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Notes and explanation of symbols

The following symbols are used in tables in the *Review:*
Three dots (...) indicate that data are not available or are not separately reported.
A dash (—) indicates that the amount is nil or negligible.
A blank space in a table means that the item in question is not applicable.
A minus sign (-) indicates a deficit or decrease, unless otherwise specified.
A point (.) is used to indicate decimals.
A slash (/) indicates a crop year or fiscal year, e.g., 1970/1971.
Use of a hyphen (-) between years, e.g., 1971-1973, indicates reference to the complete number of calendar years involved, including the beginning and end years.
Reference to "tons" mean metric tons, and to "dollars", United States dollars, unless otherwise stated.
Unless otherwise stated, references to annual rates of growth or variation signify compound annual rates.
Individual figures and percentages in tables do not necessarily add up to corresponding totals, because of rounding.

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C E P A L

Review

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CEPAL REVIEW No. 40

Population and development in the Central American isthmus

*Andras Uthoff B.**

The World Conference on Population held in Bucharest in 1974 continues to mark a watershed, because since then population policies have ceased to be the exclusive domain of Departments of Health. Ten years later, in Mexico, the consensus of the international community was ratified on the need to view demographic variables as being determined by socioeconomic and cultural factors, and in turn, as being determinants of the specific socioeconomic situations of each country.

It has not been easy to conceive and implement a comprehensive view of development and population in the design of policies that will have an impact on demographic variables. In this study, Mr. Andras Uthoff, the Regional Advisor on Population and Employment of PREALC (Regional Employment Programme for Latin America and the Caribbean), describes the solution developed by his institution in Central America, where the concept of standard of living is considered to be the best means of formulating the complex interrelations between demographic variables and economic and social development. From this viewpoint the author suggests a series of guidelines for attempting to define population and development policies within an appropriate context.

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Introduction*

This study analyses the interrelations between demographic and development variables in Central American Isthmus countries. Its central thesis is that these relations should be analysed using the concept of the people's standard of living and that they are manifested to a large extent in the labour market, since it is there that families contribute to economic development through their work and benefit from economic development by income and wages received. Thus, acting on these variables, population and development policies may be formulated.

Traditional approaches have turned out to be fairly unattractive for planners and population and development policy-makers, since they have placed too strong an emphasis on fertility control as a mechanism for resolving economic development problems. According to this criterion, development is identified with economic growth, and social investment is viewed as competing with productive investment for growth. Hence, it is concluded that it is necessary to check population growth in order to reduce demands for social investment.

According to another approach which is presented later in this study, it is suggested that a standard of living indicator be used as a criterion for dividing the population into different levels according to the benefits derived from economic growth. This provides an initial view of the heterogeneous nature of the population. Families thus classified show different kinds of behaviour in terms of reproduction, migration and exposure to death and disease as a result of the different ways in which they benefit from economic development. For the purpose of analysis, the family emerges as a unit which makes decisions not only on consumption but also on the participation in the labour market

*A more elaborate version of this article was prepared for the "Seminar on Population and Development Policies in the Central American Isthmus" (Managua, 16-20 October 1989). On returning from this Seminar, my Honduran colleagues Rodolfo Aplicano, Roger Zavala and Irma Díaz from the Secretariat of Planning, Coordination and Budget (SECPLAN), Lesbia Balladares from the Department of Education and my colleagues Jesús Herrera, from Bolivia, and Daniel Rodríguez, from Chile, all perished in an air crash. The latter were acting as consultants for our projects. In homage to them all I wish to publish these ideas which we advanced in our work in Central America.

and the contribution to productive work which the family may undertake as a unit; likewise, the consequences of such decisions on family size, composition and mobility are weighed by this unit (CELADE, 1975-1980).

After diagnosing the situation in some countries of the Central American Isthmus according to this approach, the author presents a series of comprehensive population and development policy recommendations.

I

Traditional approach to population and development

According to estimates of the Latin American Demographic Centre (CELADE) for the region, the population of the Central American Isthmus has more than tripled in the 40 years since 1950. Estimates from the same source indicate that between 1990 and the year 2020 it will double once again. However, this is not what is most important. A population that grows at such high rates (the highest in Latin America), displays intermediate stages of demographic transition, in which fertility is still high and the death rate is declining. This brings about important changes in the population age structure. While fertility continues to be high and death rates to decline, the population grows younger, i.e., the number of young people increases in relation to total population and in particular to working-age population. Then, when fertility begins to decline, the situation changes and a greater aging of the population occurs.

Table 1 summarizes the main demographic indicators of these trends for the various countries of the Isthmus. Towards the latter part of the 1980s, the only countries to have reduced population growth as a result of low fertility were Costa Rica and Panama. El Salvador also showed major declines but this was a result of higher death rates and emigration caused by internal strife.

Population growth is not the only indicator to interact with development variables during this period. The demographic dependence ratio, i.e., the relation of population between ages zero and 14 and over age 65 to population between ages 15 to 64, does not experience major swings for any of the countries until 1970. This indicator summarizes what occurs in the population age structure. From 1970 onward, there were major reductions in this indicator in Costa Rica and also in Panama. This was not the case in El Salvador, Guatemala, Honduras and Nicaragua, where it is estimated that until 1990 the dependence ratio will remain stable at one. In other words, in these countries, for every working-age person there will be one dependent-age person (under age 15 and over age 65).

For these four countries, CELADE projections show a decline in the demographic dependence ratio only as of 1990. This characteristic results from the delay in the demographic transition process of these countries.

It is also important to examine the growth rates of the working-age population (defined as being between the ages of 15 and 64) which involves those persons who may enter the labour force and for whom it is important to create jobs. It takes 15 years for this rate to respond to declines in fertility. Both in Costa Rica and in Panama, slower growth of the working-age population is seen only as of 1990 and this will occur much later on in the other countries.

The traditional approach (Coale, 1963) to population and development is shown in table 2. For given working-age population growth and for relatively constant participation rates, the labour force would grow at these same rates or with slight variations. Thus, in order to absorb this labour force productively, the country would need productive investments aimed at creating factories, businesses and jobs for the employment of these persons.

By using aggregate growth models, it is possible to determine the amount of investment necessary to absorb this labour force. First of all, these models relate the demand for jobs to

