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MEASURES OF ECONOMIC DEVELOPMENT - A CRITICAL EVALUATION

By

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ABSTRACT

Congressionally mandated programs and policies cannot be effectively implemented, nor can related research be undertaken with existing data and indicators of development. Gross National Product (GNP), as a measure of development, has some shortcomings and social indicators, as a supplement to GNP, are not adequate for measuring progress of countries in achieving development objectives as mandated by Congress. A new set of indicators, termed "distributive indicators," need to be developed and related data collected by international agencies.

Keywords: Development process, structural transformation, national accounts, economic indicators, social indicators, Congressional mandate.

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PREFACE

This study was originally undertaken to provide information about the main features of social and economic development that would be relevant for the International Economics Division (IED) of the Economic Research Service. The objective was to identify and to provide a rationale for a group of selected indicators of development and the related data series needed for research on world economic and agricultural development. In the course of the work it was realized that the major concerns of Congress, as expressed in Public Law 480 and related Foreign Assistance Acts, about income inequality, unemployment and rural poverty in low income countries (LIC), were likewise the concerns of development economists and practioners, most national governments, aid donors and international agencies. The indicators and data needs of IED as discussed in this report are matters of vital interest to all concerned with the problems of the developing countries.

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SUMMARY

1. The objective of this study is to critically evaluate the existing measures of development and related data that are needed for implementing congressionally mandated programs and policies and related research, and if these measures are found lacking, to recommend development of additional indicators and data sets.
2. The approach used is to critically assess the shifts in development objectives and methodological efforts of social scientists to measure the progress of achievement of such objectives. Also, the quality and quantity of existing data are reviewed and analyzed. The end result, unique to this study, is to bring all the diverse efforts by social scientists to a common ground to provide a unified focus on the current status of measures of development and future needs.
3. The emphasis on objectives to be achieved by economic development of less developed countries has shifted since the 1950's. The low income countries (LIC's), the aid donor agencies and development specialists have added many socio-economic objectives to the basic and original objective of achieving a high rate of growth of gross national product (GNP). Congressional action in this area reflects the general concerns of social scientists, and in some respects, goes further with its recommendations than professional social scientists.
4. The main economic indicators of development have been the growth rates of the GNP and its components. Analytical work mainly by Kuznets, Chenery and Syrquin has centered around this concept and has been based on national accounts statistics. These analyses have provided valuable information that can be used in several ways to formulate development and trade theory and policy.
5. National accounting is the presentation of a comprehensive statistical statement about the economic activities of a country. Despite the rapid development of national income accounting all over the world and standardization of accounting methods followed by different countries, there are some shortcomings of the concepts, their uses, the quality of data and their coverage. The most important limitation is their international comparability.
6. To overcome this particular deficiency, an International Comparison Project (ICP) was introduced by the United Nations at the end of 1960. This project has been preparing an international data base that includes annual estimates of real Gross Domestic Product and its main components, and purchasing power parities of the currencies of all the countries of the world, and thus remove a critical deficiency in national accounts data.
7. Despite some limitations, the economic indicators of development as represented by GNP and its derivatives are relatively well developed both in terms of the analytical base for their delineation and data coverage, and they are still the most widely used to measure development. With further research in the ICP, there will be a large well established and internationally comparable data set on real national income for most countries.
8. Over the past two decades however, shortcomings of economic indicators as the only measure of development have been recognized. To overcome these deficiencies, numerous social indicators of

development such as the Physical Quality of Life Index (PQLI) have been designed. Scrutiny of existing literature suggests that there is no consensus on the theory of social development and its measurement. Moreover, there appears to be no unique set of indicators that would serve most policy purposes. The design and use of social indicators have gone beyond the minimum needed, often resulting in some relatively unimportant indicators and overaggregation relative to data collection and conceptualization. These social indicators have not captured the major concerns of social scientists and governments with respect to the distribution of the growth of benefits among different socio-economic groups in countries via generation of employment and purchasing power for poor people.

9. A set of indicators, called distributive indicators, needs to be developed and related data series collected for designing and implementing policies and programs to address concerns about the distribution of rural resources and benefits of development.
10. The U.S. Congress over the past decade has responded to the shifting social-economic concerns in LICs. Congressional action in this area reflects the general concerns of social scientists, and in some respects, goes further with its recommendations than they have. The International Development and Food Assistance Act of 1978, for example, amended the Foreign Assistance Act (FAA) to emphasize the basic human needs objective of development and emphasized the mandate for development and use of indicators of commitment and progress of achievement of these objectives in aid recipient countries (Section 102).
11. Existing economic and social indicators of development and data are, thus, inadequate for designing and implementing appropriate programs and policies required by Congressional mandate. A set of distributive indicators and related data are needed to supplement existing economic and social indicators for that purpose. The responsibility for designing such indicators and collecting needed data should remain with agencies of the United Nations. The U.S. Government through its representatives to these agencies can influence policies for the development of indicators that meet the needs of Congressionally mandated programs.

INTRODUCTION

The objective of this study is to address a very important and timely issue, that is the measurement of development in Low Income Countries (LIC's). During the past several decades there has been a lively but inconclusive debate on the contents and measurement of development. Social scientists and foreign aid donors have been concerned about this issue. They have emphasized or re-emphasized different objectives of development and the alternative ways to measure the achievement of these objectives. The United States Congress has also responded and recent amendments to the Foreign Assistance Act (FAA), especially to Section 102 added in 1975, require specifically that "the President shall establish appropriate criteria to assess the commitment and progress of countries" toward the objectives of development assistance under Chapter I of the FAA.

The Agency for International Development (AID) responded to the concerns in Section 102 in its 1977 report, Social-Economic Criteria for Development, but only in a very limited way (10). 1/ Social scientists have continued their efforts to understand the development process itself, to determine the objectives of development, and to measure development. Methodological work and data collection have been important parts of designing appropriate measures or indicators of development. The efforts have been stretched over a few decades, and have been isolated in nature. No significant efforts have been undertaken to make a comprehensive study of these divergent activities. This study critically evaluates these diverse activities by bringing them to a common ground and thereby providing a unified focus on the current status of development indicators, and if found lacking, recommends further efforts. The design of indicators of development and data collection have been the responsibility mainly of the different agencies of the United Nations. Because of the expense involved and the need for coordination and cooperation at the international level, only these agencies are capable of undertaking such responsibilities. It is hoped that this study will encourage efforts to develop appropriate indicators and collect data needed for carrying out legislative mandates of the U.S. Congress.

Economic development has traditionally been viewed as the transformation of an economy from a stage characterized by low GNP and high agricultural employment and output to a one where agriculture's share in output and employment declines as GNP and its growth rate rise. Development strategies during the fifties and sixties aimed primarily at raising GNP by rapid industrialization. Industrialization was to be made possible, in part, by a transfer of the surplus population from the traditional rural sector to the industrial and service sectors, thereby raising employment, productivity, and per capita income in all sectors. Increased employment, productivity, and income equality were perceived by many economists as contradictory goals, at least in the initial stages of development. Only persistent growth in GNP was believed to be necessary.

The poor countries as a whole achieved their goals of a 5-percent annual increase in the GNP during the sixties and seventies. Yet

wide-spread poverty, unemployment, and inequality in the distribution of benefits remained. The failure of increased GNP in many countries to reach the poor during the sixties led to greater emphasis during the seventies on creating employment. But the definition of unemployment in the industrialized countries was not necessarily appropriate for these countries. Also attempts to redistribute income growth yielded only meager results, at least in the short run. As a result the concern of donor agencies and recipient countries shifted to eradicating absolute poverty by concentrating on the basic human needs of the very poorest people. U.S. Foreign Assistance Acts, for example, mandated that an increasing amount of bilateral assistance be directed to improving the well-being of the poorest of the poor in developing countries, and required that appropriate measures be established to assess progress in meeting that objective. Because of the large rural population in these countries, the U.S. Legislation requires that special attention be given to rural development programs. Problems of small farmers and landless laborers require special measures as an integral part of strategies for increasing agricultural productivity and achieving other objectives mandated by Congress.

The concern about inequality, poverty and unemployment coexisting with a satisfactory GNP growth rate led to a consensus about the need to modify the pattern of development so that growth will generate fuller employment and more income equality as well as satisfy basic human needs. This new emphasis requires a better understanding of economic development as experienced over the last three decades.

In response to these growing concerns, numerous indicators of development have been designed to measure economic and social conditions of countries. Economic indicators, the most important set of indicators because of their wide use, are statistics on the state of an economy that measure total and per capita output (GNP) and their derivatives. These statistics reflect structural changes that take place during development. Social indicators, another useful set are direct statistical measures that are used to monitor areas of fundamental social concern such as income inequality, unemployment and poverty.

