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A Modified Time Budget Methodology  
for gathering base-line  
data on the Roles and  
Responsibilities of Rural  
Women in Nicaragua

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## INTRODUCTION

The purpose of the Nicaraguan portion of "A Preliminary Study in Three Countries", Grant No. AID/otr-G-1477 is to develop a standard methodology for gathering data on the roles and responsibilities of rural Nicaraguan women so that the work of development planners can proceed from a base of fact and reality. By understanding women's roles and potential, planners can tailor programs which will allow women as well as men to be participants and beneficiaries in the development of their country.

The project is being directed by Coralie Turbitt of the International Center for Research on Women in three countries, Kenya, Indonesia and Nicaragua. Research Director for Nicaragua is Vivian Gillespie. Dr. Mayra Buvinic, also for the ICRW Washington office, assisted with development of research strategies and analysis. The Field Work Coordinator for Nicaragua was Katherine Carey Clifford. Mrs. Clifford, a former Peace Corps Volunteer in Nicaragua, was trained in their basic grains program and worked and lived in the area of Esteli. Field work of eight weeks took place in Area V, or the Central Interior region of Nicaragua. The basic field team consisted of the Field Work Coordinator and three Nicaraguan University students. They were assisted variously by a public health collaborator, a public health educator, and a recent sociology graduate—all Nicaraguan.

Various in-house documents, maps, questionnaires and raw data were generously provided by the Instituto de Bienestar Campesino (INVIERNO) and the Direccion de Planificacion Sectorial Agricola (DIPSA). In addition we received cooperation at several INVIERNO CEDES of rural social workers and technical agricultural experts (AGROMOCS) as well as transportation assistance in and out of our study sites whenever possible.

The Nicaraguan Office of Women under the direction of Dra. Norma Gutierrez has been our link with the Government of Nicaragua. Dra. Gutierrez was always willing to offer advice and the full services of her office.

Finally, the Rural Development Office, USAID/Nicaragua, has loaned crop charts, agricultural studies and technical advice and knowledge concerning the Central Interior region.

Coding of the raw data and subsequent data analysis began immediately at the close of field work, May 9, 1977, and was accomplished by the full time efforts of the Project Research Director and Field Work Coordinator in less than three month's time.

## SUMMARY

After eight weeks of field testing in six different localities we conclude that time-budget preparation based on field observation by semi-skilled investigators (not necessarily academically trained social scientists) will yield information about the rural poor, and especially the rural poor woman, which should be of great value to development planners, project designers and project managers. The trial application of this methodology has produced significant information not available heretofore and provides a snapshot of life among some of Nicaragua's poorest rural dwellers.

For example, the median age of our sample was seven years older than the national median age, indicating a possible female, as well as male, migration to cities and towns. Women in our sample showed a uniformly higher educational level than their male companions. We found that 20% of our sample households have no adult male present and are headed by rural women. Further, our study shows that almost twice as many campesinas as national census figures report work for some remuneration. The total fertility rate of our sample, another index of rural life, is approximately double the national rate as listed by Bove.

An additional finding elicited by this methodology is that 16% of the total number of children in our sample had

left their rural homes in search of better education or work opportunities or to get married. Interestingly, the two localities which lost the greatest number of young people to migration were the same localidades which evidenced the lowest relative standard of living as measured by the three standard-of-living indicators we developed.

The methodology is ready for application now. To achieve its full utility, we recommend that it be used to obtain an enlarged portrait of the rural poor woman. Diachronic series of time budget observations during other crop cycle phases will expose additional facets of woman's role and her responsibilities. Moreover, in marginal urban barrio settings, where it is estimated 78% of the inhabitants are rural migrants, the same method should be applied to learn whether, in that migration, woman's lot has been substantially altered. The data thus obtained should help to indicate how the rural woman can be engaged in efforts to improve the quality of her life and that of those about her.

## SUMMARY DATA

The composite woman derived from our study is just over 34 years old. She had her first child by the time she was twenty, and of the five children she has borne, one has not survived. She has been to school (for more years than her male contemporary) and may be able to read and write.

This hypothetical campesina lives in a house with walls of earth and wood, a tile roof and a dirt floor. There is no running water and not even a latrine. She works long and hard just to maintain marginal subsistence and can expect to do so for another twenty years ---

The aggregate data from which this cross section of our sample is derived are shown in figures 1,2.

DEMOGRAPHIC INFORMATION ON THE TYPICAL FAMILY IN SAMPLE ACCORDING TO LOCALITY

DEMOGRAPHIC INFORMATION	AVERAGES TAKEN FROM DEMOGRAPHIC MATERIAL						
	Tomabú	Río Abajo	Ducuali Grande	El Prado	Puerta Vieja	Santa Lucia	Average
Age	35	35	45	30	36	25	34.3
Woman's age at "Marriage"	18	20	18	18	19	18	18.5
Age of woman at birth of first child	19	21	19	19	20	19	19.5
Children Alive	4	4	5	7	4	2	4.3
Children deceased	1	1	2	2	.8	.4	1.2
Educational Level attained: woman	2	3	2	.7	1	4	2.1
#people who live in house	10	7	6	7	7	6	7.2
Educational level attained: man	.7	3	.9	.3	.6	4	1.6

FIGURE 1

TYPICAL HABITATION-TOTAL SAMPLE

INFORMATION ON HABITATION	TYPE HABITATION MOST OFTEN OBSERVED					
	Tomabú	Rio Ahajo	Ducuali Grande	El Prado	Puerta Vieja	Average
Walls of house	Wood/mud	Wood/mud	Wood or mud	Mud/sticks	Mud/sticks	Wood/mud sticks
Roof	TILE	TILE	TILE	TILE	ZINC OR TILE	TILE
Floor	Dirt	Dirt	Dirt	Dirt	Dirt	Dirt
# Rooms	4	5	4	3	5	4.2
# People per room	2.5	1.38	1.64	2.9	1.7	2.0
# Pieces of furniture	14	10	10	10	14	11.6

FIGURE 2

## AREA SELECTION

Because the focus of our methodology was to be the rural woman we wanted to work in distinctly rural areas. As a result, it was decided that field research might most beneficially take place in area V, Nicaragua's Central Interior region because 74% of that region's population has been classed as rural. Moreover, the Central Interior is home for 25% of the country's total rural population. Additionally, the Nicaraguan Government's Instituto de Bienestar Campesino (INVIERNO), which has development projects planned and underway in this area, generously offered raw, unanalyzed data from a social questionnaire the Instituto had administered to a sample of residents of the area, as well as demographic information useful for preliminary site selection. It was hoped that results of our study would be useful to INVIERNO, an AID-backed agency, in planning future projects which might impact on women.

## DESCRIPTION OF AREA

### DESCRIPTION OF CENTRAL INTERIOR

The central interior zone (or Area V) of Nicaragua is noted for its mountainous terrain and cool climate. Within the sector temperatures and rainfall vary greatly according to the season and the elevation of each location.

With a total land area of 2,314,000 manzanas (one manzana = 1.4 acres), 1,223,700 manzanas (or 53%) are

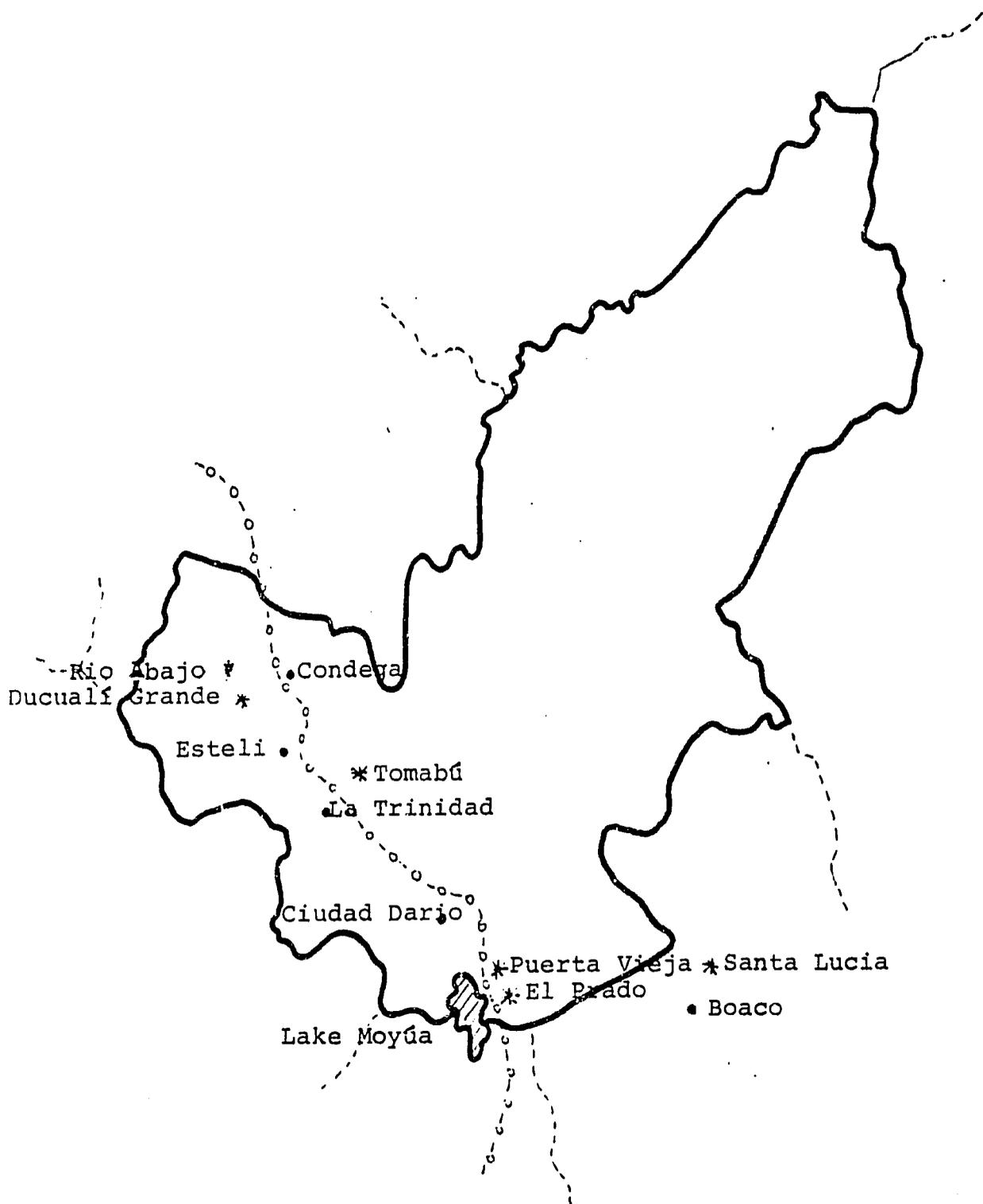
MAP #1 NICARAGUA BY REGION



KEY

- Pan American Highway
- Large Cities
- Localidades Visited

MAP #2 INTERIOR CENTRAL REGION



## KEY

-o-o-o- Pan American Highway

-----

. Main Towns

\* Study Sites

occupied in farming making this an agriculturally intensive zone.

According to a study done by DESAL (Centro para el Desarrollo Economico y Social de America Latina), the minimum amount of cultivated land that is necessary for a family to subsist modestly is fifteen manzanas (Gomez, Edgard Macias-DIECISEIS COMUNIDADES RURALES-1971). Of the 24,028 farms in the central interior 11,590 (or 48%) consist of 20 manzanas or fewer.

Agricultural products include beans, corn, coffee, sugarcane, sesame, and tobacco. (See Tables #1 and #2 for levels of production and Table #3 for crop cycles).

Of the total population of Area V, of about 303,000, some 74% is termed rural. (see Table #4).

#### SITE SELECTION

Original project design called for the random selection of six localities in area V; two where development projects had been in effect for a year or more, two where development projects had been in effect 6 months, and two where no project had been started. One goal was to measure the effect these projects had had on the rural woman and conversely, what impact if any, she had had on project design and implementation. We proposed to work at the small localidad (as opposed to pueblo or ciudad) level, estimating a population of about 200 persons with an average of 30 families per localidad.

TABLE # 1

NICARAGUA: Distribution of National Production by Region & Activity, 1971

Activity/Region	Pacific North	Pacific Central	Pacific South	Interior North	Interior Central	Interior South	TOTAL
Basic Grains <sup>1</sup> (hundred weight)							
Corn	659,782	494,501	73,559	430,074	787,580	1,094,722	3,530,218
Beans	6,100	44,014	14,481	47,835	175,662	47,668	335,760
Rice (paddy)	25,007	69,886	33,169	68	47,173	164,594	339,897
Rice (upland)	5,440	80,043	57,024	7,551	4,885	31,580	186,523
Sorghum	160,516	109,200	2,868	30,981	149,247	45,042	497,854
Export Crops <sup>1</sup> (hundred weight)							
Cotton	1,519,126	195,507	---	502	21,387	---	1,736,522
Coffee	6,018	392,904	8,124	139,269	327,304	54,020	927,639
Sugarcane	27,435,340	6,607,200	3,077,740	195,340	1,475,160	173,620	38,964,400
Sesame	66,580	15,595	15,095	8	5,027	834	103,139
Tobacco	---	1,500	11,521	24,210	8,102	67	45,400
Livestock							
Cattle <sup>2</sup>	356,079	143,487	159,431	89,461	440,869	885,269	143,487
Milk <sup>3</sup>	15,625,334	22,205,596	6,560,744	3,754,095	15,180,051	38,930,056	102,255,876

1 Production in Hundredweight

2 Head

3 Production in Gallons

Source: An Analysis of Agricultural Production in Nicaragua, 1974

TABLE #2

NICARAGUA: Percent Distribution of National Production by Region & Activity, 1971

<u>Activity/Region</u>	<u>Pacific North</u>	<u>Pacific Central</u>	<u>Pacific South</u>	<u>Interior North</u>	<u>Interior Central</u>	<u>Interior South</u>	<u>TOTAL</u>
Basic Grains							
Corn	18.69	14.01	2.08	11.90	22.31	30.01	100.00
Beans	1.82	13.11	4.31	14.25	52.32	14.20	100.00
Rice (paddy)	7.36	20.56	9.76	----	13.88	48.83	100.00
Rice (upland)	2.92	42.90	30.56	4.05	2.62	16.93	100.00
Sorghum	32.24	21.93	1.58	6.22	29.99	9.05	100.00
Export Crops							
Cotton	87.48	11.25	----	.03	1.23	<del>1.23</del>	100.00
Coffee	.64	42.35	.87	15.02	35.28	5.82	100.00
Sugarcane	70.41	16.95	7.89	.50	3.78	.44	100.00
Sesame	64.55	15.12	14.64	----	4.87	.81	100.00
Tobacco	----	3.30	25.37	53.32	17.84	.14	100.00
Livestock							
Cattle	14.61	12.86	6.64	8.41	21.00	36.47	100.00
Milk	15.28	21.71	6.41	3.67	14.84	38.07	100.00

Source: An Analysis of Agricultural Production in Nicaragua, 1974

TABLE # 3

SMALL FARMER'S 2-ANNUAL CROP SYSTEM MODEL

REGION V, NICARAGUA - NOVEMBER 1974

CROPS	MAY	JUNE	JULY	AUGUST	SEPTEMBER	OCTOBER	NOVEMBER	DECEMBER	JANUARY	FEBRUARY	MARCH	APRIL
Cabbage (1)	111111	/	/	/	/	/	/	/	/	/	/	/
Cabbage (2)							1111111111	/	/	/	/	/
Beans (1)	1111	/	/	/	/	/	/	/	/	/	/	/
Beans (2)					1111111111	/	/	/	/	/	/	/
Corn (1)	111111	/	/	/	/	/	/	/	/	/	/	/
Corn (2)						1111	/	/	/	/	/	/
Onions								1111111111	/	/	/	/
Tomatoes								1111111111	/	/	/	/
Sesame (2)					1111111111	/	/	/	/	/	/	/
Potatoes (1)	11111	/	/	/	/	/	/	/	/	/	/	/
Potatoes (2)					11111111	/	/	/	/	/	/	/
Beets								1111111111	/	/	/	/
Carrots								1111111111	/	/	/	/
Sorghum (1)	1111	/	/	/	/	/	/	/	/	/	/	/
Sorghum (2)					11111	/	/	/	/	/	/	/

11111=Planting time (I) Irrigated  
 /////  
 /////  
 ))))=Harvest (1) First crop  
 (2) Second crop

Source: Armando J. Gonzalez, Agronomist, AID/Nicaragua

TABLE #4

NICARAGUA: Total Population & Population of Rural & Urban Sectors by Region, 1971

<u>Region</u>	<u>Total Population</u>	<u>Urban Population</u>	<u>Rural Population</u>	<u>Percent Rural of Total</u>
Republic	1,911,543	916,872	994,671	52.0
North Pacific	305,494	151,875	153,619	50.3
Central Pacific	753,836	552,672	201,162	26.7
South Pacific	74,156	25,396	48,760	65.8
North Interior	130,123	30,498	99,625	76.7
Central Interior	303,299	80,159	223,140	73.6
South Interior	194,899	42,250	152,649	78.3
Caribbean (all)	149,854	34,020	115,716	77.2

Source: An Analysis of Agricultural Production in Nicaragua, 1974.

