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PATTERNS OF INCOME DISTRIBUTION AND HOUSEHOLD SPENDING IN THE BICOL RIVER BASIN

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ABSTRACT. In the SSRU's first Annual Panel Survey conducted in April 1974, a random sample of 3240 households was visited and asked, among other things, about income and expenses. It was found that the average annual family income (cash and noncash combined) was approximately ₱3800, or ₱317 per month, supporting a household of six. Income is so unequally distributed, however, that over half of the total is in the hands of the wealthiest 20 percent of Bicol River Basin households.

The inadequacy of household income is reflected in the general dis-saving (negative saving) observed among Basin households, estimated to be about ₱1200, on the average. Almost three-fifths (57 percent) of the average annual household expenses of ₱5000 are spent on food. Indeed, practically all of the income received by the household is used for its food needs. Viewed against a poverty-threshold estimate, about 79 percent of the Basin households are absolutely poor, with income falling short even of the estimate food threshold (₱415 per month); an additional 11 percent of households can be described as short of the total threshold as well, able to meet food requirements of the household, but not other needs.

A nation or region may achieve increased production, and even increased per capita income, yet fail to raise the level of living of most of its residents. Indeed, unless the additional products and income find their way to those who need them most, the poorer members of society will not be benefited by development.

This research report is based mainly on selected findings of the SSRU's Annual Panel Survey 1 (April 1974). A technical summary of AP1 is found in SSRU Research Activity Summary No. 13, which is available from the SSRU on request. The senior author is presently (as of January 1976) the SSRU's Chief of Operations, while Frank Lynch is its Director.

and may even be harmed by it. For misdirected growth activities may make life more intolerable for the poor, increasing their sense of relative deprivation in the midst of a booming prosperity enjoyed by a few.

Several questions may be asked. Specifically, using data collected in the SSRU's first Annual Panel Survey (April 1974) we propose to discuss the following: Who are the poor of the Bicol River Basin? How big is the gap between them and the rich? How poor are they, in other words?

I. INCOME DISTRIBUTION IN THE BICOL RIVER BASIN

1. Source of household (HH) income. Three sources of income are distinguished. Earnings coming solely from activities on one's own (or one's landlord's) farm are classified as farm income; farm income supplemented by income from work done outside the farm (whether on some other farm or on no farm) is called farm income and others; while earnings from activities not performed on any farm are considered nonfarm income (see Table RS13.01 and its appended note a).

Overall, more than half of the Basin HHs derive their income from activities performed outside any farm. But there are great differences by residence. While almost three-fourths of the HHs in the poblacion are dependent on nonfarm income, only a little more than half of this proportion (39 percent) are similarly supported in the barrios. The average rural HH is largely dependent on farm earnings, though it may be partly supported by income from other sources. In fact, about 58 percent of the barrio farming HHs reporting income rely on these extra-farm earnings. In addition, the average rural income from exclusively farm activities (\$1,551) is significantly lower than that reportedly earned from farm and extra-farm sources (\$3,884; difference is significant at the 0.01 level by the t test). See Table RS13.01.

2. Income classes and share in total income.¹ Households were ranked according to their annual income (cash and noncash combined), then divided into 10

¹It is recognized that incomes are probably understated. We assume nevertheless that this understatement is present in all income classes. Thus, when

Table RS13.01. Selected measures of annual HH income, classified by residence and crossclassified by source of income (Bicol River Basin, Camarines Sur, April 1974)

Residence and selected in-come measures	Source of income ^a			All sources
	Farm	Farm and others	Nonfarm	
a. Poblacion				
p ^b	8.9%	17.0%	74.1%	100.0%
\bar{x}	₱1,936	₱6,814	₱5,107	₱5,174
S.D.	2,348	8,453	5,455	6,087
n	60	115	501	676
b. Barrios				
p	27.2%	33.6%	39.2%	100.0%
\bar{x}	₱1,551	₱3,884	₱4,170	₱3,379
S.D.	3,333	5,294	7,605	5,857
n	657	812	947	2,416
c. Poblacion and barrios				
p	19.8%	29.0%	53.2%	100.0%
\bar{x}	₱1,582	₱4,248	₱4,640	₱3,770
S.D.	2,114	5,878	6,995	5,954
n	717	927	1,448	3,092 ^c

^a Farm income is derived from activities on one's own (or one's landlord's) farm; Farm and others income is from work on one's own (or one's landlord's)--and some other farm or no farm at all; Nonfarm income is from work not performed on any farm.

^b The symbol p refers to the percentage of HHs deriving their income from this source.

^c This total excludes zero incomes as well as one case reporting a remarkably high annual income (₱365,265). Total n is 3240.

(percentile) classes. When this was done separately for poblacion and barrio HHs, the following patterns resulted.

- a. Mean incomes. Overall, a gradual increase in average income is observed as one moves from the lowest to the ninth percentile class. This is followed by a dramatic leap to the highest income class. Thus, while the lowest group's mean income is ₱112 and that of the ninth class is ₱6,157, the highest income group reports ₱15,177, which is more than twice the figure for the preceding class (see Table RS13.02, col. 1).
- b. Variation in income. At least within the second to ninth percentiles, HHs vary very little in income, their Coefficient of Variation always being between .28 (second percentile) and .06 (sixth percentile). The highest percentile, on the other hand, shows a wider range in income--from ₱6500, at one end, to ₱365,000, on the other, resulting in a Coefficient of Variation estimated at 1.45; removing this highest income figure, the variation in this class is pulled down to 0.84. If we convert these percentile income classes into quintiles, the average income of the highest fifth (₱10,660) is almost 32 times higher than the mean income of the lowest fifth (₱337). Ibid., col. 3.
- c. Percentage share in the total income. Incomes are so unequally distributed that about 43 percent of the Basin's income accrue to the richest 10 percent of the HHs in the area, leaving less than 60 percent of the total income to be divided among the remaining 90 percent of HHs. The richest 20 percent of HHs, in fact, corner almost three-fifths of the income generated in the Basin, while the poorer four-fifths share the remaining two-fifths of the income (ibid., col. 4).
- d. Areal differences. Undeniably, poblacion HHs in all income classes have average incomes significantly higher (at the 0.001 level) than the corresponding class in the countryside. For the entire Bicol River Basin,

speaking of distribution, the pattern, if not the amounts themselves, would reliably describe income distribution in the Basin.

