THE SOURCES AND DETERMINANTS OF INCOME OF A SAMPLE OF SINGLE CROPPING PADI FARMERS IN MALAYSIA

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INTRODUCTION

It is generally agreed that the poorest groups in Malaysian society are rural laborers, padi farmers, fishermen, and the urban unskilled.[1] Of these groups, by far the largest numerically are the padi farmers.[2] Among padi farmers the poorest segment is considered to be the single-cropping padi cultivators. Selvaduri sums up the situation as follows:

> "Padi farms in West Malaysia are small and incomes from them are low particularly in those areas where only a single crop of padi is harvested each year. Thus many padi farmers work outside their own farms to supplement their padi incomes."[3]

Despite the belief that single-cropping padi farmers constitute one of the very poorest groups in Peninsular Malaysia, little is known in detail about the level and sources of income of this group, or about the determinants of this income. Such knowledge is of considerable practical importance, for in its absence it is impossible to guage the effect of government policies, such as maintaining a high domestic price for rice, or providing new irrigation facilities, on this group. Furthermore, in designing a strategy aimed at reducing severe absolute poverty and at providing "basic needs" for everyone it is helpful to know what are the social and demographic characteristics of the poor and how their position could be bettered.

With such considerations in mind we have undertaken the analysis

of a set of surveys conducted by the Ministry of Agriculture which collected information on about 2700[4] households involved in single-cropping of rice.[5] All the households surveyed were in areas where small-scale irrigation projects could be undertaken and the survey was undertaken with the immediate aim of providing information which would help evaluate the desirability of investing in such a project in the various areas examined.

THE SURVEY

The survey sought information on a large number of variables, including data on income by source, farm size, educational levels, tenancy types, and the uses of output. A full listing of the variables and potential responses is to be found elsewhere.[6] The great wealth of detail enhances the importance of the survey in aiding understanding of rural padi-growers.

The households sampled are spread over the states of Western Malaysia as shown in Table 1. It will be noted that the distribution of the sample mirrors closely the distribution of all padi-farmers, with some over-representation of Kedah, Melaka and Trengganu and and under-representation of Penang and Perak. Because of the small samples taken in Johore and Selangor, generalization about these states are almost meaningless, and even in the cases of Pahang, Perak and Perlis the samples are scarcely of adequate size. However, it is reasonable to regard the survey as covering the single-cropping rice-farming group fairly well.

The full survey can be thought of as consisting of a series of mini-surveys; typically the survey team would go to a village and sample up to one half of the households. While most of the results given here

are at a more aggregated level, the mini-surveys may provide enough information about particular villages to be of help to policy-makers trying to decide whether, for instance, to improve the irrigation works there. At least 40 households were sampled in each of 15 of the 40 districts covered by the survey.[7]

The first mini-survey was done in October 1976 and the last in February 1979. A more detailed chronology is given in Appendix I. The survey covered almost 1% of all padi-growing households, and almost 3% of single-cropping padi-farmers.[8]

THE PADI FARMER -- INCOME

The mean annual income of households covered by the survey is $2,231 and the median is $1,571. For a group regarded as among the very poorest in Malaysia, these figures are surprisingly high.

Figure A shows the distribution of household income for the sample, and the data on which it is based are presented in Appendix II. The distribution has a traditional log-normal shape with a Pareto-style upper tail.[9] Figure B plots a Lorenz curve for the family income distribution of the sample. The Gini coefficient is .430, which indicates moderate inequality within the group sampled.

It is worth noting that 7.3% of families covered had incomes of $5,000 p.a. or more. That these relatively well-off families were included in the survey leads one to conclude that it is impossible to make a simple correlation between involvement in single-cropping rice farming and extreme poverty.

The foregoing conclusions hold even when one expresses income

on a per capita basis, and this is illustrated in Figure C. Interestingly the distribution of per capita income is more heavily concentrated at the lower end than is family income. The 7% of families with income of less than $100 must be considered as extremely poor by any standard, and even the 47% of families who have less than $300 in income per head should be thought of as very poor.

Figure D presents a further illustration of how family income is not proportionately related to the amount of padi land operated. This graph maps padi acreage per household against total household income. From the scatter of the observations no clear pattern emerges, suggesting that padi-farm size is not useful as a predictor of income. Only 14% of the income of households surveyed comes from padi grown by the households themselves. A further 18% comes from other on-farm activities. The largest single source of income is, however, off-farm employment, which contributes 52% to income. No discussion of rural incomes would be complete without a full analysis of the sources of this income, and we will return to the question below (under the heading "occupations").

Table 2 gives a breakdown of income data by state. The large differences in median income among states are noteworthy. Table 3 gives the proportion of households which earn more than half of their income from off-farm employment, on-farm activities and padi-growing, respectively. Just over half of the sample earned over 50% of their income off the farm, and almost a third (31%) earned over 80% of their income in this way. 26% of those surveyed earned more than 80% of their income from on-farm activities and 38% earned at least half their income in this way. Table 4 shows that this group of "farm-specializers" had a mean annual family

income of only $1,510 which amounts to just two-thirds of the sample average income.

From Table 3 we see that only 8% of the families surveyed earned the majority of their income from padi. These households had an average income of just $1,103, amounting to 49% of the mean for the entire sample. A mere 5% of those surveyed earned at best four-fifths of their income from padi.

PADI HOUSEHOLDS -- LAND HOLDING

In Figure E is presented the size distribution of padi holdings. This shows that almost 20% of farmers cultivated less than one acre of padi, and 84% cultivated less than three acres of padi. The median size of padi holding in the sample is therefore 1.8 acres per household. It is instructive to compare these figures with the data given by Selvadurai for West Malaysia as a whole.[10] He found that in about 1970 only 10% of Malaysian padi-farmers cultivated less than one acre of padi, and 54% cultivated less than three acres of padi. The median size of padi holding for West Malaysia was 2.8 acres.

Table 5 provides a breakdown of padi-holdings by state, and shows that households in Melaka, Perak and Negri Sembilan cultivate smaller than average acreages of main-crop padi, while in Pahang, Selangor and Johore the acreage under padi is larger than average.

Figure F, which is presented above Figure E for ease of comparison, gives the size distribution of total farm holdings. It was shown

above that the households covered by the survey derived considerable income from farming activities other than padi-growing. Thus, it is not surprising that the median farm size at 3.1 acres is substantially above the median padi acreage of 1.8. Indeed, Figure F shows that 26.4% of farms are at least five acres in size, and 4.2% are more than ten acres. The mean farm size in the sample is 3.8 acres and the mean padi acreage 1.8. A breakdown of farm-size by state is given in Table 6 and shows that unusually large farms are to be found in land-rich Pahang. The smallest farms sampled were in Perak and Melaka, where high levels of double-cropping were also found.

While 93% of the sample had at least two plots of land in their farms, only 10% had four or more plots. This does not provide evidence of any excessive fragmentation of holdings.

The typical family sampled cultivated 3.8 acres, divided into 2.4 plots of 1.6 acres each. This includes space allocated for a house. Plots with houses averaged .7 acres in area. Conventionally, a house is considered to require a quarter acre, but 10% of the plots which included houses were less than a quarter acre in size. A further 28% were exactly a quarter acre in size. Thus, it is probably reasonable to allow a quarter acre for each house. This would reduce the average acreage devoted to padi cultivation correspondingly, and the averages shown in Table 7 should be adjusted downward to take account of this.

Table 8 provides some further data on the size of padi holdings, and on the amount of land used for double-cropping of padi. Approximately 24% of the land covered by the survey was double-cropped, but this varied from 0% in Johore to 99% in Perak. In 1970, 35% of padi land in West

Malaysia was double-cropped, but this figure was certainly considerably higher in 1978. Thus, the survey covers a disproportionately high number of single-cropping households in most states.

Tables 9, 10 and 11 summarize the available data on the forms of tenure current among sample households. From Table 9 we see that 63% of farmers own all the land they work and 12% are pure tenants. Among the separate states, ownership is particularly high in Negri Sembilan, while tenancy is more common in Perlis, Selangor and Pahang.

Table 10 gives the origins of the different tenure forms. 48% of all the land owned was inherited, 12% purchased and 25% granted or leased by the government. Finally, a relatively small amount of land was rented - 10% of the total. Two-thirds of this was rented for cash payments and one quarter for simple share-cropping.

Of the sample surveyed, 8.2% of families rented out land, and on average these families rented out 3.1 acres each. Only 5% of families who rented out land rented out less than one acre. The total area rented out by the families sampled was approximately 550 acres. Collectively, however, those sampled rented in about 830 acres. The difference is due to the fact that the survey covered only people who were cultivators of padi land and thus would not have surveyed those who rented out padi land but did not cultivate any land themselves.

Finally, it is clear from Table 11 that the size of plots held under different tenure forms varies. Government-granted plots are especially large, averaging over 2.0 acres each, whereas most other plots are about 1.5 acres in size.

