.3*	...	...
Had seen agricultural film shows ..	No.	6	4	8	4	-	7	7	8	-	-
	%	*33.3*	*40.0*	*24.2*	*30.8*	-	*31.8*	*43.8*	*44.4*	-	-

... Percentages not reported as they are based on small numbers

Farmers' contact with the extension services in relation to their tenurial category and the size of their holdings is shown in Table 4-V. The highest contact is seen to exist with owners and tenant-owners while tenants and others have a lower level of contact. This could be due to the interest taken by owners and tenant-owners in developing their land and increasing production while tenants and others (mostly joint owners) due to insecurity of tenure and other problems may not be as concerned with the development of their holdings.

The most predominent class according to size of holdings is the 2-4 acre class. Therefore, the extension services should have more contact with this class. However, Table 4-V shows that this class has a lower level of contact with the extension services than both the 4-6 acre class and 6-8 acre class.

Though farmer training classes are one of the most effective methods of increasing knowledge among farmers only 16 of the 74 farmers had attended these training classes (Table 4-VI). The main reason for not attending was that the farmers were not aware of these classes.

Table 4-VI Farmer Training Classes - Yala 1972

Method	Farmers No.	Farmers %
	74	*(100)*
Farmers who attended training classes	16	*22*
Farmers who attended training classes and indicated usefulness	16	*22*
Farmers who did not attend training classes ..	58	*78*
No.of farmers who gave reasons for not attending	54	*73*
Reasons for Not attending:		
Place was too far	2	*3*
Did not know about them	29	*39*
Too much work in the farm	6	*8*
Household problems	5	*7*
Not convinced of its benefits	2	*3*
Classes not conducted	12	*16*
Other reasons	2	*3*

Laying down demonstration plots in farmers' fields is another effective and popular method of creating an awareness of modern methods. 41% of the respondents had seen such demonstration plots (Table VII). 39% had read advisory leaflets while 18 of the 29 who had read them could name the document consulted.

Table 4-VII Demonstration Plots and Advisory Leaflets - Yala 1972

Method	Farmers No.	%
	64	*(100)*
Demonstration Plots:		
Farmers who had seen demonstration plots	30	*41*
Farmers who had seen and indicated usefulness ..	25	*34*
Advisory Leaflets:		
Farmers who read advisory leaflets	29	*39*
Farmers who read advisory leaflets and indicated usefulness	28	*38*
Farmers who mentioned the name of a document they had read:	18	*24*
(a) Fertiliser 7		
(b) Subsidiary Food Crops .. 6		
(c) *Govikam Sangarawa*.. .. 4		
(d) Others 1		

Farm Radio Programmes and Agricultural film shows are the more common mass media used in agricultural extension. Fifty of the 74 farmers had listened to farm radio programmes and 45 of them indicated their usefulness. However, film shows seemed to be in want as only 30% has seen them.

Table 4-VIII Radio Programmes and Agricultural Film Shows - Yala 1972

Method	Farmers No.	%
	74	*(100)*
Radio Programmes:		
Farmers who listen to radio programmes	50	*68*
Farmers who listen to radio at home	44	*60*
Farmers who listen to radio at the Community Centres	-	-
Farmers who listen to radio at the village boutique	2	*3*
Farmers who listen to radio at neighbours' houses	4	*5*
Farmers who indicated usefulness of these programmes	45	*61*
Farmers who could give the name of a recent broadcast:	23	*31*
Subsidiary food crops .. 12		
Paddy cultivation 7		
Tharuna Govisangamaya .. 1		
Others 3		
Film Shows:		
Farmers who had seen agricultural film shows	22	*30*

Chapter 5

MANAGEMENT PRACTICES AND PRODUCTIVITY

Of the 67,945 acres of asweddumised paddy lands in Colombo District 56,000 acres, 82% are rainfed and approximately 6,289 acres get their water from small anicut schemes. Successful paddy production in the district is largely dependent on the distribution of moonsoon rains. The only major irrigation scheme in the district is the Attanagalu Oya Scheme. In dry weather the water level of most streams and small rivers falls below the level of the fields and in the absence of mechanical devices for lifting water lose their value as sources of irrigation. *Relatively poor drainage conditions are a major limiting factor in many areas. The natural sub-soil drainage often is not able to cope with the heavy precipitation and results in frequent floods. Salinity and swamp conditions as found in Muthurajawela and Attidiya affect over 10,000 acres of asweddumised paddy land and drainage is a major problem in such areas. A number of environmental factors inhibit the widespread adoption of improved cultural practices almost everywhere irrespective of tenancy conditions or holding size.*

5.1 Duration of Sowing Operations

Table 5-I Distribution of Operators according to Time of Sowing and Water Supply during Maha 1971/72*

Month of Sowing	Minor Irrigation	Rainfed	Total No.	Total %
June	4	3	7	5
July	10	10	20	16
August	13	24	37	29
September	10	19	29	23
October	7	21	28	22
November	1	2	3	2
December	1	2	3	2
January	-	1	1	1
Total			128	100

* Information relates to only 128 of the 144 operators, who cultivated in Maha 1971/72. Operators who reported crop failures and operators who have reported sowing at two different times have been excluded. Six who did not respond are also excluded.

Maha sowing commences in mid-year (June-July) and continues almost till the end of November with the main thrust being from August to October. Mid-year sowing is confined mostly to fields that could not be cultivated during Yala due to flooding. Of the 37 operators who had sown during June to August, 33 had cultivated the traditional 5 to 6 month *samba* varieties. From September onwards it was the shorter-age varieties (4-4½ months) that were sown.

Data pertaining to cropping intensity of paddy lands during the year 1971/72 are given in Table 5-II

Table 5-II Cropping Intensity

Source of Water Supply	No. of operators	Area available for cultivation during each season (acres)	Extent Cultivated (acres)			* Cropping Intensity		
			Maha 1971/1972	Yala 1972	Year 1971/1972	Maha 1971/1972	Yala 1972	Year 1971/1972
Minor Irrigation	51	117.10	101.77	39.44	141.21	86.9	33.7	120.6
Rainfed	93	144.25	141.17	79.82	220.99	97.9	55.3	153.2
All schemes	144	261.35	242.94	119.26	362.20	93.0	45.6	138.6

$$\text{* Cropping Intensity} = \frac{\text{Extent cultivated}}{\text{Extent available for cultivation}} \times 100$$

The overall cropping intensity is relatively low, primarily due to the high proportion of asweddumised land that cannot be cultivated during the Yala season mainly because of flooding during the heavy South West monsoon rains.

5.2 Draught Power

The pattern of draught power used for tillage during Maha 1971/72 season is summarised in Table 5-III.

Ploughing is done mainly with buffaloes. Around 72% of the operators had prepared 62% of their lowland either exclusively with buffaloes or in combination with hand tools such as mammoties. 12% had prepared their fields exclusively with mammoties. Only 9% had used tractors exclusively.