Table RS13.02. Households ranked according to annual HH income, by selected statistical measures and cumulative share (%) in the total income (Sicol River Basin, Camarines Sur, April 1974)

Income class	(1) Mean income (in pesos)	(2) Standard Deviation	(3) C.V. ^a	(4) Cum. share in income
Lowest tenth ^b	112	109.6	.98	0.1%
Second tenth	439	121.8	.28	1.3
Third tenth	875	112.1	.13	3.8
Fourth tenth	1,312	158.0	.12	7.5
Fifth tenth	1,792	160.0	.09	12.5
Sixth tenth	2,398	155.3	.06	19.2
Seventh tenth	3,199	274.3	.09	28.1
Eighth tenth	4,287	366.6	.09	40.1
Ninth tenth	6,157	796.3	.13	57.4
Highest tenth ^c	15,177	12,697.0	.84	100.0
All households ^d	3,770	5,953.5	1.58	₱11,012,558

^aC.V., or Coefficient of Variation, is estimated by dividing the Standard Deviation by the mean (S.D./ \bar{x}).

^bExcluded from the computation of the class statistics were 84 HHs with negative income, and 86 zero-income HHs.

^cExcluded from this class is the highest income reported, ₱365,265. Inclusion of this value would result in a mean income of ₱15,177; S.D., ₱12,697; and C.V., 0.84. *1.45*
16,310

^dLikewise excluded from the total statistics were the HHs mentioned in (b) and (c). Including them (assuming that negative-income HHs have at least zero incomes) would result in a total mean income of ₱3,680 (S.D., 8,748). The n used in the computation of the total mean reported in the table above is 2,921 and not 3,092. One hundred forty-eight (148) HHs replying "DK" (Don't Know) when asked about HH income were also excluded from the analysis.

the poblacion HHs are estimated to have a mean income of ₱5,174; those in the barrios, ₱3,379. Variations in income, however, are reportedly less pronounced in the municipal centers (C.V. is 1.20) than in the barrios (C.V. is 1.73). Moreover, while 37.4 percent of the poblacion total income accrue to the area's highest percentile class, a significantly higher portion of the barrios' total income (43.2 percent) goes to the rural richest 10 percent. See Table RS13.03.

In addition, the district figures support the general patterns observed for the Basin. For one, in all districts, the poblacion mean income exceeds that of the barrio (0.001). For another, variation in income reported is noticeably greater in the countryside than in the municipal centers. While the poblacion incomes' Coefficient of Variation ranges from .95 (in Naga) to 1.42 (in Goa), the barrio C.V.'s range from 1.02 (in Milaor) to 2.03 (in Naga). See Table RS13.04.

Arranging the districts according to average HH income results in Naga's placing first with ₱5,713, followed by Iriga with ₱3,979. The last place is occupied by Milaor, with average income estimated at ₱2,806 (Table RS13.04).

3. Distribution of income in the Bicol River Basin. The percentage of people (or HHs), ranked from poorest to richest, may be plotted together with the portion of the Basin's total annual HH income which they receive. The resulting parabola is known as a Lorenz curve (Samuelson 1970: 110-11), in which income distribution may fall within two limiting extremes--absolute equality, on the one hand, and absolute inequality, on the other. The diagonal in Fig. RS13.01 illustrates the first extreme; the 90-degree angle in the lower right-hand corner, the other. The diagonal implies that a certain proportion, or percentage, of the income, say, 20 percent, is received by the same proportion of HHs. The right-angled line, on the other hand, illustrates a situation where only one HH out of 100 gets all the income, while the rest go empty-handed.

Table RS13.03. Annual HH income measures, by percentile class and by residence (Bicol River Basin, Camarines Sur, April 1974)

HH percentile class	Poblacion				Barrio			
	Mean	S.D.	C.V. ^a	Cum.	Mean	S.D.	C.V.	Cum.
Lowest tenth (68; 242) ^b	288	112.2	.39	0.3%	83	50.9	.61	0.1%
Second tenth (68; 242)	850	231.4	.27	2.0	382	113.4	.30	1.3
Third tenth (68; 242)	1,467	137.9	.09	5.0	773	110.3	.14	3.7
Fourth tenth (68; 242)	1,972	158.2	.08	9.1	1,139	127.1	.11	7.3
Fifth tenth (68; 242)	2,710	234.0	.09	14.7	1,618	135.1	.08	12.4
Sixth tenth (68; 242)	3,531	195.6	.08	22.0	2,160	187.5	.09	19.2
Seventh tenth (67; 241)	4,739	403.2	.08	31.6	2,852	242.2	.08	26.1
Eighth tenth (67; 241)	6,443	571.6	.09	44.7	3,847	315.8	.08	40.1
Ninth tenth (67; 241)	8,852	807.7	.09	62.6	5,352	594.7	.11	56.8
Highest tenth (67; 241) ^c	18,488	9,802.5	.53	100.0	13,866	13,441.0	.97	100.0
All HHs (676; 2,416) ^d	5,174		1.18		3,379		1.73	
		6,086.8		3,306,000		5,856.9		7,710,640.33

^a See note a, Table RS13.02.

^b Excluded from the computations of measures for the poblacion's lowest class are 25 HHs reporting negative income, and 12 with zero HH income. From the barrio's lowest class, 59 negative-income and 74 zero-income HHs have also been dropped.

^c One barrio household in Naga City was excluded.

^d The totals do not include the HHs specified in note b, above. Their inclusion would result in mean income of ₱4,535 (S.D., 5,743) and ₱3,343 (S.D., 9,340) for the poblacion and barrio, respectively.

Table RS13.04. Selected annual HH income measures, by residence and district (Bicol River Basin, Camarines Sur, April 1974)

Residence and income measure	Sipocot	Naga	Magarao	Milaor	Goa	Iriga	All districts
a. Poblacion							
Mean income (₱)	4,971	6,184	4,580	4,580	5,184	6,015	5,174
Standard Deviation	5,302	5,887	4,677	4,751	7,373	7,643	6,087
C.V. ^a	1.07	.95	1.02	1.18	1.42	1.27	1.18
n ^b	116	112	103	102	103	103	639
b. Barrio^c							
Mean income (₱)	3,069	5,574	2,584	2,471	3,190	3,409	3,379
Standard Deviation	3,607	11,301	2,730	2,514	4,146	5,391	5,857
C.V.	1.18	1.81	1.11	1.14	1.41	1.52	1.73
n ^c	407	378	384	374	371	368	2,282
c. Poblacion and barrio							
Mean income (₱)	3,491	5,713	3,006	2,806	3,624	3,979	3,770
Standard Deviation	4,121	10,320	3,342	3,296	5,093	6,054	5,954
C.V.	1.18	1.81	1.11	1.14	1.41	1.52	1.58
n	523	490	467	476	474	471	2,921

^aC.V. refers to Coefficient of Variation (S.D./ \bar{X}).

