AGRICULTURAL DEVELOPMENT SYSTEMS EGYPT PROJECT

UNIVERSITY OF CALIFORNIA, DAVIS

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WORKING PAPER

USAID/EGYPT

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The authors would like to thank Peter Lee Simmons for research assistance.

Assistance from the Agricultural Development Systems Project of the University of California, Egyptian Ministry of Agriculture, and USAID, is gratefully acknowledged, but the author is soley responsible for the views expressed in this paper.

Economics
Working Paper Series
No. 8

May, 1981

Agricultural Development Systems:
Egypt Project
University of California
Davis, Ca 95616

SUMMARY OF MAJOR CONCLUSIONS

1. There is a sharp contrast between landless workers and even the poorest farm holders, whether measured by wealth, income sources, or labor utilization. Whereas landless workers get roughly 90% of their income by working for others, even farmers with less than one feddan receive only 33% of their income from such a source. Landless workers are clearly heavily dependent upon agricultural labor for their income.

2. Only 20% of the population were landless in our sample. This is considerably lower than that found in national studies in the late 1960s or even early 1970s. This fact, plus the considerably lower percentages of prime age males in the demographic profile of landless workers compared with the whole sample, (Or for the farm holders) suggest that considerable out-migration of landless workers has taken place. Our survey did not, unfortunately, provide useful direct information on migrants.

3. Landless workers' principal crop labor activities for the major field crops (cotton, maize, wheat, rice) are fertilizer application, hoeing, harvest, and post-harvest operations. Except on the very largest farms, they do not work either with animals or on irrigation and land preparation.

4. The implications for mechanization policy are:

   a) Irrigation mechanization appears to have a low social cost;

   b) Since land preparation is already nearly entirely mechanized in the sample area, most of the "low social cost" mechanization has already occurred, with the exception noted. Mechanization of field crop operations which the landless perform will sharply reduce their incomes. This poses some clear trade-offs for policy makers: One

should be certain that the social benefits (e.g. increased crop yields) are indeed high before pushing such mechanization.

5. Landless appear to be underemployed, working an average of 164 days per year. This may be because of their age (more than one-third of the adult males in the sample and in some villages, more than one-half of them are over 45 years old) or because we are observing a "backward bending supply function" for labor.

6. On the whole, farm families are much less important suppliers of hired farm labor than the landless. Farmers spend most of their time and derive most of their income from on-farm activities.

   Even farmers with less than one feddan derive 47% of their income from their farms. Most labor on the farm is performed by family members, although all farms hire some labor. But even the 0-1 feddan holders devote nearly two-thirds of family labor time to their farms.

7. Farm families devote a large proportion of their time to caring for animals. This is especially true for women, but men devote at least one-third of their time to caring for livestock. On small farms men devote two-thirds of their on-farm labor time to animals

   a) This fact, plus the cash income and substantial home consumption which farm animals provide, suggest that mechanization will not induce farmers to get rid of their animals and reduce their planting of birsim.

   b) The survey data lend some plausibility to the argument that price policies which have subsidized meat and dairy prices have reduced the supply of adult male labor from small farms to the rural labor market. Holders of between 1 and 5 feddans get roughly 20% of their cash income from animal products.

8. Non-cultivating strata are not important suppliers of agricultural labor.
9. Women do a considerable amount of the hired field labor, although they seem to specialize in certain operations (detailed in an appendix). They also perform significant amounts of family labor. Current official statistics of the agricultural labor force contain serious downward bias, due to the undercounting of women's labor in agriculture.

INTRODUCTION

In a previous working paper we saw that rural real wages have increased markedly in the past decade. We also saw that there is little reason to suppose that changes in the demand for hired crop labor in agriculture have been the primary force behind these historically unprecedented changes. Consequently, we are led to scrutinize the supply of labor, which is the subject of this and subsequent working papers.

In this paper we shall try to provide answers to these questions:

1) What is the socio-economic composition of rural Egypt? Our survey data on social stratification, on income sources and on labor utilization are relevant to a wide variety of policy questions in agriculture.
2) Who are the hired agricultural workers? To what extent does the agricultural labor force depend largely upon farm labor for its income and employment?
3) Who performs exactly what sort of labor?
4) What are the implications for labor supply and for agricultural mechanization policy?

The remainder of this working paper is organized as follows: First, we shall describe the survey which generated the data upon which our analysis is

based. Second, we shall use this data to describe the socio-economic structure of Egyptian villages. We shall focus upon the landless agricultural workers and farm owners, although the non-agricultural population is also taken into account. We shall provide information upon income and wealth levels and sources, employment activities, education and demography. This information permits some tentative conclusions about the origins of the "labor shortage" and the kind of trade-offs which confront agricultural policy makers.

THE SURVEY

The data were collected from eight villages in Sharqiyya Governorate.* There were several reasons for the selection of this location. First, our collaborators from Zagazig University had considerable experience in and knowledge of the area. They were well known to local government personnel, whose cooperation was essential to the success of the survey. Second, previous work on farm mechanization had been conducted in the area by Wayne Dyer of Stanford University. We hoped that our work could be joined with his to generate a fairly complete picture of the trade-offs of labor, animals, and machines. Third, we felt that we sacrificed little by choosing Sharqiyya. The governorate is clearly quite representative of the Delta, with different marakiz in each of the three major crop zones of the Delta.