Table 5-III Distribution of Farmers and Extent of Land Prepared by the Type of Draught Power used for Land Preparation and Different Sources of Water Supply - Maha 1971/72

Source of Water Supply		Buffaloes only	2-Wheel tractor only	4-Wheel tractor only	Mammoty only	Mammoty and Buffaloes	Buffaloes and 2-Wheel tractor	Buffaloes and 4-Wheel tractor	Others	Total
Minor Irrigation	No.	24	2	-	2	11	4	8	-	51
	%	*47*	*4*	-	*4*	*22*	*8*	*16*	-	*100*
	Acres	38.23	9.25	-	2.60	19.73	6.25	25.71	-	101.77
	%	*38*	*9*	-	*3*	*19*	*6*	*25*	-	*100*
Rainfed	No.	31	2	2	16	20	6	11	5	93
	%	*33*	*2*	*2*	*17*	*22*	*6*	*12*	*5*	*100*
	Acres	42.53	6.00	8.00	13.30	27.84	13.14	23.24	7.12	141.17
	%	*30*	*4*	*6*	*9*	*20*	*9*	*16*	*5*	*100*
Total	No.	55	4	2	18	31	10	19	5	144
	%	*38*	*3*	*1*	*13*	*22*	*7*	*13*	*4*	*100*
	Acres	80.76	15.25	8.00	15.90	47.57	19.39	48.95	7.12	242.94
	%	*33*	*6*	*3*	*7*	*20*	*8*	*20*	*3*	*100*

The main reasons indicated by farmers for their preference for using buffaloes are given below:

Principal Reasons for Using Buffaloes

	No.	%
No. of operators who used buffaloes alone or with mammoties	87	100
Reasons:		
Better land preparation	27	31
Own buffaloes	16	18
Easily available	13	15
Boggy fields	11	13
More economical	10	11
4-Wheel or 2-Wheel tractors not available ..	6	7
Others	4	5

The relatively small size of lowland holding (1.81 acres) may also be another reason that makes the farmers prefer the use of animal power.

5.3 Use of Improved Varieties

Operators classified on the basis of varieties cultivated during Maha 1971/72 and Yala 1972 are given in Table 5-IV.

Table 5-IV Distribution of Operators according to Varieties Cultivated during Maha 1971/72 and Yala 1972

Season	Operators	NHYV only	OHYV only	TV only	NHYV and OHYV	NHYV and TV	OHYV and TV	OHYV NHYV and TV	Total
Maha 1971/72	No.	19	15	94	2	6	8	-	144
	%	13	10	65	1	4	6	-	100
Yala 1972	No.	27	4	35	-	7	3	2	78
	%	35	5	45	-	9	4	3	100

Since the NHYVs were released for extension work for the first time only in Maha 1971/72 season, only a small proportion of operators have adopted them. During Maha traditional varieties hold a dominant position compared to the imporved varieties, particularly among those who cultivate long-aged varieties in the months of July and August. At the time of the survey improved varieties suitable for cultivation on lands subject to long spells of inundation and/or flooding were not available. Thus the smaller percentage differences observed between operators who had grown NHYVs and Traditional Varieties in Yala are probably because of smaller numbers engaged in Yala cultivation.

5.4 Use of Improved Varieties according to Size of Holding

Varietal distribution classified on the basis of holding size is presented in Tables 5-V and 5-VI.

Table 5-V Extent Grown Under Different Varieties Classified according to Size of Paddy Holding - Maha 1971/72

Total No. of operators = 144

Size of holding (acres)	Extent	NHYV	OHYV	TV	All varieties
Up to 0.50	Acres	1.21	1.66	5.97	8.84
	%	*14*	*19*	*68*	*100*
0.50 - 1.00	Acres	5.25	4.33	29.60	39.18
	%	*13*	*11*	*76*	*100*
1.00 - 2.00	Acres	9.25	5.85	41.43	56.53
	%	*16*	*10*	*73*	*100*
2.00 - 4.00	Acres	14.10	12.25	48.65	75.00
	%	*19*	*16*	*65*	*100*
4.00 - 6.00	Acres	5.25	-	17.89	23.14
	%	*23*	-	*77*	*100*
Over 6.00	Acres	12.00	14.75	13.50	40.25
	%	*30*	*37*	*34*	*100*
All Size Categories	Acres	47.06	38.84	157.04	242.94
	%	*19*	*16*	*65*	*100*

Table 5-VI Extent Grown Under Different Varieties Classified according to Size of Paddy Holding - Yala 1972

Total No.of operators = 78

Size of holding (acres)	Extent	NHYV	OHYV	TV	All varieties
Up to 0.50	Acres	1.20	.57	2.31	4.08
	%	*29*	*14*	*57*	*100*
0.50 - 1.00	Acres	7.48	.19	10.84	18.51
	%	*40*	*1*	*59*	*100*
1.00 - 2.00	Acres	9.34	3.00	10.51	22.85
	%	*41*	*13*	*46*	*100*
2.00 - 4.00	Acres	17.31	1.25	22.26	40.82
	%	*42*	*3*	*55*	*100*
4.00 - 6.00	Acres	5.75	-	8.25	14.00
	%	*41*	-	*59*	*100*
Over 6.00	Acres	13.50	-	5.50	19.00
	%	*71*	-	*29*	*100*
All Size Categories	Acres	54.58	5.01	59.67	119.26
	%	*46*	*4*	*50*	*100*

The popularity of traditional varieties during both seasons in all size groups is striking. In the larger holdings of over 6.0 acres which constitute around 3% of paddy holdings, a higher proportion of land has been planted with new varieties during the two seasons. It is noteworthy that in all size categories the extent cultivated under NHYVs is very similar during both seasons, while the area under traditional varieties is substantially lower during Yala. *The pattern of varietal use may be governed more by soil and drainage conditions than by the holding size.* The greater contact with the extension service reported by larger holdings may well explain the higher adoption rate.

5.5 Use of Improved Seed according to Supply of Water

Source of water supply does not appear to have had a marked influence on the adoption of new varieties. During Maha the area under NHYVs and traditional varieties was in fact distributed more or less in like proportions, the relevant figures being 19% under NHYVs and 64% under traditional varieties in minor schemes as well as rainfed areas. During Yala the percentage of the area under NHYVs had risen sharply to around 40% of the extent cultivated under both categories of water supply.

5.6 Use of Improved Seed according to Tenurial Category

Since the acreage under NHYVs is limited the pattern of varietal distribution in relation to tenancy conditions was not examined. The data reveals that NHYVs had been grown in 19% of the extent during Maha and 45% in Yala. *However, the percentage of the area under such varieties showed very little difference between owners and tenants.*

5.7 Non-cultivation of Improved Seed

Of the 144 operators in the sample 117 (74%) had not cultivated NHYVs during Maha 1971/72 season. Reasons given by them are arranged in descending order of importance.

Reasons for not using NHYVs - Maha 1971/72

	No.	%
Operators who did not cultivate NHYVs in Maha 1971/72 ..	177	*100*
Reasons :		
Followed others	37	*32*
Lack of water	26	*22*
Not convinced of benefits	23	*20*
Aversion to change	25	*21*
Did not know about them..	20	*17*
Could not obtain seeds	21	*18*
Cultivation costs excessive	12	*10*
Palatability poor	9	*8*
Not suitable for the area	7	*6*
Excess of water	6	*5*
Other reasons	19	*16*

Some of the main reasons given such as 'followed others', 'not convinced of benefits', 'aversion to change', 'did not know about them', etc., are

understandable as the new varieties were released for the first time only during this particular Maha season. As the Department of Agriculture has launched a programme to popularise these new varieties with the aid of minikits as well as production kits greater acceptance of NHYVs by farmers may be anticipated.

