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PART III

AN ANATOMY OF PATTERNS OF INCOME DISTRIBUTION IN DEVELOPING NATIONS

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February 12, 1971

PREFACE

The present grant was awarded in February, 1969 for the purpose of employing quantitative techniques to analyze the sources of inter-country differences in political and economic participation and to make recommendations to AID on the instruments which can be utilized to increase popular participation in the benefits of economic development. The grant was executed under Title IX of the Foreign Assistance Act of 1968 and directed at elucidating some of the concerns of the Congress on the impact of U.S. foreign aid.

The report is organized in three parts. Part I contains the summary, conclusions, and recommendations. Parts II and III present the analytic and empirical results of the investigations into political participation and the distribution of income, respectively. It is upon these studies that the conclusions and recommendations are based.

AN ANATOMY OF PATTERNS OF INCOME DISTRIBUTION IN DEVELOPING NATIONS

by Irma Adelman and Cynthia Taft Morris*

The distribution of income among the individuals and households of a nation is central to its economic welfare. An understanding of the interactions among the inequality of income distribution and economic modernization is therefore essential for the formulation of appropriate development policy. In the more limited context of foreign assistance, it is necessary to ascertain the circumstances under which such assistance actually results in a transfer of income from the poor of the developed nations to the wealthy of the underdeveloped ones.

The present study is an empirical investigation into the sources of intercountry variation in various facets of the distribution of income within developing countries. The analysis is based on data from 44 underdeveloped nations which span the range from predominantly subsistence economies to those rapidly approaching a developed state. It should be made clear at the outset that the technique employed to show the relationship between independent and dependent variables does not establish causation but only association. This does not exclude the possibility of a causal nexus; but empirical work in specified situations would be required to establish it.

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THE TECHNIQUE OF ANALYSIS

Changes in income distribution are brought about by highly complex processes which impinge in a different manner on various strata of the population. In addition, the forces responsible for altering the distribution of income may be expected to interact differently in countries characterized by varying sets of characteristics. For example, where approximately 65% of the population is agricultural, industrialization may shift the distribution of income against the lower 60% of the population and in favor of the upper 20%. On the other hand, in more industrialized countries, policies centered on the development of manufacturing may well shift the income distribution in favor of the middle 40-60% of the population. It would therefore be highly desirable, in the analysis of income distribution, to rely upon statistical techniques which place few restrictions upon the functional forms of the interactions to be studied. In particular, it would be advisable to avoid using a technique of analysis which specifies that interactions among variables must occur linearly within the set of data being studied.

The statistical technique used in the present study is based on an analysis of variance. It employs an assymetrical branching process to subdivide the original sample into a series of subgroups constructed so as to facilitate prediction of the value of the dependent variable with the least error. At each step of the analysis, and for each candidate independent variable, one forms all possible mutually exclusive partitions of the parent group into two subgroups. Each subgroup includes all observations which correspond to particular, usually successive, sets of values of the independent variable. The means of the two subgroups and the variances

of the group means from the grand mean are calculated for each partition. For each variable, that partition is selected which maximizes the fraction of the total variance of the dependent variable accounted for by the means of the subgroups (i.e. which maximizes the sum of the squared deviations of the group means from the grand mean). At each step in the branching process, the results of the above calculation are compared for all the independent variables included in the analysis. That variable is chosen for which the best split accounts for the greatest portion of the overall variance of the dependent variable. The corresponding partition is then actually carried out.

For example, if the independent variable X assumes r distinct values X_r then the parent group is arranged initially so that all observations which have values $X_r \leq X_1$, are in group 1, and all observations which have values $X_2, \ldots, X_r$ are in Group 2. The means of the two subgroups are then calculated as well as the variance from the overall sample mean which is due to the group means (the "regression" sum of squares); this latter variance is equivalent to the variance attributable to (or "explained" by) the partition. Next, the partition which places the values of $X_r \leq X_2$ in Group 1 and the remaining data in the parent group in Group 2, is tried and the same calculations are carried out. The process is then repeated for $X_r \leq X_3$, $X_r \leq X_4$, etc. For each independent variable, that binary partition of the parent group which provides the largest reduction in the unexplained sum of squares (i.e., that partition which maximizes the "regression" or group sum of squares) becomes a candidate for splitting the parent group. The same analysis is carried out for each of the independent variables in turn, and the reduction in the variance provided by

the best partition associated with each independent variable is then compared. At each step of the analysis, that split of the parent group is chosen which maximizes the sum of squares explained by the partition over all possible binary, non-overlapping partitions and over all the independent variables included in the analysis.

Groups are candidates for splits provided that (1) they contain a number of observations greater than $\bar{N}$ (set equal to 10 for our study); and (2) they include at least a specified proportion of the overall variance (this proportion was set equal to 10% for our analysis). Splits which are not statistically significant (by an F test), and splits which produce splinter groups (i.e. which, in our case, contain less than 10% of the observations in the parent group) are disregarded in the present analysis.

If the independent variables are ordinal in nature (i.e., are ranked in either ascending or descending order, so that X_{r+1} is either greater or less than X_r) only those splits are permissable which place all values of X_r which are less than or equal to a certain value, say X_m, in a given group. If an independent variable is only nominal (i.e., is assumed to have no natural order) then the analysis forms the partitions which correspond to all possible combinations of values of X_r taken 2, 3, 4, . . ., r-1 at a time, and selects that partition which performs best. The analysis can therefore accomodate dummy variables, or variables for which the investigator does not wish to specify a ranking.

It is evident from this description that this particular form of analysis of variance is extremely flexible. In spirit, it is akin to a highly non-linear type of stepwise multiple regression analysis. Like

stepwise regression, the present technique finds, at each step, those combinations of values of the independent variables which permit prediction of the value of the dependent variable with least error. However, unlike regression analysis, the branching process used admits of highly non-linear interactions. The variables, interactions, and coefficients which best "explain" a difference of ΔY in the value of the dependent variable can be quite different for high values of the dependent variable from those which are required to account for the same difference at low, or intermediate values of the dependent variable. Furthermore, unlike regression analysis, the independent variables need not be assumed to be uncorrelated with one another. That is, the present statistical technique can accomodate interactions among independent variables. (These interactions, of course, constitute a particular type of non-linearity).

The present technique of analysis is therefore ideally suited to the study of the systematic interactions among a dependent variable on the one hand, and a set of independent variables on the other, when there is reason to believe that the phenomenon to be analyzed affects different parts of the data differently, and when the best principles for stratifying the original sample into subsamples are not known *a priori*. Indeed, this technique of analysis is very well adapted to indicating the best principles for meaningful stratification.

THE DATA AND THE MODEL

THE INDEPENDENT VARIABLES

Most of the theoretical discussion in the literature on income distribution refers to the manner in which functional shares (i.e. shares accruing to the factors of production) are determined. The dominant theory is essentially that the share of each factor is equated to the values of its marginal product. Individuals are hypothesized to possess various quantities of the primary factors of production (land, labor, capital, and entrepreneurship). The establishment of functional shares then *ipso facto* determines the distribution of personal incomes.

Even if such a theory is applicable to developed economies, there are many qualifications which must be introduced in an application to developing countries. Differences in individual wages are often the result of non-market considerations -- norms set by the previous colonial power or a politically powerful traditional elite, and influenced by semi-arbitrary scales for government employees, the social philosophy of the government, minimum wage laws, the degree of often premature unionization, and the role of expatriates. In developing countries these historical and political considerations can be expected to interact with the classical economic considerations in the determination of the distribution of personal incomes.

The extent of concentration of income in underdeveloped nations should therefore depend not only on various aspects of the structure of the economy, the nature of its factor endowments, institutions, and linkages with the rest of the world, but also on the political complexion of the government, the country's colonial heritage, the structure of political power and pressure

mechanisms, and the recentness of independence. Various indices of economic, political and social forces which could on a priori grounds be expected to exert an impact upon the distribution of income were therefore introduced into the analysis as independent variables.

A brief description of the indicators constructed to represent these characteristics is given below; a complete description of the classification schemes employed may be found in Society, Politics, and Economic Development.* Unless otherwise indicated, the variables are treated as ordinal rather than nominal.

Economic Indicators

1. Per Capita GNP (1961). The score which each country is given with respect to this indicator is the value of its per capita GNP in 1961 dollars.

2. Natural Resources. The grouping of countries into categories by natural resource abundance was based upon information regarding the quantity and variety of fuel and nonfuel mineral resources together with data on the amount of agricultural land available per capita.

3. Size of Traditional Agricultural Sector (About 1960). This classification indicates the proportion of the population of less developed countries engaged in traditional subsistence agriculture in which production is largely for self-contained indigenous communities, and marketing of surpluses is of incidental importance. Both modern commercial agriculture and indigenous cash-crop agriculture are excluded.

4. Extent of Dualism (About 1960). This index stratifies countries by the presence and extent of socio-economic and technical dualism. At one pole are the largely agrarian societies having extremely small exchange sectors; at the other pole are countries with continuous interaction between

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* Irma Adelman and Cynthia Taft Morris, Society, Politics, and Economic Development, (Baltimore: Johns Hopkins Press, 1968), Chapter 2.

modern and nonmodern elements. Intermediate are societies in which a for the most part financed and directed modern sector is superimposed upon a predominantly agrarian society and countries in which the growth of an indigenous small-scale cash-crop sector using conventional techniques has evolved at the expense of a traditional subsistence sector.

This variable was treated as a nominal variable in order to allow for the possibility that the association of income distribution with lack of dualism is similar when the economies are very underdeveloped and when they are relatively developed.

5. Level of Modernization of Techniques of Agriculture (About 1961). This indicator is a composite based upon the extent of use of mechanical power, fertilizer, and other modern techniques in agriculture, and the relative weight of traditional and of modern agriculture.

6. Degree of Improvement in Agriculture Productivity Since 1950. This indicator distinguishes among countries by the extent to which they had experienced an increase in output greater than could be accounted for by the additional inputs of the same quality as those prevailing in 1950. Indications concerning the extent of increases in the use of chemical fertilizer, mechanical power, the completion of modern irrigation systems, or extensions in the use of other modern agricultural techniques, provided the basis for this classification.

7. Character of Agricultural Organization (About 1960). This index combines indices of land tenure patterns and the size and viability of farming units. Various types of agrarian structure are viewed as located along a scale, one end of which is represented by communally owned agricultural lands on which the marketing of crops is only of incidental importance, and the other end of which is depicted by commercial agriculture in which owner

operated farms are sufficiently large to be economically viable. Intermediate on the scale are tenant-operated subsistence farms and large owner-absentee commercial farms or plantations.

8. Level of Modernization of Industry (About 1961). This indicator combines three principal elements: the relative importance of domestically directed and financed modern power-driven industrial activities; the modernity of machinery and of organization patterns in the modern industrial sector; and the diversity and range of goods produced in the modern in the modern industrial sector.

9. Change in Degree of Industrialization Since 1950. This index is a composite of three statistical elements: the average rate of change (in constant prices) in industrial output; the increase in the proportion of GNP originating in industry; and the change in the proportion of industrial employment, all over the period 1950-63.

10. Structure of Foreign Trade (About 1960). This variable is a composite measure of the extent to which developing countries have shifted from the export of primary products and raw materials to the export of processed and manufactured commodities and the degree to which these countries have diversified their exports.

11. Size and Pattern of Development (About 1960). This nominal variable groups countries into three categories depending upon their populations and their economic strategy. A similar grouping was found to induce significantly different patterns of industrial growth.* All small (less than 20 million population), primary oriented, countries are in one group; All small manufacturing oriented countries are in another group; all large

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* H. Chenery and L. Taylor, "Development Patterns Among Countries and Over Time." Review of Economics and Statistics, Nov., 1968, Vol. L, No. 4, pp. 391-416.

(more than 20 million population) countries are in a third group. This indicator was found never to enter the analysis.

12. Level of Adequacy of Physical Overhead Capital (About 1961). Countries were grouped into four categories based upon the adequacy of internal transport systems (including roads, rail and waterways) and power networks, in meeting current requirements for economic development.

13. Level of Effectiveness of the Tax System (1961). This indicator is a composite based upon: the proportion of total domestic government revenue to GNP; the ratio of direct tax revenues to total government revenues with, however, special treatment of countries in which a single foreign sector provided almost all direct tax revenues; and the breadth of the tax base and the efficiency of tax collections.

14. Level of Effectiveness of Financial Institutions (About 1961). This variable is abroad composite which combines both the success of financial institutions in attracting private savings and the extent to which they provide medium and long-run credit to the major sectors of the economy.

15. Rate of Improvement in Human Resources (1961). This indicator is based upon the Harbison-Myers composite index of the level of human resource development and is a weighted average of secondary and higher level school enrollment ratios as a percentage of the relevant age group. We interpret this index to refer to the rate of improvement in human resources since it measures the rate of additions to the stock of education (about 1961) rather than the related total stock of education.

16. Population. The score which each country is given with respect to this variable is the size of its population, as of the latest census data, in millions.

17. Level of Socio-Economic Development. This indicator is the factor score on the first factor of a 74-country factor-analysis of the inter-relationship between per capita GNP and 23 social and political variables.*

18. Extent of Potential for Economic Development. This index groups 74 underdeveloped countries into three categories accoring to performance during the 1950-51 to 1963-64 period with respect to raising rates of growth of per capita GNP and to improvements in seven areas of economic institutions and activities.**

Socio-Cultural Indicators

19. Extent of Urbanization (1961). The categories of this index are defined in terms of the proportion of the population living in urban areas containing over 20,000 people.

20. Extent of Literacy (About 1958). This classification groups countries by the percentage of population (aged fifteen and over) which is literate.

21. Importance of the Indigenous Middle Class (About 1960). This classification is based upon the relative size and political importance of indigenous people in middle class occupations in less developed countries Middle class occupations are interpreted to include entrepreneurs, and managerial, technical, administrative, commercial and banking employees.

22. Extent of Social Mobility (About 1960). This classification is based upon a composite measure of several aspects of social mobility, including the extent of racial or cultural barriers to mobility, the extent of educational opportunity, and access to membership in the middle class.

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* Adelman and Morris, op. cit., Chapter 4.

** Irma Adelman and Cynthia T. Morris, "Performance Criteria for Evaluating Economic Development Potential: An Operational Approach," Quarterly Journal of Economics, LXXXII (May, 1968), p. 261.

23. Degree of Cultural and Ethnic Homogeneity (About 1960). This indicator ranks countries into groups differentiated by the proportion of the population which speaks the dominant language. Distinctions within categories are based upon the extent of ethnic and religious heterogeneity.

Political Indicators

24. Extent of Political Participation (1957-1962). This variable is an aggregate of three elements: the extent to which the major socio-economic and cultural-ethnic groups have their interests represented in national political decisions; the extent of choice among political channels for national representation; and the extent of actual participation in national politi al processes.

25. Extent of Direct Government Economic Activity (About 1960). This classification scheme is based upon estimates of the relative weight of direct government economic activity in the economy, judging by the share of government investment in total net investment.

26. Political Strength of the Traditional Elite (1957-1962). This index classifies countries by the extent to which traditional land-owning or other tradition-oriented elites were politically dominant during the period.

27. Strength of the Labor Movement (1957-1962). This indicator is a composite which ranks countries by the extent of political power of labor-unions, by their freedom from political restrictions, by their independence of government influence and the extent of their popular support.

28. Political Strength of the Military (1957-1962). This indicator groups countries into three broad categories determined respectively by a marked, moderate, or negligible military influence in the political arena.

29. Nature of Colonial Experience. This nominal variable classifies countries into three groups, differentiated by whether their colonial experience had been British, Frensh, or other.

30. Recentness of Self-Government. This variable scores countries by the number of years since they have become politically self-governing.

31. Degree of Commitment of Leadership to Promoting Economic Development (1957-62). Three broad categories of leadership commitment were distinguished on the basis of the following judgments: (1) whether the heads of agencies involved in direct or indirect central guidance of the economy typically make concerted efforts to promote the country's economic growth; (2) whether or not this planning effort includes serious attempts to alter the institutional arrangements which clearly block the achievement of planning goals; and (3) whether or not there is a national plan and a planning group functioning within the government which is charged full-time with executing the plan.

THE DEPENDENT VARIABLES

Data on income distribution are notoriously unreliable, even in developed countries. The raw data are usually derived from information supplied by the income receipients themselves; its accuracy is therefore a function of the recall of the respondent, of his perception of the use to which the information will be put, of his veracity about a sensitive subject etc. In a very small number of countries, the income curves are based on information reported on tax returns, which can be regarded as somewhat

more reliable.

Three types of sources were employed in order to construct the income distribution data used in the present study. Budget, income-expenditure, studies which sample different strata of the population; income information compiled from national censuses; and tax returns. In some cases, the results of budget studies referring to particular segments of the population (e.g. only urban or only wage earners) were used in conjunction with data from the National Accounts Statistics and from other sources to construct the overall picture of income distribution. In some cases, the basic information was exceedingly coarse; a finer breakdown into class intervals was achieved by fitting the distributions to similar empirical or theoretical distributions. Whenever the lowest end of the lowest income class was not given, the minimum income was estimated by fitting a Pareto curve to the data. Whenever the average income in the upper class interval was not given, it was estimated by selecting a value which would equate the average per capita (or per household) income estimated from the income distribution to the corresponding value estimated from the national accounts (i.e. to per capita national income).

There were other sources of incompatibility in the basic data. Some of the information for example referred to households, some to individuals, and some to active population. Information on households was preferred because of theoretical considerations. It should be noted however that for a given country the distribution based on active population indicates less concentration than the distribution based on households; the latter, in turn, shows less concentration than data for individuals. Since the

percentage adjustment differs with the nature of the distribution, no adjustment on this score was attempted.

Also, our data refers to various years in the late fifties and sixties; since income distributions do not change very rapidly, this is not, however, a very serious disadvantage. What is more serious is that the extent of detail differs substantially among countries varying from 28 class intervals for Zambia to 5 class intervals for some African and Latin American nations. The more detail provided the greater is the estimate of concentration.

The basic data for the study is summarized in Table 1, together with the sources from which the data is derived. A full bibliography of country sources is included in the appendix together with the country income distributions from which this table is obtained.

Seven different dependent variables were constructed from the data:

(1) The concentration (GINI) coefficient. This index is a measure of the extent of departure of the actual income distribution from a uniform income distribution. It is the ratio of the area between the cummulative income distribution curve and the uniform distribution line to the area of the triangle in which this distr bution is inscribed. This coefficient is the best single index of concentration. It should, however, be noted that it is not an additive measure and is therefore only an ordinal indicator of income inequality. In addition, income distributions with very different properties can have the same concentration ratio. In the analysis of income distributions, one must therefore supplement this index with other indicators.

(2) The income share of the poorest 20% of the population.

(3) The proportion of the total product accruing to the lowest 60% of the population.

(4) The ratio of income of the middle quintile (i.e. of the households 10% below and 10% above the median income households).

(5) The share of total output accruing to the wealthiest 5% of the population.

(6) The percentage of national income accruing to the upper 20% of the population.

(7) An index of the point at which the income distribution shifts its slope from less than unity to greater than unity.* The households before that point are receiving less than their fare share under a uniform distribution; the households after that point are receiving more than their fair share. The more concentrated the distribution, the further to the right will this point be. The analysis with this indicator as dependent variable was not very illuminating and is therefore not discussed in the paper.

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* This point is found by locating the point of tangency on the Lorenz curve of a line parallel to the diagonal (even-distribution) line. The definition in the text assumes the same scale is used to measure percentage points of income and of households.

