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9. ABSTRACT
This study documents the complex of economic activities in rural households in the Philippines in terms of a set of accounts in a double-entry system that summarizes the flows of goods and services. The data were generated from the integrated household record-keeping project conducted in a rice village. Supplementary data were collected from the assets surveys conducted both at the beginning and at the end of the record-keeping period. Tubuan is a relatively small barrio consisting of 95 hourses in the Municipality of Pila, located about 25 kms east of Los Banos. Twelve cooperators were selected from this village for the record-keeping project. The accounting system consisted of six accounts: (1) current agricultural production; (2) current non-agricultural production; (3) income-expenditure; (4) fixed capital production; (5) saving-investment; and (6) outside-of-household. The agricultural production account was divided into rice production and non-rice agricultural production. The results of this effort were largely plausible, despite possible observational errors inherent in the process of highly complicated data collection for such an accounting system. The study clearly shows a possibility that data can be systematically collected and documented at a village household level to be consistent with the framework of macro national accounts. This approach applied to various locations over time will produce a solid data base for advancing the theory of peasant economy, as well as for formulating the rural development policy. Data tables are included.

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ANATOMY OF PEASANT ECONOMY: THE ECONOMIC ACCOUNTS OF RURAL HOUSEHOLDS IN THE PHILIPPINES

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ANATOMY OF PEASANT ECONOMY: THE ECONOMIC ACCOUNTS OF RURAL HOUSEHOLDS IN THE PHILIPPINES*

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"Peasant", the basic unit of rural economy in developing countries, is a complex of economic activities including production, consumption, and capital formation. By this characteristics the peasant sector represents a sharp contrast to the urban sector in which the clear division of economic functions prevails among firms and households.

Theories of modern economics, such as "the theory of firm" and "the theory of consumer behavior," are assuming the functional divisions among different economic agents, typical in the urban sector. The conventional approach to the analysis of the peasant economy has been to abstract "producer", "consumer", and "investor" from the complex of the peasants, to which the theories of modern economics are applied separately.

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Although such an approach is useful as a first approximation, its effectiveness is limited to the extent that the approach is based on the unrealistic abstraction of different economic functions from the single peasant complex.

Since the classical work by Tschajanov (Chayanov) (1923), there has been a number of attempts to develop the "theory of peasant economy" including Hymer-Resnick (1966) and Nakajima (1969). However, such theoretical efforts have not been paralleled by the systematic collection of data which are amenable to the analysis of the peasant complex. A large body of statistics on the peasant economy has been collected from the farm management and production cost surveys as well as the household income-consumption surveys. However, little effort has been made to collect statistics that enables the analysis of the peasant complex in its entirety. As a result, the recent boost in the "integrated rural development programs" suffers the lack of an appropriate statistical basis.[1/]

In order to fill this gap, we attempt in this study to document the complex of economic activities in rural households in the Philippines in terms of a set of accounts in a double-entry system, that summarizes the flows of goods and services. The data on which this study was based were generated from the integrated household record-keeping project conducted in a rice village in the Philippines. Supplementary data to complete the system of accounts, such as inventory changes, were collected from the assets surveys conducted both at the beginning and at the end of the record-keeping period.

1/ For a perspective on the integrated rural development programs of the aid agencies, typically the World Bank, see Yudelman (1976). A skeptical view was expressed in Ruttan (1975/4).

I. DATA COLLECTION AND ESTIMATION PROCEDURES

Study site

The Municipality of Pila is located in about 25 kms east of Los Baños, or about 90 kms southeast of Manila. Tubuan is one of 13 barrios (villages) of Pila. It is connected to the Poblacion (urban district) of Pila by a narrow unpaved road of about 2 kms. Common means of transportation are tractors and tricycles.

Tubuan is a relatively small barrio consisted of 95 houses according to the benchmark survey conducted for this project in November 1974. The houses are hidden in the coconut grove which looks like an island in the midst of an ocean of paddy field -- a landscape typical to rice-producing areas in Southern Luzon. The northwestern side of the barrio is demarcated by the Laguna de Bay. There is little difference in height between paddy fields and lake water.

The coconut grove under which most houses are located is slightly elevated from the paddy fields. Villagers are residing under coconut trees with the implicit consents of the coconut owners living outside of the barrio. By custom they are allowed to utilize the space below the trees by planting fruits and vegetables or raising livestock and poultry. In return they serve as caretakers by clearing undergrowth of the coconuts and etc.

Absentee landlordism is pervasive in this area. Due to the extension of national irrigation network the double cropping of rice is commonly practiced with the use of modern semi-dwarf varieties.

Rice farming is by far the most dominant enterprise. Coconuts are a relatively minor source of income of villagers. Duck raising is a common sideline enterprise, using shellfish from the Laguna de Bay as feeds. Fishing is being practiced in a very minor scale primarily for home and village consumption.

Sample households

From the total 95 households in the village, twelve cooperators were selected for the record-keeping project. The selection of the cooperators was not random, but based on our judgement on the ability and the willingness to participate in the project. Included in the sample were the households of four large farmers (cultivating more than 2 ha), four small farmers (cultivating less than 2 ha) and four landless workers. However, we found that the quality of the records of one cooperator who belonged to the category of small farmers was considerably lower than others. Thereby, we omitted his records from our analysis of sample averages. (For family and farm characteristics of the cooperators, see Appendix Table A.)

During the course of the project, two cooperators who belonged to the landless class subleased small parcels of paddy field (0.25 ha each) from other tenant farmers. Henceforth, their records included information on rice farming.

Record-keeping procedures

Daily records on economic activities were kept by the cooperators on the record books that we distributed. The period extended for one year from June 1, 1975 to May 31, 1976, using the two preceding months (April and May 1975), as a test period.

The record book consists of (a) labor sheets and (b) transaction sheets. The labor sheets were designed to record all labor uses, including those of family, hired and exchange workers, in terms of hours worked. Only income-generating works in a conventional sense were recorded, but house-keeping works such as cooking and child caring were not recorded. The transaction sheets were designed to record all transactions in cash and kind, including exchange and grant. Home consumption of agricultural products and their uses for seeds and feeds were also recorded in the transaction sheets.

We checked cooperators' records regularly twice in a week (Tuesday and Friday). The record books were distributed and collected weekly every Friday.

Accounting framework

The accounting system that we designed to summarize the records on the economic activities of the village households consists of six accounts: (1) current agricultural production account, (2) current non-agricultural production account, (3) income-expenditure account, (4) fixed capital production account, (5) saving-investment account, and (6) outside-of-household account. Considering the critical importance of rice in the economy concerned, the current agricultural production account is divided into: (IR) rice production account and (IN) non-rice agricultural production account. Therefore, our system consists of seven accounts which are "completely articulated," as shown in A/C Tables attached in the end of this paper. The system is largely consistent with the framework of the recent UN System of National Accounts (1968).