The selection of villages was based on the following criteria: 1) Inclusion of at least two villages from each of the major crop zones of the Delta (Northern Delta rice zone; mid-Delta cotton-maize-wheat zone; Cairo vegetable zone); 2) Inclusion of both large and small villages; 3) Inclusion of villages which were both close to and far from Zagazig, the major town and capital of the governorate. It was felt that all of these different

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* Data from one village, el-Kanayat, was not yet available at the time of writing.

characteristics might affect the structure and performance of rural labor markets. After a complete census of all eight villages was completed by Yehia Badran, a graudate student in the Department of Agricultural Economics at Zagazig University, our sample was stratified into five groups. The strata were: 1) farm holders, in turn stratified by farm size; 2) landless agricultural workers; 3) workers in agriculturally related activities; 4) workers in non-agriculturally related activities; and 5) service workers (largely government employees). Sampling was random within each strata. Mr. Badran and Mr. Ibrahim Youssef (also of Zagazig University) administered the questionnaire. Interviews were conducted from December, 1979 through February, 1980, usually either in the informant's house or at the gama'iyya headquarters. Mr. Badran and Mr. Youssef were aided by ten assistants from the Ministry of Agriculture. Each interview lasted at least one day, and required as many as three days in some cases for the farmers.

A PROFILE OF THE LANDLESS AGRICULTURAL WORKERS

Landless agricultural workers made up roughly 20% of the sample population (See Table 1). This is in marked contrast to other studies, which have estimated the proportion of the landless in the population at 40% (Radwan, 1977) or 35% (World Bank, 1975). The field researchers commented often upon the difficulties in locating landless workers, and considerable effort was expended locating them.

Such a low percentage of the landless in the total rural population could be explained in two ways: 1) Our data are biased and/or unrepresenative of the nation as a whole, or 2) Substantial numbers of landless workers have left the countryside. Of course, it is impossible to disprove the first

hypothesis. Nevertheless, as argued above, we believe that Sharqiyya is reasonably representative of at least the Delta Governorates. Nor do we believe that landless workers were so reticent that they shunned the field researchers. Indeed, the field workers had no difficulty communicating with those landless whom they were able to locate. We have considerable confidence in the rigor and thoroughness of the survey, and especially, in the field workers.

Furthermore, in some respects our data show very similar patterns with other studies: For example, the relatively low degree of income inequality and the tendency for family size to rise with wealth and income were also noted by the World Bank study (Ikram, 1980; see Tables 3 - 5). In addition, as Table 6 shows, the demographic profile for landless workers shows a "hole" in the prime age groups in comparison with the (presumably less mobile) land owners. This would be consistent with the hypothesis that the proportion of landless workers in our sample is low because many of them have left the countryside. The migration issue is discussed in more detail in the conclusion in this working paper.

Turning to the socio-economic position of the landless, the discontinuous gap between the landless and even the very smallest landowner is striking. This perhaps least striking for income, but is very noticeable for wealth and, especially relevant here, for income sources and labor activities. It is fair to say that landless workers constitute a distinct social class, with markedly different patterns of work and life from small landowning peasants.

This is in contrast to earlier studies, (Riad 1965; Abdel Fadil 1975; Radwan 1977), which have emphasized the similarities between the landless and

the poor peasants. Their average incomes are low, of course. (See Tables 4 and 5). However, average landless family income is some 80% of the income of the next poorest group, the 0-1 feedan farm owners. Their family income is only some 7% of the wealthiest group of the agricultural population, those holding more than 20 feddans. Nevertheless, since family size increases standards, per capita income is distributed fairly equally by international standards. Average per capita income of the wealthiest group, 20+ feddan holders, is only six times larger than that of the landless.

The distribution of wealth, is, as usual, considerably less egalitarian than that of income: average family wealth of the landless is only 17% of that of the wealth of those families owning between 0-1 feddans. As Table 7 shows, wealth holdings are dominated by land, which accounts for some 73% of total wealth. This is unsurprising; given the extreme scarcity of land in Egypt, it makes a very great difference indeed whether one owns even the smallest parcel of land. Also unsurprisingly, differences in human capital clearly do not offset other wealth inequalities.

This sharp difference between small landholders and the landless also appears in the data on income sources and labor utilization. While the landless get nearly 90% of their income from the rural labor market, even those owning less than one feddan get only one-third of their income by working for others, while those owning more than one feddan received less than 10% of their income from any labor market (Table 9). It appears that the landless spend roughly 70% of their time working in agriculture. (Table 10) As we shall see, the landless supplement farm labor with jobs in other economic activities only to a limited extent. The landless are heavily dependent upon hired farm labor for both employment and income to a much greater

extent than farmers owning more than one feddan, and even to a qualitatively greater extent than those with farms of less than one feddan.