TABLE 1

SUMMARY OF INCOME DISTRIBUTIONS

COUNTRY	LOWEST 20%		21 - 40%		41 - 60%		61 - 80%		81 - 95%		96 - 100%	
	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income
Argentina[1]	7.00	7.00	10.30	17.30	13.10	30.40	17.60	48.00	22.60	70.60	29.40	100.00
Bolivia[2]	4.00	4.00	13.70	17.70	8.90	26.60	14.30	40.90	23.40	64.30	35.70	100.00
Brazil[3]	3.50	3.50	9.00	12.50	10.20	22.70	15.80	38.50	23.10	61.60	38.40	100.00
Burma[4]	10.00	10.00	13.00	23.00	13.00	36.00	15.50	51.50	20.29	71.79	28.21	100.00
Ceylon[5]	4.45	4.45	9.21	13.66	13.81	27.47	20.22	47.69	33.93	81.62	18.38	100.00
Chad[6]	12.00	12.00	11.00	23.00	12.00	35.00	22.00	57.00	20.00	77.00	23.00	100.00
Chile[7]	5.40	5.40	9.60	15.00	12.00	27.00	20.70	47.70	29.70	77.40	22.60	100.00
Taiwan[8]	4.50	4.50	9.70	14.20	14.80	29.00	19.00	48.00	27.90	75.90	24.10	100.00
Colombia[9]	2.21	2.21	4.70	6.91	8.97	15.88	16.06	31.94	27.70	59.64	40.36	100.00
Costa Rica[10]	6.00	6.00	7.30	13.30	12.10	25.40	14.00	40.00	25.00	65.00	35.00	100.00
Dahomey[11]	8.00	8.00	10.00	18.00	12.00	30.00	20.00	50.00	18.00	68.00	32.00	100.00
Ecuador[12]	6.30	6.30	10.60	16.50	26.10	42.60	15.60	58.20	20.30	78.50	21.50	100.00
El Salvador[13]	5.50	5.50	6.70	12.20	11.30	23.50	15.10	38.60	28.40	67.00	33.00	100.00
Gabon[14]	2.00	2.00	6.00	8.00	7.00	15.00	14.00	29.00	24.00	53.00	47.00	100.00
Greece[15]	9.00	9.00	12.80	21.80	12.30	34.10	16.40	50.50	26.50	77.00	23.00	100.00
India[16]	8.00	8.00	12.00	20.00	16.00	36.00	22.00	58.00	34.00	92.00	8.00	100.00
Iraq[17]	2.00	2.00	6.00	8.00	8.00	16.00	16.00	32.00	34.00	66.00	34.00	100.00
Israel[18]	6.80	6.80	13.40	20.20	18.60	38.80	21.80	60.60	28.20	88.80	11.20	100.00

COUNTRY	LOWEST 20%		21 - 40%		41 - 60%		61 - 80%		81 - 95%		96 - 100%	
	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income
Ivory Coast[19]	8.00	8.00	10.00	18.00	12.00	30.00	15.00	45.00	26.00	71.00	29.00	100.00
Jamaica[20]	2.20	2.20	6.00	8.20	10.80	19.00	19.50	38.50	30.30	68.80	31.20	100.00
Japan[21]	4.70	4.70	10.60	15.30	15.80	31.10	22.90	54.00	31.20	85.20	14.80	100.00
Kenya[22]	7.00	7.00	7.00	14.00	7.00	21.00	15.00	36.00	41.80	77.80	22.20	100.00
Lebanon[23]	3.00	3.00	4.20	7.20	15.80	23.00	16.00	39.00	27.00	66.00	34.00	100.00
Lybia[24]	0.11	0.11	0.39	0.50	1.28	1.78	8.72	10.50	43.10	53.60	46.40	100.00
Madagascar[25]	7.00	7.00	7.00	14.00	9.00	23.00	18.00	41.00	22.00	63.00	37.00	100.00
Mexico[26]	3.66	3.66	6.84	10.50	11.25	21.75	20.21	41.96	29.52	71.48	28.52	100.00
Morocco[27]	7.10	7.10	7.40	14.50	7.70	22.20	12.40	34.60	44.50	79.10	20.60	100.00
Niger[28]	12.00	12.00	11.00	23.00	12.00	35.00	23.00	58.00	19.00	77.00	23.00	100.00
Nigeria[29]	7.00	7.00	7.00	14.00	9.00	23.00	16.10	39.10	22.50	61.62	38.38	100.00
Pakistan[30]	6.50	6.50	11.00	17.50	15.50	33.00	22.00	55.00	25.00	80.00	20.00	100.00
Panama[31]	4.90	4.90	9.40	14.30	13.80	28.10	15.20	43.30	22.20	65.50	34.50	100.00
Peru[32]	4.04	4.04	4.86	8.90	8.30	17.20	15.20	32.40	19.30	51.70	48.30	100.00
Philippines[33]	4.30	4.30	8.40	12.70	12.00	24.70	19.50	44.20	28.30	72.50	27.50	100.00
N. Rhodesia[34] (Zambia)	6.27	6.27	9.55	15.82	11.10	26.95	15.95	42.90	19.60	62.50	37.50	100.00
Rhodesia[35]	4.00	4.00	8.00	12.00	8.00	20.00	15.00	35.00	5.00	40.00	60.00	100.00
Senegal[36]	3.00	3.00	7.00	10.00	10.00	20.00	16.00	36.00	28.00	64.00	36.00	100.00

COUNTRY	LOWEST 20%		21 - 40%		41 - 60%		61 - 80%		81 - 95%		96 - 100%	
	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income
Sierra Leone[37]	3.80	3.80	6.30	10.10	9.10	19.20	16.70	35.90	30.30	66.20	33.80	100.00
South Africa[38]	1.94	1.94	4.17	6.11	10.16	16.27	26.37	42.64	17.98	60.62	39.38	100.00
Sudan[39]	5.60	5.60	9.40	15.00	14.30	29.30	22.60	51.90	31.00	82.90	17.10	100.00
Surinam[40]	10.70	10.70	11.56	22.26	14.74	37.00	20.60	57.60	27.00	84.60	15.40	100.00
Tanzania[41]	9.75	9.75	9.75	19.50	9.85	29.25	9.75	39.00	18.10	57.10	42.90	100.00
Trinidad and Tobago[42]	3.60	3.60	5.76	9.36	9.16	18.52	24.48	43.00	30.40	73.40	26.60	100.00
Tunisia[43]	4.97	4.97	5.65	10.62	9.95	20.57	14.43	35.00	42.56	77.56	22.44	100.00
Venezuela[44]	4.40	4.40	9.00	13.40	16.60	30.00	22.90	52.90	23.90	76.80	23.20	100.00

SOURCES - TABLE 1

[1]Argentina households (1961): United Nations Publication, "Economic Development and Income Distribution in Argentina," Economic Commission for Latin America, United Nations, E/CN.12/802, (New York: 1969).

[2]Bolivia households (1968): National Secretariat of Planning, Prepared for AID by Mr. Folando Sanz-Guerrero.

[3]Brazil population (1960): United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three."

[4]Burma households (1958): Central Statistical and Economics Department, Government of the Union of Burma, "Report on the 1958 Survey of Household Expenditure in Rangoon," (adjusted on the basis of National Account Statistics to reflect the distribution of rural income).

[5]Ceylon population (1963): Survey of Ceylon's Consumer Finances 1963, Central Bank of Ceylon, Department of Economic Research, (Colombo, 1964) p. 66.

[6]Chad population (1958): Christian Morrisson, La Repartition Des Revenus Dans Les Pays Du Tiers-Monde, Editions Cujas, (Paris, 1969), pp. 194, 203

[7]Chile households (1968): United Nations, Economic Commission for Latin America, . . . loc. cit.

[8]Taiwan households (1961): Prof. Kowie Chang, "Report on Pilot Study of Personal Income (and Consumption) in Taiwan," (prepared under the sponsorship of Working Group of National Income Statistics Directorate - General of Budget, Account and Statistics, The Executive Yuan).

[9]Colombia households (1964): United Nations, Economic Commission for Latin America, . . . loc. cit.

[10]Costa Rica households (1969): ibid.

[11]Dahomey population (1959): Christian Morrisson, . . . op. cit., p. 194.

[12]Ecuador population (1968): National Development Plan, 1964-73, Alianza Para El Progresso, Evaluacion del Plan General de Desarollo Economico y Social del Ecuador, (August, 1964).

[13]El Salvador households (1968): United Nations, Economic Commission for Latin America, . . . loc. cit.

[14]Gabon population (1960): Christian Morrisson.

[15]Greece population (1957): Jean Crockett, "Consumer Expenditures and Incomes in Greece," University of Pennsylvania and Center of Planning and Economic Research, (Athens, 1967).

[16]India households (1956-57): P.D. Ojna and V.V. Bhatr, "Patterns of Income Distribution in an Underdeveloped Economy: A Case Study of India," American Economic Review, (September, 1964), p. 714.

[17]Iraq population (1956): Christian Morrisson, . . . loc. cit.

[18]Israel population (1957): Haim Ben-Shahar and Moshe Sandberg, "Economic and Institutional Effects on Income Distribution: The Case of Israel," Public Finance, Vol. XXII, No. 3, 1967, p. 244.

[19]Ivory Coast population (1959): Christian Morrisson, . . . loc. cit.

[20]Jamaica households (1958): A. Ahiram, "Income Distribution in Jamaica, 1958," Social and Economic Studies, Vol. 13, No. 3, (Jamaica: Institute of Social and Economic Research, University of the West Indies, September, 1964), p. 337.

[21]Japan households (1962): Tadao Ishizaki, "The Income Distribution in Japan," The Developing Economies, Vol. 5, No. 2, (June 1967), p. 356.

[22]Kenya population (1961-62): Estimated by amalgamating data from the following sources with U.N. National Account Statistics data on subsistence income and on functional shares: Priyatosh Maitra, "Implications of Income Distribution for Economic Development: East Africa a Case Study," Economic Affairs, Vol. XIII, Nos. 1-2, (January-February, 1968), p. 87.
Government of Kenya, Economics and Statistics Division, Ministry of Finance and Economic Planning, "Reported Employment and Earnings in Kenya 1962."
Christian Morrisson,. . . loc. cit.

[23]Lebanon households (1955-60): Christian Morrisson, . . . loc. cit.

[24]Libya households (1962): Sami W. Dajani, "Family Budget Survey in Tripoli Town 1962," (Tripoli: United Kingdom of Libya, Ministry of National Economy Central Statistics Office).
"Yearbook of National Accounts," (United Nations, 1968), p. 410.
"Compendium of Social Statistics," Series K., No. 2, (United Nations, 1963).

[25]Madagascar households (1960): Christian Morrisson, . . . op.cit., pp. 159, 204.

[26]Mexico households (1963): United Nations, Economic Commission for Latin America, . . . loc. cit.

[27]Morocco population (1965): Abderrazak Lazraq, "Les Salaires dans La Revenue National de 1955 a 1966," Bulletin Economique et Social du Maroc, Vol. XXIX, Nos. 106-107, (Juillet-Decembre, 1967).

[28]Niger population (1960): Christian Morrisson, . . . op. cit., pp. 194, 204.

[29]Nigeria population (1959): Jean Marchal and Bernard Ducros, The Distribution of National Income, (New York: St. Martin's Press, 1968), p. 405.

[30]Pakistan households (1963-64): Dehjom, "Personal Income Distribution and Personal Savings in Pakistan, 1963-64," Pakistan Development Review, (Summer, 1967).

[31]Panama households (1969): United Nations, Economic Commission for Latin America, . . . loc. cit.

[32]Peru population (1961): David Cha, "Income Distribution, 1961," Instituto Nacional de Planificacion, private communication.

[33]Philippines population (1961): Eustaquio O. Ordono, "The Pattern of Post-War Income Distribution in the Philippines," Economic Research Journal, Volume XI, No. 3, (December, 1964), p. 144.

[34]Northern Rhodesia - Zambia households (1959): Robert E. Baldwin, "Economic Development and Export Growth, A Study of Northern Rhodesia, 1920-1960," (Berkeley and Los Angeles: University of California Press, 1966), p. 46.

[35]Rhodesia population (1946): Christian Morrisson, . . . loc. cit.

[36]Senegal population (1960): ibid.

[37]Sierra Leone households (1968): Sierra Leone Household Survey, Africa Research Bulletin, (Feb. 14, 1968), p. 917.

[38]South Africa population (1965): Republic of South Africa, Bureau of Statistics, "Report No. 11-06-03, Survey of Family Expenditure, Ten Principal Urban Areas and the Urban Areas of the Vaal Triangle and the Orange Free State Gold Fields, November, 1966, Family Income."

G.R. Feldmann-Laschin, F.E. Radel, and C. De Coning, "Income and Expenditure Patterns of Coloured Households Cape Peninsula," (Pretoria: Bureau of Market Research, University of South Africa, 1965).

United Nations, Yearbook of National Accounts Statistics, (various years).

United Nations, Demographic Yearbook, (various years).

[39] Sudan households (1969): "Omdurman Household Budget Survey," Republic of the Sudan, Department of Statistics, p. 24.

[40] Surinam population (1962): "Surinam in Figures, No. 44," Algemeen Voor de Statistiek, (March, 1967), p. 3).

[41] Tanzania population (1964): Maitra Priyatosh, . . . op. cit., pp. 96-97. Hadley E. Smith, "Readings on Economic Development and Administration in Tanzania," IPA, Dar Es Salaam, N. 4, Table 1.

[42] Trinidad and Tobago population (1965): Nugent Miller, "Some Observations on the Income Distribution of Trinidad and Tobago," Income Earnings of Individuals by Sex IN 1-1, Continuous Sample Survey of Population - Publication No. 6, p. ix, p. 1 (urban paid employees).

[43] Tunisia population (1971): Ghazi Duwaji, " Economic Development in Tunisia," (New York: Frederick A. Praeger, New York), p. 189, figures are projected.

[44] Venezuela households (1962): United Nations, Economic and Social Council, "Economic Survey of Latin America, 1969, Part Three, Special Studies," (March 20, 1970), E/CN.12/AC. 62/2 Add. 2.

STATISTICAL RESULTS

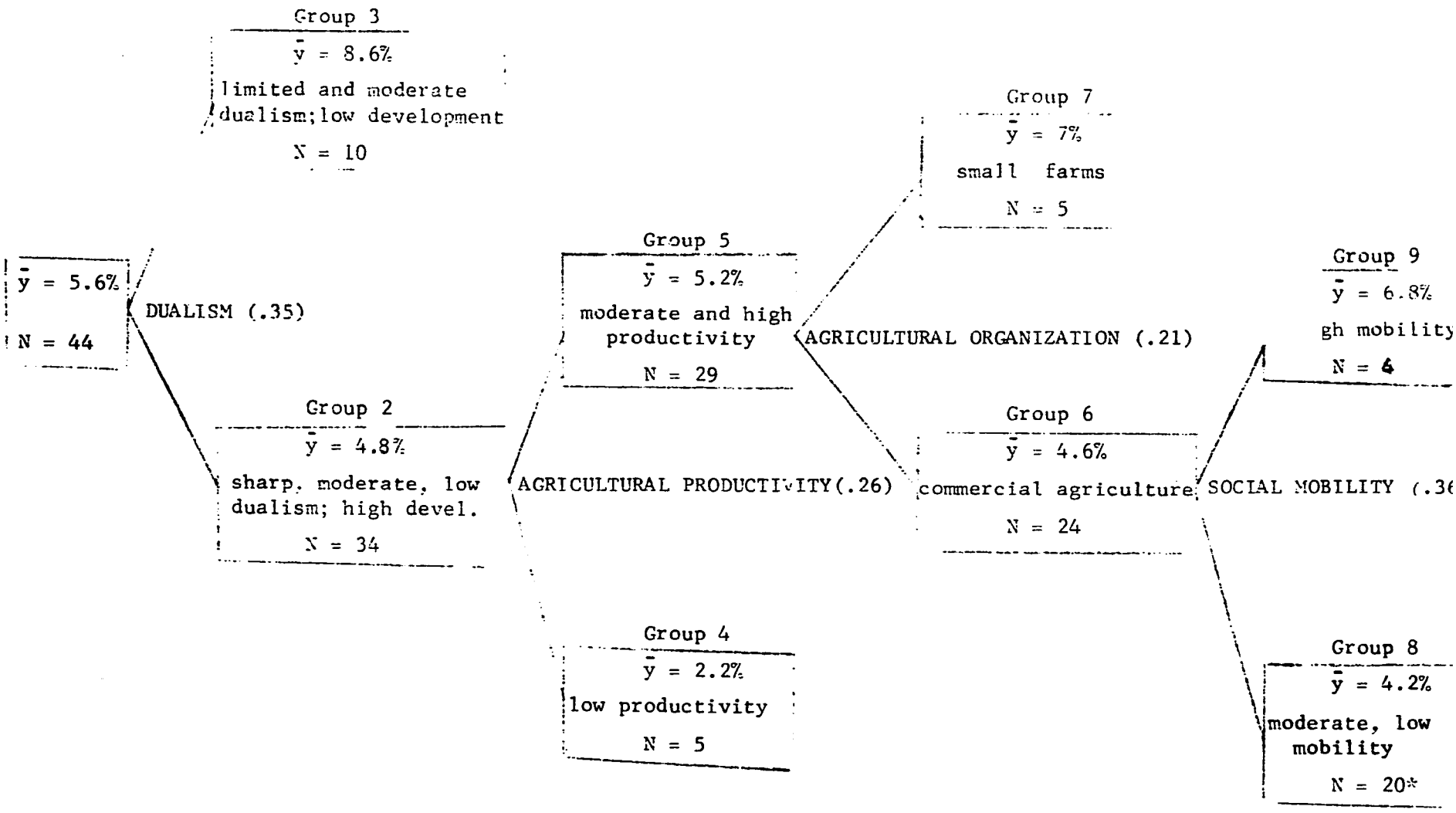
THE SHARE OF INCOME ACCRUING TO THE LOWEST 20% OF THE POPULATION

The present section is devoted to a discussion of the forces affecting the distribution of income at the lowest end of the income scale. The average share of GNP accruing to the poorest 20% in the countries in our sample is 5.6%. This income group thus receives, on the average, about one-fourth of what it would receive had income been distributed completely uniformly throughout the population.

To facilitate interpretation of the results, the analysis is summarized graphically. For each step in the branching, the variable which distinguishes among groups is listed on the chart. The percentage of the variance accounted for by the split is indicated in parenthesis next to the name of the variable. For every split, the characteristics of each group are summarized in a box on the chart. The mean of the dependent variable (represented by $\bar{y}$ = . . .) and, the number of observations (N = . . .) are listed in the box. A characterization of the values of the independent variable included in the group is also given.

The analysis (see Diagram 1) indicates that the most important association of the share of income accruing to the lowest income group is with the extent of socio-economic dualism. Differences in dualism account for 35% of the variance in the portion of income accruing to the poorest 20% of the population. Next in importance in explaining, the gross differences among countries in the portion of the total product flowing to the poorest 20% of households is the level of modernization of industry (26% of the overall variance). Countries in which there is little industrial development allocate a <u>larger</u> portion of their income to their poorest households. The analysis thus suggests that industrialization works to the relative disadvantage of the very poor.

Figure The Share of Income of the Poorest 20% of the Population



*This group is not split further because it contains less than 10% of the total variance.