5.8 Method of Planting

In this district the traditional method of broadcast sowing is adopted on an intensive scale. During the reference period over 94% of the extent cultivated has been sown broadcast. As only 9 of the 144 operators had transplanted their holdings an attempt was made to find out the reasons for non-adoption of this practice. A summary of the important reasons given by the respondents is shown below:

Principal Reasons for Not Transplanting - Maha 1971/72

No.of operators who did not transplant their fields .. 135

Reasons:	No.	%
Irksome	41	31
Lack of funds	25	19
Unsatisfactory water supply	24	18
Boggy fields	12	9
Uneconomic	9	7
Not convinced of benefits	6	5
Shortage of labour	5	4
Just followed others	3	2
Other reasons	9	7
Total	134	100

The tedium of transplanting, lack of funds, unsatisfactory water supply and boggy fields are the main reasons for non-adoption of this practice. The general physical and environmental conditions prevailing in a greater part of this district such as poor drainage, heavy and unseasonal rainfall resulting in flash floods are really not conducive to the adoption of labour intensive operations that involve extra expenditure.

5.9 Application of Fertiliser

Information in respect of fertiliser use was available in regard to 144 operators in Maha and 78 in Yala. In both seasons over 90% of the farmers have reported use of some kind of fertiliser, at the rate of 2.3 cwt per acre. Compound pellet fertiliser is the most widely used type followed by Urea. In a district where the physical and environmental conditions are not so favourable for paddy production, the reported figures appear to be excessive particularly in the light of available figures on fertiliser use and the low cost of cash inputs reported by the sample of farmers in respect of the Yala 1972 season. Fertiliser consumption figures for Colombo District for 1971/72 show that the average quality used per acre has been only 0.8 cwt in Maha and 1.0 cwt

in Yala.[1] The cash expenses reported in respect of Yala 1972 also show that only Rs.39/- have been spent on this item, whereas the fertiliser that is reported to have been applied should really have cost around Rs.60/-. Hence a detailed discussion on the pattern of fertiliser use was not attempted. The quantities applied per acre show hardly any variation when examined on the basis of water supply.

5.10 Weed Control

Both hand weeding as well as use of chemicals are popular in the district. Though a higher proportion of operators (54%) have adopted hand weeding compared to only 32% that had used chemicals, the area covered by each of the methods is almost the same, being around 40% of the cultivated extent. In holdings of less than 2 acres a higher proportion of operators (60%) have resorted exclusively to hand weeding their crops. With the increase in holding size, the tendency to rely more on chemicals become evident, as around 55% of the weeded extent in larger holdings of over 4 acres have used weedicides exclusively.

PRODUCTIVITY

The yields reported for the Maha and Yala seasons were 36.1 and 25.8 bushels per acre. The Yala yields were considerably lower than the figures given by the Department of Census and Statistics.[2] As mentioned earlier, low productivity in this district is primarily due to a number of physical as well as environmental factors that inhibit the widespread adoption of improved cultural practices.

5.11 Land Tenure and Yields

Owners who constituted the largest proportion of operators in the sample (42%) had the highest yields in both seasons, 36.9 bushels in Maha and 27.5 bushels in Yala. Tenants on the other hand had obtained on the average 3 bushels per acre less in Maha and 2 bushels in Yala. Both owners as well as tenants had reported around 8 bushels more per acre during Maha. The yield data in respect of owners and tenants classified according to size of holding show very little variation.

5.12 Yields in Relation to Varieties Grown

New high yielding varieties have given strikingly superior performances during the Maha season under minor irrigation. The five operators who have grown new varieties have reported yields of 51 bushels per acre compared to an average of 32 bushels from traditional varieties. Even under rainfed conditions the new varieties have yielded 4.5 bushels more per acre. *In contrast the performance of these new varieties during Yala is disappointing*

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[1] Annual Implementation Programme: Targets and Achievements (1972) Source - Ministry of Agriculture and Lands.

[2] Yields estimated by the Department of Census and Statistics:
Maha 1971/72 - 38.22 bushels
Yala 1972 - 34.92 bushels

both under minor as well as rainfed conditions as the yields recorded for new varieties are almost 7 bushels less per acre compared to traditional varieties. The yield data available is inadequate to judge the performance of these new varieties which were introduced only in 1971/72 Maha season.

5.13 Disposal

Data on disposal of paddy crops in Maha 1971/72 and Yala 1972 tabulated on the basis of holding size is presented in Tables 5-VII and 5-VIII.

Table 5-VII Disposal of Paddy according to Size of Holding - Maha 1971/72

Size of Holding (acres)	No. of farmers	Sales per acre sown (bushels)	Sales as % of total production	Sales to Co-op as % of Total Sales	Yield per acre (bushels)
Up to 0.50	23	0.4	*1*	*100*	36.2
0.50 - 1.00	40	2.9	*8*	*42*	37.5
1.00 - 2.00	33	6.4	*18*	*1*	34.9
2.00 - 4.00	20	3.5	*11*	*38*	32.6
4.00 - 6.00	4	16.6	*54*	*78*	30.9
Over 6.00	4	17.7	*51*	*26*	35.0
Overall	124	8.0	*23*	*35*	34.3

Information relates to 124 of the 144 operators who cultivated in Maha 1971/72.

3 Operators who reported crop failure and 17 operators who were operators cum landlords (13 owner cum landlords, 2 tenant-owner cum landlords, 2 others cum landlords), have been excluded.

Table 5-VIII Disposal of Paddy according to Size of Holding - Yala 1972

Size of Holding (acres)	No. of farmers	Sales per acre sown (bushels)	Sales as % of total production	Sales to Co-op as % of Total Sales	Yield per acre (bushels)
Up to 0.50	12	-	-	-	25.4
0.50 - 1.00	18	1.0	*3*	-	36.2
1.00 - 2.00	17	6.4	*22*	*7*	29.6
2.00 - 4.00	13	2.3	*10*	*44*	24.2
4.00 - 6.00	2	20.3	*84*	-	24.2
Over 6.00	3	7.9	*51*	*100*	15.5
Overall	65	5.7	*22*	*34*	25.6

Information relates to 65 of the 78 operators who cultivated in Yala 1972.

4 Operators who reported crop failure and 9 operators cum landlords (7 owners cum landlords, 1 tenant-owner cum landlord, and others cum landlords), have been excluded.

The average quantity of paddy sold per acre is very low, 8 bushels in Maha and approximately 6 in Yala. This is not surprising particularly in view of the low p oductivity, small holding size and the tenurial arrangements, common in the district.

A relatively small proportion (34%) of paddy disposed of has been marketed through the co-operative societies. Since Colombo is a rice deficit area even the limited quantities of paddy that are offered for sale have not reached the network of co-operatives presumably due to the higher prices prevailing in the open market. The above data refers to seasons prior to the enforcement of the Monopoly Purchase Scheme for Paddy.

The pattern of disposal of paddy as reported by the two main tenurial groups, e.g. owners and tenants show a striking difference. In both seasons the quantity of paddy sold per acre, sown by tenants has been even less than a bushel. On the other hand in Maha season the owners have reported sales of as much as 25 and 8 bushels (per acre sown) in minor schemes and rainfed areas respectively. Even in Yala the owners have been able to sell over 8 bushels per acre. This wide disparity in the volume of sales by the two tenurial groups is due partly to exorbitant rents (half crop share) paid by a large majority (72%) of the tenants, and also the lower yields obtained by this group.