Indicators of development are both descriptive and prognostic. Descriptive indicators help to understand the current socioeconomic status of a country and to make quantitative comparison over time or between countries, while prognostic indicators reflect a set of correlated phenomena in society and provide a basis for policy intervention. Hence, the purpose of social and economic indicators is to serve policy and related program purposes, which depend on the perception of current and emerging problems by policymakers. Their perception of problems and their adherence to hypotheses regarding economic development influence the selection of development indicators. There are thus no *a priori* criteria for choosing indicators without reference to a specific policy orientation. However, commonly shared concerns in the development field provide the basis for a critical evaluation of the adequacy of existing indicators and their related data bases.

The conceptual basis and data bases for indicators are of crucial importance to the development of appropriate indicators. If indicators are based on an inappropriate analytical foundation, they may fail to indicate the desired phenomenon. The great improvements in statistical methodologies and data processing techniques over the past decade cannot offset failure at the conceptual level; no matter how well the numbers are manipulated they may still measure the wrong thing. It is equally true that the availability and quality of an appropriate data base can greatly limit or enhance the conceptualization of indicators as well as their operational value. This paper undertakes the important task of assessing the current status of development indicators and future needs. It considers recent shifts in development objectives, methodological efforts of economists and statisticians to understand and measure economic and social progress, and the quality and quantity of data needed to develop better indicators. Finally, it concludes with recommendations on actions needed to increase the information base that analysts and decisionmakers need to address more adequately and act on important economic and social concerns associated with the lower and middle income countries.

The following two sections review the evaluation and development of economic and social indicators, respectively. Special attention is given to the deficiencies of the two types of indicators and how social scientists have attempted to overcome them. The third section of the report considers how the U.S. Congress, through its legislative mandates, has responded to the emerging socioeconomic concerns in the low income countries. Congressional action in this area reflects the general concerns of social scientists, and in some respects, goes further with its recommendation than professional social scientists. The final section of the report draws on the materials from the previous sections and presents recommendations on the need for additional indicators of development. This section integrates the conclusions of social scientists with those of the U.S. Congress as reflected in congressional mandates. It is this synthesis of conclusions that serves as the basis for the recommendations on the need for additional indicators of development.

ECONOMIC INDICATORS

The main yardsticks for measuring economic development have been the growth rates of GNP and its components. Analytical work has centered around this concept and has been based on national accounts statistics. Over the past two decades, other measures have been suggested, and often used, as supplements to GNP to capture the shifting concerns of economic development. Nevertheless, the main focus still is on per capita GNP growth and its components. This section reviews the analytical work, the present status of economic indicators of development, and the recent refinements in national accounts statistics that are the basis for estimating GNP and its derivatives.

Economic indicators of development are statistics on the state of the economy. These can be analyzed to assess the structural changes that take place in an economy as it progresses from an underdeveloped to a developed state. Simple indicators present the basic data series;

complex indicators are derived from these basic data and can be used for more complex analytical purposes. Economic indicators, can be used to describe the current state of an economy, and thus to make quantitative comparisons over time or between countries. Economic indicators can also be prognostic, that is, predictive or prescriptive. The main use of economic indicators is to serve policy and planning needs. This is done by selecting a key data series and deriving indicators that can illuminate economic relationships and other important developments in the growth processes.

The most important analytical work using GNP and national accounts to measure economic development is by Kuznets, (29) and Chenery and Syrquin, (15). These are reviewed below.

Review of Analytical Work on Development

During the 1950s starting with the recorded national accounts of a few Western industrialized countries, Kuznets measured changes in the composition of consumption, production, trade, and other economic aggregates as income rose. He found comparable rates of growth and development patterns over time and for groups of countries classified by income levels. Since at that time there were few significant time series for developing countries, Kuznets was hesitant to apply his cross-country results to the analysis of change over time. More recently, with the benefits of more data, Chenery and Syrquin verified his findings for more than 100 countries (15). The work of Chenery and Syrquin has enhanced understanding of the structural transformation inherent in economic development of LDCs. This has facilitated the development of appropriate policies in many areas of concern. However, unlike Kuznets, Chenery and Syrquin did not focus on the role of agriculture in the transformation of an economy from an underdeveloped to a developed state. Kuznets' analysis did consider agriculture and, in this respect, is important for our purposes and is therefore described below.

Simon Kuznets

Kuznets' analysis of agriculture's role in development is based on a study of national accounts. Agriculture, like other sectors, contributes to the sustained increase in national product. Also it manifests the structural changes both within the sector and in its relation to other sectors. Agriculture participates in international dealings--commerce, financial flows, and technology transfer--that affect national growth. Thus, its importance in promoting economic growth is a composite of its product, market, and factor contributions. As its output expands it makes a product contribution and through domestic and foreign trade it makes a market contribution and by transferring productive resources to other sectors it makes a factor contribution.

The rate of growth of agricultural products is a measure of agriculture's direct contribution to the growth of national product. Kuznets expects that in the course of development, the growth of the nonagricultural sectors is greater than the growth of the agricultural

sector and, therefore, the share of agriculture in the national product declines.

Kuznets' study demonstrates the similarities between historical growth patterns and the intercountry patterns of the 1950's. Many other studies also focused on individual characteristics of developing countries, especially with respect to consumption, savings, investment, taxation, industrialization, and population growth. The results of these studies are not strictly comparable because they used different statistical methods to different country samples and different time periods.

Chenery and Syrguin

The main objective of Chenery and Syrquin is to provide a comprehensive description of the structural changes which accompany the growth of developing countries and to analyze their interrelations. An enormous increase in statistical information since 1950 enabled them to employ a combination of time series and cross-section analysis which was not feasible during the 1950's. They selected 27 variables to describe 10 basic processes of accumulation, resource allocation, and income distribution. In their analysis, Chenery and Syrquin rejected the notion of a dichotomy between developed and less developed countries and used a concept of a "transition" from one state to the other. This "transition" was defined by a set of structural changes that have almost always accompanied growth in per capita income in recent years.

Over the whole transition, they found per capita food consumption to increase only half as much as per capita income. They found the decline in the share of food consumption from 40 percent to less than 20 percent of GDP allowed a doubling of investment as a share of GDP. According to them, nonfood consumption rises rapidly and reaches 70 percent of total private consumption at the $1,000 (in 1964 dollars) per capita income level. The composition of exports also shifts away from primary products toward manufacture. Moreover, they maintain that the transformation of the composition of demand and production is half completed at the $300 income level. Above this level, the value added in industry normally exceeds that in primary production as is typical of the later stages of transition. The transformation of trade is a process more dependent upon government policy and normally occurs much later. Though countries vary a good deal in this respect, the rise in the share of manufactured exports does not generally reach its halfway mark until per capita reaches about the $600.

According to Chenery and Syrquin, the distribution of income in developing countries is determined largely by (a) the relative growth of different sectors and the modes of production (modern, traditional) of each; (b) the growth in the size, education, and sectoral distribution of the labor force; (c) the ownership of assets and the relative savings rates of different socio-economic groups; and (d) policy makers' attitudes about programs and policies designed to raise the share of income received by the poor such as free education, land redistribution,

and the substitution of labor-intensive for capital-intensive technologies. For a variety of reasons, changes in the pattern of employment lag behind changes in the structure of output. At the lowest level of development, primary production 2/ accounts for 52 percent of value added but for 71 percent of employment. As income rises, the share of primary production falls more rapidly than the share of primary employment, reflecting the concentration of investment and capital intensive technology in industry and the accumulation of surplus labor in agriculture. Labor productivity in the primary sectors falls from about 70 percent of the national average at an income level of $100 to about 50 percent at $500 and then gradually rises as agricultural technology is modernized and surplus agricultural labor is absorbed by the rest of the economy. The productivity gap between the primary and secondary sectors, according to the study, is widest at an income level ($200-$500) where income inequality is usually greatest. In advanced countries, primary sector production accounts for less than 15 percent of employment; rural to urban migration has substantially reduced the productivity gap; and the share of the labor force in industry and service sectors closely approximate the share of production of these sectors.

Chenery and Syrquin established that the share of urban population is closely related to the sectoral composition of output and that differences in degrees of urbanization among countries at similar income levels are associated largely with differences in patterns of production and trade. In a representative country, they hold, more than 50 percent of the production will be nonagricultural when income per capita is $500 and above, and the industrial labor force will exceed that employed in primary sector production when income per capita is $700 and above. But it is only at levels of $2,000 per capita and above that these primary production processes have been completed. In most countries, urban population has stabilized at about 75 percent of the population.

The historical fall in birth rates and death rates seems also to be a feature of economic development. On the basis of data for 1950-70, Chenery and Syrquin estimated that the income-related fall in birth rates takes place at income levels of about $200, with maximum levels of fertility occurring early in the transition.