Countries in Which a Relatively Large Share of NNP Accrues to the Lowest 20% of Households

In the first split, the countries are divided intwo two groups according to the extent of cleavage between their modern and traditional sectors. The top group (Group 3) in which, on the average, the lowest 20% of households gets 8.6% of national income is comprised of: Bolivia, Burma, Chad, Dahomey, Ivory Coast, Kenya, Malagasy, Niger, Nigeria and Surinam. This group includes: (1) countries not characterized by significant dualism because of their extremely limited economic development (Chad, Dahomey, Malagasy, Niger); (2) two countries (Bolivia and Burma) in which there is a sharp contrast in technology and in styles of life between the moretized and the traditional sectors, and in which the traditional subsistence sector comprises approximately 80% of the population; and (3) four countries (Ivory Coast, Kenya, Niger, and Surinam) which have a large traditional sector intermingled with an agricultural sector, consisting of commercial owner operated farms which are large enough to be economically viable. All countries in this group have over 75% of their population engaged in agriculture. With the exception of Bolivia, their industrial sectors are, at best, producing a limited number of commodities in small scale factories; modern, large-scale technology is confined to foreign financed and foreign managed industry. With the exception of Kenya, the countries in this group are all exporting primarily agricultural products. In addition, all countries in this group are at most intermediate in the extent of their development potential.

Countries in Which a Relatively Small Share of NNP Accrues to the Lowest 20% of Households

Group 2, the lower of the two groups in the first split, contains 34 countries in which, on the average, the lowest 20% of the population captures only 4.8% of national income. This is roughly half the share of income accruing to the lowest 20% in the top group. This group of countries which branches off from the top group on the basis of the extent of dualism consists of several distinct types: (1) countries in which there is significant modernization of methods of production in almost all sectors of the economy (Argentina, Chile, Taiwan, Greece, Israel, Jamaica, Japan, Lebanon, South Africa, and Trinidad); (2) countries with important modern industrial, mining or agricultural sectors existing side by side with a large, traditional non-monetized agricultural sector (Brazil, Ceylon, Colombia, Costa Rica, Ecuador, El Salvador, India, Mexico, Pakistan, Panama, Philippines, Rhodesia and Venezuela); and (3) countries in which there is a sharp geographic or sectoral cleavage between their modern and their traditional sectors (Gabon, Iraq, Libya, Morocco, Peru, Senegal, Sierra Leone, Sudan, Tanzania, Tunisia and Zambia). This last group includes a set of countries (Gabon, Iraq, Libya, Sierra Leone, Zambia) with important mineral resources exploited largely under foreign franchise.

In the next split, five of this last set of countries (Gabon, Iraq, Libya, Senegal and Sierra Leone) separate from Group 2, using the level of agricultural productivity as a differentiator.* The countries in this

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* There are no other variables which perform as well as agricultural productivity (26% of variance) in reducing variance in this split.

group (Group 4) are all characterized by extremely low agricultural productivity. In addition, they are sharply dualistic, with a modern economy based upon the foreign managed and financed exploitation of a rich mineral resource. As might be expected, in this group of countries, the lowest 20% of the population is extremely poor, receiving, on the average, only 2.2% of national income. This percentage is one-tenth of what this group would receive were the distribution of income completely uniform.

The remaining countries in Group 2 are relegated to Group 5. This group has an average of 5.2% of income accruing to the poorest 20%. But it is still rather heterogeneous, combining a set of non-dualistic, well developed countries, with countries which are at an intermediate level of development. The range of agricultural productivity included in this group is still quite substantial, even though the great majority of the countries in this group has a relatively important monetized agricultural sector in which there is some significant use of modern techniques.

As might be expected, most of the lower productivity countries in Group 5 branch off into a separate group, Group 7, in the next step of the analysis. This group consists of Ecuador, India, Morocco, Pakistan and Tanzania. It is characterized by the predominance of small owner-operated subsistence farms in which the marketing of surpluses is either only of incidental importance, or in which the size of the farming unit is too small to be economically viable. In the countries in this set, an average of 7% of the total produce accrues to the poorest 20%.

The remaining group of 24 countries combined in Group 6 now consists of Argentina, Brazil, Ceylon, Chile, Taiwan, Colombia, Costa Rica, El Salvador, Greece, Israel, Jamaica, Japan, Lebanon, Mexico, Panama, Peru,

Philippines, Zambia, Rhodesia, South Africa, Sudan, Trinidad, Tunisia and Venezuela. In this group, the lowest 20% of the population receives, on the average, only 4.6% of national income. All the countries in this group have relatively important commercial agriculture, in which there is some significant use of modern technology; traditional subsistence agriculture absorbs less than 55% of their total populations. In terms of land tenure this group consists of (1) countries characterized by the predominance of commercial owner operated farms large enough to be economically viable (Costa Rica, Greece, Israel, Jamaica, Japan, Lebanon, Mexico, South Africa, Taiwan and Trinidad); (2) countries characterized by the predominance of large absentee-owner commercial farms or plantations, (Argentina, Brazil, Colombia, El Salvador, Peru, and Venezuela); and (3) countries characterized by the predominance of small owner-operated farms in which the marketing of surpluses is of incidental importance but in which there is also an important segment of small owner-operated (indigenous or expatriate) farms large enough to be economically viable (Ceylon, Panama, Philippines, Zambia, Rhodesia, Sudan, and Tunisia).

Groups 6 and 7 are distinguished from one another by reference to type of land tenure; this variable accounts for 21% of remaining differences in the income share accruing to the lowest 20%. Of secondary importance in distinguishing among the countries in this split is the level of socio-economic development (18% of variance). Among the only moderately dualistic countries remaining in Group 5, the higher the level of socio-economic development, the larger is the share of the poorest segments of the population.

Group 6, is capable of one further split. The extent of social mobility, accounting for 36% of variance, is the variable distinguishing among groups. Of lesser importance in differentiating among countries in this split are the degree of ethnic homogeneity (32%), the rate of improvement in human resources (31%), the level of socio-economic development (21%), the extent of political participation (23%), and the literacy rate (21%). The relationship between the variables describing the extent of economic and social modernization and the share of the poorest 20% is U-shaped. The share is larger at both extremes and reaches a minimum only at very high levels of socio-economic development (for underdeveloped countries): literacy rates of at least 65%, a minimum of 65% of school age children in primary school and of 25% of the relevant age group in secondary school; and levels of socio-economic development exceeding that of Chile. The relationship between the extent of political participation and the share of the least privileged is monotonic; the more widespread participation, the larger is the share.

The top group (Group 9) contains the four most developed countries in the sample: Argentina, Greece, Israel, and Japan. The average share of the poorest 20% is 6.8% in this group of well developed nations.

The bottom group, Group 8, consists of countries in which (except for Peru) at least 70% of the population speaks the dominant language. In this set of countries, which are, on the average, less developed than those of the complementary group, the part of the least privileged 20% is, on the average, 4.2%.

Conclusions

The important characteristics which distinguish among countries with respect to the share of income accruing to the poorest 20% of households are the extent of dualism as well as various aspects of foreign trade and agricultural policy. The relationship between the share of income devoted to the lowest 20% and economic development varies with the level of development. Economic development is associated with increases in the share of the bottom 20% only after relatively high levels of socio-economic development have been attained. At the early stages of the development process, economic development works to the relative disadvantage of the lowest income groups.

The countries in which the highest share of national income accrues to the bottom 20% of the population (8.6%) are characterized by at most moderate degrees of dualism, by the pursuit of agriculturally oriented foreign trade policies, and (except for Kenya) by agriculturally oriented development patterns. They are also, at best, at the lowest end of the intermediate scale in the extent of their socio-economic development and in the extent of their development potential.

The countries in which the smallest portion of national income accrues to the lowest 20% (2%) are likewise rather underdeveloped. In addition, however, they are characterized by sharp dualism; and have economies centered on the foreign-financed and foreign-managed exploitation of natural resources.

Between these extremes there are three types of countries in which approximately the same share of national income (7%) is channeled to the

lowest 20% of their respective populations: (1) countries with small owner operated farms devoted mostly to subsistence agriculture and of only moderate agricultural productivity (Group 7); and (2) the best developed countries in the group which are ethnically and culturally homogeneous and have highly productive, modern, commercial agricultural sectors.

The great majority of countries are all devoting approximately 4 - 5 % of national income to the lowest 20% of households. The countries in the relevant groups have at least moderate (but not extremely high) development potential. They are for the most part not sharply dualistic;* most** have at least 10% of their indigenous active male population in middle class occupations; they have at most 50% of their populations in subsistence agriculture, at least moderate agricultural productivities, and important commercial farming.

The entire analysis has an F ratio of 11.8, which is equivalent to an R^2 (adjusted for degrees of freedom) of .56.

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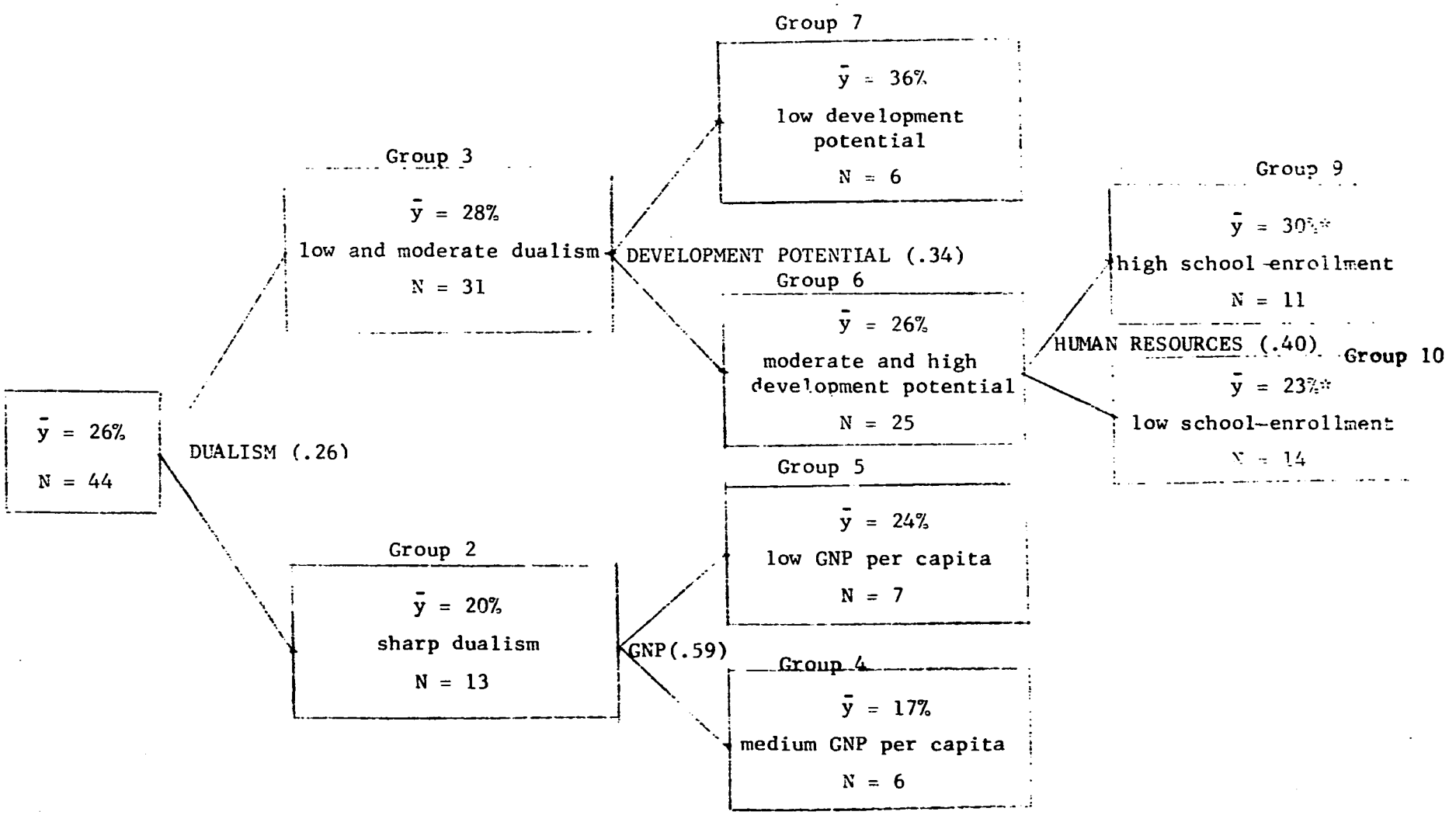
* The exceptions to this are Peru, Zambia, Sudan and Tunisia.

** The exceptions to this are Zambia, Rhodesia, South Africa, and Sudan.

Figure 2. Analysis of Share of Income of the Poorest 60% of the Population



*This group is not split further because it contains less than 10% of the total variance.

THE SHARE OF INCOME ACCRUING TO THE LOWEST 60% OF THE POPULATION

On the average, over the entire group of 44 countries, the lowest 60% of the population receives 25% of national income. This is roughly 40% of the share this portion of the population would have had were income evenly distributed throughout the economy. The standard deviation of the share is 7.7%; the range is from 2% (Libya) to 39% (for Israel).

The first split divides the entire group of 44 countries into two subgroups (Groups 2 and 3) according to the extent of their dualism. (See Figure 2.) Differences in dualism "explain" 26% of the variance in the share of income of the lowest 60%. The only other variable which distinguishes well among all countries in our sample with respect to the portion of income of the lowest 60% is the extent of government participation in economic activity (24%). In countries with extensive government role in the economy, the share of the lowest 60% is higher; it averages 31% in countries which have nationalized important segments of their industry.

Low Share of NNP to the Lowest 60%

The group in which the bottom 60% of the population gets least (Group 2) consists of: Gabon, Iraq, Libya, Malagasy, Morocco, Peru, Zambia, Senegal, Sierra Leone, South Africa, Sudan, Tanzania, and Tunisia. In terms of dualism, the countries in this group are all characterized by a sharp sectoral or geographic cleavage between an important* exchange sector and

*Malagasy is, to some extent, an exception to this statement since it has an extremely small modern sector.

a predominant, traditional non-monetized sector. In this latter sector, traditional patterns of economic and social organization remain relatively untouched by the activities of the monetized sector despite intermittent flows of labor into the modern economy.

Except for Sudan, the countries in this group are all rich in natural resources, but they have attained at best moderate levels of socio-economic development and have at best moderate development potential. The nations in this group are all small; all have school enrollment ratios of less than 40%; and middle class occupations account for less than 10% of total employment. Handicraft production is still more important than modern techniques in the manufacture of their domestic consumer goods.* With the exception of South Africa, their GNP in 1960 did not exceed $200 per head.

This group, which is characterized by sharp dualism, at most moderate development, and a low share of GNP to the lowest 60%, is subdivided further into Groups 4 and 5, using GNP per capita as a differentiator. Differences in per capita GNP account for 60% of the variance remaining in Group 2. Next in ability to distinguish among countries with respect to the share of the lowest 60% are: the level of socio-economic development (59%), the rate of improvement of human resources (40%), and the rate of growth of per capita GNP (34%). On the average, the higher the level of socio-economic development, and the higher th school enrollment ratios, the larger the portion accruing to the lower 60% of households. The trend is not uniform, however; the highly underdeveloped countries, with virtually no modern sectors have as large a share of GNP allocated to their poorer 60% as the most developed

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*The exception to this statement is South Africa.

nations in the sample The lower the rate of growth of per capita GNP, the higher the share of the lower 60%. In sharply dualistic countries, the analysis therefore suggests that economic dynamism works to the relative disadvantage of the lower income groups. In these sharply dualistic economies, the type of economic opportunities which income growth opens up are not such as to provide relatively greater possibilities for the participation of the indigenous people in the opportunities opened up by economic expansion.*

The group in which, on the average, the share of national income of the bottom 60% is higher (24%) has a lower per capita GNP than other groups. This group (Group 5) is comprised of: Malagasy, Morocco, Zambia, Sierra Leone, Sudan, Tanzania, Tunisia. The countries in this group all had per capita incomes below $170 in 1960. They all were predominantly agricultural; had at least 35% of their adult populations literate; were, except for Sudan, at least moderately endowed with natural resources; and had low potential for further economic development.

Group 4, in which the share of income of the lowest 60% is, on the average, 17%, had a GNP per capita which, in 1960, ranged from $175 to $430. This group is composed of Gabon, Iraq, Peru, Senegal, and South Africa -- a set of resource rich countries in which expatriates or traditional elites appropriate most of the economic benefits.

High Share of GNP to the Lowest 60%

Group 3, which branched off from the original group of 44 nations, contains two distinctly different types of countries: (1) countries which are not dualistic because they have virtually no modern sectors (Chad, Dahomey and Niger), and (2) countries which despite sectoral or geographic cleavages between their modern and traditional sectors are characterized by some intermingling of modern and traditional technology, and by the absence of very sharp contrasts in style of life among their modern and

* This point is made by S. M. Komorovsky: "Development for Whom" A Preliminary Inquiry into African Realities" Economic Commission for Africa (June 1970), (Mimeographed).

traditional sectors.* The countries are: Argentina, Brazil. Ceylon, Chile, Colombia, Costa Rica, Ecuador, Salvador, Greece, India, Israel, Ivory Coast, Jamaica, Japan, Kenya, Lebanon, Mexico, Pakistan, Panama, Philippines, Rhodesia, Surinam, Taiwan, Trinidad and Venezuela.

Not surprisingly, in the next split, all the countries of the first type are removed from Group 3 and combined with three other countries to form Group 7.** The countries in Group 7, all have low potential for economic development and have shares of GNP accruing to the lowest 60% above 30%. These countries also have industrial sectors in which only a limited number of goods are produced in small-scale factories, and in which whatever large-scale modern production exists is foreign financed and managed. The agricultural productivity of countries in this group did not improve significantly between 1950 and 1963. Their exports are primary products, and are not diversified.

Group 6, contains 25 countries of moderate and high development potential. The countries in this group are characterized by low and moderate dualism by virtue of having attained higher levels of development. On the average in this group the share in the total product of the lowest 60% is only 26%. Differences in development potential "explain" 34% of the variance in NNP share remaining in Group 3. No other variables differentiate as well among the countries in this group.

In the next step of the analysis the 25 countries in Group 6 separate into two sets, according to their rate of improvement in human resources (40% of variance). There are two other variables which "explain" 30% of the remaining variance: the degree of development potential, and the extent of social mobility. In the less dualistic countries, the higher the levels of

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* There are also two countries in Group 3 (Bolivia and Burma) which are sharply dualistic, but in which the share of GNP of the lowest 60% is more akin to that of Group 3 than of Group 2. In these countries there was an unusual extent of direct government economic enterprise.

** The nations in this group are: Burma, Chad, Dahomey, Ecuador, Niger and Surinam.

economic and social development, the larger is the share of the lower income households.

Group 8, the low rate of improvement in human resources group, has a mean of 23% of national income in the hands of the lower 60% of households. The countries in this group are: Bolivia, Brazil, Ceylon, Colombia, El Salvador, Ivory Coast, Jamaica, Kenya, Lebanon, Mexico, Nigeria, Pakistan, Rhodesia and Trinidad. Most of the countries included in this group are intermediate in their levels of socio-economic development.* The great majority of countries involved in this group are moderately dualistic.** Only four countries contained in this set have high development potential (Brazil, Jamaica, Mexico, and Trinidad); the rest are intermediate.

By contrast, with the exception of India and the Philippines, the countries in Group 9 are economically and socially the most developed in our sample This group contains: Argentina, Chile, Costa Rica, Greece, India, Israel, Japan, Panama, Philippines and Venezuela. In this group, the share of national income of the lowest 60% is on the average 30%, and at least 25% of secondary school age children are in school.

