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WOMEN IN A DEVELOPING ECONOMY:
A WEST AFRICAN CASE STUDY*

by

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1. INTRODUCTION

1.1 Need for the Study

As part of a general concern with equity in the development process, policy makers and donor agencies have recently become concerned with the role women play in and the benefits they derive from the economic development process. This concern is reflected, for example, in the development strategy of the United Nations Development Decade, which states that "the full integration of women in the total development effort should be encouraged." Another example is the "Percy Amendment" which mandates the Agency for International Development and other U.S. agencies to insure that women participate and benefit fully from U.S. financed development projects.

Unfortunately although many generalizations exist, action agencies are hampered by a lack of "hard facts" in their planning for the integration of women in the economic development process. For example, in Africa Cleave [1974] and Pala [1976] point out clearly that there is so much diversity in Africa, that it is dangerous to draw Africa-wide conclusions from studies in one area. It is clear that meaningful planning must be based on systematic analyses of the present use of the male and female labor, preferably in each country, but at the very least in each sub-region of Africa.

This monograph presents the results of detailed micro-analysis of the role of women in the economy of a Tropical West African country, Sierra Leone.

1.2 Objectives of Study

The main purpose of the study is to examine the role of women in the economy of Sierra Leone. The major objectives are:

1. To determine the quantity and seasonality of use of female labor in farm and non-farm enterprises and the role of women as generators of rural household income.
2. To examine the impact of agricultural development projects on the work done by women.
3. To examine the factors affecting the rural to urban migration of women and their entry into the urban labor force.
4. To examine the role of women in household decision making.
5. To recommend policies and programs that would improve the economic well-being of rural women in Sierra Leone.

1.3 The Country Studied

The analyses reported in this monograph are based on data drawn from micro-level surveys conducted in Sierra Leone, a former British Colony which gained independence in 1961. Sierra Leone is located on the West Coast of Africa between 6° 55' and 10° N and between 10° 16' and 13° 18 W. It has an area of about 28,000 square miles and a population estimated at roughly 3 million in 1978. National population growth is around 2.1 percent per annum with urban growth estimated at about 5.9 percent. The urban population comprises about 32.4 percent of the total population, with Freetown the Capital and largest city having about 300,000 persons, i.e. about a third of the whole urban population.^{1/} The gross domestic product in 1976 was reported at about Le 613 million (US \$613 million) and annual per capita income at Le 216.

As in much of West Africa, agriculture is the mainstay of the Sierra Leone economy. It employs 70 percent of the working population and produces

^{1/} Defined as towns with more than 2,000 inhabitants, more than 50 percent of whom are engaged in non-farm activities.

about a third of GDP. Over the eleven year period between the population censuses of 1963 and 1974, employment in agriculture, forestry, and fishing declined from 77.3 to 72.4 percent of total employment, but the actual number of people employed in agriculture increased by 5.5 percent [Government of Sierra Leone, 1978]. The agriculture sector is also a major provider of foreign exchange, becoming more important in recent years with the decline of the mining industry. In the early part of the 20th century, agricultural exports accounted for around 90 percent of all exports from Sierra Leone. Since the introduction of iron ore and diamond mining in the 1930's, its share has generally been between 15 and 25 percent. However, over the past two years the share of agricultural exports rose to 40 percent as a result of the closure of the country's only iron ore mine, a decline in diamond mining, a small increase in the tonnage of agricultural exports and a large increase in the world market prices for coffee and cocoa, Sierra Leone's major agricultural exports.

The agriculture sector also serves as an important market for domestic urban-produced goods. Although average and marginal propensities to consume domestic urban-produced goods are only 0.086 and 0.075 compared to 0.113 and 0.141 for imported products [Byerlee and King, 1978], the rural population, because of its large share of total population constitutes a very important source of demand for growth of urban industries, especially small scale industries.

Sierra Leone is one of five countries in Western Tropical Africa in which rice is the staple food, the others being Liberia, Guinea, Guinea Bissau and the Gambia. In Sierra Leone which has the highest per capita

consumption of rice in the region^{1/} rice is grown by over 85 percent of farmers. Of the roughly 1.6 million acres cultivated in 1976 (9 percent of the country's land area) about 72 percent contained rice in mixed or pure stands. In this respect Sierra Leone differs from the root crop economies represented by parts of some Western Tropical African countries, e.g. Southern Ivory Coast, Southern Ghana and Southern Nigeria. On the other hand, there are areas in the country where other tropical crops are well represented, e.g. cassava in the Bonthe district in the extreme South, millet and sorghum in Kambia, Bombali and Koinaduju districts in the North, and the cash crops cocoa and coffee which occupy 15 percent of total cultivated area and are concentrated in the Kenema and Kailahun districts in the East. The rural economy of Sierra Leone is therefore fairly typical of those of many Western Tropical African countries.^{2/}

1.4 Sources of Data

Data used in this study were collected in a series of detailed micro-level surveys of farm and non-farm households conducted in Sierra Leone mainly in 1974 and 1975.^{3/} All the surveys used a multiple visit or cost

^{1/} Estimated annual per capita rice consumption rates in some of the rice staple food economies in West Africa in 1976 were as follows (WARDA):

Sierra Leone	275 lbs.
Liberia	226 lbs.
Gambia	185 lbs.

^{2/} Western Tropical African countries are defined to exclude the Sahelian states.

^{3/} Surveys undertaken as part of the African Rural Employment Research project jointly carried out by the Departments of Agricultural Economics at Njala University College, University of Sierra Leone, and Michigan State University and financed by AID/csd 3625, Rockefeller Foundation and the Population Council of New York.

route technique in which sampled households were visited twice a week for at least 12 months.^{1/} Areas as well as households were selected using stratified area sampling.

1.4.1 The Farm Level Survey

For the farm level survey the country was first divided into eight rural resource regions reflecting different ecological zones using available secondary data. Each of the eight rural resource regions was then subdivided into the enumeration areas used by the Central Statistics Office for the 1963 population census [Government of Sierra Leone, 1965]. Each enumeration area is about ten miles square and contains about 130 farm families, located in one to ten villages. Using the occupational distribution and the 1963 population of each enumeration area, all enumeration areas falling into or containing urban areas (defined as localities with more than 2,000 people and more than 50 percent of the labor force engaged in non-farm activities) were rejected. Three enumeration areas were then selected at random to represent each resource region.

The next stage of the sampling procedure was the preparation of a list of households in each selected enumeration area, providing a frame for selecting the primary units of study. In this exercise enumerators visited all households in all villages in selected areas and recorded the name and sex of each household head, the crops grown and non-farm occupation of the household. From these lists a stratified sample of twenty farm households and four non-farm households were selected at random in each enumeration area. In the course of the survey some households were dropped from the sample because of deaths and movement from the village. Furthermore, at the

^{1/}See Spencer and Byerlee [1975] for further details.

time of analysis non-randomly selected households such as chiefs and households with severe problems of inconsistent or missing data were also dropped. The final number of households analyzed was about 350.

Between March 1974 and June 1975 selected households were visited twice weekly by resident enumerators who used eight types of questionnaires to collect the necessary information. The data collected included information on labor inputs by all household members in all non-domestic activities. Non-domestic activities are defined as all farming activities as well as non-farm activities such as food processing; hunting and gathering, including gathering of firewood; fishing; house building and repairing; woodwork, including carving; metal work; trading; clothwork including spinning, weaving and dyeing; vehicle repairing; art work; basket making; etc. Data were not obtained on time spent on purely domestic activities such as preparation of meals, child care (when it is not performed in conjunction with non-domestic activities), personal hygiene etc. Information on domestic work was not collected in the above survey because the survey was not designed specially to collect data on women's work but on the economics of farm and non-farm production activities.

1.4.2 The Migration Survey^{1/}

In order to obtain information on the migration process a migration survey was conducted in Sierra Leone in three phases in 1974/75. Phase I, was a census of all households in enumeration areas selected for study in the farm level survey described above. Data were collected on demographic characteristics of persons who had migrated from the households.

Phase II, involved the tracing of migrants identified in Phase I to urban areas and interviewing such migrants to obtain information on

^{1/}See Byerlee, Tommy and Fadoo [1976] for further details.

incomes, jobs, migration history, initial support in turn, remittances, expectations, plans to return home and socio-cultural factors.

In the final phase, three groups of rural people were interviewed: heads of out-migrant households to determine the motives for sending or encouraging someone to live in town and return migrants and non-migrants to obtain information on their reason for returning or not migrating in the first place.

1.4.3 The Fishing Survey^{1/}

A survey of about 100 marine fishing households was also conducted in 1974/75. Forty households were selected from the Northern and 40 from the Southern regions while 20 were selected from the area around Freetown, the capital city. Input, output data and other socio-economic data were collected on fish production and processing data.