Chenery and Syrquin feel that the results of their study lend support to the hypothesis that as average per capita income grows the share of total income received by the low-income groups declines before it rises. They maintain that information on income distribution has recently become available to support their statistical analysis, but statements about income distribution are still subject to many more qualifications than the other processes. Their analysis shows that the share of the poorest 40 percent of the population declines from about 16 percent of income in the poorest countries to about 13 percent at the middle-income level of $300 per capita. Meanwhile, the income share of the richest 20 percent of the population rises from 50 to 56 percent.

Although in the course of the transition income distribution typically worsens significantly before it improves, the direct cause of

this is clearly not growth in GNP per capita. They suggest that this worsening process is likely to be accentuated in highly dualistic economies, 3/ and less marked in those in which agriculture is still the dominant sector or in which education is widely available.

Most development processes show gradual transition from a lower to an upper limit. Structural characteristics like the rate of savings and of investment, the proportion of the population receiving higher education, or the extent of urbanization obviously cannot rise indefinitely. Chenery and Syrquin suggest that an S-shaped curve provides a better basis for analyzing a country's development than does the notion of indefinite growth in any single dimension. This S-shaped curve is also useful for intercountry comparisons of savings rates, industrialization, and trade patterns. The structural relations identified by comparing countries at different income levels at given years are compared with estimates derived by following development within groups of countries over time. Although some significant differences emerge, the time series used by Chenery and Syrquin tend to confirm the general nature of the transition.

Chenery and Syrquin emphasize, however, that it is useful to subdivide countries into homogeneous groups, so that individual deviations from the average relationships can be shown. Examination of a given country's departures from the average patterns for its group may be more instructive than analysis of the average changes that may be expected. For example, the economies of large developed countries--those with populations of more than 15 million in 1960--normally have more restrictions on foreign trade than small countries at the same income level. Imports and exports in these large developed countries rarely account for more than 15 percent of GDP, whereas the norm in small countries is from 20 to 30 percent. In addition, large countries generally have more inward-looking development policies which have repercussions on other aspects of the accumulation and resource allocation processes. The productive structures of large and small countries do not differ significantly at the lowest or, it appears, at the highest income levels. Small countries can sustain satisfactory rates of growth with import levels of less than 20 percent of GNP, and since the markets for primary exports expand only slowly, most countries must, at some point, shift toward manufactured or service exports if they are to maintain their growth.

According to Chenery and Syrquin, early industrialization in small countries usually reflects a lack of natural resources to provide an export base. Most of the same developing countries that have developed high levels of manufactured or service exports have needed relatively large inflows of foreign capital to substitute for earnings from primary exports and to allow their economies to continue growing while manufacturing capacity is being built up. After considerable development in domestic industry, exports can replace external borrowing as a source of foreign exchange.

On the basis of their results, Chenery and Syrquin classified

countries according to structural similarities and development strategies. Using level of exports, attitudes toward trade, and composition of production as the basic criteria, they identified four main patterns of resource allocation: primary specialization, balanced production, import substitution, and industrial specialization. They suggest that countries within each classification have followed somewhat different sequences of development. This is partly the result of differences in size, resource endowment, and access to foreign capital, and partly due to differences in social philosophy and organization (table 1).

This classification provides a basis for comparing the policies of countries with similar structural characteristics. It may also provide a basis for refining existing theories of resource allocation. The average trends may have little normative significance, but can present in a summary form, the experience of comparable countries and help to evaluate development policies. For example, if a development plan calls for a tax rate of 25 percent of GNP at a per capita income income level of $300, their results immediately suggest that few countries have been able to manage such a high tax rate at such a low level of income. Similarly, for long-term country projections (over 15 to 20 years), the average structure of countries that have already reached the projected level of income and population can serve as a meaningful reference point. Statistical comparisons may be of limited merit in the detailed definition of policy options, but they can be helpful in diagnosing the structural problems of a given country and also in suggesting feasible growth patterns.

The authors point out that the results of their statistical analysis can be used in several ways to formulate development theory and policy. Although theories cannot be validated by such analyses, in a number of cases the authors' statistical results are more consistent with one theoretical formulation than with another, notably in the fields of saving, taxation, and trade. The main contribution of Chenery and Syrquin to the testing of hypotheses has been to describe related phenomena for the same sample of countries and time period so that the results can be taken as manifestations of the same set of underlying processes.

Chenery and Syrquin also claim that the observed worsening of income distribution can be clarified by international comparisons. International attention focused on this problem when a number of cases of unequal income distribution were identified through time series and cross-country comparisons. Development economists attempted to reformulate development theory for a better understanding of the problem, and aid donors reconsidered their programs of international assistance to see whether they could help offset this tendency. International comparisons also show that the worsening of the income distribution in the course of economic growth is by no means inevitable, and they identify countries in which this tendency has been offset by government action.

Table 1--Economic and social indicators of development by groups of countries

Country or Region	Per capita GNP	Physical quality of life index
	Dollars	Units
Lower-income areas:	152	39
India	140	41
Kerala, India	110	69
Sri Lanka	130	83
Lower middle-income countries:	338	59
Malaysia	680	59
South Korea	480	80
Cuba	460	86
Upper middle-income countries:	1,091	67
Gabon	1,960	21
Iran	1,250	38
Algeria	710	42
Taiwan	810	88
High-income countries:	4,361	95
Kuwait	11,770	76
United States	6,670	96
Netherlands	5,250	99

Source: (15).

Chenery and Syrquin rightly contend that development policy cannot always wait for the formulation of adequate theories and the preparation of comprehensive country plans. Analysis of development has sometimes identified both problems and successful strategies for meeting them. However, some of these problems might have been disregarded as local peculiarities if they were studied only in the context of a single country. In their view this is particularly true of international trade and capital accumulation at similar income levels. Problems associated with this finding lends considerable support to theories of balanced growth and provides a convenient point of departure for interpreting the interrelations between demand, production, and trade patterns. The Chenery and Syrquin study, therefore, is invaluable as a guide for planning and policy formulation.

The above analysis of the development process underscores the critical importance of GNP data as tools of analysis. While Kuznets had, at the time of his writing, GNP data for only a few countries, Chenery and Syrquin had the relative advantage of having systematically recorded GNP data for a large number of countries. They were thus able to analyze the development process more fully than Kuznets, and provide more complete information for analyzing development and trade oriented policies. However, the GNP data upon which their analysis is based have recognized shortcomings. Their lack of international comparability, as pointed out by Chenery and Syrquin is an especially serious limitation. Since national accounts underlie the entire spectrum of GNP data, it is important to analyze their current status, limitations, and the recent efforts that have been undertaken to rectify some of their limitations. Below they are reviewed more carefully.

Review of National Accounts

National accounting is the presentation of a comprehensive statistical statement about the economic activities of a country. Through a weighting system based on market prices at factor costs national accounts record year by year the allocation of resources and the relative contribution of different product sectors to value added. The chief source of national accounts data is the Yearbook of National Accounts Statistics published by the Statistical Office of the United Nations in cooperation with national statistical services of member countries (42). It contains the latest available data on national accounts for approximately 118 countries. To collect the data, the Statistical Office of the United Nations sends a questionnaire each year to the countries with market economies; those with centrally planned economies receive a material balance questionnaire. For the purpose of maintaining uniformity, definitions and classifications are recommended and a request is made to indicate where the scope and coverage of the country estimates differ for conceptual or statistical reasons. Data obtained from these replies are supplemented by information obtained from correspondence with the national statistical services and from national publications. Efforts are made to present the country data in a form designed to facilitate comparability. To this end, important differences in concept, scope, coverage, and classification are described in the notes that precede and accompany the country tables.

The World Bank supplements the national accounts data collected by the United Nations and the Organization for Economic Cooperation and Development (OECD) with additional data collected by its country missions. These two sources -- United Nations and the World Bank -- provide a well established and internationally comparable national accounts data set for most countries of the world with the exception of a few small and poor countries in Africa.

Despite the rapid development of national income accounting, there is some dissatisfaction with the use of GNP as a measure of development. The major shortcomings of GNP as a measure of development are:

- o Many goods and services do not pass through markets and are therefore excluded from GNP estimates. In all countries, unpaid housework, for example, is not considered as production. The failure to include nonmarket transaction distorts GNP figures more in LICs than in highly industrialized countries because such transactions are more important in the LICs.
- o The national accounts data say nothing about the distribution of income.
- o The national accounts are aggregate data and provide incomplete information about the specific types of goods and services produced. Also, they provide no information on the costs to society of exogenous factors such as increased environmental pollution, urbanization, and population growth.