Conclusion

The allocation of income to the poorest 60% of the population is related to both the extent of dualism and the level of modernization. The share of the national product accruing to the poorer 60% of households is high under two distinctly different sets of circumstances: reasonably

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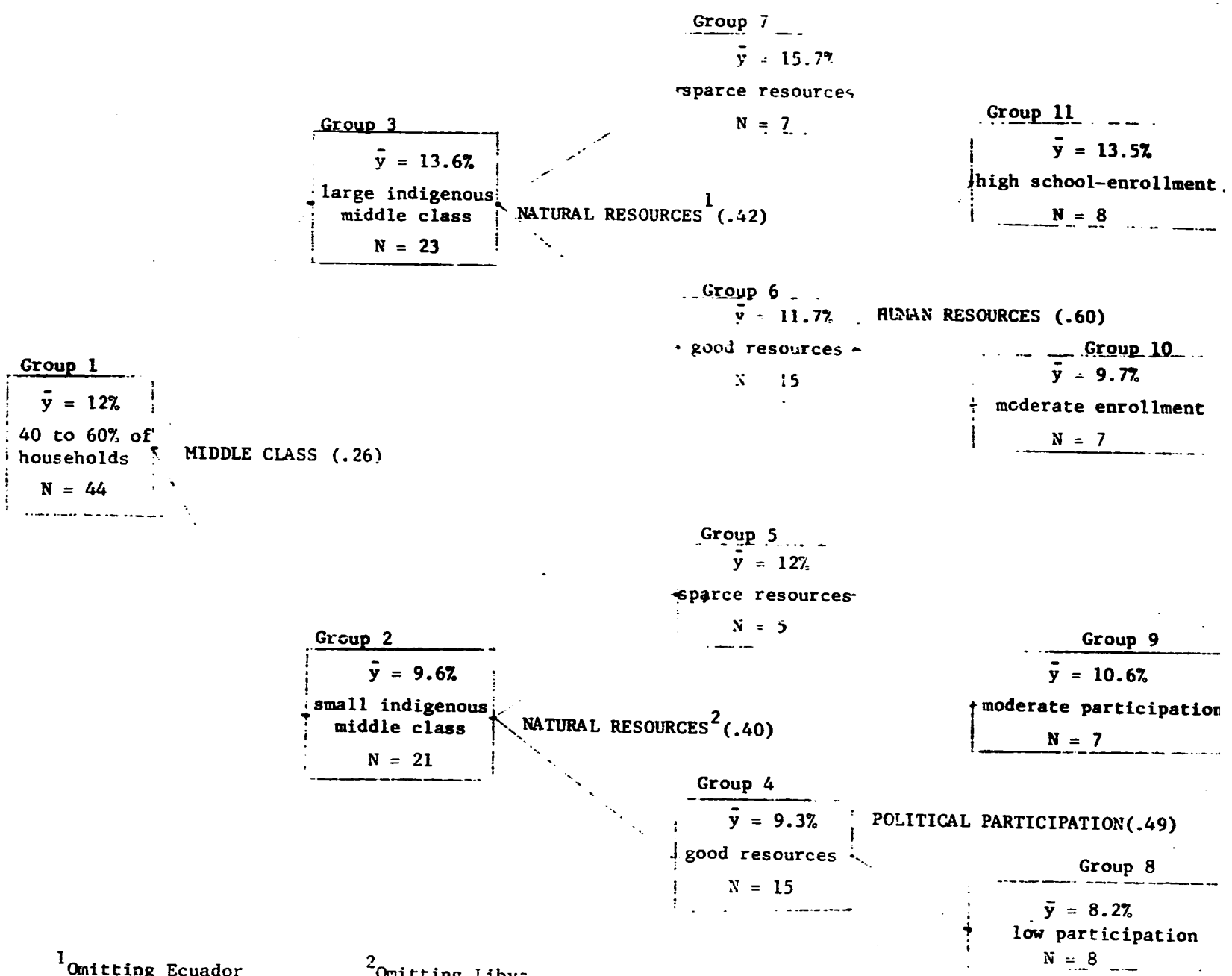
* The exceptions to this are Trinidad and Lebanon, which have attained high levels of socio-economic development.

** The exceptions to this are Jamaica, Lebanon, and Trinidad in which dualism is low and Bolivia, which is sharply dualistic.

pervasive underdevelopment (Group 7) and very substantial development (Group 9). Under both of these circumstances, the share of NNP of the lowest 60% is, on the average, between 30% and 40%. The bottom 60% of households gets the smallest share when a sharply dualistic development process has just been initiated. In all other instances, the share of national income of the lowest 60% is, on the average, about 25%. This is the case in moderately dualistic, moderately developed countries, as well as in sharply dualistic more poorly developed countries.

The overall coefficient of multiple determination adjusted for degrees of freedom ($\bar{R}^2$) is .74.

Figure 3. Analysis of the Share of Income of the Middle Income Groups



[1]Omitting Ecuador [2]Omitting Libya

THE SHARE OF INCOME OF THE MIDDLE INCOME GROUPS

In our sample, the average share of the national product accruing to the middle 20% of households (i.e. to the households in the two deciles clustered around the median income) is 12%, with a standard deviation of 4%. The share ranges from 1.3% for Libya* to 26% for Ecuador.** In only one country in the entire sample (Ecuador) do the middle income families get as much as they would were income uniformly distributed throughout. The share of the middle income families varies from approximately one third to 75% of the "even distribution" share.

The portion of income allocated to the middle income groups is the only share which appears to vary systematically with the level of development throughout the entire sample. In the first split, (see Diagram 3) our 44 countries are divided into two groups, differentiated by the importance of the indigenous middle class. This variable accounts for 26% of the overall variance in income share of the middle income groups. Other variables of importance are: the extent of dualism (24% of variance), the rate of improvement in human resources (22%), the extent of government participation in economic activity (22%) and the literacy rate (20%). The lower the degree of dualism, the higher the literacy rate, the larger school enrollment ratios, and the greater government involvement in the economy, the higher is the portion of output accruing to the middle class.

The countries in the group with the higher share of income flowing to the middle income households (Group 3) are: Argentina, Brazil, Ceylon, Chile, Colombia, Costa Rica, Ecuador, Greece, India, Israel, Jamaica, Japan, Lebanon, Mexico, Pakistan, Panama, Peru, Philippines, Surinam, Taiwan, Trinidad, Tunisia and Venezuela. At least 10% of their indigenous active male

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* The next highest figure is 7%.

** The next highest figure is 19% for Israel.

populations are engaged in commerce, banking, insurance or in technical, professional, managerial, administrative, or clerical employment. Except for India and Pakistan, which have unusually well developed middle sector manpower, the countries in this group are economically the most developed in our sample. The countries in this group are also, except for Ecuador and Surinam, all at least intermediate in the extent of their development potential.

By contrast, countries in which the middle income groups receive, on the average, only 10% of the national product are distinctly less developed. Their middle class consists for the most part of expatriates, and accounts for less than 10% of overall employment. The countries in this group are Burma, Bolivia, Chad, Dahomey, El Salvador, Gabon, Iraq, Ivory Coast, Kenya, Libya, Malagasy, Morocco, Niger, Nigeria, Zambia, Rhodesia, Senegal, Sierra Leone, South Africa, Sudan and Tanzania. With the exception of Burma, Bolivia and El Salvador the countries in this group are all African. They all* have over 60% of their populations in subsistence agriculture, and are characterized by, at best, fairly limited social mobility. Except for South Africa, the countries in this set have at most moderate potential for further economic development, and (except for El Salvador) have attained at most intermediate levels of socio-economic development.

Low Share of National Product to the Middle Income Groups

Group 2, the less developed group of nations, is divided in the next step of the analysis into two groups, (Groups 4 and 5) in accordance with the abundance of natural resources. Differences in natural resource endowments account for 40% of the remaining variance in the income share

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* The exception to this statement is El Salvador.

of the middle income groups. Next in importance in distinguishing among the countries in this group are the political role of the military (31% of variance), followed by the degree of cultural and ethnic homogeneity (27%) and per capita GNP (26%). Among this group of nations the share of GNP of the middle income groups is lower than in ethnically, relatively more homogeneous countries. The portion of income accruing to the middle sectors of the population is also less in countries with relatively more emphasis on industrial exports. It is greater, however, in the countries wit lower per capita GNP, and in nations with military governments.

Group 5, in which a larger share of GNP (12%) accrues to the middle income households, is comprised of: Chad, El Salvador, Niger and Sudan. The countries in this group have, for the most part, limited agricultural resources, no significant known non-agricultural resources, little industry, low to moderate agricultural productivity, low school enrollment ratios, and agriculturally oriented foreign trade.

Group 4, with a smaller share of GNP (9%) going to the middle-income groups, is rich in natural resources. The countries in this group* have either relatively abundant agricultural resources, or significant fuel or non-fuel mineral resources. Expatriate groups are generally important in their economies; the benefits from abundant natural resources accrue mostly to the expatriates, who are in the top income groups, or to indigenous traditional elites.

In the next step of the analysis, the countries in Group 4 divide into two groups, 8 and 9, distinguished from one another by the extent of political participation.

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* Bolivia, Burma, Gabon, Iraq, Ivory Coast, Kenya, Malagasy, Morocco, Nigeria, Zambia, Rhodesia, Senegal, Sierra Leone, South Africa and Tanzania

Group 8, in which, on the average, the middle quintile of households receives only 8% of national income, includes: Gabon, Iraq, Kenya, Malagasy, Morocco, Rhodesia, Sierra Leone, and South Africa. In this group of African countries, political participation is defective because at least one third and most often as much as two thirds of the population is without formal political representation. In addition, in some of the countries in this group there is a very limited choice of channels for political representation (Gabon, Iraq), and actual participation in any form does not involve more than a quarter of their adult males. In all these countries, expatriate elements play a significant role in commerce, industry, and/or commercial agriculture.

Group 9, where, on the average, the share of the middle income groups is 11%, is comprised of: Bolivia, Burma, Ivory Coast, Nigeria, Zambia, Senegal, and Tanzania. This group includes countries with reasonably effective political representation but no choice, for a given individual, of channels of political representation, since there are either uni-party systems or because party affiliation is determined by membership in a given ethnic or socio-economic group.

High Share of National Product to the Middle Income Groups

The well developed countries in Group 3, with large indigenous middle classes and a relatively high share of national income accruing to the middle income groups, are differentiated into two groups. The variable used to distinguish among countries is, as for the low group, the abundance of natural resources (42% of variance). The next variables which could appear in the analysis are: the structure of foreign trade (34%), the rate of improvement in human resources (29%), the extent of development potential (28%), and the level of modernization of techniques in agriculture (25%). The better the agricultural porductivity, the higher the school enrollment ratios, the more directly involved the government in the economy, the more diversified and less primary-oriented the foreign trade, and the higher the development potential,

the larger is the total product of the middle-income group.

The group (Group 7) in which the share of the middle groups in the national product is highest (16%) consists of natural resource poor countries: Ceylon, India, Israel, Lebanon, Pakistan, Surinam and Taiwan. The countries in this group have middle class occupations accounting for over 20% of employment, but beyond that, exhibit a great variety of characteristics with respect to levels of development and economic policy.

The remaining group, Group 6, in which, on the average, natural resources are more plentiful and the share of middle income groups is lower (12%), consists of relatively developed underdeveloped countries only.* In addition, the countries in this group all have at least intermediate development prospects. The group includes: Argentina, Brazil, Chile, Colombia, Costa Rica, Greece, Jamaica, Japan, Lebanon, Mexico, Panama, Peru, Philippines, Trinidad, and Venezuela.

Once again, this group is subdivided into two subgroups, distinguished from one another by the rate of improvement of their human resources. Group 11, the group with the larger share of national product accruing to the middle income groups (13.5%), is comprised of: Argentina, Chile, Costa Rica, Greece, Japan, Panama, Philippines, and Venezuela. The countries in this group have 60% of school age children in school, and at least 60% literacy rates. Except for Panama, the countries in this set have well established independent labor movements with moderate political power, and have industrial sectors with several modern, large-scale industries that, as of 1961, were producing a fair variety of products by power-driven factory methods.

Group 10, in which the middle sectors received only 10% of the national product, consists of: Brazil, Colombia, Jamaica, Lebanon, Mexico, Peru, and

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* It does not, however, include all the highly developed countries in the sample.

Trinidad. This group has school enrollment ratios varying between 54 and 60. On the average, the countries in this group are less developed along both social and economic lines than those in Group 11.

The rate of improvement of human resources accounted for 60% of the variance in share of income accruing to the middle groups. Next in importance in distinguishing among countries in Group 6 are the extent of development potential (45%) and the level of socio-economic development (43%). The higher the development level and the better the potential for further development, then the larger is the share of income of the middle class.

Conclusion

Social and economic development are uniformly to the advantage of the middle income groups. They appropriate the highest share of GNP in countries which are well developed, both economically (Group 7, with 16% of national income going to the middle quintile), and socially (Groups 3 and 11 with 13.5% of national income accruing to the middle income groups). Given the level of socio-economic development, natural resource abundance is associated with a lower share for the middle income groups and a higher share to the top income groups. Greater political participation is correlated with higher shares for the middle-income households, even when the indigenous middle class accounts for less than 10% of active males.

The entire analysis explains 88% of the overall variance in the share of income of the middle income groups.

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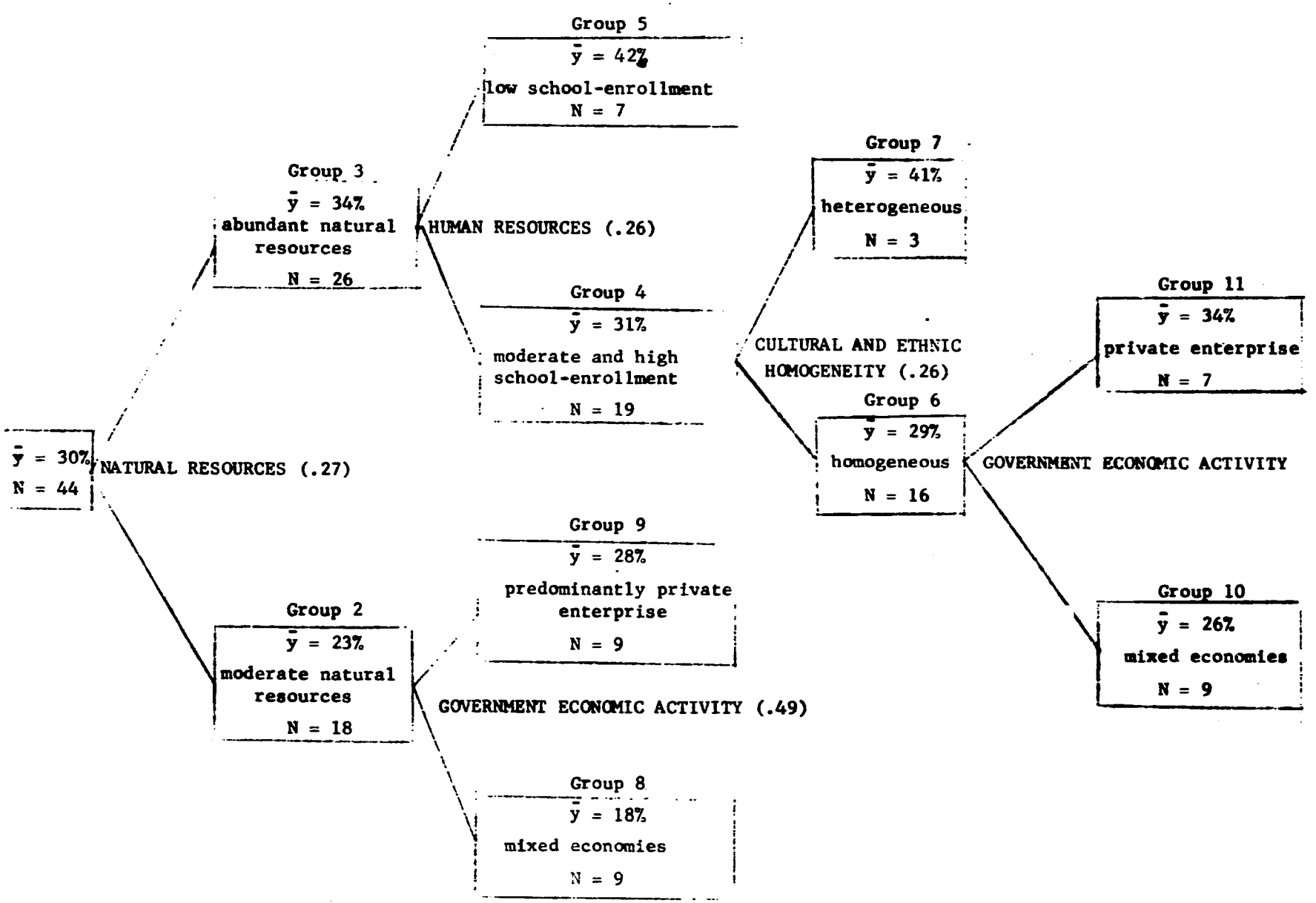
* This figure is adjusted for degrees of freedom.

Figre 4. Analysis of the Share of Income of the Wealthiest 5% of the Population



THE SHARE OF INCOME ACCRUING TO THE UPPER 5%

In our sample the average share of income captured by the top 5% of the households is 30% -- six times as large as their share under an even distribution pattern would be. The standard deviation of this share is quite large, 10%. The lowest share is 8%, in India; the highest is 60%, in Rhodesia.

The analysis indicates (see Diagram 4) that one of the primary correlates of the share accruing to the top income group is natural resource abundance. Where natural resources are plentiful, the top 5% of the population appropriates a much larger share of national income. In the first split, the entire sample of 44 countries subdivides into two groups of 33 and 18 countries respectively, according to the quality of the natural resource base (27% of overall variance). Next in importance in "accounting for" intercountry differences in the portion of income of the top group are the extent of government participation in economic activity (19%), the extent of popular participation in the political process (19%), and a group of variables all of which "explain" approximately 15% of variance: the political strength of the traditional elite, the extent of leadership commitment to economic development, the strength of the labor movement, the rate of improvement of human resources and the importance of the middle class.

Natural resources and the political complexion of the country thus play an important role in accounting for the share of income accruing to the top income group. The larger the middle class, and the higher school enrollment ratios, the lower is the share of the upper families. The less powerful the traditional elite, the more widespread the popular participation in the political process, the larger the share of government ownership of enterprise, and the greater the political strength of the

labor movement, the smaller is the concentration of income at the top.

Countries with a Relatively Low Income Share Accruing to the Upper 5%

Group 2 consists of 18 countries in which, on the average, 23% of national income goes to the top 5%. This group of countries has, at best, relatively abundant agricultural resources but no significant non-agricultural resources. The nations in this group are: Ceylon, Chad, Dahomey, El Salvador, India, Israel, Ivory Coast, Jamaica, Japan, Lebanon, Niger, Pakistan, Philippines, Senegal, Sudan, Surinam and Taiwan. The countries in this set span the entire range of levels of socio-economic development covered in our sample. Most of the developing countries in this group are pursuing policies of rapid industrialization in order to overcome natural resource limitations.

In the next split, this group is subdivided into two groups of nine countries each, differentiated from one another by the extent of the economic role of government. Group 8, in which the share of the top 5% is smallest of all groups of countries in our sample, is comprised of: Ceylon, Chad, India, Israel, Japan, Niger, Pakistan, Sudan and Taiwan. These are all mixed government-private economies in which the share of government investment in net investment often exceeds the share of private industry. In terms of development levels and economic policies the countries in this set span the entire range.

In the nine complementary countries which are combined into Group 9, the average share of the top families is 50% higher than in the similarly naturally endowed but socialist countries of Group 8. This group includes: Dahomey, El Salvador, Ivory Coast, Jamaica, Kenya, Lebanon, Philippines, Senegal and Surinam. Except for Kenya and Senegal, in which government participation in economic activity is quite recent and still limited, the

countries in this group are all predominantly private enterprise economies. The direct role of the government is relatively limited as indicated by a relatively small government contribution to net investment and a relatively small public section.

The role of government in economic activity explains 49% of variance in the share of the top 5% in resource poor countries. Other statistically significant variables are the extent of development potential (34%), the extent of political participation (32%), and the rate of improvement of human resources (32%). The less limited the access to education, and the greater the popular participation in the political process, the smaller is the concentration of wealth in the upper income groups.