^bThe poblacion n for each district should have been 120 HHs. Excluded from the computations, however, are HHs which reported no income as well as those which had zero- or negative-income data.

^cThe barrio n for each district should have been 420. Not included, however, in the computations are HHs which reported unknown, zero, or negative income data. In Naga district, one HH with a very high income figure (₱365,265) is also excluded, inasmuch as its inclusion would further skew income-distribution and income measures.

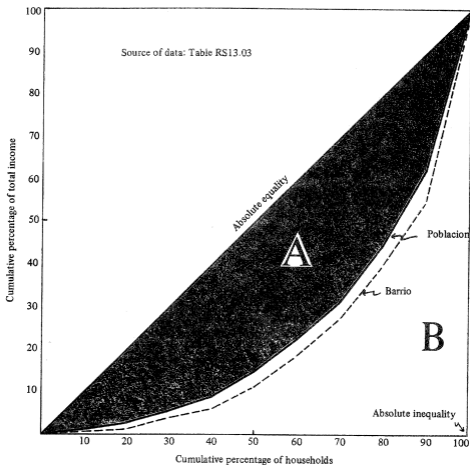


Fig. RS13.01. Lorenz curves showing distribution of annual income among poblacion and barrio HHs (Bicol River Basin, Camarines Sur, April 1974)

The shaded area (A) between the diagonal and the Lorenz curve for the poblacion, for example, measures the deviation of the actual income distribution from absolute equality. The broader this gap, the more unequal the distribution. The proportion of this gap (area A) to the total below the diagonal (areas A plus B) yields the Gini ratio of concentration (Mijares and Belarmino 1973: 29; Sicat 1972: 4). The narrower the gap between the diagonal and the Lorenz curve, the smaller will be the Gini ratio, and the less unequal the actual distribution. Both the Lorenz curve and the Gini ratio can be used to compare degrees of inequality. It is in this light that these two measures will be used here.

Disaggregating the income data by residence (poblacion or barrio), it is observed that the poblacion income is slightly less unequally distributed than the barrio's (Fig. RS13.01). In fact, while the Gini ratio for the municipal centers is .71, that for the barrios is .74 (see Table RS13.05). Among the districts' poblaciones, Milaor displays the greatest inequality (largest Gini ratio); Sipocot, the least (ibid.). Inspecting the barrio income data, on the other hand, suggests that the Naga Lorenz curve lies farthest from the diagonal, while those of Sipocot and Magarao are the nearest. In terms of the Gini ratio, the deviation of annual HH income distribution in Naga district's barrios is quantified as .76; that of the barrios of Sipocot and Magarao, as .70 (see Table RS13.05).

Taking the poblaciones and barrios together, Naga district is estimated to have the greatest income inequality (Gini ratio, .74), which is .01 point higher than the Basin figure (.73), while Sipocot has the least, being .04 points lower than the .73 Gini ratio for the entire Basin (ibid.).

4. Selected characteristics of HHs in the different income classes. How do HHs in different income classes compare with one another with respect to size, number of members employed, HH type, and type of construction materials used?
 - a. Household size. Overall, the average poblacion HH is bigger than that of the barrio (6.5 members vs. 6.2 in the barrio; 0.01). The general

Table RS13.05. Gini ratio of concentration for annual HH income, by district and by residence (Bicol River Basin, Camarines Sur, April 1974)

District	Poblacion	Barrio	Overall
Sipocot	.69	.70	.73
Naga	.70	.76	.74
Magarao	.70	.70	.70
Milaor	.77	.71	.73
Goa	.70	.72	.71
Iriga	.72	.74	.73
Bicol River Basin	.71	.73	.73

pattern for both poblacion and barrio is the absence of any significant difference in size between average HHs of two adjacent income classes. Thus within the lowest four percentiles of poblacion HHs, and within the highest four, HHs do not vary significantly in size. However, the wealthier 50 percent of poblacion HHs are certainly larger than those of the lower half. The barrios manifest a similar pattern: the highest 40 percent are consistently larger than the lower six income percentiles, but very little variation in size is noted among the households composing the upper three percentiles. See Table RS13.06.

- b. Employed household members. Despite its being smaller, the average barrio HH has significantly more members employed than does its larger poblacion counterpart (2.0 in the poblacion vs. 1.8 in the barrios; 0.01). Among the poblacion HHs only the highest percentile has a consistently higher number of employed HH members, compared to the first nine classes. Moreover, the highest two classes of barrio HHs have more employed members than do the lower eight. Despite this general trend of more employed members in the higher income groups, the difference is significant in neither the barrio nor the poblacion (*ibid.*).

Table RS13.06. Selected measures of Bicol River Basin HHs, by residence and decile income class (Camarines Sur, April 1974)

Selected characteristics and residence of HHs	Income class (deciles, from 1st, or lowest, to 10th, or highest)										All classes
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
a. Household size^a											
i. Poblacion											
Mean	5.5	5.4	5.9	5.5	6.3	6.4	6.6	7.5	7.5	7.5	6.5
S.D.	2.6	2.6	2.7	2.5	2.2	2.7	2.9	3.5	2.8	3.1	2.9
ii. Barrio											
Mean	4.9	5.0	5.8	6.0	6.0	6.3	6.7	7.0	7.0	7.3	6.2
S.D.	2.5	2.4	2.6	2.4	2.5	2.6	2.6	2.6	2.8	3.0	2.7
b. No. of household members employed											
i. Poblacion											
Mean	1.2	1.3	1.5	1.6	1.8	1.7	1.9	2.1	2.1	2.6	1.8
S.D.	0.96	0.97	0.92	1.10	1.10	1.23	1.30	0.95	1.09	1.64	1.20
ii. Barrio											
Mean	1.3	1.6	1.8	1.8	1.9	2.0	2.0	2.1	2.5	2.6	2.0
S.D.	1.15	1.13	1.24	1.25	1.24	1.28	1.29	1.29	1.55	1.64	1.18
c. Type of household^b											
i. Poblacion											
Nuclear	53%	53%	54%	71%	66%	68%	63%	49%	64%	28%	57%
N + kin	21	25	25	23	25	16	24	40	19	46	26
Less-N	22	18	16	4	6	7	7	8	2	8	11
Single-R	4	4	2	2	-	3	3	-	4	2	2
N + nonkin	-	-	3	-	2	6	4	3	10	16	4

^aWhere the reported measures were means and Standard Deviations, the t test was employed to detect significant differences between income classes. The significance level was set at 0.05.