Probably the most important limitation of the national accounts data is their lack of precision in making intercountry comparisons of GNP per capita. Part of the problem arises from the fact that official exchange rates do not measure relative domestic purchasing power, since a large portion of marketed GNP does not enter into world trade. In addition, trade policies often create distortions in nominal exchange rates, so that they fail to reflect the true value of even that proportion of GNP that is traded. Moreover, for countries at all income levels, exchange rates not only obscure the true quantity relationships for gross domestic products (GDP) 4/ as a whole, but they also distort certain kinds of structural comparisons. These distortions arise because purchasing power deviates from exchange rates among different kinds of goods. In the price structure of low-income countries, for example, capital goods tend to be more expensive relative to consumer goods than they are in high-income countries. Because of this problem, attempts were made as early as 1940 by Colin Clark (16) to make national accounts comparable by using purchasing power parities 5/ (PPP), which involves measuring the output of a country at a common price level, usually international prices. Similar efforts were also made by the U.N. Statistical Office, the Organization for European Economic Cooperation, the Council of Mutual Common Assistance, the World Bank, the Economic Commission for Latin America, and a number of governments, including those of Canada, the Federal Republic of Germany, Japan, the Soviet Union, and the United States. Some pioneering work in comparisons between centrally planned and market economies was carried out under the auspices of the Conference of European Statisticians.

But no useful worldwide system of consistent, reliable comparisons covering a substantial number of countries was produced. Moreover, no uniform framework was laid down that could be used as the basis for an expanded and continuing coverage of countries over time (34).

At the end of 1968 the United Nations launched the International Comparison Project (ICP) under the leadership of Irving Kravis of the University of Pennsylvania. The broad aim of the ICP is to establish an international data base that will include annual estimates of real GDP and its main components and purchasing power parities of the currencies of all the countries of the world (34).

The basic method of the ICP is to collect in each country prices of a large number of items which are spread over the entire spectrum of GDP expenditure and grouped into 152 categories. With the help of expenditures data for these 152 categories, estimates of purchasing power parities (PPP) are obtained as weighted averages of these prices. These PPPs, instead of the exchange rate are used to convert national currencies of GDP data into U.S. dollars. The PPP converted GDP data are termed real GDP in contrast with nominal GDP which are obtained by exchange rate conversion. The ICP presents multilateral comparisons in which all countries are simultaneously compared as opposed to binary comparisons in which only pairs of countries are compared. The PPP estimates are provided not only at the total GDP level but also for various components of the GDP. These data permit cardinal as well as ordinal scaling of countries on the basis of per capita GDP.

Table 2 shows the difference it makes when GDP is converted to U.S. dollars (column 1) by exchange rates or to international dollars by PPP (the international dollar has the same purchasing power over the total GDP as the U.S. dollar). 6/

Table 2--GDP in U.S. dollars at exchange rate and in PPP converted to international dollars

Area	In U.S. Dollars at exchange rates (billions) (1)	In International dollars (billions) (2)	Exchange rate deviation index (3 = 2 - 1)
Africa	175	324	1.85
Asia (incl. Oceania)	974	1,471	1.51
Europe	1,774	1,757	0.99
Latin America and Caribbean	546	806	1.48
United States	1,532	1,532	1.000

Source: (26).

There is a clear tendency for the international dollar (I$) figures to be higher. The exchange-rate-converted estimates of GDP tend to understate the real GDP's of other parts of the world relative to the GDP of the United States with the underestimation greater for the poorer regions than for Europe.

In three phases the ICP has published data for 10, 16, and 34 countries respectively (28). The latest report which was published early this year contains data for the year 1975. The phase four now underway hopes to cover about 70 countries by 1984 with data for 1980.

These benchmark studies require so much time and financial resources that a system of real income comparisons covering all the countries of the world appears infeasible. Efforts are underway, however, to investigate various procedures for estimating PPP's (or, equivalent, real national income) which are more economical.

Two approaches to estimating PPP have been pursued: (1) a shortcut approach which attempts to exploit structural relationships between a country's real national income and associated monetary or nonmonetary indicators; and (2) a reduced information approach in which PPP's estimated on the basis of small subsets of price data, which can be collected cheaply in the countries, are compared (11).

Shortcuts, which seek to predict real incomes on the basis of physical or monetary indicators, have been found to be good only on the average, and can have unacceptably large residual errors for individual countries. Reduced information methods seek to produce real income comparisons quickly and cheaply with much less than the full set of price and expenditure data currently required by ICP. Structural relationship estimates derived from data obtained in the benchmark study of expenditures and prices of 16 countries in Phase II of ICP were used by the University of Pennsylvania group to develop a table of real gross domestic product and share of gross domestic product devoted to private and public consumption and investment for 119 countries for 1950 and 1960-77 (38) (See Appendix I for a sample). Price level estimates for total product and three components are also provided. The authors have warned that apart from the possible inaccuracies inherent in the econometric specifications used to describe complicated phenomena, entries in the table are subject to substantial sampling variations. They strongly feel, however, that the methods give reasonably unbiased estimates. Alternative entries developed from simple exchange rate conversions will be subject to a much wider range of inaccuracy and are demonstrably biased in a systematic way.

Research is underway at the World Bank to develop a small sample of items and methods of aggregate which would replicate the ICP results quickly and inexpensively without too much sacrifice of accuracy.

In summary, while ongoing analytical work is continuing to improve our understanding of the development processes, despite some limitations, the economic indicators of development, as represented by GNP, are relatively well developed both in terms of the analytical basis needed

for their delineation, and the data coverage needed for their empirical estimation. Efforts are continuing in the desired direction to obtain international comparability. With the completion of the ICPs and further research on a shortcut approach as well as a reduced information approach, there would be a well established and internationally comparable data set available for real national income. An improved understanding of the development processes together with improved data bases can make it easier to move policy formulation and implementation in the desired direction.

SOCIAL INDICATORS

Over the past two decades it has become apparent that the growth of output or income by itself is not an adequate indicator of development. Interest has grown in designing other measures of development, including social indicators and associated systems of social accounts and composite indices of development, as supplements to GNP for this purpose. This section critically reviews the current status of measures of social development, especially from a methodological point of view. Such a review is important because there is no analytical basis for delineating social measures of development. This lack of an analytical basis makes it especially important to assess the alternative measures that have been designed and for which data are available.

Social indicators are direct statistical measures of selected social attributes of a society. They are used to establish levels and monitor changes over time in the attributes of a society that are judged to be of fundamental social concern. They can be "simple indicators" presenting basic data series, or "complex indicators" that are derived from the basic data and used for analytical purposes. Social indicators are both descriptive and diagnostic. Descriptive indicators merely describe the current state and make quantitative comparisons over time or between countries. Diagnostic indicators reflect a set of correlated phenomena in a society and provide a basis for policy intervention. Hence, the purpose of developing social indicators is to illuminate relationships and to identify important developments in the areas of social concern which can be used to serve policy and planning purposes.

Development plans during the fifties and sixties aimed at accelerating the rate of GNP growth and focused mostly on the processes of capital accumulation. Total and per capita GNP and their growth rates were viewed as the principal performance test of development. This emphasis on GNP growth was based on several assumptions. First, that the benefits of economic growth have a tendency to "trickle down" automatically to the poor; second, that if the benefits from growth fail to "trickle down," government will take corrective actions; and third, that concern with greater equality of income distribution, as well as other social aspects of development, was premature since it would reduce savings, investment, incentives, and, hence, growth.

The experience of the past several decades suggests that none of these assumptions was generally valid. While highly concentrated and unequal growth took place in some countries, no correlation between

Adelman and Morris

Adelman and Morris substantially extend the scope of measurement of the devlopment process by addressing political, social, and cultural, as well as economic factors associated with development. Moreover, they develop a stage theory of development which has important implications for development policy and planning. They quantify the noneconomic factors and provide an empirical basis to underscore the importance of these in explaining growth within and between stages of development.

Adelman and Morris used different forms of multivariate analysis to conduct their research. They obtained quantitative or semiquantitative data for each of 41 different social, political, and economic indicators of development for 74 LDC's (table 3). Some of these are based on two or more indicators. 7/ Applying factor analysis to these indicators they concluded that 70 percent of the variance in GNP per capita could be attributed to the sociopolitical indicators and that it is just as reasonable to view underdevelopment as a social and political phenomenon as it is to view it in terms of intercountry difference in economic structure.

Adelman and Morris made further applications of their factor analysis to the same set of data and divided their sample of countries into three groups. These were identified as having different stages of development--low, intermediate, and high. Separate factor analyses using the same indicators were then made for the three different subgroups of countries, identified as regional subsamples of African, Asian, and Latin American countries. Since it is generally recognized that the three different regions correspond at least roughly to different stages of development, the authors found that the role of the factors varied somewhat from one stage to another, with social factors dominating intragroup differences in per capita GNP for the low stage of development (Africa) and political factors dominating such differences for the intermediate and high stages of development (Asia and Latin America).