Countries with a High Income Share Accruing to the Top 5%

Group 3, consists of countries rich in either agricultural resources or in fuel or non-fuel mineral resources (or in both). Included in this group are: Argentina, Bolivia, Brazil, Burma, Chile, Colombia, Costa Rica, Ecuador, Gabon, Greece, Iraq, Kenya, Libya, Malagasy, Mexico, Morocco, Nigeria, Panama, Peru, Zambia, Rhodesia, Sierra Leone, South Africa, Tanzania, Trinidad, Tunisia, and Venezuela. In this group, the average share of the top 5% is one-third of national income. Like Group 2, this group spans the entire range in levels of socio-economic development and in development policies.

In the next split, seven exceedingly socially underdeveloped countries are segregated into a separate group (Group 5). This group consists solely of resource rich African countries: Gabon, Malagasy, Nigeria, Zambia, Rhodesia, Sierra Leone and Tanzania. The countries in this set characteristically have a small indigenous middle class, have more than 55% of their populations in traditional subsistence agriculture, and have fewer than 40% of school age children in primary school.

The variable used to separate the countries of Group 5 from the rest is the rate of improvement of human resources which accounts for 26% of overall variance. Variables next in importance in distinguishing among the countries of Group 3 are: the importance of the indigenous middle class (25%), the change in degree of industrialization (24%), the level of socio-economic development (23%), the extent of political participation (22%), the extent of literacy (21%), and the strength of the labor movement (20%). These are all characteristics relating to levels of social, economic and political development. The larger the middle class, the higher the literacy rate, the better the school enrollment ratios, the more rapid the degree of industrialization, and the more widespread the political participation, the lower is the share of income of the wealthiest 5%.

In the next step of the analysis, three countries with severe racial problems and large, exceedingly poor, ethnic minority groups (Bolivia, Peru, and South Africa) branch off from the rest. In these countries, the average share of the national product appropriated by the top 5% is 41% -- approximately 8 times their share under an even distribution pattern!

In the next step, the sixteen countries remaining in Group 6 divide into two groups differentiated again by the extent of government role in the economy. As for the resource poor countries, the more mixed (government-private) the economy, the lower the share of the upper 5% in the national product.

The countries in Group 10 in which there is more nationalized enterprise (Argentina, Burma, Chile, Costa Rica, Ecuador, Mexico, Morocco, Tunisia and Venezuela) devote only 25% of GNP to the top 5% of their population.

In the corresponding group (Group 11) in which (as of 1963) the economic role of government was considerably less pronounced (Brazil, Colombia, Greece, Iraq, Libya, Panama, and Trinidad) one-third of nation income accrues, on the average, to the top 5%. Both groups in this split encompass wide variations in levels of economic and social development.

The extent of government role in the economy accounts for 36% of the variance in the income share of the top 5% remaining in the parent group (Group 6). The level of socio-economic development (33%), the level of effectiveness of financial institutions (33%), the level of modernization of techniques in agriculture (33%), the size of traditional agricultural sector (33%), the type of colonial experience (33%), the extent of political participation (29%), and the structure of foreign trade (29%), could all distinguish among countries with respect to their portion of the national product accruing to the top 5%. A relationship between greater economic development and smaller concentration of income at the top is evident; however, the relationship is not at all monotonic.

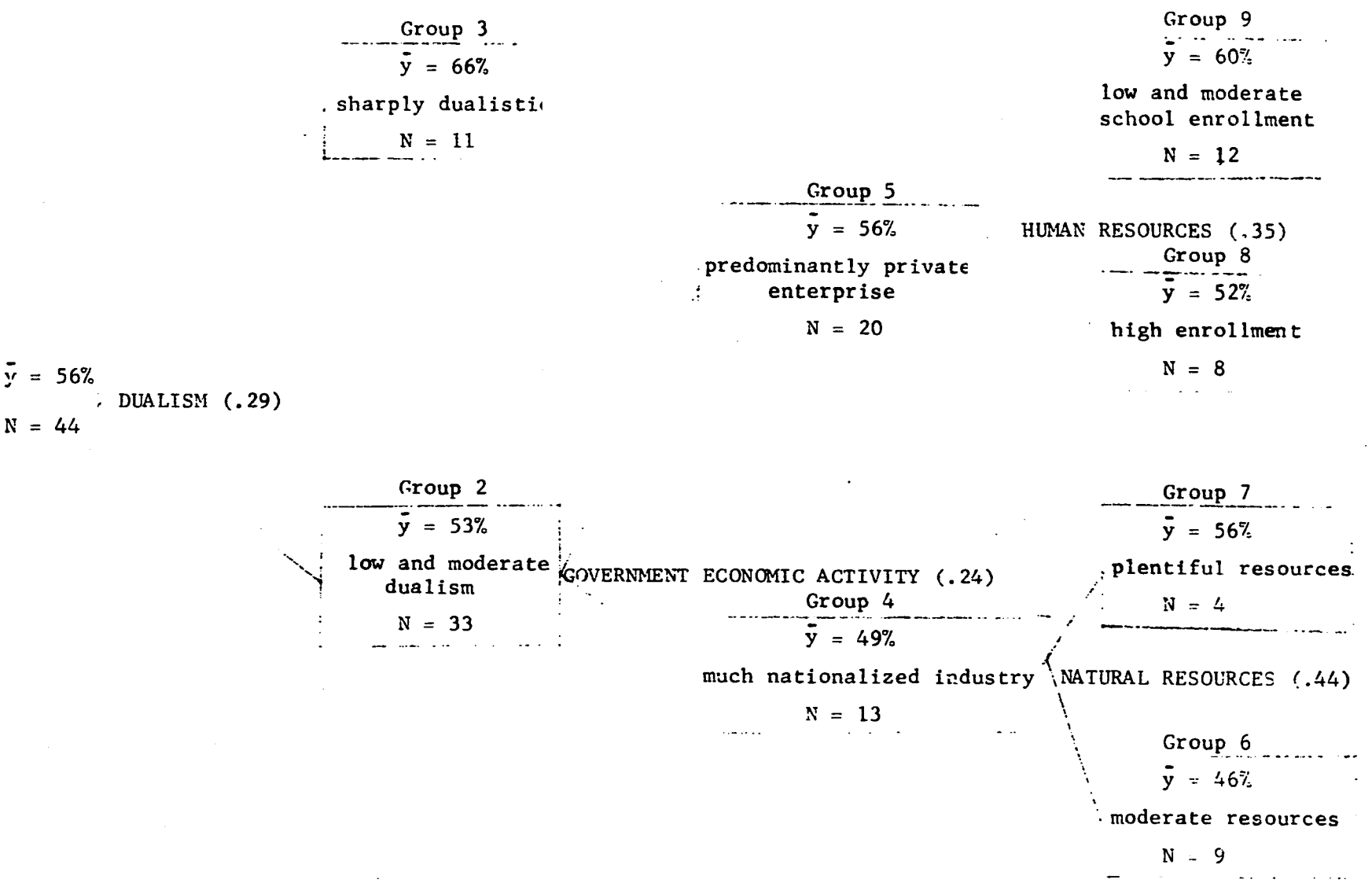
Conclusion

Two variables emerge as important in distinguishing reliably among countries with respect to the income share accruing to the upper 5% of families: natural resources and the role of government in economic activity. The share of income accruing to the top 5% is larger in

resource rich countries and in countries in which private enterprise predominates. Except for Group 5, (the natural resource rich, human resource poor group) in which the share of NNP accruing to the top 5% is the highest, all the final groups combine wide variations in levels of social and economic development.

The explanatory power of the entire analysis is equivalent to a value of R^2 of .65, after adjustment for degrees of freedom.

Figure 5. Analysis of the Share of Income of the Wealthiest 20% of the Population



THE SHARE OF INCOME ACCRUING TO THE UPPER 20% OF THE POPULATION

On the average, the upper 20% of households earns 56% of the national product. The standard deviation of the share accruing to the top 20% is 10%. The range varies from 90% in Lybia* to 39% in Israel.

High Share of Income to the Upper 20%

The first split to distinguish among the shares of the total product accruing in different countries to the wealthiest 20% of the population separates a set of eleven sharply dualistic nations from the rest of the sample (Group 3 in Diagram 5). The share of GNP devoted to the upper 20% is, on the average, the highest of any of our groups -- 66%. The countries in this group are: Gabon, Iraq, Libya, Morocco, Peru, Senegal, Sierra Leone, Sudan, Tanzania, Tunisia, and Zambia. In all of these countries there is a sharp and pervasive (sectoral or geographic) cleavage between an important exchange sector and an important traditional non-monetized sector. For the most part, the countries in this group are rich in natural resources.** They are small in terms of population and, except for Peru, rely predominantly on primary exports. Their levels of per capita GNP did not exceed $200 in 1960; they are at most intermediate in development level and in development potential.

The extent of dualism is the variable which best differentiates among the entire set of countries in the first split; it accounts for 29% of variance. The quality of natural resources (27%) and the extent

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* The next highest is 71% in Gabon.

** The exceptions to this are Senegal and Sudan.

of government participation in economic activity (25%) are the only other significant variables in this split. The more abundant the natural resources and the smaller the role of government in the economy, the larger is the share of the upper class.

Lower Share of Income to the Upper 20%

Group 2 includes 33 countries characterized by low and moderate degrees of dualism.* It combines countries in which there is no dualism because they have virtually no modern sectors, with countries with little dualism because modern and traditional technologies and styles of life intermingle. In this group the average portion of income of the upper 20% is 53%.

At the next step in the analysis, the extent of government participation in economic activity distinguishes best among our groups of countries; this variable accounts for 24% of the variance within Group 2 in income share of the upper 20%. The abundance of natural resources (22%), the degree of development potential (20%), and the strength of the labor movement (17%) are also statistically significant. The less rich in natural resources, the smaller the development potential, and the more politically powerful the labor movement, the lower is the share of the wealthiest 20% in the total product.

Group 4, one of the two lowest in the share of the total product accruing to the upper 20%, consists of: Argentina, Bolivia, Burma, Ceylon, Chad, Ecuador, Israel, Japan, Niger, Pakistan, Rhodesia, Taiwan, and

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* There are two exceptions to this statement, Bolivia and Burma. Both are sharply dualistic, but have more equalitarian income distributions than the strongly dualistic countries of Group 3.

Venzuela. An average of 49% of the total product goes to the wealthiest 20%. In all of these countries, the economy is characterized by significant government ownership of productive enterprise. Otherwise this group includes a wide range of development levels and modernization policies.

Group 5, in which the share of the upper 20% is, on the average, 56% combines: Brazil, Chile, Colombia, Costa Rica, Dahomey, El Salvador, Greece, India, Ivory Coast, Jamaica, Kenya, Lebanon, Malagasy, Mexico, Nigeria, Panama, Philippines, South Africa, Surinam, and Trinidad. This group includes a wide range of private and mixed enterprise economies, and is also characterized by large differences in development levels and development policies.

Each of the above two groups is susceptible of one more split. Group 5 branches into two groups of countries, separated by levels of socio-economic development; Group 4 divides into two sets which differ from one another in the quality of their natural resource base. The more abundant the natural resources (Group 7) and the poorer the human resources (Group 9), the larger is the share of the upper segments of the population.

Natural resource differences account for 44% of the variance in Group 4. No other variable differentiates as well among countries at this split.

The group of countries with the lower share of product accruing to the top 20% (Group 6) consists of: Burma, Ceylon, Chad, Ecuador, Israel, Japan, Niger, Pakistan, and Taiwan. The countries in this group have, at best, a moderately good natural resource base. The more developed countries in this set have succeeded in compensating for natural resource handicaps by means of an industrialization program based on human resource development.

The four countries in Group 7 (the group complementary to Group 6) are: Argentina, Bolivia, Rhodesia, and Venezuela. All have economies based upon the exploitation of plentiful agricultural or mineral resources, and upon the channeling of a large share of the total product to a small privileged group.

The two groups of countries which branch off from Group 5 are distinguished from one another by the rate of improvement of human resources. The group in which income is most unequally distributed (Group 9) is also characterized by a very limited access to education. This group includes: Brazil, Colombia, Dahomey, El Salvador, Ivory Coast, Jamaica, Kenya, Lebanon, Malagasy, Mexico, Nigeria, and Trinidad. No more than 55% of school age children are in school in these countries.

Group 8, in which the income distribution is not as concentrated at the top, has an unusually widespread access to education for underdeveloped countries. It includes: Costa Rica, Greece, India, Panama, Philippines, South Africa, and Surinam. The Harbison human resource development index is over 35 in the countries of this set.

Other variables which could have been used to distinguish among the countries in Group 5 are: the extent of political participation (26%), and the extent of social mobility (25%). The more widespread the political participation and the greater the social mobility, the smaller is the concentration of income and wealth at the top.

Conclusion

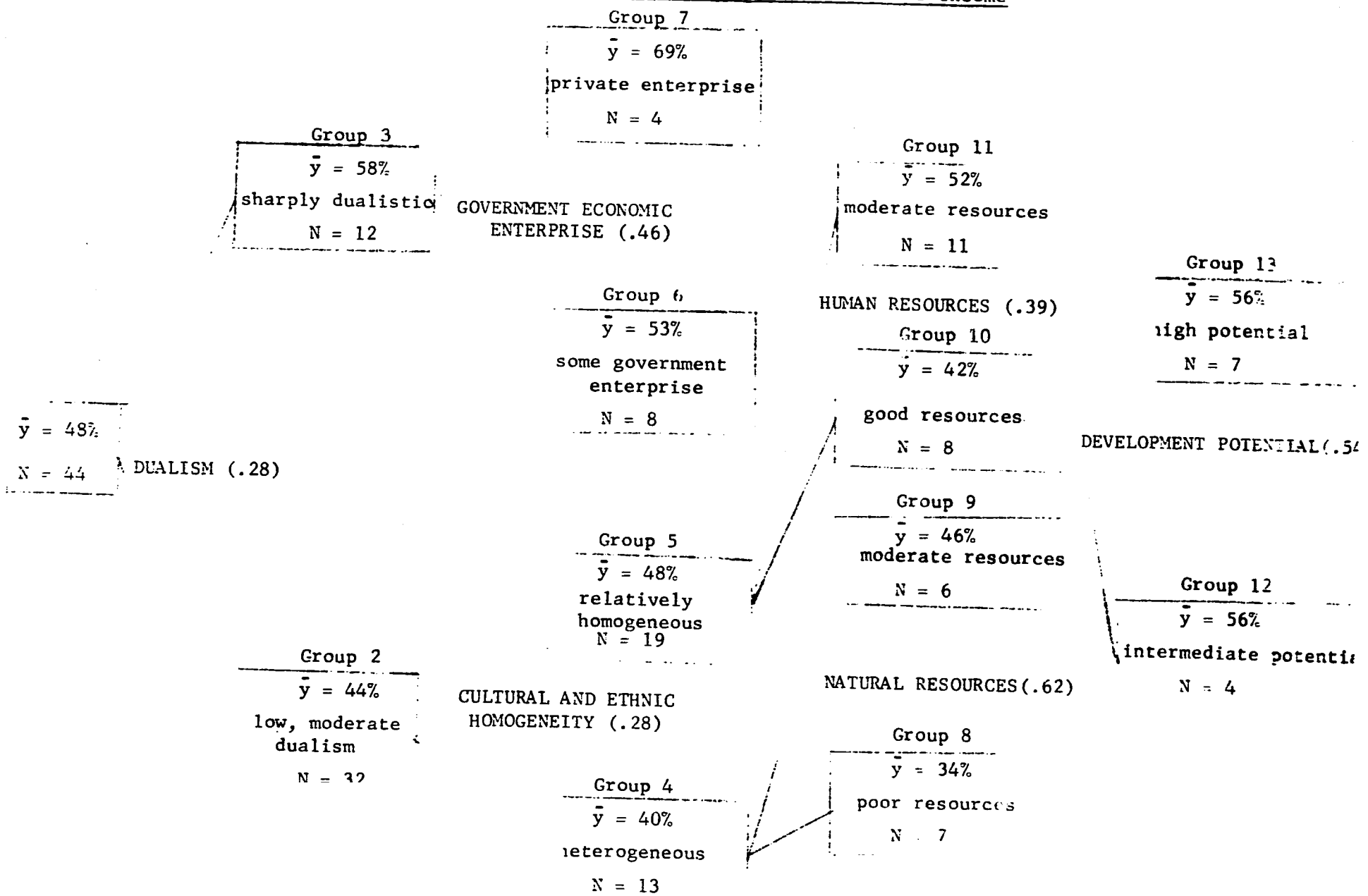
The factors which explain intercountry differences in the share of the upper 20% are quite similar to those which account for the share of the

upper 5%: the extent of socio-economic dualism, the share of nationalized enterprise, the abundance of natural resources, and policies with respect to human resource development.

The countries in which over 60% of income accrues to the top 20% fall into one of two categories. They are either sharply dualistic (Group 3), or have neither strongly socialist governments nor generalized access to education (Group 9). The countries at the other extreme, with at most 50% of the total product in the hands of the wealthy, have socialist governments and not too abundant natural resources (Groups 4 and 6). In the other groups of countries, the share of the upper 20% is approximately 55%. There is thus not much variance among groups in the average share of income accruing to the wealthiest 20%.

The proportion of variance explained by the analysis is .68.

Figure 6. Analysis of the Coefficient of Concentration of Income



THE COEFFICIENT OF CONCENTRATION

The coefficient of concentration is a summary measure which characterizes the extent of divergence from a completely uniform distribution of income. The higher the coefficient of concentration, the more unevenly is income distributed. As such, it offers the best single index of the degree of income concentration.

The average coefficient of concentration equals .48; the highest is .83 for Libya and the lowest is .30 for Israel. (The corresponding value for the United States is about .43.)

Countries With a Substantial Concentration of Income

The first split (See Diagram 6) divides the entire set of countries according to the extent of dualism. Group 3, in which income concentration is higher, consists of countries which are sharply dualistic: Gabon, Iraq, Libya, Morocco, Peru, Zambia, Senegal, Sierra Leone, South Africa, Sudan, Tanzania, and Tunisia. In these countries, the average shares of the lowest 20% and 60% of the population are 4% and 19%of the total product, respectively; these proportions are two thirds of the corresponding values for the complementary group (Group 2). On the other hand, the top 5% get 39%, about 125% of their share in the complementary group, and approximately eight times their share would be under a uniform income distribution. In most of the countries in this set, political participation is limited and expatriates dominate the entrepreneurial, commercial, administrative and technical groups.* Literacy rates in this group are at most 54%; the great

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* The exceptions to this statement are Iraq and Tunisia.

majority of countries had literacy rates below 16%. All countries in this set are small*; the great majority are following a primary-oriented development strategy.**

In the next stage of the analysis, these sharply dualistic countries are subdivided in accordance with the extent of government role in their economy. Four, predominantly private enterprise, resource rich countries separate from the rest: Gabon, Libya, Peru, Sierra Leone. In this group of countries (Group 7), the average concentration ratio is .69, the highest of any other group. The lowest 20% get, on the average, 2.5% of GNP, while the upper 5% appropriate an average of 43%.

The complementary group (Group 6) consists of: Iraq, Morocco, Senegal, South Africa, Sudan, Tanzania, Tunisia, and Zambia. In all ways other than the extent of government role in the economy, the countries in this group are quite similar to those of Group 7 . In this group, in which the government's role in the economy is more extensive, the average concentration ratio is, however, .53. The average share of the bottom 20% is 5% -- twice that in Group 7 ; the share of the top 5% is 31% -- approximately two-thirds of that in Group 7 .