^bThe classification scheme is that of Nena Eslao (1966: 200-01). Nuclear HH means respondent and spouse, with or without children. Nuclear plus kin embraces three Eslao types (nuclear-lateral, nuclear-linear, and nuclear-joint) and generally consists of a nuclear family with

Table RS13.06 (cont'd)

Selected characteristics and residence of HHs	Income class (deciles, from 1st, or lowest, to 10th, or highest)										All classes
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
ii. Barrio											
Nuclear	71%	71%	67%	75%	77%	73%	77%	70%	65%	57%	70%
N + kin	12	17	22	17	13	17	15	22	26	31	19
Less-N	13	9	10	7	10	7	6	6	7	4	8
Single R	3	3	2	1	0	2	0	2	1	1	2
N + nonkin	0	0	0	-	1	1	2	-	1	6	1
d. House materials^c											
i. Poblacion											
Light-1	29%	52%	28%	35%	22%	35%	19%	8%	4%	4%	24%
Light-2	31	18	24	25	19	31	9	13	13	8	19
Mixed-1	21	16	31	28	26	13	28	36	30	8	24
Mixed-2	9	6	12	6	21	12	15	18	18	13	13
Strong-1	7	6	3	2	7	2	22	15	13	34	11
Strong-2	3	3	3	4	4	7	6	10	21	33	10

married children, couple's parent(s), siblings, or cousins. This may also be taken as the general form of the extended family. Less-than-nuclear HHs are those in which the respondent is not living with spouse, as is the case of respondents who have been widowed, separated or currently married but whose spouse resides elsewhere because of illness or extended employment somewhere else. Single-R units are characterized by a household head who has never married. Nuclear family with nonkin is basically a household consisting of a nuclear core with helpers. While Eslao had female respondents who are household heads, our respondent population, on the other hand, can include female or male household heads. Since the usual household head is a male, the typological scheme used here has been re-worded as though all the respondents were male.

^cHouse materials refer to materials used for walls, on the one hand, and the roof, on the other. Light-1 refers to a dwelling unit with walls of bamboo and/or nipa with a nipa or cogon-grass roof and in bad repair; Light-2 is basically of similar materials as Light-1 but in good repair. Mixed-1 refers to a dwelling unit with walls of wood, with a nipa or cogon-grass roof and in bad repair; Mixed-2, units with Mixed-1 materials but in good repair. Strong-1 embraces houses with walls of wood or concrete, with a galvanized-iron or aluminum roof, but not in good repair; Strong-2, of Strong-1 built and in good repair.

Table RS13.06 (cont'd)

Selected characteristics and residence of HHs	Income class (deciles, from 1st, or lowest, to 10th, or highest)										All classes
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
ii. Barrio											
Light-1	41%	41%	47%	33%	40%	38%	32%	31%	29%	20%	35%
Light-2	30	30	28	32	34	31	28	25	25	18	28
Mixed-1	18	19	14	22	14	16	21	21	22	17	18
Mixed-2	8	7	7	10	7	8	10	16	11	18	10
Strong-1	2	2	2	2	3	5	5	4	5	12	4
Strong-2	2	1	2	0	1	2	4	3	8	15	4
e. Educational attainment of household head (in years)											
i. Poblacion											
Mean	4.9	5.4	5.8	6.0	7.1	7.5	8.8	9.5	10.2	11.6	7.7
S.D.	2.9	1.4	1.3	1.3	1.4	1.5	1.6	1.4	1.5	1.4	1.6
ii. Barrio											
Mean	4.3	4.0	4.4	4.0	4.2	4.9	5.4	5.5	5.5	8.0	5.2
S.D.	3.2	2.3	2.4	2.6	2.6	2.7	2.8	3.2	3.5	4.5	3.6
f. Sample size (n)											
Poblacion	68	68	68	68	68	68	67	67	67	67	676
Barrios	242	242	242	242	242	242	241	241	241	241	2,416

- c. Type of household. More than half of the HHs in the Basin are of the nuclear-family type, regardless of residence. More often than not, in other words, rich or poor, the HHs are made up of a married couple and their children. However, a distinctive mark of the upper two classes in the poblacion and of the highest income class in the barrio is the relatively high percentage of nuclear families with nonkin housemates (presumably HH helpers). This is not so common among deciles 1-8 (ibid.).
- d. House materials. The average dwelling unit in the poblacion appears to be made of stronger materials than the typical barrio residence. For while more than 57 percent of poblacion households live in houses of wood (for walls) and nipa (for roofing), only 37 percent of barrio families are similarly housed.

More than half of the barrio dwelling units are constructed of bamboo, nipa, and cogon. By income class, however, there is a noticeable, though gradual, shift in housing pattern as one proceeds from the first to the tenth percentile. Thus while the poorest 60 percent invariably reside in nipa huts, the middle 30 percent have more substantial houses, and the richest 10 percent reside at least in wood-and-nipa houses (35 percent), if not in units of wood and GI sheet or cement and GI sheet (28 percent).

As in the barrios, the lowest six percentiles in the poblacion usually occupy nipa houses. However, while the first six income groups in the rural areas invariably live in nipa huts, only about three out of five of the poblacion's poorest 60 percent are similarly housed. At the other end of the socioeconomic scale, the richest 10 percent of the poblacion are definitely better sheltered than their barrio counterparts. For while only 28 percent of the countryside's richest 10 percent are housed in units of strong materials, 67 percent of the poblacion's richest income class have houses of this description.

- e. Educational attainment of household head. With very few exceptions, the overall (and persistent) trend in the poblacion indicates a positive

correlation between HH income and the educational attainment of the main breadwinner. Higher income is consistently associated with the HH head's having a higher level of education. Without any notable break in the pattern, the HH head's period of formal training increases regularly from 4.9 years for the poorest class to 11.6 for the richest. In the barrios, on the other hand, no significant difference separates income classes among the poorer half of the barrio populace: the mean number of years of education is below five years. Though the next four percentiles reported significantly higher education for every higher income class, average education for this 40 percent is still below a complete six-year elementary education. The highest barrio income class, however, with a mean education of 8.0 years, is better educated, on the average, than all others. Overall, the poblacion's populace is better educated than the barrio's (ibid.).