We may be considerably more specific about the work activities of the landless. With the exception of the minority of farms which exceed 10 feddans, the landless are almost never employed in caring for livestock. This should be borne in mind when reading Table 11, which shows that with the exception of the very largest farms (over 20 feddans) a majority of all farm work (defined as crop labor plus livestock work) is performed by family members. However, the same table also shows that even the very smallest farms also hire outside labor: there appears to be no such thing as an entirely "labor self-sufficient" farm.

However, such an aggregation conceals important differences between the kinds of work typically performed by the hired as opposed to family workers. As Tables 12-15 show, hired workers typically perform a majority of total cotton labor. (With the exception of 0-1 feddan farms), over one-third of rice and wheat labor (with the same exception), and somewhat less than one-third of the maize labor.

It is also evident that the percentage of total farm labor, whether aggregate or for specific crops, which is performed by landless workers rises with farm size.* It may be noted that the relatively high proportion of hired to total labor for the price controlled crops of cotton and wheat lends some plausibility to the "profit squeeze" argument.

The landless's employment is concentrated in certain specific crop operations for these 4 major field crops. They do very little work in land

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* However, the 10-20 feddan farms depart from this pattern.

preparation, which is heavily mechanized and employs largely family workers. The landless also perform relatively little irrigation labor, except, as usual on the very largest farms. By contrast, their principal tasks appear to be such post-land-preparation tasks as hoeing, fertilizer application, harvesting and post-harvest operations.

The implications for mechanization policy are as follows:

1) Mechanization of irrigation will displace little hired labor.
2) Further mechanization of field operations (e.g., cotton flame-throwers for weed control) will indeed reduce landless workers' farm employment.
3) Ceteris paribus, such changes will sharply reduce the income of the landless, since they are heavily dependent upon such farm labor for their incomes.
4) The same may be said for additional mechanization of post harvest operations.
5) Insofar as mechanization of these operations is believed to increase land yields and production, there are some clear trade-offs for policy makers.

Our evidence indicates that with the exception of mechanizing irrigation, most of the "socially costless" mechanization (i.e. land preparation) has already occurred. Further free lunches are not being served. It is therefore vital to have a clear specification of the precise crop yield and other social benefits of mechanization since the social costs are not trivial.

It is important to note that landless household heads seem to be under-employed, working and average of only 164 days per year. (Using 300 days as a "full employment" norm in Egypt as in the ILO study.) Even in the busiest months (October, November, May, and June), household heads are working only

about twenty days per month. Unsurprisingly, there is also considerable seasonal fluctuation in employment. It also appears that the landless do not find much off-farm work to make up for the seasonal lulls in agriculture (See Table 16 and Figure 1).

One may wonder how to reconcile this evidence with that which we reviewed in our first working paper on the extent of increase in rural real wages: There does not appear to be a "labor shortage," if this is defined as the "unavailability" or the full employment of hired laborers. Nor do the seasonal bottlenecks appear to be as severe as is sometimes thought: even in the busiest months, the landless male workers do not work for the whole month.

At this stage of our research we are unable to resolve this puzzle. We shall return to it in future working papers, when we shall estimate labor supply functions. There are a number of possible explanations for the coincidence of the observed employment pattern and rising rural real wages.

1) We are observing a "backward bending supply curve" for landless workers.
2) Since over one-third of the adult male landless workers (one-half in some villages) are over 45 years of age, they may be unable to work full time.
3) The "seasonal bottlenecks" which are so often referred to may be less than one-month in duration: e.g. the need to harvest wheat, plant maize, and transplant rice simultaneously may occur within a ten day period. In this case, there would still be seasonal bottlenecks, even though the landless were employed only for twenty days during the peak season.
4) The fact that land preparation is already almost entirely mechanized in the sample area may mean that the May/June seasonal bottleneck has <u>already</u> been removed.

FARM HOLDERS' LABOR ACTIVITIES

In this section we shall:

1) Briefly outline the income sources of farm holders.

2) Examine their labor activities in detail.

The overall distribution of income has laready been discussed: It is apparent from Table 9 that a very high percentage of farmers' income comes from agriculture. The bulk of their income is from crops, rather than livestock. There appears to be no consistent pattern relating the percentage of income from livestock and farm size. (Table 20). Farm holders with more than one feddan derive very small percentages of their incomes from hiring themselves out, whether for agricultural work or for other activities. Even those holding the very smallest farms derive only one-third of their income from the labor market. Finally, renting of assets, whether land or machinery, was not an important source of income for farmers.

Turning to labor utilization, Tables 10 and 11 show that the large majority of the total labor time of the family is devoted to the farm. Not only is most farm labor performed by family members, but most of the total work time of all members of holders families is devoted to farm labor: even for the smallest farms, some two-thirds of total family labor time is devoted to the farm. For farms larger than one feddan, this proportion rises to nearly 90%. On the whole, families holding more than one feddan are not important suppliers of agricultural hired labor. However, since farm holders with less than one feddan account (as a mode) for some 50% of holders, (or perhaps 25% of the rural population), they do supply work to the labor market, but less than their proportion in the population would at first indicate. In subsequent

papers we shall try to estimate the percentages of total hired labor time which are supplied by various social groups.