Differences in government's role in the economy "account for" 46% of the variance in the concentration ratio. Other variables which could "explain" differences in the concentration of income at this step are: per capita GNP (44%), and the structure of foreign trade (25%). In this sharply dualistic group of nations, the higher per capita income, the <u>higher</u> the concentration of income; the less primary oriented the economy, the lower is the concentration of income and wealth.

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* They have populations below 20 million.

** The exceptions to this are Peru and South Africa.

Countries with a Relatively Smaller Concentration of Income

The countries in Group 2, which, in the first split, were segregated from those of Group 3, are composed of: Argentina, Bolivia, Brazil, Burma, Ceylon, Chad, Chile, Colombia, Costa Rica, Dahomey, Ecuador, El Salvador, Greece, India, Israel, Ivory Coast, Jamaica, Japan, Kenya, Lebanon, Malagasy, Mexico, Niger, Nigeria, Pakistan, Panama, Philippines, Rhodesia, Surinam, Trinidad, and Venezuela. In the great majority of these countries there is at least some intermingling of modern with traditional technologies and styles of life. A small number of countries in this set (Dahomey, Malagasy, and Niger) are not dualistic because they have virtually no modern sectors; two countries (Bolivia and Burma) appear to be characterized by a more equalitarian distribution of wealth despite sharp sectoral cleavages between a small modern sector and a predominant traditional sector* On the average, in this set of countries the bottom 20% receives 6% national income; the upper 5% receives only 28%.

Differences in dualism account for 28% of the variance in income concentration among our full set of nations. Other variables which are statistically significant in the initial split are: The abundance of natural resources (21%), the government's role in the economy (17%), and the political strength of the traditional elite (16%). The less plentiful natural resources, the more government participation in economic activity, and the weaker the traditional elite, the less is the concentration of income.

At the next step in the analysis the 32 countries in Group 3 are subdivided into two Groups, 4 and 5, according to the extent of cultural and ethnic homogeneity (26% of variance). The extent of development potential (22%), natural resource abundance (20%), and the extent of direct government

*In these two countries, the government's role in the economy is unusually large for sharply dualistic nations.

economic activity (18%), are also statistically significant at this point. The lower the potential for further economic development, the less plentiful the natural resources, and the more active the government in the economy, the more uniformly is income distributed.

The group with the better income distribution (Group 4), is culturally and ethnically less homogeneous. In all countries in this group, less than 80% of the population speaks the dominant language. This group includes: (1) countries in which less than 51% of the population speaks the dominant language (Bolivia, India, Ivory Coast, Kenya, Niger, Nigeria, and Philippines), (2) countries in which 51 - 70% of the population speaks the dominant language, but in which over 90% of the population is of the same race and religion (Burma, Israel, and Pakistan); (3) together with countries with important ethnic minorities* (Chad and Surinam) in which the same linguistic criteria apply. It will be recalled that the countries in Group 3 are all not sharply dualistic. In addition, in all countries in this group, tradition oriented elite had little or no political power during most of the period 1957-62. Indeed, quite of few of the countries in this set have actively modernizing national governments. Under those circumstances, cultural and ethnic heterogeneity makes for a more equalized pattern of income distribution. On the average, the coefficient of concentration is .40, in this set of countries; the mean share of the wealthiest 5% is only about 24%.

Group 5 in which the income distribution is less uniform (the concentration ratio is, on the average, .48) is composed of: Argentina, Brazil, Ceylon, Chile, Colombia, Costa Rica, Ecuador, El Salvador, Greece, Jamaica, Japan, Lebanon,

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*Less than 71% is of the same race.

Malagasy, Mexico, Panama, Rhodesia, Taiwan, Trinidad, and Venezuela. This group consists of countries in which over 70% of the population speaks the dominant language and in which tradition oriented national or colonial elites were of at least moderate influence during an important part of the period 1957-1962. This group is also composed of countries which, except for Malagasy, have attained at least an intermediate level of social and economic development: the indigenous middle class is at least 10%; literacy rates are at least 35%; since 1950, the average annual rate of increase of industrial output in constant prices has been at least 3%;* commercial agriculture is predominant; and since 1950 there have been at least moderate improvements in agricultural productivity. The countries in this group are thus, on the average, characterized by more social and economic development than the countries in the complementary group. Politically, however, they are less progressive.

In the next step of the analysis, the 19 countries in this group are subdivided according to the rate of improvement of human resources (39% of the remaining variance). Also statistically significant are the extent of political participation (30%), the degree of development potential (23%), the extent of literacy (21%), and the extent of direct government economic activity (21%). Within the group of at best moderately dualistic, and at least moderately socially and economically developed countries -- the more socially and politically developed the countries, and the more dynamic their economies, the better is their distribution of income. The higher the degree of development potential, the more widespread the opportunities for political

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*Rhodesia and Malagasy are exceptions to this statement.

participation, and the larger the role of government in the economy, the less concentrated is the distribution of income.

Group 10 is comprised of a set of 8, socially and economically well developed countries: Argentina, Chile, Costa Rica, Greece, Japan, Panama, Taiwan, and Venezuela. The average concentration ratio in this group is .42 (akin to that in the United States). The mean share of the poorest 20% is 6%; that of the upper 5% is 26%.

The countries in the complementary set (Group 11 are: Brazil, Ceylon, Colombia, Ecuador, El Salvador, Jamaica, Lebanon, Malagasy, Mexico, Rhodesia, and Trinidad. This group excludes* both of the extremes in social and economic development; it also excludes both the nations with the highest and lowest* development potential. The average concentration of income in this group is higher than in Group 10 (the average concentration ration is .52); however, this group still combines a fairly wide range in the extent of concentration of income.

In the next step, this group can be subdivided further. There is an association (54% of variance) between higher development potential (higher growth rates and better overall economic performance) and more concentration of income. Group 12 contains four countries (Ceylon, Ecuador, El Salvador, and Malagasy) with at most intermediate potential for self-sustained growth, and in average concentration ratio of .44. Group 13, consisting of Brazil, Colombia, Jamaica, Lebanon, Mexico, Rhodesia and Trinidad, has distinctly better prospects for further growth and an average concentration ratio of .56.

Group 4, the culturally more heterogeneous countries with the modernizing elites, subdivides into two groups, distinguished by natural resource abundance.

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* Except for Malagasy.

The group with the poorer resources, but with the best income distribution of any of our groups (Group 8) combines (1) four of the economically least developed countries in our sample (Chad, Dahomey, Niger and Surinam) with (2) two modernizing countries at the intermediate level of economic and social development, and of intermediate development potential (India and Pakistan) and with (3) one country (Israel) which is one of the two most highly developed nations in our sample. Thus this group spans the extremes in the range of development. The more developed countries in this set all have mixed, government-private-economies. The average concentration ratio in this group is .34; the share of the bottom 20% averages 9% and that of the top 5% averages 19%.

By contrast, the complementary group (Group 9) is considerably more homogeneous in its levels of economic and social development. It combines: Bolivia, Burma, Ivory Coast, Kenya, Nigeria, and the Philippines. These are relatively resource rich countries which are low-to-intermediate in the modernization scale. The average concentratio ratio in this set is .46; about 6% of nation income accrues to the bottom 20% and about 30% to the top 5%.

Conclusion

The forces which influence intercountry variations in the concentration coefficient are those which were found earlier to impinge upon various portions of the distribution of income: the extent of socio-economic dualism, the degree of direct government economic activity, human and natural resource endowments, the extent of cultural and ethnic homogeneity, and the degree of development potential. Sharp dualism, good natural resources, poor human resources, and the prevalence of private enterprise, all increase the concentration of income. More rapid economic growth increases concentration in two of the splits, even where it occurs among only moderately dualistic countries and is accompanied by widespread improvements in economic institutions.*

The analysis explains 85% of the overall variance of the GINI Coefficient.

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* It will be recalled that this latter element is built into our definition of development potential. The extent to which improvements in economic institutions accompany growth is one of the elements distinguishing between countries in the top two categories.

SUMMARY AND CONCLUSION

The most important variables affecting income distribution are ecological, socio-economic and political. Table 2 present a summary of the impact in all six analyses of all the variables included in the study. The second column of the Table indicates the frequency with which a variable is statistically significant; the third column lists the number of splits in which a given variable is the primary differentiator among groups. In the summary which follows we will discuss only the six most important variables.

Among socio-economic indicators, the rate of improvement of human resources is the variable most frequently associated with differences in patterns of income distribution. This variable is statistically significant in 10 of the 27 splits. The rate of improvement of human resources is essentially an index of the equality of access to middle level and university education and therefore reflects the extent of political commitment to equalizing economic and social opportunities throughout the various strata of society: when access is limited, education is solely an elitist activity. In the analysis, higher school enrollment ratios are uniformly associated with less concentration in income distribution and with larger shares accruing to the lower and middle income strata.

The variable to appear next most frequently in the analysis is the abundance of natural resources. This indicator is statistically significant in a third of the splits, and it appears as primary differentiator in 5 of 27. At all levels of social and economic development, wealth in natural resources is associated with a shift in the allocation of income

Table 2: SUMMARY OF SIGNIFICANT VARIABLES

	Frequency of Significance	Frequency of Appearance as Primary Variable
Rate of Improvement in Human Resources	10	5
Extent of Direct Government Economic Activity	9	4
Abundance of Natural Resources	9	5
Extent of Potential for Economic Development	9	2
Extent of Political Participation	6	1
Extent of Dualism	5	4
Strength of Labor Movement	4	0
Level of Socio-economic Development	4	0
Per Capita GNP	3	1
Level of Modernization of Techniques in Agriculture	3	1
Structure of Foreign Trade	3	0
Importance of Indigenous Middle Class	3	1
Extent of Literacy	3	0
Degree of Cultural and Ethnic Homogenity	3	2
Extent of Social Mobility	2	1
Political Strength of Traditional Elite	2	0
Political Strength of the Military	1	0
Extent of Leadership Commitment to Development	1	0
Character of Agricultural Organization	1	1
Level of Modernization of Industry	1	0
Change in Degree of Industrialization	1	0
Level of Effectiveness of Financial Institutions	1	0

towards the wealthiest 20% and 5% and against the middle income groups, thereby increasing the concentration of income and wealth.* Among the least developed countries, most of which are in subSaharan Africa, there is, of course, an association between the extent of dualism and the abundance of natural resources; this association is the result of colonial settlement and exploitation patterns. Since their recent independence, these countries have been unable to overcome this economic legacy of colonialism.

The more developed natural-resource-poor countries have had to rely on human resource development as a substitute for poor natural resource endowments. The less developed countries that lack natural resources have not been colonized to the same extent and are, therefore, not as dualistic in their structure. As a result, the countries with only moderate natural resource endowments, whether developed to a greater or a lesser extent, tend to have better income distribution patterns.

The extent of direct government economic activity is the next most important variable to differentiate among countries in their patterns of income distribution. It appears in 9 out of 27 splits and is a primary variable in 4 of the splits. The larger the government's share in total investment, the smaller is the share of income of the wealthiest 5 and 20 percent and the larger is the share of the middle income groups. It is interesting to note that this variable has been found not to affect either levels of economic development or rates of change of per capita GNP, but it does exert a significant impact upon income distribution.

The extent of dualism appears as the first variable to differentiate among countries in four out of the six analyses. Higher dualism increases

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* The mean difference in concentration ratios between the resource poor and resource rich countries is .07; the average differences between the shares of the upper 5 and 20 percent are 9 and 7 percentage points respectively.

the concentration of income by lowering the shares of the least privileged 20% and 60%, by decreasing the share of income of the middle class, and by increasing the share of the wealthiest 20%. Furthermore the analysis indicates that, once a sharply dualistic development pattern has been initiated, further economic growth actually reduces the share of the lowest 60%. When the dualistic development pattern is primarily foreign-managed and financed, higher GNP tends to lower the share of the middle income households as well. In the absence of government intervention, dualistic growth therefore increases the concentration of income. The extent of cleavage in technology and life styles thus exerts a profound effect upon income distribution, not only in itself, but also by influencing the way in which further development affects the distribution of income.

The extent of potential for economic development is statistically significant in a third of the splits, but appears as a primary variable only twice. Faster growth accompanied by improvements in economic institutions tends to redistribute income from the two extremes of the income distribution towards the families in the 40 - 95% income brackets. The more dynamic the economy, and the more malleable its institutions, the larger is the share of the middle income groups. However, more rapid economic growth also increases the proportion of income accruing to the upper 20%, even though it decreases the share of income of the upper 5%. The effect of economic growth on the share of the lowest 20% is not very systematic, but there is an indication that better growth performance tends to lower the share of the poorest households. The overall effect may or may not be an increase in the concentration of income.*

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* In two splits, a higher concentration coefficient is associated with higher development potential; in one split, it is associated with lower development potential.

More widespread opportunities for political participation increase the degree of equality of income distribution. This variable was statistically significant in 6 of 27 splits, though it appeared as a primary differentiator only once.

Several variables which, on a priori grounds, might have been expected to affect the distribution of income were never actually statistically significant. Among economic variables, the size of the traditional agricultural sector, the size and pattern of development, the level of adequacy of physical overhead capital, the level of effectiveness of the tax system, and the total population never entered the analysis. The extent of urbanization, the nature of colonialism, and the recentness of self-government also never appeared.

Argentina (1961)

	% households	% income
lowest	10.00	2.90
next	10.00	4.10
next	10.00	4.80
next	10.00	5.50
next	10.00	6.10
next	10.00	7.00
next	10.00	8.00
next	10.00	9.60
next	10.00	12.90
next	5.00	9.70
next	4.00	14.90
upper	1.00	14.50

Source: United Nations Publication, "Economic Development and Income Distribution in Argentina," Economic Commission for Latin America, United Nations, E/CN.12/802 New York, 1969.

Bolivia (1968)

	% households	% income*
lowest	20.00	3.50
next	30.00	11.00
next	23.30	20.50
next	21.70	29.30
next	3.00	17.00
upper	2.00	18.70

Source: National Secretariat of Planning, Prepared for AID by Mr. Rolando Sanz-Guerrero.

*Allocation between first three groups and between next two groups estimated on basis of distribution in similar countries in Latin America.

Brazil (1960)

	% population	% income
lowest	20.00	3.50
next	30.00	11.50
next	30.00	23.50
next	15.00	23.10
upper	5.00	38.40

Source: United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three."

Burma (1958)

	% households	% income
lowest	83.20	53.58**
next	6.50	7.08
next	3.60	6.76
next	2.40	6.15
next	1.30	4.61
next	1.90	11.24
upper	1.00	10.57*

Source: Central Statistical and Economics Department, Government of the Union of Burma," Report on the 1958 Survey of Household Expenditure in Rangoon," Adjusted on the basis of National Account Statistics to reflect the distribution of rural income.

*Estimated so that total income equals national income at factor cost.

**Estimated by allocating agricultural income to agricultural population and adding urban income at that level. An average family size of 6 people is assumed in this calculation.

Ceylon (1963)

	% population	% income
lowest	10.00	1.50
next	10.00	2.95
next	10.00	4.00
next	10.00	5.21
next	10.00	6.27
next	10.00	7.54
next	10.00	9.00
next	10.00	11.22
next	10.00	15.54
upper	10.00	36.77

Source: Survey of Ceylon's Consumer Finances 1963, Central Bank of Ceylon, Department of Economic Research, Colombo, 1964, p. 66.

Chad (1958)

	% population	% income
lowest	60.00	35.00*
next	20.00	22.00*
next	10.00	13.00
next	5.00	7.00
upper	5.00	23.00

Source: Morrisson, Christian, La Repartition Des Revenus Dans Les Pays Du Tiers-Monde, Editions Cujas, Paris, 1969, pp. 194,205.

*Division of income between groups estimated on basis of classification in Morrisson, p. 194.

Chile (1968)

	% households	% income
lowest	28.30	7.70
next	32.40	20.10
next	18.00	18.90
next	7.60	11.10
next	4.40	8.70
next	2.90	7.10
next	2.90	8.00
next	1.50	5.90
upper	2.00	12.50

Source: United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

Taiwan (1961)

	% households	% income
lowest	17.36	3.29
next	19.58	9.00
next	14.90	9.41
next	13.18	10.45
next	8.13	7.87
next	6.03	6.87
next	5.79	7.80
next	4.56	7.68
next	3.33	6.87
next	2.09	5.02
next	1.85	5.30
next	1.72	6.52
next	0.74	4.07
next	0.49	5.16
upper	0.25	4.69

Source: Chang, Prof. Kowie, "Report on Pilot Study of Personal Income (and Consumption) in Taiwan," Prepared under the sponsorship of Working Group of National Income Statistics Directorate-General of Budget, Account and Statistics, The Executive Yuan.

Colombia (1964)

	% households	% income
lowest	7.64	0.45
next	5 94	0.75
next	5.16	0.77
next	8.65	1.52
next	8.00	1.84
next	6.67	2.34
next	15.42	6.76
next	6.12	3.52
next	6.71	4.90
next	8.51	7.37
next	6.79	9.02
next	4.86	8.59
next	1.49	3.24
next	2.02	8.41
next	1.28	7.78
next	0.71	5.83
next	0.59	8.55
upper	0.20	9.17

Source: United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

Costa Rica (1969)

	% households	% income
lowest	20.00	6.00
next	30.00	12.20
next	30.00	21.80
next	15.50	25.00
upper	5.00	35.00

Source: United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

Dahomey (1959)

	% population	% income
lowest	60.00	30.00*
next	20.00	20.00*
next	10.00	10.00**
next	5.00	8.00
upper	5.00	31.00

Source: Morrisson, Christian, La Repartition des Revenues dans les Pays du Tiers-Monde, Editions Cujas, Paris, 1969.

*Allocation between lowest two groups estimated on basis of classification in Morrisson, p. 194, 2A.

**Estimated on basis of distribution in Togo and Niger.

Ecuador (1968)

	% population	% income
lowest	20.00	6.30*
next	30.00	17.00*
next	24.90	28.00*
next	23.60	32.00
upper	1.30	16.60

Source: National Development Plan, 1964-73, Alianza Para El Progresso, Evaluacion del Plan General de Desarollo Economico y Social del Ecuador (August, 1964).

*Distribution between bottom three groups estimated on basis of distribution in other similar Latin American countries.

Gabon (1960)

	% population	% income
lowest	60.00	15.00*
next	10.00	8.00*
next	10.00	6.00
next	10.00	11.00
next	5.00	13.00
upper	5.00	47.00

Source: Morrisson, Christian, La Repartition des Revenus dans les Pays du Tiers-Monde, Editions Cujas, Paris, 1969.

*Distribution between bottom two groups estimated on basis of classification 6B, Morrisson, p. 194.

Greece (1957)

	% population	% income
lowest	20.00	9.00
next	24.00	15.00
next	23.50	14.50
next	5.00	4.30
next	4.20	4.20
next	3.30	3.50
next	3.20	5.50
next	11.80	21.00
upper	5.00	23.00*

Source: Crockett, Jean, "Consumer Expenditures and Incomes in Greece," University of Pennsylvania and Center of Planning and Economic Research, Athens, 1967.

*Estimated by adding national account data on property income to this income class. Labor force estimates by skill from ILO Yearbook.

India (1956-57)

	% households	% income
lowest	10.00	3.00
next	10.00	5.00
next	10.00	6.00
next	10.00	6.00
next	10.00	8.00
next	10.00	8.00
next	10.00	9.00
next	10.00	13.00
next	10.00	14.00
next	5.00	8.00
upper	5.00	20.00

Source: P.D.Ojna and V.V.Bhatr, "Patterns of Income Distribution in an Underdeveloped Economy: A Case Study of India," American Economic Review, September 1964, p. 714.