USES AND SOURCES OF PADI

Table 12 shows the main ways in which padi was used by households in the sample. On average 20% of the crop was sold for cash. The vast bulk of the remaining four-fifths was used for domestic consumption, and the modest remaining amounts went as in-kind rent payments and for the zakat.

There is considerable variation in this pattern among the different states. In only three states - Kedah, Perlis and Selangor - was more than a fifth of the padi crop sold.

While more than 80% of non-commercialized padi was consumed domestically in every state, the proportion rises to over 90% in those states with a low acreage of padi holdings per household. Zakat payments took only 1.5% of unsold rice in Melaka, but 9.6% in Perlis. Rent payments in the form of rice averaged about 24 gantangs per household.

From Table 13 it appears that 71% of all padi which is sold goes to middlemen and 7% to cooperatives of all types. In most states the number of usable responses is too small to permit useful inference.

Just 21% of the sample reported sales of padi. The mean price paid was $27.1 per pikul for sales to cooperatives, $30.4 for sales to middlemen and $29.4 for sales to "others". More detail is given in Appendix V.

Table 14 gives the yield per acre of padi cultivated, both for the main crop and the off-season crop. A breakdown by state is also given. The yield per acre for the main crop is 264 gantangs (1478 lbs.) which is fairly low by Malaysian standards.[11] There is not much variation in yields among states, which is perhaps surprising, and nor is the yield per acre

for the off-season crop very different from that of the main crop. It is quite possible that respondents understated their total padi yield, which would help explain the low yield per acre, and also bias downwards the proportion of income attributable to padi cultivation.

"PADI FARMERS" -- OCCUPATIONS

What do padi farmers do if not padi cultivation? Table 15 tries to shed light on this question, and details the primary, secondary and tertiary occupations of the heads of households. Of the 2204 usable responses, 34 heads of households listed "no work" as their occupation. 87% of all thos surveyed had at least 2 occupations, and 21% had 3 or more occupations.

Not surprisingly, padi planting is listed as the major primary occupation, covering 66% of the sample. However, rubber tapping (17%) and laboring (3%) are also important. While 97% of those surveyed mention padi planting as an occupation, the figure is 45% for rubber tapping, 12% for laboring, 16% for other agricultural pursuits, and 6% for skilled manual workers. A fuller breakdown is given in Appendix IV.

What generalizations can be made about the occupational structure and the rural labor market? First, the considerable diversity of occupations and the wide scope for paid off-farm employment suggest tentatively that the rural labor market is open and active, and we would expect (for future testing) that wage rates are correspondingly competitive.

In Table 16 the primary exceptions of heads of households are tabulated by state. The inter-state differences are not surprising - for instance, the high proportion of rubber tappers in Pahang and Johore and

of padi farmers in Perlis.

The proportions of people who are out of the labor force with no active occupation are presented in Table 17. These proportions refer to all household members and not merely to household heads. The proportion of non-participation is very high for the 16-20 year old group, but drops to very low levels by the age of 30, remaining there until the age of 60 or so. The proportion of non-participation for the illiterate group is higher than the average at all ages after 20 years old. It remains to be established whether these are also poorer households.

PADI-FARMERS -- DEMOGRAPHY AND EDUCATION

The sample survey produced usable replies for 2,197 families, representing 11,778 people. The distribution of family size is shown in Figure 6. The mean family size of the sample was 5.2, which is close to the figure of 5.5 typically found or assumed in Malaysia.[12]

Table 17 shows a crosstabulation of age against levels of schooling. Several points are worth noting. First, the number of people in the 21-25 age bracket is about half of the number in the previous (16-20) bracket. This provides sure evidence of substantial migration out of the rural area. Second, 17% of the population was recorded as illiterate. This proportion rises with age, from 1.6% in the 11-15 year age group to 26.5 in the 31-35 year group and 77% for those aged 76 or over. This shows clearly that basic education has now spread to all rural padi-growers, bringing virtually complete literacy to the youngest generation. Furthermore, many go well beyond primary education. Thus, within the 16-20 year age group 57% had at least completed lower secondary school. It is note-

worthy that in the 21-25 year age group 32% had reached a similar level of attainment. This may reflect disproportionate emigration by this group or a relatively recent expansion of more advanced education. However, the very high rates of non-participation (37%) among well-educated[13] people in this age group suggests that migration may be a particularly common route for this group once they complete their schooling. It is possible that the expansion of the educational sector will increase rural-urban migration. At any rate it is clear that the consumption of education by the padi-farming group has risen rapidly, and has important implications for the future.

Table 18 shows the number with no work divided up by education and age. The larger number of youths in the 11-15 age bracket and who are no longer at school yet have no occupation is of interest. This group without work constitutes 7% of its age group.

CAVEATS

This paper only seeks to provide a preliminary sketch of the data collected in this survey. The conclusions stated here are subject to revision when further verification of the data is carried out. Some of the above figures have yet to be cross-checked with other data from the survey to test for internal consistency.

Most importantly the data have been presented here in an essentially descriptive way. For any initial look this is acceptable, but ultimately the data will only become useful when fitted into a framework which will enable one to answer such questions as: How would a change in the price of rice affect this group of padi farmers? What effects

would the introduction of irrigation schemes have given the households' present activities? How could one raise the incomes of the poorest 40% of the padi farmers? It is to such questions that future attention should be directed.

TABLE 1

Breakdown of Households Sampled, by State

STATE	FOR SURVEY no. of households	FOR SURVEY % of households	WEST MALAYSIA[1] no. of households (,000)	WEST MALAYSIA[1] % of households
Johore	20	.9	4	1.4
Kedah	714	32.4	81	27.4
Kelantan	277	12.6	56	18.9
Melaka	209	9.5	12	4.1
Negri Sembilan	200	9.1	19	6.4
Pahang	135	6.1	20	6.8
Penang	--	0	16	5.4
Perak	97	4.4	44	14.9
Perlis	109	7.7	12	4.1
Selangor	25	1.1	13	4.4
Trengganu	358	16.2	19	6.4
Total	2204	100.0	296	100.2

Note: 1. Figures from Selvaduri (1972), and refer to approximately 1970.

TABLE 2

Household & Per Capita Incomes and Their Origins by State

state	sample size	income per household ($) mean	income per household ($) median	income per capita ($) mean	income per capita ($) median	padi	% of income derived from livestock	other on-farm	off-farm	other
Johore	20	3649	2750	617	600	7	1	19	64	8
Kedah	686	1870	1496	396	307	20	2	23	48	7
Kelatan	274	1530	1106	319	229	15	3	18	53	11
Melaka	195	4107	2169	663	433	5	1	13	41	41
Negri Sembilan	195	2635	2088	615	492	9	1	23	42	25
Pahang	133	3042	2724	555	466	12	2	27	53	6
Perak	94	1836	1409	372	247	19	1	14	54	13
Perlis	162	1539	1156	345	244	22	4	7	60	8
Selangor	24	2265	1875	424	300	44	1	6	49	<1
Trengganu	336	2261	1708	417	312	9	1	11	59	6
Whole Sample	2120	2231	1571	441	319	14	2	18	52	15

TABLE 3

Breakdown of Income Sources

percentage of households earning	>50% of income	>80% of income
from off-farm employment	52	31
from on-farm activities	38	26
from padi cultivation alone	8	5

TABLE 4

Mean Income of Households According to Major Activity

on-farm employment accounts for:	off-farm employment accounts for: <80% of total income	off-farm employment accounts for: ≥80% of total income
<80% of total income	2,397 (N = 924)	2,597 (N = 653)
≥80% of total income	1,510 (N = 543)	--
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padi-income account for:		
≥50% of total income	1,103 (N = 257)	--

TABLE 5

Acreage of Main-Crop Padi by State

state	sample size	% of households in state in acre brackets							
		<1	1-1.99	2-2.99	3-3.99	4-4.99	5-7.49	7.5-9.99	≥10	total
Johore	19	5	42	53	0	0	0	0	0	100
Kedah	696	20	37	26	8	6	3	<1	<1	100
Kelantan	266	12	49	24	12	1	2	0	0	100
Melaka	205	46	42	10	1	0	1	0	0	100
Negri Sembilan	191	25	50	17	7	1	1	0	0	100
Pahang	134	4	30	34	15	10	6	1	1	100
Perak	98	37	50	8	4	1	0	0	0	100
Perlis	163	6	25	39	12	10	6	1	1	100
Selangor	25	8	20	36	32	0	4	0	0	100
Trengganu	344	18	39	28	10	4	1	0	0	100
TOTAL	2141	20	40	25	9	4	2	<1	<1	100