1.4.4 The Small Scale Industry Survey^{2/}

In order to supplement data on rural small scale industries which was collected as part of the farm level survey, a two phase survey procedure was used to obtain required small scale industry data from urban areas of Sierra Leone differentiated into size categories. Phase I was a census of Sierra Leone's small scale industry to estimate the total number of small scale establishments. Phase 2, was designed to generate more detailed economic data from a sample of about 250 establishments.

1.4.5 Survey of Role of Women in Household Decision Making

The migration survey ascertained who made the decision to migrate but the other surveys mentioned above did not specifically determine who

^{1/} For further details see Linsenmeyer [1976].

^{2/} For further details see Liedholm and Chuta [1976].

made other household production and consumption decisions. It was therefore necessary to conduct a special one-contact survey to collect information on the role of women in household decision-making.

The survey was conducted over a five-week period in November/December 1976. About 150 randomly selected urban households were interviewed in Freetown, the capital city. In addition, about 150 rural households, a subsample of the 1974/75 farm level sample were reinterviewed. Male/female pairs of enumerators were used to interview husbands and wives separately. Also key informants (village chiefs and elders etc.) were interviewed by the author. (See Appendix A for a copy of the questionnaire.)

2. WOMEN IN THE RURAL LABOR FORCE

Labor is the most important factor in agricultural production in most African countries. The United Nations Economic and Social Council claims that 60-80 percent of agricultural labor in Africa is women's work [UNECA, 1974]. It is generally believed that women are most important particularly in food crop production (see Boserup [1970] and Pala [1976]). Although Boserup presents a map which indicates that most of Western Tropical Africa falls in the zone where only men prepare the ground with women doing all other work, a careful review of available literature shows the following:

1. Virtually, all empirical studies of women in rural development in Africa have been conducted in East, Central and Southern Africa.
2. Only in a few recent cases (e.g. Clark [1975]) have quantitative data been presented to show the extent to which women participate in the labor force. Thus although it is asserted that women do "most" of the work in agriculture the meaning of "most" (i.e. 15% or 99%) is usually not defined.
3. As Pala [1976] points out, the studies do not explain the specific tasks performed by men and women within the crop cycles.

We now turn to a presentation of a profile of female participation in the rural labor force in Sierra Leone. In the first section the participation of women relative to men and children in different farm and non-farm enterprises is examined. Data are presented in terms of the percentage of total annual labor input supplied by women in rural enterprises. In the second section the relative participation of the women in different tasks is explored.

2.1 Female Participation in Different Enterprises

Table 2.1 shows the national breakdown of family labor input into farm and non-farm enterprises by men, women and children.^{1/} The table shows that adult women (15 years and over) contribute about a third of the total hours to crop production. Girls under 15 contribute an additional 4 percent bringing the total female contribution to 39 percent. The level of female participation in the production of rice, the staple food crop, is the same as that for the crop production sector. As pointed out already rice is produced by over 85 percent of all farmers in Sierra Leone. The contribution of women to the other important food crops, fundi (African three-fingered millet) and cassava is also at the same level as for rice. Only the minor crop groundnuts can be described as a female-dominated crop in Sierra Leone, with women and girls providing two-thirds of family labor input. On the other hand, tree crop production (oil palm, coffee and cocoa) is male-dominated with men and boys supplying four-fifths of the labor input.

Among the other rural enterprises, processing is dominated by women, with all others being male-dominated. Only in the hunting and fishing and animal production group is the male input less than two-thirds.

From the above discussion we can conclude that agricultural and non-agricultural enterprises are dominated by men although women play an important role in rural non-domestic productive enterprises. Hence, the numerous assertions that women contribute about 60-80 percent of the labor for food production in Africa are not supported by Sierra Leone data.

^{1/}Hired labor input is not examined in this report. For details of total labor use in farm and nonfarm enterprises see Spencer and Byerlee [1977]; Spencer, Byerlee and Franzel [1978]; Liedholm and Chuta [1976]; Linsenmeyer [1976].

Table 2.1 Percentage of Total Family Labor Input by Age/Sex Classification in Rural Enterprises in Sierra Leone

Enterprise	MALE LABOR			FEMALE LABOR			Total
	5-14 Yrs.	15+ Years.	Total	5-14 Yrs.	15+ Yrs.	Total	
Crop Production	11	50	61	4	35	39	100
- Rice	10	50	60	5	35	40	100
- Fundi & Cassava	10	48	58	5	37	42	100
- Groundnuts	7	30	37	9	54	63	100
- Vegetables	8	45	53	7	40	47	100
- Tree Crops	8	71	79	2	19	21	100
Hunting, Fishing & Animal Production	12	46	58	4	38	42	100
Processing	4	21	25	8	67	75	100
Small Scale Industry	8	78	86	1	13	14	100
Other Non-Farm	5	60	65	4	31	35	100
Hiring Out Labor	14	66	80	2	18	20	100

2.2 Female Participation in Different Tasks

Table 2.2 shows the distribution of labor inputs by different tasks in crop production and marine fishing. As expected women play a minor role in the physically demanding task of brushing and felling of trees, i.e. the opening of land for cultivation. In fact it is only in the north where the vegetation cover is lighter, that female input into this activity is above 5 percent. In the South and East, female inputs in brushing and felling usually involve the clearing of light vegetation after a rice crop, for the planting of groundnuts. Weeding is the only female-dominated task with women and girls supplying nearly two-thirds of total labor input. Harvesting is shared almost equally between the sexes. In short, in Sierra Leone agriculture, land clearing, digging and planting are dominated by males. Women dominate weeding and participate equally in harvesting.

Interesting examples of enterprises in which women play dominant roles are found in modern fish production and processing. The men catch the fish then pass the catch over to the women who process (i.e. smoke-dry the fish) and market the smoked fish.

In concluding this section we can say that in Sierra Leone men provide the major labor inputs in agricultural (food as well as cash crop) production, but women also make a substantial contribution in some activities such as weeding. With the exception of felling of heavy vegetation at the onset of the planting season no agricultural task is exclusively assigned to any one sex. Each sex contributes at least a third of the labor input into each agricultural task. The substitutability of one form of labor for another in Sierra Leone is clearly demonstrated in Sierra Leone, as is apparently also the case in Kenya [Heyer, 1966]. In rural small scale industry men dominate all major types of industries except the gara cloth which is dominated by women.

Table 2.2 Percentage of Family Labor Input into Different Tasks by Age/Sex
Classification in Rural Sierra Leone.

Task	MALE LABOR			FEMALE LABOR			Total
	5-14 Yrs.	15+ Yrs.	Total	5-14 Yrs.	15+ Yrs.	Total	
Crop Production							
- Brushing and Felling	12	79	91	1	8	9	100
- Land Clearing	8	58	66	3	31	34	100
- Digging and Planting	10	54	64	4	32	36	100
- Weeding	6	32	38	7	55	62	100
- Pest Control	17	54	71	7	22	29	100
- Harvesting	8	44	52	6	42	48	100
- Others ^{1/}	6	38	44	7	49	56	100
Marine Fishing ^{2/}	—	—	75	—	—	25	100
- Fish Catching	—	—	96	—	—	4	100
- Fish Processing	—	—	12	—	—	88	100
- Fish Trading	—	—	11	—	—	89	100

^{1/} Threshing, winnowing, etc.

^{2/} Adapted from Linsenmeyer (1976) Table 4.4

Source: Survey data

3. THE BURDEN OF WORK ON WOMEN AND THEIR REWARD

In this section we will examine the factors affecting the actual hours of work and returns earned by sex.

3.1 Total Labor Inputs in Farm and Rural Non-Farm Enterprises

Table 3.1 shows the annual hours and days of work done by the different age/sex groups in rural Sierra Leone. As pointed out earlier the figures do not include time spent in domestic activities such as preparation of meals, child care (when it is not performed in conjunction with non-domestic activities) personal hygiene etc. To the extent that women participate in these activities more than men, the female work load as represented by figures in Table 3.1 is understated. If we use figures from other surveys in Africa, e.g. Cleave [1974], Clark [1975] which estimate domestic labor inputs at about two hours per day we see that the average labor input per day for men and women is about equal or slightly higher for women.

As expected, adult men and women between 25 and 64 years put in the most hours. Although the average hours worked per day increases slightly for this age group, most of the increased hours of work result from adults working slightly more days per year than children and older people.

3.2 Seasonality of Labor Inputs

Most agricultural work is highly seasonal in nature reflecting the effect of climate on the biological processes in agricultural production. Peak and slack periods will vary between households depending on the combination of enterprises in the household. The slack season for labor demand in Sierra Leone occurs during the dry season from December to May. The month of lowest labor in all regions is April, between land clearing and planting of upland rainfed crops.