Table 1

CENTRAL AMERICAN ISTHMUS: CHARACTERISTICS OF POPULATION AGE STRUCTURE

	Population growth rates		Ratio of			Ratio vis-à-vis 1950 population	Participation by total isthmus population
	Total	Working age	Demographic dependence	Rejuvenation	Aging		
Costa Rica							
1950			0.96	0.85	0.11		0.09
1960	3.67	3.00	1.10	0.99	0.11	1.43	0.10
1970	3.42	3.69	1.04	0.94	0.10	2.01	0.10
1980	2.81	4.13	0.80	0.69	0.11	2.65	0.10
1990	2.81	3.14	0.74	0.63	0.11	3.50	0.10
2000	2.10	2.60	0.66	0.54	0.12	4.31	0.10
2010	1.64	2.05	0.59	0.45	0.14	5.07	0.09
2020	1.32	1.22	0.61	0.41	0.20	5.78	0.09
El Salvador							
1950			0.90	0.81	0.09		0.21
1960	2.85	2.40	0.99	0.90	0.10	1.32	0.21
1970	3.40	3.13	1.04	0.95	0.09	1.85	0.21
1980	2.35	2.38	1.03	0.94	0.09	2.33	0.20
1990	1.50	1.65	1.01	0.89	0.12	2.71	0.18
2000	2.53	3.01	0.91	0.79	0.12	3.47	0.18
2010	2.34	2.85	0.82	0.70	0.12	4.38	0.18
2020	2.00	2.75	0.69	0.57	0.12	5.33	0.18
Guatemala							
1950			0.94	0.85	0.09		0.33
1960	2.93	2.52	1.02	0.93	0.09	1.34	0.32
1970	2.84	2.87	1.01	0.92	0.09	1.77	0.31
1980	2.80	2.78	1.01	0.92	0.09	2.33	0.31
1990	2.89	2.86	1.02	0.92	0.10	3.10	0.32
2000	2.88	3.31	0.94	0.83	0.11	4.12	0.32
2010	2.62	3.27	0.82	0.71	0.11	5.33	0.33
2020	2.22	2.86	0.71	0.60	0.11	6.64	0.34
Honduras							
1950			0.92	0.86	0.06		0.15
1960	3.28	3.07	0.96	0.89	0.07	1.38	0.16
1970	3.10	2.60	1.06	0.97	0.09	1.87	0.16
1980	3.38	3.23	1.09	0.99	0.10	2.61	0.17
1990	3.44	4.00	0.98	0.88	0.10	3.67	0.18
2000	2.91	3.55	0.86	0.76	0.10	4.89	0.18
2010	2.39	3.20	0.72	0.62	0.10	6.19	0.18
2020	1.99	2.52	0.63	0.52	0.11	7.53	0.18
Nicaragua							
1950			0.95	0.87	0.08		0.12
1960	3.12	2.46	1.08	1.00	0.08	1.36	0.12
1970	3.24	3.17	1.09	1.01	0.08	1.87	0.12
1980	3.05	3.23	1.06	0.98	0.08	2.52	0.13
1990	3.40	3.65	1.01	0.92	0.09	3.53	0.13
2000	3.12	3.67	0.90	0.81	0.09	4.79	0.14
2010	2.63	3.41	0.76	0.66	0.10	6.22	0.14
2020	2.14	2.69	0.67	0.55	0.12	7.68	0.15
Panama							
1950			0.89	0.78	0.11		0.09
1960	2.79	2.30	0.98	0.86	0.12	1.32	0.09
1970	3.01	2.31	1.01	0.89	0.12	1.78	0.09
1980	2.78	2.91	0.88	0.76	0.12	2.33	0.09
1990	2.14	3.03	0.72	0.60	0.12	2.88	0.08
2000	1.81	2.26	0.65	0.52	0.13	3.45	0.08
2010	1.40	1.77	0.59	0.44	0.15	3.96	0.07
2020	1.10	1.13	0.58	0.38	0.20	4.41	0.06

Source: CELADE (1987).

absorb this force to the need for product growth. This ratio is referred to as the aggregate product/employment elasticity of a country, which tends to be 0.5. In other words, in order for employment to grow by 1%, the product has to grow by 2%, so as to absorb employment and raise workers' productivity.

Product growth requires a given volume of investment. The ratio of capital increase needed in a country to product increase is called the product/capital incremental coefficient of an economy and it may be estimated at approximately 0.33. In other words, in order for the product to grow by 1%, the net capital increase *vis-à-vis* total product of a country must be 3%.

By using these values, table 2 associates working-age population growth rates (which supposedly reflect work force growth with relatively constant participation rates) with the product growth necessary for productivity to increase and for jobs to be created for those persons. Finally, column 3 shows the net investment coefficient necessary for meeting these targets. The latter indicator relates capital increases to product volume of a country. Column 4 shows gross investment coefficients published by ECLAC for the period 1980-1987, which may be compared with those needed (net) in column 3.

This conventional model is based on the view that the difference between needed investment and effective investment reflects significant social problems. Given the population growth rates, it is not possible to have the resources necessary to meet simultaneously the employment needs of the working-age population and the basic needs of the population as a whole. Some of these social problems were summarized by PREALC (1986) for Central America. This publication indicates, for example, that towards 1980, 75% of Costa Rica's population was engaged in modern work and the remainder in informal or traditional work. Panama also succeeded in having relatively significant numbers engaged in modern work, with 65% of its work force. In El Salvador, Guatemala, Honduras and Nicaragua, on the other hand, the work force was less successful in being employed in modern types of work. In El Salvador only 51% of its labour force was employed in modern work; in Guatemala 43%, Honduras 50% and in Nicaragua 48% (PREALC, 1986).

As a result of the crisis of the 1980s it would seem that in these countries percentages declined rather than increased (PREALC, 1988). Thus, for the Central American Isthmus during the 1980s, current conditions have been added to structural arguments that tended to conventionally interpret the relations between population and development, and this has aggravated the possibilities of employment being absorbed by modern enterprises.

This form of analysing interrelations between population and development may

Table 2

INVESTMENT NEEDS FOR JOB CREATION BETWEEN 1990 AND THE YEAR 2000

	Working age population growth 1990-2000	Product growth necessary (Pee =.5)	Net investment coefficient necessary (Pcc =.33)	Effective gross investment coefficient 1980-1987	Percentage of work force in modern sector
Costa Rica	2.60	5.20	15.76	19.40	75.00
El Salvador	3.01	6.02	18.24	12.90	51.00
Guatemala	3.31	6.62	20.06	14.10	43.00
Honduras	3.55	7.10	21.52	18.70	50.00
Nicaragua	3.67	7.34	22.24	21.20	48.00
Panama	2.26	4.52	13.70	23.10	65.00

Source: PREALC, based on table 1; product/employment elasticity equals 0.5; product/capital incremental coefficient equals 0.33 (ECLAC, National Accounts and PREALC (1986)).

prove misleading unless careful consideration is given to its policy implications, in particular when it is introduced to those who have just begun to study the subject.

In terms of its consequences for standard of living and employment conditions, various weak points are revealed. To begin with, this model gives the impression that employment problems are only caused by work supply factors and, in particular, the working-age population growth rate. Moreover, it would seem that any measure dealing with demographic policies would only produce economic results over the long run, i.e., after 15 years. On the other hand, this type of analysis ignores the interrelation between demographic variables and those of development and the role they play in bringing about desired changes in death rates and fertility. The majority of changes in the demographic behaviour of families responds to socioeconomic processes that account for the way in which the benefits of economic growth are distributed through the labour market or through government subsidy programmes. Lastly, this type of analysis overlooks a series of aspects related to the heterogeneous nature of sociodemographic behaviour, such as differences in fertility, participation in work by age, sex, and socioeconomic level, migration towards better employment opportunities by different family members and investment in human resources (education, health, nutrition). Besides, this investment is seen as competing with productive investment, when in fact, it is a complementary investment, given its stimulating effects on economic growth. (For a more in-depth criticism of this approach see Uthoff and Pernia, 1986.)

II

Population, employment and standard of living

Another approach in analysing interrelations between demographic and economic development variables is dynamic and heterogeneous whereas the preceding approach was dynamic but homogeneous. This is shown in table 3 for Guatemala and Honduras, and is illustrated in figure 1 for urban Honduras.[1]

Figure 1 shows population age structure, stratified by per capita family income levels in urban Honduras, after grouping the population into family units. The groups are defined according to per capita family income value, ranking them from lowest to highest. Groups considered to be "indigent" are those whose per capita family incomes do not cover the cost of a subsistence food basket. The "non-indigent" poor are those who live in family groups where per capita family income accounts for between once and twice the value of the cost of the basic food basket. Finally, the "non-poor" are those who live in families with per capita family incomes which exceed that value twice over. This grouping is based on family budget studies in Latin America which indicate that under normal conditions, families allocate 50% of their income to food, and the rest to other expenses such as transportation, housing, clothing and education (Musgrove, 1978).