Chapter 6

LABOUR UTILISATION AND INCOME

This chapter deals mainly with the situation relating to labour use and family farm earnings of the households surveyed. The information collected relates mainly to the use of family labour. Data on family size and age structure of the population are presented first as these variables determine the availability of family labour. The total population in the sample amounts to 893 of whom 75% (667 persons) were 14 years and above.

6.1 Family Size

The average household size in the sample was 6.2. Nevertheless, 16% of households had 9 or more members while 26% had less than 4 (Table 6-1).

While tenurewise variation in the distribution of family size is not marked, there is some tendency for larger holdings to be associated positively with family size.[1]

6.2 Family Labour Force

Family labour force as defined here includes all family members of 14 years and above. However, this definition is obviously an over-estimate.

i. The above population would include those too old to work, disabled people, etc.

ii. It ignores the 'participation' factor as well, i.e. some housewives may not be available for work in family enterprises.

On the other hand, it is quite possible for younger people (below 14 years), to help in farm work. But we have excluded them from the labour force following standard practice.

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[1] The smaller number of operators in holdings of 4-6 acres and over 6 acres makes meaningful comparisons difficult and are therefore not discussed.

Table 6-I Distribution of Households by Size of Family, Tenurial Category and Size of Holding

No. of family members	For all size Classes Tenurial Category										For all Tenurial Categories Size of Holding (acres)													
	Owners		Tenants		Tenant-Owners		Others		Total		Up to 0.50		0.50-1.00		1.00-2.00		2.00-4.00		4.00-6.00		Over 6.00		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Less than 3	1	2	-	-	1	6	2	8	4	3	1	4	1	2	1	3	-	-	-	-	1	...	4	3
3 - 4	16	25	10	26	2	11	5	21	33	23	8	32	12	26	9	26	2	7	2	...	-	-	33	23
5 - 6	22	35	13	33	6	33	9	38	50	35	7	28	16	35	10	29	15	52	1	...	1	...	50	35
7 - 8	14	22	8	21	7	39	5	21	34	24	2	8	15	33	9	26	7	24	-	-	1	...	34	24
9 - 10	7	11	7	18	2	11	1	4	17	12	6	24	1	2	6	17	2	7	1	...	1	...	17	12
Over 10	3	5	1	3	-	-	2	8	6	4	1	4	1	2	-	-	3	10	1	...	-	-	6	4
Total	63	100	39	100	18	100	24	100	144	100	25	100	46	100	35	100	29	100	5	100	4	100	144	100

... Percentage not reported as they are based on small numbers.

As Table 6-II shows, 70-80% of the total population are in the potential labour force. It is, by definition, determined by the age composition. A lower ratio is noted for the tenant category. The above ratios represent the maximum limits for participation rates.

The size of the work force per acre is a more meaningful indicator of the availability/sufficiency of labour. Though the agrarian survey related only to paddy, highland cultivation is quite important in the cropping pattern of the Colombo District, the ratio of paddy land to highland being 36%. Hence, average labour force per acre of all land is more indicative of the labour supply situation. The number available per farm and per acre move in different directions. Tenants have the highest family labour units per acre while they rank lowest in regard to labour units per farm. Differences in the average size of holding explain this.

Table 6-II Distribution of Work Force and Employment by Tenurial Category

	Owners	Tenants	Tenant-Owners	Others	Total
Number of farms	63	39	18	24	144
Total population	393	245	112	143	893
Average household size ..	6.2	6.3	6.2	6.0	6.2
Population over 14 years (work force)*	294 *(75)*	170 *(69)*	88 *(79)*	115 *(80)*	667 *(75)*
Size of work force per farm	4.7	4.4	4.9	4.8	4.6
Size of work force per acre (all land)	0.8	1.9	0.6	1.1	0.9
Size of work force per acre (lowland)	2.4	3.2	2.0	2.8	2.6
Number employed **	223 *(76)*	142 *(84)*	67 *(76)*	93 *(81)*	525 *(79)*
Employed per farm	3.5	3.6	3.7	3.9	3.6
Employed/acre (all land) ..	0.6	1.7	0.5	1.0	0.8
Employed/acre (lowland) ..	2.0	2.8	1.5	2.5	2.2

* Figures in parentheses denote the percentage of work force to total population.

** Figures in parentheses denote the percentage of numbers employed to work force.

The family labour force information could be further analysed according to size of holding.

Table 6-III Distribution of Work Force and Employment by Size Class of Holding

	Size of lowland holding (acres)						
	Upto 0.50	0.50-1.00	1.00-2.00	2.00 4.00	4.00-6.00	Over 6.00	Total
Number of farms ..	25	46	35	29	5	4	144
Total population ..	154	263	210	200	41	25	893
Average household size	6.2	5.7	6.0	7.0	8	6.2	6.2
Population over 14 yrs (work force)*	112	187	165	156	27	20	667
	(73)	*(71)*	*(79)*	*(78)*	*(66)*	*(80)*	*(75)*
Size of work force per farm ..	4.5	4.1	4.7	5.4	5.4	5.0	4.6
Size of work force per ac.(all land)	2.68	1.5	0.93	0.76	0.55	0.17	0.93
Size of work force per ac.(lowland)	12.6	4.7	2.9	1.9	1.2	0.4	2.5
Number employed**	90	144	132	125	21	13	525
	(80)	*(77)*	*(80)*	*(80)*	*(71)*	*(65)*	*(79)*
Employed per farm	3.6	3.1	3.8	4.3	4.2	3.2	3.6
Employed/acre (all land)	2.2	1.1	0.7	0.6	0.4	0.1	0.7
Employed/acre (lowland)	10.1	3.6	2.3	1.5	0.9	0.3	2.0

* Figures in parentheses denote the percentage of work force to total population.

** Figures in parentheses denote the percentage of numbers employed to work force.

93% of the population is in the size class below 4 acres. The number of workers per farm shows a slight upward curve except in the 0.50-1.00 acre category. The number employed per farm does not show a consistent trend. The work force per acre (all land) and the number employed per acre (all land) show a well defined downward curve. The trends suggest a favourable labour supply position in smaller holdings relatively to larger ones.

6.3 Pattern of Labour Use

The average household in the sample had 6.2 members, 4.3 (69%) of whom were 14 years and above. As some of the latter may not be available for farm work also, it is not possible to carry out all farming operations on the basis of family labour alone, due to the nature of paddy cultivation with its seasonal peaks. The data gathered in the survey is not comprehensive enough to analyse this aspect in detail. Table 6-IV indicates the relative dependence on different types of labour for different field operations during Maha 1971/72. It should be kept in mind that the data does not reflect the intensity of labour use. Transplanting had been practised by only 12 farmers, but 5 farmers reported shortage of labour as a reason for not transplanting.