TABLE 6

Percentage Size Distribution of Total Farm Holdings by State

state	sample size	mean acreage	<1	1-1.99	2-2.99	3-3.99	4-4.99	5-7.49	7.5-9.99	≥10	total
Johore	20	3.8	0	25	30	10	0	30	0	5	100
Kedah	712	4.1	7	20	19	13	13	17	7	5	100
Kelantan	278	3.8	4	28	21	11	9	13	8	5	100
Melaka	207	2.9	15	34	11	11	9	16	3	1	100
Negri Sembilan	199	3.4	10	23	14	17	13	16	7	1	100
Pahang	134	6.3	0	8	9	13	11	28	16	16	100
Perak	97	2.7	12	37	10	14	9	12	2	2	100
Perlis	170	3.7	1	16	25	22	17	15	2	2	100
Selangor	25	3.1	4	8	16	44	20	8	0	0	100
Trengganu	355	3.3	12	24	22	13	7	13	7	3	100
Whole Sample	2197	3.8									

TABLE 7

Summary of Plot Size & Number of Plots by State

state	# of households	# of plots	acreage/ plot	acreage/ household	plots/ household
Johore	21	52	1.472	3.646	2.48
Kedah	711	1689	1.736	4.123	2.38
Kelantan	279	709	1.434	3.644	2.54
Melaka	207	482	1.237	2.880	2.33
Negri Sembilan	199	522	1.257	3.298	2.62
Pahang	134	347	2.419	6.264	2.59
Perak	97	227	1.170	2.738	2.34
Perlis	170	395	1.602	3.723	2.32
Selangor	25	41	1.877	3.078	1.64
Trengganu	354	859	1.357	3.293	2.42
Whole Sample	2197	5323	1.551	3.759	2.42

TABLE 8

Double Cropping and Size of Padi Holdings by State

state	sample size	acreage of padi cultivated mean sample	acreage of padi cultivated mean West Malaysia 1970[1]	acreage of padi cultivated median sample	acreage of padi cultivated median West Malaysian 1970[1]	approximate % of land double-cropped sample	approximate % of land double-cropped West Malaysia 1970[2]
Johore	20	1.6	1.5	2.1	1.8	0	52
Kedah	686	2.1	4.0	1.8	3.3	17	30
Kelantan	274	1.6	2.3	1.8	2.5	2	15
Melaka	195	1.0	2.1	1.1	1.9	57	14
Negri Sembilan	195	1.4	1.1	1.5	1.3	21	33
Pahang	133	2.5	1.7	2.5	1.9	4	9
Perak	93	1.2	2.6	1.3	2.5	99	66
Perlis	162	2.8	4.1	2.5	4.1	17	42
Selangor	24	2.5	3.6	2.6	3.7	84	66
Trengganu	336	1.6	2.3	1.8	2.5	26	13
Whole Sample	2118	1.8		1.8		24	
West Malaysia			3.1		2.8		35

Notes: 1. Selvadurai (1972), p. 26.

2. Ibid, p. 13.

TABLE 9

Tenure Status of Farmers by State

state	no. of households in sample	% of farmers who are:[1] full owners	part owners part tenants	completely tenants
Johore	20	50 (70)	40 (20)	10 (10)
Kedah	709	62 (45)	26 (20)	12 (35)
Kelantan	275	68 (25)	24 (55)	8 (20)
Melaka	202	61 (52)	36 (18)	3 (30)
Negri Sembilan	199	81 (87)	16 (7)	3 (6)
Pahang	134	49 (70)	24 (14)	27 (16)
Perak	98	67 (50)	26 (13)	7 (37)
Perlis	170	61 (45)	18 (24)	21 (31)
Selangor	25	16 (60)	24 (25)	60 (15)
Trengganu	355	48 (55)	36 (23)	15 (22)
Total	2188	63 (48)	25 (25)	12 (27)

Note: 1. Selvadurai (1972) figures in brackets.

TABLE 10

Plot Size by Tenancy Type and State

(mean acres per household)

(bracketed figures denote sample size <10 households)

	Johore	Ked.	Kel.	Melak	NS	Pah.	Perak	Perlis	Sel.	Treng.	Whole Sample
Purchased	1.8	1.6	1.7	2.0	1.8	2.6	1.6	1.4	(1.7)	1.5	1.7
Rented	(3.5)	1.7	1.2	.7	1.1	1.0	.8	2.3	(2.9)	1.3	1.5
Inherited	(.8)	1.7	1.4	1.0	1.1	1.8	1.2	1.5	(1.3)	1.1	1.4
Tax paid to govt.	(1.6)	1.7	(1.0)	---	(3.0)	2.3	(1.0)	1.7	(2.3)	2.3	2.0
Govt. grant	1.7	2.1	2.7	3.3	2.0	3.6	1.9	1.9	1.8	2.0	2.3
Shared free of charge	(.3)	.5	.7	.3	(.7)	1.1	(1.9)	(.5)	---	3.4	.5
Open land	---	3.3	(6.0)	---	(1.5)	2.0	(.8)	---	---	(2.8)	2.4
Illegal	---	1.8	---	---	---	(3.2)	---	(1.5)	---	(7.0)	2.0
Rent - pajak	---	(1.3)	(1.9)	---	---	---	---	(1.0)	---	(1.5)	(1.1)
- pawah	---	2.4	(1.7)	---	(2.0)	---	(2.0)	(1.9)	---	(1.4)	1.9
Equal sharing - bagi dua	---	2.6	1.3	(.9)	(1.2)	---	(1.3)	(1.9)	---	1.4	1.5
- bagi tiga	---	(.9)	(1.8)	(.4)	1.4	---	---	---	---	(1.6)	1.3
Whole Sample	1.5	1.7	1.4	1.2	1.3	2.4	1.2	1.6	1.9	1.4	1.55

TABLE 11

% of Land Held Under Different Tenancy Arrangements by State

	Johore	Ked.	Kel.	Melak	NS	Pah.	Perak	Perlis	Sel.	Treng.	Whole Sample
Purchased	44	9	23	17	9	9	7	4	13	15	12.3
Rented	3	11	3	2	2	1	8	5	8	6	6.3
Inherited	4	53	56	59	69	25	71	43	3	35	48.2
Tax paid to govt.	15	2	<1	--	1	15	<1	13	15	8	4.6
Govt. grant	34	18	9	20	12	39	9	27	61	24	20.4
Shared free of charge	<1	2	3	1	1	2	3	1	--	2	1.6
Open land	--	1	1	--	1	7	1	--	--	1	1.4
Illegal	--	3	--	--	--	3	--	4	--	1	1.7
Rent - pajak	--	<1	<1	--	--	--	--	<1	--	<1	0.1
- pawah	--	1	1	--	<1	--	1	1	--	1	0.7
Equal sharing - bagi dua	--	1	4	1	1	--	1	3	--	7	2.4
- bagi tiga	--	<1	<1	<1	3	--	--	--	--	1	0.5
Unknown	--	<1	<1	1	<1	--	--	--	--	--	
Whole Sample	100	100	100	100	100	100	100	100	100	100	100
Sample Size	20	709	275	202	199	134	98	170	25	355	2188

TABLE 12

Uses of Non-Commercialized Padi by State

state	per household: no. in sample	per household: total crop (gantang)	per household: total crop not sold (gantang)	per household: % of total crop sold	% of unsold crop used for: wage payments	rent payments	domestic consumption	zakat	other
Johore	19	307	307	0	0	0	98.9	1.1	0
Kedah	698	675	453	33	0.4	5.4	86.2	7.9	0.1
Kelantan	267	382	371	2	0	7.5	88.2	3.8	0.5
Melaka	205	334	330	1	0.1	2.5	95.1	1.5	0.8
Negri Sembilan	191	377	375	1	0	4.1	91.1	2.8	2.1
Pahang	134	528	509	4	2.4	0	92.8	4.1	0.7
Perak	98	492	440	11	0.1	2.6	94.9	2.5	0
Perlis	163	640	431	33	1.1	4.5	84.6	9.6	0.2
Selangor	25	1430	713	50	0	0	81.3	18.7	0
Trengganu	344	439	415	5	0.2	12.1	84.6	3.1	0
Whole Sample	2145	527	421	20	0.4	5.7	88.2	5.3	0.4

TABLE 13

Purchasers of Padi and Prices Offered by State

state	padi sold per household (gantang)	% of padi volume sold to:				price ($/pikul) of padi				sample size (# sellers)
		coop.	farmers coop.	middle-men	others	coop.	farmers coop.	middle-men	others	
Johore	0	--	--	--	--					0
Kedah	222	2	1	83	14					288
Kelantan	11	0	0	33	67					9
Melaka	4	0	0	67	33					3
Negri Sembilan	2	0	0	0	100					1
Pahang	19	25	0	25	50					4
Perak	52	6	0	76	18					17
Perlis	209	3	0	72	25					79
Selangor	717	100	0	0	0					18
Trengganu	24	0	9	23	69					35
Whole Sample	106	6	1	71	21	27	26	30	29	455