(IR) Current rice production account establishes the identity between the total value of rice output and the total cost paid (and/or imputed) to the inputs applied to rice production processes. (IN) Non-rice agricultural production account establishes the same identity with respect to other crops, livestock and poultry. It should be noted that the rice production account was prepared not only for farmers but also landless workers who did not produce rice. This was because landless workers received rice (paddy) as wages in kind, and consumed it at home or sold it to outside. Also, the non-rice agricultural production account was prepared for landless workers, because some of them were engaged in raisings pigs and ducks.

The village households not only engage in farming but also run a wide spectrum of non-agricultural enterprises, including commerce, transportation and manufacturing. (2) Current non-agricultural production account establishes the revenue-expenditure identity with respect to non-farm production activites.

Values produced by the factors owned by the rural households together with earnings of wages from outside employment, represent major sources of the household income. (3) Household income-expenditure account records how the income thus generated was disposed for consumption and savings.

In addition to current production activities, the village households engage in the production of capital goods, such as building houses and digging irrigation ditches. (4) Fixed capital production account shows how much of the increase in the value of fixed capital is attributable to family-owned factors and how much of it was paid to external factors contributed from outside. (5) Saving-investment account identifies the

sources of fund for financing the investments, including fixed capital formation and investments in inventories and financial assets. Finally, (6) outside-of-household account put together all the transactions of the households with outside.

Imputation

The major problem in accounting economic activities in the village households is how to impute the values of goods and services which do not go through market transactions. Two major items, of which the portions of non-market transactions were especially important, were rice and family labor.

Not only a major portion of rice produced in the village was consumed directly by producers' households, but rice was extensively used as a media of exchange, including payments for hired labor and land rent. In this study, we adopted the standard rates for imputing the value of rice as 1 peso per kilogram of paddy (rough rice) and 2.05 pesos per kilogram of milled rice. These were the typical market prices during the period of study. The cost of rice milling for home consumption, which was usually paid to millers as a portion of rice milled or bran, is assumed as 5% of the value of the paddy milled.

The values of other agricultural products which were consumed directly by producers or used for exchange were imputed according to the valuation of record keepers themselves.

The imputations of family labor costs were based on the standard market wage rates by tasks, prevailed during the period of record keeping (Appendix Table B).

Those standard wage rates were also used for separating labor costs from capital costs in the payments to tractor custom works. Since the payments to tractor custom works include both the wage for operator and the capital rental for tractor, we assumed the difference between the total payment and the imputed wage cost as the capital rental.

Because our farmer cooperators were all tenants and actually paid rents to landlords, we did not make any imputation of land rents. However, the tenancy title commands a value in this village (Hayami and Maligalig, 1976). This means that the tenants are receiving a part of the functional income share of land. Therefore, our rent data may be underestimating functional land rent.

Cash and rice balance

Besides the basic accounting tables, we prepared balance sheets for cash and rice, as a check for the accuracy of data (Appendix Tables C and D).

The cash balance establishes the identity between the total amount of cash received by the household from various transactions, such as the sale of agricultural products and wage earnings from outside employment, and the total amount of cash paid by the household for various purposes such as the purchase of consumption goods and services. The rice balance establishes a similar identity between total receipt and total disposition of rice. Those two balance sheets were prepared for every month.

The cash on hand at the beginning of every month was obtained from the assets survey. Another independent estimates of cash on hand at the beginning of a month is the sum of the cash on hand at the beginning of a

previous month and the increase in cash on hand during the month, which was obtained from the assets surveys. During the record-keeping project, we compared those two estimates of cash on hand, and tried to minimize the discrepancies by reexamining the data and reinterviewing the cooperators.

A similar check was made with respect to the rice balance. The difference between total rice receipt and disposition gives an estimate of rice output. Another direct estimate was obtained from the rice production survey conducted independently of the record-keeping. The comparison of those two estimates served as an effective data check.

II. MAJOR FINDINGS

The accounts of village households are compiled in A/C Tables, for the averages of all sample households as well as for the averages of large farmers, small farmers, and landless workers separately. The major findings are as follow:

Cost and returns of rice production

Cost and returns of rice production are summarized in Table 1. On the average, the value of total rice output per farmer household was ₱15,492 ($2,213).[2/] The average per household for large farmers was ₱19,347 ($2,764), more than twice larger than the average for small farmers. However, the average per hectare was slightly smaller for large farmers than for small farmers (₱6,046 vs. ₱7,766).

2/ The exchange rate of 7 pesos (₱) to 1 U. S. dollar ($) is used, which prevailed during the period of record-keeping project.

Value added from rice farming calculated by subtracting current intermediate inputs including rice seeds was about 84% of total output value.

Family income, the sum of imputed incomes of family factors, was 36% of total output and 43% of value added, on the average of all farmers. About one-thirds of family income was the return to family labor, and two-thirds were the residual profit which is supposed to represent the return to family-owned capital.

A major contrast is that the ratio of family income to total value added for large farmers was substantially larger than for small farmers. The major reason for the low family income ratio for small farmers was the large payment of rent. The average rent payment of large farmers (₱3,663) was smaller than small farmers' (₱4,404), despite the fact that the average farm size of large farmers was 3.2 ha whereas that of small farmers was only 1.3 ha.

The difference in the rate of land rent (₱1,145/ha for large farmers vs. ₱3,388/ha for small farmers) seems to be primarily due to the difference in the tenure arrangements. Whereas two out of three small farmers were under share tenancy, three out of four large farmers were under leasehold tenancy. (Another one large farmer cultivates a part of his land under leasehold tenancy and a part under share tenancy.) This suggests a possibility that large farmers were capturing a part of functional income share of land in the form of residual farm profit.

Costs and returns of non-rice agricultural production

Table 2 summarizes the cost and returns of non-rice agricultural production. Major non-rice agricultural enterprises in this village were duck and hog raising. For those enterprises, purchase of current inputs, especially feeds, comprised the major item of external payment. A part of rice output was also used for feeding ducks.

Since the intermediate inputs were of major importance in duck and hog raising, the value added ratios in non-rice agricultural production were relatively small. The family income ratios with respect to total output were also small, but the ratios with respect to value added were as high as 100%.

Since duck and hog raising were backyard enterprises and did not use any farmland, the share of land in value added was zero. According to our estimates, about 30% of income share went to labor and 70% to capital (or residual profit). However, it must be emphasized that, because duck and hog raising is a sideline enterprise using only several few minutes everyday, the recording of labor use would be much less accurate than for rice farming. Also, the wage rate used for imputation may not reflect the contribution of family labor for such enterprises. Thus, the estimates of factor shares on non-rice agricultural production should be taken with great reservations.

Costs and returns of non-agricultural production

Table 3 summarizes the costs and returns of non-agricultural enterprises. In fact, among our sample households, only one which belonged to the category of large farmers ran a tricycle (motored tricycle cab) as a

non-agricultural enterprise. Therefore, the data in Table 3 were those of the tricycle operation of this farmer.

The largest cost item was the fuel of running the tricycle. The second largest was the cost of family labor. Residual profit was also high and capital's share was about 50%, so that income share was almost equally divided between labor and capital.

Structure of household income and expenditure

Table 4 shows the incomes of village households by sources. Average household income for all households was ₱8,211 ($1,173). Large farmers' income was the highest and landless workers' income was the lowest in terms of both averages per household and averages per household member.