15-

Pre-selection of study sites was made in Managua and two trips were made by the Project Research Director to make the final choices. An insurmountable impediment to fully random site selection turned out to be the logistics of getting in and out of localidades and of finding adequate lodging for the research team at a reasonable distance. Four of the areas originally selected were in remote regions of very difficult access. The necessity of a 4 wheel drive vehicle, a horse or a time-consuming (measured in hours) daily walk loomed large. In most places there is simply no place for strangers to sleep; the virtual lack of uncontaminated water supplies and latrines added another dimension to the problem. For this eight week long field operation, therefore, it was felt necessary to find at least minimally adequate accommodation for the investigating teams.

Randomly pre-selected areas in the Jinotepe region had easy access and close accommodations, but they also had electricity and television, and were located within a 10 minute walk of a moderate sized city. The researchers felt this area was better classified as a marginal barrio rather than rural, and these sites were rejected.

Three localidades from our original pre-selection remained in the project for a combination of reasons:

a) RIO ABAJO-because of a vegetable garden project in which women actively participated. Also because

we were assured that transportation in and out would be no problem as INVIERNO jeeps passed by there daily.

b) TOMABU-because a mini-aqueduct program was planned by INVIERNO to begin within a week of project initiation and we wanted to see whether and how women participated in construction and decision making. In addition our field team was offered the opportunity to stay on-site with a resident Peace Corps Volunteer and would have longer observation hours. Furthermore, this arrangement would minimize transportation difficulties in getting to and from this isolated localidad.

c) DUCUALI GRANDE-because many women there are actively engaged in remunerative pottery making in the home. We proposed to contrast their average day with that of women who work inside the home without remuneration.

The three remaining sites were chosen for the following reasons:

d) PUERTA VIEJA-no development projects were in effect there. They are situated near the Pan American Highway so private or public transportation is readily available, but they are by no means part of any urban setting. They remain fully rural. Nonetheless, women presumably have had more contact with cities, fabricated consumer goods, etc. Puerta Vieja residents have the additional advantage of a constante lake water supply for irrigating their crops.

e) EL PRADO-just across the highway is not so fortunate.

f) SANTA LUCIA-lies just outside area V and with the largest population of any site was selected because a joint Ministry of Agriculture-FAO project has involved women in factory hemp rug fabrication. We wanted to see how these women, who are away from home eight hours each day, fulfill their child care and food preparation responsibilities. Once again, a resident Peace Corps Volunteer welcomed the research team into her home.

#### DESCRIPTION OF STUDY SITES

Rio Abajo, in the Department of Esteli, is located north of Esteli and west of Condega near the Nicaraguan-Honduran border (see Map 1&2). With 140 people and 23 houses, it lies in a fertile valley next to a river that provides a constant supply of water (INVIERNO). Main cash crops are tobacco, corn, beans, tomatoes, and cabbage. The houses have relatively large rooms and porches and are made of mud or clay with tile roofs. They are concentrated on either side of a rural feeder roadway (no bus transportation is available). The Ministry of Health is currently promoting installation of latrines and electricity is available. There are two pulperias, a school, and a public well. Nevertheless, for many Rio Abajo is a one-hour walk from the closest pueblo. The approximate altitude of Rio Abajo is 1200 meters; the median temperature is 18.0 c. Rainfall has been reported at 1400 mm. per year. (DIPSA).

Tomabú is in the southwest of the Central Interior zone. Situated in the mountains south of Esteli and east of La Trinidad (see Map 1&2) it has a population of 384 distributed among 56 houses (INVIERNO). A one-room school house and a pulperia<sup>are</sup>/located in the approximate center of the localidad with houses situated around them. The access road into Tomabú is poor during the dry season and impassable, except on horse back, during most of the rainy season. Most houses are relatively small and made of mud with tile roofs. No electricity is available. There is a latrine at the school and one at the Peace Corps Volunteer's house, two public wells and several private wells. The land surrounding Tomabú has for the past two years been plagued by drought. As a result, most farmers move to the agricultural frontier at Nueva Guinea, Department of Zelaya, during the planting and harvesting seasons where they work as laborers. Also, whole families have migrated north to work picking coffee and others have gone for the cotton harvest. Tomabú has an approximate elevation of 1500 meters and a median temperature of 15.5°C. Average annual rainfall for the area is reported at 1000 mm, the lowest of all sites visited.

Ducualí Grande (see map 1&2) a localidad of 113 people and 19 houses, lies north of Esteli and west of Condega (INVIERNO). It has electricity. There is a good access road, but a ford restricts its use. A school and

two pulperias have been built at the end of the road, they form the pueblo's center. The houses<sup>are</sup> situated around this center and are constructed of wood, mud, and tile. The principal source of water is the river which is contaminated and heavily silted during the rainy season. Many houses have latrines. Pottery is the main industry, and cash crops include tobacco, corn, and beans. Ducualí Grande is about 1400 m above sea level and has a median temperature of 18.0 c. Rainfall has been estimated at 1200 mm. annually (DIPSA).

Puerta Vieja is situated south of Ciudad Dario and east of Lake Moyua in the southern section of the Central Interior (see Map 1&2). Dwellings have been built along the Pan American Highway, a main artery, with a few houses set back off the road near the lake to the west. Population is 540. House construction ranges from cane and straw to cement and tile, but most houses are made of mud with tile roofs. Dwelling sizes vary greatly. The fields near the lake produce cantaloupe, watermelon, tomatoes, peppers, beans, and corn. The lake provides fish as food and a source of income. There are four pulperias, six barbers, and one cantina, and several latrines. Approximate elevation of Puerta Vieja is 1100 meters. Median temperature and, rainfall are reported to be 19.0°c and 1100 mm, respectively.

El Prado is a localidad of 36 houses with a population of 249 (INVIERNO). It is located south of Ciudad Dario and

east of Lake Moyua in the southern section of the Central Interior (see map 1&2). It is set back 200 meters from the Eastern shoulder of the Pan American Highway. Dwellings have been built along two unpaved roads that lead from the highway back into the hills. There is a school and one pulperia. Water is from wells and there is no electricity. There were no latrines in operation but several homes were employing the concrete portions as chairs. Houses are very small and made of wood, mud, scrap material, tiles, and tin. The fields around El Prado are rocky and steep. Elevation is estimated at 1100 meters and the median temperature and rainfall are reported respectively at 19.0°C and 1100 mm.

Santa Lucia, a pueblo with 779 houses and a population of 5450, is set in the mountains north of Boaco, (see map 1&2) on the periphery of Area V (Central Interior) (INVIERNO). A large, prosperous looking community, it has electricity, several pulperias, a comedor, church, community center, park, school, and, of course, the rug factory. Most, but not all, dwellings are of substantial construction. Water is supplied both by wells and a river. This area is famous for its hennequen and is one of the main suppliers of "hijos" (seedlings) for the rest of the country. The two access roads leading into Santa Lucia are poor but are in the process of being repaired. The town has an approximate elevation of 1200 m. and a

median temperature of 18.0 c. Rainfall in the area has been estimated at 1600-1800 mm. annually. (DIPSA).

#### SAMPLE SELECTION

Population figures supplied by INVIERNO were used to determine the number of houses to be visited in each site. A one-third sample was taken.

Random sampling for house selection was not deemed feasible because of time pressures. No maps showing building placement were available from which to draw the sample. A half day per site was already committed to travel and another half day would be necessary to draw a plan of the area. It was decided that mapping the community would be an uneconomical use of time and that the value of a half day's interviews outweighed the value of a random sample. Houses were chosen in an arbitrary manner except in Sta. Lucia and Ducuali Grande, where women known to be engaged in either the pottery fabrication or in the rug-making project were singled out.

#### INTRODUCTION INTO THE COMMUNITY

We were initially introduced into the communities and to our subjects or we introduced ourselves in various manners, depending on resources available at the time. The Research Director had made an initial visit to three of the finally selected study sites in the company of INVIERNO social workers and Technical Agricultural Specialists (known as AGROMOCS) who introduced her to

members (socios) of the INVIERNO program who later made further introductions. In two localities we were introduced by resident Peace Corps Volunteers. And in the two localities not served by either INVIERNO or Peace Corps the Field Work Coordinator and the research team introduced themselves.

We found the independent variable was not the person making the introduction, but the manner in which introductions were made. Formalized, group introductions, with implied organizational relationships were not productive, or satisfactory. In one locality, for instance, we were introduced at a town meeting organized by INVIERNO and Ministry of Health representatives and attended by only one woman and the rest men. One antagonistic person (male) was able to affect the thinking of many people and our project was accused of being sponsored by the Nicaraguan government for tax purposes and by the Central Intelligence Agency. The next day the research team went house-to-house explaining the project to the women; acceptance was swift and no one refused them entrance or cooperation.

#### TRAINING OF FIELD WORKERS

Field investigators must be instructed not only in the mechanics of collecting data; they must be helped to understand the objectives of the project and the purpose of the methods being used. It is important to know why each part of the investigation is necessary and to com-

prehend the contribution of each type of observation activity to the project's success.

Our experience showed that field-work team formation at the beginning of the project and group training yielded good results. The team developed as a unit, perfecting the application of the methodology until each member was comfortable with it.

Three preliminary, one-day training sessions were held in Managua to acquaint the field team with the project, its purpose and its specific requirements. Emphasis was placed on the general deportment of research team members while in the field, i.e., being sensitive to each woman as an individual as well as the necessity of obtaining her permission to carry out the research.

The first week in the field nightly training sessions were held to identify and discuss problems encountered and to elicit ideas and suggestions for their solution or avoidance. Each evening the Field Work Coordinator reviewed the day's time studies to be sure each observer was following the data collection process and recording observations in the prescribed manner. At the end of the week, the field staff met with the Research Director in Managua to discuss suggested changes and possible refinements of the methodology.

During the succeeding weeks informal weekend sessions were held in Managua with the Research Director who was

monitoring the completed studies. These occasions provided an opportunity to exchange opinions, offer alternatives, or just to review some of the interesting experiences of living in the campo.

We occasionally used interviewers from outside our experienced team. We found the results to be less than satisfactory. Generally a 1/2 hour introduction to the methodology was all the time available at field location and this proved insufficient, especially for investigators accustomed to using objective questionnaire/interview methods. Their approach was one of "you must answer my questions, I will be observing in your home today". This seemed to make the campesina ill at ease, and to create some suspicion. As a result, information was hedged and not given openly and activity patterns may have been altered. We estimate at least two days are required to thoroughly train new field team members in what appears to be a loosely structured methodology, but one in which each component is as important as another.

The mechanics of data collection, i.e., how to fill in the dwelling plan and house construction sheet, where to write descriptions and comments, and the format for recording observed activities, can all be learned in training sessions before going into the field. However, training in the field and follow-up are essential in learning how to approach and relate to the campesina.

Each of the five principal members of our field team, Nicaraguan as well as American, shared two experiences: 1) The urge to help the women with their work and 2) at the end of a day's observations, to give the subject a present of some sort. The first desire, of course, had to be suppressed. The second feeling seemed to be reciprocated by some of the subjects who pressed gifts of eggs, sweets, gourds, and even magical stones on the field workers. We experimented with giving gifts of food, but felt this was altering the day's food consumption, which we wanted to observe. A suggestion has been made since field work terminated that we take polaroid photos and leave them in each house where we observe. This seems to be a worthy suggestion for most families value photographs highly. An additional lesson which can only be learned through field experience, is how to assure the subject that the investigator does not want to interrupt or change her daily activities. It takes practice to become a bit like a piece of furniture in a household--- observing and writing but not interfering. One learns, by experience, if too many questions are asked or comments made, that soon the campesina is engaged in a dialogue with the investigator. It does help, however, to show the subject what is being written and to give as much detail about the study as is desired.

### DEVELOPMENT OF INSTRUMENT

Phase I of this project, the literature review, showed that information about the rural Nicaraguan woman is scarce, incomplete, and often contradictory. For example, only two monographs attempt to describe the campesina in detail: neither cites sources or field work, and they portray two different, almost opposed, models. The first, taking a positive view, saw the campesina as accepting and trying to fulfill responsibilities for the mental and physical health of her family, including her children's intellectual and social development. The other, in contrast, shows the campesina as parent, spending such long hours in the field, leaving her offspring to be raised by siblings so as to virtually abandon them, just as she is often abandoned by her male companion who abdicates responsibility for the children he has fathered. Such hypothetical, impressionistic portrayals of the campesina and her life repeat much that is stereotype and do not provide a sound basis on which to build assistance or other social action strategies. A systematic method of collecting data which would lead to a clear picture of the campesina living in rural poverty is needed. The instrument, to be effective, should be capable of use by a variety of skilled or semi-skilled investigators from different socio-cultural and economic background; trained social scientists are in short supply. It should also be designed to filter out the observer's subjective and culture-bound judgments about activities and surroundings.

Our first days of trial observation in the field showed the day of the rural woman to be so fractionated as to rule out the likelihood of accurate recall of events and activities and especially the time devoted to them. The idea of using structural objective questionnaires therefore, was discarded as impractical. We concluded that a descriptive time budget, prepared by a direct observer, would begin to produce the data needed to portray the campesina.

#### THE TIME BUDGET INSTRUMENT

After the initial days of becoming acquainted with the Central Interior region of Nicaragua and with the various tasks engaged in by the women who live there, we determined that a synchronic record of all sun-up to sun-down activities of female members of rural households ought to yield relevant base-line data for development planners. The central theme of the data collection effort was observation with minimum interference in the woman's daily activities in order not to cause changes in "usual" behavior or time use patterns. The Field Work Coordinator and Research Director spent one week living in the first locality to be studied, Tomabú, Departamento de Esteli, experimenting with and attempting to streamline ways of writing full-day descriptions of women's activities. Before beginning our field work we had familiarized ourselves with various styles of time studies which had been carried out elsewhere in Latin America. These ranged from one or two word descriptions of activity (e.g.,

breakfasts, feeds mules) to tape recorded descriptions, some from obtained /subject participation using the services of an interpreter. We decided to rely on written full sentence descriptions of activities in order to capture as much information as possible (e.g., instead of "breakfasts", we chose to write "eats tortillas, beans and black coffee".) All observers had professional fluency in Spanish and could interact directly, as required, with their subjects; interpreters were not used.