TABLE 14

Yields from Padi Cultivation by State

state	sample size	padi crop per household (gantang)	mean acreage cropped per household (main + 2nd crops-acres)	yield per acre (main crop-gantang)	yield per acre (2nd crop-gantang)	% of land double cropped (approx.)
Johore	19	307	1.61	196	0	0
Kedah	696	675	2.48	289	237	17
Kelantan	266	382	1.64	261	258	2
Melaka	205	334	1.43	267	228	57
Negri Sembilan	191	377	1.66	248	240	21
Pahang	134	528	2.49	233	218	4
Perak	98	492	2.10	267	249	99
Perlis	163	640	3.04	230	212	17
Selangor	25	1430	4.57	311	307	84
Trengganu	344	439	1.96	251	232	26
Whole Sample	2142	527	2.16	264	237	24

TABLE 15

Occupations of Heads of Households

	No. for whom primary occupation	% for whom primary occupation	secondary	tertiary
Padi planter (working on own farm)	1,466	(66.49)	654	17
Rubber tapper	376	(17.05)	566	55
Laborer	71	(3.22)	128	63
Housewife	16	(0.73)	94	25
No work	34	(1.54)	(284)	(1739)
Businessman	28	(1.27)	47	17
"Professional" (teacher, imam, clerk, barber, shopkeeper, police, army)	38	(1.72)	21	6
Other agricultural (fruit orchard, groundnuts, coconut, oil palm, banana, vegetable, tobacco, gardener)	34	(1.54)	173	150
Other manual (foreman, watchman, estate worker, factory worker, contract worker, tobacco factory, tractor driver)	44	(2.00)	41	11
Semi-skilled manual (attap worker, driver, contractor, mechanic, taxi driver, trishaw driver, carpenter)	38	(1.72)	59	30
Fishing and related (fresh water fish, fishmonger, fisherman)	7	(0.32)	24	5
Woodsman	10	(0.45)	7	5
Farm owner (landlord)	8	(0.36)	18	24
Padi planting/harvesting (off-farm)	5	(0.23)	37	17
others	29	(1.32)	50	40
TOTAL	2,204	(99.96)	1,919	465

TABLE 16

Primary Occupation of Heads of Household by State - Percentage Breakdown

	Johore	Ked.	Kel.	Mel.	NS	Pah.	Perak	Perlis	Sel.	Treng.	total sample
No work	0	1	1	2	4	2	2	1	0	1	
Padi planter	25	66	70	63	65	42	66	79	76	73	66
Rubber tapper	55	22	16	18	20	26	19	3	0	8	17
Padi planting/harvesting (off-farm)	0	<1	0	0	0	1	0	0	0	0	<1
Other agricultural	0	1	1	0	2	4	1	1	0	3	
Laborer	0	1	1	6	3	6	3	2	4	6	3
Other manual	5	2	2	1	2	4	1	1	8	2	
Businessman	5	1	1	<1	1	1	3	4	0	1	1
Housewife	0	1	<1	1	2	1	0	0	4	<1	1
Landlord	5	1	0	1	0	0	0	0	0	0	<1
Semi-skilled	0	1	2	2	2	3	1	2	0	3	
"Professional"	5	1	3	1	2	3	2	1	8	2	
Fishing	0	<1	<1	<1	1	1	0	0	0	<1	
Woodsman	0	<1	0	0	0	3	2	0	0	1	<1
Other	0	1	1	1	1	2	0	5	0	1	1
Total	100	100	100	100	100	100	100	100	100	100	100
Total sample size	20	714	277	209	200	135	97	169	25	358	2204

TABLE 17: Breakdown of Sample by Age and Educational Status

Age at next birthday	TOTAL	No longer at school							Still at school				
		0 (Pre-seh.)	1 (Ill-it.)	2 (Literate no sch.)	3 (Primary not comp)	4 (Primary)	5 (Lr. sec.)	6 (Upr. sec.)	6 (Primary)	7 (at Lr. sec.)	8 (at Upr. sec.)	10 (Higher ed.)	11 Unknown
1- 5	1363	1361	1						1				
6-10	1718	342	6		2				1355	6			7
11-15	1821	5	29	5	31	104	13	1	712	854	59		8
16-20	1667	1	57	26	145	443	233	164	2	32	386	165	13
21-25	840	1	55	25	142	345	128	96			2	41	6
26-30	626		107	50	175	222	42	22				5	3
31-35	547	1	145	77	150	153	13	8					
36-40	774		304	100	219	143	4	4					
41-45	532		234	89	152	55	2						
46-50	679		355	107	142	65	5	1		1			3
51-55	389		194	69	79	44	2	1					
56-60	391		216	60	69	42	2	1		1			
61-15	175		108	23	27	17							
66-70	164		116	18	18	12							
71-75	45		26	8	8	1			2				
76-80	50		37	4	6	3							
81-85	11		8	1	1				1				
over 85	14		13		1								
Total:	11,806	1711	2011	662	1367	1648	444	298	2073	894	447	211	40

TABLE 18

Percentage rate of Nonparticipation by age and education:

(of those not at school)

Age	Total	Illit.	Literate No Sch.	Primary not comp	Primary finished	Lr. Sec. finished	Upr. Sec. finished
11-15	73	83	(40)	77	70	77	(100)
16-20	26	19	12	17	22	28	48
21-25	8	16	8	5	5	7	18
26-30	3	6	2	2	2	2	0
31-35	1.3	3	0	1	1	0	(0)
36-40	0.8	1	1	1	0	(0)	(0)
41-45	0.8	1	0	1	2	(0)	(0)
46-50	1.5	2	1	0	2	(0)	(0)
51-55	2.6	4	3	0	0	(0)	(0)
56-60	7.9	12	7	0	2	(0)	(0)
61-65	11	16	4	4	0		
66-70	32	40	6	28	0		
71-75	30	27	(38)	(12)	(50)		
76-80	54	62	(25)	(33)	(33)		
81-85	80	(88)	(100)	(0)			
86-90	(71)	(67)		(100)			
over 90	(100)	(100)					

Note: Bracketed figures indicate sample size of less than 10.

TABLE 19: Those with no work, by age and educational status

Age at next birthday	No longer at school							Still at school				
	0 (presch)	1 (Illit)	2 (Literate No Sch)	3 (Primary not comp)	4 Primary	5 Lr. sec.	6 Upper sec.	31 (Primary)	47 (at lr. sec.)	51 (at upr. schl)	61 (Higher ed.)	Unknown
1-5	1357	1						1				0
6-10	343	2		5				1354	6			7
11-15	7	24	2	24	73	10	1	711	842	57		5
16-20	1	11	3	25	96	65	80	3	31	370	157	6
21-25	1	9	2	7	18	9	17	1		2	24	2
26-30	1	6	1	4	5	1				1	4	1
31-35	1	5		1	1							
36-40		3	1	1			1					
41-45		2		2								
46-50		8	1		1							1
51-55		8	2									
56-60		26	4		1							
61-65		17	1	1								
66-70		46	1	5								
71-75		7	3	1	2			1				
76 and over		41	2	3	1			1				