On the average of all households, income from rice production was about 42% of total income. Family factor income accounted for 84% of total income. Labor income was about 40% of total income and 47% of family factor income.

Both the rice income ratio and the family factor income ratio were the highest for large farmers and the lowest for landless workers. In contrast, the labor income ratio was the highest for landless workers and the lowest for large farmers.

Table 5 shows the household expenditure patterns in terms of average expenditures per household member. Disposable income of an average household member per year was ₱1,242 ($177) which was 90% of total household income.

On the average, ₱977 ($140) or 79% of disposable income was spent for consumption. The ratios of consumption of home-produced agricultural product to total disposable income and to total food consumption were 27 and

40%, respectively. Engel coefficient, defined as the ratio of food consumption to total consumption was 66%.

Both the average propensity to consume and the Engel coefficient were the lowest for landless workers and the highest for small farmers; these were very reasonable results considering the differentials in the income level. The ratios of home produce were about the same among the three classes of the households. (Home produce of landless workers was primarily rice received as wages in kind.)

Capital formation

Data on capital formation by village households were presented in Table 6. On the average of all household, gross investment was ₱1,760 ($251), of which ₱448 or 25% was in fixed capital. Investment in agricultural fixed capital was relatively small -- only 7% of total gross investment and 27% of fixed capital investment.

Total investments of large and small farmers were about the same but higher than landless workers' by almost 200%. Large farmers' fixed capital investment was about 3 times larger than small farmers' and landless workers'. However, the ratio of fixed capital investment was the highest for landless workers, because of a relatively large investment in residential construction.

Table 7 shows the cost of producing fixed capital. On the average, total fixed capital formation was ₱448, of which ₱376 or 83% was paid to external inputs and only ₱72 or 16% was the contribution of family factors, primarily labor.

The weights of contribution of family factors were very small for farmers, but it was relatively large for landless worker (53% of gross fixed capital

formation). The relatively large weight of family factor contribution for landless workers was due to construction of their residence (simple nipa and bamboo houses) by their own labor.

Table 8 identifies the sources of financing investments. On the average, ₱1,576 or 96% of total investment (₱1,648) was from the household surplus. There is a sharp contrast between farmers and landless workers. Both large and small farmers depended almost 100% of investment on the household surplus. The household surplus of landless workers was relatively small, and the significant source of their capital formation was the use of their own labor.

The minor contribution of family factors to capital formation corresponds to a low rate of family labor utilization in the slack months of rice production.[3/] This seems to suggest that a large potential exists to mobilize the underutilized family labor for the construction of productive capital in the rural sector by adequate technical and financial assistance.

Transaction balances

Table 9 shows the transaction balances between total receipts and payments, which imply changes in the financial claims of households.

On the average, a sample household received from outside the sum of ₱13,303 ($1,900) during the project period, of which about 55% was paid for the purchase of production inputs and about 30% for consumption goods and

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3/ During the year of record keeping, a working family member of sample households worked on the average of 170 days out of 365 days. The rates of labor utilization were especially low in the slack months, August-September and February-March. See Hayami, Flores and Maligalig (1976).

services. A surplus was recorded in the balance of payment, in about 6% of total receipt, which presumably took the form of the acquisition of financial assets by the sample households.

There were substantial differences in the transactions of the households with outside among the three classes in the village. The total receipt of large farmers was almost twice as large of small farmers' and 5 times of landless workers. The structure of payments was similar between large and small farmers; about 60% out of the total receipt was paid for input purchase and about 25% for consumption purchase. In contrast, the ratio of input purchase was very low for landless workers, primarily because of no input requirement for rice farming, and their ratio of consumption purchase was as high as 70%.

The surplus in the balance of payment was quite large for large farmers (8.5% of the total receipt), whereas the relatively minor surpluses were recorded for small farmers (3.3%) and for landless workers (2.1%). Such rankings in the ratio of surplus balance of payment among the three classes correspond well to those in the average propensity to save (one minus the average propensity to consume, estimated in Table 5).

III. CONSISTENCY CHECK

As explained previously, a check on the accuracy of data was the comparisons between the two sets of data on cash on hand at the beginning of the month -- one was obtained directly from the assets survey, and another was an "expected" cash on hand obtained by adding to the cash on hand at the beginning of a previous month the change in cash during the month. As shown

in Table 10, the discrepancies on the two sets of estimates on cash on hand were relatively minor, though there is a general tendency that the "expected" cash on hand was smaller than the cash on hand directly obtained from the assets survey.

Another consistency check was the comparisons between the data of rice output obtained from the output survey and "expected" output obtained by subtracting the non-output receipt of rice from the total disposition of rice. The comparisons were shown in Table 11. Contrary to the cash balance, there is a tendency that the "expected" output were larger than the output estimates from the output survey, but the discrepancies were not so large.

As a final check, we compared in Table 12 the investment data of the Saving-Investment Account with the "expected" investments which were the differences between the asset values at the initial date (June 1, 1975) and at the terminal date (May 31, 1976) obtained by the assets survey. Statistical discrepancies for total investment and fixed capital investment were relatively modest. But, the discrepancy was rather large for financial assets; this was an expected result because the acquisition of financial assets was estimated in our accounting system as a final residual including various possible errors.

IV. CONCLUSION

In this study we have experimented to document the production, income-expenditure, capital formation, and transaction activities of rural village households in a developing economy, in terms of a set of economic accounts

in a completely articulated double-entry system. For this purpose a record-keeping project was conducted in a typical rice village in Southern Luzon in a pilot scale. Despite possible observational errors inherent in the process of highly complicated data collection for such an accounting system, the results were largely plausible, judging from the conventional "great ratios" such as the factor shares and the average propensity to consume. Also, a consistency check that compares the investment data generated from the income accounts with those from the assets surveys shows that the statistical errors were not as large as one might expect.

It should be emphasized that, by nature, this study represents an experiment of data collection and documentation for the analysis of peasant economy in its complexity. It was not intended, by itself, to produce policy implications directly useful for rural development. Since the study was based on a very small sample in one village in one year, any generalization from our data can be highly dangerous. However, the study clearly shows a possibility that the data can be systematically collected and documented at a village household level to be consistent with the framework of macro national accounts. When our approach will be applied to various locations over time, we will have a solid data base for advancing the theory of peasant economy as well as for formulating the rural development policy. Needless to say, in the process the reliability of national income accounts in developing countries will be increased dramatically.

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Table 1. Cost and returns of rice production, averages per household per year.