II. SPENDING PATTERNS OF BICOL RIVER BASIN HOUSEHOLDS

5. Form of HH spending. Expenditures may entail cash outlay or not, and are by this criterion classified as cash or noncash. Consumption expenditures are theoretically ruled by the HH's tastes and preferences, preferences which are usually manifested in the allotment of income (and possibly debts and gifts) among different expense items. These preferences have been observed to differ according to the place where the HHs reside (that is, poblacion or countryside), HH income, and HH size. Here we shall investigate the effect of residence, HH income, and HH size on the pattern of expenditures, or manifested preferences, of HHs. Age composition of the HH, though an important variable, is not treated here.

As expected, the wage-earning poblacion HHs spend more cash--absolutely and relatively--than do the food-producers of the Basin barrios. In fact, while 94 percent of the urban HH budget entails cash outlays, only 85 percent of the rural HH's expenditures are in cash (see Table RS13.07). For all HHs,

98 percent of total noncash expenses are food expenditures. However, while 11 percent of the poblacion HH's food expenses are noncash, the figure is 25 percent for the barrio (ibid.).

6. The HH budget. Eight expense items are considered: food, housing, clothing, education, medical care, transportation and communication, recreation, and, in addition, a broad residual category ("others"). Housing expenses include house rental (actual and imputed), minor house repairs, and fuel, light, and water. Recreation covers such items as family celebrations, tobacco and alcohol, toys and games, and expenses incurred in amusement places like moviehouses, nightclubs, and dance halls. Lumped together in "others" are expenses for personal care, personal insurance, taxes, and house furnishings and equipment.

Theoretically, a HH spends only to the extent of available funds, a large portion of which is in the form of income. Spending less than this income will result in savings; living beyond one's means brings about dis-savings.

In view of the data in Tables RS13.07 and .08, the following patterns emerge. First, a big slice of the HH budget has to be covered by cash, more so among the poblacion HHs than among those in the barrio (ibid.). Second, though over nine-tenths of the noncash expenditures of the unit go to food, only a little over one-fifth of food expenses are met in this manner. Moreover, noncash outlays for food are characteristic more of the countryside than of municipal centers (ibid.). Third, though the Basin HH's budget consists largely of expenditures for food, the share of food in the rural HH's budget (59 percent) is larger than it is in the poblacion (53 percent; see Table RS13.08). Roughly speaking, the proportion of income spent on food decreases, while that spent on education increases, with growing income. Fourth, barrio HHs, although lower earners than their poblacion counterparts, also spend comparatively less. This results in the rural HHs' dissaving less than HHs in the municipal centers (ibid.).

Table RS13.07. Proportion of food and total household expenses covered by cash payment, classified by residence (Bicol River Basin, Camarines Sur, April 1974)

Expenses		Poblacion	Barrio	Overall
<u>Average food expenses</u>	(₱)	3,553	2,658	2,857
	(%)	100	100	100
Cash expenses	(₱)	3,147	1,996	2,252
	(%)	89	75	79
Noncash expenses	(₱)	406	662	605
	(%)	11	25	21
<u>Average total expenses</u>	(₱)	6,671	4,514	4,993
	(%)	100	100	100
Cash expenses	(₱)	6,253	3,842	4,378
	(%)	94	85	88
Noncash expenses	(₱)	418	672	615
	(%)	6	15	12

If the poblacion-barrio distinction is taken (and correctly) as an indicator of occupational difference (nonfarming vs. farming), the expectation might be that the proportion of the budget going to clothing and transportation would be higher in the poblacion than in the countryside. Basin data indicate, however, that expenditures for clothing (as well as for medical care) do not differ by residence. Transportation costs, on the other hand, are different. It could be that occupational attire in the average River Basin poblacion does not entail an outlay as high as that observed in other urban and semi-urban centers of the Philippines. Given the greater mobility of poblacion residents, on the other hand, transportation costs are naturally higher for these HHS, though the proportion of total expenditures is much the same (Table RS13.08).

Table RS13.08. Average annual income and expenses of Basin HHs, classified by residence (Bicol River Basin, Camarines Sur, April 1974)

Item	Poblacion	Barrio	Overall
Average household income	₱5,174	₱3,379	₱3,770
Average household expenses	6,671	4,514	4,993
Food	53%	59%	57%
Housing ^a	12	11	11
Clothing	3	3	3
Education	7	4	5
Medical care	3	3	3
Transportation, communication	6	5	5
Recreation ^b	9	10	10
Others ^c	7	5	6
Average household dissavings	₱1,497	₱1,135	₱1,223

^a Includes house rental (actual and imputed), minor house repairs, fuel, light, and water.

^b Covers expenses during family celebrations, expenditures for tobacco and alcohol at other times, toys and games, and sums spent in moviehouses, nightclubs, and dancing halls.

^c Includes expenditures for personal care, insurance, taxes, and house furnishings and equipment.

7. Propensity to consume (or spend). A comparison of the spending and savings patterns of the different districts reveals that Naga district residents dissave less than their counterparts elsewhere in the Basin. For while they spend, on the average, 18 centavos more than each peso they earn as income, the other districts' HHs spend an added 22 (Goa) to 59 centavos (Magarao) for every peso of income (Table RS13.09).

Table RS13.09. Average propensity-to-consume estimates, classified by district and by residence (Bicol River Basin, Camarines Sur, April 1974)^a

District	Poblacion	Barrio	Overall
Sipocot	1.16	1.25	1.23
Naga	1.38	1.12	1.18
Magarao	1.38	1.18	1.59
Milaor	1.35	1.56	1.50
Goa	1.20	1.22	1.22
Iriga	1.28	1.44	1.39
Bicol River Basin	1.29	1.34	1.32

^aThe average propensity to consume is the ratio of average expenses to average income for a given period of time.

Disaggregating the data by residence (poblacion or barrio), the Sipocot poblacion HHs emerge as least inclined to dissave, while Magarao and Naga poblacion HHs show the greatest tendency in this direction. Among barrio residents, on the other hand, Naga district reports the lowest average dissavings (12 centavos for every peso of income received), and Magarao district, the highest (68 centavos per peso earned; ibid.). The overall pattern that emerges, moreover, is that of relatively greater dissavings in the countryside, with the exception of Naga district, where the reverse appears to be true.