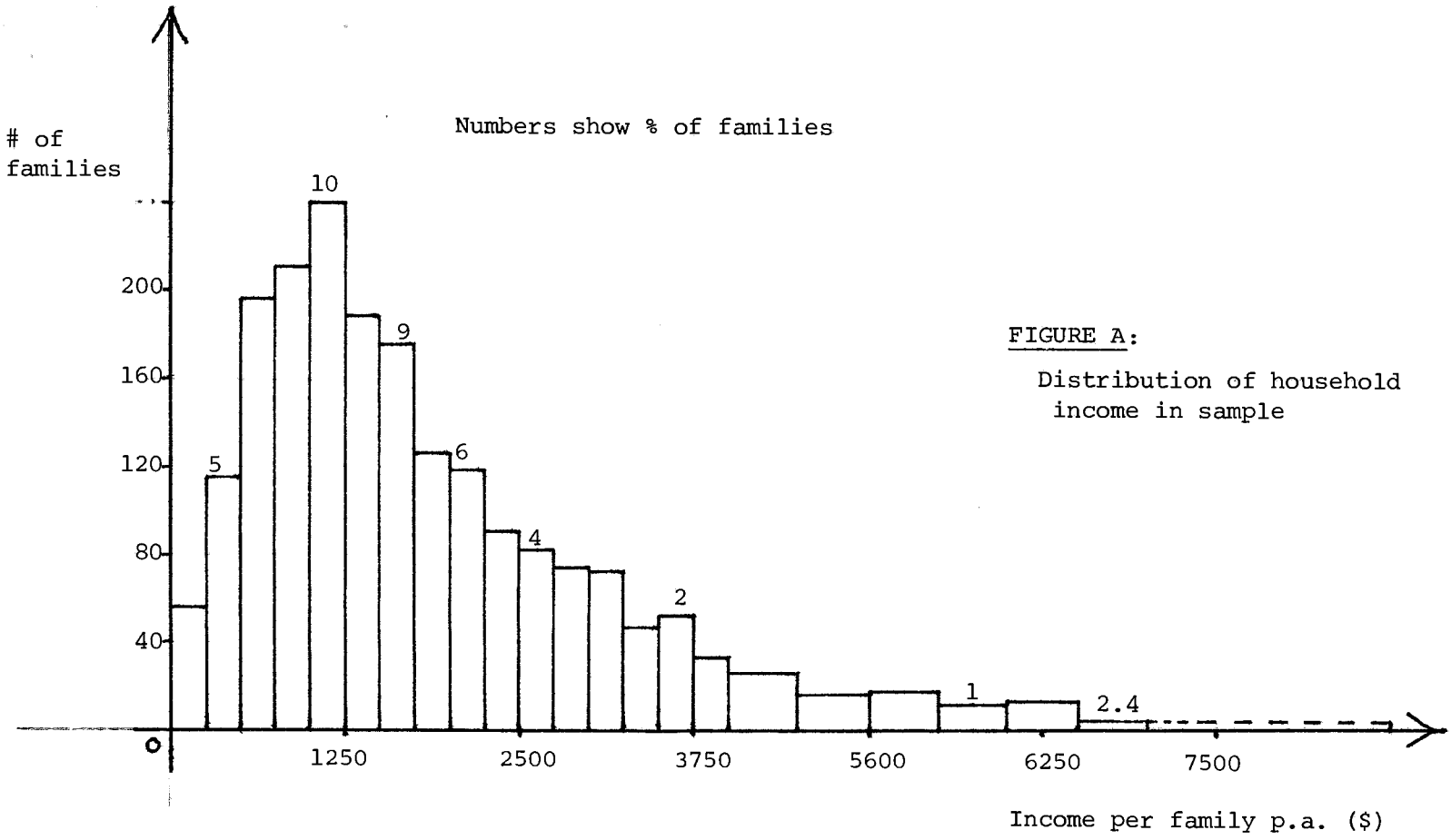


FIGURE A:

Distribution of household income in sample

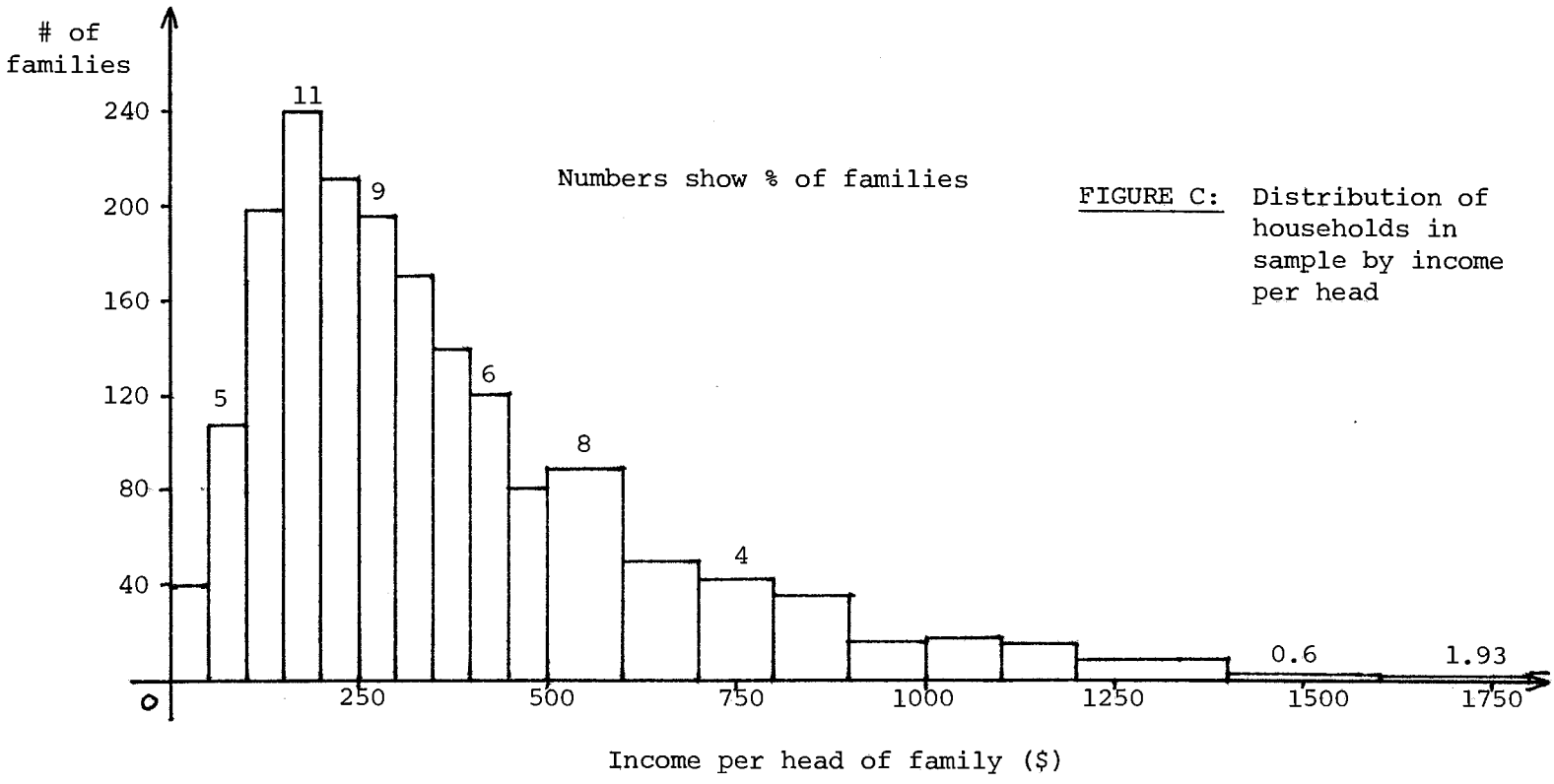
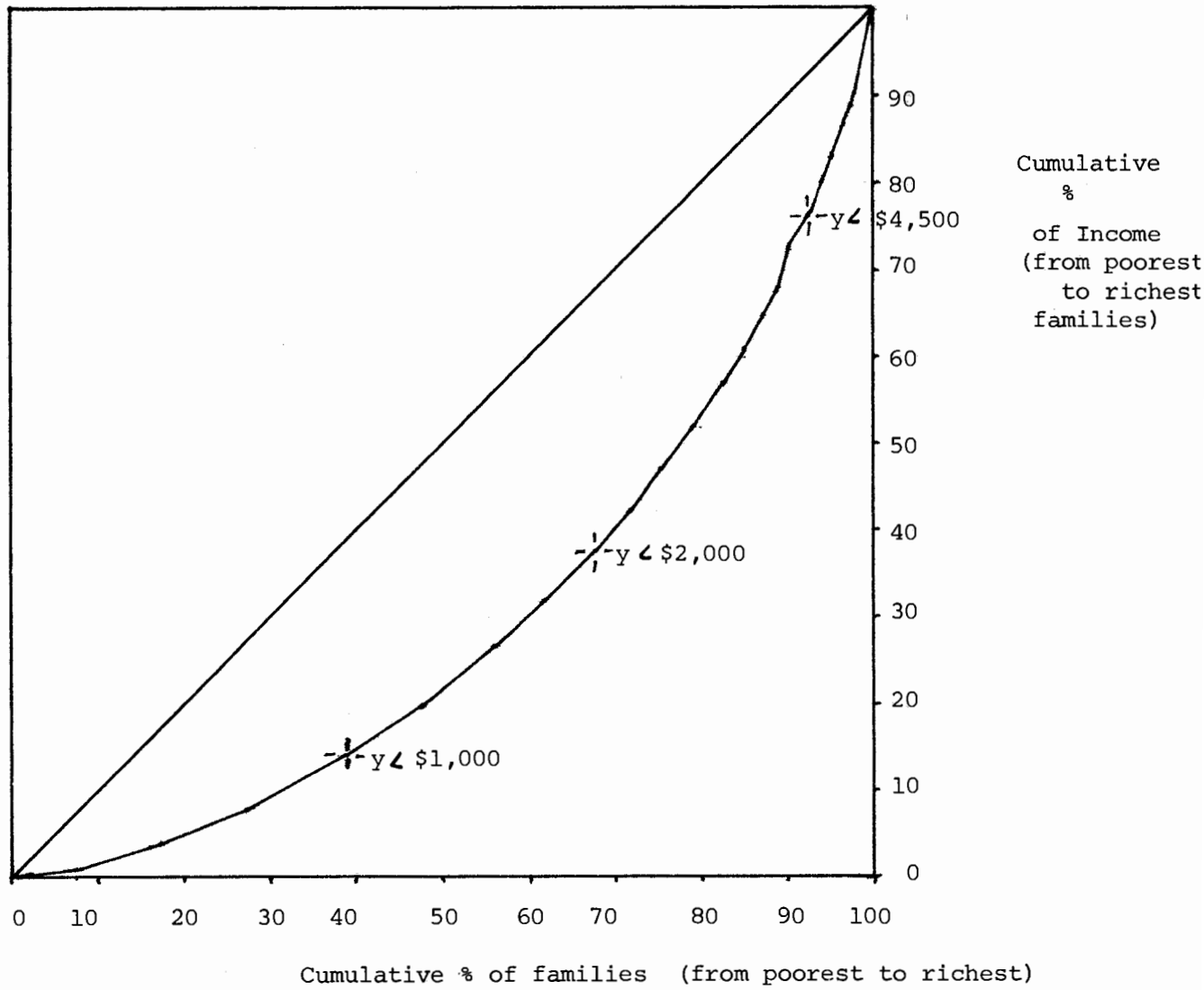