The first time budgets were quite long and detailed, simply because most of the women's activities were foreign (to the Nicaraguan as well as non-Nicaraguan team members, it should be stressed) and fascinating. In our enthusiasm we found we were trying to describe everything - the houses, clothing, the entire food preparation process, as well as who ate what and when, etc., all on the same page. This produced a jumble of information which, while pertinent, would make later data analysis extremely time consuming, if not impossible. We solved this problem by limiting strict time observations to one sheet (Time Budget Observation Sheet) and adding Activity Description Sheets. In many homes there was more than one woman to observe. We first attempted to number each woman in a household and code her activities accordingly. However, this too became confusing and we finally determined it to be easier, in the long run, to allot each subject a separate Time Budget Observation Sheet and to record all her activities on this and con-

tinuation sheets.

#### A. TIME BUDGET OBSERVATION SHEETS

The first document created was a Time Budget Observation Sheet for each female 12 years and older in a household. All discrete activities were described on this sheet with beginning and ending times recorded in the left-hand margin. It became apparent that women do more than one thing at a time and that the day of those working within the home is incredibly fractionated. For example, two types of food preparation were noted; we dubbed these active and passive. Active food preparation required constant, often physical, involvement, e.g., making tortillas or roasting coffee beans. Passive food preparation included the two and one-half hours that beans, for example, were cooking on the fire during which time the woman's involvement was less than full time. The woman would stir them and add water occasionally and make sure the fire did not go out, but she did not devote a full 150 minutes to this activity. However, it should be noted that her choice of other activities was limited by the necessity to be close to the fire. Activities such as clothes washing, which is done beside the river or well, bathing, shopping at the pulperia or socializing outside the home were thereby precluded.

At all times our focus for record purposes was on activities performed by women. These were described in molecular-time, i.e., the amount of time actually spent on

FIGURE 3

31

Date: 4/22/77  
 Initials of Investigator: K.C.  
 # of Investigation: 99  
 Locality: Tomabú

TIME BUDGET OBSERVATION SHEET:

WOMEN

I. Subject says she did these things before we arrived:  
 got up at 4 or 5.

5:00-5:15	Makes Fire
5:15-5:45	Carries Water
5:45-6:00	Makes Breakfast - Coffee, beans and tortillas
6:00-6:15	Serves Food
6:15-7:00	Carries Water

II. Observation begins at 7.

7:00-7:15	Washes dishes
7:15-8:00	Feeds children, bathes children, dresses children
8:00-8:15	Washes & sorts beans 3 times-waters plants
8:15-8:30	Washes dishes
8:30-9:00	Makes Coffee, drinks coffee
9:00-9:35	Sweeps, feeds pigs (5 min.)
9:35-10:45	Makes Tortillas
10:45-10:50	Mixes ash w/water
10:50-11:10	Shells corn
11:10-1:10	Cooks sorghum (1 hr.) & corn (2 hr.)
1:10-1:25	Cleans Kitchen

III. Afternoon observation begins at 2:00.

2:00-2:20	Roasts Coffee
2:20-3:10	Grinds corn & sorghum
3:10-3:35	Socializes
3:35-3:55	Cleans kitchen
3:55-4:35	Cleans beans
4:35-4:45	Fries beans
4:45-5:00	Goes for water

(to be filled in before interviewer departs)

IV. What will you do this evening until the time you go to bed? Ask for approximate times.

5:00-5:10	Serves food
5:10-5:30	Eats dinner
5:30-5:45	Washes dishes
5:45-7:00	Sits & talks or visits
7:00	Goes to bed.

each activity, rather than arbitrary-time units, such as one-half hour intervals. Simultaneous activities of husband or compañero, and children, were noted secondarily and in less detail. However, some twenty formal Time Budget Observations of working men were made for comparative purposes. These time budgets of men working in field or factory correspond most closely with those of women working outside the home for profit. These women have long, uninterrupted work periods similar to those of the men. They may work at the same job steadily from 7:30 until 12:00, while the women inside the home spend an average of about 15 minutes each on a series of different tasks. These differences in time-per-activity called for a different type of observation record for each kind of time budget. Women working inside the home must be observed steadily for the full day in order to catch their various activities. Women working in the field or factory generally continue with a basic job for the entire morning or entire afternoon. Their activities vary in the hours between rising (4 or 5 until 7 a.m.) and arriving at work, at the lunch break, and after work until bed time (4 to 7 p.m.). Therefore, specific questions should be asked of these field or factory working women as to what time they got up, what tasks they did before arriving at work, what during the lunch break, etc.

Date: \_\_\_\_\_  
 Initials of Investigator: \_\_\_\_\_  
 # of Investigation: \_\_\_\_\_  
 Locality: \_\_\_\_\_

TIME BUDGET OBSERVATION SHEET

FOR

WOMEN OR MEN WORKING OUTSIDE THE HOME

I. Subject says he/she did these things before we arrived:  
 Got up at 5.

5:00-5:15	Makes Fire
5:15-5:30	Cooks breakfast
5:30-5:45	Eats beans, tortillas and coffee.
5:45-6:00	Washes dishes
6:00-6:30	Grinds corn
6:30-6:55	Makes tortillas
6:55-7:00	Walks to work

II. Observation begins at 7.

7:00-12:00	Works in rug factory
12:00-12:05	Walks home
12:05-12:20	Makes lunch
12:20-12:30	Eats beans, tortillas and cuajada
12:30-12:45	Washes dishes
12:45- 1:55	Rests

III. Afternoon observation begins at 2.

1:55- 2:00	Walks to factory
2:00- 5:00	Works in factory

IV. To be filled in before interviewers departs\*

5:00-5:05	Walks home
5:05-5:20	Prepares dinner
5:20-5:35	Serves food and eats beans, tortillas and coffee
5:35-5:55	Washes dishes
5:55-6:20	Watches children
6:20-8:00	Mends clothes and socializes

\*What will you do this evening until the time you go to bed?  
 (Ask for approximate times).

### LENGTH OF OBSERVATION DAY

Our initial plan called for full-day (sun-up to sun-down) observation of each subject. We were prepared, however, to do shorter (half day) observations if our presence appeared to disrupt normal routine or strain individual subjects. In fact, the length of the observation day was determined as much by logistic requirements and the facts of campo living as by the subject's reaction. When the investigators were able to live on-site, full-day observation was possible and complete time budgets were achievable. When off-site lodging was necessary, observation hours were limited by available meal times and travel time. On the average these days ran from about 8 a.m. until about 4 p.m. continuously. We estimate that 1 1/2 hours in the morning and 1 1/2 hours in the evening were "lost" as a result, but subject recall or description was able to provide some information. As it turned out we found consistently good recall for the hours immediately preceding our arrival, but sporadic and sketchy plans for the hours after we left. Therefore, during the data analysis we included only the former type of recollection.

### B. SUMMARY ACTIVITY SHEETS

At the conclusion of each day's observations, investigators filled out Summary Activity Sheets which list by category significant activity and the time allotted to it, e.g., if one woman was observed to make 3 trips to obtain water requiring 20 minutes per trip, sixty minutes would be

## SUMMARY ACTIVITY SHEET

Date: 4/22/77  
 Initials of Investigator: K.C.  
 # of Investigation: #99  
 Locality: Tomabú

Food Preparation Active	Food Preparation Passive
a.m. 1 hr. 25 min. p.m. 10 min.	a.m. 3 hrs. p.m.
Food Processing	
a.m. 50 min. p.m. 1 hr. 55 min.	
Clothes Washing	Socializing (at home)
a.m. p.m.	a.m. p.m. 25 min.
Ironing	Socializing (outside the home)
a.m. p.m.	a.m. p.m.
House Cleaning	Animal Care
a.m. 1 hr. p.m. 35 min.	a.m. 5 min. p.m.
Water Carrying	
a.m. 1 hr. 15 min. p.m. 15 min.	
House Repair	Inactive Period
a.m. p.m.	a.m. p.m. 1 hr. 15 min.
Child Care	
a.m. 45 min. p.m.	

recorded for Carrying Water. This summarized information, prepared while details can still be recalled with some reliability, is capable of rapid collation and can quickly provide the end-user general data for planning purposes.

It is useful to know, broadly, when the rural woman has committed time or, conversely, when her hours are "free". For this purpose the summary should show activity categories as pre-noon (a.m.), post-noon (p.m.), or all day.

#### C. ACTIVITY DESCRIPTION SHEETS

The observation process yields a wealth of information about how the campesina does the things she does. Materials and methods used are identified, plus the time spent doing them. Knowledge of the frequency with which mud houses, floors, and stoves are repaired and by whom, as well as the accepted repair methods and materials is vital to understanding life and activities in the campo and should be of particular interest to planners and technicians dealing with housing and sanitation at the very least. In-depth knowledge of an area's activities and how they are accomplished and by whom can mean the difference between acceptance and success, or rejection and failure of modernization projects. Field observers should be encouraged to capture this information and record it in detail on a separate Activity Description Sheet. In this manner supplementary data will not confuse time budget preparation but will be susceptible to later review and analysis.

EXAMPLE OF ACTIVITY DESCRIPTION SHEET

Making tortillas - The sorghum is washed in plain water many times. Ashes from the fire are mixed in a pan of water and then strained out by hand until she has the right proportion of ashes to water. This mixture is heated. The woman shells the corn by rubbing two dried cobs together. The corn kernels pop off into a gourd she uses for a bowl. The old, seedless cobs are used to stoke the fire. The corn is then put in the ash water and cooked for 2 hrs. Halfway through cooking, the sorghum is added and is cooked for the remaining hour.

This corn/sorghum mixture is put through the metal grinder and, afterward, rolled out on the stone grinding board with a stove rolling pin. The "masa" dough is patted out on a round piece of plastic to form the tortillas. The plastic is used to ensure uniformity of size. Then the tortillas are cooked one by one in a shallow ceramic bowl. No grease is used. Each tortilla is cooked for a few minutes, flipped over and cooked for a minute more, and is then stored in a gourd.

#### D. DWELLING PLAN AND HOUSE CONSTRUCTION SHEET

There is variety in dwelling size, layout and construction methods and materials, knowledge of which should prove useful for development planners in determining home maintenance or improvement projects and sanitation assistance. It soon became apparent that some observers were more skilled than others in reporting these details. For this reason, the Field Work Coordinator designed a Dwelling Plan and House Construction Sheet listing significant furnishings to be checked off by the interviewers. This method promotes completeness and uniformity of description while minimizing the impact of the necessarily subjective opinions of interviewers. Among items significant to note were the different types of beds - such as hammocks, cots, or wooden beds; type of stove and corn grinding apparatus (every home we went in had a piedra de moler for grinding - some also had a hand-operated grinding machine) presence or absence of a latrine, electricity, oven and well (no home we were in had a water connection to the house).

This information was later useful in devising a relative standard of living by locality (see data analysis section) and should be useful in helping determine which localities would be likely to benefit most from specific development projects.

#### E. DEMOGRAPHIC AND ECONOMIC INFORMATION SHEET FOR WOMEN

A minimal amount of demographic and general economic information was considered useful to augment the descriptive

KEY TO DWELLING PLAN AND HOUSE CONSTRUCTION SHEET

LATRINE 

OVEN 

WELL 

SEWING MACHINE 

CHAIR 

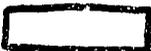
HAMMOCK 

BENCH 

DOORWAY 

STOOL 

BED 

WORK TABLE 

SACK-CORN  
OR  
SORGHUM 

TABLE 

GRINDER 

STOVE: TRIPLE 

DOUBLE 

SINGLE 

ELECTRICITY 

RADIO 

BARREL OR STORAGE BOX 

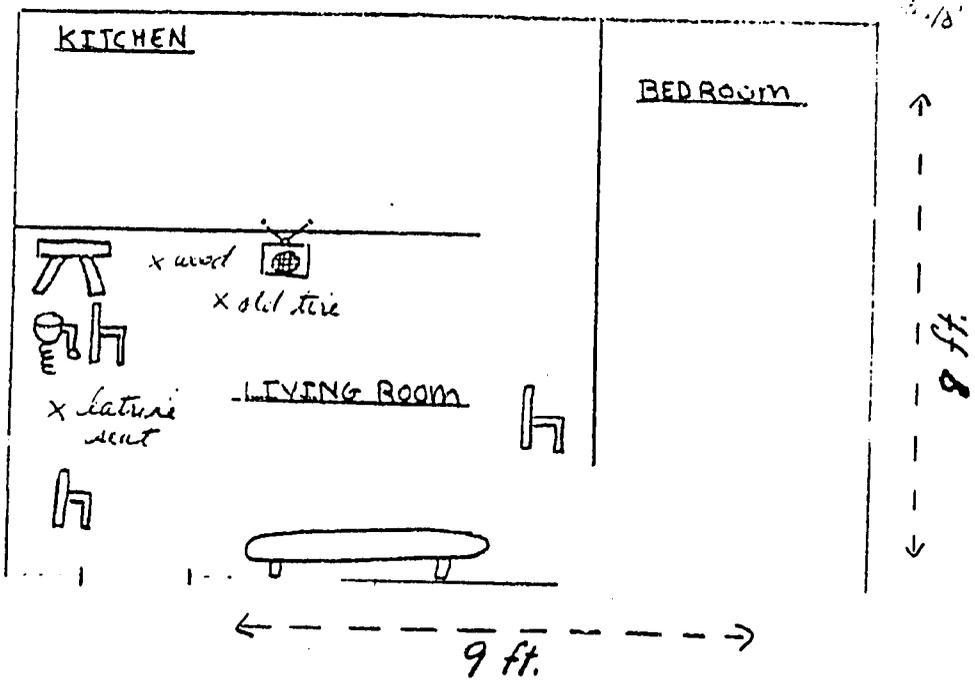
Town: El Prado

# 48

Name: K. Clifford

FURNITURE

	3
	1
	1
	1
	1



FLOOR	ROOF	WALLS	description
tile	tin	X brick "stone"	house very poor holes in walls low roof
dirt	X tile	wood planks	
other	straw	smooth mud	
	other	cane & sticks	
		mud & sticks card. board scrab. metal other	

record we were keeping. Obtaining this information should occupy as short a time span as feasible as the primary purpose of our study was to observe women's activities and not to interrupt them. Very basic general demographic information concerning the subject and her relationship to other members of her household was desired. Sample questions attempted to elicit the age at which the subject married for the first time, age when her first child was born, number of children born alive to her, number still-born and number of non-surviving children, etc.. The subject's abilities to recall specific anniversary dates and ages precisely varied, as might be expected with respondents of differing degrees of literacy. Generally speaking, women up to about age 40-50 probably gave reasonably reliable data; some older, but fully active, women (and men) did not know whether they were 50 or 70 years old and were unsure when past events occurred.

At the December project planning seminar it was suggested that we try to define the campesina's economic contribution to her household. The following types of questions were asked: Do you help with the farm work? Do you devote some time to the care of domestic animals? Do you sell the produce of such animals? etc... A total of 17 points of information covering the economic and demographic aspects of the campesina's life were asked of each woman.