TABLE 3.1: TOTAL HOURS AND DAYS WORKED ON FARMS AND NON-FARM ENTERPRISES
BY AGE AND SEX GROUPS IN RURAL SIERRA LEONE, MAY 1974-APRIL 1975

Age Years	<u>Total Hours Worked</u>		<u>Total Days Worked</u>		<u>Average Hours/Day</u>	
	Male	Female	Male	Female	Male	Female
10-14	1088	828	159	157	6.8	5.3
15-24	1192	829	169	167	7.1	5.0
25-34	1519	1016	213	194	7.1	5.2
35-44	1589	979	222	184	7.2	5.3
45-54	1610	949	226	174	7.1	5.5
55-64	1503	1042	214	200	7.0	5.2
65-74	1436	736	211	137	6.8	5.4
Over 74	1267	485	187	105	6.8	4.6

Source: Field Survey

The peak season usually occurs during the rainy season from May to October, but the actual month of peak labor demand varies between regions. In the Northern regions the peak male and female labor demand occurs in May at the time of planting of upland crops. In the Southern regions, peak male labor demand occurs during upland rice harvests in October while peak female labor demand occurs during weeding in August and harvesting in October. In the Eastern region peak male labor demand occurs during planting of inland swamps in July, while that for female labor occurs during weeding in August. In over 80 percent of all farming systems in Sierra Leone the peak month of female labor demand occurs in the same or adjacent month to the peak month for male labor, indicating that there is little sexual differentiation in work loads during the peak period [Spencer and Byerlee, 1977].

A measure of the seasonality of labor inputs is the coefficient of variation computed as the standard deviation of monthly labor inputs divided by mean monthly labor input. A higher coefficient implies higher seasonality of labor demand. The figures in Table 3.2 show that the coefficient of variation and the seasonality of labor inputs is usually greatest in the Northern regions. This reflects the lower rainfall and shorter growing season, the greater importance of swamp rice which requires land clearing in the dry season and the lack of tree crops which use slack season labor.

A comparison of the coefficients of variation by sex shows that female labor input always has a higher seasonal variability than male labor indicating that with a peak season labor constraint women are called on to supply a higher proportion of the total labor input to non-domestic activities. Unfortunately the data do not allow one to determine whether this relative increase is at the expense of the leisure time of the women or at the expense of domestic activities.

TABLE 3.2: COEFFICIENT OF VARIATION^{a/} OF ADULT LABOR INPUTS INTO FARM
AND NON-FARM ENTERPRISES IN RURAL SIERRA LEONE

Region	Adult Male Labor	Adult Female Labor
Scarcies	41.1	44.0
Northern Plains	52.0	60.0
Boliland	44.9	46.0
Northern Plateau	29.2	39.3
Southern Coast	16.3	25.9
Riverain Grasslands	21.6	45.4
Southern Plains	24.1	33.7
Eastern Region	23.9	38.5

^{a/} Defined as the standard deviation of monthly labor inputs divided by the mean monthly labor input. It should be noted that the coefficients of variance for Adult Female Labor (especially for the Northern Plains) are high because they are based on very few observations.

Source: Spencer and Byerlee (1977) Table 5.3 and 5.4.

3.3 Effect of Technological Change on Labor Use by Sex

Several writers assert that agricultural development projects in Africa have an adverse effect on women since they lead to an increase in women's work load while the work load of men is reduced (Boserup [1970], Skonsberg [1975], Tinker [1976]). It is claimed that in these agricultural development projects men introduce modern inputs which reduce male labor inputs (e.g. mechanization) while women are called on to increase their labor input in order to weed the expanded acreage and harvest and process the expanded output.

In this section we shall present empirical evidence to test this hypothesis. First of all we must distinguish between labor-saving mechanical technology designed to facilitate the substitution of other inputs for labor and land-saving biological and chemical technology which is designed to facilitate the substitution of other inputs for land [Hayemi and Ruttan, 1971]. We assume that the effect of the introduction of modern inputs on women's work load would depend on (1) the degree to which the technological package is labor-saving, (2) the degree to which the activities affected by the improved technology are traditionally performed by men or women and (3) the willingness of either sex to adopt the technology being introduced. The data used to test this hypothesis were obtained as part of the farm level survey described earlier. In order to sharpen the focus of this analysis we will use only data from two survey areas. The first area is situated in the center of the Boliland area where rice is grown on infertile swamp grasslands. Cultivation is practiced in the area through a government hire tractor service as an example of a project adopting mechanical technology although there is also some variation in biological technology in the area with respect to the planting procedures--broadcasting or transplanting--and

use of fertilizer. The second area is located in the Moa Basin in the area served by an Integrated Agricultural Development Project (IADP) which was established in late 1973 with major emphasis on improved biological-chemical technology for the production of inland swamp rice. Each farmer participating in the project receives credit, improved seed, fertilizer and tools, as well as extension advice on constructing water control measures. No mechanical cultivation is practiced in the area. Both projects substantially increase the financial incomes of participating farm households, although economic returns which are calculated on the basis of shadow pricing of inputs at their social opportunity costs are hardly affected.

In assessing the impact of technological change on labor use by sex, it is necessary to consider all household production activities, since labor may be shifted between crops and between farm and non-farm activities at different seasons of the year. The seasonal profile of total hours worked each month by family members in farm and non-farm work (excluding domestic duties) for the two sample sites are shown in Table 3.3. In the IADP area, the households were divided into three groups: (a) nonparticipants or households who had not joined the IADP, (b) households participating in the project for the first year and (c) households participating in the project for the second year. Boliland households are grouped into (a) households using primarily hand cultivation, (b) households using mixed hand and mechanical cultivation and (c) households using primarily mechanical cultivation.

Of course, with cross-sectional data, one cannot always be sure that the difference among groups are the result of the technological adoption or the cause of the adoption. In the following comparison among groups it is assumed that observed differences are the result of the technological

TABLE 3-3
SEASONALITY OF LABOR INPUTS FOR ADULT FAMILY MEMBERS IN SIERRA LEONE RURAL HOUSEHOLDS
USING DIFFERING AGRICULTURAL TECHNOLOGIES

Type of Household	Sample Size	Month ^a												Total Hours for Year ^b	Coefficient of Variation	
		May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April			May
(Average Hours Worked Per Adult Per Month)																
IADP Area																
Male																
Nonparticipant	14	67	147	114	141	93	68	67	68	70	81	60	51	1,027	.37	
First year participant	10	187	231	228	268	207	140	124	134	151	131	102	125	2,028	.32	
Second year participant	14	167	162	232	201	137	92	84	66	82	69	95	85	1,472	.45	
Female																
Nonparticipant	21	46	140	145	164	114	106	106	54	74	41	18	29	1,037	.58	
First year participant	14	96	145	153	144	116	80	97	80	87	52	19	36	1,105	.47	
Second year participant	15	139	156	143	211	143	89	83	60	60	34	22	28	1,168	.62	
Bolilands																
Male																
Hand cultivation	10		125	186	231	199	128	137	204	182	97	56	55	80	1,680	.43
Hand and mechanical cultivation	12		95	184	239	179	93	78	157	160	85	38	25	46	1,379	.59
Mechanical cultivation	14		95	181	215	221	158	120	173	145	57	24	42	52	1,488	.56
Female																
Hand cultivation	7		55	108	160	81	53	39	57	88	54	32	20	22	769	.63
Hand and mechanical cultivation	6		60	133	193	103	86	69	99	119	67	50	25	24	1,028	.56
Mechanical cultivation	20		90	158	214	164	84	75	121	107	59	40	25	32	1,169	.60

SOURCE: Byerlee and Spencer (1976) Table 3.

^aSurvey from May 1974 to April 1975 in IADP area and June 1974 to May 1975 in Bolilands.

^bDifferences between groups significant at 5 percent level for males in IADP and for females in Bolilands.

change. Boliland households with and without mechanical cultivation exhibit similar characteristics with respect to age and sex composition of family members. However, in the IADP area heads of nonparticipant households are older than for participant groups so that a priori we expect their labor inputs to be somewhat lower.

As expected there are definite seasonal peaks in labor use at planting time in June to August and harvest time in December and January and well-defined slack periods--in October and November and in the dry season from February to May. In the peak month, male adults consistently work over 200 hours per month. The one exception is the nonparticipant group in the IADP area work a peak monthly average of 147 hours. However, this in part reflects the heterogeneity of this group with respect to crops, so that the peak month varies from household to household. When this average is computed using the peak month for each household the male labor input is 190 hours per month.

The technologies examined here have had relatively little impact on the "spread" of labor inputs over the year. In every case the peak season occurs at planting (July through September) with a subsidiary peak at harvest (December and January). In the IADP area, first year participants in the project have less pronounced slack periods partly because they are still producing some traditional upland rice which has different seasonal labor demands from swamp rice [Spencer, 1975]. In the Bolilands, labor inputs of households with mechanical cultivation are slightly less in the slack period since this is the time of mechanized land preparation. These effects are reflected in the coefficient of variation of monthly labor use around the annual mean. In the IADP area first year participants have the lowest seasonal variation while in the Boliland, males in households using hand cultivation have the lowest variation.