FIGURE C: Distribution of households in sample by income per head

FIGURE B: Lorenz curve of income distribution of households sampled



Gini Coefficient: .430

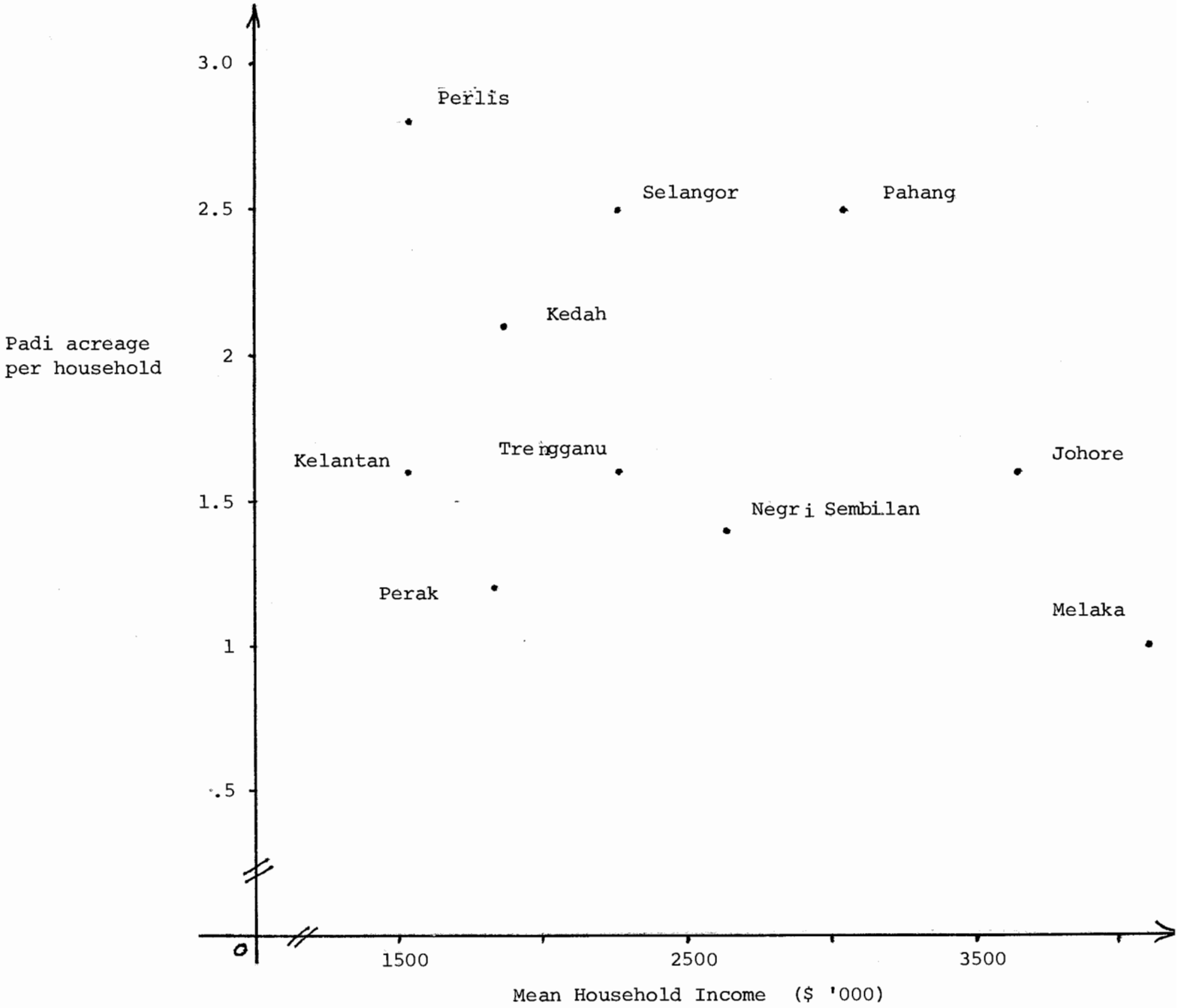


FIGURE D: The Graph of Association between average padi holding per household and mean household income