Figure 1 shows that, while fertility has dropped among certain groups of the population, it remains high for others. Consequently, demographic indicators in table 2 vary by socioeconomic level, having an impact on investment needs for working-age and non-working-age populations and guiding resource allocation according to the preceding model. In other words, dependence and family size with its implications for the growth rates of different population age groups vary according to per capita family income. As other authors have pointed out in previous decades, "although families are an important mechanism for redistributing income at a given point in time, they are also an important motor for

[1] For figures illustrating other cases in Central America, see PREALC, 1989.

transmitting inequality into the future. To the extent that parents' income affects the probability of a child generating a high income when he reaches working age, equality of opportunity will not prevail and inequalities will persist once more" (Fishlow, 1972).

The characteristics of households that are grouped according to this stratification (table 4) suggest that this mechanism operates in the Central American Isthmus. The percentage of children is inversely proportionate to total per capita family income. This responds not only to greater household size, but also, and more intensively so, to lower productivity levels and occupational conditions under which working members are employed, as well as to greater unemployment levels, although they have lower participation rates.

Poverty profiles in the Central American Isthmus highlight low productivity levels and scarce employment opportunities as being determinants of the problems of poverty. These households are also the ones that show the highest fertility and young population structures. Consequently, to embark on a policy of change in family reproduction patterns, one would have to understand the factors which have an impact on the behaviour of households, grouped according to different socioeconomic levels, and have an influence both on the variables that cause their poverty and on the consequences of that poverty.

This approach emphasizes three elements: standard of living as a category into which population can be divided; the family as a unit of analysis; and interrelations between

Table 3

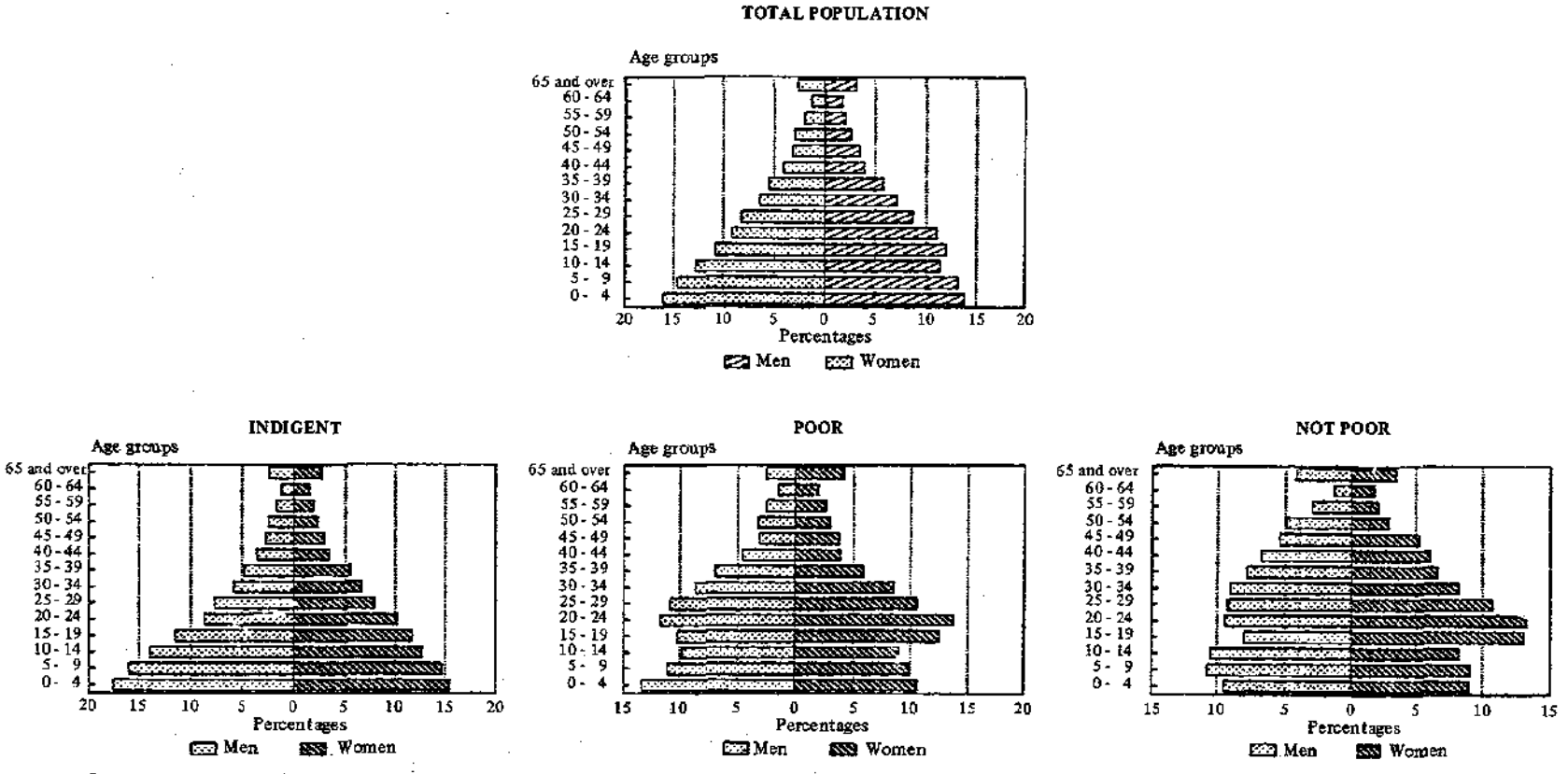
CHARACTERISTICS OF POPULATION AGE STRUCTURE, BY INCOME LEVELS IN SOME COUNTRIES AND SELECTED AREAS

	Ratio of:			Ratio with:		Average age	Children/ woman ratio
	Demographic dependence	Rejuvenation	Aging	Total households	Total population		
Guatemala 1987							
Main urban							
Indigent	0.97	0.90	0.07	56.00	60.00	16.35	64.75
Poor	0.58	0.51	0.07	23.20	22.10	21.89	36.85
Non-poor	0.42	0.33	0.09	20.80	17.90	25.48	25.41
Total	0.75	0.68	0.07	100.00	100.0	19.11	49.70
Remaining urban							
Indigent	0.98	0.93	0.05	56.10	58.00	15.76	69.68
Poor	0.76	0.69	0.07	21.30	20.40	18.45	49.71
Non-poor	0.58	0.50	0.08	22.60	21.60	22.64	36.50
Total	0.86	0.80	0.06	100.00	100.00	17.47	58.73
Rural							
Indigent	1.17	1.12	0.05	81.10	85.10	13.90	92.32
Poor	0.81	0.75	0.06	13.50	11.40	18.36	58.84
Non-poor	0.56	0.50	0.06	5.40	3.50	22.45	47.85
Total	1.09	1.04	0.05	100.00	100.00	14.70	86.40
Honduras 1986							
Main urban							
Indigent	0.91	0.87	0.04	67.00	73.20	16.14	64.24
Poor	0.54	0.49	0.05	19.60	16.90	21.64	37.95
Non-poor	0.47	0.42	0.05	13.40	9.90	23.86	26.05
Total	0.78	0.74	0.04	100.00	100.00	18.00	53.90

Source: PREALC and GUA/85/PO2 and HON/87/PO2 projects with information from the National Statistics Institute (INE) and General Director's Office of Statistics and Censuses (DGEC), household surveys.