The introduction of improved technologies has a significant impact on the use of household labor by sex. In the IADP project male adults increase their labor inputs by at least 50 percent when they join the project. In the first year of participation in the project when most land development is undertaken male adults worked over 2,000 hours per year. In contrast, female labor input is not significantly changed by participation in the IADP project. In the Bolilands, the effect of mechanical technology on labor use by sex is quite different. The mean hours of work per adult male decreases slightly as mechanical cultivation is substituted for hand cultivation (but the difference is not statistically significant even at the 30 percent level). However, the hours worked increases significantly for females who work 50 percent more than in households using primarily hand cultivation. Also, at the peak season, women in households using mechanical cultivation work the same number of hours in farm activities as men.

The key to these differential effects of varying technologies on male and female labor inputs lies in the sex-specific nature of some farm activities in Sierra Leone. In the Bolilands, mechanization almost completely eliminates land preparation which is traditionally performed by men, but increases farm size so that there is an increase in the demand for labor for planting and harvesting, where women traditionally play an important role. In the IADP area, the substantial land development required in the early years of the project places the burden of work primarily on men.

The results suggest some important interrelationships between the use of improved technology and the division of labor by sex. Biological-chemical technologies increased the male labor input but did not affect female labor inputs, while mechanical technology increased female labor inputs and slightly reduced the male labor inputs. The results of

these findings provide a mixed picture of the effects of technical change on the changing work loads of men and women. Clearly we cannot generalize across the different systems of rice production in Sierra Leone because of the wide variations in environment and the technical nature of the production process in the different systems of rice cultivation. This finding is of central importance for policy makers because it suggests that micro-research on specific production systems will be essential in order to design programs to increase the participation of women in the development process.

3.4 Wage Rates and Returns to Labor

Small farms in Sierra Leone like most in tropical Africa hire less than 20 percent of their total labor inputs. But it is quite evident that there is a well established labor market in rural Sierra Leone. Wage rates vary significantly by sex, region, and season [Spencer and Byerlee, 1977].

The actual regional wage rates are shown in Table 3.4. The rural daily wage averaged Le 0.49 per person per day. Daily regional wage rates varied between Le 0.40 and Le 0.74. They were highest in the Scarices and the Southern Plains and lowest in the Bolilands and Northern Plateau. Generally these differences in wage rates correspond to regional differences in per capita income.

The mean national wage rates show that women receive about 75 percent and children about half of the male wage. This relationship is found in all regions although the actual percent difference varies from region to region. Examination of the wage rate per hour showed that they followed the same pattern as the wage rate per day at the national level and in all regions except the Bolilands, i.e., hired men, women and children worked roughly the same number of hours per day. In the Bolilands the wage per hour (Le 0.07)

Table 3.4
 REGIONAL VARIATION IN RURAL WAGE PER PERSON PER DAY
 (CASH PLUS KIND) BY LABOR TYPE IN SIERRA LEONE,
 1974/1975

Region	Labor Type			
	Men	Women	Children	All ^a
	(Leones Per Day)			
1. Scarices	.84 (1.19)	.38 (.16)	.10 (.38)	.74
2. Southern Coast	.54 (.72)	.30 (.32)	.22 (.24)	.44
3. Northern Plains	.51 (.59)	.48 (.49)	.60 (1.04)	.49
4. Riverain Grasslands	.52 (.56)	.30 (.31)	.13 (.15)	.43
5. Bolilands	.42 (.35)	.33 (.35)	.30 (.19)	.41
6. Mao Basin	.52 (.52)	.45 (.40)	.37 (.32)	.50
7. Northern Plateau	.47 (.53)	.69 (1.20)	.22 (.14)	.40
8. Southern Plains	.70 (.62)	.52 (.41)	.33 (.28)	.62
Sierra Leone ^a	.54	.42	.28	.49

SOURCE: Field Survey

NOTE: Standard deviations are in parentheses below the mean to which they refer. It will be noted that many of the standard deviations exceed the mean, when the data are primarily from fishing areas where usage rates tend to be higher than in other areas of Sierra Leone.

^aMeans derived from multiple classification analysis of variance, i.e., adjusted for effect of month and labor type and region.

was roughly the same for men and women with the child wage (Le 0.06) being only slightly less. In this region there is relatively little variation in wage rates by age-sex group.^{1/}

There are also significant differences in wages by season. Table 3.5 shows the seasonal variation in daily wage by labor type. Wage rates are highest in April and May, the planting season for upland crops, in February, the bush clearing period, and in July, the month in which most of the swamp rice is planted. Wages are lowest in September when weeding is the most common activity for annual crops. The seasonal pattern is similar for men and women except that there appears to be less of a seasonal variation in wage rates for women than men. It is interesting to note that the percentage difference between the daily wages of men and women is smallest during the September weeding period and the November/December period when upland rice is being harvested. Women play a significant role in rice weeding and harvesting.

There is ample evidence that the agricultural wage received by hired women and children is less than that received by men in rural areas of Sierra Leone. The question that arises is whether this difference reflects a difference in labor productivity or is institutionally determined, i.e. is due to sex discrimination in wage rates. To examine this question it is necessary to estimate the marginal value productivities (MVP) for each category of labor and then to compare these with marginal costs i.e. wage rates. If the gap between male and female wage rates is greater than that between the estimated MVP's one can conclude that the differences are institutionally determined. Unfortunately, production

^{1/}In one example area in the Bolilands (Yenkisa), the hired women and men worked the same number of hours per day and the daily wage rate was the same.

TABLE 3.5
SEASONAL VARIATION IN RURAL WAGE PER PERSON PER DAY
BY LABOR TYPE, SIERRA LEONE, 1974/1975

Month Year	Labor Type						All Daily ^a Total
	Mean Daily		Women Daily		Children Daily		
	Cash	Total	Cash	Total	Cash	Total	
	(Leones Per Day)						
May 1974	.26 (.36)	.67 (.51)	.12 (.22)	.49 (.39)	.17 (.66)	.48 (.69)	.60
June	.19 (.24)	.56 (.44)	.09 (.20)	.37 (.33)	.06 (.11)	.34 (.29)	.50
July	.19 (.35)	.60 (.53)	.09 (.20)	.42 (.35)	.07 (.12)	.31 (.26)	.53
Aug.	.17 (.35)	.52 (.48)	.06 (.14)	.38 (.28)	.05 (.09)	.20 (.19)	.46
Sep.	.13 (.23)	.44 (.39)	.06 (.14)	.37 (.49)	.04 (.09)	.15 (.16)	.41
Oct.	.15 (.46)	.51 (1.18)	.04 (.21)	.33 (.43)	.01 (.04)	.12 (.12)	.44
Nov.	.14 (.49)	.44 (.58)	.02 (.14)	.41 (.45)	.01 (.08)	.17 (.17)	.44
Dec.	.18 (.44)	.53 (.67)	.03 (.12)	.43 (.42)	.06 (.20)	.24 (.30)	.49
Jan. 1975	.18 (.60)	.49 (.72)	.03 (.10)	.30 (.28)	.04 (.12)	.19 (.23)	.43
Feb.	.28 (.89)	.65 (.96)	.02 (.07)	.38 (.42)	.00 (.02)	.42 (.85)	.55
Mar.	.21 (.54)	.52 (.63)	.08 (.28)	.36 (.39)	.00 (.02)	.25 (.20)	.49
Apr.	.26 (.57)	.54 (.67)	.01 (.05)	.44 (.55)	.12 (.18)	.32 (.29)	.58
Sierra Leone	.21 (.52)	.55 (.67)	.06 (.13)	.39 (.39)	.04 (.18)	.23 (.32)	.49

NOTE: Standard deviations are in parentheses below the figures to which they refer.

^aMean derived by multiple classification analysis of variance, i.e., adjusted for effects of labor type and region.

function analysis of specific enterprises has yielded rather inconclusive results (e.g. Jarrett, 1978). Attempts to estimate MVP's for male, female and child labor in upland rice production yielded regression coefficients which were not significantly different from zero (e.g. Spears, 1977). This lack of success in production function analysis is probably due to the fact that although information was collected on enterprise inputs and outputs, the joint production activities in the households made it difficult to allocate all inputs to specific enterprises. This probably explains why household production function analysis using more aggregative variables such as household income and total labor inputs, i.e. man-hour equivalents yield better results (e.g. Eponou, 1978). The question of sex discrimination in wage rates will therefore have to remain unsettled until more precise enterprise specific data becomes available.

A related issue is the benefits which women derive from their work in cash crop production. Some writers claim that although women contribute a substantial proportion of the labor input to cash crop production, and may even market the crop, the proceeds from the sale are kept and utilized almost exclusively by men. To test this hypothesis in Sierra Leone respondents in the decision making survey were asked to indicate who in the household benefited from the sale of farm produce and livestock. Table 3.6 presents the results. In at least two thirds of responding households the respondents indicated that the proceeds from the sale of farm produce were kept by the wife or shared jointly between husband and wife.^{1/} The proceeds

^{1/}Unfortunately it was not possible to isolate responses specifically for coffee and cocoa the major export tree crops. But these tree crops comprise less than 16 percent of total crop acreage in Sierra Leone.