Some further clues as to the situation of labor supply may be gleaned from our information on on-farm labor use. We have seen that the bulk of total farm labor comes from the farm family. (See above and Table 11). Unsurprisingly, the majority of adult family labor is performed by men, although the percent which is done by women is considerably larger than is often supposed (Table 17). Indeed, current official agricultural labor force statistics, which give only 6% of the agricultural labor force as female, contain serious downward biases, due to the undercounting of women's labor. A somewhat higher percentage of on-farm labor being performed by women on small farms (0-1 and 1-3 feddan farms) is consistent with other information which indicates that males from such farms supply relatively more labor to the hired labor market than those of other farm sizes. The differences are not great, however, and there is nothing here to contradict the basic finding that farm holders supply relatively little time to the hired labor market.

A potential key to the low quantity of labor supplied to the labor market from even small farms may be found in Table 18, which gives the breakdown of farm family labor use between crops and livestock.

It may be seen that: 1) Women spend the bulk of their time in agriculture working with livestock.

2) The amount of time which adult males spend tending livestock varies inversely with farm size, but with the exception of the largest farms, at least 30% of on-farm adult male labor is devoted to livestock.

On small farms, adult males devote nearly two-thirds of their on-farm labor time to animals.

A comparison of Tables 18 and 20 will show a discrepancy between the percentage of income derived from livestock and the amount of time devoted to animals. This is because home consumption has not been included in the total income profile. Other studies (e.g. Hopkins 1980) indicate that small farmers consume the bulk of the cheese and milk from their animals on the farm and sell only a residual amount. The same may well be true here as well.

Several conclusions may be drawn from this evidence on farm holders:

1) The substantial income from livestock, the role of home consumption and the high percentage of labor time which is devoted to livestock suggest that farmers will not get rid of their animals as mechanization proceeds. The hope that mechanization alone will free land now devoted to fodder crops (e.g. birsim) is almost certainly vain.
2) The fact that a large percentage of adult male small farmers' time is devoted to livestock suggests that current price policies, which subsidize meat production, may have the unexpected effect of reducing the supply of labor to the hired market. Small farmers have an incentive to substitute work with their own farm animals for hiring themselves out to other farmers for field crop labor.

Since our data come from a "one shot" survey, in which all farmers face (presumably) the same relative prices for hired labor, meat, milk, and crops, we are unable to test this hypothesis. However, the available evidence is consistent with such an argument, first put forward by Iliya Harik (1976). There are numerous theoretical problems here (e.g. the subjective valuation of home produced food [milk] versus hiring oneself out), and as mentioned, we cannot assess the quantitative importance of this phenomenon. However, bringing

domestic meat prices more into line with international levels may increase the supply of hired agricultural labor.

NONCULTIVATING RURAL SOCIAL STRATA AS SUPPLIERS OF AGRICULTURAL LABOR

We may be brief here:

1) Non-agricultural strata derive very little of their income from the agricultural labor market (always less than 5%).
2) Although such strata devote between 17 and 21% of their labor time to agriculture, the bulk of this time is spent on their own farms (Table 19).

The low percentage of these strata in the population (30%, of which one-half are government employees), plus the low percentage of time which they spend working for other farmers indicate that such people are <u>not</u> an important source of hired farm workers. The bulk of the rural labor supply comes from the landless, with farmers holding less than one feddan supplying some labor. Only residual amounts are supplied by other farmers and by other non-farming strata.

CONCLUSIONS AND FUTURE RESEARCH DIRECTIONS

The major findings of this working paper have already been summarized. A few additional points are in order.

1) The evidence presented here is consistent with the argument that important changes in the supply of labor have occured.
2) Out-migration of labor and (possibly) some withdrawal of adult male labor from rural labor markets seem to be the principal cause of the change.

3) It is highly likely that migration is the principal force, although we cannot prove this yet.

4) The data do not permit us to discriminate among the various types and forms which such out-migration may have taken. All we have here is the observation that there is a "hole" in the demographic profile of the landless, the bulk of the agricultural force.

We cannot tell whether such workers have gone to Egyptian cities, or abroad; nor can we differentiate between migration in hopes of finding a job and "migration" to an assured government position as a result of having served in the armed forces. The fact that the demographic "hole" appears for both men and women suggests that migration affects the entire family. This, in turn, may imply that landless agricultural workers are not migrating directly overseas (since this is usually done only by males among non-professional migrants), but rather are "filling in behind" the departed skilled Egyptian urban workers who have gone to take higher paying jobs in the OPEC countries. However, there are fewer males than females in the "migratory" age groups for the landless. It is clear that additional study of labor migration is essential if we are to understand the conditions of labor supply in rural Egypt.

APPENDIX: HIRED WOMEN's LABOR IN AGRICULTURE

We have already seen that 1) Women work primarily with livestock; 2) they also perform crop labor; 3) they supply a significant percentage to the total agricultural labor supplied to the family farm by the family (See Table 17). They also provide between one-fifth and one-third of all of the hired labor in agriculture.

For hired labor, we can be quite specific about which operations are performed by the women for the principal field crops. In general they do not do much of the following operations:

1) Land preparation, all crops. (This is simply because little hired labor of any sort is used here).
2) Hoeing all crops.
3) Manual pest control (largely done by children).
4) Irrigation (for the same reasons as number 1).
5) Harvest of: Maize, Wheat.
6) Planting of wheat.