We experimented with two ways of obtaining the demographic and economic information. First, we tried casually asking a question, bringing it up at an apt moment, noting the reply and then waiting for a propitious time to ask another question, and so on. This was to avoid frightening the subject by appearing to want too much information. However, as time progressed, we found that in this conversational mode we were being asked as many personal questions as we ourselves were asking and we decided to try asking the entire 17 questions in one time period. We found the women continued to be open and candid in their responses and not put off by this approach. This method had the disadvantage of distracting some women from their on-going activities briefly, but had the advantage of assuring that each woman was asked all questions. Because the men and women working in the field were constantly moving within a large area, it was difficult to be within easy speaking distance without also being in the way. For this reason, it was necessary to obtain the demographic economic information from field workers during one time period. Questioning was never begun until an easy rapport had been established between subject and investigator.

It should be noted that the information asked of the women was most applicable to either married women or to women who had been married or lived with a compañero at one time. The target of our efforts was the Ama de Casa and these women formed the majority of our sample. If, in the

future, the focus of a study is to be of unmarried women, a revised demographic and economic activity information sheet would be desirable.

#### F. DEMOGRAPHIC AND ECONOMIC INFORMATION SHEET FOR MEN

At our first study site, Tomabú, very few men were present or working because of the agricultural cycle and drought conditions. Many of the men and young boys had gone to Nueva Guinea, Departamento de Zelaya, some 350 kms. southeast of Tomabú, to sow beans at the edge of the forest. Collection of demographic-economic information from men at Tomabú was not attempted. However at the second study-site, Rio Abajb, Departamento de Esteli, the type of crop grown was different due to the availability of deep wells for irrigation purposes and men were interviewed. At first we obtained only background information about the crops grown, the agricultural cycle and the hours worked in the field. It was then decided that information similar to that obtained from the women would amplify our study, so specific demographic and economic information was elicited from a sample of 20 men.

#### G. OPEN-ENDED QUESTIONS-TAPED INTERVIEWS

Open-ended questioning was introduced into the methodology when the field work was about half completed. It was hoped that by asking the women broad, general questions about their goals and their aspirations for themselves and for their children, a new dimension would be added to our understanding of the campesina. Questions were also asked

## ECONOMIC AND DEMOGRAPHIC INFORMATION SHEET

WOMEN

Date: \_\_\_\_\_  
 Initials of Investigator: \_\_\_\_\_  
 Number of Investigation: \_\_\_\_\_  
 Locality: \_\_\_\_\_

1. Age of interviewed woman \_\_\_\_\_
2. Age at first marriage \_\_\_\_\_
3. Age at first pregnancy \_\_\_\_\_
4. Number of living children \_\_\_\_\_
5. Number of dead children and/or stillborn \_\_\_\_\_
6. Highest (school) grade attended \_\_\_\_\_
7. Does she know how to read \_\_\_\_\_ Write \_\_\_\_\_
8. Number of people living in the house \_\_\_\_\_
9. Husband's work or employment \_\_\_\_\_
10. Highest (school) grade attended by husband or companion  
 (compañero) \_\_\_\_\_
11. Have some children gone to another zone? \_\_\_\_\_  
 Age when they left \_\_\_\_\_  
 For what reason did they leave \_\_\_\_\_  
 Because they married  
 For job opportunities  
 To attend school
12. Do you help with the farm work \_\_\_\_\_  
 Weeding  
 Threshing (grain), shelling (beans, etc.)  
 Storage

13. Do you devote some time toward care of domestic animals \_\_\_\_\_
14. Do you sell produce (of such animals) e.g. eggs, livestock, etc. \_\_\_\_\_
15. Do you receive a salary (an income) for any work you do? For example
- |                            |                 |
|----------------------------|-----------------|
| Making of Cuajada (cheese) | Preparing meals |
| Manufacture of tortillas   | Laundering      |
16. How do you invest this money \_\_\_\_\_
17. Who decides if the money is spent or saved \_\_\_\_\_

At the end of the interview, the interviewer should give her opinion of the way she was received: tolerated, well received, she felt comfortable, uncomfortable, poorly received.

## Economic and Demographic Information Sheet

MEN

Locality \_\_\_\_\_  
Date \_\_\_\_\_  
Initials of Interviewer \_\_\_\_\_  
Number of Interview \_\_\_\_\_

1. Age \_\_\_\_\_
2. How many people live in your house \_\_\_\_\_  
What relation are they to you \_\_\_\_\_
3. What is your work \_\_\_\_\_
4. How much are you paid daily \_\_\_\_\_
5. Is your work different at other times of the year \_\_\_\_\_  
if so, how \_\_\_\_\_
6. How many men in your house work \_\_\_\_\_
7. How much are they paid daily \_\_\_\_\_
8. At what time do you get up in the morning \_\_\_\_\_
9. At what time do you begin work \_\_\_\_\_
10. Do you know how to read \_\_\_\_\_ write \_\_\_\_\_
11. Until what grade did you attend school \_\_\_\_\_
12. Until what grade did your wife or mother attend school \_\_\_\_\_
13. What type of work does your wife or mother do \_\_\_\_\_
14. What type of work do your sisters or daughters do \_\_\_\_\_
15. Who in your house is attending school \_\_\_\_\_
16. At what age did you begin to work for money \_\_\_\_\_
17. At what age did you begin to work helping your parents \_\_\_\_\_
18. How do you get to work (walk, in a truck, etc.) \_\_\_\_\_
19. How much time do you need to get to work \_\_\_\_\_

20. Have you ever gone to another place to live \_\_\_\_\_  
How old were you when you went \_\_\_\_\_  
Why did you go \_\_\_\_\_  
Married \_\_\_\_\_  
Had opportunity to work \_\_\_\_\_  
Went to school \_\_\_\_\_
21. Do you do other work for which you receive  
money \_\_\_\_\_

about their frustrations and any bars to realizing their goals.

Two methods of recording the responses to these inquiries were tested: first, writing the answers given by the women in long-hand. The main drawback to this method was that we were unable to write fast enough to record answers fully. The investigator tried to hurriedly record the response and the end product was an incomplete transcript, colored by the investigator's subjective judgment.

The second, more successful method of recording responses to the open type of question was recording them on a tape. The advantage of instantaneous recording turned the interview into more of a conversation, facilitating an easy exposition of ideas. It had the added benefit of later replay of the response in its entirety and its transcription.

One difficulty of taping was in obtaining a clear recording without the interference of roosters crowing, cows lowing and children calling. These sounds, however, reflect the level of noise in which the campesina must try to collect her ideas, and with which she lives and works.

The open question idea was fully experimental. The taped interviews were conducted only during the later afternoon when there is a general reduction in woman's activity and fewer chores remain to be done. The value of this process will depend on the end-user and his project.

We did, however, ascertain that the tape recorder could be introduced at the end of a day's observation without jeopardizing the rapport earlier established.

## ANALYSIS OF DATA COLLECTED

The process of designing and then modifying a methodology, also included the gathering of specific data on a sampling of rural women. Analysis of the data thus collected begins to demonstrate the potential yield from this methodology. In selecting our sample sites, it will be recalled, we chose two localities where women were known to work for remuneration: - inside the home in Ducuali Grande and outside the home in Santa Lucia. For purposes of illustration we contrasted these towns with the other four localities where a majority of the women do not receive remuneration for their work on a regular basis.

Several types of information were collected using a combination of three methods: a) time budgets of 117 women and 20 men; b) demographic and limited economic information; c) we also recorded open-ended interviews with a smaller sample of women.

## CODING OF TIME BUDGET DATA

To put the data into manageable form, it was first necessary to code it. This was accomplished by transferring the raw data to large coding sheets on which we could fit all the information acquired about all the women of one localidad. In order to structure available time in each localidad each observed subject was assigned a number which was marked across the horizontal of the page. The vertical axis was divided into time periods. Observed activities

were then plotted for each subject in the proper time divisions. In those cases, where data were based on subject recall, activities were assigned an estimated time interval, constant (with one exception, noted below) for the entire sample and derived from reported observations of the field investigators. The only estimated time not constant for the full sample was time spent carrying water. Time variance of this activity between localities was substantial depending on the water source and its location; for this purpose an average time per localidad was derived. (see figure 10 for example of coding sheet I).

On the second coding sheet activity categories deemed significant (e.g., food preparation, washing and ironing clothes, breast and bottle feeding, mending and sewing, etc.) were listed on the vertical axis with subjects, again listed by number along the horizontal axis. The frequency of each activity and the length of time in minutes devoted to it were plotted per subject, yielding a mean time per activity per frequency and a mean time per activity per subject performing it. (See figure 11 for example of coding sheet II).

The third coding sheet lists on the vertical axis all those activities performed by the women of one localidad during specified time periods (12-4 p.m. for example). Again the women are listed along the horizontal axis of the page. When all activities have been coded a frequency count

TIMES	SUBJECT # 86	SUBJECT # 87	SUBJECT # 88
4-6	GETS UP AT 6	GETS UP AT 5 / MAKES	GETS UP AT 6 / MAKES
6-6:30		BREAKFAST / DRESSES CHILDREN	COFFEE / GRINDS CORN
6:30-7	MAKES COFFEE	FEEDS CHILDREN	↓
7-7:30	GRINDS CORN & MAKES TRTS*	↓	MAKES TRTS
7:30-8	WASHES DISHES / FEEDS CHICKENS	COOKS CARROTS TO MAKE DRINK	↓
8-8:15	MAKES TRTS	WASHES DISHES & <sup>BABY</sup> BOTTLE	↓
8:15-8:30	↓	↓	PLANTS
8:30-8:45	↓	WASHES TABLE &	↓
8:45-9	↓	STRAIGHTENS KITCHEN	↓
9-9:15	WASHES WORK TABLE & DISHES	↓	↓
9:15-9:30	↓	GOES FOR WOOD	BATHES
9:30-9:45	RESTS & TALKS	CLEANS ASHES / PUTS BEANS ON TO COOK	CLEANS TABLE
9:45-10		MAKES LEMON DRINK / BEANS	WASHES BEANS
10-10:15	GOES FOR WATER	CHANGES DIAPPERS & GIVES	COOKS BEANS
10:15-10:30	CLEANS OVEN & WATERS PATIO	BOTTLE	MAKES TRT.
10:30-10:45	WASHES WOODEN BENCHES	BATHES CHILD	GOES TO BUY TOMATOES
10:45-11	RESTS	PUTS CHILD IN HAMMOCK	↓
11-11:15	SOCIALIZES W/ RELATIVES	SOCIALIZES W/ NESE TOR	↓
11:15-11:30	↓	BRINGS WATER / TENDS FIRE / WASHES CHILD	↓
11:30-11:45	PUTS MILK ON TO COOK	COMBS HAIR	↓
11:45-12	COOKS ASHES W/ CORN	MAKES CEREAL DRINK	↓
12-12:15	SOCIALIZES	SWEEPS KITCHEN	PREPARES FOOD
12:15-12:30		↓	
12:30-12:45		BATHES	
12:45-1		SOCIALIZES	SOCIALIZES
1-1:15		FRIES BEANS / GIVES DRINK TO CHILD & BABY	
1:15-1:30	↓	↓	
1:30-1:45	TAKES CORN OFF & WASHES IT	GREETES CHILDREN FROM SCHOOL / FEEDS CHILDREN / POTATOES, BREAD, RICE, BEANS & EGGS	
1:45-2	SOCIALIZES W/ RELATIVE	EATS, RESTS, HELPS CHILDREN W/ HOMEWORK	
2-2:15	↓	TALKS TO CLOTHES SALESMAN	
2:15-2:30	↓		
2:30-2:45	GRINDS CORN W/ HELP OF HUSBAND	CHANGES DIAPER & GIVES	
2:45-3	RESTS	BOTTLE	↓
3-3:15	↓	↓	FEEDS ANIMALS / CARRIES WATER
3:15-3:30	PREPARES FISH	WASHES DISHES	SOCIALIZES
3:30-3:45	↓	WASHES CLOTHES	↓
3:45-4	SERVES LUNCH TO HUSBAND		
4-4:15	WASHES DISHES		
4:15-4:30	↓	↓	
4:30-4:45	RESTS	WILL PREPARE	
4:45-5		DINNER	

SAMPLE CODING SHEET I: TIME BUDGET PER WOMAN PER LOCALIDAD

\* TRTJ - TORTELLI

..BUNDLE CODING SHEET II: TIME PER ACTIVITY, PER WOMAN, & FREQUENCY 53

TIME* & FREQUENCY - PUERTA VIEJA															
ACTIVITIES	SUBJECT #86					SUBJECT #87					SUBJECT #88				
FOOD PREPARATION	30	15	60	15	30	30	30	8	15	7	30	75	15	15	15
WASHING & IRONING CLOTHES						60									
CLEANING HOUSE	15	15				30	30				15				
CARRYING WATER	15					5					7				
REPAIRING HOUSE															
CHILD CARE						15	60	30	30	5	15	5	15		
ANIMAL CARE	7										7				
SOCIALIZING	15	30	90	45		15	15				135	30			
RESTING	15	15	30	30		5									
LISTENING TO RADIO															
FOOD PROCESSING	15	15	15	15		15	15	7	5		30	15			
MENDING & SEWING															
BREAST & BOTTLE FEEDING						20	15								
SERVING FOOD	15					7	15								
SELLING															
EATING						5									
BUYING						15					90				
FOOD PREPARATION FOR PROJECT															
FIELD/FACTORY WORK											60				
WASHING DISHES	23	30	30			30	15								
BATHING & PERSONAL CARE						15	15				15				
ATTENDING SCHOOL															

\* ALL TIMES GIVEN IN MINUTES

FIGURE 11

SAMPLE CODING SHEET III: TYPICAL AFTERNOON DETERMINED BY ACTIVITIES  
MOST FREQUENTLY PREFORMED

12 PM -  
4 PM

ACTIVITIES	FREQUENCY OF ACTIVITIES																					FREQUENCY	
	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90		91
WORK FOR PROFIT																							11
CLEANS HOUSE																							4
WASHES DISHES																							7
EATS																							15
SOCIALIZES																							15
PERSONAL CARE																							4
CHILD CARE																							12
ANIMAL CARE																							4
FOOD PREPARATION																							20
BUYS																							2
FOOD PROCESSING																							5
ATTENDS SCHOOL																							2
CARRIES WATER																							3
IRONS																							1
LISTENS TO RADIO																							1
WASHES CLOTHES																							3
SERVES FOOD																							8
RESTS																							11
TOTAL																							128

TOTAL OF FREQUENCY OF ACTIVITIES 128 divided by # WOMEN PREFORMING 20  
 = 6.4  
 ACTIVITIES GIVES MOST FREQUENTLY PREFORMED ACTIVITIES  
 BETWEEN 12 PM & 4 PM

- TYPICAL AFTERNOON
- FOOD PREPARATION 28 min.
  - SOCIALIZES 50 min.
  - EATS 16 min.
  - WORKS FOR PROFIT 54 min.
  - CHILD CARE 44 min.
  - RESTS 25 min.
  - TOTAL 3 hrs. 42 min

FIGURE 12

FIGURE 13

ESTIMATED TIMES FOR ACTIVITIESWHEN OBSERVATION INCOMPLETE

ACTIVITY	ASSIGNED TIMES
Lighting fire & making coffee	30 min.
Making tortillas	1 hr.
Beans: Sorting, washing, & putting on stove	30 min.
Sweeping	15 min.
Making cuajada	1 hr. 30 min.
Eating	24 min.
Animal tending	27 min.
Child care	35 min.
Serving food	16 min.
Washing dishes	15 min.
Grinding corn	1 hr.
Preparing dinner	30 min.

is taken showing which were performed most during this given time period. The total frequency count is divided by the number of women performing activities during this time period, yielding an average number of activities performed per woman per specified time. The sample Coding Sheet III (see figure 12) shows 128 as frequency of activities performed by 20 women during the time cohort 12-4 p.m. Therefore, each woman performed, on the average, 6.4 activities during this time. By consulting the frequency count we pick those six activities showing the greatest frequency to form the average day for this time period for the women of this locality.