Table 3.6 Beneficiaries of the Proceeds From the Sale of Farm Produce,
Livestock and Retail Trade in Sierra Leone

Proceeds	Location of Households	Beneficiary (% of Households)		
		Husband	Wife	Joint
1. Sale of Farm Produce				
a. Rice	Rural	35	0	65
b. Cassava	Rural	33	8	58
c. Palm Oil	Rural	21	5	74
d. Groundnuts	Rural	38	0	62
2. Sale of Livestock				
a. Goats and Sheep	Rural	53	9	38
b. Poultry	Rural	12	31	56
3. Profits From Retail Trade				
a. By Husband	Urban	54	46	0
	Rural	64	21	15
b. By Wife	Urban	10	65	25
	Rural	35	50	15

Source: Field Survey

from the sale of poultry are kept more often by women than by men, while that from sale of ruminant stock are more often kept by men, although in both cases over a third of the households share the proceeds. Another issue relates to the benefits which women derive from commercial activities when households move from rural to urban locations. Table 3.6 shows that women keep or share the profit from retail trade in a higher proportion of urban than rural households, indicating that urbanization tends to improve the relative position of women vis-a-vis men traders. Generally men usually keep the profits from their trading activities while women keep the profits from theirs.

4. FEMALE RURAL TO URBAN MIGRATION

In preceding sections we have examined the role of women in rural areas. We shall now examine the rural to urban migration process and some of the activities of female migrants in urban areas.

Although rural to urban migration is a necessary element of economic development, the problems that have emerged from very high rates of rural to urban migration in Africa have caused governments and policy makers to seek ways of slowing down the process. The rural to urban migration process in Africa has been analyzed by a large number of scholars.^{1/} Byerlee, Tommy and Fadoo (1976) recently completed a thorough examination of migration in Sierra Leone. We shall now discuss female rural to urban migration in Sierra Leone.

4.1 Characteristics of Migrants

Table 4.1 summarizes the education, age and sex characteristics of non-migrant and rural-urban migrants. The table shows that females are well represented in the rural to urban migration stream although the percent of migrants who are female (46%) is slightly lower than the percentage of females in the rural population (53%). Consistent with other migration surveys the Sierra Leone survey showed that young people dominate the migration stream. Youths aged 15 to 24 years comprise 41 percent of all rural-urban migrants and the mean age is only 17.5 years.

Table 4.1 also shows that rural/urban migrants have a higher level of education than the rural population from which they originate. Male

^{1/}For a survey of such literature see Byerlee (1972).

TABLE 4.1
EDUCATION, AGE AND SEX OF NONMIGRANTS AND
RURAL/URBAN MIGRANTS

Type of Migrant	Education ^a			Mean Educa- tion (Years)	Age ^a				Mean Age (Years)	Percent Female
	None	Pri- mary	Second- ary		<15	15-24	25-34	>35		
	(Percent Distribution)				(Percent Distribution)					
Nonmigrant	91	8	1	.31	49	15	11	26	22.5	53
Rural-urban migrants	55	12	33	2.82	28	41	20	10	17.5	46
Total rural population ^b	90	8	2	.44	40	16	13	30	25.1	53

SOURCE: Byerlee, Tommy and Fadoo(1976) Table 7.

^aAge and education are computed for the year when migration occurred. Education is for persons 15 years old and above.

migrants have an average of 2.8 years of formal education while female migrants had 1.5 years (Byerlee et al., 1976, Table 9).

4.2 Rates of Migration

Byerlee, Tommy and Fadoo [1976] computed age and sex specific rates of migration from the number of people who had migrated in and out of an area each year during a five year (1970-75) period. Also, they estimated both gross and net migration flows. Gross rates can be misleading for policy purposes. In Sierra Leone, for example, two-thirds of the migrants returned to rural areas after five years.

The migration rates show that both age and education have marked effects on the propensity to migrate to urban areas. The 15-34 age group has the highest gross cohort-specific migration rates for both sexes and both educational levels. Likewise, the cohort-specific rates for educated persons is five to ten times higher than those for people without education. On the other hand, sex has relatively little effect in the propensity to migrate. There is, however, a slight tendency for educated females to have a lower propensity to migrate compared to males of the same age cohort.

Aggregate gross rates of migration which measure the number of persons who actually leave, and aggregate net rates which measure the number of persons who not only leave but stay away (i.e., out migrants minus return migrants) show interesting sex differences. The uneducated female (no primary education) is more important and the educated female is less important than males among persons who actually migrate because of the lower level of education for rural women compared to men.

The effect of uneducated women migrating to urban areas for marriage has a strong effect as discussed below.

4.3 The Decision To Migrate

Byerlee, Tommy and Fattoo found that only 26 percent of all rural to urban migrants migrated to look for work while 20 percent left to marry, 26 percent left for schooling, 19 percent were sent for upbringing and 9 percent migrated for other reasons. Thus, migration for marriage and schooling are more important than migration for work. Also, the authors found that since migrants leave home at a relatively young age, 18 years in the case of the uneducated and 12 years among the educated, the decision to migrate is often made by persons other than the migrant, usually the head of the household.

Table 4.3 shows the importance of different persons in migration decision making. We see that even for migrants seeking to work in town over half of the decisions were made by a parent or relative at home. Unfortunately, the data do not allow a further breakdown of the working group by sex. But it is quite clear that marriage is the reason why most women migrate. In 20 percent of the cases the women accompanied their husbands who were moving to town. Another 20 percent moved to town seeking a husband while most of the rest moved to town to marry their betrothed who was already in town.

4.4 Female Migrants In Town

The migration survey provides some valuable information on the participation and remuneration of migrants in the urban labor market

TABLE 4.2
 PERSONS IDENTIFIED AS DECISION MAKER FOR MIGRANTS, BY TYPE OF MIGRANT

	Decision Maker					Total
	Migrant	Rural Household Head	Other Rural Relative	Town Relative	Spouse	
<u>Type of Migrant</u>			(Percent Distribution)			
1. Working	32	40	16	7	5	100
2. Housewife	4	44	17	5	30	100
3. Scholar	6	61	14	17	2	100

Source: Byerlee, Tommy and Fadoo, Table 17.

that point to some interesting differences by sex.^{1/} First, we define labor force participation as the percentage working or seeking work outside the home. Participation rates for age, sex and education cohorts are given in Table 4.3. Seventy-five percent of adult male migrants are in the labor force. The remaining one-quarter are largely in the 15 to 25 year age category while 56 percent of educated migrants are still attending school. In the case of uneducated migrants 23 percent are acquiring skills through apprenticeship. Among female migrants, however, only a quarter are in the labor force. This proportion rises with both age and education but still remains substantially lower than for males. These low participation rates are in contrast to the important contribution of women in rural occupations, particularly farming. Moreover, as a result of the substantial number of students and housewives not in the labor force, overall labor force participation rates for urban migrant households are lower than rural households. Hence earnings for those who work will have to be higher to offset the reduced number of workers.

The government is the dominant employer of migrants, employing half of all migrants who currently hold a job (Table 4.4). Self-employment in the small-scale sectors is also important. In contrast, wage employment in both small and large private firms together accounts for only 20 percent of total employment.

The division of employment between small and large-scale sectors differs significantly with education and sex. Over half of the employed

^{1/}It should be stressed that this analysis relates only to rural-urban migrants. The picture of female labor force participation that emerges here should not be interpreted as completely representative of female labor force participation in urban areas since urban born female residents are more active in the labor force, particularly in wage employment.

TABLE 4.3
 PERCENTAGE OF MIGRANTS IN THE LABOR FORCE EMPLOYED IN LARGE-SCALE AND SMALL-SCALE SECTORS, BY SEX AND EDUCATION
 (Percent)

	By Sex and Education						All Employed Migrants
	Males			Females			
	Unedu- cated	Edu- cated	All Males	Unedu- cated	Edu- cated	All Females	
Government sector ^a	40	73	57	7	48	20	52
Large Private firms	9	16	13	0	14	5	12
Total large-scale sector	49	89	70	7	62	25	63
Small-scale wage employed	14	4	9	0	10	3	8
Small-scale self-employed	37	7	21	93	29	72	28
Total small-scale sectors	51	11	30	93	39	75	36
Total	100	100	100	100	100	100	100

^aIncludes local government.

Source: Byerlee, Tommy and Fattoo, Table 22

TABLE 4.4
LABOR FORCE PARTICIPATION OF ADULT MIGRANTS, BY SEX, EDUCATION AND AGE
(Percent)

Labor Force	Sex									
	Males					Females				
	Education				All Males	Education				All Females
	Uneducated		Educated ^{a/}			Uneducated		Educated ^{a/}		
	Age(years)					Age(years)				
	15-24	25+	15-24	25+	15-24	25+	15-24	25+		
Wage employed	33	54	25	85	51	--	2	11	33	6
Self-employed	16	29	2	5	13	13	21	2	19	14
Unemployed	19	10	14	6	11	4	5	6	--	5
Total in the labor force	68	93	41	96	75	17	28	19	52	25
Housewives	--	--	--	--	--	78	65	35	33	59
Students	--	--	56	1	20	--	--	45	--	12
Apprentices	23	2	2	1	3	1	--	--	--	--
Others	9	5	--	2	2	4	6	1	14	4
Total not in the labor force	32	7	58	4	25	83	71	81	47	75
Total	100	100	100	100	100	100	100	100	100	100

Source: Byerlee, Tommy and Fatooh, Table 21

^{a/} More than 4 years formal education

male migrants without education are employed in small-scale sectors but almost all educated migrants are employed in large-scale sectors. Female migrants with and without education have a stronger tendency than males to be self-employed in small-scale sectors. This reflects to a large extent the dominance of women in food trading activities.