Code		All farmers	Large farmers	Small farmers
		----------	P	----------
1.1	Payment to external inputs	9,566	10,994	7,663
	1.1.1 Wage	2,896	3,635	1,912
	1.1.2 Rent	3,981	3,663	4,404
	1.1.3 Interest and rental	523	738	236
	1.1.4 Current inputs	2,166	2,958	1,111
1.2	Seed use of rice	342	484	153
1.3	Imputed income of family factors	5,584	7,869	2,538
	1.3.1 Family labor wage	1,936	2,697	921
	1.3.2 Owned land rent	0	0	0
	1.3.3 Farm profit (residual)	3,648	5,172	1,617
A.	Total output	15,492	19,347	10,354
	A. per ha.	6,455	6,046	7,766
B.	Total value added (a-1.1.4-1.2)	12,984	15,905	9,090
	Ave. per ha.	5,410	4,970	6,818
		----------	%	----------
	Value added ratio (B/A)	83.8	82.2	87.8
	Family income ratio (1.3/A)	86.0	40.7	24.5
	(1.3/B)	43.0	49.5	27.9
	Factor shares:			
	Labor (1.1.1 + 1.3.1) /B	37.2	39.8	31.2
	Land (1.1.2 + 1.3.2) /B	30.7	23.0	48.4
	Capital (1.1.3 + 1.3.3) /B	32.1	37.2	20.4

Table 2. Costs and returns of non-rice agricultural production, per household per year.

Code		All households	Large farmers	Small farmers	Landless workers
		----------	₱	----------	
1.1	Payment to external inputs	683	1,381	581	62
	1.1.1 Wage	1	0	5	0
	1.1.2 Rent	0	0	0	0
	1.1.3 Interest and rental	0	0	0	0
	1.1.4 Current inputs	682	1,381	576	62
1.2	Feed use of rice	376	573	615	0
1.3	Imputed income of family factors	1,115	1,360	1,656	464
	1.3.1 Family labor wage	318	390	497	111
	1.3.2 Owned land rent	0	0	0	0
	1.3.3 Farm profit (residual)	797	970	1,159	353
A.	Total output	2,174	3,314	2,852	526
B.	Total value added (A-1.1.4-1.2)	1,116	1,360	1,661	453
		----------	%	----------	
	Value added ratio (B/A)	51.3	41.0	58.2	88.0
	Family income ratio (1.3/A)	51.3	41.0	58.0	88.0
	(1.3/B)	99.9	100.0	99.7	100.0
	Factor shares:				
	Labor (1.1.1 + 1.3.1) /B	28.6	28.7	30.2	24.0
	Land (1.1.2 + 1.3.2) /B	0	0	0	0
	Capital (1.1.3 + 1.3.3) /B	71.4	71.3	69.8	76.0

Table 3. Costs and returns of non-agricultural enterprises, averages per household per year.

Code		All households	Large farmers	Small farmers	Landless workers
		----------	P	----------	
2.1	Payments to external inputs	34	94	0	0
2.1.1	Wage	4	12	0	0
2.1.2	Interest and rental	0	0	0	0
2.1.3	Current inputs	30	82	0	0
2.2	Imputed income of family factors	54	149	0	0
2.2.1	Family labor wage	24	66	0	0
2.2.2	Profit of non-agricultural enterprise (residual)	30	83	0	0
A.	Total non-agricultural output	88	243	0	0
B.	Total value added (A-2.1.3)	58	161	0	0
		----------	%	----------	
	Value added ratio (B/A)	65.9		0	0
	Family income ratio (2.2/A)	61.4		0	0
	(2.2/B)	93.1		0	0
	Factor shares:				
	Labor (2.1.1 + 2.2.1) /B	48.3		0	0
	Capital(2.1.2 + 2.2.2) /B	51.7		0	0

Table 4. Structure of household incomes, averages per household per year.

Code		All households	Large farmers	Small farmers	Landless workers
		---------- P ----------			
1.3 R	Total income from rice	3,476	7,869	2,538	-214
1.3.1 R	Labor income from rice	1,307	2,697	921	206
1.3 N	Total income from non-rice crops	1,115	1,360	1,656	464
1.3.1 N	Labor income from non-rice crops	318	390	497	111
2.2	Total income from non-farm enterprise	54	149	0	0
	2.2.1 Labor income from non-farm enterprise	24	66	0	0
3.9	Labor earnings from outside	1,591	1,058	685	2,802
3.10 & 3.11	Other factor incomes from outside	665	1,823	7	0
3.12 & 3.13	Non-factor incomes	1,310	1,185	1,267	1,469
A.	Total household income	8,211	13,444	6,153	4,521
	Average per household member	1,390	1,793	1,154	952
B.	Family factor income (A-3.12 & 3.13)	6,901	12,259	4,886	3,052
	Average per household member	1,168	1,635	916	643
C.	Labor income (1.3.1 R + 1.3.1 N + 2.2.1 + 3.9)	3,241	4,211	2,103	3,119
	Average per working household member	1,543	1,685	1,618	1,418
		---------- % ----------			
	Rice income ratio (1.3 R/A)	42.3	58.5	41.2	-4.7
	Family factor income ratio (B/A)	84.0	91.2	79.4	67.5
	Labor income ratio (C/A)	39.5	31.3	34.2	69.0
	(C/B)	47.0	34.4	43.0	102.2

Table 5. Structure of household expenditures, averages per household member per year.

Code		All households	Large farmers	Small farmers	Landless workers
		₱			
3.1	Home consumption of agricultural products	262	300	268	195
3.2	Purchase of consumption goods and services	715	843	632	575
	3.2.1 Food	379	406	387	327
	3.2.2-6 Non-food	336	437	245	248
3.3	Interest payment to consumption loan	67	92	10	73
3.4	Grant	77	90	104	34
3.5	Tax and rate	3	4	6	0
3.6	Household surplus	265	464	134	65
A.	Total household income = expenditure	1,389	1,793	1,154	942
B.	Disposable income (3.1 + 3.2 + 3.6)	1,242	1,607	1,034	835
C.	Total consumption (3.1 + 3.2)	977	1,143	900	770
D.	Food consumption (3.1 + 3.2.1)	641	706	655	522
		%			
	Propensity to consume (C/B)	78.7	71.1	87.0	92.2
	Engel coefficient (D/C)	66.4	62.4	73.9	67.8
	Home produce ratio (3.1/C)	26.8	26.2	29.8	25.3
	(3.1/D)	40.9	42.5	40.9	37.4

Table 6: Structure of capital formation by investment outlets, per household per year.

Code		All households	Large farmers	Small farmers	Landless workers
		---------- P ----------			
4.3	Agricultural fixed capital formation	122	304	42	0
4.3.1	Land infrastructure	0	0	0	0
4.3.2	Machinery and implements	80	195	33	0
4.3.3	Livestock and perennial plants	42	109	9	0
5.2 (4.4)	Non-agricultural fixed capital formation	224	447	223	0
5.3 (4.5)	Residential construction	102	0	21	264
5.4 & 5.5	Inventory change	345	830	29	99
5.6	Acquisition of financial assets (residual)	967	762	1,974	417
A.	Gross investment	1,760	2,343	2,289	780
B.	Gross fixed capital investment (4.3 + 5.2 + 5.3)	448	751	286	264
		---------- % ----------			
Ratio of fixed capital investment (B/A)		25.5	32.1	12.5	33.8
Ratio of agricultural fixed capital investment:					
	(4.3/A)	6.9	13.0	1.8	0
	(4.3/B)	27.2	40.5	14.7	0

Table 7. Costs of producing fixed capital, per household per year.