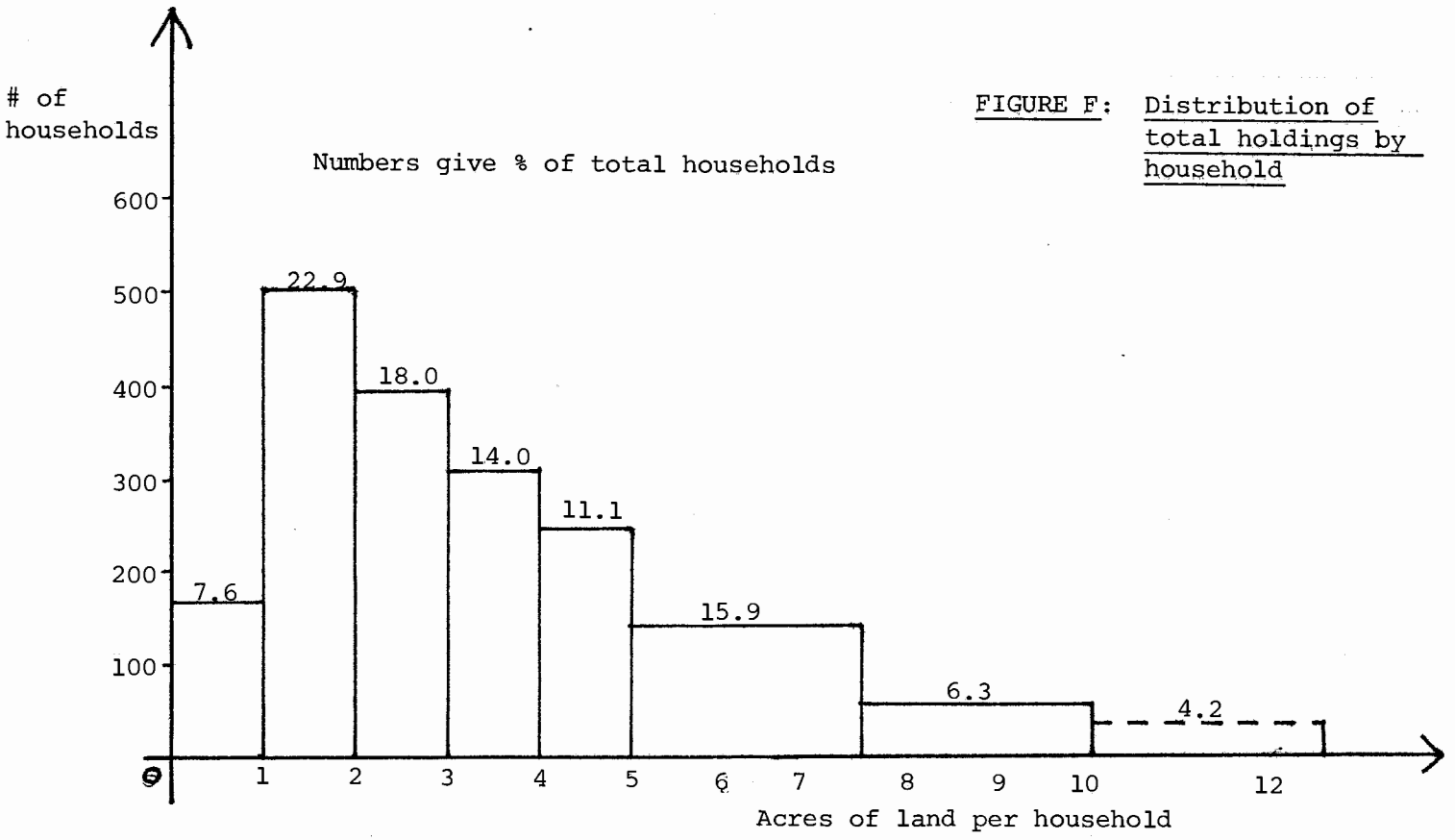


FIGURE F: Distribution of total holdings by household

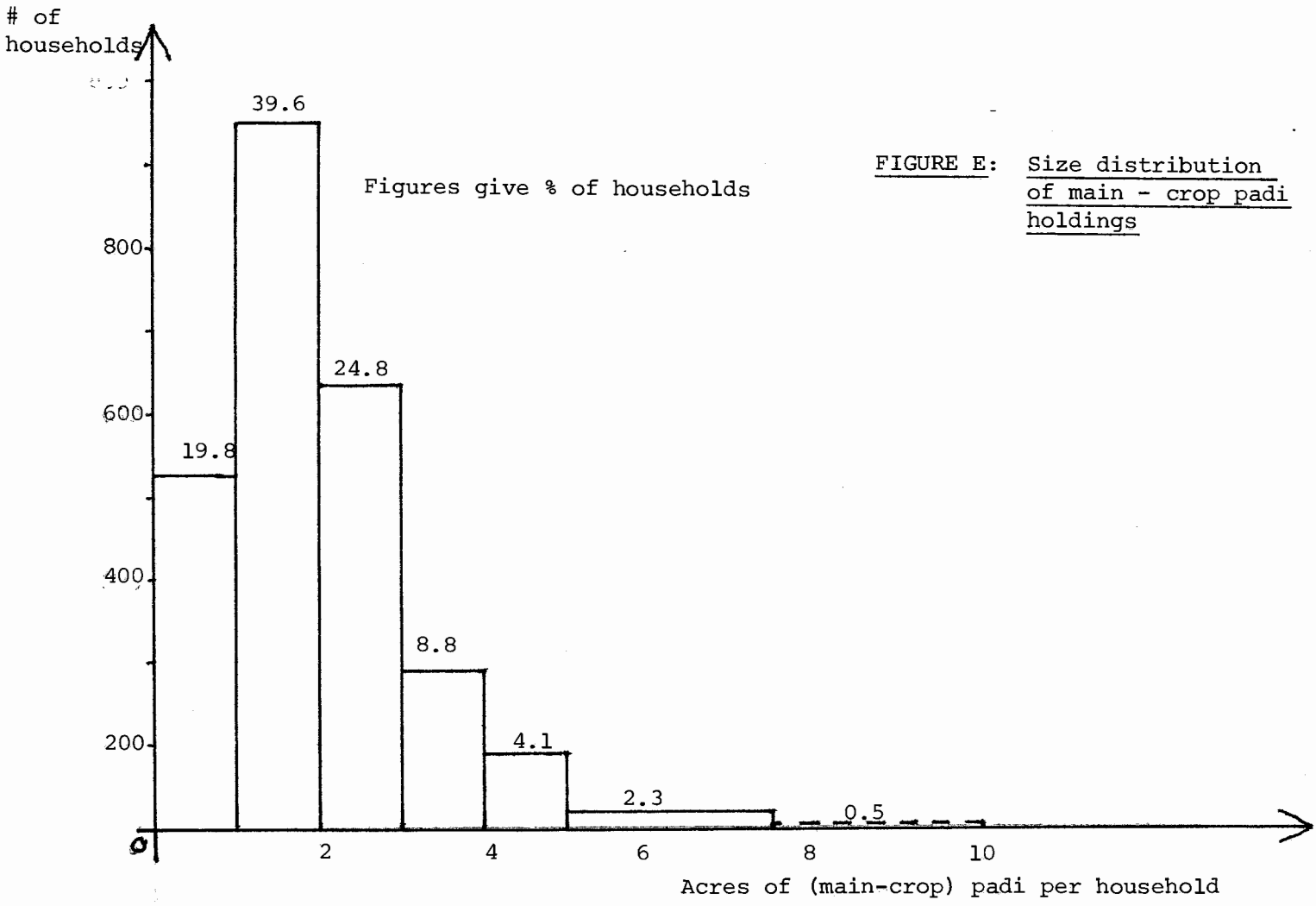
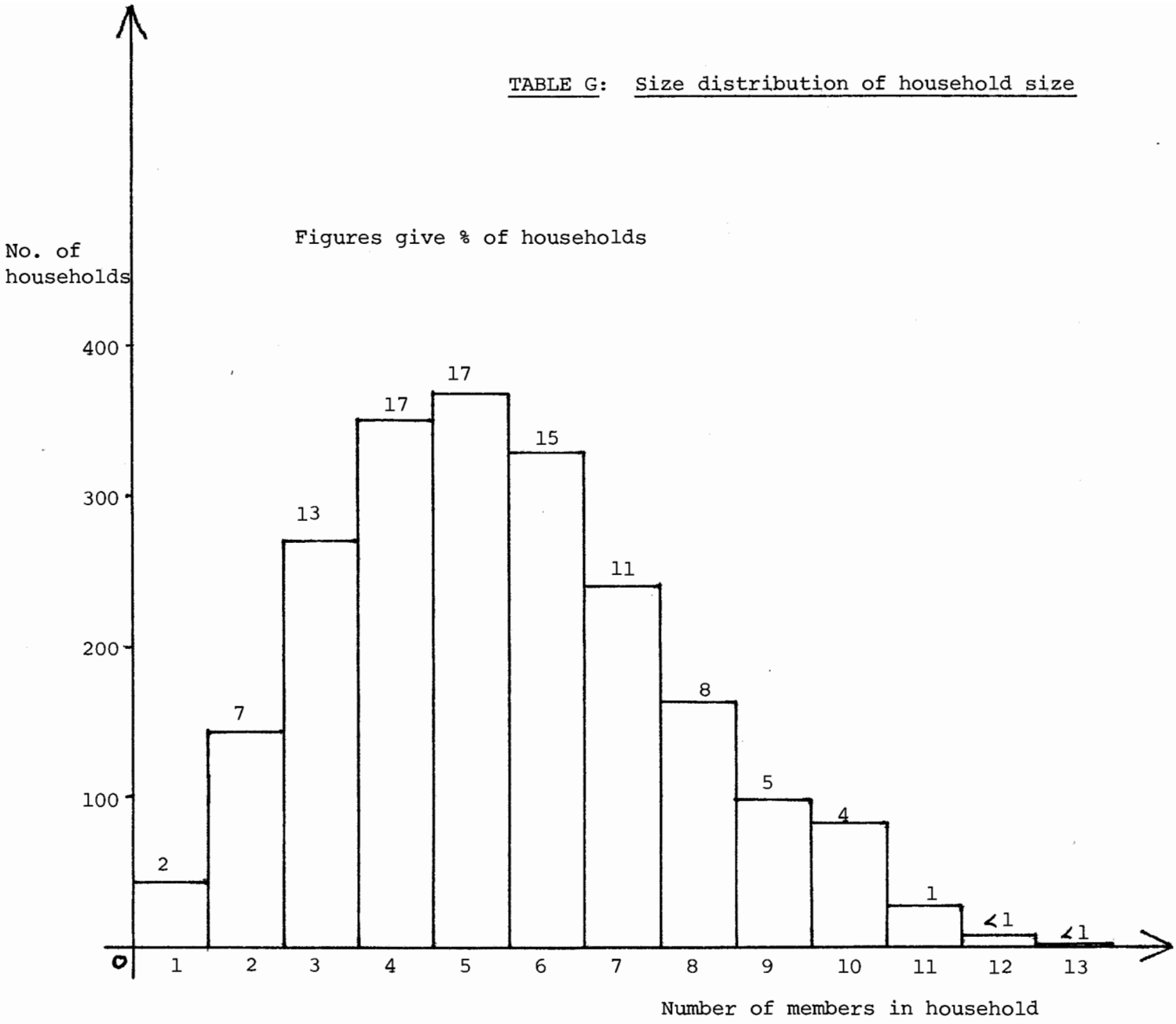


FIGURE E: Size distribution of main - crop padi holdings

TABLE G: Size distribution of household size



APPENDIX I

A. Chronology of When the Surveys Were Undertaken

(figures show no. of households)

	1976	1977	1978	1979
January			117	97
February		80	38	174
March			77	
April		1	70	
May		100	1	
June		36	187	
July		11	197	
August		63	160	
September		134	161	
October	79	160		
November		1	63	
December		59	53	

APPENDIX I

B. Detailed Breakdown of When Districts Were Surveyed

(figures give no. of households)

1976:	October:	Kedah: Kuala Muda	58	total: 79
		Trengganu: Besut	21	
1977:	February:	Kelantan: Machang	20	total: 80
		Pasir Mas	40	
		Tanah Merah	20	
	May:	Negri Sembilan: Remban	20	total: 100
		Tampin	18	
		Perlis: Perlis	60	
	June:	Kelantan: Pasir Puteh	8	total: 36
		Perlis: Perlis	18	
	July:	Kelantan: Pasir Puteh	10	total: 11
	August:	Pahang: Pekan	30	total: 63
		Temerloh	29	
	September:	Kelantan: Machang	32	total: 134
		Tanah Merah	55	
		Trengganu: Dungun	19	
		Marang	28	
	October:	Kedah: Baling	21	total: 160
		Kuala Muda	53	
		Sik	26	
		Negri Sembilan: Remban	39	
		Seremban	20	

Appendix IB (continued)