The migration survey also revealed that there is a wide gap between male and female incomes, even when allowance is made for the education and employment status of females.^{1/} For example, female migrant monthly earnings averaged Le 25.36 while male earnings averaged Le 61.44. However, when self-employed persons were excluded from the analysis, wages were no longer statistically different between sexes in wage employment, but are quite different in self-employment. This is because women in self-employment were mainly engaged in trading activities on a part-time basis and receive low monthly earnings, while men tend to be employed in small-scale industrial activities.

4.5 Female Urban Entrepreneurship in the Gara Industry^{2/}

Liedholm and Chuta (1976) report that employment in small-scale industrial establishments are almost completely male-dominated with the exception of the gara (hand tie and dye) industry. The surveys in Sierra Leone revealed that there are about 360 small-scale private gara dying

^{1/}The authors used a multiple classification analysis of variance which analyzed the effects of two age groupings (15-24 and over 25 years); two education groupings (less and more than five years education); employment status (government, large private firms, small private firms, and self-employed) and four urban locations (Freetown, Kono, other medium sized towns and small towns).

^{2/}This section draws heavily from Chuta (1978).

establishments^{1/} and seven cooperatives in Sierra Leone employing about 1,600 people. Although scholars such as Hymer and Resnik have asserted that small scale industries would decline in the course of economic development, Liedholm and Chuta found that gara dyeing is economically profitable with a large potential for future growth. Women constitute over 80 percent of the entrepreneurs, while 70 percent of the total labor input is supplied by women. They found that about 18 percent of gara cloth was exported, as compared with almost no exports for the other (male dominated) small scale industries.

Chuta used three concepts--economic profit, economic rate of profit and returns to proprietor--in order to analyze the economic profitability of gara. Economic profit was obtained for the representative firms by subtracting from the gross value of output, all material input costs, annual capital costs and labor costs valued at their opportunity cost. Returns to proprietors, i.e., income of proprietors was derived by subtracting from the gross value of output, the opportunity cost of all production inputs except proprietor and family labor. The economic rate of profit was obtained by dividing the total capital stock of each representative firm into the economic profit.

An examination of Table 4.5 reveals that apart from the cooperatives, all private gara producing representative firm types generated average annual incomes of Le 800 to Le 3,000. Also the representative firm types 1, 2, and 4 generated positive economic profits of Le 89.1, Le 179 and

^{1/}The word "gara" refers to the dye made out of the leaves of the leguminous plant (*Lonchocarpus cyanescens*), a straggling shrub or woody lumber which grows in northern Sierra Leone. Nowadays imported synthetic dyes are also used extensively in the gara industry.

TABLE 4.5 ANNUAL COSTS AND RETURNS PER FIRM IN THE GARA DYEING INDUSTRY
IN SIERRA LEONE, 1974/75

Firm Type	% of Firms	Costs of Production(Le)				Value of(Le) Output	Returns(Le)		
		Labor	Capital ^a	Material Inputs	Total		To Proprietor	Profit ^b / Total	%
1) Traditional dye, medium price fabric	4	1512	24	892	2429	2518	1584	89	120
2) Synthetic dye, medium price fabric, large town	42	1150	20	3554	4724	4903	1286	179	107
3) Synthetic dye, cheap fabric, small towns	50	1002	24	1530	2556	2388	834	167	14
4) Synthetic dye, expensive fabric, large towns	4	1645	264	3190	5099	6591	3016	1492	117
5) Co-op production units	*	3004	2604	10,995	16,603	12,600	201	-4003	-3

* Less than 1%

^a/Annual user cost estimated at a discount rate of 20%.

^b/Proprietor labor valued at Le 0.84 per hour, the approximate value of the proprietors marginal profit estimated using production function analysis(Leidholm and Chuta, 1976).

Source: Chuta (1978) Table 2.

Le 1,491.6 and hence positive economic profit rates of 120 percent, 107 percent and 117 percent respectively. Proprietor incomes in the female dominated gara industry are the second highest of all rural small-scale industrial enterprises, being exceeded only by incomes of carpenters. This points to the great potential for the industry in terms of income generation and employment of women.

5. THE ROLE OF WOMEN IN DECISION-MAKING

There is very little published material on the role of women in decision-making in Africa. Most socio-economic research on the role of African women in rural development does not address the issue of decision-making in the household. But this is an important issue in development programming. It would be useful to know who in a household makes decisions related to the cultivation of a crop, in order to single out the decision maker for special attention by "change agents."

In preceding sections we have examined the participation of men and women in the labor force. We will now examine their relative roles in decision-making. As pointed out earlier, the data in this section were collected in a special survey during which female enumerators interviewed wives while male enumerators used the same questionnaires to interview the husbands. There was no attempt to get couples to arrive at a consensus. Consequently, the answers given to the questions were sometimes different.

With regards to decisions relating to the farm business, disagreements between wives and husbands occurred in less than 10% of sampled households. Disagreements occurred more often in questions relating to household decisions. Even then disagreement occurred in over 10% of household's only with regards to decision on what to feed babies, when to purchase staple foods (rice, palm oil, meat and fish), cooking and eating utensils, when to seek medical attention, when wives should become retail traders and when to borrow money for purchase of food items.

Since there was no a priori basis for judging whether husbands or wives were correct, and disagreements were in any case minor, the results discussed in the rest of this chapter are based on the averaging of the male and female responses.

5.1 Farm Business Decisions

Table 5.1 contains information about farm-related decisions in rural Sierra Leone, in terms of the percentage of responding households in which a particular decision was made by the husband alone, the wife alone or jointly by husband and wife.

With reference to the decision as to what piece of land is to be planted with a particular crop it is evident that men decide where to plant annual and perennial crops (e.g., rice, groundnuts, coffee, cocoa) while women generally decide where to plant vegetables. The percent of households in which men make the decision for onions, pepper and tomatoes is above that for green vegetables in general, showing the effect of commercial production of these crops in the Lungi areas. Men are more important in decision making for the commercial production of these crops. It is interesting to observe that women are important in decisions about land selection for vegetable cultivation although as shown in Table 2.1, they only work the same numbers of hours as men in vegetable cultivation. On the other hand land selection for groundnut cultivation, a female-dominated field crop, is a male-dominated decision.^{1/}

^{1/}Actually this is not a surprising finding since groundnuts are usually planted on land which was previously planted to upland rice. The decision to plant upland rice on a piece of land (male decision) is at the same time a decision to plant groundnuts the following year.

Table 5.1 The Relative Importance of Husbands and Wives in the Making of Farm-Related Decisions in Rural Sierra Leone

Type of Decision	Decision Maker (% of Households)		
	Husband	Wife	Joint
1. Where to plant crops			
a. Annual or perennial field crops	92	4	4
b. Green vegetables	8	89	3
c. Onions, peppers, tomatoes	29	68	3
2. Hiring-in of farm labor			
a. For felling trees	93	3	3
b. For digging and planting	90	6	3
c. For weeding	68	22	10
d. For harvesting	90	3	7
e. Threshing of grain	82	8	10
3. Resolution of labor demand conflicts			
a. During weeding	94	3	3
b. During harvesting	91	3	6
4. Hiring out farm labor			
a. Husband's labor	96	0	4
b. Wife's labor	60	36	4
c. Child labor	78	0	22
d. Other household member's labor	72	4	23
5. Sale of Farm Produce			
a. Rice	72	6	22
b. Cassava	57	21	21
c. Palm Oil	55	18	27
d. Groundnuts	75	17	8
6. Sale of Livestock			
a. Goats and sheep	68	20	12
b. Poultry	39	48	12
7. Whether to join development project ^{a/}	100	0	0

a/ Participation in Eastern Area Integrated agricultural development project.

Source: Field Survey.

The management of farm labor is clearly an area of male decision-making. Apart from the decision to hire labor for weeding (a female-dominated activity) and to sell the wife's labor, men make all labor management decisions in over 80% of households. Resolution of labor demand conflicts, i.e., decisions as to which of two competing crops to work on first, including which to weed first is solely a male decision in over 90% of households. Even in labor management decisions relating to activities dominated by women, female participation solely or jointly with their husbands, occurs in only a third of households.