Iraq (1956)

	% population	% income
lowest	60.00	16.00*
next	20.00	16.00*
next	10.00	23.00
next	5.00	11.00
upper	5.00	34.00

Source: Morrisson, Christian, La Repartition des Revenus dan les Pays du Tiers-Monde, Editions Cujas, Paris, 1969.

*Allocation of income between the bottom two classes estimated on basis of classification in Morrisson, p. 194.

Israel (1957)

	% population	% income
lowest	10.00	2.60
next	10.00	4.20
next	10.00	6.00
next	10.00	7.40
next	10.00	8.30
next	10.00	9. 60
next	10.00	10. 30
next	10.00	12. 20
next	10.00	17.00
upper	10.00	22.40

Source: Ben-Shahar, Haim and Moshe Sandberg, "Economic and Institutional Effects on Income Distribution: The Case of Israel," Public Finance, Vol. XXII, No. 3, 1967, p. 244.

Ivory Coast (1959)

	% population	% income
lowest	60.00	30.00
next	20.00	15.00*
next	10.00	15.00*
next	5.00	11.00
upper	5.00	29.00

Source: Morrisson, Christian, La Repartition des Revenus dans les Pays du Tiers-Monde, Editions Cujas, Paris, 1969.

Jamaica (1958)

	% households	% income
lowest	20.00	2.2
next	10.00	2.5
next	10.00	3.5
next	10.00	4.7
next	10.00	6.1
next	10.00	8.3
next	10.00	11.2
next	10.00	18.0
next	5.00	13.3
upper	5.00	30.2

Source: Ahiram, A., "Income Distribution in Jamaica, 1958," Social and Economic Studies, Institute of Social and Economic Research, University of the West Indies, Jamaica, Vol. 13, No. 3, September, 1964, p. 337.

Japan (1962)

	% households	% income
lowest	10.00	1.40
next	10.00	3.30
next	10.00	4.70
next	10.00	5.90
next	10.00	7.20
next	10.00	8.60
next	10.00	10.30
next	10.00	12.60
next	10.00	16.20
upper	10.00	29.80

Source: Ishizaki, Tadao, "The Income Distribution in Japan," The Developing Economies, Vol. 5, No. 2, June 1967, p. 356.

Kenya (1961-62)

	% population	% income
lowest	64.40	21.04
next	11.50	7.57
next	7.10	12.83
next	3.70	.93
next	1.40	4.02
next	1.60	7.79
upper	2.29	45.79

Source: Estimated by amalgamating data from the following sources with U.N. National Account Statistics data on subsistence income and on functional shares:
Maitra, Priyatosh, "Implications of Income Distribution for Economic Development: East Africa a Case Study," Economic Affairs, Vol. XIII, Nos. 1-2, January-February, 1968, p. 87.
Government of Kenya, Economics and Statistics Division, Ministry of Finance and Economic Planning, "Reported Employment and Earnings in Kenya 1962."
Morrisson, Christion, La Repartition des Revenus dans les Pays du Tiers-Monde, Editions Cujas, Paris, 1969.

Lebanon (1955-60)

	% households	% income
lowest	20.00	5.00*
next	30.00	13.00*
next	10.00	5.00
next	20.00	16.00**
next	10.00	16.00
next	5.00	11.00
upper	5.00	34.00

Source: Morrisson, Christian, La Repartition des Revenus dans les Pays du Tiers-Monde, Editions Cujas, Paris, 1969.

*Division between groups estimated on basis of similar distributions.

**Estimated on basis of similar distributions.

Libya (1962)

	% households	% income
lowest	21.60	0.11
next	12.20	0.21
next	15.90	0.57
next	18.30	1.60
next	6.60	2.20
next	5.70	5.80
next	13.20	36.10
next	4.60	23.40
upper	2.00	28.80

Source: Dajani, Sami W., "Family Budget Survey in Tripoli Town 1962," United Kingdom of Libya, Ministry of National Economy Central Statistics Office, Tripoli.

United Nations. "Yearbook of National Accounts," 1968, p. 410.

United Nations,"Compendium of Social Statistics," Series K., No. 2, (1963).

Madagascar (1960)

	% households	% income
lowest	50.00	18.00
next	10.00	5.00*
next	20.00	18.00
next	10.00	11.00**
next	5.00	11.00
upper	5.00	39.00

Source: Morrisson, Christian, La Repartition des Revenus dans les Pays du Tiers-Monde, Editions Cujas, Paris, 1969, pp.159, 204.

* Estimated on basis of distribution in similar countries.

** Estimated by subtraction.

Mexico (1963)

	% households	% income
lowest	18.36	3.10
next	25.14	8.59
next	21.60	13.13
next	10.89	10.56
next	14.99	24.65
next	4.55	13.00
next	1.91	7.79
next	1.65	9.86
upper	.91	9.32

Source: United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

Morocco (1965)

	% population	% income
lowest	55.70	20.00*
next	20.60	10.50
next	1.20	1.00
next	9.40	11.90
next	2.80	9.10
next	.80	4.70
next	.30	2.20
next	.07	1.10
next	.07	1.90
upper	9.10	37.50**

Source: Lazraq, Abderrazak, "Les Salaires dans la Revenue National de 1955 a 1966," Bulletin Economique et Social du Maroc, XXIX, 106-107, Juillet-Decembre, 1967.

*Agricultural income estimated from Yearbook of National Accounts Statistics; agricultural population from U.N. Demographic Yearbook; number of non-agricultural wage earners and ratio of their salary to that of urban unskilled wages given in Lazraq. op. cit;

**Property income estimated from Yearbook of National Accounts Statistics and added to this category. Ratio of non-agricultural property income to non-agricultural wage income given in Lazraq, op. cit.

Niger (1960)

	% population	% income
lowest	60.00	35.00*
next	20.00	23.00*
next	10.00	11.00**
next	5.00	8.00
upper	5.00	23.00

Source: Morrisson, Christian, La Repartition des Revenus dans les Pays du Tiers-Monde, Editions Cujas, Paris, 1969, pp. 194, 204.

*Distribution between these groups estimated on basis of classification in Morrison, p. 194.

**Estimated on basis of distribution in Chad and Togo.

Nigeria (1959)

	% population	% income
lowest	90.00	43.98
next	0.44	0.85
next	0.50	1.15
next	0.59	1.73
next	0.50	1.65
next	0.57	2.18
next	0.53	2.12
next	0.67	2.92
next	0.62	2.94
next	0.61	3.12
next	0.57	3.27
next	0.41	2.50
next	0.40	2.57
next	0.35	2.36
next	1.65	13.69
next	0.33	3.94
next	0.11	1.67
next	0.10	2.12
upper	0.01	0.72

Source: Marchal, Jean and Bernard Ducros, "The Distribution of National Income," St. Martin's Press, New York, 1968, p. 405.

Pakistan (1963-64)

	% households	% income
lowest	5.00	1.00
next	5.00	1.50
next	10.00	4.00
next	10.00	5.00
next	10.00	6.00
next	10.00	7.00
next	10.00	8.50
next	10.00	9.50
next	10.00	12.50
next	10.00	15.00
next	5.00	10.00
upper	5.00	20.00

Source: Dehjom, "Personal Income Distribution and Personal Savings in Pakistan, 1963-64," Pakistan Development Review, Summer, 1967.

Panama (1969)

	% households	% income
lowest	20.00	4.90
next	30.00	15.70
next	30.00	22.70
next	15.00	22.20
upper	5.00	34.50

Source: United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

Peru (1961)

	% population	% income
lowest	9.20	1.40
next	32.70	8.00
next	22.90	9.90
next	24.50	21.20
next	1.80	2.90
next	6.00	12.80
next	1.00	3.60
upper	1.90	40.20

Source: Cha, David, "Income Distribution, 1961," Instituto Nacional de Planificacion, private communication.

Philippines (1961)

	% population	% income
lowest	17.00	3.30
next	29.30	12.00
next	17.80	12.20
next	12.00	11.50
next	10.80	14.50
next	7.40	15.20
upper	5.80	31.30

Source: Ordono, Eustaquio O., "The Pattern of Post-War Income Distribution in the Philippines," Economic Research Journal, Volume XI, No. 3, December, 1964, p. 144.

Zambia - Northern Rhodesia (1959)

	% households	% income
lowest	14.67	3.73
next	40.09	19.11
next	24.81	19.70
next	9.18	10.20
next	4.45	6.37
next	1.61	2.82
next	0.57	1.19
next	0.28	0.66
next	0.19	0.51
next	0.17	0.53
next	0.27	0.94
next	0.32	1.30
next	0.28	1.36
next	0.33	1.76
next	0.37	2.22
next	0.41	2.72
next	0.25	1.83
next	0.16	1.28
next	0.16	1.35
next	0.24	2.22
next	0.66	7.39
next	0.38	6.11
next	0.07	1.48
next	0.03	0.86
next	0.02	0.95
next	0.01	0.48
next	0.00	0.41
upper	0.01	0.52

Source: Baldwin, Robert E., "Economic Development and Export Growth, A Study of Northern Rhodesia, 1920-1960," University of California Press, Berkeley and Los Angeles, 1966, p. 46.

Rhodesia (1946)

	% population	% income
lowest	60.00	20.00
next	20.00	15.00*
next	15.00	5.00
upper	5.00	60.00

Source: Morrisson, Christian, La Repartition des Revenus dans les Pays du Tiers-Monde, Editions Cujas, Paris, 1969.

* Estimated on basis of classification in Morrisson, p. 194.

Senegal (1960)

	% population	% income
lowest	20.00	3.00*
next	20.00	7.00*
next	20.00	10.00*
next	20.00	16.00
next	10.00	16.00
next	5.00	12.00
next	5.00	36.00

Source: Morrisson, Christian, La Repartition des Revenues dans les Pays du Tiers-Monde, Editions Cujas, Paris, 1969.

*Estimated on basis of similar distributions and classification in Morrisson, p. 194.

Sierra Leone (1968)

	% households	% income
lowest	18.00	3.20
next	32.00	10.10
next	6.00	2.60
next	36.00	30.00
upper	8.00	54.10*

Source: Sierra Leone Household Survey, Africa Research Bulletin, Feb. 14, 1968, p. 917.

* Income in this category adjusted so that the per capita income times population equals National Income figure from Yearbook of National Accounts Statistics.

South Africa (1965)

	% population	% income*
lowest	6.60	0.3-
next	10.00	1.07
next	8.70	1.29
next	12.50	2.66
next	11.90	3.84
next	3.30	1.72
next	7.30	5.54
next	12.10	14.30
next	11.10	17.30
next	6.80	13.10
next	4.30	10.40
upper	5.40	28.40

Source: Republic of South Africa, Bureau of Statistics, "Report No. 11-06-03, Survey of Family Expenditure, Ten Principal Urban Areas and the Urban Areas of the Vaal Triangle and the Orange Free State Gold Fields, November, 1966, Family Income."
Feldmann-Laschin, G.R., F.E. Radel and C. De Coning, "Income and Expenditure Patterns of Coloured Households Cape Peninsula," Bureau of Market Research, University of South Africa, Pretoria, 1965.
United Nations, Yearbook of National Accounts Statistics (various years).
United Nations, Demographic Yearbook (various years).

*Amalgamated from data in cited sources using Demographic Yearbook data for population distribution. All rural income was assumed to be distributed as in the Cape Peninsula.

Sudan (1969)

	% households	% income
lowest	0.20	0.006
next	5.70	0.94
next	18.20	5.84
next	15.20	7.74
next	14.20	9.41
next	8.40	6.95
next	7.40	7.35
next	4.40	5.11
next	4.90	6.49
next	2.90	4.32
next	3.30	5.46
next	1.70	3.10
next	2.20	4.37
next	1.20	2.59
next	1.40	3.24
next	1.20	2.98
next	0.90	2.39
next	1.00	2.81
next	0.60	1.79
next	2.20	7.29
next	0.70	2.66
next	0.70	3.02
next	0.40	1.42
next	0.20	1.56
upper	0.20	1.16

Source: Republic of the Sudan, Department of Statistics, "Omdurman Household Budget Survey," p. 24.

Surinam (1962)

	% population	% income
lowest	35.50	19.00
next	23.70	17.20
next	12.80	12.10
next	8.10	9.30
next	5.20	7.10
next	3.60	5.70
next	2.70	4.80
next	1.80	3.70
next	1.40	3.20
next	1.00	2.50
upper	4.20	15.40

Source: Algemeen Bureau Voor de Statistiek, "Surinam in Figures, No. 44," March, 1967, p. 3.

Tanzania (1964)

	% population	% income
lowest	80.00	39.00
next	5.00	4.60
next	2.00	2.30
next	10.50	16.10
upper	1.50	38.10

Source: Priyatosh, Maitra, "Implications of Income Distribution for Economic Development: East Africa A Case Study," pp. 96-97.

Smith, Hadley E., "Readings on Economic Development and Administration in Tanzania, IPA, Dar Es Salaam, N. 4, Table 1.

Trinidad and Tobago (1965)

	% population	% income
lowest	13.30	2.60
next	20.00	3.50*
next	15.00	7.30
next	31.00	29.00
next	11.20	18.00
next	5.20	13.00
upper	4.80	26.00**

Source: Miller, Nugent, "Some Observations on the Income Distribution of Trinidad and Tobago," Income Earnings of Individuals by Sex IN 1-1, Continuous Sample Survey of Population - Publication No. 6, p. ix, p. 1 (urban paid employees).

* Income and population in this class are rural income estimated from breakdown in Yearbook of National Accounts Statistics and Demographic Yearbook.

**Adjusted by figure on profit income from Yearbook of National Accounts Statistics.

Tunisia (1971)

	% population	% income
lowest	37.40	9.33
next	30.30	15.11
next	12.60	11.07
next	5.80	7.46
next	1.80	2.78
upper	12.00	54.24

Source: Duwaji, Ghazi, "Economic Development in Tunisia," Frederick A. Praeger, New York, p. 189.

* Figures are projected.

Venezuela (1962)

	% households	% income
lowest	3.73	0.33
next	12.07	2.25
next	9.40	4.09
next	9.30	3.81
next	8.00	4.22
next	29.-0	25.40
next	10.70	17.00
next	9.30	10.30
next	5.10	13.70
next	1.52	6.20
next	0.99	4.00
upper	0.89	8.70

Source: United Nations, Economic and Social Council, "Economic Survey of Latin America, 1969, Part Three, Special Studies", March 20, 1970, E/CN.12/AC. 62/2 Add. 2.

COUNTRY	LOWEST 20%		21 - 40%		41 - 60%		61 - 80%		81 - 95%		96 - 100%	
	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum incom
Argentina[1]	7.00	7.00	10.30	17.30	13.10	30.40	17.60	48.00	22.60	70.60	29.40	100.0
Bolivia[2]	4.00	4.00	13.70	17.70	8.90	26.60	14.30	40.90	23.40	64.30	35.70	100.0
Brazil[3]	3.50	3.50	9.00	12.50	10.20	22.70	15.80	38.50	23.10	61.60	38.40	100.0
Burma[4]	10.00	10.00	13.00	23.00	13.00	36.00	15.50	51.50	20.29	71.79	28.21	100.0
Ceylon[5]	4.45	4.45	9.21	13.66	13.81	27.47	20.22	47.69	33.93	81.62	18.38	100.0
Chad[6]	12.00	12.00	11.00	23.00	12.00	35.00	22.00	57.00	20.00	77.00	23.00	100.0
Chile[7]	5.40	5.40	9.60	15.00	12.00	27.00	20.70	47.70	29.70	77.40	22.60	100.0
Taiwan[8]	4.50	4.50	9.70	14.20	14.80	29.00	19.00	48.00	27.90	75.90	24.10	100.0
Colombia[9]	2.21	2.21	4.70	6.91	8.97	15.88	16.06	31.94	27.70	59.64	40.36	100.0
Costa Rica[10]	6.00	6.00	7.30	13.30	12.10	25.40	14.00	40.00	25.00	65.00	35.00	100.0
Dahomey[11]	8.00	8.00	10.00	18.00	12.00	30.00	20.00	50.00	18.00	68.00	32.00	100.0
Ecuador[12]	6.30	6.30	10.60	16.50	26.10	42.60	15.60	58.20	20.30	78.50	21.50	100.0
El Salvador[13]	5.50	5.50	6.70	12.20	11.30	23.50	15.10	38.60	28.40	67.00	33.00	100.0
Gabon[14]	2.00	2.00	6.00	8.00	7.00	15.00	14.00	29.00	24.00	53.00	47.00	100.0
Greece[15]	9.00	9.00	12.80	21.80	12.30	34.10	16.40	50.50	26.50	77.00	23.00	100.0
India[16]	8.00	8.00	12.00	20.00	16.00	36.00	22.00	58.00	34.00	92.00	8.00	100.0
Iraq[17]	2.00	2.00	6.00	8.00	8.00	16.00	16.00	32.00	34.00	66.00	34.00	100.0
Israel[18]	6.80	6.80	13.40	20.20	18.60	38.80	21.80	60.60	28.20	88.80	11.20	100.0

COUNTRY	LOWEST 20%		21 - 40%		41 - 60%		61 - 80%		81 - 95%		96 - 100%	
	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cu inco
Ivory Coast[19]	8.00	8.00	10.00	18.00	12.00	30.00	15.00	45.00	26.00	71.00	29.00	100.
Jamaica[20]	2.20	2.20	6.00	8.20	10.80	19.00	19.50	38.50	30.30	68.80	31.20	100.
Japan[21]	4.70	4.70	10.60	15.30	15.80	31.10	22.90	54.00	31.20	85.20	14.80	100.
Kenya[22]	7.00	7.00	7.00	14.00	7.00	21.00	15.00	36.00	41.80	77.80	22.20	100.
Lebanon[23]	3.00	3.00	4.20	7.20	15.80	23.00	16.00	39.00	27.00	66.00	34.00	100.
Lybia[24]	0.11	0.11	0.39	0.50	1.28	1.78	8.72	10.50	43.10	53.60	46.40	100.
Madagascar[25]	7.00	7.00	7.00	14.00	9.00	23.00	18.00	41.00	22.00	63.00	37.00	100.
Mexico[26]	3.66	3.66	6.84	10.50	11.25	21.75	20.21	41.96	29.52	71.48	28.52	100.
Morocco[27]	7.10	7.10	7.40	14.50	7.70	22.20	12.40	34.60	44.50	79.10	20.60	100.
Niger[28]	12.00	12.00	11.00	23.00	12.00	35.00	23.00	58.00	19.00	77.00	23.00	100.
Nigeria[29]	7.00	7.00	7.00	14.00	9.00	23.00	16.10	39.10	22.50	61.62	38.38	100.
Pakistan[30]	6.50	6.50	11.00	17.50	15.50	33.00	22.00	55.00	25.00	80.00	20.00	100.
Panama[31]	4.90	4.90	9.40	14.30	13.80	28.10	15.20	43.30	22.20	65.50	34.50	100.
Peru[32]	4.04	4.04	4.86	8.90	8.30	17.20	15.20	32.40	19.30	51.70	48.30	100.
Philippines[33]	4.30	4.30	8.40	12.70	12.00	24.70	19.50	44.20	28.30	72.50	27.50	100.
N. Rhodesia[34] (Zambia)	6.27	6.27	9.55	15.82	11.10	26.95	15.95	42.90	19.60	62.50	37.50	100.
Rhodesia[35]	4.00	4.00	8.00	12.00	8.00	20.00	15.00	35.00	5.00	40.00	60.00	100.
Senegal[36]	3.00	3.00	7.00	10.00	10.00	20.00	16.00	36.00	28.00	64.00	36.00	100.