Figure 1

URBAN HONDURAS: SEX AND AGE STRUCTURE



Source: PREALC and HON/87/PO2 containing information from the Dirección General de Estadísticas y Censos (DGEC).

Table 4

HOUSEHOLD CHARACTERISTICS BY POVERTY LEVEL

	Indigent	Non-indigent poor	Non-poor	Total
Costa Rica 1982				
Urban	20.5	36.7	42.8	100.0
Household size	5.6	4.8	3.8	4.9
Percentage of children (under 15)	57.0	33.0	39.0	32.0
Employed/adults	59.0	57.0	70.0	67.0
Working/adults	67.0	61.0	71.0	67.0
Employed/working	89.0	94.0	98.0	93.0
Per capita income	466.0	1 042.0	3 299.0	1 921.0
Income per employed person	1 181.6	2 528.8	5 709.0	3 579.1
Total income	2 578.0	4 958.0	11 524.0	7 373.0
Guatemala 1986				
Main urban	56.0	23.2	20.8	100.0
Household size	5.2	4.6	4.2	4.9
Percentage of children (under 10)	32.3	19.7	14.9	
Employed/adults	46.0	53.0	64.0	51.5
Working/adults	50.6	56.5	66.5	55.2
Employed/working	90.9	93.8	96.2	93.3
Per capita income	31.4	96.6	289.5	100.2
Income per employed person	111.3	255.4	570.1	243.7
Total income	164.3	440.3	1 163.8	436.0
Guatemala 1986				
Remaining urban	56.1	21.3	22.6	100.0
Household size	5.8	4.8	4.0	5.2
Percentage of children (under 10)	32.8	25.6	18.4	28.9
Employed/adults	43.8	48.0	60.1	48.1
Working/adults	46.9	50.6	62.5	50.8
Employed/working	93.4	94.9	96.2	94.7
Per capita income	27.7	78.9	479.8	140.7
Income per employed person	104.6	250.7	1 250.4	397.6
Total income	153.8	374.4	1 882.4	591.2
Guatemala 1986				
Rural	81.2	13.5	5.4	100.0
Household size	5.9	4.7	3.6	5.6
Percentage of children (under 10)	37.1	26.7	23.2	35.5
Employed/adults	46.1	55.2	64.4	47.9
Working/adults	46.9	55.8	66.6	48.8
Employed/working	98.3	98.9	96.7	98.2
Per capita income	16.7	63.6	259.9	36.1
Income per employed person	63.3	177.5	554.6	105.3
Total income	94.5	298.0	1 014.1	171.3
Honduras 1986				
Urban	67.0	19.6	13.4	100.0
Household size	5.8	4.5	3.9	5.3
Percentage of children (under 15)	31.9	23.1	21.2	29.3
Employed/adults	42.4	54.4	60.7	46.5
Working/adults	49.0	58.2	62.3	52.2
Employed/working	86.5	93.5	97.4	89.1
Per capita income	79.0	243.6	742.8	200.4
Income per employed person	281.8	642.4	1 600.8	529.6
Total income	429.4	1 091.6	2 649.8	857.3

Source: PREALC, with information from household surveys, General Director's Office of Statistics and Censuses (DGEC) (Costa Rica), the National Statistics Institute (INE) (Guatemala) and General Director's Office of Statistics and Censuses (DGEC) (Honduras).

Note: The poverty line is set at 714 colones in Costa Rica, 68 quetzals in main urban Guatemala, 55 quetzals in remaining urban Guatemala, 47 quetzals in rural Guatemala and 172 lempiras in urban Honduras.

demographic and development variables as a mechanism for transmitting inequality into the future via the labour market. This is a much more useful method of analysing population phenomena, and has been studied in Latin American literature under the concept of family survival strategy.

Efforts at defining and characterizing poverty in a country are closely linked to the interrelation between demographic variables and the establishment of minimum survival levels (planning component). In general, per capita family income should be compared with some accepted measure of normal or standard income at a regional or national level. Minimum wage or minimum income normally tend to be used, and are defined according to minimum work requirements. However, these indicators vary in real terms *vis-à-vis* macroeconomic variables, such as, for example, inflation. The poverty line on the other hand, should at each moment reflect the cost of buying the necessary nutrients for family survival.

To this end, it is common to apply consumption studies which estimate elasticities with respect to family size. These elasticities indicate whether or not economies of scale exist. If they do, supposedly the most numerous families do not necessarily increase their consumption in the same proportion as their members increase, but rather in a relatively lower proportion. The opposite occurs in smaller families.[2]

The relation between the basic needs of a person, family size, cost of buying daily sustenance and family income is often disregarded in population studies. Working income has three fundamental functions: it reflects worker' purchasing power and therefore provides an incentive for them to offer their time in exchange for satisfying their families' needs; it involves a production cost for employers; and its readjustability has an effect on the setting of production prices, which makes it part of the inflationary movement. This triple function covers a wide area which has not been duly considered in population and development studies.

Table 4 provides information on the four areas being analysed, in addition to urban Costa Rica for 1982, based on household characteristics according to poverty levels. These have been grouped according to their per capita income compared with the value of a subsistence food basket, according to the needs estimated by the Economic Commission for Latin America and the Caribbean (ECLAC).

Direct comparisons of per capita family income and poverty lines indicate that in urban Costa Rica (1982) indigent families accounted for 20.5% of families; in urban Guatemala (1986), 56%; in remaining urban Guatemala (1986), 56.1%; in rural Guatemala (1986), 81.2% and in urban Honduras (1986), 67%.

This criterion is highly sensitive to short-term economic price swings —i.e., the cost of the minimum subsistence food basket— and to working income or that from other sources, i.e., a family's purchasing power. It is also very sensitive to the concept and measurement of income, whether or not this includes income in kind, subsidies and transfers (Pollack, 1987). It also requires the application of a series of value judgements with respect to the dietary needs, over time, of various population groups, by regions. Still, it is the criterion most commonly recommended when undertaking poverty studies (Sen, 1976) (Altimir, 1978 and 1981) (Rodgers, 1984 and 1989).

The aspects or characteristics that distinguish poor households are clearly seen in table 4: family size and number of children over the average; high unemployment rates among working members; and income very much below average for each employed member. Poverty profiles in these countries consequently show that poverty is not only associated with demographic variables having an effect on population size, growth and composition, but that it also accounts for the population that is severely affected by employment problems. These include discouraged workers, or persons engaged in work that is not traditionally considered as such (low participation rates); the unemployed (i.e., those seeking work without a chance of finding any); and the underemployed (those who work or are employed in jobs with

[2] Elasticity equal to 1 has been assumed here, i.e., that there would be no economies or diseconomies in consumption with respect to family size. However, if this assumption were to change, conclusions of the study would not vary significantly.

very low productivity levels within certain lagging sectors of the economy).

To embark on a study of the interrelationships between demographic and economic development variables in the Central American Isthmus is consequently very promising. Poverty affects a high percentage of the population and is found closely linked to high fertility rates in households with major unemployment problems. A fairly close correlation is seen between regions and levels in which low standards of living still persist, as does demographic behaviour that is characterized by high fertility levels. The dilemma faced by population and employment policy-makers is to discern whether the original problem is one of poverty or rapid population growth. Undoubtedly, both are mutually reinforcing over time in the intergenerational transfer of inequality and poverty.

III

Intergenerational poverty transfer mechanisms as elements for population and employment policy

The solution to immediate employment problems does not necessarily resolve either the problems of poverty or population. Demographic factors have an important role to play in the transfer of poverty from generation to generation. The number of children per indigent family varies significantly, and is very different from that recorded by non-indigent poor and non-poor families. As the tables show, there is an inverse relation between family size and the standard of living it attains.