8. Savings patterns of selected income classes. Investigating the spending (and saving) patterns of HHs belonging to different income classes reveals that food expenses decline as we go from the lowest to the highest income class; education expenditures increase with income; and savings occur (at an increasing rate) with increases in income. As we move from the lowest percentile to the ₱9000-9999 bracket, dissavings persistently diminish;

above this roughly determined threshold, positive savings appear to be a general characteristic of HHs (Table RS13.10).

To estimate the rate at which savings may be expected to take place with changes in income, average expenses were regressed with average income. The results indicate that out of every extra peso earned, HHs spend about 60 centavos, or save about 40 centavos. Moreover, at least among Bicol River Basin HHs, a minimum of ₱2700 is spent regardless of the HH's level of income. Expectedly, the minimum level of expenditures is higher in the poblacion (₱4000 or so) than in the barrio (about ₱2300). The marginal propensity to save, however, is higher in the municipal centers (50 centavos to the peso) than in the countryside (30 centavos per extra-one-peso income). Apparently, as residence (and, to some extent, occupation) causes minimum HH expenditure levels to differ, so also does it bring about varying rates of spending and saving; hence we observe the higher minimum and higher marginal propensities to save in the poblacion relative to those observed in the barrio.

Doing regressions for the poblacion, barrio, and poblacion and barrio together yields the following results.

Poblacion: HH expenses = 4058.43 + 0.51 (Income) $r^2 = 0.95$
 $(S_{yx} = 852.05)^1$

Barrio: HH expenses = 2155.15 + 0.68 (Income) $r^2 = 0.85$
 $(S_{yx} = 1547.06)$

Pob. and barrio: HH Expenses = 2683.71 + 0.64 (Income) $r^2 = 0.95$
 $(S_{yx} = 826.45)$

Because the regression inputs were average figures (taken from Table RS13.10), the correlation coefficients are expectedly high. Working with the raw

¹ S_{yx} , or the Standard Error of Estimate, is used to determine the band within which expenditures to be estimated using the regression equation will be correct at specified levels of significance (Yamane 1969: 414).

Table RS13.10. Average pattern of savings shown by Bicol River Basin HHs, classified by annual income class (Bicol River Basin, Camarines Sur, April 1974)

Income class (in pesos) (1)	Average income (2)	Average expenses (3)	Average savings ^a (2) - (3)	n ^b
0 - 499	270.00	3,304.60	(3,034.60)	367
500 - 999	741.80	3,311.90	(2,570.10)	314
1000 - 1999	1,486.40	3,652.40	(2,166.00)	555
2000 - 2999	2,464.00	4,280.40	(1,816.40)	357
3000 - 3999	3,453.90	5,025.40	(1,571.50)	274
4000 - 4999	4,455.50	1,694.70	(1,239.20)	184
5000 - 5999	5,448.90	6,550.40	(1,101.50)	130
6000 - 6999	6,379.20	7,044.90	(665.70)	84
7000 - 7999	7,528.00	7,071.50	456.50	72
8000 - 8999	8,547.70	8,916.30	(368.60)	43
9000 - 9999	9,449.80	8,548.60	900.20	41
10,000-10,999	10,477.60	6,979.10	3,498.50	31
11,000-11,999	11,513.10	9,988.40	1,524.70	12
12,000 & over	21,487.10	17,487.30	3,999.80	107

^a Where expenses exceed income, dissaving takes place. This is indicated by parentheses.

^b Excluded from the computations are those HHs with unspecified expenses and income.

scores, however, produced almost the same regression coefficients, but the proportion of the variation in expenses explained by income was definitely low: only about 16 percent vs. the 95 percent explained above (Salazar and Lynch 1974: 15). In both cases, the two coefficients were found to be statistically significant at least at the 0.05 level.

III. POVERTY IN THE BICOL RIVER BASIN

Income distribution--a review. As earlier discussed, the upper 10 percent of Basin HHs claim over 40 percent of the Basin's total income. This leaves slightly less than three-fifths of the total income to be divided among the remaining nine-tenths of the population (see paragraph 2c, above). That the poorer 50 percent of Basin residents do not fare well in the distribution of income in the study area is further evidenced by the fact that they average about ₱900 a year (₱75 per month) in earnings, and received only about 12 percent of the Basin's total income. Compare this with the Philippines' distribution of income in 1971, at which time the poorer half of Filipino families received about 18 percent of the national income, while the richest tenth received 37 percent (Mijares and Belarmino 1973: 27). The Gini ratio of concentration was about .48 for the nation in 1971, indicating a relatively much more equitable distribution pattern than that found in the Basin area in 1974, with a Gini ratio of .73.

Adequacy of Basin HH income. The question of adequacy of average HH income may be approached in several ways (Abrera 1975). One can use the results of income-and-expenditures surveys and compare the level of HH income with that of expenses. If the question is merely whether the HH is able to meet all its expenses, an adequate income level would then approximate the level of HH expenditures. Another method would be to determine the required level of nutrition and other basic needs, such as minimum floor space and clothing requirements. Or one could ask sample HHs to estimate what they perceive as the level of income needed to lead a decent life.²

To describe the extent of poverty in the Basin, we make extensive use of the experimental poverty thresholds developed by the DAP Social Indicators Project. Two levels of poverty are distinguished--absolute and secondary. The

²The first method has been followed by the Food and Nutrition Research Council (FNRC); the second, by the Center for Research and Communication; the third is one of several used by the Social Indicators Project of the Development Academy of the Philippines (DAP).

Table RS13.11. Estimated poverty thresholds for the Bicol River Basin, and other selected areas, by residence (Midyear, 1974)^a

Geographical area and residence	Food threshold	Total threshold
Manila and suburbs	₱6,630	₱10,550
Philippines		
Other urban areas	5,306	8,844
Rural areas	4,643	7,738
Bicol River Basin ^b		
Urban areas	5,306	8,440
Rural areas	4,575	7,280

^a Except for the data for the Bicol River Basin, which were estimated following the suggestions of the DAP Social Indicators Project, the figures appearing in the table, above, come from Abrera (1975: Table 5/9). All estimates are for a family of six.