In subsequent studies, Adelman used discriminant analysis to identify the specific indicators that best predicted the development performance potential of individual countries, or, in the language of the technique, best discriminated among different development performance groups (3). They found that four indicators (13, 23, 35, and 39 in table 3 in order of importance) accounted for more than 99 percent of the variance among the different development performance groups.

Table 3--Indicators of social, political, and economic structure utilized by Adelman and Morris

Sociocultural indicators	Political indicators	Economic indicators
1. Size of the Traditional Agricultural Sector	13. Degree of National Integration and Sense of National Unity	25. Per Capita GNP in 1961
2. Extent of Dualism	14. Extent of Centralization of Political Power	26. Rate of Growth of Real per Capita GNP
3. Extent of Urbanization	15. Strength of Democratic Institutions	27. Abundance of Natural Resources
4. Character of Basic Social Organization	16. Degree of Freedom of Political Opposition and Press	28. Gross Investment Rate
5. Importance of the Indigenous Middle Class	17. Degree of Competitiveness of Political Parties	29. Level of Modernization of Industry
6. Extent of Social Mobility	18. Predominant Basis of the Political Party System	30. Change in Degree of Industrialization
7. Extent of Literacy	19. Strength of the Labor Movement	31. Character of Agricultural Organization
8. Extent of Mass Communication	20. Political Strength of the Traditional Elite	32. Level of Modernization of Techniques in Agriculture
9. Degree of Cultural and Ethnic Homogeneity	21. Political Strength of the Military	33. Degree of Improvement in Agricultural Productivity
10. Degree of Social Tension	22. Degree of Administrative Efficiency	34. Adequacy of Physical Overhead Capital
11. Crude Fertility Rate	23. Extent of Leadership Commitment to Economic Development	35. Improvement in physical overhead capital.
12. Degree of Modernization of Outlook	24. Extent of Political Stability	36. Effectiveness of the Tax System
		37. Improvement in the Tax System
		38. Effectiveness of Financial Institutions
		39. Improvement in Financial Institutions
		40. Rate of Improvement in Human Resources
		41. Structure of Foreign Trade

Sources: (1, 46).

A critique of the Adelman and Morris approach to extending the scope of measurement of development leads to several observations. First, they may have introduced some spurious correlations into their analysis because some of their indicators were partially based on combination of other indicators (46). This is especially true for the social indicators used in their original factor analysis.

Also, Adelman and Morris can be criticized for making arbitrary and unjustified assumptions (42). Procedures such as stepwise regression and factor analysis inevitably involve certain arbitrary judgment, such as how to draw the line between one factor and another, or what variables to start with and deciding which and how many varibles to add as the analysis proceeds. The results are often sensitive to such arbitrary choices. For example, in their attempt to define a more satisfactory and comprehensive index of development, they included only one economic indiator (GNP per capita), even though they added additional economic indicators in subsequent factor analyses (3, 1). The decision to include or exclude variables is defensible on grounds of a priori knowledge, but such a priori information is not admissible in multivariate analysis. Yotogoulos and Nugent suggested that Adelman and Morris, therefore, made their decisions about what indicators to include simply on the basis of whether or not they worked out well. Such a procedure, of course, makes the results tautological (46).

Adelman and Morris were not careful about formulating hypotheses and using appropriate methodologies to test them. Factor analysis can expose possible interactions among the variables and assist in constructing hypotheses through inductive reasoning. However, without a specific theoretical conceptual basis, the transition from correlation to causality is impossible. Because of this limitation, factor analysis can be used only as: (1) ranking device, (2) a descriptive device, or (3) as a tool for identifying the need for further analysis (for example, suggesting the need for new hypotheses) (36). In each of these respects, it can be particularly useful when large numbers of variables need to be reduced to a smaller number of factors. At times, however, Adelman and Morris go beyond these legitimate uses of factor analysis and use the technique to establish causality.

Adelman and Morris have classified complex data and established correlations that help to formulate specific hypotheses. One such hypothesis based on their data and correlation analysis is that the relative importance of the factors that explain development varies from one stage of development to another, with social factors being more important in the early stages and economic and political factors in the late stages. However, they cannot validly use this correlation as evidence that their hypothesis is correct. Additional independent evidence, an analytical method to explain causality is required for this purpose. Formulating a theory on apriori considerations and testing it with appropriate data is a better approach than the one used by Adelman and Morris (46).

United Nations Research Institute for Social Development

The United Nations Research Institute for Social Development (UNRISD) attempted to measure development by supplementing economic indicators with many social indicators. Its approach was to choose quantifiable components of levels of living whose values were correlated with GNP per capita. McGranahan et al., attempted to select the best available indicators of social and economic development, establish the relationship among them at different levels of per capita GNP, and finally combine them into a synthetic indicator of development (32).

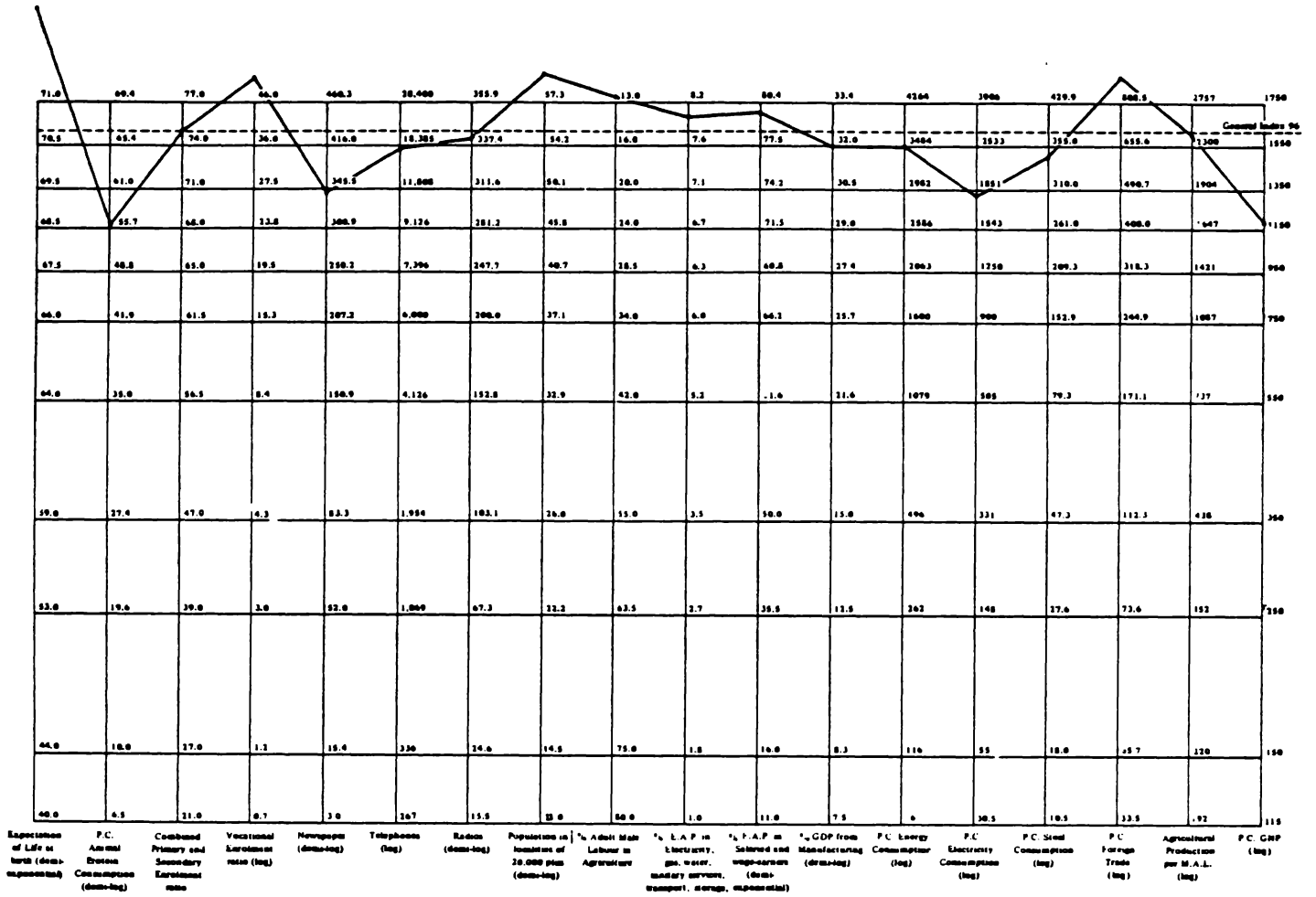
Development was defined in terms of the interaction of social and economic indicators. The wide variety of measures analyzed focused on agreed-on international objectives and selected structural changes characteristic of growth. After extensive correlation analysis of 73 variables using 1960 cross-section country data, they settled on 18 highly interrelated, nonredundant variables (core components). The correlation coefficients (absolute value) of these core components with GNP per capita are between 0.64 and 0.93. These were grouped into three categories--eight social, five economic, and five structural. These are shown on the horizontal axis of figure 1.