The pattern described shows that the family, upon increasing its size, cannot escape a situation of poverty. Work by children and other secondary members of the family does not significantly contribute to family income. If this work exists, it is because poverty conditions demand this greater participation. Table 4 clearly shows that children who are educated and brought up under poverty conditions constitute a much higher percentage than that of children educated in families which are not poor. As has been indicated in various poverty profile studies, these children inherit a series of characteristics which increase their probability of remaining poor during their generation. Firstly, they are brought up under income conditions which prevent them from obtaining adequate levels of nourishment. Secondly, they will not receive legacies of assets or socioeconomic status which would allow them to overcome their situation of poverty. Their scant possibilities of education will prevent them from using it as a mechanism for achieving social mobility. Also they will be instilled with limited aspirations based on the environment in which they develop. All these factors help to reduce their possibilities of access to stable work. Under these circumstances, barring direct intervention by planners and development policy-makers, the mechanisms which would aid these children to escape from poverty will not operate. These children participate to a lesser extent in the school system than do children of other socioeconomic backgrounds; they remain in it for fewer years and they advance less rapidly within it; they acquire very unstable attitudes towards work because of their informal status; they have little access to assets and credit; and they are forced to a greater extent to engage in low productivity work with little access to the formal mechanisms of the economy. Table 5 shows the situation described for Guatemala and Honduras as do figures 2a and 2b for urban Honduras, with indicators prepared from household surveys.

Five indicators show major discrimination against the poorest sectors:

i) Nutrition levels which the family may attain, measured as a ratio of average per capita family income for the stratum as a whole to the cost of the subsistence food basket;

ii) School attendance, which has been measured differently for Guatemala and for Honduras, since in the first case average school

Table 5

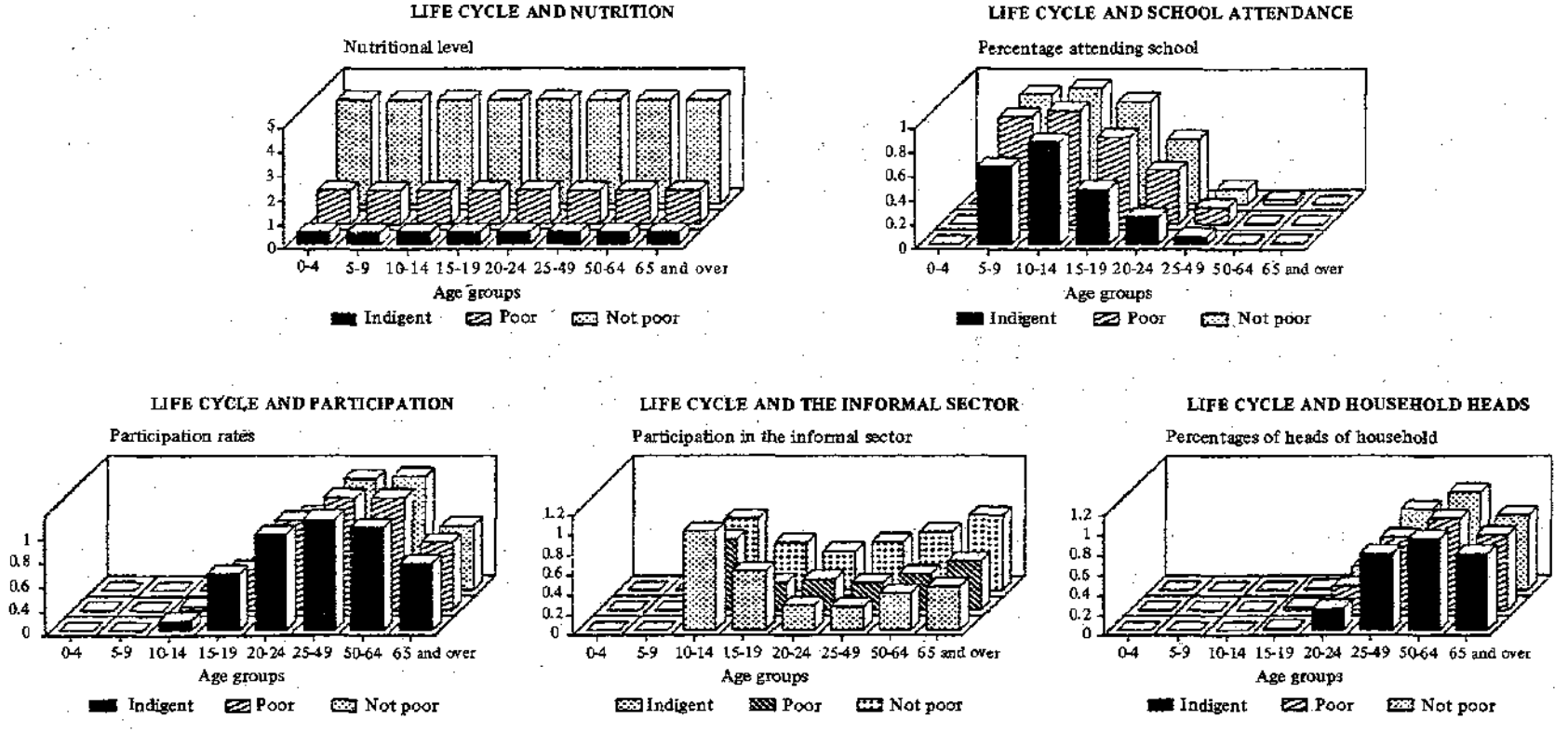
SOCIAL INDICATORS BY LIFE CICLE AND SOCIO-ECONOMIC LEVEL