Table 6-IV Pattern of Labour Use according to Field Operations - Maha 1971/72

(Percentage of Farmers using various types of labour)

Field Operations	Family labour only	Hired labour only	*Attan* labour only	Contract only	Family and Hired	Hired and *Attan*	Family and *Attan*	Family Hired, & *Attan*	Total No. of farmers
Land Preparation	15	13	9	1	28	1	24	9	144
Transplanting	42	8	33	-	8	-	-	8	12
Weeding	53	21	5	-	13	1	8	-	106
Harvesting	10	18	12	3	21	-	24	11	143
Threshing	7	15	28	-	19	-	25	6	141

Labour use information has been categorised under (a) exclusive reliance on one form; (b) use of more than one form of labour. In regard to the first, family labour is dominant in the pre-harvesting stages. Hired labour is more important than *attan* labour in all operations except threshing. A word of caution may be necessary concerning figures on the use of *attan* labour only. It is rather unusual for exchange (*attan*) labour to be used exclusively, especially in harvesting stages without the help of family labour. Hence this category may really belong to *attan* plus family labour group. Family labour is mostly used for weeding which could be carried out manually during slack periods.

The demand at peak activity periods for use of other forms of labour is clear. In contrast to Polonnaruwa and Anuradhapura, *attan* labour seems to be quite popular in Colombo.

In relation to size of holding, the trend in labour use patterns is not clear-cut. There is some tendency for exclusive reliance on family labour to be reduced as one moves up the size scale.

.4 Employment Situation among Households

The survey was not designed to collect detailed information on employment aspects. Some general comments on the nature and extent of farm and non-farm employment (both loosely defined), are offered below. Out of a potential labour force of 667 persons, 569 were employed.[1]

The family work force (employed) is classified on the basis of work place into 3 categories (Table 6-V).

A - Employed in own farm. Full-time operators/farm workers (319 persons)

B - Employed in own farm and outside. Part time farmers/farm workers (195 persons including students and 151 excluding them).

C - Employed only outside. Off farm employment (55 persons).

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[1] This definition of employment does not take into account the intensity of work. Students, the disabled and unemployed are excluded from the population 14 years and above.

Table 6-V Employment Situation - Family Members 14 Years and Over according to Tenurial Category

Tenurial Category	Employed in own farm only			Employed in own farm and outside Including Students				Employed in own farm and outside Excluding Students				Employed only outside			
	No.of farms	Total No.of persons	Avg. per farm	No.of farms	Total No.of persons	4 as a % of 1	Avg. per farm	No.of farms	Total No.of persons	8 as a % of 1	Avg. per farm	No.of farms	Total No.of persons	12 as a % of 1	Avg per farm
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
Owners	63	137	2.2	44	84	*70*	1.9	28	57	*44*	2.0	22	29	*35*	1.3
Tenants	39	88	2.3	30	54	*77*	1.8	25	45	*64*	1.8	6	9	*15*	1.5
Tenant-owners	18	39	2.2	12	24	*67*	2.0	11	23	*61*	2.1	5	5	*28*	1.0
Others	24	55	2.3	18	33	*75*	1.8	14	26	*58*	1.9	7	12	*29*	1.7
Total	144	319	2.2	104	195	*72*	1.9	78	151	*54*	1.9	40	55	*28*	1.4

As expected, the majority of workers are employed on own farm. Still the number employed outside is sizeable, being 29% of the total. The higher degree of urbanisation in the Colombo District would also imply a greater incidence of part-time farming. Unfortunately one cannot isolate the operators in group B with the data collected.

Table 6-VI shows the distribution of the farm work force defined as family members of 14 years and above who are presently available for farm work either on a full time or part time basis (Categories A and B). The average number of workers per farm does not show much difference as between tenurial categories

Table 6-VI Farm Labour Force * according to Tenurial Category

Tenurial Category	Average size of holding (acres)	Median size of holding (acres)	Employed in own farm only and own farm and outside		No. per acre (on average holdings
			No.	Average per farm	
Owners	1.94	1.00	221	3.5	1.8
Tenants	1.36	1.00	142	3.6	2.6
Tenant-owners	2.48	1.88	63	3.5	1.4
Others	1.69	1.69	88	3.7	2.2

* including students

The nature of off-farm activities of family members (categories A and B) was further analysed in terms of an occupational breakdown (Table 6-VII). The total number with outside interests was 206 with 151 working on both own farm and outside. This outside occupational structure could reflect two things.

Table 6-VII Nature of Outside Employment

Employment	Tenurial Category									
	Owners		Tenants		Tenant-owners		Others		Total	
	No.	%	No.	%	No.	%	No.	%	No.	%
Salaried or white collar employment	46	53	14	26	10	36	13	34	83	40
Non-salaried employment	9	10	4	7	3	11	1	3	17	8
Skilled workers.. ..	12	14	8	15	4	14	7	18	31	15
Trade/Commerce	11	13	3	6	1	4	6	16	21	10
Agricultural labourers..	3	3	1	2	6	21	1	3	11	5
Non-agricultural " ..	4	5	23	43	2	7	5	13	34	17
Others/Not specified ..	1	1	1	2	2	7	5	13	9	4
Total	86	100	54	100	28	100	38	100	206	100

a) Some households may be able to diversify their family employment through access to education or training along vocational lines, etc.

b) Family members may be driven to supplement their incomes through low productivity off-farm jobs, especially during slack seasons.

Analysis of data brings out the following points:

i. Salaried/white collar group accounts for 40% of outside jobs. This confirms the earlier observation on the importance of part time farming. The bulk of owners are drawn from this group.

ii. Tenants are by far the most depressed as far as outside employment is concerned. 43% of members of tenant families are non-agricultural labourers while the corresponding ratio for the owner group is only 5%.

6.5 Income Distribution among Farm Households

6.5.1 Limitations of Data

Data on incomes gathered in the course of the survey are not comprehensive enough for a meaningful discussion of income distribution. Gross receipts from (a) paddy produced in the crop year (b) sale of high-land and livestock produce (c) off-farm employment were enumerated. The following limitations of data should be borne in mind.

(a) Net farm family incomes cannot be worked out as expenditure data was collected only in relation to paddy cultivation in Yala 1972. Expenses connected with the production of high-land and livestock produce have not been deducted.
(b) Several forms of non-monetary income or income in kind have not been incorporated, or consistently enumerated, i.e. rent free housing, consumption of home produced goods, etc.
(c) Income data gathered in an interview type survey generally turns out to be underestimates.

Hence the figures are only crudely indicative of the income position in rural areas. The trend in gross receipts could be an imperfect indicator of the relative well being/poverty of different groups. It may perhaps be more useful as an indicator of the scale of operations.

6.6 Gross Farm Family Receipts

Farms were classified according to receipt groups (Table 6-VIII)

Table 6-VIII Total Family Receipts - Distribution of Farms by Tenurial Groups and Receipt Groups

Receipt Groups (Rupees)	Average receipts	Owners		Tenants		Tenant-owners		Others		Total	
		No.	%	No.	%	No.	%	No.	%	No.	%
Up to 500	359	3	*5*	4	*10*	-	-	2	*8*	9	*6*
501 - 1000	585	1	*2*	7	*18*	-	-	2	*8*	10	*7*
1001 - 2000	1493	10	*16*	11	*28*	4	*22*	4	*17*	29	*20*
2001 - 4000	2971	17	*27*	14	*36*	9	*50*	8	*33*	48	*33*
4001 - 8000	6032	19	*30*	2	*5*	4	*22*	5	*21*	30	*21*
Over 8000	16379	13	*21*	1	*3*	1	*6*	3	*12*	18	*12*
Total	4658	63	*100*	39	*100*	18	*100*	24	*100*	144	*100*

About 66% of households receive less than Rs. 333/- per month. The highest two groups comprising 33% of income receivers obtained 71% of total receipts. Average receipts per annum range from Rs.359/- in the lowest to Rs.16,379/- in the highest group.