Wheat threshing was ambiguous: In two villages women did not do this, while in three they did.

Women do perform these operations:

1) Planting of cotton, rice and maize.
2) Cotton picking.
3) Maize shucking.
4) Rice harvesting (in four of the five villages).
5) Threshing of rice.
6) Winnowing of rice (three of five); of wheat (two of five).

It should be emphasized that these observations refer only to the labor of women hired in agriculture, not to the labor of women in the strata of farm holders.

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Table 1

Appendix (1)

Distribution of families according to economic activities [Census]

Villages	Land holders		Agricultural Landless Workers		Agro-related activities		Non-agro related activities		Services		Total
	number	%	number	%	number	%	number	%	number	%	
Kafr El Hadeady	59	43	42	30	12	9	5	4	19	14	137
Kafr Ahmad Jubran	59	60	9	9	5	5	4	4	21	22	98
Kafr El Nousary	142	67	34	16	4	2	5	2	28	13	213
Farsees	212	68	18	6	14	5	23	7	43	14	310
Kafr El-Lebba	178	56	58	19	14	4	14	4	52	17	316
Kafr El-Goneimy	173	49	9	3	11	3	14	4	145	41	353
El-Kenayat *	662	52	222	18	152	12	107	8	126	10	1269
San El-Hayger	230	32	239	38	101	14	36	5	76	11	708
Total :	1715	50%	661	19%	313	9%	204	6%	510	15%	3404
Total of 87 villages	1053	49%	439	21%	161	8%	97	5%	384	18%	2134

*Data from El-Kenayat were unavailable at the time of writing.

Table 2

Number of holders acording to size sub stratum (Census)

Village	Total number of holders	Total Feddans	Land holders 1.00 Feddan a less				Land holders >1.00 -3.0 Feddans				Land holders >3.00-5.0 Feddans				Land holders >5.00-10.0 Feddans				Land holders >10 00-20.0 Feddans				Land holders >20.00 Feddans			
			Holders		Feddans		Holders		Feddans		Holders		Feddans		Holders		Feddans		Holders		Feddans		Holders		Feddans	
			Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%	Number	%
afr El Hadeady	201	355	105	52	67	19	69	34	126	35	14	7	54	15	11	5	77	22	2	1	31	9	—	—	—	—
afr Ahmad Jubran	299	430	141	47	89	21	149	50	288	67	7	2	28	7	—	—	—	—	2	1	25	6	—	—	—	—
fr.EL Nousary	450	574	247	55	139	24	192	43	360	63	7	1.5	25	4	2		11	2	1		15	3	1		24	4
arsees	783	106.9	399	51	229	21	356	45	672	63	18	2	70	7	3		52	5	1		15	1	1		31	2
afr El-Lebba	545	754	322	59	169	26	184	34	326	43	24	4	94	12	8	1.5	53	7	5	1	60	8	2	0.4	52	7
afr El-Ghoneimy	326	239	266	82	108	45	53	16	96	40	5	2	20	8	2	1	15	6	—	—	—	—	—	—	—	—
kenayat	1507	2558	773	51	451	18	613	41	1361	53	79	5	299	12	32	2	216	8	6		85	3	4		146	6
an El Haggar	739	3376	57	8	47	1	293	40	99	3	168	23	1312	39	162	22	1159	34	40	5	206	6	19	0.3	533	16
otal :	4850	9355	2310	48%	1349	19%	1909	39%	3328	36%	322	7%	1402	30%	225	5%	1583	17%	57	1%	437	5%	27		786	8%

ALL VILLAGES

FAMILY SIZE

SIZE OF HOLDING	NUMBER OF FAMILIES	NUMBER OF PERSONS	AVERAGE FAMILY SIZE
LANDLESS	33	175	5.3
0-1 FEDDANS	26	165	6.3
1-3 FEDDANS	29	229	7.9
3-5 FEDDANS	18	147	8.2
5-10 FEDDANS	7	64	9.1
10-20 FEDDANS	2	29	14.5
20+ FEDDANS	2	28	14.0

TABLE III

INCOME PER FAMILY

BY SOURCE AND SIZE CLASS

SIZE OF HOLDING	CROPS	LIVESTOCK	RENT OF ASSETS	HIRED AGRIC. LABOR	TOTAL AGRIC. INCOME	TOTAL HIRED INCOME	TOTAL INCOME
LANDLESS	0.00	9.67	0.00	247.16	256.83	326.36	371.36
0-1 FEDDANS	129.36	72.19	1.15	123.35	324.92	157.62	463.46
1-3 FEDDANS	443.86	143.45	17.34	25.00	629.66	25.00	759.93
3-5 FEDDANS	596.17	193.94	0.00	33.17	823.26	66.50	980.78
5-10 FEDDANS	1132.86	304.29	26.29	12.00	1475.43	12.00	1773.57
10-20 FEDDANS	3140.00	255.00	0.00	8.50	3403.50	8.50	3463.50
20+ FEDDANS	4750.00	922.50	0.00	0.00	5822.50	0.00	5822.50