Code		All households	Large farmers	Small farmers	Landless workers
		---------- p ----------			
4.1	Payments to external inputs	376	698	281	124
4.2	Contribution of family factors	72	53	5	140
	4.2.1 Family labor wage	60	0	4	162
	4.2.2 Farm-supplied materials	0	0	0	0
	4.2.3 Residual	12	53	1	-21
A.	Gross fixed capital production = Gross expenditure	448	751	286	264
		---------- % ----------			
	Ratio of family factor contribution (4.2/A)	16.1	7.1	1.7	53.0
	Ratio of family labor contribution (4.2.1/A)	13.4	0	1.4	61.4

Table 8. Sources of investments per household per year.

Code		All households	Large farmers	Small farmers	Landless workers
		₱			
5.7	Household surplus	1,576	3,478	735	308
5.8	Contribution of family factors	72	53	5	140
4.2.1	Contribution of family labor	60	0	4	162
A.	Gross investible fund (5.7 + 5.8 + 5.9)	1,648	3,531	740	448
		%			
	Household surplus ratio (5.7/A)	95.6	98.5	99.3	68.8
	Family factor ratio (5.8/A)	4.4	1.5	0.7	31.2
	Family labor ratio (4.2.1/A)	3.6	0	0.5	36.2

Table 9. The balances of household transactions with outside, per household per year.

Code		All households	Large farmers	Small farmers	Landless workers
		----------	₱	----------	
6.11	Payments to external inputs for agricultural production	6,950	12,375	8,244	556
6.12	Payments to external inputs for non-agricultural production	34	94	0	0
6.13	Payments to external inputs for capital production	376	698	282	124
6.14	Purchase of consumption goods and services	4,218	6,321	3,350	2,762
6.15-16-17	Transfer payments	870	1,398	640	515
6.18	Acquisition of financial assets	855	1,950	425	85
A.	Total receipt from outside	13,303	22,836	12,941	4,042
		----------	%	----------	
Ratio of input purchase: for agriculture (6.11/A)		52.2	54.2	63.7	13.8
for total	(6.11 + 6.12 + 6.13/A)	55.3	57.7	65.9	16.8
Ratio of consumption purchase (6.14/A)		31.7	27.7	25.9	68.3
Ratio of surplus balance of payment (6.18/A)		6.4	8.5	3.3	2.1

Table 10. Cash balance check, averages of all households.

	Cash on hand at the beginning of month[a/] (1)	Cash receipt during month[b/] (2)	Cash payment during month[b/] (3)	Expected cash on hand[c/] (4)	Statistical discrepancy (1)-(4)
	----------	----------	p	----------	----------
June	781	740	1,452	-	-
July	65	481	506	69	4
Aug	43	475	476	40	-3
Sept	32	446	456	42	10
Oct	21	823	796	22	1
Nov	50	1,222	1,002	48	-2
Dec	258	1,059	1,220	270	12
Jan	96	537	564	97	1
Feb	59	337	373	69	10
Mar	25	431	424	23	-2
Apr	31	1,106	601	32	1
May	539	1,228	1,437	536	-3
June	329	-	-	330	1

a/ Based on the assets survey.

b/ Based on the record keeping.

c/ Cash on hand at the beginning of a previous month is added to cash receipt minus cash payment during this month.

Table 11. Rice balance check, averages of all households.

	Rice balance[a/]			Rice output[b/]	Statistical discrepancy
	Total disposition (1)	Non-output receipt (2)	Expected output (3)=(1)-(2)	(4)	(3)-(4)
	kg				
June	28	5	23	0	23
July	74	54	20	0	20
Aug	54	52	2	0	2
Sept	586	180	406	396	10
Oct	4,226	307	3,919	3,874	45
Nov	724	152	572	548	24
Dec	73	63	10	0	10
Jan	22	26	-4	0	-4
Feb	36	25	11	0	11
Mar	297	199	98	44	54
Apr	3,616	351	3,265	3,271	-6
May	2,153	29	2,124	2,138	-14
Total	11,889	1,443	10,446	10,271	175

a/ Based on the record keeping.

b/ Based on the outputs survey.

Table 12. Investment check, averages of all households.

	Asset survey a/				
	Initial asset (1)	Terminal asset (2)	Expected investment (3)=(2)-(1)	Gross investment b/ (4)	Statistical discrepancy (3)-(4)
	₱				
Fixed capital	18,343	18,862	519	448	71
Inventory	1,084	1,430	346	346	0
Financial assets	-2,620	-2,274	346	854	-508
Total	16,807	18,818	1,211	1,648	-437

a/ Asset value gross of drpreciation, based on the assets surveys.

b/ Based on the record keeping (A/C Table 5), except inventory.

A/C Table IR. Current rice production account (₱).

		Large farmers	Small farmers	Landless workers	All households
1.1 Payments to external inputs for rice production	(6.11)				
1.1.1 Hired labor wage		3,635	1,912	133	1,891
1.1.2 Rent		3,663	4,404	305	2,644
1.1.3 Capital interest and rental		738	236	49	351
1.1.4 Purchased current inputs		2,958	1,111	7	1,381
1.2 Seed use of rice	(1.7)	484	153	0	218
1.3 Imputed income of farm factors in rice production	(3.7)				
1.3.1 Family labor wage		2,697	921	206	1,307
1.3.2 Rent to owned land		0	0	0	0
1.3.3 Farm profit (residual)		5,172	1,617	-420	2,169
Total rice production expenditure		19,347	10,354	280	9,961
1.4 Payments in kind to external inputs	(6.1)				
1.4.1 Hired labor wage		2,311	1,529	152	1,312
1.4.2 Rent		3,663	4,404	55	2,553
1.5 Sale of rice and rice products	(6.2)				
1.5.1 Sale in cash		8,998	2,681	1,206	4,442
1.5.2 Exchange		102	136	41	89
1.5.3 Grant in kind		45	178	32	77
1.5.4 Credit, interest and fee payment in kind		1,192	365	402	679
1.6 Home consumption of rice	(3.1)	1,649	1,070	891	1,215
1.7 Seed use of rice	(1.2R)	484	153	0	218
1.8 Feed use of rice	(1.2N)	573	615	0	376
1.9 Inventory change in rice products and inputs	(5.5)	830	29	99	346
1.10 (Deduct) Non-output rice receipt	(6.11)	500	806	2,598	1,346
Total rice output		19,347	10,354	280	9,961

A/C Table IN. Current non-rice agricultural production account (P).