#### ANALYSIS OF DATA CONTENT

##### I. Four "Typical" localities

Analysis of the data coded for the four localities where the majority (over 66%) of the subjects work in the home without remuneration reveals that their day is incredibly fractionated. These women constantly shift from one type of activity to another, taking between 5 and 15 minutes to complete each task. For example, in two hours between 8:45 and 11:00 a.m. a typical woman in Rio Abajo is likely to engage in at least 8 or 9 activities in a series. She may: make a corn drink for the family; finish making the tortillas she started earlier; wash the grinding stone and dishes; wash and sort beans and put them on to cook, put the baby to sleep and sweep the house; serve food to her husband

AVERAGE TIME PER ACTIVITY, AREA V

ACTIVITY	$\bar{X}$ in minutes	SD	VAR
Time: 4-8	63	.13	.02
8-12	56	.32	.10
Food Preparation 12-4	43	.23	.05
Food Processing	27	.15	.02
Carrying Water	32	.2	.04
Cleaning House	17	.03	.0008
Child & Aged care	49	.19	.04
Washing dishes	15	.009	.00009
Socializing	47	.15	.02
Eating	18	.07	.005
Resting	31	.08	.006
Repairing House	26	.08	.007
Tending animals	19	.10	.01
Listening to radio	26	.06	.003
Mending/Sewing	52	.30	.09
Serving food	21	.09	.008
Selling	50	.49	.24
Buying	29	.26	.07
Food preparation for profit	88	.94	.89
Work for profit	41	.30	.09
Bathing/personal care	14	.04	.002

19 most frequently performed activities

Key:  $\bar{X}$  - mean  
 SD - standard deviation  
 VAR - variance

and other children; go to the river for water; eat her lunch; and so on.

The 10 mutually exclusive categories which most occupy her day beginning with those which take the most time to the least are: Active Food Preparation, child and aged care, socializing, food processing (which primarily consists of processing corn for cooking), carrying water, resting, cleaning house, washing dishes, eating, serving food to family. Women additionally sew or mended; tended animals (pigs, cows, chickens, ducks, dogs, and cats), repaired their houses which consisted of patching mud floors, walls or stoves with a mixture of hot cow manure and mud; washed clothes at the river and ironed; sold (eggs, roasted coffee, cuajada); bought, worked for profit which includes field work, making items to sell in pulperias, which includes field work, making items for profit, bathed and listened to the radio (see figure 14 for mean time to perform these activities, standard deviations and variances. Most are at .2 or below-indicating reliable time per activity figures).

The campesina's day divides roughly into four four-hour time periods beginning with the hours slightly before dawn until after all members of the family have breakfasted (roughly 4 or 5 until 8 a.m.). During these hours she makes the fire in the clay stove, starts the coffee, and prepares any food she will serve to her family for breakfast (usually beans and tortillas left from the day before). Then she

makes from one to 3 trips to the river or well for water.

The next natural time division is from after breakfast until lunch or approximately from 8 a.m. until 12 noon. It is during these hours' that primary food preparation and some food processing takes place. At this time the campesina will wash and sort and put on the fire beans for the day's meals; she will grind corn for the day's supply of tortillas in two steps --- first in a hand grinding machine and then, to insure a finer masa, on the grinding stone (pedra de moler). Finally, she will pat out by hand and toast anywhere from 20 to 70 tortillas-the staple of the campo diet. When the tortillas are finished the grinding machine and stone and any other dirty dishes are washed, frequently with water only-no soap. School in the campo begins at 8 a.m. and the campesina mother will have made sure those children attending have a relatively clean face, a notebook and a pencil. The children return home at 10:00, their recess or tiempo de recreo time for a snack which the mother has prepared. Younger children are bathed, nursed or bottle-fed, and dressed during these hours. The house is cleaned in the morning hours, as well. Most floors are of dirt and cleaning is quickly accomplished by sweeping out the house and then sprinkling water on the floor to cut the dust. Additional trips for water are often necessary during mid-morning. We observed that washing clothes is not a daily task, but is accomplished from 1 to 3 times a

TYPICAL WOMAN'S DAY: RIO ABAJO

TIME OF DAY	ACTIVITY	AVERAGE TIME PER ACTIVITY
4 a.m. - 8 a.m.	Food Preparation	1 hr. 12 min.
	Food Processing	40 min.
	Cleaning House	15 min.
	TOTAL	2 hr. 17 min.
8 a.m. - 12 p.m.	Food Preparation	1 hr. 12 min.
	Carrying Water	42 min.
	Food Processing	40 min.
	Washing Dishes	14 min.
	Cleaning House	15 min.
	Child Care	57 min.
	Socializing	56 min.
TOTAL	4 hr. 56 min.	
12 p.m. - 4 p.m.	Food Processing	40 min.
	Eating	24 min.
	Resting	32 min.
	Child Care	57 min.
	Sewing	1 hr. 5 min.
TOTAL	3 hr. 38 min.	
4 a.m. - 4 p.m.	TOTAL DAY	10 hr. 41 min.

week using a mean time of 1 hr. and 34 min. each time. Trips for clothes washing or water carrying are frequently combined for bathing and personal care. There is time for socializing with one's neighbors or relatives before lunch, the next dividing time of the day.

From 12 to 4 the campesina serves lunch to her husband (either in the home or in the field). School is out by 1:00 and returning children are fed also. The campesina then eats her lunch and rests. She may visit with neighbors or her family, put young children down for naps, etc. This is frequently the time when she begins processing food for the next day's meals. For example, corn is shelled, washed and put to soak with ashes saved from the cooking stove; sorghum, (million), a corn substitute used only by the poorest families, is processed similarly; coffee beans are roasted over the fire for half an hour, cooled and then ground. Frequently sewing or mending are attempted during this time span. The pace is definitely slower in the afternoon and more relaxed. (see chart on figure X, for typical day of women working inside home for no profit). Buying and selling and tending animals may take place at any time during the day.

## II. Ducuali Grande - An "atypical" localidad.

As mentioned earlier the localidad of Ducuali Grande was included in our study because a majority of the women work in their homes for profit making and selling pottery.

We wanted to contrast their use of time with that of women who work in the home for no profit (i.e., amas de casa). Comparing an average day of a women from Ducuali Grande with other Area V women—we first noted that the former spent four hours and 22 minutes daily working with clay. No one particular work pattern seemed to prevail except that each day was organized around a block of time set aside for potting. Each woman seemed to have set in advance the schedule she would keep. For example, when asked at 12:00 noon (the most frequently observed eating time in the campo) if she was going to stop for lunch, one woman replied, "No, I always work (with clay) until 2:00 p.m." A second woman started cooking her beans at 12:15 p.m. (after having worked with clay from 9 until 12). A third made her tortillas from 2:30 until 4:00 p.m. after having worked with clay (interspersed with breast feeding and caring for a young baby) in the morning. A different schedule was followed by a fourth woman who made her tortillas, cooked her corn, cleaned her house and went for water in the morning (a schedule similar to other Area V women) but who then began working with clay, making her pots from 11:15 until 3:30 p.m. It is significant that Ducuali Grande women with only one exception, did not engage in food processing during observation hours. One woman in Ducuali said she began grinding her corn at 5:00 a.m. and made her tortillas early in the day. In another house, a female relative

TYPICAL DAY, AREA V; COMPARISON  
OF WOMEN WORKING IN  
HOME-NO PROFIT AND WOMEN WORKING IN HOME FOR PROFIT

MOST FREQUENTLY PERFORMED ACTIVITIES	TOTAL TIME PER DAY	
	Rio Abajo, Puerta Vieja, <sup>1</sup> Tomabú, El Prado	Ducuali Grande <sup>2</sup>
Food Preparation	2 hrs. 42 min.	1 hr. 57 min.
Food Processing	1 hr. 21 min.	--
Child Care	1 hr. 38 min.	37 min.
Carrying Water	1 hr. 4 min.	
Cleaning House	34 min.	--
Washing Dishes	15 min.	15 min.
Socializing	1 hr. 34 min.	1 hr. 1 min.
Eating	18 min.	17 min.
Resting	31 min.	--
Working with Clay	--	4 hr. 22 min.
TOTAL	9 hr. 57 min.	9 hr. 34 min.

1 - Women working in home-no profit

2 - Women working in home for profit

came in to prepare the food for the two women potters and their children. It is also worth noting that the investigators were told by a number of subjects that women in Ducuali Grande rarely devote more than 4 out of 7 days to making pottery.

III. The other "atypical" localidad - Santa Lucia.

We visited the pueblo of Santa Lucia on the fringes of Area V because there was a hemp rug making factory in which the majority of those working are women. We knew these women were outside their homes the major portion of a day and we wanted to see how their time budgets would compare with those of women working in the home both for profit and for no profit. The days of the factory workers are the least fractionated of all subjects observed, being divided into large time blocks, based on the factory work hours -(8-12, lunch from 12 to 1, 1-5:30).

We also wanted to ascertain how women working outside the home for profit arrange for the care of their children and the preparation of food for their families. Interestingly, over half the factory workers observed live with either parents or parents-in-law who did household chores and cared for their children. Perhaps this is best explained by the relative youth of the factory workers whose ages varied between 16 and 30 years, with a median age of 25 years, (this approximately ten years junior to the rest of our sample). All were married with up to 4 children.

Even so the average number of people living in the same household was 6, which is 1.2 people less than the total sample. Of those not living with relatives, some employed a servant to work in the home, others prepared the day's food before going to the factory, left children with an aunt or sister while they worked, took the children home for lunch, and home again after the afternoon shift.

TYPICAL DAY DIVIDED INTO TIME PERIODS, AREA V;  
COMPARISON OF WOMEN WORKING IN HOME-NO PROFIT &  
WOMEN WORKING IN HOME FOR PROFIT

TIME PERIODS	MOST FREQUENTLY PERFORMED ACTIVITIES	TIME PER ACTIVITY	
		Rio Abajo, Tomabú <sup>1</sup> El Prado, Puerta Vieja	Ducuali Grande <sup>2</sup>
4 a.m.-8 a.m.	Food Preparation	1 hr. 3 min.	39 min.
	Food Processing	27 min.	---
	Carrying Water	32 min.	48 min.
	Cleaning House	17 min.	---
	Total All Activities	2 hr. 19 min.	1 hr. 27 min.
8 a.m.-12 p.m.	Food Preparation	57 min.	39 min.
	Food Processing	27 min.	---
	Child & Aged Care	49 min.	37 min.
	Washing Dishes	15 min.	15 min.
	Socializing	47 min.	61 min.
	Cleaning House	17 min.	---
	Carrying Water	32 min.	---
	Working w/clay	---	2 hr. 11 min.
Total All Activities	4 hr. 3 min.	2 hr. 43 min.	
12 p.m.-4 p.m.	Eating	18 min.	17 min.
	Child & Aged Care	49 min.	---
	Food Preparation	43 min.	39 min.
	Socializing	47 min.	---
	Resting	31 min.	---
	Food Processing	27 min.	---
	Working w/clay	---	2 hr. 11 min.
	Carrying Water	---	17 min.
Total All Activities	3 hr. 35 min.	3 hr. 23 min.	
4 a.m.-4 p.m.	Total All Activities	9 hr. 57 min.	9 hr. 34 min.

1 - Women working in home - No Profit.

2 - Women working in home for profit.

#### IV. Working Men

We were able to observe, for comparative purposes, a small sample of Area V men working in the fields or in the rug factory at Santa Lucia. Generally the time budgets of working men parallel those of women working outside the home for profit. Their days are marked by large blocks of time devoted to a single task. The day is divided at the noon hour by a meal, perhaps a rest, and then back to work. The most frequently observed activities were clearing the fields, harvesting, irrigating, walking to and from the field, and eating.

(See chart 18 comparing typical work day of Area V men with women working outside home for profit).

Our study was not conducted during a period of peak agricultural activity. We have been told that during planting and heavy harvesting periods the work day of the men lengthens accordingly. We would like to ascertain whether the work day of the campesina also increases. Many women mentioned that during harvesting, for example, they prepare and deliver to the field up to three meals a day for as many as 4 mozos (day laborers) hired to help with the field work. In addition, we saw one 17 year old daughter join the harvesting crew in her family's manzanas of tomatoes when a buyer for the ripe crop arrived. She admitted to having worked in the field two weeks earlier staking the tomato plants. In an adjoining field another

TYPICAL DAY, AREA V; COMPARISON OF WOMEN & MEN WORKING OUTSIDE THE HOME FOR PROFIT

Women working outside home  
for profit  
7-12

Walks to work	15 min.
General factory work	<u>4 hr.</u>
TOTAL	4 hr. 15 min.

12-1  
Walks  
Eats-Rests

15 min.
<u>30 min.</u>

1-5:30

Factory work	4 hr. 30 min.
5:30 walks home	<u>15 min.</u>
TOTAL	4 hr. 45 min.

TOTAL 10 hours

Men-Area V

7-12	Walks to work	25 min.
	General Field work	2 hr. 46 min.
	Walks home	<u>25 min.</u>
	TOTAL	3 hr. 36 min.

12-1	Eats-Rests	28 min.
	Walks	<u>25 min.</u>
	TOTAL	53 min.

1-5:30	General field work	2 hr. 46 min.
	Walks home	25 min.
	Eats	<u>28 min.</u>
	TOTAL	3 hr. 39 min.

TOTAL 8 hr. 8 min.

FIGURE 18

teen-age daughter was weeding a corn and bean field - taking the place of her father who had recently suffered a heart attack. These activities might indicate that the campesina who works in the home for no profit may very well be helping others earn a profit, either by additional activities performed within her home or outside it. A future study, timed for peak agricultural activity, should yield quantitative information on women and children who engage in activities which will enable someone else (husbands, parents) to garner a wage or income.

#### DIVISION OF LABOR

As part of our observations we noted and recorded a sexual division of labor. Jobs divided into three categories: tasks most frequently performed by women, tasks most frequently performed by men, and jobs performed with some frequency by both women and men. (see chart fig. 19 for this list). This listing of tasks is not complete, but serves to give a general idea of the "unspoken" but "understood" assignment of duties in the campo. Unless otherwise noted, all activities were observed.