INCOME PER CAPITA

BY SOURCE AND SIZE CLASS

SIZE OF HOLDING	CROPS	LIVESTOCK	RENT OF ASSETS	HIRED AGRIC. LABOR	TOTAL AGRIC. INCOME	TOTAL HIRED INCOME	TOTAL INCOME
LANDLESS	0.00	1.82	0.00	46.61	48.43	61.54	70.03
0-1 FEDDANS	20.39	11.38	0.18	19.44	51.20	24.84	73.03
1-3 FEDDANS	56.21	18.17	2.20	3.17	79.74	3.17	96.24
3-5 FEDDANS	73.00	23.75	0.00	4.06	100.61	6.14	120.10
5-10 FEDDANS	123.91	33.28	2.67	1.31	161.37	1.31	193.98
10-20 FEDDANS	216.55	17.59	0.00	0.59	234.72	0.59	238.86
20+ FEDDANS	339.29	65.89	0.00	0.00	415.89	0.00	415.89

AGE DISTRIBUTION

BY SEX AND STRATUM

	0-5 YRS		6-10 YRS		11-15 YRS		16-25 YRS		26-35 YRS		36-45 YRS		46-55 YRS		56-65 YRS		65+ YRS		
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	TOTAL
HOLDERS	.10	.07	.05	.07	.07	.07	.12	.11	.05	.04	.04	.05	.04	.03	.03	.03	.02	.01	1.00
	.17		.12		.15		.23		.09		.09		.07		.05		.03		1.00
LANDLESS	.10	.10	.08	.06	.07	.03	.09	.09	.05	.04	.05	.06	.06	.04	.02	.03	.01	.01	1.00
	.20		.16		.10		.18		.07		.10		.10		.06		.02		1.00
RELATED	.10	.11	.07	.05	.08	.08	.09	.07	.05	.06	.06	.06	.03	.03	.03	.02	.02	.02	1.00
	.21		.12		.15		.16		.11		.11		.06		.04		.04		1.00
NON-RELATED	.10	.07	.06	.03	.09	.08	.12	.12	.03	.05	.04	.04	.03	.03	.04	.03	.01	.02	1.00
	.17		.09		.17		.24		.08		.08		.07		.07		.02		1.00
SERVICES	.09	.10	.06	.06	.03	.10	.12	.12	.07	.05	.06	.03	.03	.03	.01	.03	.01	.01	1.00
	.18		.12		.13		.23		.12		.09		.06		.04		.02		1.00
TOTAL	.10	.09	.06	.06	.07	.07	.11	.10	.05	.05	.05	.05	.04	.03	.03	.03	.02	.01	1.00
																			1.00

DISTRIBUTION OF ASSETS BY SIZE CLASS

ALL ASSETS

(VALUE IN L.E.)

Obs	SIZEF	FAMILIES	FEDDANS	FARSIS	JUBRAN	HAGGAR	LEBBA	HADEADY	GHONEIMY	NOUSSARY	TOTAL	PER_FAML	PER_FEDD
1	LANDLESS	33	.	2601.00	1751.00	1021.00	2440.00	325.00	5090.00	652.00	13880.00	420.61	.
2	0-1 FEDDANS	26	18.83	8750.00	10187.00	.	20595.00	5967.00	9155.00	7775.00	62829.00	2416.50	3336.06
3	1-3 FEDDANS	29	60.83	32672.00	22036.00	9791.00	25155.00	21786.00	31978.00	19579.00	162997	5620.59	2679.40
4	3-5 FEDDANS	18	68.75	33618.00	14940.00	8319.00	34432.00	16796.00	813.00	51831.00	160749	8930.50	2338.17
5	5-10 FEDDANS	7	42.63	35942.00	.	21593.00	50740.00	.	38513.00	.	146788	20969.71	3443.71
6	10-20 FEDDANS	2	31.00	.	.	35908.00	.	.	.	.	35908.00	17954.00	1158.32
7	20+ FEDDANS	2	80.00	.	.	177940	.	.	.	.	177940	88970.00	2224.25

DISTRIBUTION OF ASSETS BY SIZE CLASS

AGRICULTURAL LAND

(VALUE IN L.E.)

OBS	SIZEF	FAMILIES	FEDDANS	FARSIS	JUBRAN	HAGGAR	LEBBA	HADEADY	GHONEIMY	NOUSSARY	TOTAL	PER_FAML	PER_FEDD
1	LANDLESS	33	.	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	.
2	0-1 FEDDANS	26	18.83	5700.00	6960.00	.	14800.00	2660.00	3510.00	1800.00	35630.00	1370.38	1891.86
3	1-3 FEDDANS	29	60.63	24300.00	14200.00	5540.00	11650.00	15010.00	19700.00	12800.00	103200	3558.62	1696.44
4	3-5 FEDDANS	18	68.75	23870.00	9200.00	3000.00	30000.00	8920.00	0.00	40000.00	114990	6388.33	1672.58
5	5-10 FEDDANS	7	42.63	30800.00	.	19000.00	41900.00	.	31900.00	.	123600	17657.14	2899.71
6	10-20 FEDDANS	2	31.00	.	.	24800.00	.	.	.	.	24800.00	12400.00	800.00
7	20+ FEDDANS	2	80.00	.	.	155000	.	.	.	.	155000	77500.00	1937.50