	November/ December:	Johore:	Muar	19	total: 59
		Melaka:	Alor Gajah	20	
			Jasin	20	
1978:	January:	Perak:	Larut & Matang	30	total: 117
		Selangor:	Sabak Bernam	24	
		Kedah:	Kulim	60	
	February:	Pahang:	Jerantut	20	total: 38
		Trengganu:	Kemamen	18	
	March:	Kelantan:	Machang	17	total: 77
			Pasir Mas	45	
			Ulu Kelantan	14	
	April:	Trengganu:	Ulu Trengganu	70	total: 70
	June:	Kedah:	Kubang Pasu	25	total: 187
			Padang Terap	38	
			Sik	37	
			Yan	23	
		Pahang:	Lipis	35	
			Ramb	15	
	July:	Kedah:	Kota Satar	70	total: 197
			Kubang Pasu	42	
		Perlis:	Perlis	84	
	August:	Kedah:	Kubang Pasu	6	

Appendix IB (continued)

		Melaka:	Alor Gajah	67	total: 160
			Jasin	87	
	September:	Kedah:	Kubang Pasu	159	total: 161
	November:	Perak:	Kuala Kangsar	63	total: 63
	December:	Kedah:	Kota Setar	50	total: 53
1979:	January:	Negri Sembilan:	Kuala Pilah	18	total: 97
			Remban	74	
	February:	Trengganu:	Kuala Trengganu	173	total: 174
			TOTAL:		2,116

Also:	60 w/date uncoded		60
	2 w/ridiculous dates		
	April 77: 1		
	May 78 : 1		
	Aug. 74 : 1		7
	Nov. 77 : 1		2,183
	Nov. 79 : 1	observations expressly excluded:	25
	Total: 67		2,208

Notes: Counting Kubang Pasu as 2 surveys, then there are about 48 "mini-surveys".

# of districts in W. Malaysia':	78
# of districts sampled ... at least once:	40
... at least 10 times:	35
... at least 40 times:	15

APPENDIX II

Distribution of household income in sample

Income bracket	Number of households	% of households
<250	56	2.6
250 - 499	116	5.5
500 - 749	197	9.3
750 - 999	212	10.0
1000 - 1249	240	11.3
1250 - 1499	189	8.9
1500 - 1749	176	8.3
1750 - 1999	126	5.9
2000 - 2249	119	5.6
2250 - 2499	90	4.3
2500 - 2749	82	3.9
2750 - 2999	74	3.5
3000 - 3249	72	3.4
3250 - 3499	47	2.2
3500 - 3749	52	2.5
3750 - 3999	33	1.6
4000 - 4499	53	2.5
4500 - 4999	32	1.5
5000 - 5499	33	1.6
5500 - 5999	23	1.1
6000 - 6499	24	1.1
6500 - 6999	16	0.8
7000 - 7499	8	0.4
7500 and up	50	2.4
TOTAL	2120	100

APPENDIX III

The Size distribution of total farm holdings

Size of holdings (acres)	From sample: No. of households	From sample: % of households	All Malaysia % of households[1]
<1	167	7.6	10
1 - 1.99	503	22.9	23
2 - 2.99	395	18.0	21
3 - 3.99	307	14.0	14
4 - 4.99	245	11.1	10
5 - 7.49	349	15.9	15
7.5 - 9.99	139	6.3	4
10 and up	93	4.2	3

Notes: 1. Selvadurai(1972). Data refers to about 1970.

FOOTNOTES

1. An example of this perception is in Snodgrass (1974), p. 26.

2. According to Selvadurai (1972), there were 296,000 padi farmers in West Malaysia in 1970. If half of these fall into the category of single-cropping farmers, this represents 148,000 households or over 800,000 people.

3. Selvadurai (1972), p. 20.

4. Only 2,210 questionnaires have been coded and the analysis in this paper was based on these replies only. Approximately 2,700 households were surveyed altogether.

5. It turns out that almost a quarter (24%) of the land covered by the survey was double-cropped.

6. Notably, in Glenn P. Jenkins, "Proposal to Study the Sources and Determinants of Income of Single Cropping Padi Farmers in Malaysia", (November 26, 1979); and also an untitled listing of variables.

7. There are 78 districts in West Malaysia.

8. Selvadurai (1972), p. 11, projected that 70% of the padi acreage would be double-cropped by 1975. This would mean that probably about 80,000 single-cropping padi farms remained in 1978, of which the survey sampled about 2,000.

9. This type of distribution has been widely fitted to income distributions in European and American countries.

10. Selvadurai (1972), p. 26.

11. According to Selvadurai (1972), p. 13, the average main crop yield in 1970 was 427 gantangs per acre and the off season yield in the same

year was 464 gantangs per acre.

12. Snodgrass (1974) assumes a figure of 5.5.

13. "Well-educated" refers to anyone who has completed lower-secondary school.

REFERENCES

S. Selvadurai, Padi Farming in West Malaysia (Ministry for Agriculture and Fisheries, Malaysia, 1972).

D.R. Snodgrass, Trends and Patterns in Malaysian Income Distribution, 1957-1970 (Harvard Institute for International Development, Discussion Paper No. 2, September 1974).

APPENDIX V:

A Further Note on Occupations.

The following information on occupations was not available in time for inclusion in the main body of the paper.

Salient points:

* Occupational data covers 11,631 people, including children. Of these, 5,660, or 48.7% have at least one occupation.

* 79% of working indivisuals have at least two jobs, and almost 17% have three or more occupations.

* The most popular occupations are:

Padi Planter (own farm):	5,046 individuals	(89% of total)
Rubber Tapper:	1,935 individuals	(34% of total)
Housewife:	1,830 individuals	(32% of total)
Labourer:	426 individuals	(8% of total)
Tobacco Farmer:	195 individuals	(3% of total)
Fruit orchard man	141 individuals	(2½% of total)
Businessman	137 individuals	(2½ % of total)
Padi planter/harvester	131 individuals	(2½% of total)
Vegetable Grower	116 individuals	(2% of total)

* For primary occupations, women account for 44% of workers, excluding those in the "housewife" category. Interestingly more than half of padi planters and over 40% of rubber tappers are women.

TABLE A5.

Breakdown of occupations of those sampled.

Occupation	Primary Occupn. (No. of Indivs)	% in primary occn. who are women (where sample over 10)	Secondary occupn. (No. of indivs)	Tertiary occupn. (No. of indivs)	Total (No. of indivs)
No work	5951	49.9	7132	10768	
Barber	6		3		9
Businessman	41	22.0	72	24	137
Witch Craft	0		2		2
Attap Worker	0		10	8	18
Mat maker	1		13	4	18

Occupation	Primary Occupn. (No. of indivs.)	% in primary occn. who are women (where sample over 10)	Secondary occupn. (No. of indivs)	Tertiary occupn. (No. of indivs)	Total (No. of indivs)
Labourer	176	8.5	175	75	426
Driver/Conductor	24	0	8	1	33
Fruit Orchard man	8		48	85	141
Foreman	4		2		6
Teacher	39	23.1	5	1	45
Hospital Attendant	4			3	7
Hostel warden	1				1
Priest	1		3	1	5
Fresh water fish	1		1	2	4
Watchman	8		4	1	13
Baby Sitter	1		2		3
Fish Monger	3		4	1	8
Nurse	1				1
Groundnuts grower	4		16	11	31
Woodsman, timber, mill worker	24	0	7	4	35
Own farm	18	38.9	31	39	88
Coconut farmer	1		25	33	59
Clerk	32	25.0	1	1	34
Estate workers	27	29.6	6	6	39
Oil palm worker	17	35.3	2	1	20
Factory worker	55	50.9	7	5	67
Contract worker	29	0	23	2	54
Contractor	1				1
Harvest coconut	1		5	9	15
Mining	3			2	5
Mechanic	6		1		7
Planting/Harvesting (off-farm, padi)	16	37.5	83	32	131
Rubber tapper	826	40.8	965	144	1935
Fisherman	5		26	3	34
Shopkeeper	31	38.7	16	3	50
Headman	2		1	1	4
Padi planter (own farm)	3236	50.5	1752	58	5046

Occupation	Primary Occupn. (No. of indivs.)	% in primary occn. who are women (where sample over 10)	Secondary occupn. (NO. of indivs)	Tertiary occupn. (No. of indivs)	Total (No. of indivs)
Banana farmer	6		25	20	51
Police/Army	17	0		1	18
Vegetable grower	10	20.0	77	29	116
Supervisor	1				1
Tailor	3		1		4
Taxi Driver	3		1		4
Tobacco factory	2		5	1	8
Tobacco farmer	19	36.8	106	70	195
Tractor driver	6		7	2	15
Trishaw driver	2		3		5
Gardener	16	0	1	1	18
Carpenter	17	0	41	24	82
Typist	18	94.4			18
Tapico/Sweet potato cultivation	1		10	3	14
Housewife	796	99.6	850	184	1830
Others	90	16.7	20	36	146
No response and unknown	8		15	12	35
TOTAL EMPLOYED	5660	51.9	4484	943	11087
Total overall	11631	50.8	11616	11711	

May 17, 1980.