	Large farmers	Small farmers	Landless workers	All households
1.1 Payments to external inputs for agricultural production (6.11)				
1.1.1 Hired labor wage	0	5	0	1
1.1.2 Rent	0	0	0	0
1.1.3 Capital interest and rental	0	0	0	0
1.1.4 Purchased current inputs	1,381	576	62	682
1.2 Feed use of rice (1.8R)	573	615	0	376
1.3 Imputed income of farm factors in agricultural production (3.7)				
1.3.1 Family labor wage	390	497	111	318
1.3.2 Rent to owned land	0	0	0	0
1.3.3 Farm profit (residual)	970	1,159	353	797
Total agricultural production expenditure	3,314	2,852	526	2,174
1.4 Payments in kind to external inputs (6.1)				
1.4.1 Hired labor wage	1	0	1	1
1.4.2 Rent	0	0	0	0
1.5 Sale of agricultural products (6.2)				
1.5.1 Sale in cash	2,509	2,283	460	1,702
1.5.2 Exchange	4	4	9	6
1.5.3 Grant in kind	202	208	11	134
1.5.4 Credit, interest and fee payment in kind	0	0	0	0
1.6 Home consumption of agricultural products (3.1)	598	357	45	331
1.7 Inventory change in agricultural products and inputs (5.4)	0	0	0	0
Total agricultural output	3,314	2,852	526	2,174

A/C Table 2. Current non-agricultural production account (P).

	Large farmers	Small farmers	Landless workers	All households
2.1 Payments to external inputs for non-agricultural production (6.12)				
2.1.1 Hired labor wage	12	0	0	4
2.1.2 Capital interest and rental	0	0	0	0
2.1.3 Purchased current input	82	0	0	30
2.2 Imputed income of farm factors in non-agricultural production (3.8)				
2.2.1 Family labor wage	66	0	0	24
2.2.2 Profit of non-agricultural enterprises (residual)	83	0	0	30
Total non-agricultural production expenditure	243	0	0	88
2.3 Revenue of non-agricultural enterprises (6.3)	243	0	0	88
2.4 Inventory change in non-agricultural products and inputs (5.5)	0	0	0	0
Total non-agricultural output	243	0	0	88

A/C Table 3. Household income-expenditure account (₱).

		Large farmers	Small farmers	Landless workers	All households
3.1 Home consumption of agricultural products	(1.6R+N)	2,247	1,428	936	1,546
3.2 Purchase of consumption goods	(6.14)				
3.2.1 Food		3,046	2,062	1,572	2,242
3.2.2 Personal needs		798	348	246	474
3.2.3 Household needs and equipment		493	225	173	304
3.2.4 Transportation and other services		556	278	280	380
3.2.5 Health needs and recreation		297	320	120	240
3.2.6 Education		1,131	117	371	578
3.3 Interest payment to consumption loan	(6.15)	694	53	351	394
3.4 Grant from the household	(6.16)	677	554	164	457
3.5 Tax and rate	(6.17)	27	33	0	19
3.6 Household surplus (residual)	(5.7)	3,478	735	308	1,577
Total household expenditure		13,444	6,153	4,521	8,211
3.7 Imputed income of farm factors in agricultural production	(1.3R+N)	9,229	4,194	250	4,591
3.8 Imputed income of farm factors from non-agricultural enterprises	(2.2)	149	0	0	54
3.9 Earnings from outside employment	(6.4)	1,058	685	2,802	1,591
3.10 Receipt of rent	(6.5)	0	0	0	0
3.11 Receipt of interest and rental	(6.6)	1,823	7	0	665
3.12 Grant to the household	(6.7)	1,022	1,267	1,469	1,251
3.13 Sale of fixed asset	(6.8)	163	0	0	59
3.14 Government subsidy	(6.9)	0	0	0	0
Total household income		13,444	6,153	4,521	8,211

A/C Table 4. Fixed capital production account (P).

	Large farmers	Small farmers	Landless workers	All households
4.1 Payment to external inputs for capital production (6.13)				
4.1.1 Purchase of land	0	0	0	0
4.1.2 Purchase of machinery	0	0	0	0
4.1.3 Purchase of materials	589	272	124	334
4.1.4 Purchase of livestock and plants	109	9	0	42
4.1.5 Hired labor wage for construction	0	0	0	0
4.2 Contribution of farm factors to fixed capital production (5.8)				
4.2.1 Family labor wage for construction	0	4	162	60
4.2.2 Farm-supplied materials	0	0	0	0
4.2.3 Residual	53	1	-21	12
Gross expenditure for fixed capital production	751	286	264	448
4.3 Agricultural fixed capital production (5.1)				
4.3.1 Land infrastructure	0	0	0	0
4.3.2 Machinery and implements	195	33	0	80
4.3.3 Livestock and perennial plants	109	9	0	42
4.4 Non-agricultural fixed capital production (5.2)				
4.4.1 Building and structure	110	198	0	94
4.4.2 Machinery and implements	337	25	0	130
4.5 Residential construction (5.3)	0	21	264	102
Gross fixed capital production	751	286	264	448

A/C Table 5. Saving-investment account (P).

		Large farmers	Small farmers	Landless workers	All households
5.1 Agricultural fixed-capital production	(4.3)	304	42	0	122
5.2 Non-agricultural fixed capital production	(4.4)	447	223	0	224
5.3 Residential construction	(4.5)	0	21	264	102
5.4 Inventory change in agricultural products and inputs	(1.7N+1.9R)	830	29	99	346
5.5 Inventory change in non-agricultural products and inputs	(2.4)	0	0	0	0
5.6 Acquisition of financial assets (residual)	(6.18)	1,950	425	85	855
Gross investment		3,531	740	446	1,649
5.7 Household surplus	(3.6)	3,478	735	308	1,577
5.8 Contribution of farm factors to fixed capital production	(4.2)	53	5	140	72
Gross investible fund		3,531	740	448	1,649

A/C Table 6. Outside-of-household account (P).

			Large farmers	Small farmers	Landless workers	All households
6.1	Payments in kind to external inputs	(1.4R+N)	5,975	5,933	208	3,866
6.2	Sale of agricultural products	(1.5R+N)	13,052	5,855	2,161	7,129
6.3	Revenue of non-agricultural enterprises	(2.3)	243	0	0	88
6.4	Earnings from outside employment	(3.9)	1,058	685	2,802	1,591
6.5	Receipt of rent	(3.10)	0	0	0	0
6.6	Receipt of interest and rental	(3.11)	1,823	7	0	665
6.7	Grant to the household	(3.12)	1,022	1,267	1,469	1,251
6.8	Sale of fixed asset	(3.13)	163	0	0	59
6.9	Government subsidy	(3.14)	0	0	0	0
6.10	(Deduct) Non-output rice receipt	(1.10)	500	806	2,598	1,346
Total receipt from outside			22,836	12,941	4,042	13,303
6.11	Payments to external inputs for agricultural production	(1.1R+N)	12,375	8,244	556	6,950
6.12	Payments to external inputs for non-agricultural production	(2.1)	94	0	0	34
6.13	Payments to external inputs for fixed capital production	(4.1)	698	282	124	376
6.14	Purchase of consumption goods	(3.2)	6,321	3,350	2,762	4,218
6.15	Interest payment to consumption loan	(3.3)	94	53	351	394
6.16	Grant from the household	(3.4)	677	554	164	457
6.17	Tax and rate	(3.5)	27	33	0	19
6.18	Acquisition of financial asset (residual)	(5.6)	1,950	425	85	855
Total payment to outside			22,836	12,941	4,042	13,303

Appendix Table A. Family and farm characteristics of sample households, June 1, 1975.