The distribution of receipts by tenurial groups shows that tenants fare the worst (subject to qualifications about the data noted above). 56% of tenant households earn less than Rs.2,000/- annually while the corresponding ratio for the owner group is 23% (Table 6-VIII). A similar trend is observed for the highest two income groups.

6.7 Receipts from Sources other than Paddy

While paddy is one source of income family income consists of other sources as well. We can expect the role of other sources to be high in the Colombo District because of (a) larger share of highland in the total holding; (b) more diversified occupational pattern.

137 households (95% of the total) reported earnings from other sources which may fall into one or more of the following categories:

i. highland crop cultivation

ii. off-farm employment

iii. non-employment income

These receipts formed 76% of gross receipts on average. Generally the distribution of other receipts was more even suggesting that it is paddy which causes disparities in gross receipts.

Tenants have the least amount of average earnings from sources other than paddy (Table 6-IX). This results from the larger share of paddy in their holdings and the low productivity nature of their outside employment.

Table 6-IX Average Receipts from Sources other than Paddy Produced by Operators * by Tenurial Category

Tenurial Category	Total No. of farms	Farms reporting outside earnings		Average receipts per farm	
		No.	%	Reporting farms only Rs	All farms Rs
Owners	63	61	*97*	4,806	4,653
Tenants	39	35	*90*	1,573	1,411
Tenant-owners ..	18	18	*100*	4,740	4,740
Others	24	23	*96*	3,438	3,295

* Paddy received by landlords from tenants has been considered as land rent and included in the receipt from other sources.

All other categories earn more than double the amount realised by tenants from outside sources.

6.8 Gross Value of Paddy Production

The gross value/income from paddy produced is estimated as the product of yield of paddy and the GPS price of paddy (Rs.14/- per bushel at the time of the survey). Hence, the values (per acre) directly reflect the productivity of paddy land adjusted for the payment of land rent in appropriate cases.

Gross value of paddy according to water supply indicates a higher productivity of lands under minor irrigation (Table 6-X).

Table 6-X Average Income per Family from Paddy after Deduction of Land Rent for Tenanted Land - (Maha and Yala)

Water Supply	Income in Rupees
Minor Irrigation	1,500
Rainfed ..	968

Table 6-XI shows the gross value of paddy produced per farm and per acre. The former reflects farm family income for paddy, while the latter relates to land productivity. Tenants and owners have more or less equal incomes from paddy per farm while tenants enjoy higher returns per acre.

Table 6-XI Value of Paddy Produced under Different Tenurial Conditions - (Maha and Yala) *

Tenurial Category	Average size of holding (acres)	Average income per farm (gross) Rs	Income after deduction of land rent	
			Average per farm Rs	Average per acre Rs
Owners	1.95	1,287	1,287	658
Tenants	1.36	1.573	1,270	933
Tenant-owners	2.48	1,307	897	362
Others	1.69	1,096	827	489

* Income was computed by valuing the paddy produced at Rs.14/- per bushel guaranteed price that prevailed at the time of the survey.

Average income per employed member is more meaningful than that per head of members 14 years and above as some of the latter may not be economically active. However, all employed need not be income receivers, i.e. unpaid family workers. The latter share in the work but do not directly receive incomes except for their subsistence which would be met anyway. Some members may be in occupations where work cannot be shared by family members but the income has to be shared given the extended family system.

6.9 Production Expenses and Income from Paddy - Yala 1972

Since recall lapse on the part of farmers is bound to be high, data on operating expenses was collected only for the immediately preceding season, Yala 1972. Only 78 operators cultivated in Yala but 4 reported crop failure. Hence the reported data pertains to the 74 operators who cultivated 116 acres.

The average cash outlay per acre amounted to Rs.327/- (Table 6-XII).

Table 6-XII Summary of Cash Outlay per Acre for Paddy Cultivation - Yala 1972

Items of Expenditure	Amount Rs.	%
Draught power	66	*20*
(a) hired labour	89	*27*
(b) food bought for hired labour.. ..	66	*20*
Purchased inputs	59	*18*
Land rent, acreage tax and *ande*	45	*14*
Transport	2	*1*
Total	327	*100*

The highest item of cost was hired labour (inclusive of the food supplied). The high labour cost is surprising in a way because of the widespread use of *attan* labour. However, without labour input data this cannot be further analysed. Purchased inputs amount to only 18% of the total cost.

The average cash outlay by source of water supply does not conform to the expected pattern (Table 6-XIII). This lends support to the earlier observation that the relationship of source of water supply with other factors is not consistent. The relative absence of risk under major irrigation schemes does not apply to minor schemes in the same measure. While rainfed paddy areas carry higher outlays, the composition of expenditure also does not exhibit any significant differences.

Table 6-XIII Cash Outlay per Acre for Paddy Production according to Source of Water Supply - Yala 1972

	Minor Irrigation		Rainfed	
No. of farmers	19		55	
Sown area (acres)	38.44		77.61	
Item of Expenditure	Expenses Amount	%	Amount	%
Field operation	201	*65*	231	*69*
i. Tractor including fuel costs..	41	*13*	47	*14*
ii. Buffalo	16	*5*	23	*7*
iii. Hired labour				
(a) wages	76	*25*	95	*28*
(b) food	68	*22*	66	*20*
Inputs	58	*19*	60	*18*
Miscellaneous				
i. Ande, acreage tax and land rent	47	*15*	44	*13*
ii. Transport	1	..	3	*1*
Total	307	*100*	338	*100*

.. *Indicates less than 1 per cent*

On a tenurewise basis a marked difference in the composition of outlay between owners and the tenant and tenant-owner groups are found (Table 6-XIV).

Table 6-XIV Cash Outlay per Acre for Paddy Production according to Tenurial Category - Yala 1972

	Owners		Tenants		Tenant-owners		Others	
No. of farmers	35		16		10		13	
Sown area (acres)	62.41		19.37		16.83		17.44	
	Expenses							
	Rs.	%	Rs.	%	Rs.	%	Rs.	%
Field operations	243	*78*	174	*49*	162	*52*	250	*67*
a) Tractor (including fuel cost)	61	*20*	18	*5*	20	*6*	40	*11*
b) Buffalo	16	*5*	36	*10*	14	*5*	29	*8*
c) Hired labour:								
i. wages	111	*36*	50	*14*	47	*15*	93	*25*
ii. food	55	*18*	70	*20*	81	*26*	88	*23*
Inputs	60	*19*	46	*13*	52	*17*	77	*21*
Miscellaneous								
i. Andé, acreage tax and land rent	5	*2*	132	*37*	94	*30*	44	*12*
ii. Transport	2	*1*	1	..	2	*1*	3	*1*
Total	310	*100*	353	*100*	310	*100*	374	*100*

.. Indicates less than 1 per cent

This could be traced to the high land rent borne by the latter groups which restricts their ability to spend on other inputs. Expenditure on purchased inputs is lowest for the tenant group. Figures on cost of food for hired labour should be viewed with some caution as they seem to exceed the wage cost of hired labour.

6.10 Income from Paddy - Yala 1972

Net income from paddy is defined as the difference between gross income and cash operating expenses. On this basis, the average net income per farm is estimated to be Rs.34/-.