	Nutrition			School attendance						Economic participation						Work in informal sector						Head of household					
				Men			Women			Men			Women			Men			Women			Men			Women		
	I	P	NP	I	P	NP	I	P	NP	I	P	NP	I	P	NP	I	P	NP	I	P	NP	I	P	NP	I	P	NP
Guatemala																											
Main urban																											
0-4	.5	1.4	4.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-9	.5	1.4	4.3	0.5	1.1	0.9	0.6	0.8	1.2	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-14	.5	1.4	4.3	3.6	4.5	5.4	3.3	4.7	5.4	.19	.11	.02	.07	.12	.11	.78	.61	.99	.90	.96	.96	-	-	-	.00	.01	-
15-19	.5	1.4	4.3	5.9	7.7	9.5	5.5	7.4	7.4	.62	.46	.30	.29	.36	.49	.65	.53	.37	.77	.77	.68	.02	.03	.04	.01	.02	.01
20-24	.5	1.4	4.3	6.0	8.3	11.5	4.7	7.8	9.0	.87	.85	.83	.39	.55	.76	.59	.34	.26	.73	.49	.45	.24	.20	.24	.03	.02	.01
25-49	.5	1.4	4.3	4.4	7.8	12.1	3.1	6.3	9.3	.96	.98	.99	.40	.33	.77	.61	.32	.23	.84	.52	.34	.81	.69	.71	.15	.12	.11
50-64	.5	1.4	4.3	2.5	4.7	10.2	1.8	3.9	7.4	.89	.88	.98	.33	.31	.49	.75	.53	.29	.90	.90	.51	.93	.90	.99	.26	.31	.29
65 +	.5	1.4	4.3	1.9	4.2	7.3	1.2	3.6	5.0	.60	.43	.57	.21	.10	.10	.87	.70	.74	.99	.87	.96	.67	.81	.98	.33	.29	.30
Total																.66	.39	.28	.84	.59	.44						
Other urban																											
0-4	.5	1.4	8.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-9	.5	1.4	8.7	0.5	0.8	0.9	0.5	0.8	0.6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-14	.5	1.4	8.7	3.3	4.9	4.3	3.0	5.2	5.5	.16	.12	.12	.07	.09	.05	.92	.66	.67	.84	.99	.99	-	-	-	-	-	-
15-19	.5	1.4	8.7	5.1	8.0	8.4	4.6	6.0	6.2	.67	.43	.45	.24	.25	.47	.86	.59	.62	.76	.77	.92	.02	.05	.02	.02	.02	-
20-24	.5	1.4	8.7	6.1	7.5	10.3	4.2	7.2	8.8	.85	.94	.90	.30	.42	.71	.69	.28	.26	.77	.61	.44	.20	.29	.41	.04	.02	.02
25-49	.5	1.4	8.7	4.0	8.0	11.0	2.4	6.4	9.3	.97	.95	.99	.34	.47	.68	.68	.28	.32	.85	.64	.27	.79	.84	.78	.11	.13	.17
50-64	.5	1.4	8.7	2.5	5.1	7.7	1.4	3.2	4.7	.88	.93	.93	.32	.41	.43	.68	.35	.45	.98	.95	.67	.85	.99	.99	.30	.31	.37
65 +	.5	1.4	8.7	1.3	5.3	5.0	1.8	2.6	4.3	.55	.46	.72	.42	.12	.34	.92	.65	.54	.99	.99	.99	.71	.87	.99	.42	.12	.34
Total																.73	.34	.36	.85	.72	.45						
Rural																											
0-4	.4	1.4	5.5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-9	.4	1.4	5.5	0.2	0.4	1.4	0.2	0.6	0.7	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-14	.4	1.4	5.5	2.1	3.4	4.2	1.5	3.0	4.0	.34	.24	.11	.07	.14	.25	.87	.61	.99	.78	.85	.99	-	-	-	.00	-	-
15-19	.4	1.4	5.5	3.0	4.3	5.3	2.2	4.0	5.4	.86	.84	.82	.19	.30	.43	.77	.51	.74	.71	.64	.74	.02	.03	.08	.00	-	.08
20-24	.4	1.4	5.5	2.5	4.2	7.4	1.4	3.5	5.1	.98	.97	.89	.12	.23	.61	.76	.44	.40	.79	.74	.62	.51	.35	.34	.01	.04	.04
25-49	.4	1.4	5.5	1.1	3.3	7.7	0.8	2.5	6.5	.99	.99	.99	.17	.34	.57	.72	.41	.34	.91	.89	.46	.85	.75	.86	.08	.07	.07
50-64	.4	1.4	5.5	0.6	1.3	2.4	0.3	0.5	3.0	.95	.93	.97	.14	.20	.40	.82	.55	.66	.93	.86	.50	.95	.93	.97	.20	.19	.37
65 +	.4	1.4	5.5	0.4	0.3	2.0	0.2	0.8	1.0	.67	.73	.62	.11	.18	.04	.92	.88	.36	.93	.90	.99	.85	.97	.86	.29	.38	.04
Total																.77	.48	.45	.85	.82	.58						
Honduras																											
Main urban																											
0-4	.5	1.4	4.3	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
5-9	.5	1.4	4.3	.65	.89	.91	.69	.87	.94	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
10-14	.5	1.4	4.3	.85	.94	.96	.87	.94	.93	.08	.03	.00	.05	.05	.10	.72	.71	.99	.95	.99	.99	-	-	-	.00	.00	.00
15-19	.5	1.4	4.3	.46	.72	.85	.53	.64	.57	.47	.34	.22	.21	.30	.50	.48	.28	.59	.71	.79	.87	.02	.03	.02	.01	.01	.00
20-24	.5	1.4	4.3	.23	.45	.54	.20	.35	.38	.80	.75	.63	.43	.55	.72	.39	.31	.25	.58	.45	.64	.22	.24	.24	.03	.02	.04
25-49	.5	1.4	4.3	.07	.14	.13	.05	.09	.15	.93	.94	.93	.52	.69	.79	.48	.27	.23	.65	.30	.40	.76	.73	.81	.17	.14	.08
50-64	.5	1.4	4.3	.01	.01	.04	.01	.02	.04	.86	.94	.95	.32	.43	.58	.58	.36	.36	.85	.61	.51	.91	.92	.98	.34	.27	.26
65 +	.5	1.4	4.3	.01	.00	.00	.00	.01	.02	.56	.57	.54	.18	.14	.25	.75	.49	.43	.95	.99	.91	.76	.75	.75	.30	.24	.21
Total																.49	.30	.27	.68	.43	.53						

Source: PREALC, with information from the National Statistics Institute (INE) (Guatemala) household surveys, and General Director's Office of Statistics and Censuses (DGEC) (Honduras).
Note: I = Indigent; P = Poor; NP = Non-poor.

Figure 2a

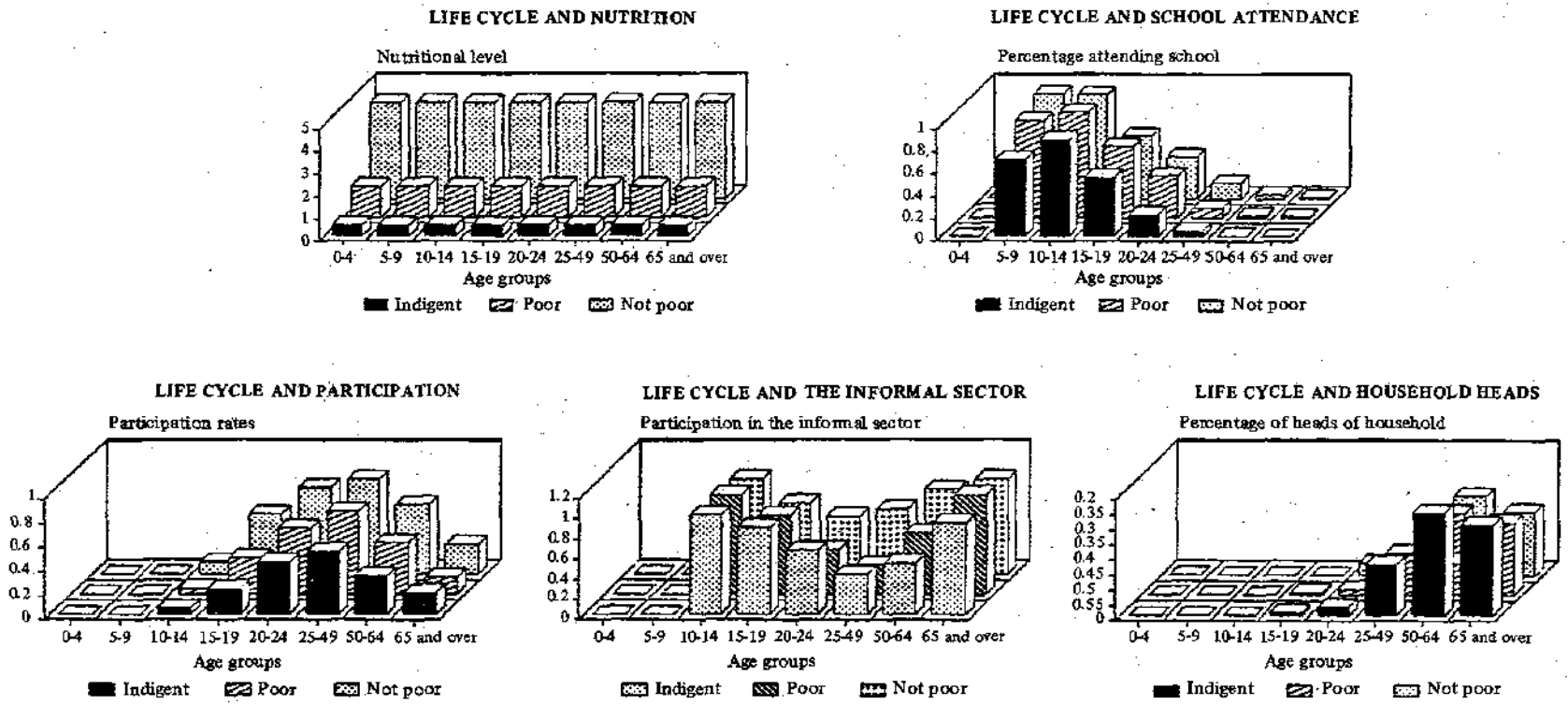
URBAN MEN: HODURAS



Source: PREALC household surveys. INEC and the Dirección General de Estadística y Censos (DGEC).
Note: Note change in order of the strata in the informal sector