Female participation in decisions relating to sale of staple foods, including groundnuts, is even lower except for the sale of the important cash earning commodity palm oil where they participate in almost half of all responding households. Finally, we see that the decision to join an agricultural development project was exclusively a male decision.^{1/}

We can conclude then, that in Sierra Leone, farm business decision making is male dominated, although women do have important inputs particularly with regards to vegetable cultivation and the sale of farm produce and livestock. This finding is consistent with earlier findings that men supply 60% of the total labor input in agriculture.

5.2 Household Decisions

Table 5.2 presents data on the relative importance of men and women in the making of household related decisions. The information is presented

^{1/}In this particular case project participation led to a big increase in male hours of work but did not affect female hours. The project introduced biological-chemical technology.

Table 5.2 The Relative Importance of Husbands and Wives in the Making of Household Related Decisions in Urban and Rural Areas of Sierra Leone

Type of Decision	Location	Decision Maker (% of Householding)		
		Husband	Wife	Joint
1. Feeding				
a. What to feed babies	Urban	20	71	9
	Rural	27	72	1
b. What to cook for household	Urban	3	93	4
	Rural	8	92	0
2. Whether/When to Purchase Staple Foods				
a. Rice	Urban	20	67	5
	Rural	40	58	3
b. Palm Oil	Urban	3	96	1
	Rural	26	73	1
c. Meat or Fish	Urban	2	97	1
	Rural	34	64	2
d. Condiments(salt, maggi cubes)	Urban	0	99	1
	Rural	20	79	1
3. Whether/When to Purchase Imported Foods				
a. Sugar	Urban	29	67	4
	Rural	64	33	3
b. Tin Milk	Urban	29	68	3
	Rural	60	32	2
4. Whether/When to Purchase Durables				
a. Furniture	Urban	86	2	11
	Rural	88	2	9
b. Cooking and Eating Utensils	Urban	25	67	7
	Rural	64	21	15
c. Refrigerator/ Cooker	Urban	79	10	11
5. Whether/When to Purchase Utilities				
a. Pay house rent	Urban	95	3	3
b. Pay for electricity	Urban	95	3	2
c. Buy fuel(Firewood/ Coal)	Urban	18	81	1
6. Whether/When to Purchase Clothing				
a. For husband	Urban	89	9	3
	Rural	84	13	3
b. For wife	Urban	31	58	11
	Rural	60	31	9
c. For children	Urban	33	30	37
	Rural	73	7	20
7. Whether/When to Pay Medical Fees	Urban	3	8	13
	Rural	92	1	7
8. Whether/When children to attend formal school				
a. First Son	Urban	50	2	48
	Rural	73	1	26
b. First daughter	Urban	53	4	43
	Rural	80	0	20

Source: Field Survey

separately for the urban and rural sample and relates to consumption expenditure decisions.

The relative importance of women and men vary depending on the type of decision. But the figures in Table 5.2 show quite clearly that irrespective of the type of decision, women play a bigger role in household decision making in urban than in rural areas. Generally, there is an increase of at least 25 percentage points in the households in which women solely or jointly make household decisions, as one moves from rural to urban areas. In fact in some cases, e.g. when or whether to purchase imported foods or cooking and eating utensils, decisions which are male-dominated in rural areas become female-dominated in urban areas. Urbanization is apparently having a beneficial effect on the participation of women in household decision making in urban areas.

Decisions related to feeding (when and what to feed) are female-dominated in rural as well as urban areas, as are decisions relating to the purchase of staple food items. On the other hand, decisions relating to the purchase of imported food items are female-dominated in urban areas where the consumption of such items is common, but is male-dominated in the rural areas where this type of consumption is relatively minor, although tending to increase with rising incomes (see King & Byerlee, 1977).

Decisions relating to the purchase of consumer durables and utilities are male-dominated, except for decisions relating to the purchase of cooking and eating utensils (pots and plates) and fuel (firewood and coal) which become female-dominated in urban areas.

Men usually make the decisions related to the purchase of personal items (e.g., clothing, soap, jewelry, etc.) for all family members in

rural areas. But in urban areas they retain only the decision making role for their own personal items becoming much less important in decision making for purchase of items for wives and children.

Men are the major decision makers with regard to decisions related to medical care and education. Consultation with wives in these areas also increases with urbanization.

5.3 Retail Trade and Credit Decisions

As in the case for household decision-making, the figures in Table 5.3 show that women are more important in decision-making related to retail trade and credit operations in urban rather than in rural areas.

The decision to enter into the retail trade is apparently largely made by the household member who actually becomes the trader, although men seem to have a more important role in making the decision for the wife to become a trader than wives have in deciding that their husbands become traders, particularly in rural areas.

In rural areas decisions to borrow money by pledging farm land or other means^{1/} for purchase of food, clothing for men and house repairs are usually made by men. But women play an important part, usually jointly with their husbands, in deciding whether and when to obtain loans for purchase of clothing for women and children and for financing social activities like weddings or funerals. But only in deciding to borrow money for purchase of clothing for themselves do women alone make the decisions in half of all reporting households.

^{1/}Pledging involves the surrender of use of farm land to a person in return for a loan. The land is redeemed by repayment of the loan. Unsecured loans could also be obtained from money lenders. For details of credit operations in rural Sierra Leone (see Kamara, 1977).

Table 5.3 Relative Importance of Husbands and Wives In the Making of Decisions Related to Retail Trade and Credit in Urban and Rural Areas of Sierra Leone

Type of Decision	Location of Household	Decision Maker (% of Households)		
		Husband	Wife	Joint
1. Entry into Retail Trade				
a. By Husband	Urban			
	Rural	78	6	17
b. By Wife	Urban	21	67	12
	Rural	36	57	7
2. Whether/When to Pledge Land				
	Rural	79	5	15
3. Whether/When to Borrow Money				
a. For food items	Urban	43	16	41
	Rural	63	14	23
b. For house repairs	Urban	50	7	43
	Rural	79	12	9
c. To buy clothes for husband	Urban	61	6	32
	Rural	84	11	4
d. To buy clothes for wife	Urban	24	41	35
	Rural	47	51	2
e. To buy clothes for children	Urban	23	20	57
	Rural	54	26	20
f. To finance son/daughters wedding	Urban	22	17	61
	Rural	47	7	46
g. To finance relative funeral	Urban	40	8	52
	Rural	49	4	47

Source: Field Survey

In summary, we note that men usually make decisions related to the farm business in rural Sierra Leone, especially decisions related to labor management. Women play an important role in household decision making. In rural areas such a role is usually subsidiary to that of men except in decisions related to feeding and the purchase of domestic staple foods for which women are usually the decision makers. With urbanization women play an increasing role in decision making, replacing men as the major decision maker in certain cases, e.g., decisions relating to the use of imported food items.

CONCLUSIONS AND POLICY IMPLICATIONS

In this study we have examined the role of women in the Sierra Leone economy. Emphasis has been put on the rural economy because it is by far the most important sector both in terms of employment and income generation. From the analysis we can draw the following general conclusions.

1. In the rural areas women play an important role in agriculture, contributing 40 percent of the total labor input. But such contribution is much less than reported in the literature, which is based mainly on East African research findings. Women dominate the production of groundnuts and vegetables, but play a minor role in tree crop production. Also, with the exception of clearing of heavy vegetation at the onset of the planting season no agricultural task is exclusively assigned to any one sex. Each sex contributes at least a third of the labor input in all other tasks, indicating that there is much labor mobility in rural areas.

2. Agricultural development projects which stress partial mechanization of land preparation activities, tend to have an adverse effect on the female work load. But the potential adverse effects of development projects is not limited to women. Projects introducing biological-chemical technology tend to affect the work load of men adversely, at least in the early years of land development.

3. In contrast to their significant role in agriculture, women play a minor role in all small-scale industrial activities in both rural and urban areas, with the exception of the gara industry. The gara industry is dominated by women who provide 70% of the total input and comprise 80% of

the proprietors. The gara industry has excellent growth prospects, including favorable international trade opportunities.

4. Female wage rates are lower than male wage rates in both rural and urban areas. The data were not adequate to determine whether the difference in wage rates by sex in rural areas reflects differences in the productivity of male and female labor or are caused by sex discrimination. In the urban areas wage rate for men and women in wage employment are equal. But women earn significantly less in self-employment, because they dominate the part-time retail trade where their earnings are low, compared to the earnings of self-employed men in the more remunerative small-scale industrial activities.

5. Women play a minor role in agricultural decision-making. Even in activities in which women provide the majority of labor inputs, e.g. weeding, they have little to do with important farm management decisions related to the resolution of labor bottlenecks and the hiring of labor. Again, this is in contrast to the important role of women in farm management in East Africa (see Staudt, 1977). On the other hand, women play an important role in household decision-making and decisions relating to the borrowing of money. With urbanization, women play an increasing role in decision-making, replacing men as the major decision-makers in certain cases, e.g., decisions relating to the purchase and use of imported food items.

6. Women share equally in the proceeds of sales of cash crops as well as in the profits derived from retail trade. Rural-urban migration therefore need not have an adverse effect on women as the household shifts to more cash earning activities.