COUNTRY	LOWEST 20%		21 - 40%		41 - 60%		61 - 80%		81 - 95%		96 - 100%	
	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income	% income	% cum. income
Sierra Leone[37]	3.80	3.80	6.30	10.10	9.10	19.20	16.70	35.90	30.30	66.20	33.80	100.00
South Africa[38]	1.94	1.94	4.17	6.11	10.16	16.27	26.37	42.64	17.98	60.62	39.38	100.00
Sudan[39]	5.60	5.60	9.40	15.00	14.30	29.30	22.60	51.90	31.00	82.90	17.10	100.00
Surinam[40]	10.70	10.70	11.56	22.26	14.74	37.00	20.60	57.60	27.00	84.60	15.40	100.00
Tanzania[41]	9.75	9.75	9.75	19.50	9.85	29.25	9.75	39.00	18.10	57.10	42.90	100.00
Trinidad and Tobago[42]	3.60	3.60	5.76	9.36	9.16	18.52	24.48	43.00	30.40	73.40	26.60	100.00
Tunisia[43]	4.97	4.97	5.65	10.62	9.95	20.57	14.43	35.00	42.56	77.56	22.44	100.00
Venezuela[44]	4.40	4.40	9.00	13.40	16.60	30.00	22.90	52.90	23.90	76.80	23.20	100.00

GENERAL SOURCES

United Nations, "National Income and its Distribution in Less Developed Countries," Statistical Series, Serie E, no 3, New York, 1951.

United Nations, "Report on the World Social Situation, 1952."

United Nations, "Statistics of the Distribution of Personal Income," Economic and Social Council 1957.

United Nations,"Rôle et Structure des Economies Monétaires en Afrique Tropicale,"1955.

United Nations, "The Economic Development of Latin America in the Post-war Period,"New York 1964.

LATIN AMERICA (General)

Economic Bulletin for Latin America, "Income Distribution in Latin America," Vol. XII, No. 2, October 1967.

United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies," E/CN. 12/AC.62/2/ Add. 2

ARGENTINA

United Nations Publication, "Economic Development and Income Distribution in Argentina," Economic Commission for Latin America, United Nations, E/CN.12/802 New York 1969.

Cline, William R., "Income Distribution Data for Argentina, Brazil, Chile, Colombia, Mexico and Venezuela," (Potential Effects of Income Redistribution on Economic Growth in Latin America), Agency for International Development (mimeographed).

Naciones, Unidas, Comision Economica para America Latina, El Desarrollo Economico y la Distribucion del Ingreso en la Argentina New York: 1968.

Republica Argentina, Presidencia de la Nacion, Consejo Nacional de Desarrollo, Sector Presupuesto Economico Nacional, Encues a Sobre Presupuestos de las Familias Urbanas por Niveles de Ingreso para 1963, Buenos Aires, 1965.

United Nations, Economic Commission for Latin America, "Income Distribution in Argentina," Economic Bulletin for Latin America, Vol. XI, No. 1, April 1966, pp. 108-112.

BOLIVIA

Source: National Secretariat of Planning, Prepared for AID by Mr. Rolando Sanz-Guerrero.

BRAZIL

United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three."

Cline, William R., op. cit.

Fundacao Getulio Vargas, Instituto Brasileiro de Economia, Pesquisa sobre Orcamentos Familiares, Rio de Janeiro; n.d.

Fundacao IBGE, Pesquisa Nacional por Amostra de Domicilios, Rio de Janeiro: quarterly, beginning November 1968 .

I. B. G. E., Servico Nacional de Recenseamento, VII Recenseamento Geral do Brasil - 1960, Censo Demografico: Resultados Preliminares, Rio de Janeiro: 1965 p. 10.

Fundacao Getulio Vargas, Instituto Brasileiro de Economia, Pesquisa Sobre Orcamentos Familiares, Rio de Janeiro: n.d.

BRAZIL (Cont.)

Ahumada, Economic development and problems of social changes in Latin America. U.N.E.S.C.O. (1967).

BURMA

Central Statistical and Economics Department, Government of the Union of Burma, "Report on the 1958 Survey of Household Expenditure in Rangoon," Adjusted on the basis of National Account Statistics to reflect the distribution of rural incomes.

CEYLON

Survey of Ceylon's Consumer Finances 1963, Central Bank of Ceylon, Department of Economic Research, Colombo, 1964.

Central Bank of Ceylon, Survey of Ceylon's Consumer Finances (Colombo, 1954), Table 21.

Central Bank of Ceylon, "An Estimate of Inequality of Income," Mars 1952.

CHAD

Morrisson, Christian, La Repartition Des Revenus Dans Les Pays Du Tiers-Monde, Editions Cujas, Paris, 1969.

CHILE

Corporacion de Fomento de la Produccion, Geografia Economica de Chile, Primer Apendice, Santiago: 1966 .

Direccion de Estadistica y Censos (Chile) Serie de Investigaciones Muestrales, Muestra Nacional de Hogares: Encuesta Continua de Mano de Obra, Julio-Octobre 1966, pp. 10-31.

_____, "Encuesta Nacional Sobre Ingresos Familares," Santiago, 1969.

Patricio Millan S., "Estructura de Costos y Distribucion del Ingreso en la Economia Chilena," Universidad de Chile, 1968.

CHILE (cont.)

United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies,"

Jadue, R.,"Distribucion probable del ingreso de las personas en Chile: periodo 1950-60"(mimeographed).

TAIWAN

Chang, Prof. Kowie, "Report on Pilot Study of Personal Income (And Consumption in Taiwan," Prepared under the sponsorship of Working Group of National Income Statistics Directorate-General of Budget, Account and Statistics,The Executive Yuan.

COLOMBIA

McClure, Charles, "The Distribution of Income and Incidence of Taxes," Bogota, 1968.

Taylor, Milton C., et. al.,"Joint Tax Program of the Organization of American States and the Inter-American Development Bank,"Fiscal Survey of Colombia, (Baltimore: Johns Hopkins Press, 1965).

Cline, William R., op. cit.

Comission de Reforma Tributaria, Richard Musgrave et. al., Informe Musgrave: Bases para una Reforma Tributaria en Colombia, (Bogota: Biblioteca Banco Popular, 1969), p. 44.

United Nations, Analysis and Projections of Economic Development, III. The Economic Development, III. The Economic Development of Colombia (Geneva, 1957), Table 13, p. 28.

United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

COSTA RICA

United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

DAHOMEY

Morris, Christian, op. cit.

Hurault, J.and J. Vallet,"Mission d'etude des Structures Agraires dans le Sud Dahomey, I.G.N.,"Paris, 1963.

DAHOMEY (Cont.)

Ville de Cotonou, 1961,"Rapport d'enquetes."S.E.D.E.S., Paris.

ECUADOR

National Development Plan, 1964-73, Alianza Para El Progresso, Evaluacion del Plan General de Desarollo Economico y Social del Ecuador. Aug. 1964. p. 62.

EL SALVADOR

United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

Wallich, Henry C. and John H. Adler, Public Finance in A Developing Country: El Salvador - A Case Study ,Cambridge, 1951 , Table 2, p. 26.

GABON

Morrisson, Christian, op. cit.

GREECE

Crockett, Jean, "Consumer Expenditures and Incomes in Greece," University of Pennsylvania and Center of Planning and Economic Research, Athens, 1967.

INDIA

P. D. Ojna and V. V. Bhatr, "Patterns of Income Distribution in an Underdeveloped Economy.A Case Study of India," American Economic Review, September 1964, p. 714.

Planning Commission, Government of India, "Distribution of Income and Wealth and Concentration of Economic Power," Part I, February 1964.

M. Mukherjee and A. K. Ghosh, "The Pattern of Income and Expenditure in the Indian Union: A Tentative Study," Bulletin of the International Statistical Institute, XXXIII, Part III, International Statistical Conferences, India, 1951,(Lorenz curve equations given on p. 56).

Lydall, H. F., "The Inequality of Indian Incomes," The Economic Weekly, XII, 23, 24 and 25 , June 1960 , p. 873 - 74.

INDIA (Cont.)

Morrisson, Christian, Op. Cit.

Patel, S., "The Distribution of the National Income of India 1950-51," The Indian Economic Review, 1956.

"The Redistribution of Income," The Eastern Economist, 18 Juil, 1958.

"A Survey on Land Holding," The Eastern Economist, 11 Juil 1958.

Mueller, E., I. R. Sarma, Subramanian Swany, P. Ohja, and V. Bhatt, "Pattern of Income Distribution in an Underdeveloped Economy: A Case Study of India," American Economic Review, Dec. 1965. pp. 1173-1188.

IRAQ

Morrisson, Christian, op. cit.

F. A. O. Mediterranean Development Project, Irak country report F. A. O. Rome 1959.

Haseeb, K. The National Income of Irak 1953-61, Oxford, 1964.

ISRAEL

Ben-Shahar, Haim and Moshe Sandberg, "Economic and Institutional Effects on Income Distribution: The Case of Israel," Public Finance, Vol. XXII, No. 3, 1967.

IVORY COAST

Morrisson, Christian, op. cit.

Service de la Statistique,"Enquete Agricole par Sondage dans le Cercle de Bouake," 1955, Abidjan, s. d. Enquete agric. Bouake.

Ministere des Finances,"Resultats de l'enquête agricole par sondage, 1959-60," Abidjan, 1960, Resultats enquete agric. par sondage.

"Recensemente de la Commune d'Abidjan,"1955 Abidjan, 1956: C. I., Recensement Abidjan.

Service de la statisque,"Les Budgets Familiaux des Salariés Africains en Abidjan,"Abidjan, 1956.

"Recensement des Centres Urbains d'Abengourou, d'Agboville, de Dimbokro et

IVORY COAST (Cont.)

Raulin, H., "Problèmes Fonciers dans les Régions de Gagnoa et Daloa, O.R.S.T.O.M., Paris, 1957.

S.E.D.E.S., "Enquête Socio-économique Sur La Ville de Bouake."Paris.

S.E.D.E.S., "Enquête Socio-économique Man, Daloa, Gagnoa, Paris.

S.E.D.E.S., "Aspects Économiques du Secteur de l'artisanat,"Paris, 1966.

JAMAICA

Department of Statistics, "Rural Household Expenditure Survey 1956." Jamaica, B. W. I., 1957.

Ahiram, A., "Income Distribution in Jamaica, 1958," Social and Economic Studies, Institute of Social and Economic Research, University of the West Indies, Jamaica, Vol. 13, No. 3, Sept. 1964, p. 333.

Young, Bruce S., "Jamaica's Long-Term Development Programme," Social and Economic Studies, Institute of Social and Economic Research, University of the West Indies, Jamaica, Vol. 13, No. 3, September, 1964, p. 370.

JAPAN

Bureau of Statistics, Office of the Prime Minister, Japan, "1964 National Survey of Family Income and Expenditures,"Vol. I, Income and Expenditures for All Japan.

United Nations, Bureau of Statistics, Office of the Prime Minister, Japan, "1968 Family Saving Survey."

Ishizaki, Tadao, "The Income Distribution in Japan," The Developing Economies, Volume V, No. 2, June 1967, p. 351.

KENYA

Income distribution pieced together from the following sources:

Maitra, Priyatosh, "Implications of Income Distribution for Economic Development: East Africa.A Case Study," Economic Affairs, Vol. XIII, Nos. 1-2, January-February 1968, p. 87.

Government of Kenya, Economics and Statistics Division, Ministry of Finance and Economic Planning, " Reported Employment and Earnings in Kenya 1962."

Morrisson, Christian, op. cit.

KENYA (Cont.)

East African Statistical Department Kenya Unit, "The Patterns of Income, Expenditure and Consumption of Africans in Nairobi, 1957-1958, May 1959.

Government of Kenya, "The Pattern of Income, Expenditure and Consumption of African Middle Income Workers in Nairobi, July 1963," Directorate of Planning Ministry of Finance and Economic Planning, July 1964.

East African Statistical Department, "Report on the European Family Budget Survey Carried out during March and June, 1952," April, 1953.

United Nations,"National Income and Its Distribution in Underdeveloped Countries," Statistical Papers, Series E. No. 3 (New York 1951), Table 12, p. 19.

LEBANON

Morrisson, Christian, op. cit.

Churchill, C., The City of Beiruth, Dar El-Kitab, 1954.

Gannage, E., "Un Exemple de Redistribution des Revenus dans un pays Insuffisa Developpé: le Liban," Revue de Science et Legislation Financière, Oct. Dec. 1955.

LYBIA

Pieced together from:

Dajani, Sami W., "Family Budget Survey in Tripoli Town 1962," United Kingdom of Libya, Ministry of National Economy Central Statistics Office, Tripoli.

United Nations, "Yearbook of National Accounts," various years.

United Nations, "Compendium of Social Statistics," Series K., No. 2, (1963).

MADAGASCAR

Morrisson, Christian, op. cit.

Mullier, A., "Note sur la Concentration du Commerce à Madagascar," Service de la Statistique, Tananarive, 1959.

MADAGASCAR (Cont.)

Informations résultant des donnees du budget malgache, Tananarive.

I.N.S.R.E., C.I.N.A.M., "Enquête sur les Budgets et l'alimentation des Ménages Ruraux à Madagascar en 1962," Tananarive 1967.

Enquête budgetaire en mileu d'assistance technique a Tananarive, Service des Statistiques et des Etudes Socio-economiques, Tananarive.

Ottino, P., "Les Economies Paysannes Malgaches du Bas-Mangoky," Paris, 1963.

Gendarme, R., "L'economie de Madagascar,"Paris, 1963.

Ottino, P., "Notables et Paysans sans Terre de l'Anony." Bulletin de Madagascar, janv. 1965.

Liaudet, P. and H. Ripert, "Etude sur l'artisanat a Madagascar." Paris, 1961.

MEXICO

De Navarrete, Ifigenia M., "La Distribucion Del Ingreso Y El Desarrollo Economico De Mexico, Instituto De Investigaciones Economicas, Escuela Nacional De Economia,"Mexico, D. F., 1960.

Banco de Mexico, S. A., Ofician de Estudios sobre Proyecciones Agricolas, Encuesta sobre Ingresos y Gastos Familiares en Mexico -- 1963 (Mexico: 1966).

Estados Unidos de Mexico, Setimo Censo General de Poblacion: Parte Especial, 6 de Junio de 1950, (Mexico: Secretaria de Economia, Direccion General de Estadistica, 1955).

Secretaria de Industria y Comercio (Mexico), Direccion General de Muestreo, La Poblacion Economicamente Activa de Mexico, 1964-65. Resumen General de la Republica Mexicana. Tomo VII, November de 1965, (Mexico).

Ingresos y Egresos de la Poblacion de Mexico: Investigaciones por Muestreo, Julio de 1958 (Mexico: 1960).

United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

Sturmthal, A., "Economic Development, Income, Distribution and Capital Formation in Mexico," The Journal of Political Economy, June 1955.

MOROCCO

Pieced together from:

Lazraq, Abderrazak, "Les Salaires Dans le Revenue National de 1955 a 1966." Bulletin Economique Et Social Du Maroc, XXIX, 106-107, Juillet-Decembre 1967.

United Nations, National Accounts Statistics.

NIGER

Morrisson, Christian, op. cit.

Comptes Economiques 1959, Paris, 1961: Niger, C. E. 1959.

Les Budgets Familiauz Africains a Niamey, 1961-62, Paris, 1964.

Echard, N.,"Etude Socio-economique Dans les Vallees de l'Ader-Doutchi-Majya," Documents des Etudes Nigeriennes n° 15 I.F.A.N.-C.N.R.S.

NIGERIA

Marchal, Jean and Bernard Ducros, "The Distribution of National Income," St. Martin's Press, New York 1968.

PAKISTAN

Dehjom. "Personal Income Distribution and Personal Savings in Pakistan, 1963-64,"

PANAMA

United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

PERU

Cha, David, "Income Distribution, 1961," Instituto Nacional de Planificacion.

United Nations, Economic Commission for Latin America, "Economic Survey of Latin America, 1969, Part Three, Special Studies."

PHILIPPINES

Ordono, Eustaquio O., "The Pattern of Post-War Income Distribution in the Philippines," Economic Research Journal, Volume XI, No. 3, December 1964.

United Nations, Prepared for the Government of the Philippines, "The National Income of the Philippines and its Distribution, 1948.

N RHODESIA (ZAMBIA)

Baldwin, Robert E., "Economic Development and Export Growth, A Study of Northern Rhodesia, 1920-1960," University of California Press, Berkeley and Los Angeles, 1966.

Morrisson, Christian, op. cit.

United Nations,"National Income and Its Distribution in Underdeveloped Countries,"Statistical Papers, Series E. No. 3 ,New York 1951 .

RHODESIA

Morrisson, Christian, op. cit.

United Nations,"National Income and Its Distribution in Underdeveloped Countries,"Statistical Papers, Series E, No. 3 ,New York, 1951 .

"National Accounts of the Federation of Rhodesia and Nyasaland," Central Statistical Office, Federation of Rhodesia and Nyasaland, Salisbury, 1963.

SENEGAL

Morrisson, Christian, op. cit.

"Etude Statistique Sur Les Etablissements et les Salaries reels Pratiques au Senegal en 1956 et 1957,"Dakar, 1958.

Enquete Agricole 1960-61, Resultats Provisoires, Paris, 1962.

Mersadier, Y.,"Les Budgets Familiaux Africains, Etude Chez 136 Familles de Salaries dans 3 Centres Urbains du Senegal,"Institut Francais d' Afrique Noire 1957.

SIERRA LEONE

"Sierra Leone Household Survey," Africa Research Bulletin, Feb. 14, 1968, p. 917.

SOUTH AFRICA

Pieced together from:

Republic of South Africa, Bureau of Statistics, "Report No. 11 - 06 - 03 Survey of Family Expenditure, November 1966, Family Income."

Feldmann-Laschin, G. R., F. E. Radel and C. De Coning, "Income and Expenditure Patterns of Coloured Households Cape Peninsula," Bureau of Market Research, University of South Africa, Pretoria, 1965.

United Nations, Yearbook of National Accounts Statistics (various years).

United Nations, Demographic Yearbook (various years).

SUDAN

Pieced together from:

Republic of the Sudan, Department of Statistics, "Omdurman Household Budget Survey,"

United Nations, Yearbook of National Accounts, 1962.

SURINAM

Algemeen Bureau Voor de Statistiek, "Surinam in Figures, No. 44," March 1967.

TANZANIA

Smith, Hadley E., "Readings on Economic Development and Administration in Tanzania, IPA, Dar Es Salaam, No. 4 , 1964.

Priyatosh, Maitra, "Implications of Income Distribution for Economic Development: East Africa A Case Study," January, 1968.

Ghai, D P., "Some Aspects of Income Distribution in East Africa," EIRP 52, Economic Development Institute

TRINIDAD AND TOBAGO

Miller, Nugent, "Some Observations on the Income Distribution of Trinidad and Tobago," Income Earnings of Individuals by Sex IN 1-1, Continuous Sample Survey of Population - Publication No. 6, 1965.

TUNISIA

Duwaji, Ghazi, "Economic Development in Tunisia," Frederick A. Praeger, New York, 1967.

VENEZUELA

Republica de Venezuela, Oficina Central de Coordinacion y Planificacion de la Presidencia de la Republica, Primeria Encuestra Nacional de Ingresos y Gastos Familiares en Venezuela. Segund Semestre de 1962. Documento 5. Descripcion de las Encuesta y Resultados Preliminares de Ingresos y Gastos Familiares, Caracas: 1964 .

United Nations, Economic and Social Council, "Economic Survey of Latin America. 1969, Part Three, Special Studies, March 20, 1970, E/CN.12/AC. 62/2 Add. 2.

_____, Estudios Sobre la Distribucion del Ingresso en America Latina (Nota Complementaria al Documento E/CN. 12/770), E/CN. 12/770 Add. 1 Caracas, 1967 .

Shoup, C., "The Fiscal System of Venezuela,"Baltimore, 1959.