#### ANALYSIS OF DEMOGRAPHIC INFORMATION

A limited amount of demographic information was collected in order to make a general comparison with the national census data and to draw a general portrait of the typical Area V family. The age distribution of our sample

DIVISION OF LABOR ACCORDING TO SEX

WOMEN	MEN	BOTH
Check Quality of Tobacco	Plow	Clean Field*
	Plant	Harvest
Milk Cows	Slaughters Animals	Stake Tomatoes
Feed Animals	Herd Cattle	Weeding
Carry Water	Chop & Carry Wood	
Make & Repair Walls	Build House Frame	
Make & Repair Floors	Build Roof	
Make & Repair Oven	Build Latrines	
Make & Repair Stove	Build Wells	
Make Kitchen Tools*	Make Furniture*	
Make Pottery		
Make Rugs		
Make Baskets*		
Make Horse Decorations		
Weave Fiber for Hats		
Process Food		
Prepare Food		
Serve Food		
Buy Food		
Sell Chickens, eggs, milk, piglets & similar products		Sell Crop *
Prepare & Sell Food		
Sell in Pulperia		
Water Plants		Work in Home Garden
Make Fire in Morning		
Mend & Sew Clothes		
Wash Clothes		
Iron Clothes		
Wash Dishes		
Clean House		
Care for Children		
Shell Corn	Shell Beans*	
	Drive Car or Truck*	

\*Information not observed - collected through conversation.

ranges from 12 to 86 years. As mentioned previously, ability to recall ages, birth dates of children, etc., varied. Peak age distribution of women was in the interval of 35-39 years with the median age being 32. National median age of women between the ages of 12-86 according to the census is 25.5 years (pg. 2-Vol, 1971 Census). This age discrepancy can signal one of two things: First, that the sample is not representative of the national population. Because it was not a random sample, the investigators could have biased the sample by selecting women to observe. However, since a one-third sample was chosen in each localidad observed, this does not seem probable. Second, it could signal the possibility that women in younger age groups are migrating to the towns and cities. This possibility would agree with a recent study of sixteen rural communities in the departments of Managua, Granada, and Carazo which notes a high rural-urban migration of people between 15 and 30 years (Macias-Gomez 1971: 6-7).

At the time of our sample 75.7% of the women were married or living in free union, 14.6% had never married (73% of whom were in the 12-19 age group) and 9.7% were either divorced from or abandoned by male companions. The largest number of divorced or abandoned women were in the 30-39 year cohort. Eighty-two women in our sample had experienced a total of 475 pregnancies (yielding a mean average of 5.79 pregnancies per woman with SD of 3.57 and

Age Distribution of all Women in Sample  
Distribucion de Edades de Mujeres en Muestra

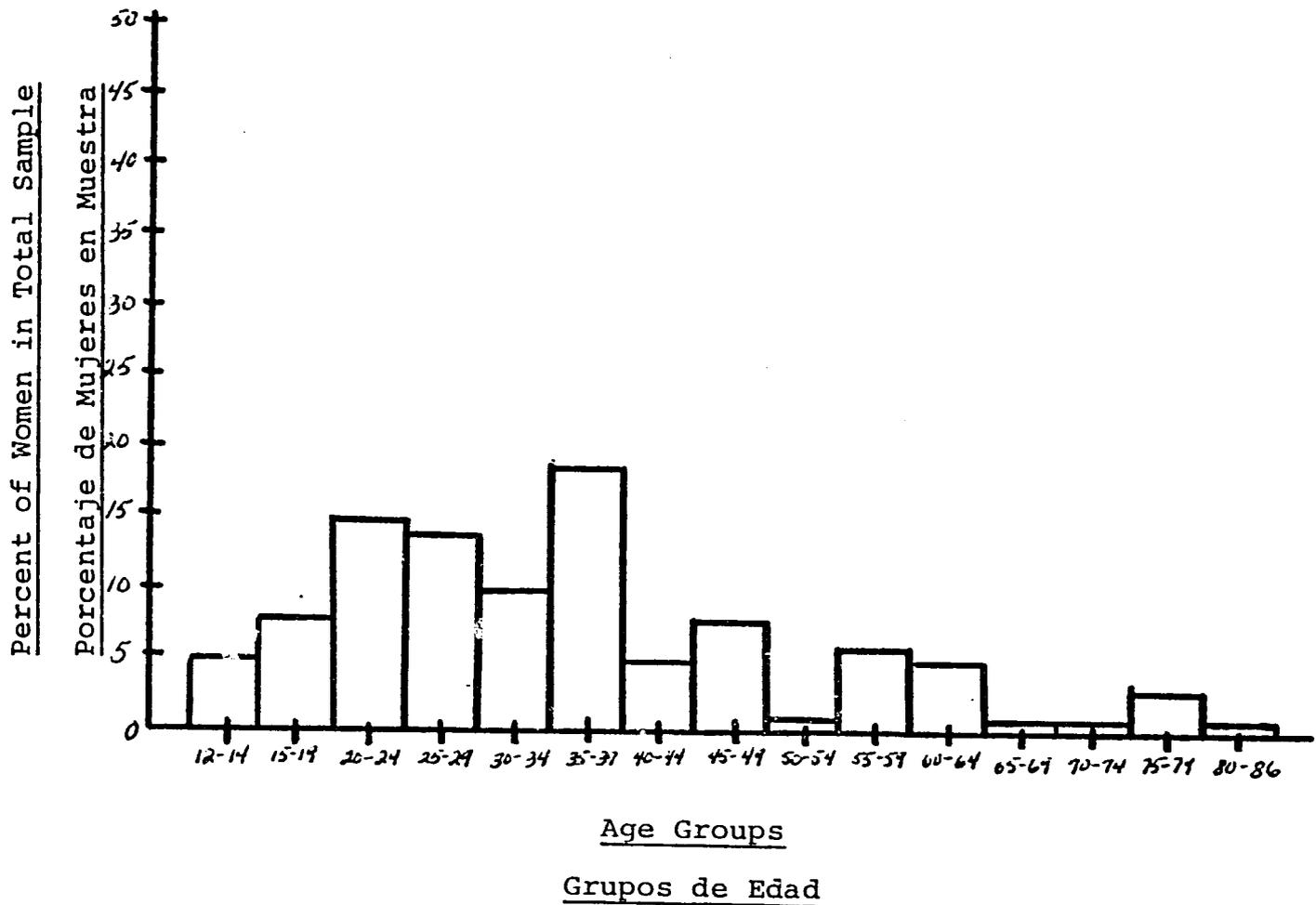


FIGURE 20

72

MARITAL STATUS OF WOMEN IN SAMPLE ACCORDING TO AGE GROUPS

WOMEN IN SAMPLE	TOTAL		AGE GROUPS							
	#	%	12-19		20-29		30-39		40 - +	
			#	%	#	%	#	%	#	%
MARRIED	78	75.7	2	15.4	25	83.3	24	82.8	27	87.
NEVER MARRIED	15	14.6	11	84.6	2	6.7	-	0	2	6.5
*OTHER	10	9.7	-	0	3	10.	5	17.2	2	6.5
TOTAL	103	100.	13	100.	30	100.	29	100.	31	100.

\*Other includes divorced  
and abandoned.

FIGURE 21

Total Number of Children of Women, Married & Unmarried

Numero Total de Hijos de Mujeres, Casadas y Solteras

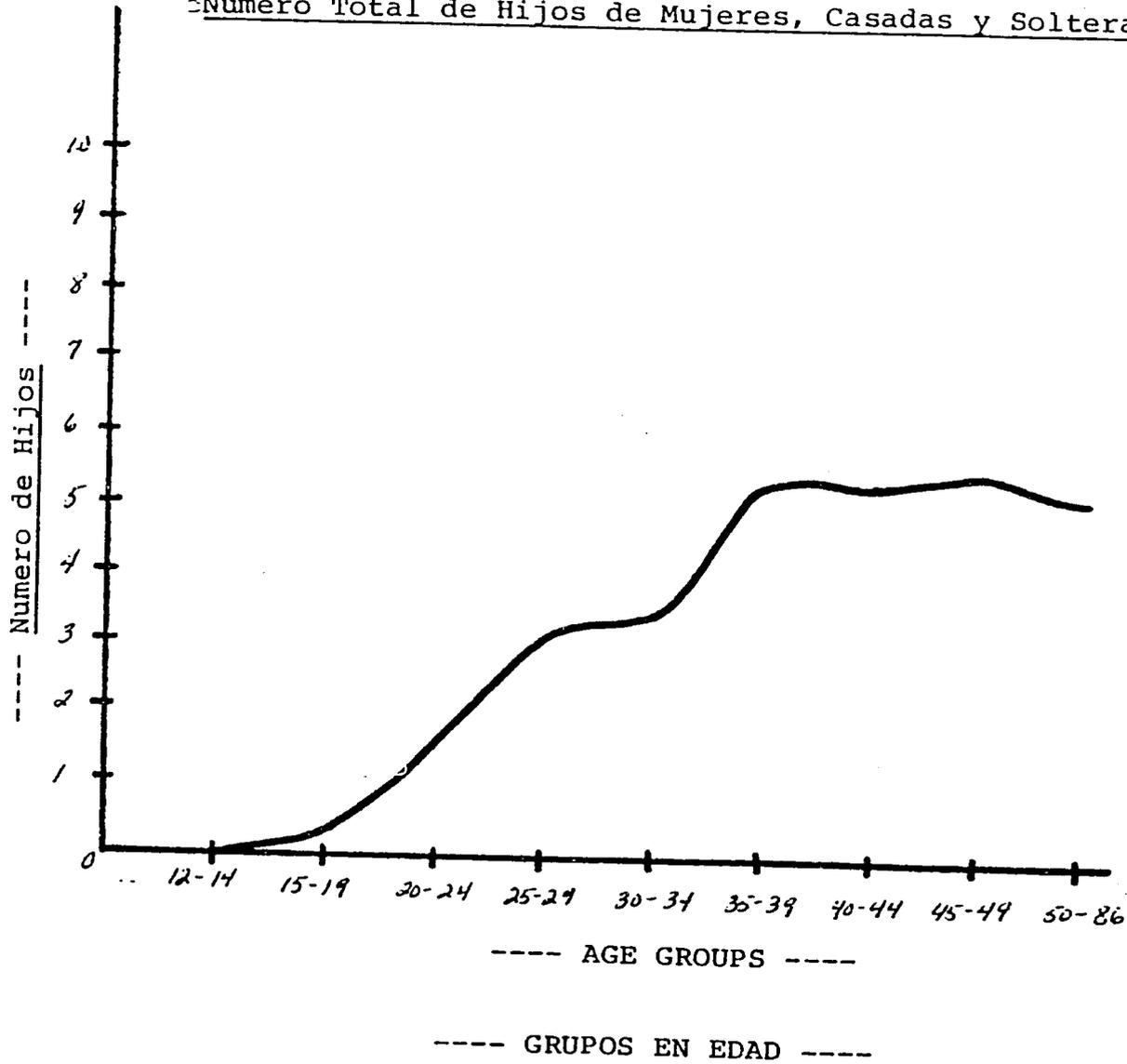


FIGURE 22

1302

var of 12). 6104 of these pregnancies resulted in non-surviving children and 371 surviving children. This gives 4.5 surviving children per woman.

Our Area V sample shows a total fertility rate of 137.5 per 1000 women in the fertile age groups (15-49). This is approximately double the national rate of 68.6 per 1000 listed in Projections for Nicaragua 1970-2000 by Roger Bove.

The two localities with the highest average of births per woman were towns where the women said they could not read or write. These two sites (Ducuali Grande and El Prado) also had the largest average number of non-surviving children per woman (2 each). The town where the women worked outside the home for profit (Santa Lucia) had the lowest average number of births per woman (2 each) and also the lowest average number of non-surviving children per woman (.4 each). However, it should be remembered that these women are, on the average, 10 years younger than the rest of the sample with approximately 24 childbearing years ahead of them. (see chart at fig 1).

#### HOUSEHOLDS HEADED BY WOMEN

If a man was present in the home he was presumed to be head of household whether this was actually the fact or not, as true head of household information is difficult to obtain in a synchronic study. Of our total sample, 20% of households were headed by women. There were no women heads of household in the 12-24 year cohort; 12% of those in the 25-34

NUMBER OF PREGNANCIES BY AGE GROUPS OF WOMEN IN SAMPLE

NUMBER OF PREGNANCIES	TOTAL		AGE GROUPS			
	PREGNANCIES	WOMEN	12-19	20-29	30-39	40-+
# Pregnancies .....0	-	21	11	7	1	2
# Pregnancies .....1	6	6	1	3	-	2
# Pregnancies .....2	20	10	1	4	4	1
# Pregnancies .....3	30	10	-	5	2	3
# Pregnancies .....4	28	7	-	4	2	1
# Pregnancies .....5	70	14	-	5	5	4
# Pregnancies .....6	42	7	-	-	5	2
# Pregnancies .....7	42	6	-	1	2	3
# Pregnancies ...8 or more	237	22	-	-	8	14
TOTAL	475	103	13	29	29	32

FIGURE 23

cohort were heads of households; 25% in the 35-44 year group; 22% of the 45-54; of the 55-64 age interval 40% headed households; as did 71% of the 65-86 year cohort.  
(see graph).

The households headed by women by locality breaks down as the following:

		Average Age of Women
Rio Abajo	20%	35 yrs.
El Prado	0%	35 yrs.
Tomabu	26%	35 yrs.
Puerta Vieja	12%	36 yrs.
Santa Lucia	8%	25 yrs.
Ducuali Grande	50%	45 yrs.

#### EDUCATIONAL LEVEL OF SAMPLE

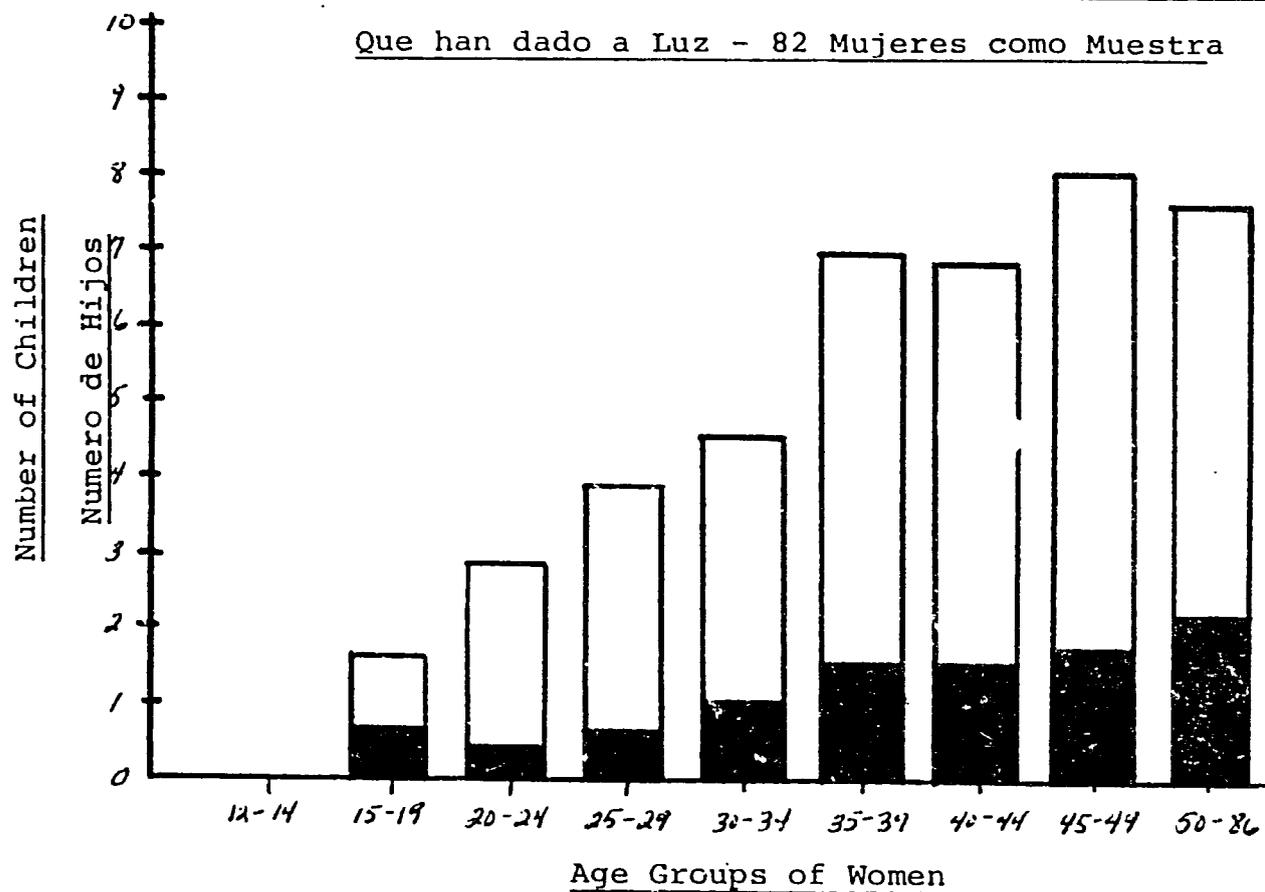
Women in the 15 to 19 year age cohort are the best educated of all women having as a group, achieved fourth grade in school. Those in the 12-14 and 20-34 age groups are the next best educated at just below 3rd. grade level. Women aged 35-49 have, on the average, the equivalent of a 1st. grade education and women from 50-86 years have had no formal education. We did not attempt to test for literacy. Even so, the level of education of the woman is consistently equal to or higher than that of her male companion (see graph fig. 27). This would be in agreement with national statistics which show that of 88.7 thousand rural Nicaraguan elementary school pupils, 50 thousand of