	Family size (Number)						Farming status	
	Total		Male		Female			
	Total	Active[a]	Total	Active[a]	Total	Active[a]	Farming area	Tenure type[c]
Large farmer:								
A	5	4	1	1	4	3	3.5	L-1.5 ha. S-2.0 ha.
B	11	5	6	2	5	3	3.3	L
C	8	7	3	3	5	4	3.0	L
D	6(7)[b]	2	3(4)	1	3	1	3.0	L
Small farmer:								
E	6	2	3	1	3	1	1.0	L
F	3	2	1	1	2	1	2.0	S
G	7	3	5	1	2	2	1.0	S
Landless worker:								
H	9	5	4	2	5	3	0	-
I	4	4	1	1	3	3	0	-
J	4	2	1	1	3	1	0	-
K	2	2	1	1	1	1	0	-
Special:								
Z[d]	5(6)	2	1	1	4(5)	1	2.0	L-0.5 ha. S-1.5 ha.

a/ Economically active members (13 to 65 years old).
b/ Include babies born during the project period.
c/ L - leasehold tenancy, S - share tenancy.
d/ The records of this household were excluded from the analysis.

Appendix Table B. Standard rates used for imputing family labor costs.

	₱/day[a]
Rice works:	
Plowing	12.00
Harrowing	12.00
Weeding	12.00
Clearing dikes	11.00
Repairing dikes	11.00
Fertilizer application	11.00
Spraying chemicals	11.00
Harvesting and threshing	11.00
Transplanting and replanting	8.30
Clearing rice straw	5.00
Seedbed preparation	5.00
Visiting ricefields	5.00
Irrigating and draining	5.00
Rice processing	5.00
Drying	5.00
Non-rice agricultural works:	
Fishing	5.00
Gardening	5.00
Feeding pigs	5.00
Feeding ducks	5.00
Non-agricultural works:	
Tricycle	10.00
Carpentry	12.00
Storekeeping	5.00
Marketing	5.00

a/ Assume 8-hour work per day.

Appendix Table C. Cash balance (P)

	Large farmers	Small farmers	Landless workers	All households
Sale of agricultural products	11,055	5,185	1,801	6,089
Sale of fixed assets	163	0	0	59
Revenue of non-agric'l enterprises	106	0	0	39
Wage received	869	160	667	602
Interest received	0	7	0	2
Rental received	1,740	0	0	633
Borrowing	576	1,324	740	840
Loan repayment to the household	130	219	215	185
Grant to the household	151	334	790	433
Total cash receipt	14,799	7,229	4,213	8,885
Purchase of consumption goods	5,823	3,062	2,531	3,873
Purchase of current inputs	2,755	782	67	1,240
Purchase of capital goods	762	271	151	406
Grant from household	332	222	114	222
Wage paid	1,086	360	149	547
Interest paid	350	118	10	163
Rental paid	15	28	30	24
Lending	216	351	604	394
Loan repayment from the household	4,276	2,062	610	2,339
Insurance	204	0	0	75
Tax and rate	41	33	1	24
Change in cash on hand (residual)	-1,061	-60	-54	-422
Total cash payment	14,799	7,229	4,213	8,885

Appendix Table D. Rice balance

Unit: kg in paddy

	Large farmers	Small farmers	Landless workers	All households
Receipt in kind for factor contribution:				
Wage	299	491	2,192	1,040
Rent	0	0	0	0
Grant in kind to household	35	53	10	30
Purchase for consumption	154	0	126	102
Output (residual)	20,414	10,692	294	10,446
Total receipt	21,068	11,499	3,003	11,889
Intermediate inputs (seeds and feeds)	1,057	769	0	594
Payments in kind to external inputs:				
Wage	2,311	1,529	152	1,312
Rent	3,663	4,404	55	2,553
Total consumption	1,802	1,070	1,016	1,317
Sale:				
Sale in cash and credit	8,998	2,681	1,206	4,442
Sale in exchange	102	136	41	89
Grant in kind	45	178	32	77
Credit, interest and fee payment in kind	1,192	365	402	679
Change in inventory	1,898	367	99	826
Total disposition	21,068	11,499	3,003	11,889
Output (based on the output survey)	20,058	10,520	297	10,271

Appendix E

Record of Daily Activities

Name: _____ Date: _____

Day	Activities	Operator (Hours)	Family No.	Family Hrs.	Hired No.	Hired Hrs.	Hired Rate	Hired Food Exp.	Exchange No.	Exchange Hr.	Exchange Food Exp.
Monday Morning	Did the cutting of rice stalks	1	2	4							
	Prepared garden for vegetables	1									
	Bought feed for ducks		1	2							
	Feed the ducks		1	1							
	Did the plowing w/ the use of tractor				2	4	7.00	6.00			
	Did the plowing w/ the use of animal										
	As tricycle operator	2							1	4	3.00
	Did groceries for sari-sari store		1	3							
	Drying of palay		1	1							
	Carpentry work	4									
	As hired farm laborer Did the planting		1	4							
	As hired farm laborer Did weeding work		1	4							
	As hired tractor operator		1	4							
Afternoon	Prepared the seedbed	1									
	Did the measuring of rice	1	1	1							
	Did the plowing with the use of tractor				2	4	7.00				
	Carpentry work	4									
	As hired farm laborer Did the planting		1	4							
	As hired farm laborer Weeding work		1	4							
	As hired tractor operator		1	4							
	As tricycle operator	2									