^b To derive the Bicol River Basin estimates, the Wage Commission's cost-of-living deflators for the Bicol Region for the first half of 1974 were applied: 0.80 and .69 for urban and rural areas, respectively (*ibid.*).

first takes into account the minimum food requirements specified by the FNRC, and is often called the food threshold. The secondary, or total, poverty threshold is estimated by dividing this food threshold by 60 percent, assumed by the Social Indicators Project to be the proportion of HH expenses that go for food (for confirmation of this, see Table RS13.08).

To apply these thresholds to the Bicol River Basin, the levels computed for Manila and suburbs in 1974 were adjusted by means of the cost-of-living differentials between Manila and the Bicol Region (six provinces). If we assume that costs of living within the Bicol region do not vary significantly, we can

Table RS13.12. Proportion of HHs with income or expenditures lower than the food or total poverty threshold, by residence (Bicol River Basin, Camarines Sur, April 1974)

Item measured and poverty thresholds	Poblacion	Barrio
a. <u>HHs with income lower than</u>		
Food threshold	68.0%	80.9%
Total threshold	82.4%	91.
b. <u>HHs with total expenditures lower than</u>		
Food threshold	48.4	62.5
Total threshold	73.5	86.1
c. <u>HHs with food expenditures lower than</u>		
Food threshold	76.6	84.3

legitimately apply these adjusted figures to the Bicol River Basin as well. The estimated poverty thresholds for Manila and suburbs, the Philippines outside Metro Manila, and the Bicol River Basin are shown in Table RS13.11.

We can return now to adequacy of income. Rephrasing the question, we ask what percentage of River Basin HHs report sufficient income to be able to meet the minimum food requirements of the HH; again, what percentage have enough income to take care not only of food needs, but of all other basic demands as well.

We find that the income reported by most River Basin HHs is inadequate to meet total basic requirements; what is more, this average income cannot cover even the minimum food needs of the HH. In the poblaciones and cities, 68 percent of HHs do not earn the amount needed to provide food for a typical family (two adults and four children); moreover, 82 percent have less than it takes to furnish food plus shelter, clothing, and other bare necessities (Table RS13.12). For whereas the monthly income needed for the first threshold is

#442, and for the second, #703, 68 and 82 percent, respectively, of urban HHs report that they earn less than that. The median urban HH income in the River Basin is only #260 per month (calculated from data in Table RS13.03).

The situation in the barrios is worse. Here the median HH income is only #157 per month (ibid.), and hence the percentage of HHs with inadequate income is even greater: 81 percent fall short of the food threshold, while 92 percent do not reach the total threshold (Table RS13.12).

The situation is bad, but it is mitigated somewhat by the River Basin HH's tendency to spend more than it earns. Dissaving, a characteristic of River Basin HHs (see paragraphs 7 and 8, above), leads to the reporting of greater expenditures for food and other necessities than the HH income would seem to permit. Hence (see Table RS13.12, sections b and c), a smaller percentage of HHs fall short of the thresholds in expenditures than in income. But the percentages are still very high (ibid.): expenditures, cash and noncash, for food are especially likely to fall short of threshold requirements. It follows that 79 percent of urban HHs and 84 percent of the rural spend less than it costs to feed the HH members properly.

Final word. We now respond to the questions raised at the beginning of the report. They are reducible to two, namely: (1) Who are the poor of the Bicol River Basin? and (2) How poor are they? We answer both questions together.

The Basin's poor are found in both the barrios and the poblaciones, but they are especially obvious in the rural places. There they reside in impermanent bamboo-and-nipa huts that are usually in need of repair. Their standard diet is rice with an occasional sidedish of fish or vegetables (Samson and Lynch 1974), financed by the median monthly income of #157 earned by fewer than two HH members supporting another four or five dependents. In fewer than 40 percent of these households, however, is enough spent on food to permit the serving of a minimally sufficient balanced diet, despite the fact that more than three-fifths of HH expenditures are for food.

The rural poor are constantly reminded of their impoverished status by the presence in the same barrio of a handful of wealthy HHs living in much more substantial homes. This is the tangible symbol of a much more pervasive problem, namely, the runaway maldistribution of income in the Basin. Of total rural income reported there, 12 percent must support the poorer half of the barrio population, while 43 percent is claimed by the richest 10 percent of these rural HHs.

Whenever they visit a poblacion of average prosperity, the rural poor are confronted by another reminder of their relative deprivation. For here they find homes, structures, and services that easily outclass what they have in their home barrios. But the poblacion has its own poor, for only about half of the HHs can afford the minimal proper diet (the median income is ₱260 per month), and the contrasts in housing are almost as stark. Here, however, the poorer half of urban HHs get 15 percent (not 12) of the total poblacion and city income, while the richest 10 percent claim 37 (not 43) percent of the total reported income.

One must conclude that, not only the average Basin HH, but the great majority of these HHs, are in a state of genuine poverty. Moreover, since the usual path to socioeconomic mobility is higher education--a benefit beyond the means of most of the poor--the prospects are not bright. The likelihood is that tomorrow's generation will be poorer than today's, unless development of the River Basin is supported and managed in future far better than it was in the past.

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Appendix A

THE FIRST ANNUAL PANEL SURVEY

One of the principal bases for evaluating the progress of the Bicol River Basin Development Program will be the information gathered in a series of projected large-sample surveys of the River Basin's households. Of special interest are three measures, namely per-capita income, employment rate, and agricultural productivity. Nonetheless, a much broader spectrum of characteristics is being investigated including many that relate to people's reactions to their own level of living--the so-called perceived-quality-of-life, or social-indicator questions. In all, the survey instrument currently in use has 16 distinct sections or blocks.¹

¹Because the interview schedule is long, certain portions of it are intended for only one-third of the respondents. Three sets of interview schedules are distinguished, then, the difference being the inclusion of a particular two blocks (either 3-9, 10-11, or 12-13) in one set and not in the other two.

Common to all three sets are the following blocks and items: Block 1 (Background Information), items 1.1-1.13; Block 2 (Housing), items 2.1-2.11; Block 3 (Household and Labor Force), items 3.1-3.15; Block 4 (Employment and Income), items 4.1-4.16; Block 5 (Agricultural Productivity), items 5.1-5.9; Block 6 (Furniture and Appliances), items 6.1-6.9; Block 7 (Household Expenditures), items 7.1-7.5; Block 14 (Perceived Happiness), items 14.1-14.6; Block 15 (Future SSRU Contacts), items 15.1-15.5; and Block 16 (Interview Situation), 6 unnumbered items. Block 5 is only for farm HHs; Block 6 only for non-farm HHs.