Average Number of Children (Alive & Dead) of Women

Who Have Given Birth - 82 Women in Sample

Numero Promedio de Niños (Vivos y Muertos) de Mujeres

Que han dado a Luz - 82 Mujeres como Muestra



Grupos de Edad de las Mujeres

- Children Alive - Niños Vivos
- Children Dead - Niños Muertos

FIGURE 24

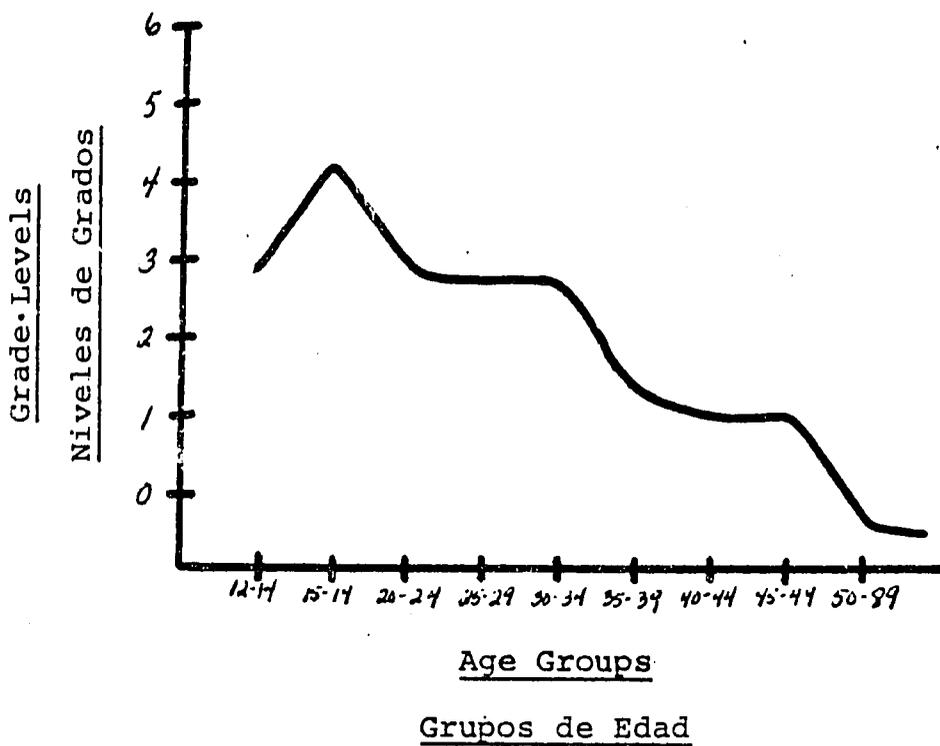
FIGURE 25

Educational Level of Women

According to Age Groups

Nivel Educativo de las Mujeres

De Acuerdo con los Grupos de Edad



Women Heads of Households

Mujeres Jefes de Hogares

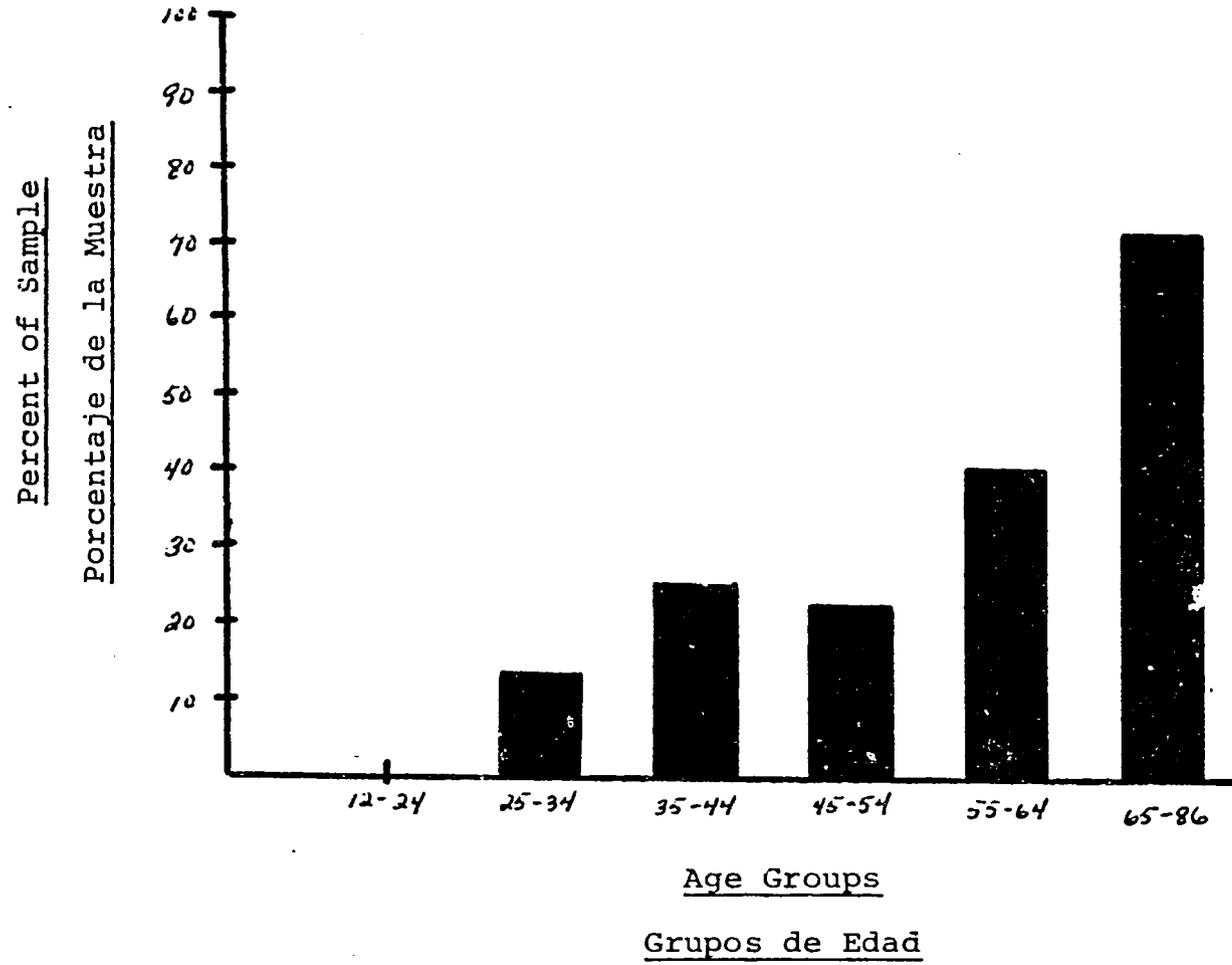


FIGURE 26

Nivel Educativo de las Mujeres  
Comparado con el de los Hombres

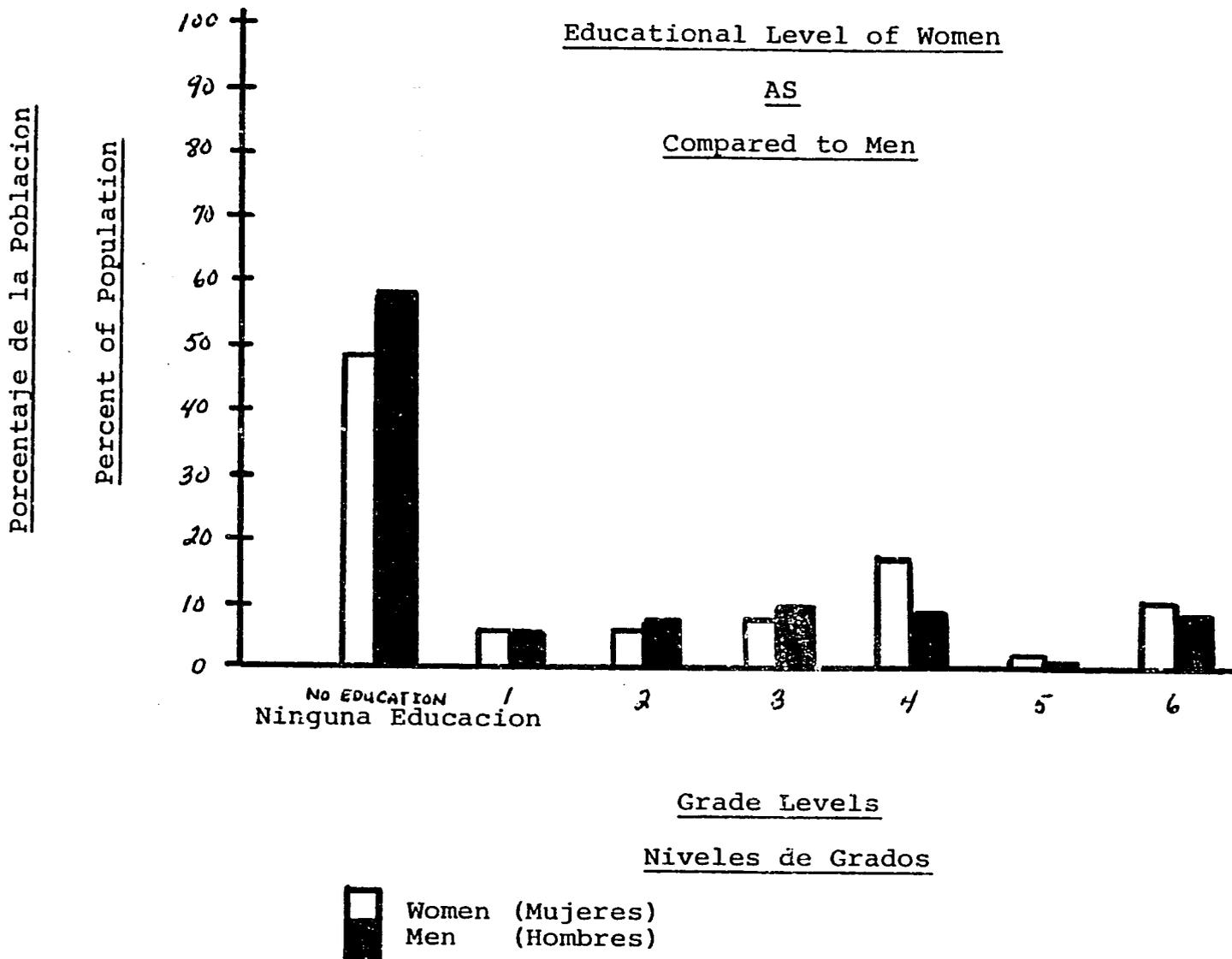


FIGURE 27

EDUCATIONAL LEVEL OF WOMEN ACCORDING TO AGE GROUPS

EDUCATIONAL LEVEL	TOTAL WOMEN	AGE GROUPS								
		12-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-89
TOTAL	100	5	8	14	14	10	18	5	8	18
NO EDUCATION	48	1	-	5	4	2	10	3	6	17
GRADES 1&2	14	1	2	1	2	3	3	1	-	1
GRADES 3&4	25		2	4	6	3	5	1	2	-
GRADES 5&6	13	3	4	4	2	2	-	-	-	-

FIGURE 28

them are women (CIM: No. 2 pg. 130).

#### RURAL MIGRATION OF CHILDREN

At least one child from 23% of families from our sample had migrated to another area. The median age of the children when they left home was 17 years and their reasons for leaving were almost equally divided between increased opportunity for schooling or work or to get married. These children represent 16% of all children on our Area V sample.

#### MIGRATION OF CHILDREN BY LOCALIDAD

<u>LOCALIDAD</u>	% of Children of Sample who have Migrated
Rio Abajo	13.4%
Santa Lucia	4.2%
Ducuali Grande	10%
El Prado	21.8%
Puerta Vieja	3.7%
Tomabu	25.8%

#### ANALYSIS OF ECONOMIC INFORMATION

Historically, accurate personal economic information is difficult to obtain from strangers; records are rarely kept, and we found our sample population of Area V to be no exception. Ascertaining if women, for example, engaged in any activity such as cheese making for remuneration was information relatively easy to obtain. Accurate information about any profit from this activity was less readily available. Therefore

WOMENS MONEY - GENERATING ACTIVITIES

<u>HIGH INCOME - C\$100 or more monthly</u>		
<u>ACTIVITY</u>	<u>INCOME PER DAY</u>	<u>ESTIMATED MONTHLY INCOME</u>
Running a Small Store (pulperia)	C\$60	C\$1,680
Making Cuajada	C\$15	C\$ 120
Factory Work	C\$10	C\$ 220
Ceramic Work	C\$25	C\$ 320-480
Work as a Maid	C\$6.15	C\$ 160
Washing Clothes	C\$10	C\$ 120
Making Decorative Cruppers	C\$20	C\$ 400
Sewing	C\$10	C\$ 120
Selling Beer & Tragos (drinks)	C\$10	C\$ 240
<u>LOW INCOME - C\$99 or less monthly</u>		
<u>ACTIVITY</u>	<u>INCOME PER DAY</u>	<u>ESTIMATED MONTHLY INCOME</u>
Selling Eggs	C\$ 1	C\$ 28
Selling Milk	C\$ 1	C\$ 28

FIGURE 29

we have estimated income generated by women in our sample as best we could using the information available, assuming a 7 day work week for activities such as selling eggs and running a pulperia; a 3 day work week for women doing laundry for a living, and a four day work week for potters and a two day work week for making and selling milk cheese (cuajada) (this information having been supplied to us by the women themselves).

Forty-two percent of the women in our sample performed some income generating activity. If we exclude the town of Ducuali Grande and Santa Lucia where most women were observed because of their work involvement, 34% of our sample of Area V women engaged in money making activities. We have listed the observed women's money generating activities in two categories, high and low income, arbitrarily setting C\$100 monthly or above as high income and C\$99 or less monthly as low income. Note: these were activities we observed being performed on a regular basis-the list does not include field work which we know took place but on a sporadic basis. Nor is the occasional sale of piglets included: these are raised regularly, but sale is specified for emergencies or to provide funds for special occasions; chanchos form the rural savings account.