Certain policy conclusions emerge from this study. With regard to agricultural policy it is clear that planners need to design agricultural development projects so that they do not adversely affect any one sex. As we have seen, the sex adversely affected could just as easily be men or women depending on the project, the nature of the technology and the biological variables. Although men are the dominant decision-makers in farming, the importance of women in credit decisions indicate that they should be carefully considered in agricultural development projects. In short, extension workers should treat the rural family as a unit when trying to teach new skills and introduce change. Since women share in the proceeds of cash sales, they will benefit from programs that raise rural incomes whether incomes are raised by cash or food crop production. There is therefore no need to design special "women" agricultural projects, at least in this part of West Africa.

With regards to urban industrial policy, government should ensure that profitable female-dominated activities are encouraged. Help in the form of extension advice is needed to raise incomes in the low income female dominated activities such as small-scale retail trade. Also, government should ensure that its tariff and macro-economic policies do not discriminate against female-dominated enterprises.

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APPENDIX A

II. CHILD/FAMILY WELFARE

The following questions relate to decisions which have been made by your household in the past. If your household has never had to make such a decision, please say so.

		<u>Decision Maker</u>		
		<u>Self</u>	<u>Spouse</u>	<u>Joint</u>
1.	Who decides <u>what</u> to feed the baby/children each day?	_____	_____	_____
2.	Who decides <u>when</u> to feed the baby/children each day?	_____	_____	_____
3.	a. Who decides what to cook for the household each day?	_____	_____	_____
	b. Does he/she ask for your suggestions? Yes/No _____			
	c. If there were things about the meals and child feeding that you do not like and wish to change, how would you influence the decision already made by your spouse?			

4.	Who decided that your children should go to school?	<u>Self</u>	<u>Spouse</u>	<u>Joint</u>
	a. Son 1	_____	_____	_____
	2	_____	_____	_____
	3	_____	_____	_____
	b. Daughter 1	_____	_____	_____
	2	_____	_____	_____
	3	_____	_____	_____
5.	Who can stop your children from going to school?			
	a. Son 1	_____	_____	_____
	2	_____	_____	_____
	3	_____	_____	_____
	b. Daughter 1	_____	_____	_____
	2	_____	_____	_____
	3	_____	_____	_____
6.	State 2 important occasions when your children had to be taken to a doctor.			
	a. Illness _____ Who decided? _____	_____	_____	_____
	b. Illness _____ Who decided? _____	_____	_____	_____

7. If any of your children has ever been vaccinated (e.g., small pox, cholera):

a. Who decided to have him/her vaccinated? _____

b. Did you/your spouse approve? _____

Yes/No _____

8. For Women

a. When your husband wants to marry another wife, would he consult you before the marriage?

Yes/No _____

b. Why would he consult/not consult you? _____

c. If you did not like the idea, what would you do to get him to change his mind?

9. For Men

a. When you married your last wife, did you consult any of your wives? Yes/No _____

b. If yes, which ones? _____

c. Why did you consult/not consult them? _____

d. If you wish to marry again, would you consult them?

Yes/No _____

Explain _____

10. a. If your spouse wants a divorce, would he/she consult you? Yes/No _____

b. Why? _____

c. If you did not want the divorce, what would you do to try to prevent it? _____

III FARMING

		<u>Decision Maker</u>		
		<u>Self</u>	<u>Spouse</u>	<u>Joint</u>
11.	Who decided what piece of land (i.e. what bush) was to be farmed this season?	_____	_____	_____
12.	a. Who decides whether to pledge/sell a piece of land?	_____	_____	_____
	b. If you <u>don't agree</u> , what can you do?	_____	_____	_____
	_____	_____	_____	_____
	_____	_____	_____	_____
13.	If your household grew the following crops this season, who decided where (i.e., on what piece of land) it was to be planted on?	<u>Self</u>	<u>Spouse</u>	<u>Joint</u>
	a. Upland rice	_____	_____	_____
	b. Swamp rice	_____	_____	_____
	c. Benniseed	_____	_____	_____
	d. Cassava	_____	_____	_____
	e. Sweet potatoes	_____	_____	_____
	f. Green vegetables	_____	_____	_____
	g. Onions/tomatoes/pepper	_____	_____	_____
	h. Cocoa	_____	_____	_____
	i. Coffee	_____	_____	_____
	j. Oil palm	_____	_____	_____
	k. Ginger	_____	_____	_____
14.	If your household is participating in the following development project, who made the decision to join?			
	a. Eastern Area Project --			
	- swamp rice scheme	_____	_____	_____
	- upland rice scheme	_____	_____	_____
	- coffee/cocoa scheme	_____	_____	_____
	- oil palm scheme	_____	_____	_____
	b. Northern Area Project			
	- swamp rice scheme	_____	_____	_____
	- upland rice scheme	_____	_____	_____
	- groundnut scheme	_____	_____	_____
	c. Mechanical cultivation scheme	_____	_____	_____
	d. Fertilizer use (for non-participants in EAP and NAP only)	_____	_____	_____

15. For the following crop/livestock which are produced in your household: (a) who decides whether/when to sell some (decision maker), (b) who actually makes the sale (seller) and (c) who gets the money (beneficiary)?

Item	a. Decision Maker			b. Seller			c. Beneficiary		
	Self	Spouse	Joint	Self	Spouse	Joint	Self	Spouse	Joint
<u>Livestock</u>									
Pigs									
Cattle									
Goats									
Sheep									
Chickens									
Ducks									
<u>Crops</u>									
Rice									
Cassava									
Maize									
Millet/ Sorghum									
Fundi									
Fruits									
Palm Oil									
Palm Wine									
Groundnuts									

16. What would you do if you want to prevent your spouse from selling an animal or crop?

17. Who decides whether/when to hire labor (daily or piece rate) to perform the following tasks (ENUMERATOR USE FOLLOWING CODE: S = Self, Sp. = Spouse, J = Joint):

Task	Crop			
	Upland Rice	Swamp Rice Type _____	Tree Crop Name _____	Development Project Crop (or onions, tomatoes) Name _____
1. Felling trees				
2. Hoeing/Planting				
3. Trans-planting				
4. Weeding				
5. Harvesting				
6. Threshing				

- | | <u>Decision Maker</u> | | |
|--|-----------------------|---------------|--------------|
| | <u>Self</u> | <u>Spouse</u> | <u>Joint</u> |
| 18. The above 4 crops are ready for <u>weeding</u> at the same time. Who decides which one will be weeded first? | _____ | _____ | _____ |
| 19. The above 4 crops are ready for <u>harvesting</u> at the same time, who decides which one will be harvested first? | _____ | _____ | _____ |
| 20. Who decides that the following should hire out their labor, i.e., work for some other farmer (daily wage or reciprocal labor): | | | |
| a. Yourself | _____ | _____ | _____ |
| b. Spouse | _____ | _____ | _____ |
| c. Children | _____ | _____ | _____ |
| d. Other household members | _____ | _____ | _____ |
| 21. If you or any member of your household has ever joined a work group: | | | |
| a. Who decided that <u>you</u> should join the group? | _____ | _____ | _____ |
| b. Who decided that <u>your spouse</u> should join the group? | _____ | _____ | _____ |
| c. Who decided that <u>your son</u> should join the group? | _____ | _____ | _____ |

IV. TRADING AND OTHER ACTIVITIES

22. If you or any member of your household is a trader give the following information:

Relationship to you	Commodities Traded ^b	Who decided to start the trade?			Source of funds to start the trade					
		Slf	Sp.	Jo.	Slf.	Sp.	Jo.	Other Relatives	Bank Loan	Oth. Loan (Specify)
1. Self										
2.										
3.										
4.										
5.										

^a1st Wife, daughter, etc.

^bStaple food crops, fish, meat, provisions, clothing, etc.

23. Who keeps the profit from trade by

	<u>Decision maker</u>		
	<u>Self</u>	<u>Spouse</u>	<u>Joint</u>
a. Yourself.....	-----	-----	-----
b. Your Spouse	-----	-----	-----
c. Your children	-----	-----	-----
d. Other household members	-----	-----	-----

24. If you have ever joined a savings club (e.g. assusu, thrift and credit coop):

- a. Who decided that you should join?
- b. Who (if anyone) did you consult before joining?

27. If your household ever needed to borrow money (goods) for the following reasons, please indicate: (a) who decided that money should be borrowed (decision maker), (b) who actually borrowed the money (borrower) and (c) who was/is responsible for getting the money to repay the debt.

Need	a Decision Maker			c Borrower			c. Debt Responsi- bility		
	Slf	Sp	Jo	Slf	Sp	J●	Slf	Sp	J●
a. For food									
b. To repair devlling									
c. To buy cloths For yourself									
For your spouse									
For your Children									
d. wedding of:									
Your son									
Your daughter									
Your spouse									
e. Death of:									
Your relative									
Your spouses relative									

THANK YOU FOR YOUR TIME, ETC.