Figures 1, 2, 3, and 4 represent the application of their procedure to the Netherlands (an advanced European country), Ireland (a relatively less developed European country), Venezuela (an oil rich Latin American country) and the Philippines (an Asian country).

Development can be measured for these countries in two ways: (1) by their profile of social and economic characteristics (the variables are mathematically transformed so that these can be expressed in one figure); and (2) by a weighted average of the 18 characteristics, the "General Index," shown as the dotted line which is a representative average of the 18 individual variables. These variables are plotted on adjusted scales, so that a country at a particular development stage would have each of its indexes for the variables shown on the chart at the same horizontal level.

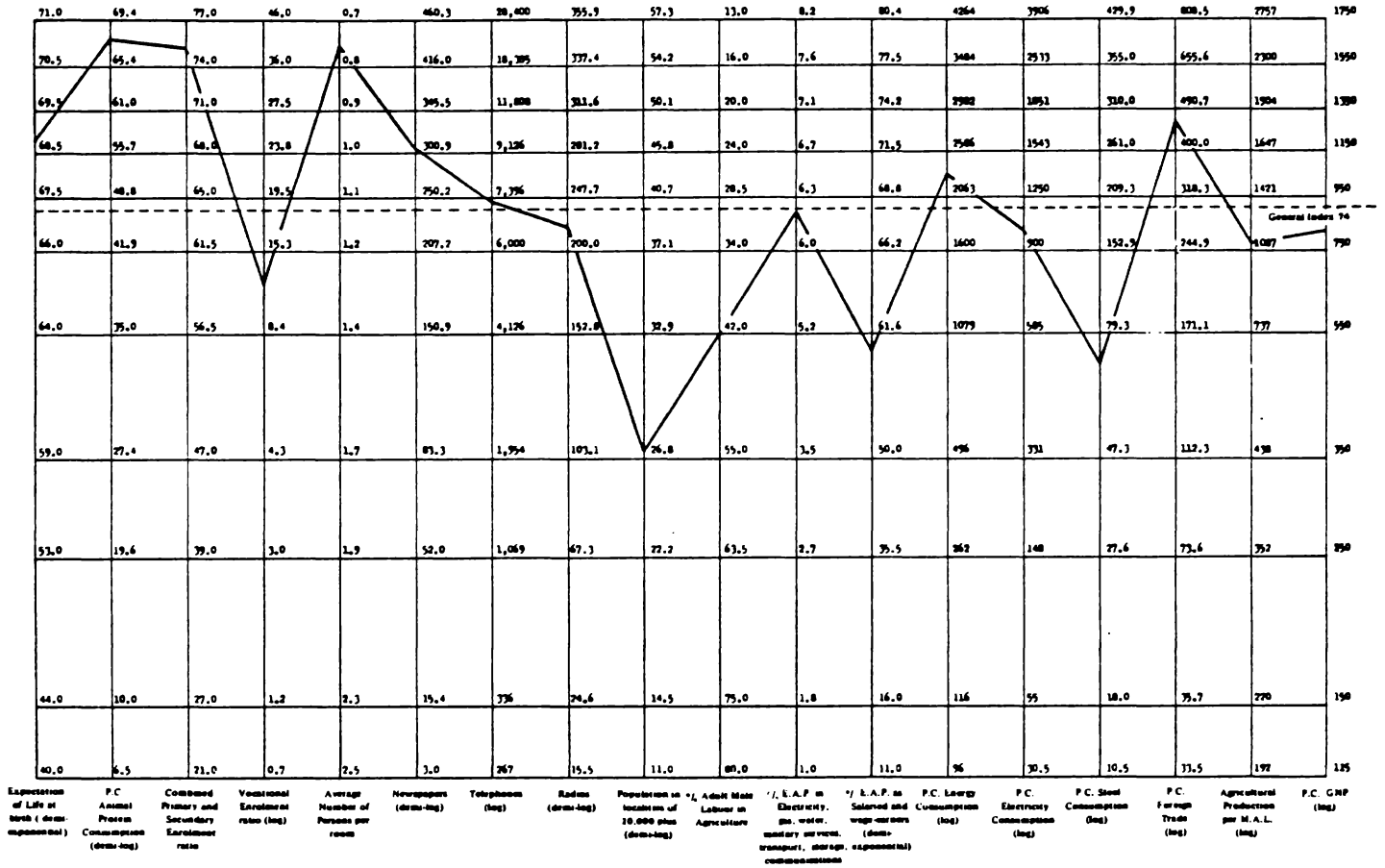
For these four countries, the general indexes are 96, 74, 63, and 24. The GNP per capita in Venezuela, buoyed by oil exports, was in 1959-61 about as high as that of the Netherlands (figures 1 and 3). However, in all areas of concern but per capita consumption of energy, Venezuela lagged behind the Netherlands, indicating that the country was less developed. Ireland (figure 2) also lags behind the Netherlands in all variables except in per capita animal protein consumption and the combined primary and secondary enrollment ratio. The Philippines (compared to a typical country at its same general development level) has relatively high primary and secondary school enrollments, a relatively large manufacturing sector, and relatively low use of radios and of steel. Table 4 shows the Development Index for 58 middle and low income countries together with their per capita GNPs for about 1960.

Figure 1--Netherlands: Measures of Development by UNRISD Method



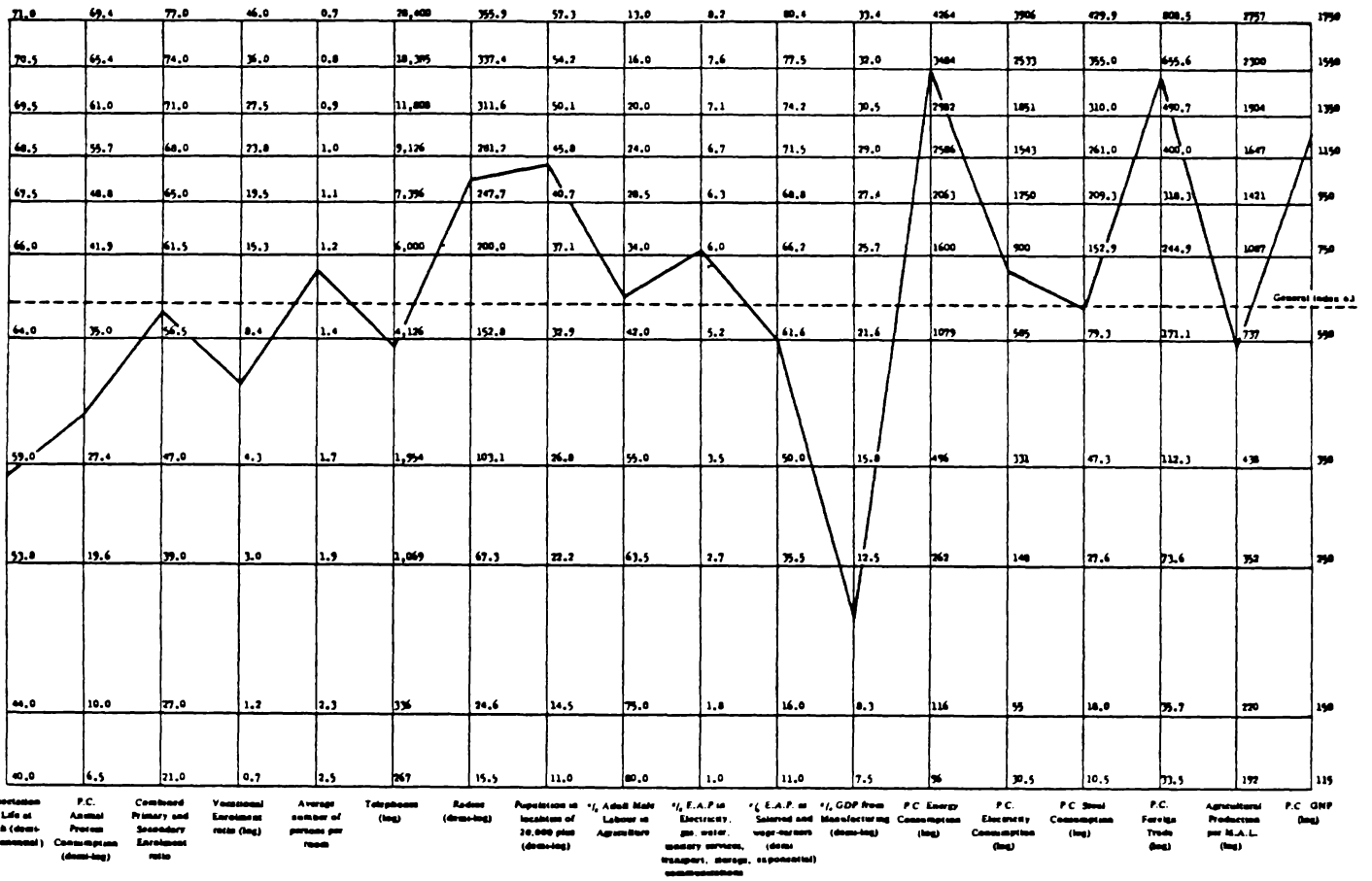
Source: (32).