#### WHO DECIDES HOW THIS MONEY WILL BE SPENT

We questioned the women to learn who decides how the money they earn will be spent. According to the women, 34% said they themselves make the decision; 38% said the husband

or compañero decides, and 25% said the decision making responsibilities are shared. Therefore, 62% control or share equally in the control over the money they themselves earn.

A comparison between the income earned in the two atypical towns of our study, Ducuali Grande and Santa Lucia, reveals that the women potters, working in their homes, make more money than the factory rug-makers. The salary of the factory is C\$10 daily or C\$220 monthly working 5 1/2 days each week, while the average wage of the women potters who work a four day week is C\$320 to C\$480 month (figuring between 10 and 15 pots a day which sell at C\$2 per pot).

The highest wages earned are by women who run the small stores (pulperias) in each town. Pulperias appear always to be run by women, one of whom told us she takes in between 50 and 70 cordobas daily or about 1680 cordobas monthly. We feel, however, that this figure is probably a rough estimate of gross and not net income. No mention of overhead, payment for supplies, etc., was made. Frequently daughters and granddaughters are pressed into service taking care of the pulperia and they receive no remuneration (a further instance of the need to know statistics of women and children who work to help others earn a profit).

## RURAL STANDARD OF LIVING

The information from the house construction and dwelling plan sheets yields 3 separate indicators for determining a relative standard of living: 1) number of rooms of house divided by number of people living in the house; 2) number of pieces of furniture (weighted in terms of a value assigned by the investigators such that a stool received 1 point and a T.V. set received 6 points) divided by number of people living in the house; 3) types of construction of walls, roof and floor. House construction materials were also weighted, with walls of cardboard or scrap metal given 1 point while brick or stone walls merited 5 points.

The listing of arbitrarily assigned points used in determining a standard of living follows on attached sheet:

## WEIGHTING OF FUNITURE &amp; SERVICES

6 points	Electricity Television Refrigerator Sewing Machine
5 points	Well Latrine
4 points	Chest Glass front hutch Radio
3 points	Oven (clay) Bed (wooden) Mirror
2 points	Chair Bench Table Hammock Cot Wall Shelf Hanging rack for glasses Corn grinding machine
1 point	Stool Stove made of rocks

## WEIGHTING OF HOUSE CONSTRUCTION

5 points	Tin or Zinc roof Tile floor Cement, brick or stone walls
4 points	Tile Roof Wood plank walls
3 points	Smooth mud walls
2 points	Straw Roof Dirt floor Cane and stick walls Mud and stick walls
1 point	Cardboard Scrap metal Bamboo Broken tile

Using this point system we determined the locality with the highest standard of living as measured by two of the three criteria to be Ducuali Grande, the town where 50% of the women in our sample were heads of families and where women work inside the home for profit. (It should be noted that home construction and dwelling plan information was not taken for the women factory workers of Santa Lucia, an oversight which should be remedied in a future study.) Discounting Ducuali Grande and Santa Lucia, our atypical study sites, Rio Abajo, followed closely by Puerta Vieja, has the highest standard of living with a large gap between them and the two localidades with much lower standard of living scores, Tomabu and El Prado. Both Rio Abajo and Tomabu have been recipients of development assistance for over a year's time, so presence or absence of this type of program does not appear to be an independent variable in this instance. Geographical isolation or, alternatively, easy access to larger population centers with attendant goods and services also does not appear to be a deciding factor in a locality's relative wealth or poverty as both El Prado and Puerta Vieja are located on the Pan American Highway. The independent variable seems to be as basic as the access to water for crop irrigation. Both Rio Abajo and Puerta Vieja have a constant supply of water so that, by using gasoline-powered pumps, they are able to grow crops even during the dry season. In contrast, Tomabu has

STANDARD OF LIVING INDICATORS

LOCALIDADES	$\bar{X}_a$	ROOMS		FURNITURE			HOUSE CONSTRUCTION		
		SD	VAR	$\bar{X}_b$	SD	VAR	$\bar{X}_c$	SD	VAR
Río Abajo	.79 (1.38)	.23	.05	4.30	2.04	4.16	3.37	.42	.17
Ducuali Grande	1.00 (1.6)	1.14	1.3	7.89	12.34	52.29	3.27	.4	.16
El Prado	.38 (2.9)	.15	.02	2.85	1.57	2.46	2.97	.51	.26
Puerta Vieja	.76 (1.7)	.41	.17	5.39	3.85	14.8	3.18	.31	.09
Tomabú	.56 (2.5)	.44	.20	4.19	2.34	5.47	3.04	.64	.41

$$\bar{X}_a = \frac{\text{\# of rooms}}{\text{\# people in house}}$$

$$\bar{X}_b = \frac{\text{weighted furniture \#}}{\text{\# people in house}}$$

$\bar{X}_c$  = mean of weighted house construction

( ) = # people per room

SD = STANDARD DEVIATION

VAR = VARIANCE

FIGURE 32

suffered a drought for the past two years and had not brought in even one crop the year we were there. The population of El Prado, situated just across the highway from Lake Moyua which yields a constant water supply for Puerta Vieja, was fervently hoping for rain to restore fertility to their rocky and hilly fields.

(See Chart of standard of living indicators and average house construction per locality.)

#### TRANSCRIBED INTERVIEWS

The open-end question interview was introduced when the field work was almost half over as an experiment. We wanted to ascertain 1) if tape recorders could be used in the campo to any advantage and 2) to try to tap the cognition of the campesina to better understand how she felt her life was different or the same as that of her mother and learn of her aspirations for her own children's lives.

The first purpose has been answered, i.e., we could introduce the tape recorder at the end of a day's observation without jeopardizing or breaking rapport which had already been established. It's important to note that the tape recorder was used only in the afternoon when there was a general lessening of women's activities. A suggestion for the future is that at the time interviews are taped they should be given a number or code which corresponds to one on the written time budget so later correlates can be drawn between responses and actual standard of living. In our

desire to maintain absolute privacy and anonymity of our subjects, we failed to do this, thereby losing the opportunity to draw similarities or differences of response for women with different work patterns (to compare responses of women working without remuneration to responses of women working for profit).

We found, after reviewing thirteen taped interviews and a smaller number of written ones, that our broad, open-ended questions were not eliciting the expected response. When we asked the campesina "What aspirations do you have for your children?", for example, we expected a flood of dreams and goals; instead we often were taken aback by a one word reply.

Investigator: "What aspirations (deseos) do you have for your children?"

Answer: "To take care of them".

Investigator: "What desires do you have for them, what do you want them to be?"

Answer: "That they grow up and we'll see if they learn a work to do."

Investigator: "And for you, yourself?"

Answer: "There's almost nothing to think about here".

Investigator: "You don't have aspirations for your children."

Answer: "No"

Apparently a more in-depth study of questions likely to elicit relevant responses is required before open-ended questioning is attempted in rural areas. Vocabulary and

question structure may be significant variables in this regard. It may also be that the lack of demonstrated, realistically alternative life styles or life choices precludes this type of thinking to a large degree.

This is not to say that campesinas don't think or don't have viable solutions to specific problems which beset them, but only to point out that wide reaching goals and sweeping dreams are not a reality to women who can't foresee a different life style or who hold with an "If God wills it" approach to life.

Investigator: "What do you think about life  
'in the country?"

Answer: "Waiting to see what happens in  
(women-El Prado) the future. Waiting to see if  
the rainy season brings us food or  
not. Because if it doesn't rain,  
that's it. We have faith in God  
to see what happens."

Perhaps the following excerpt sums up the campesina's very realistic view of life and indicates why our open-ended questioning did not elicit the replies we had expected.

Interviewer: "No deseas nada?"  
"Don't you wish for anything?"

Answer: "Of course, but there is no how.  
Why? That's the thing, if you  
wish and there is no hope for  
nothing..... There is no work here,  
there is nothing."

One 33 year old woman, who was married at 22, gave birth to twins who died after 15 days and is now separated from her husband, living and studying (6th grade) and

working as an empleada in a nearby town, was visiting her 78 year old mother while we were in her childhood home.

Because she has lived in a home with running water, indoor plumbing, gas cooking stove, and electricity as well as in a dirt floored mud house with a latrine and the necessity of a 20-30 minute walk for water several time a day, her comments are enlightening.

Interviewer: "Do you wish to further your education?"

Answer: "Of course. It is one of the basics that I need, now more than ever."

Interviewer: "What are the problems of life in the campo?"

Answer: "Work in the campo is always much harder than in the city. In the city there are more diversions while in the campo one only looks, well, one is already accustomed to one's campo, one lives the life. But the people that come from another place, two, three days is fine, but then they take the city. Because, in reality, the city is something else."

Interviewer: "If you were to stay in the campo what would you change?"

Answer: "It would be good to be in other **conditions**. To change life is to overcome it. At least the potable water which we are going to have (a proposed PRACS project) is one instance of overcoming..... Electricity also is something beautiful which we don't have."

### Information Biased by Time Budget Methodology

Two categories which showed a suprisingly low frequency of observation were listening to the radio and socializing outside the home. Battery powered radios are fairly common in the campo. An INVIERNO survey of two of the study localities showed 78% of a sample of the residents of Rio Abajo and 92% of a sample of residents of Tomabu possessed radios. Nevertheless, during our observations only two women in Rio Abajo and four in Tomabu engaged in listening to the radio for an average of 25 minutes each time during a total of three week's observations in these two localities. It must be assumed that a) either radio listening takes place only before 7:00 a.m. and after 5:00 p.m. or b) that women will not turn on the radio while an observer is in the home.

Very few women went outside the home to visit with neighbors or relatives while investigators were present. In future time budgets these activities should be included as questions to ask the women (e.g., when do you visit friends or relatives in other houses? Do you listen to the radio - when, for how long, etc.)

It is also possible that some non-crucial activities such as ironing or washing clothes were postponed because the investigator was in the home. However, the major activities of rural women are essential for their welfare, if not survival, and cannot be postponed or ignored for a

day. These activities include food processing and food preparation, water fetching, child care to include breast and bottle feeding, animal tending, food serving and dish washing. For this reason we feel the observation methodology was the direct cause of only negligible bias.

## CONCLUSIONS AND RECOMMENDATIONS

This methodology is flexible and can be focused for many kinds of studies. It was directed in this instance at discerning the specific roles and responsibilities of rural women. And in that it has met our expectations. In the process of its application some specific information and details were observed in sufficient quantity to be significant. For example, we noted that of the 72 time budget studies which made reference to feeding patterns, some 61% of the women fed their husbands and/or children before themselves. For nutritionists this type of information might indicate a feeding pattern which assures that adult women remain the least well-fed family members by both qualitative and quantitative standards. We also noted that the diets of the two localities situated along the Pan American highway were more varied and apparently nutritious than those observed in more isolated localities. This might indicate that the high malnutrition rate in Nicaragua is not caused by nutritional ignorance alone, but that unavailability (due either to poverty or isolation or both) of more nutritious foodstuffs is another likely cause. This method of observation can be brought to bear on such questions in order to isolate with good reliability causal variables.

Another type of information which this method elicited relates to rural marketing practices and the obstacles which the rural poor face in realizing fair value for their labors. For example, in Rio Abajo, tomato farmers were observed to sell boxes containing as many as 80 tomatoes to a buyer with a truck for 5 cordobas the box. The supermarket in Managua buys a box of 80

tomatoes for 35 cordobas. With monopoly control of the means of transporting the campesino's produce to market, the middleman plays a "take-it-or-leave-it" game and invariably wins.

Similarly, in Ducuali Grande, a localidad which fails to qualify for present agricultural development projects because of a lack of agricultural potential, the women potters sell their pots to a single buyer with a truck for 2 cordobas each. A trip to the Condega market where these pots are selling for 6 to 8 cordobas each is less than 20 minutes away by car. The small producer with few marketing options is in need of advice - a situation which is illuminated by the time budget observation method.

A third observation consistent throughout our sample is that women are the guardians of the subsistence-level rural savings account, i.e., the chanchos or piglets. It might be desirable to introduce more reliable methods of handling the limited funds which pass through the rural economy or, at the least, to introduce measures which would help insure the survival of the chanchos.

In order to gain a more complete picture of the roles and responsibilities of rural Nicaraguan women, we recommend that the time budget method be utilized during more active work periods of the agricultural cycle. According to The Small Farmer's Annual Crop System Model for Region V ( see Table #3), in November cabbages and tomatoes are planted. In January beans and sorghum are harvested and in February the corn is harvested. We have been told by various women that during these periods day laborers (mozos)

are hired to help with the agricultural work and the women prepare and carry to the field meals to feed their husbands, sons, and the hired mozos. We should know how many extra hours of food processing and food preparation are necessary to meet this increased responsibility.

Also, of the 20 time budget studies we did on working men, at least two had teenaged daughters working in their fields. Even though this may not be considered culturally the ideal, it may, in fact, reflect the reality. We were told that women, for example, are the ones who check tobacco leaves in the field for quality before harvesting. The time budget methodology would elicit any changes in roles and responsibilities of the rural women during more agriculturally intensive periods; this knowledge being basic to development planners.

Clearly change agents must know the social landscape of an area, and the distribution of benefits and burdens before the feasibility of projects, or even their objectives can be determined. We conclude that the time budget methodology can provide the data on which feasibility and social soundness studies can and should be based.

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## EQUIPMENT APPENDIX

This section is intended as a practical guide for the field worker; a list of what to bring and what to expect.

The gap between campo life and city life in Nicaragua is vast. Life in the campo was as foreign to the three Nicaraguan students from Managua as it was to the American Field Work Coordinator. The lack of services and the scarcity of supplies are the first realities to be faced.

### FOOD

Beans and tortillas can almost always be found and can often be bought already prepared. Rice and lard are somewhat scarcer, as is cheese but these can usually be purchased from the local pulperia. Eggs and milk are sometimes sold, but are often not available. It is wise to be cautious about locally butchered meat as the sanitary conditions of the "slaughter house" are often questionable.

Potable water, canned meats and vegetables, canned juice, packaged soups, cookies, crackers, fruit and peanut butter are suggested as items to be brought in to be added to the basic bean-tortilla diet.

### FAUNA

One of the more startling discoveries of campo life is the increase in animal and insect populations. It is wise to bring insect repellent and antiseptic cream for bites and scratches and to shake out clothing, bedding,

and shoes before use each day. Sheets offer protection from swooping bats, mosquitoes, and insects that might fall from the roof during the night. A snake bite kit is necessary, particularly if walking through fields is likely.

#### CLOTHES

Clothing should be functional and serve as protection from sun; wind, cold, insects, and animals. Heavy work boots, jean-style pants, both short and long sleeved shirts, a sweater, kerchief, and wide brimmed hat are suggested. As bathing facilities are often outside, a robe and shower shoes are a good idea.

A complete list of these and miscellaneous items deemed appropriate for field workers follows.

#### FOOD

Potable Water

Canned Meats

Canned Vegetables

Canned Juice

Packaged Soup

Crackers

Cookies

Fruit

Peanut Butter

#### CLOTHING

Work Boots

Jean-style pants

Short and long sleeved shirts

Sweater or Jacket

Kerchief

Wide Brimmed Hat

Robe

Shower shoes

MEDICINE

Snake-bite kit

Aspirins

Antiseptic lotion

Sun Screen

WORK RELATED ITEMS

Note books

Watches

Pens

Pencils

Folders

Stapler

Tape Recorder and Tapes

LINEN

Sheets

Towel & Face Cloth

Blanket or Sleeping Bag

Mosquito Net

MISCELLANEOUS

Flash Light .

Lanterns

Insect Repellent

Toilet Paper

Small amount of money