EDUCATIONAL DISTRIBUTION

BY STRATUM AND SEX
ALL VILLAGES

STRATUM	SEX	ILLIT.	READ AND WRITE	PRIMARY LEVEL	INTMDT, SECONDARY LEVEL	UNIV. LEVEL	LESS THAN MED. CERTIF.	MED. CERTIF.	UNIV. DEGREE	TOTAL
HOLDERS	FEMALE	.80	.03	.12	.05	.00	.00	.01	.00	1.00
HOLDERS	MALE	.33	.23	.18	.14	.03	.04	.05	.01	1.00
LANDLESS	FEMALE	.83	.02	.12	.03	.00	.00	.00	.00	1.00
LANDLESS	MALE	.60	.09	.19	.08	.00	.03	.01	.00	1.00
RELATED	FEMALE	.77	.02	.11	.09	.00	.00	.02	.00	1.00
RELATED	MALE	.37	.15	.22	.16	.01	.05	.03	.01	1.00
NON-RELAT.	FEMALE	.84	.03	.06	.06	.00	.01	.00	.00	1.00
NON-RELAT.	MALE	.37	.22	.19	.15	.01	.03	.03	.00	1.00
SERVICES	FEMALE	.54	.14	.17	.10	.00	.00	.03	.01	1.00
SERVICES	MALE	.08	.21	.20	.18	.04	.11	.12	.06	1.00
TOTAL	FEMALE	.75	.05	.11	.08	.00	.00	.01	.00	1.00
TOTAL	MALE	.35	.20	.19	.14	.02	.05	.05	.02	1.00

ALL VILLAGES

INCOME BY SOURCE
AND SIZE CLASS

SIZE OF HOLDING	PERCENT OF AGRICULTURAL INCOME				PERCENT OF TOTAL INCOME	
	CROPS	LIVESTOCK	RENT OF ASSETS	HIRED AGRIC. LABOR	TOTAL AGRIC. INCOME	TOTAL HIRED INCOME
LANDLESS	.00	.03	.00	.97	.74	.88
0-1 FEDDANS	.45	.23	.00	.33	.73	.33
1-3 FEDDANS	.71	.23	.02	.04	.87	.04
3-5 FEDDANS	.72	.23	.00	.05	.84	.07
5-10 FEDDANS	.79	.18	.02	.01	.89	.01
10-20 FEDDANS	.92	.07	.00	.00	.98	.00
20+ FEDDANS	.82	.16	.00	.00	1	.00

RELATIONSHIP BETWEEN FARM SIZE AND PATTERN OF LABOR UTILIZATION
ALL VILLAGES
PERCENTAGES BY SECTOR

OBS	SIZEF	ON_FARM	OFF_FARM	IN_AGR	OUT_AGR
1	LANDLESS	0.04448'	0.955518	0.70925	0.290750
2	0-1 FEDDANS	0.65650	0.343498	0.78322	0.216785
3	1-3 FEDDANS	0.90578	0.094220	0.83435	0.165646
4	3-5 FEDDANS	0.93352	0.066482	0.80706	0.192936
5	5-10 FEDDANS	0.95902	0.040978	0.78361	0.216194
6	10-20 FEDDANS	0.98642	0.013579	1.00000	0.000000
7	20+ FEDDANS	1.00000	0.000000	1.00000	0.000000

Table 11

ON-FARM LABOR UTILIZATION

SIZE OF FARM	DISTRIBUTION OF MD/E	
	Percentage of MD/E from Family	Percentage of MD/E from Hired
0-1 F.	.93	.07
1-3 F.	.79	.21
3-5 F.	.68	.32
5-10 F.	.59	.41
10-20 F.	.72	.28
20+ F.	.27	.73

PERCENTAGE OF FAMILY VS. HIRED LABOR EMPLOYED
(UNWEIGHTED AVERAGE)

OBS	SIZEF	PCT_FAM	PCT_HIRE
1	0-1 FEDDANS	.61	.39
2	1-3 FEDDANS	.41	.59
3	3-5 FEDDANS	.39	.61
4	5-10 FEDDANS	.31	.69
5	10-20 FEDDANS	.54	.46
6	20+ FEDDANS	.17	.83

PERCENTAGE OF FAMILY VS. HIRED LABOR EMPLOYED
(UNWEIGHTED AVERAGE)

OBS	SIZEF	PCT_FAM	PCT_HIRE
1	0-1 FEDDANS	.72	.28
2	1-3 FEDDANS	.67	.33
3	3-5 FEDDANS	.60	.40
4	5-10 FEDDANS	.50	.50
5	10-20 FEDDANS	.65	.35
6	20+ FEDDANS	.35	.65

PERCENTAGE OF FAMILY VS. HIRED LABOR EMPLOYED
(UNWEIGHTED AVERAGE)