Figure 2--Ireland: Measures of Development by UNRISD Method



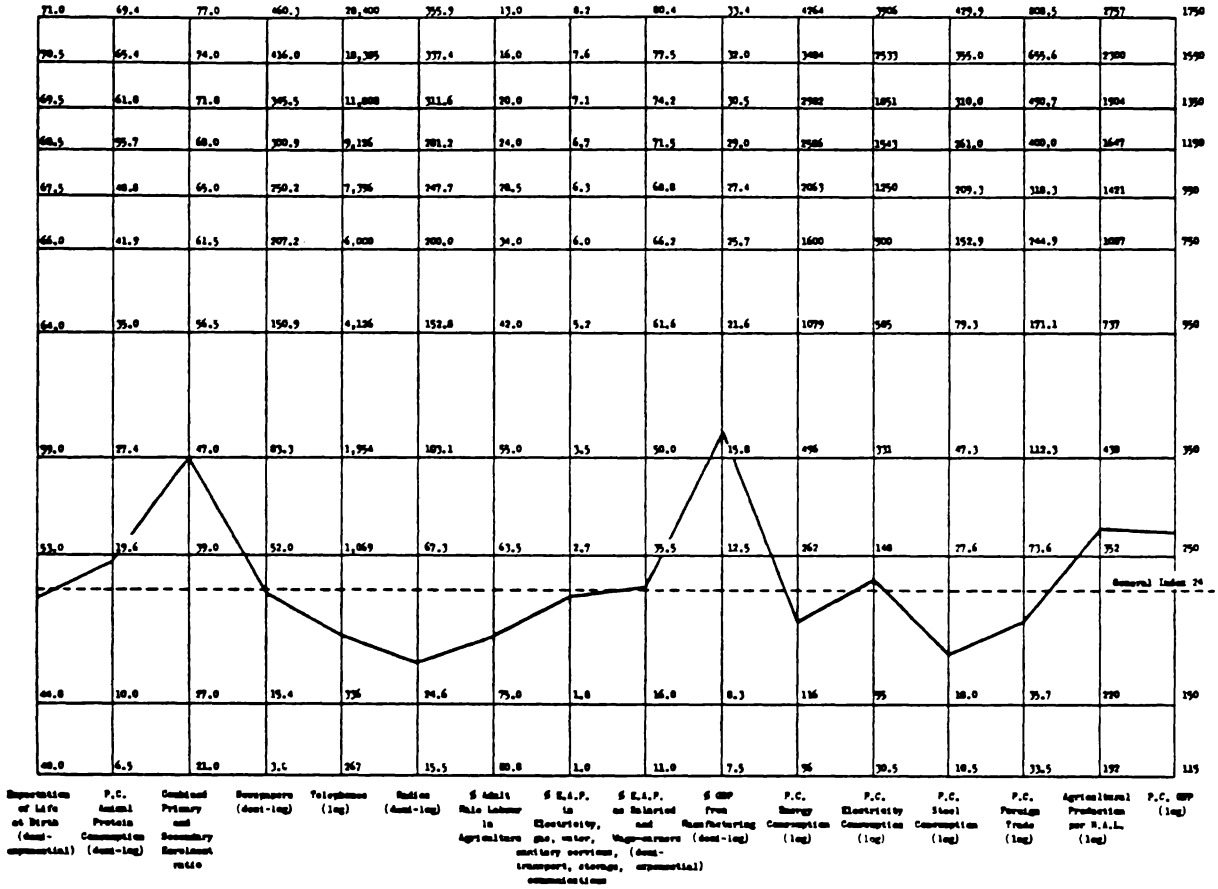
Source: (32).

Figure 3--Venezuela: Measures of Development by UNRISD Method



Source: (32).

Figure 4--Philippines: Measures of Development by UNRISD Method



Source: (32).

Such a Development Index seems to be a better measure of development than average GNP. But the approach adopted by the UNRISD is complicated, less easily interpreted, and less well known than other existing measures.

Basic Human Needs

The Basic Human Needs (BHN) approach to measuring economic development shifts the focus to an even greater extent than the UNRISD team from measurement of income to measurement of social welfare. The Overseas Development Council (37), as a major proponent of BHN, argues that given the deficiencies in the consumption pattern of the poor, and the lack of availability of the goods and services necessary for physical well-being, any measure of poverty income, no matter how carefully derived, will be inadequate for measuring the satisfaction of basic needs in health, nutrition, and shelter. A composite indicator is therefore needed to summarize different rates of improvement and deterioration in a variety of categories, and to measure the extent to which the poor'sbasic needs have been met. Morris proposed the Physical Quality of Life Index (PQLI) for these purposes (37). It synthesizes three indicators: life expectancy at birth, infant mortality, and literacy. These indicators measure results rather than inputs, and are comprehensive in the sense that they encompass many contributory influences. In the index, each indicator is weighted equally and the range from lowest to highest is set on a scale of 1 to 100.

Countries need not have a high per capita GNP in order to achieve a high quality of life as measured by PQLI. The absence of a strong correlation between per capita GNP and the PQLI shows that improvements in quality of life can be achieved before there is any large rise in GNP. The UNRISD group stressed the correlation between GNP per capita and its indicators, but the PQLI confirms that much progress in improving social welfare is possible before high levels of per capita GNP have been achieved.

Social Accounting Matrix

An alternative approach to BHN is the Social Accounting Matrix (SAM) (5). Here the main interest is with the living standards of different groups within a society. It can be viewed as a snapshot at one particular moment of an economy that shows the structure and nature of production, the distribution of income by households, as well as the composition of their expenditures. The main emphasis of the SAM is on the links between growth, inequality, and employment, and also on how poverty is related to savings and investment, balance of payments, production, and distribution.

The PQLI and SAM illustrate some of the major problems in the search for alternative measures of economic and social progress or welfare. These relate to both the need for an appropriate conceptual framework and data. An advantage of the PQLI is that the necessary information is

Table 4--Development index and per capita GNP for 58 countries

Country	Development index	P.C. GNP 1959/61
U.S.A.	111	2828
United Kingdom	104	1369
Canada	103	2092
New Zealand	103	1515
Sweden	103	1696
Australia	98	1542
Norway	98	1274
Belgium	96	1247
Netherlands	96	965
Switzerland	96	1591
Denmark	95	1300
Germany, Fed. Rep.	94	1327
France	88	1303
Austria	86	867
Finland	85	1085
Israel	81	1220
Hungary	75	-
Hong Kong	74	-
Ireland	74	653
Japan	74	463
Uruguay	74	494
Argentina	73	551
Poland	73	-
Italy	71	684
Venezuela	63	958
South Africa	62	453
Chile	61	604
Spain	58	344
Greece	52	432
Portugal	52	300
Yugoslavia	51	-

(continued)

Table 4 (cont'd)--

Country	Development index	P.C. GNP 1959/61
Costa Rica	50	352
Panama	48	385
China (Taiwan)	46	149
Colombia	46	253
Jamaica	45	396
Mexico	44	348
Brazil	38	267
Peru	37	198
Egypt	34	158
El Salvador	32	231
Jordan	32	196
Nicaragua	32	238
Syria	32	-
Ecuador	31	202
Dominican Republic	30	228
Libya	29	283
Paraguay	29	160
Turkey	27	202
Iran	26	210
Morocco	26	154
Korea, South	25	149
Philippines	24	206
Honduras	23	209
Guatemala	21	269
Ceylon	18	139
Ghana	16	195
Thailand	10	96

widely available, although as with GNP, the quality of the data varies. Some of the data required to construct a SAM is contained in the national income accounts, but additional survey research is necessary to collect the information on household accounts. One of the main recommendations of Pyatt and Thorbecke (35) is that work on national data systems should be reorganized so that planning can be concerned with poverty and inequality as well as with growth.

Government statistical offices in some developing countries are in fact collecting the kind of data necessary to construct a SAM, and SAMs are being built in at least a dozen countries, including Saudi Arabia, Sri Lanka, the Philippines, Malaysia, and Indonesia, raising the prospect of cross-national comparisons. Both the World Bank and the U.N. Statistical Office are embarking on major programs to expand the availability of data on household and personal living standards. The U.N. Statistical Office plans to initiate a major program to enhance national capabilities to conduct household surveys. The World Bank's Living Standards Measurement Study is designed to explore and assess existing methods of measuring living standards, ranging from the conceptual links among household expenditures, welfare, and the national accounts to operational and methodological issues of measurement and data processing and storage (36).