Set I (16 pages) has in addition Block 8 (Health), items 3.1-3.4; and Block 9 (Nutrition), items 9.1-9.2.

Set II (17 pages) has Block 10 (Community Rating), items 10.1-10.11; and Block 11 (Organizational Participation), items 11.1-11.20.

Set III (17 pages) has Block 12 (Social Status and Mobility), items 12.1-12.11; and Block 13 (Travel), items 13.1-13.12.

According to SSRU plans, this comprehensive survey is to be conducted periodically, perhaps annually, and will involve the same respondent households (HHs) every time, a research arrangement known as a panel survey. Because of the accuracy desired, it was decided to aim for a panel of 450 HHs in each of the six districts into which the River Basin area had been divided for administrative and research purposes.² However, as insurance against the inevitable dropping out of some sample HHs during the study years (1974-79), a 20-percent addition was made to the initial sample. Hence we planned on 540 HHs per district, a total of 3,240 HHs in all, of which 720 were to be taken from poblaciones and 2,520 from barrios.

The first annual panel survey (or AP1) was conducted in April 1974. What follows are facts about that study, selected for inclusion here because they are a necessary preparation for reading any reports on the survey.

1. The study area of AP1, that is, the land area covered by the survey, is that portion of the Bicol River Basin which is located in the province of Camarines Sur. Included are 33 of the province's 37 municipalities--all except the four which constitute the Caramoan peninsula, east of Mt. Isarog.

The Bicol River Basin (BRB) strictly so called, that is, insofar as it is an area drained by the Bicol River and its tributaries, includes about 312,000 hectares. Two-thirds of this land are in Camarines Sur, but the Basin extends to both Camarines Norte and Albay as well.

Considered part of the BRB in the broader sense of a target area of the BRB Development Program, are several areas which are not drained by the Bicol

²The six districts, with their constituent municipalities, are the following: Sipocot (Sipocot, Cabusao, Del Gallego, Libmanan, Lupi, and Ragay); Naga (Naga City, Baao, Bula, Ocampo, Pili); Magarao (Magarao, Bombon, Calabanga, Canaman); Milaor (Milaor, Camaligan, Gainza, Minalabac, Pamplona, Pasacao, San Fernando); Goa (Goa, Lagonoy, Sangay, San Jose, Tigaon, Tinambac); and Iriga (Iriga City, Bato, Buhí, Balatan, Nabua).

River system. Among them are certain portions of the AP1 study area, especially those municipalities east of Mt. Isarog (Partido district) and others along Ragay Gulf north and west of Lupi. They are included in the scope of the Development Program--and in AP's coverage--because they are systematically linked to municipalities in the Basin proper and are therefore, in a functional sense, part of the Basin.

2. The dominant and economically most important geographical features of the study area are, of course, the Bicol River and the moist lowland plain which it drains. This alluvial plain extends about 90 kilometers southeast from San Miguel Bay to Lake Bato and Mt. Mayon (in Albay); it is 8-10 kilometers wide, broadening locally along tributary streams of the Bicol River. Lying very close to sea level, the Bicol Plain has the compact soil and water supply suitable especially for the cultivation of wet rice.

Less important features of the study area are its coastal swamp and marsh lands, its dry open lowlands and slopes (especially the upper Sipocot River valley, Camarines Sur), its rough and hilly uplands (the Ragay Gulf coast hills that border the Bicol Plain on the west), and the rough mountain lands that extend from Mt. Isarog, south through Mt. Irija, Camarines Sur, to Mt. Mayon.

3. The topic population, the people about whom reports on AP1 are written, are household residents of the study area, especially those who are 10 years of age and over.

As of May 6, 1970 (Census of the Philippines), the total population of the Bicol River Basin was reported to number 878,905, living in about 141,758 households. In April 1974, at the time AP1 was conducted, the estimated population of the study area was 929,900 living in about 150,000 households.³

³This population estimate assumes that the BRB had an annual growth rate 1970-74 of 1.42 percent, the rate observed during the 1960-70 intercensal period. The number of households (149,502) is derived by dividing the estimated 1974 population (929,900) by the average household size (6.22 in the study sample (n = 3240)).

4. The respondent population consists of household heads and their spouses living in the study area.
5. The respondent sample came from 3,240 randomly selected households found in 33 poblaciones and 87 barrios. Respondents were selected by means of a multistage sampling procedure.⁴

Of the households included in the sample, about 23 percent (720) are from poblaciones, 77 percent (2520) from barrios. This implies that poblacion households are overrepresented in the sample, since according to estimates based on the 1970 Census they are only about 16 percent of the area total, not 23 percent.⁵

6. Living in the sample households are 20,155 individuals about whom demographic data were gathered; they are 2.2 percent of the area's estimated topic population (929,900) as of April 1974. The poblacion residents in the sample (4,660) are a little over 3 percent of the River Basin's poblacion dwellers, while those living in sample barrio-households are a 2.0 percent sample of the corresponding area total.

⁴The sampling procedure used in AP1 involved six steps. First, the study area was divided into six districts with four-seven municipalities in each, or 33 in all (see note 2, above). Second, within each district, every municipality was represented. Third, within each municipality respondents were drawn from every poblacion, and from as many randomly chosen barrios as were needed to assure the presence in the sample of that number of households that had been allotted as the barrio quota for the particular municipality. Fourth, within each sample community (poblacion or barrio) the area was first blocked (25-30 dwelling units per block), and a varying number of blocks selected by chance. Fifth, within each of these blocks a household count was made, followed by systematic random selection of no more than nine households per block. Sixth, in each sample household, both the household head and his wife were interviewed (one for some sections of the lengthy schedule, and the other for the rest).

⁵The sampling fractions for poblacion and barrios are 1/33 and 1/50, respectively.

7. As a consequence of the large sample size, sampling error in findings about household members is small. It is estimated that the figures presented here would not differ by more than 1 or 2 percent (plus or minus) from figures based on a complete enumeration of households. The chances of the error exceeding 2 percent are also small--only once in 20 sample draws (in other words, the reliability level is 0.95).
8. Income-and-expenditures data used in RS13 are derived from the entire AP1 sample (n = 3240; HH members = 20,155). The overall sampling error, at 0.95 reliability, is 1 percent (plus or minus). Hence estimates of population values must be understood as correct within these limits.