Yala 1972

	Rs
Gross farm income per acre of paddy ..	361/-
Cash operating expenses	327/-
Net operating income	34/-

This figure is rather low compared to the position of other districts studied. However, it is consistent with the fact that Colombo District ranks low in paddy productivity.

SUMMARY AND CONCLUSIONS

A - Land and Land Use

A - 1 There were 67,945 acres of paddy in the Colombo District in Maha 1971/72 cultivated by 65,436 farmers. Over 80% of this extent is rainfed. The 144 sample farmers operated an extent of 261 acres of paddy of which 45% was reported to be served by minor irrigation, while the reset were rainfed. These farmers also operated 456 acres of highland.

A - 2 63% of the paddy land operated was owned. The rest (37%) was operated under tenancy. Only 44% of the operators fully owned the land they cultivated - 17% operated on land held under various forms of joint ownership. The remaining 39% had rented in at least a portion of the land they cultivated. Tenancy and joint ownership thus affect a substantial proportion of cultivators. All 39 tenants had no paddy land whatsoever, though most of them had some highland. 35% however, owned less than half an acre of highland. Hence, the tenants as a category were almost landless. 56% of all operators owned less than 0.50 acre of lowland. 52 operators owned highland extents smaller than half an acre, while about 1/3 of the sample farmers owned less than one acre of both lowland and highland.

A - 3 The average lowland holding was 1.81 acres; median was 1.01 acres. The holdings ranged in sizes between 0.06 to 25.50 acres. The average size of the lowland holdings below the median was 0.68 acre and that above was 2.94 acres. The average size of lowland holdings operated by different tenurial categories did not vary very much. The smallest was among tenants (1.36 acres) and the largest among tenant-owners (2.48 acres).

A - 4 The operated lowland was unequally distributed among different holding sizes. 28% of the total extent was operated by 7% of the farmers in the above four acre holdings, while the 48% of operators working on holdings below one acre operated only 18% of the lowland. This disparity was noted even within different tenurial categories. Hence smallness of the operated holding is a major problem in this district.

A - 5 Owner cultivators were concentrated more in rainfed areas while the tenanted lands were located more in areas served by minor schemes indicating the control of paddy lands better served by irrigation by landlords who rented out them to tenants.

A- 6 The rent regulation provisions of the Paddy Lands Act do not seem to have had much impact in the district. Nearly 75% of the tenants paid a half share of the crop as land rent. Only 14% paid a 1/4 share and 3% a fixed rent as stipulated in the Act. Shortage of paddy land in the district and the high population pressure on it tend to keep the rents at a high level. Also, acute competition for land among tenants increases the possibility of eviction in any attempt at paying the legal rent. This is why some tenants continue to pay half share even without receiving any collateral help from the landlords. Almost 50% of the tenants who paid half share did not feel secure on the land and the rest relied essentially on the goodwill of the landlord for their security. However, over 70% of the tenants paying half share felt that the rent they pay is fair and 85% of them received some collateral help. Fertiliser and/or seed paddy are the main inputs normally provided by landlords. The majority of those who felt half share as excessive received no collateral help and so were those who paid 1/4 share or a fixed rent.

A- 7 A large proportion of the landlords were those with other interests; Public servants, traders, technicians, etc. Nearly 20% were land owners and only 12% were peasant landlords. Almost 50% of the landlords lived outside the village. While 33% of landlords were outsiders 30% were relatives and the rest friends and neighbours. Thus a considerable extent of village paddy land is controlled by outsiders, who continue to extract a high rent from the tenants.

A- 8 54% of the tenants desire to cultivate additional land on *Ande*. These were mostly the smallest operators who owned little or no land of their own. They desired to cultivate extra land in order to increase family incomes and provide work to excess family members. Very few tenants however saw the possibility of becoming owners of paddy lands in the future.

B Institutions

B- 1 Nearly 25% of the respondents were not members of a co-operative. 22% of the non-members did not know about the co-operatives and 19% preferred to deal with private traders and 15% complained of mismanagement of co-operatives.

B- 2 Most farmers depend on the co-operative for their fertiliser requirements (90% of members and 80% of all farmers). This is because subsidised fertiliser is channelled almost entirely through the co-operative net-work. 54% obtained their agro-chemicals also from this Institution. However, few farmers made use of the co-operative for their loan requirements (17%) and for marketing paddy (30%).

Operators of small-holdings and tenants appear to make less use of certain important facilities (fertiliser and credit) provided by the co-operative.

B- 3 Only 20% of the farmers were indebted for paddy cultivation during Maha 1971/72. Almost 90% of those indebted for paddy cultivation had borrowed from private sources like friends, relatives, traders, etc. Among various tenurial categories a greater proportion of tenants were indebted for paddy cultivation and had borrowed mostly from private sources. The co-operative is not an important source of credit; only 2 operators had borrowed from this institution during Maha 1971/72.

It is difficult to say whether there is a general lack of need for credit in the District though the non-borrowers gave this as the most important of all reasons (43%). It is possible that the risk involved in farming under unfavourable environmental conditions discourages farmers to borrow. Further, the small operators and tenants are less credit worthy. However, nearly 50% of the reasons given pointed to deficiencies on the part of Co-operatives - lack of any organisation for credit (40%), inadequate knowledge of credit schemes and inconveniences in borrowing (8%). Of course, 25% of the operators were not members of co-operatives.

B- 4 The gross amount borrowed in Maha 1971/72 was very small; Rs.6,829.00 of which 35% came from institutional sources. Average size of loan per borrower was Rs.236.00. The owner operators had borrowed a higher amount than others (Rs.442.00 per borrower). Almost 75% of the loans were repaid.

B- 5 The rate of interest for loans taken from private sources varied between 0-112% per annum. 17 loans out of 29 were reported to be interest free.

B- 6 Only 30% of the operators sold their surplus paddy through the co-operative. The amount of surplus paddy available for sale in the district is, however, small (See Section E).

B- 7 Most farmers had contact with several extension media. However, the extension services formed the most important source of general agricultural information. 67% of the farmers got their information from this source while 45% received such general information from neighbours. Farmer training classes and demonstration plots as sources of general information figured less important and so were advisory leaflets.

The pattern was similar for information on NHYVs and fertiliser recommendations, but in this case farmer training classes and advisory leaflets were more important than for general information. Influence of neighbours was of much less importance.

Mass media (radio, newspapers and films) were also of little importance as sources of agricultural information. However, nearly 40% of the farmers got their general information on NHYVs from radio programmes.

B- 8 58% of the farmers were visited by extension personnel on their own initiative during Yala 1972. 78% of the farmers knew the location of the extension centre and 40% had visited it during Yala. The main reasons for visiting the centre was to obtain various inputs (41%), but only 28% went for general advice. Among methods of impersonal contacts 41% had seen demonstration plots, 40% had read advisory leaflets and 67% had listened to radio programmes, but only 22% had attended training classes. The majority of those who had not attended were not aware of such classes.

B- 9 Almost 50% of the farmers in the sample had a low extension contact score of 2 or less. Only 25% had a high contact score of 5 to 7. Neither the rate of adoption of NHYVs nor the paddy yields showed a direct relationship with the contact score. Problems of the physical environment appear to have a greater impact on cultural practices than extension facilities in this district.