OBS	SIZEF	PCT_FAM	PCT_HIRE
1	0-1 FEDDANS	.87	.13
2	1-3 FEDDANS	.75	.25
3	3-5 FEDDANS	.66	.34
4	5-10 FEDDANS	.62	.44
5	10-20 FEDDANS	.	.
6	20+ FEDDANS	.12	.88

PERCENTAGE OF FAMILY VS. HIRED LABOR EMPLOYED
(UNWEIGHTED AVERAGE)

OBS	SIZEF	PCT_FAM	PCT_HIRE
1	0-1 FEDDANS	.64	.28
2	1-3 FEDDANS	.63	.37
3	3-5 FEDDANS	.57	.43
4	5-10 FEDDANS	.48	.52
5	10-20 FEDDANS	.	.
6	20+ FEDDANS	.17	.83

Table 16

MONTHLY EMPLOYMENT PROFILE FOR LANDLESS
AVERAGE OVER ALL VILLAGES
HEADS OF FAMILIES

OBS	MONTH	ENUMBR	AVAGRDY	AVNONDY	AVTOTDY
1	NOV	33	17.2	1.8	19.0
2	DEC	33	5.8	2.6	8.4
3	JAN	33	7.9	2.8	10.7
4	FEB	33	7.1	2.1	9.3
5	MAR	33	13.7	0.6	14.3
6	APR	33	14.3	1.1	15.4
7	MAY	33	18.3	0.7	19.0
8	JUN	33	18.7	1.0	19.7
9	JUL	33	10.1	1.2	11.3
10	AUG	33	5.0	2.6	7.6
11	SEP	33	7.0	1.5	8.5
12	OCT	33	20.0	0.5	20.6

YEARLY EMPLOYMENT, LANDLESS AGRICULTURAL WORKERS

SHARQIYYA PROVINCE
1978/79 (AGRICULTURAL YEAR)

SAMPLE*

Category	Days Employed / Year (Average)	Number of Observ.
Household Heads	164	33
Wife	66	12
Adult Male	127	10
Adult Female	55	6
Male Children	116	20
Female Children	80	11
All Children	99	31

* Seven villages

ON FARM

LABOR UTILIZATION BY TYPE AND SEX

	ADULT FAMILY LABOR		ADULT HIRED LABOR	
	Percentage Performed By Men	Percentage Performed By Women	Percentage Performed By Men	Percentage Performed By Women
)-1 FEDDAN	.63	.37	.78	.22
-3 FEDDANS	.61	.39	.66	.34
:-5 FEDDANS	.68	.32	.78	.22
-10 FEDDANS	.70	.30	.77	.23
)-20 FEDDANS	.72	.28	.65	.35
20+ FEDDANS	.96	.04	.69	.31

Table 18

ALL VILLAGES

PERCENT OF FAMILY LABOR IN CROPS AND LIVESTOCK
ADULT MALE, ADULT FEMALE, AND CHILDREN

OBS	SIZEF	M_CROPS	M_LVSTK	F_CROPS	F_LVSTK	CH_CROPS	CH_LVSTK
1	0-1 FEDDANS	.305	.695	.178	.822	.817	.183
2	1-3 FEDDANS	.375	.625	.262	.738	.607	.393
3	3-5 FEDDANS	.503	.497	.216	.784	.513	.487
4	5-10 FEDDANS	.596	.404	.203	.797	.624	.376
5	10-20 FEDDANS	.689	.311	.400	.600	1	.000
6	20+ FEDDANS	.767	.233	.538	.462	1	.000

Table 13

LABOR UTILIZATION BY STRATA

NONCULTIVATING CLASSES
(ALL VILLAGES)

PERCENT OF ANNUAL EMPLOYMENT BY SECTOR
(YEAR: 1978/1979)

OBS	STRATUM	ON_FARM	OFF_FARM	IN_AGR	OUT_AGR	TOTAL
1	RELATED	0.16	0.05	0.21	0.79	1.00
2	NON-RELATED	0.10	0.03	0.13	0.87	1.00
3	SERVICES	0.12	0.05	0.17	0.83	1.00

Table 20

PERCENT OF TOTAL INCOME FROM LIVESTOCK

(WEIGHTED AVERAGE)

OBS	SIZEF	LIVESTK
1	LANDLESS	.03
2	0-1 FEDDANS	.16
3	1-3 FEDDANS	.20
4	3-5 FEDDANS	.19
5	5-10 FEDDANS	.15
6	10-20 FEDDANS	.07
7	20+ FEDDANS	.16

Table 21
PERCENT OF TOTAL INCOME FROM OWN FARM

(WEIGHTED AVERAGE)

OBS	SIZEF	OWN_FARM
1	LANDLESS	.03
2	0-1 FEDDANS	.47
3	1-3 FEDDANS	.81
4	3-5 FEDDANS	.80
5	5-10 FEDDANS	.87
6	10-20 FEDDANS	.98
7	20+ FEDDANS	.97

Figure 1

MONTHLY EMPLOYMENT PROFILE FOR LANDLESS
AVERAGE OVER ALL VILLAGES
HEADS OF FAMILIES

A= DAYS IN AGRICULTURE
N= DAYS OUTSIDE AGRICULTURE
T= TOTAL DAYS EMPLOYED