Figure 2b

URBAN WOMEN: HONDURAS



Source: PREALC household surveys, INEC and the Dirección General de Estadísticas y Censos (DGEC).
Note: Nate change in order of the strata in the informal sector.

attendance is shown for each age group within each socioeconomic level and, in the second, it is the percentage of persons within each age group that attend school;

iii) The conventional statistical indicator of work, which represents the specific participation rate by age group, and which varies according to the definition of economic activity used. For Honduras and Guatemala economic activity is understood to be that in which persons seek or engage in work, whether paid directly or as an unpaid family worker. It does not include housework.

iv) The percentage of working persons engaged in the informal sector of the economy, presented for each age group of persons over age 10 and for each level separately;

v) The percentage of persons in each age group who are heads of household.

These five fairly straightforward indicators illustrate how the interrelations of demographic and development variables act in the intergenerational transfer of poverty. In the latter four —school attendance, economic participation, work in the informal sector and head of household— the values are provided separately for men and women. The first does not vary by either sex or age, since it is an indicator that measures the potential level of nutrition reached on average by all family members.

The indicators identified illustrate important elements of the vicious circle of the intergenerational transfer of poverty. We should formulate population and development policies by looking for a way to break this vicious circle.

1. *Poverty, life cycle and nutrition*

As is clearly and equally seen for both countries and the regions where it has been measured, indigent households start off with deficient nutritional levels, which only reach half of the levels considered as acceptable according to standards for the subsistence food basket. Non-indigent poor households have the income to meet their minimum dietary needs and to have another 40% per individual at their disposal for other basic expenses. Lastly, non-poor households have over four times the necessary income to buy the subsistence food basket for each family member.

An important element of population and development policies should be aimed at closing this gap in nutrition levels for children from various socioeconomic levels, at least at the younger age groups.

2. *Poverty, life cycle and schooling*

Once having succeeded in achieving sufficient nutrition levels at the f pre-school age, population policy should then seek greater equality in access to schooling. As is seen in two indicators (that of Guatemala, which measures the average level of schooling attained by different age groups and, that of Honduras, which measures the percentage of the population that attends school at different ages), equal opportunity for education is non-existent. For Guatemala, regardless of the region, in all age groups the average schooling reached by children from non-poor households exceeds that from non-indigent poor households and indigent households.[3]

In Guatemala, especially in urban areas, the difference is particularly significant among the 15 to 19 age-group, i.e., starting from secondary school. At this same age the difference in schooling reached by men *vis-à-vis* women also begins to be significant. Consequently, population policy in Guatemala in urban areas should also promote investment in education so that it can succeed in equalizing educational opportunities by socioeconomic level and by sex. In rural Guatemala much lower levels of schooling are attained both by men and women in the different age groups *vis-à-vis* those reached in urban areas. It should be remembered that a high percentage of the total population in both Guatemala and Honduras are still found in rural areas.

Despite low levels of schooling attained by the rural population as a whole, major differences are observed by socioeconomic level. On the other hand, the levels reached by the non-poor population are similar to those at indigent

[3] We recognize that this indicator may be distorted by the effect of age structure within each regional group; however, we do not think that this explains all variations of values observed.

levels in urban areas of Guatemala. Consequently, investment in education for the population of Guatemala should be aimed particularly at the rural areas. This does not mean relying only on educational services for this population, but, to a much greater extent, it means creating conditions so that children may attend school without detriment to the other tasks they carry out as part of the family's survival activities. This is an area to which population policies should pay particular attention. Once again in the rural context there is a marked difference by sex favouring men.

Lastly, in the urban areas of Honduras, the pattern is similar to that shown in Guatemala. Nevertheless, it should be observed that the indicator used in this case is that of school attendance and not level of schooling reached by each age group. The pattern is sufficiently clear to show that in urban Honduras participation in the school system by socioeconomic level is also different. This difference is especially significant at the ages of 15 to 19, when students enter or participate in secondary education. Also, as in Guatemala, there is marked differentiation by sex against women from this level onwards.

3. *Participation in work and life cycle*

a) *The situation of men*

Even with the narrow definitions used to measure work, one sees, particularly in the case of men, an earlier incorporation into the labour force in poor indigent households than in those at other levels. This variable shows totally different behaviour by level for young men in urban areas. Incorporation into work occurs at a much earlier age among male youths at indigent levels than in poor and non-poor levels. This hinders improvement of school attendance rates. The situation is much more widespread at the rural level, where from ages 15 to 19 participation rates reach levels over 80%.

Participation rates in the rural areas of Guatemala are similar for all levels from ages 15 to 19 onwards, where participation rates are already over 80% for all levels. These rates continue in fairly similar fashion up to age 64. At retirement age the rates continue to be much higher than those observed for urban levels.

The conflict between the need to contribute to family income and to attend school is one of the issues which population policy has to tackle.

b) *The situation of women*

The situation of women is very different from that of men. In general, regardless of the region or country, the rate of female participation in non-poor households is higher at an earlier age. This may result from the existence of domestic service in these households, which counts as part of those households. Taking this situation into account, from ages 20 to 24 on-wards and almost throughout the entire length of their life cycle, women's participation rates at non-poor levels are greater than at the other two levels. It should be pointed out that as part of survival strategies of the indigent poor and the non-indigent poor, work carried out by women is not considered to be economic activity as it is measured in surveys. Research by the International Labour Organisation has explored the importance of redefining the concept of work with major changes in measurement (ILO, 1988).

In any case, paid work, which is that used by surveys to measure the rate of participation, is possibly that which permits non-poor households to escape from a situation of poverty by having their women contribute additional income. Once again this behaviour which is common to all regions is much more marked in the rural context.

The implications of women's work for population policy are different than those of men. One should point out the role played by domestic service in the measuring of women's work by socioeconomic level. Given the way in which it has been measured, in this research study there may be a significant distortion in the measuring of these rates by level, since maids are considered as working within the households in which they fulfil their functions. On the other hand, unlike men, women do not show an effectively high rate of participation at the younger ages, which has therefore not prevented them from attending school. One would therefore have to think that, besides educating themselves and working, women engage in other tasks, which are not considered in traditional definitions, but which it is imperative

to understand in order to analyse their use of time. We need to become familiar with all the functions fulfilled by women within households at the different levels. This will undoubtedly shed light on the compatibility of these activities with fertility levels, the propensity to migrate and the aspects which have an influence on family subsistence.