C Labour and Employment

C- 1 The 144 farm families surveyed had a population of 893 persons which yields an average household size of 6.2

C- 2 The potential family labour force (members 14 years and above) amounted to 667, that is, about 75% of the population. The labour supply position is more favourable in smaller holdings than in larger ones.

C-3 525 persons (79% of potential labour force) were employed - 319 employed only on the farm, 151 both on the farm and outside and 55 only outside. The farm work force represented by the first two categories averaged 3.3 per farm and 1.8 per acre.

C-4 The pattern of labour use shows a high rate of reliance on family labour. Hired labour and *attam* labour though of lesser importance, are used more or less in equal proportions. Family and *attam* labour together provide the bulk of the labour requirements for many of the important operations.

C-5 A substantial number of households had some members employed outside their farms either on a part time or full time basis. The higher degree of urbanisation in Colombo District implies a greater degree of part time farming. Many households have been able to diversify their family employment through access to education, and in the case of poorer households they have been driven to supplement their incomes through low-productivity off-farm jobs. The main outside occupation was salaried/white collar employment (40%) followed by non-agricultural labour (17%). The former category of employment is associated more with members of owner operator households while the latter is more associated with tenant households - the more depressed.

D Management Practices and Productivity

D- 1 The main sowing season commences in mid year (June-July) and continues almost till the end of November with the main thrust being from August to October. Mid year sowing is confined mostly to fields that cannot be cultivated during Yala due to flooding.

D- 2 The overall cropping intensity is relatively low (138%) primarily due to the high proportion of asweddumised land that could not be cultivated during Yala as a result of flooding.

D- 3 The major source of draught power is buffaloes. 72% of the operators have prepared 62% of their lowland mainly with buffaloes. 12% had prepared their fields exclusively with mammoties. Small size of the operational holding and environmental problems like water logging have reduced the dependence on tractors for field preparation. Further, highland cultivated with coconuts also provide grazing facilities for cattle.

The potential for increasing the buffalo population in the district is considerable owing to the large highland extent under coconuts.

D- 4 Use of traditional varieties is still widespread especially in Maha (65% of cultivated extent). However, during both seasons a higher proportion of the cultivated acreage in larger holdings of over six acres (3% of extent) had been planted with new varieties

indicating on the one hand the ability of larger operators to take risks and on the other better location of their fields perhaps. Source of water supply does not appear to influence the choice of paddy varieties cultivated during Maha. In Yala the percentage area under NHYVs is considerably higher (40% of the cultivated extent). However, poor soil and drainage conditions appear to govern the pattern of varietal use.

D- 5 The new varieties were introduced only in Maha 1971/72 and as such the farmers were either not aware of them or were not convinced of their benefits. Unfavourable environmental conditions have also acted as a limiting factor to the adoption of improved varieties.

D- 6 The traditional method of broadcast sowing is adopted on an extensive scale (94% of the extent cultivated). Non-adoption of transplanting is primarily due to some of the physical and environmental constraints such as poor drainage, soil characteristics, heavy and unseasonal rainfall. The main reasons indicated for continuing with traditional sowing methods were the tedium of transplanting, lack of funds, unsatisfactory water supply and boggy soils. The additional requirements in labour and funds that transplanting demand may not be invested under uncertain environmental conditions.

D- 7 97% of the operators in Maha and all the operators in Yala have applied some kind of fertiliser. Compound pellet is the most widely used type followed by Urea. However, the reported application of 2.3 cwt per acre appears to be an exaggeration when compared with cash expenses on fertiliser (Rs.39.00 per acre) and the actual consumption figures for the district (0.8 cwt in Maha and 1.0 cwt in Yala). In holdings of over 2.0 acres around 50% of the operators have made three applications while in the smaller holdings the proportion was only 30%. The pattern of fertiliser use does not show any variation based on tenurial conditions.

D- 8 Both hand weeding as well as use of chemicals are popular. The area covered by each of the methods is almost the same being around 40% of the cultivated extent. In holdings of less than 2.0 acres 60% of the operators have relied exclusively on hand weeding their crops. In larger holdings of over 4.0 acres around 55% have used weedicides exclusively.

D- 9 The yields reported were 36.1 bushels in Maha and 25.8 bushels per acre in Yala. The Yala yields were considerably lower than the figure given by the Department of Census and Statistics (34.92 bushels). Low productivity was primarily due to a number of environmental factors that inhibit the widespread adoption of improved cultural practices.

D-10 Owners who constitute 42% of the operators had the highest yields for both seasons (36.9 bushels in Maha and 36.5 bushels in Yala). Tenants on the average had obtained 3 bushels less per acre in Maha and 2 bushels less in Yala. This difference however, is not very significant and points to the fact that environmental factors are a basic problem for all categories of cultivators.

D-11 NHYVs have given strikingly superior performances during Maha. In minor schemes a few operators who had grown such varieties have reported a yield of more than 19 bushels per acre over traditional varieties. During Yala their performance had been disappointing as the new varieties have yielded almost 7 bushels less per acre compared to traditional varieties. The yield data available is however inadequate to judge the performance of the new varieties.

E Disposal, Expenses and Income

E- 1 The average quantity of paddy sold per acre is very low (8 bushels in Maha and 6 in Yala). This is due to low productivity, small-holdings and unsatisfactory tenurial arrangements. The average lowland holding is only 1.81 acres and 72% of the tenant operators paid half the produce to landlords. In the circumstances availability of paddy for disposal would naturally be very limited.

E- 2 Only 34% of paddy disposed of has been marketed through the co-operative societies. The price of paddy (especially rice) in the open market is much higher. The district in addition to being urbanized is also a deficit area.

E- 3 In both seasons the quantity of paddy sold per acre sown by tenants has been even less than a bushel. On the other hand the owners have reported sales of as much as 25 bushels per acre sown during Maha in minor schemes and 8 bushels per acre in rainfed areas. Even in Yala the owners have been able to sell over 8 bushels per acre. The plight of the tenant is amply demonstrated by this. Absence of any surplus paddy for sale deprives him of saving and thereby investing on production.

E- 4 Data on cash operating expenses was collected only for Yala 1972. The average cash outlay per acre was Rs.327.00 for the 74 reporting farmers.

E- 5 The major component in operating expenses was hired labour (47% of total outlay). This is surprisingly high when one considers the fairly widespread use of family and *attan* labour. The proportion spent on draught power and purchased inputs amounted to 20% and 18% respectively.

E- 6 There was no substantial difference between the level and composition of average cash outlay between areas fed by minor schemes and rain.

E- 7 The composition of outlay between owners and tenants differed as the latter had to spend a fair amount as land rent thus reducing their ability to spend on purchased inputs in particular.

E- 8 The distribution of gross family receipts showed that 66% of households earn less than Rs.335.00 per month. Only 12% had receipts above Rs.666.00 per month. Family receipts were positively related to holding size.

E- 9 Sources other than paddy formed 76% of total receipts. This is because in this district highland forms a larger share in the total holding and also because of the more diversified occupational pattern. Tenants earn the least amount from other sources for they have very much less highland at their command and their sources of outside employment are low paid ones.

E-10 The net cash operating income from paddy amounted to Rs.34.00 per acre, the lowest for any district. Rainfed areas enjoyed higher net returns from paddy than those under minor schemes. On a tenurial basis, owners obtained the highest net receipts.