Appendix F

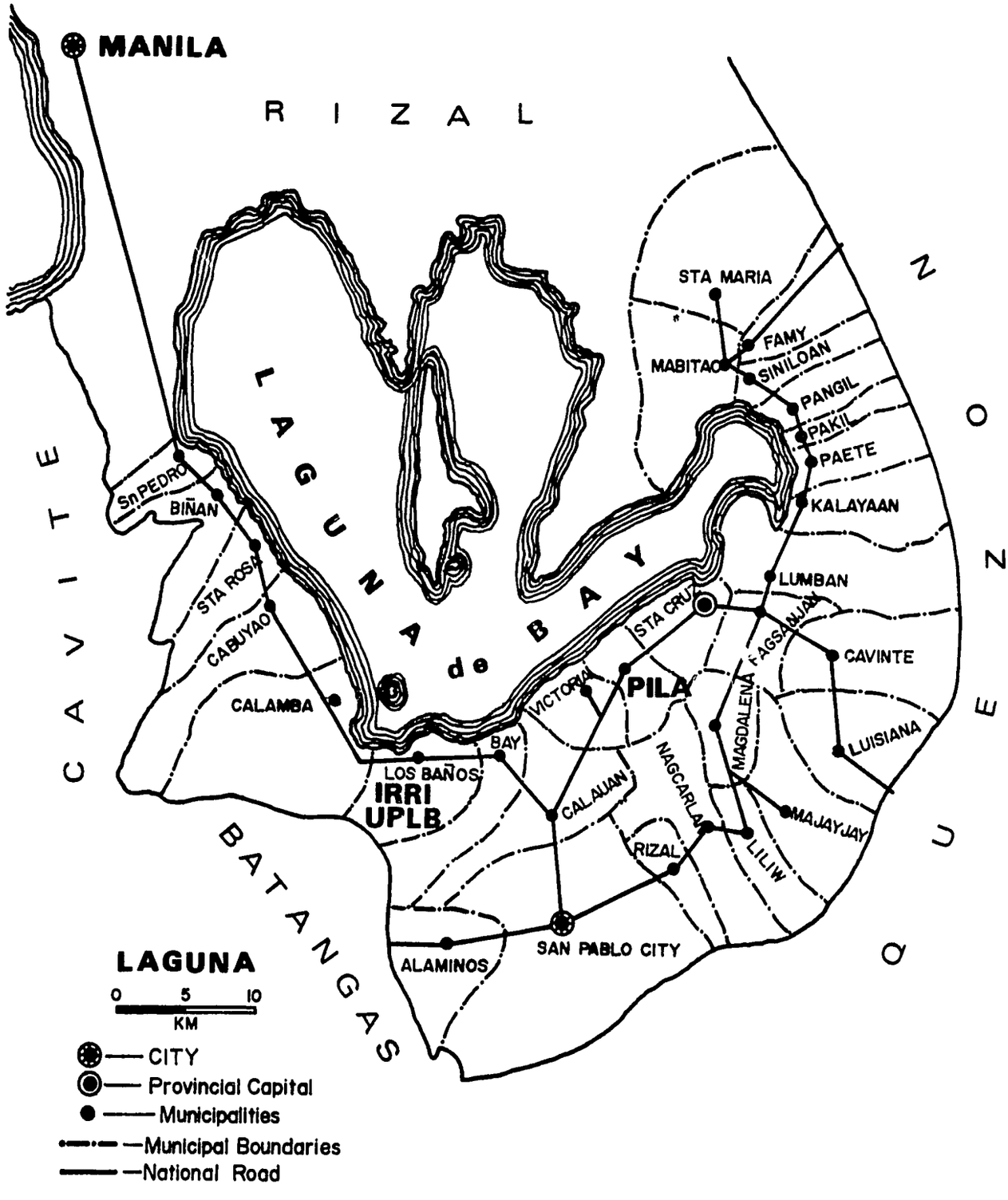
Daily Record of Income and Household Expenses

Date: _____ Day: _____

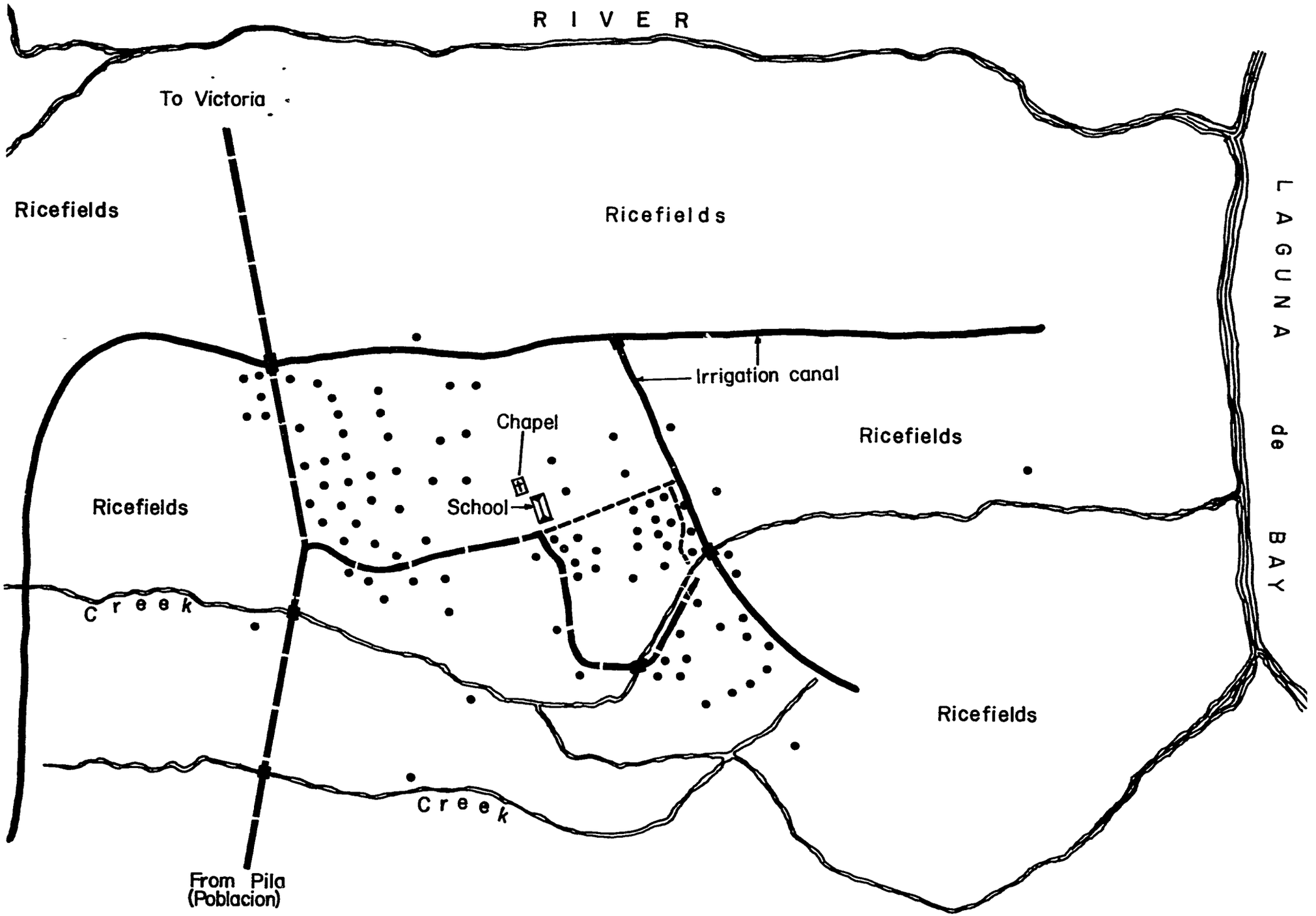
Name of head: _____

Name of wife: _____

Description of Activities	Items Given	Income Qty.	Income Value	Home Produced Items	Expenses Qty.	Expenses Value
Sold 10 cavans of rice		400 kgs	₱400.00			
Sold 1 pig		80 kgs	584.00			
Paid interest in Bank						₱ 50.00
Haircut expense						1.50
Transportation						2.00
Bought: Salt						1.00
Dress material					1 pc.	20.00
Fish					1 kg.	7.00
Gasoline					1 ltr.	1.75
Cooked rice (3 x)				1 ganta		(4.50)
Eggs				2		(1.00)
Sweet potato tops				1 bundle		(0.10)
Paid 2 hired laborers				2 gantas		(9.00)
Coconut given	2		(0.30)			
Gave rice as gift				2 gantas		(9.00)
Grant from children			100.00			
Credit from Sari-Sari Store			2.00			
Oil				1 bottle		1.50
Bread						.50



MAP OF LAGUNA



Map of Barrio Tubuan (Tanza), Pila, Laguna.