The need to consider the family as a unit in which decisions pertaining to survival strategies are made, including work in the traditional sense, a series of household chores which are not seen as work and family rest, implies that it is not possible to analyse economic participation at these levels as a dichotomous decision between opting for work or rest, but as an option between the three elements mentioned. The way in which participation by the various family members is taken into account in these uses of time provides a basis for analysing the importance of children and household size in this strategy. Reproduction or fertility decisions should be analysed within each context.

4. *Informality and life cycle*

a) *The situation of men*

Informality is measured as the percentage of working persons engaged in lagging sectors of the economy (informal urban sector and traditional rural sector). Using this criterion, a much greater proportion of working members of indigent households is registered in the informal sector than in poor and non-poor households for the four regions and the two countries analysed in table 5. In main urban Guatemala, seven out of every five working members of indigent households participate in the informal urban sector, as compared with only four in non-indigent poor households, and three in non-poor households. A similar pattern occurs in the remaining urban and rural areas of Guatemala, as well as in the main urban areas of Honduras. However, in the other regions, participation in the informal sector by working men from non-indigent poor and non-poor households is similar.

Throughout their life cycle, men's participation in the informal sector is U-shaped. This sector employs a high proportion of male youths. Subsequently, employment drops between the ages of 15 and 49 and again rises at age 50 and over. This pattern is similar for the three regions and two countries as observed in table 5. The informal sector is thus a sector in which generally male youths and to a greater extent elderly persons work. Greater access to modern work by men occurs at their more productive ages (15 to 49).

b) *The situation of women*

The situation of women is quite different regardless of age and socioeconomic level. There is a much greater proportion of working women than men employed in the informal urban and traditional rural sectors. For women from non-poor households these rates are also U-shaped throughout their life cycle. This pattern repeats itself for the main urban areas in Honduras and at the other two levels in Guatemala. However, both in the remaining urban and in the rural area of Guatemala women's participation in informal work is quite irregular compared to that at the other two levels. In any case, in these two areas participation rates in informal work are always over 60% (domestic service included).

Women's activity in the informal sector thus emerges as an important variable for analysing their contribution to the family's and the community's economic activity. Any policy wishing to have an effect on women through their work must necessarily be implemented in the informal urban and traditional rural sectors, especially in the areas that lag the most, i.e., the remaining urban of Guatemala and Honduras and the rural area of Guatemala.

5. *Life cycle and head of household*

This variable does not appear to discriminate significantly either by social level or by region in the case of men. They are the ones who, for the majority, are heads of household, particularly from ages 25 to 49. With the exception of the rural area of Guatemala, no major participation of youths is observed as heads of household. In general, men's participation as heads of household is more than triple that of women in nearly all age groups. However, in main urban areas, the role of head of household among the elderly begins to fall upon older women. No clear pat- tern has been established among women by level or by region.

IV

Conclusions and recommendations

1. *Population and development*

Population policy cannot be devised by falling back upon simplistic mechanisms of fertility regulation. Activities designed to control population should be linked to development efforts and to the impact they might have on the population's standard of living, which will in turn determine the success or failure of population policy. Population and development policy requires that development of the population be comprehensive, with family planning programmes being only one component within a much broader range of development activities.

For their part, the limitations of development possibilities do not lie only in rapid population growth, but also in the political and economic conditions that develop in a country. Within a context of war and strife, it is essential that resources be allocated to both development of the population and the economy as well as to the defence of the nation. In countries where, for various reasons, resources have been limited, economic growth has been slow and there has been little improvement in the standard of living. This has accelerated the already rapid population growth. Thus a vicious circle of poverty is created through its intergenerational transfer, boosted by the demographic increase.

Each country's problems with the exterior are at the centre of their possibilities of reducing population growth. Countries today show declines in terms of trade prices, which impoverishes them *vis-à-vis* the rest of the world, and imposes a series of international economic demands upon them which imply resource transfers abroad instead of affluence to improve development conditions and standard of living. In this sense, the population problems of Central American Isthmus countries should be viewed within both the national and international context.

2. *Population and standard of living*

However, it is not enough to have resources available for accelerating the economic growth of our countries. It is necessary to complement this growth with programmes directed at easing poverty and promoting social development. Various initiatives should be developed in order to succeed in reducing the percentage of families that are below the poverty line. Some important variables on which it is necessary to act are as follows:

a) The implementation of nutritional programmes for new-born babies and children, as well as supplementary nourishment for pregnant and nursing women. This would result in an improved standard of living of this population, a reduction in infant mortality and an increase in children's survival, as well as better health for mothers.

b) Greater attention to school attendance by men and women, regardless of social level and region in which they live, i.e., to improve equal opportunities for education.

c) The organization of men and women to better prepare them for participating in the labour market under equal conditions. Not only is it necessary to highlight the traditional elements of wage improvement and employment, thanks to training and skill-upgrading for working in the modern sector of the economy, but also, to a much greater extent, programmes intended to improve activities such as self-employment, the organization of co-operatives and greater control over economic assets, as well as the generation of employment through work in the informal sector of the economy.

3. *Population and structural heterogeneity*

There is no homogeneity among different regions and socioeconomic levels of Isthmus countries. A preliminary perusal, differentiating between populations in rural, remaining urban

and main urban areas, has shown that the relation between demographic variables and development varies very markedly depending on the context in which they are analysed. Cross-sections by region are significant, but they should also be undertaken by socioeconomic status of the population under study. Data analysed in this study show that, while poorer sections of the population are still found at the preliminary stages of demographic transition, those at more affluent levels are found at an advanced stage. The population problem does not translate into homogeneous parameters throughout the territories of these countries, but rather their averages reflect situations which do not occur at any of the levels being analysed. There are immense variations from one region to another and from one socioeconomic level to another.

In defining population and development policies and actions, a first conclusion which emerges is that family planning measures should be part of a development process and not constitute a programme independent of the process. Consequently, international assistance for population programmes must be related to other development action or programmes for these countries. In order to achieve comprehensive development of the population of Central American Isthmus countries, an in-depth knowledge will be required of development processes, of which population policies are a very important component.

On the other hand, and as a second conclusion, it should be pointed out that population programmes with initiatives intended to modify fertility or mortality rates cannot be applied across-the-board for each country and for all socioeconomic levels. Consequently, it is essential to set targets for population programmes in quantitative terms and above all on the basis of differences in impact that various development and population programmes may have on regional or socioeconomic (and also ethnic) groups.

It is essential to divide each country into homogeneous units in terms of the parameters we wish to modify with our policy, in order to adapt policies and programmes to the specific characteristics of the different areas of the country. Within these areas it is essential to advance in the definition of specific needs of the various socioeconomic groups.

4. *Population and planning*

The specifics of population policy cannot be centrally determined. Governments may help to create awareness and to make resources available to the population, but success will depend in the end, on the private decision of individuals, couples and families regarding number of children. These individual judgements are influenced to a high degree by local community and neighbourhood values, and cannot be forecast by a central agency unless it is aware of the variables which influence the communities in which these people live.

Consequently, the implementation of population and development programmes requires a high degree of decentralization so that their conception and motivation arise more from within the neighbourhood and community than from an official agency removed from the local environment.

In order to achieve decentralization in population and development programme planning, it is essential to organize the community around its own needs. We believe that the concept of standard of living should be one of the areas of greatest interest among institutions which seek decentralized development in planning. Community participation may prove much more fruitful than a paternalistic and centralized model of population programmes. The chances of this effort being comprehensive will help to co-ordinate the various agencies concerned with the same groups at the receiving end. A comprehensive approach will help to improve the efficiency of the solution to these problems and will reduce policy implementation costs.

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