The above scrutiny of existing work suggests that there is no theoretical basis for delineating one or a set of social indicators as adequate measures of economic development. The World Bank, after making a rigorous analysis of existing methods and concepts and assessing its own unique needs, has prepared a Social Indicators Data Sheet for individual countries. An illustrative example of the data for Nigeria is given in table 5. The data are similar to those contained in the UNRISD data sheet. The Bank notes that "although the data are drawn from sources generally judged the most authoritative and reliable," they may not be internationally comparable because of the lack of standardized definitions and concepts used by different countries in collecting the data. The data are, nonetheless, useful to describe orders of magnitude, to indicate trends, and to characterize certain major differences between countries.

The development of social indicators has proceeded at a much faster rate than the collection of data. Data for many important indicators are lacking for many countries. Moreover, there is no theoretical basis to delineate a specific system of social indicators relevant to policy formulation. The coverage of social indicators tends to be overly comprehensive relative to data collection and conceptualization. Likewise, attempts at aggregation have not been matched by attempts at providing theoretical basis and data gathering for social indicators. Further, social indicators have not adequately addressed two major concerns: distribution of income and generation of employment. These are reviewed briefly below.

MEASURES OF ECONOMIC DEVELOPMENT - A CRITICAL EVALUATION

by

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March 1983

International Economics Division
Economic Research Service
U.S. Department of Agriculture

Table 5 (cont'd)--

	NIGERIA			REFERENCE GROUPS (WEIGHTED AVERAGES - MOST RECENT ESTIMATE) /a	
	1960 /b	1970 /b	MOST RECENT ESTIMATE /b	MIDDLE INCOME AFRICA SOUTH OF SAHARA	MIDDLE INCOME LATIN AMERICA & CARIBBEAN
EDUCATION					
ADJUSTED ENROLLMENT RATIOS					
PRIMARY: TOTAL	36.0	34.0	42.0	61.7	99.7
MALE	46.0	43.0	50.0	69.2	101.0
FEMALE	27.0	25.0	33.0	51.4	99.4
SECONDARY: TOTAL	4.0	6.0	..	20.6	34.4
MALE	6.0	8.0	..	29.2	33.5
FEMALE	1.0	4.0	..	14.7	34.7
VOCATIONAL ENROL. (% OF SECONDARY)	5.0	8.5	3.8/f	7.0	38.2
PUPIL-TEACHER RATIO					
PRIMARY	30.0	34.0	34.0	36.6	30.5
SECONDARY	19.0	21.0	25.0	24.3	14.5
ADULT LITERACY RATE (PERCENT)	15.0	..	..	..	76.3
CONSUMPTION					
PASSENGER CARS PER THOUSAND POPULATION	0.7	1.0	..	38.8	43.0
RADIO RECEIVERS PER THOUSAND POPULATION	3.0	23.0	79.0	83.5	245.3
TV RECEIVERS PER THOUSAND POPULATION	0.1	1.4	1.6	..	84.2
NEWSPAPER ("DAILY GENERAL INTEREST") CIRCULATION PER THOUSAND POPULATION	8.0	5.0	9.0	24.2	63.3
CINEMA ANNUAL ATTENDANCE PER CAPITA	..	..	0.5	0.7	..
LABOR FORCE					
TOTAL LABOR FORCE (THOUSANDS)	21788.5	25988.8	30331.1	.	.
FEMALE (PERCENT)	41.3	40.6	40.0	38.1	22.2
AGRICULTURE (PERCENT)	70.8	62.1	56.0	54.3	37.1
INDUSTRY (PERCENT)	10.4	13.8	17.0	17.8	23.5
PARTICIPATION RATE (PERCENT)					
TOTAL	42.7	40.5	39.1	38.8	31.5
MALE	50.9	48.8	47.4	48.4	48.9
FEMALE	34.8	32.4	31.0	29.4	14.0
ECONOMIC DEPENDENCY RATIO	1.1	1.2	1.3	1.3	1.4
INCOME DISTRIBUTION					
PERCENT OF PRIVATE INCOME RECEIVED BY					
HIGHEST 5 PERCENT OF HOUSEHOLDS	..	..	..	..	..
HIGHEST 20 PERCENT OF HOUSEHOLDS	..	..	..	..	..
LOWEST 20 PERCENT OF HOUSEHOLDS	..	..	..	..	..
LOWEST 40 PERCENT OF HOUSEHOLDS	..	..	..	..	..
POVERTY TARGET GROUPS					
ESTIMATED ABSOLUTE POVERTY INCOME LEVEL (US$ PER CAPITA)					
URBAN	..	..	472.0	..	..
RURAL	..	..	181.0	..	190.8
ESTIMATED RELATIVE POVERTY INCOME LEVEL (US$ PER CAPITA)					
URBAN	..	..	402.0	..	474.0
RURAL	..	..	134.0	..	332.5
ESTIMATED POPULATION BELOW ABSOLUTE POVERTY INCOME LEVEL (PERCENT)					
URBAN	..	..	..	..	..
RURAL	..	..	..	..	..

.. Not available
. Not applicable.

NOTES

/a The group averages for each indicator are population-weighted arithmetic means. Coverage of countries among the indicators depends on availability of data and is not uniform.

/b Unless otherwise noted, data for 1960 refer to any year between 1959 and 1961; for 1970, between 1969 and 1971; and for Most Recent Estimate, between 1974 and 1978.

/c 1965-66 average; /d 1963; /e Including ex-North Cameroon under British administration; /f Certain fields of study previously classified under other second level education of vocational or technical nature are now reported under general education.

Distribution of Income

Recent empirical evidence (13, 14) from cross-country data seem to support Kuznets' hypothesis that the distribution of income becomes more unequal as development occurs before it improves. Widespread poverty coexisting with a satisfactory GNP growth rate in many countries led to the concern about the distributional aspects of development and its measurement. This is one area where the concern seems not to have been matched with development of needed indicators, variables, and data base. The percentage of national income received by the wealthiest 5 and 20 percent of households as well as by the poorest 20 and 40 percent of households has been used in Income Distribution Indicators by the World Bank, which collected data for 1964 through 1974, but are not available for more than one half of low and middle-income countries.

Generation of Employment

Concern about widespread unemployment together with a high rate of per capita GNP growth in many countries was reflected in making the creation of productive employment opportunities, rather than aggregate income growth, a primary objective of policy during the seventies by many national governments, aid donors and international agencies concerned with development.

There was a fundamental redirection of developmental strategy. A rural development strategy focusing on increasing the productivity of small farmers, the self-employed and landless agricultural workers, intended to give better access to land, water, credit, market, and other facilities. An urban development strategy designed to restructure the modern sector tried to make it more responsive to the opportunity cost of labor and capital. Subsequent emphasis on integrated rural development strategies and development of urban projects reflected this perception. Since the vast majority of the population in the underdeveloped world live in rural areas, and since urban unemployment is perceived as a spillover of rural unemployment, more attention has perhaps focused on rural development. It is maintained that rural development strategies generate more employment among the poor and thus produce a more equal distribution of the benefits of growth. The focus of this strategy is narrower than that of previous approaches in that the central objective is to increase the general welfare of a specific target population. The United Nations, World Bank, U.S. Congress, as well as many LIC governments have expressed a growing interest in this equity-oriented, employment-generating approach with its focus on small farmers, landless workers, and the urban poor. In particular, interest in comprehensive programs to facilitate access by the rural poor to agricultural inputs and other facilities has grown.

The International Labor Organization (ILO) has long articulated the strategy of increasing employment opportunities in order to increase the effective demand of the poor. But, the data gathered by it are not adequate for the purpose. This is partly because of the inherent difficulty in the concept of unemployment, in gathering unemployment data in LICs, and partly because of the political sensitivity of the matter.

Need for Distributive Indicators

The design of effective programs and projects for a equity-oriented and employment-generating strategy requires a better understanding of the distribution of assets, incomes, and access to nonfarm inputs and among different income classes of rural households in research, extension, and services and marketing facilities. Other information needed includes data on levels and types of employment, unemployment, effects of different patterns of technological transformation, structure of rural demand. Indicators for many of these are still unsatisfactory. Some regional studies exist but they provide only scattered evidence in these areas and there is no clearinghouse nor worldwide effort to develop a set of distributive indicators that describe and measure the development process itself.

The World Census of Agriculture, currently prepared by the U.N. Food and Agriculture Organization at 10-year intervals, provides extensive land distribution data for member countries but only sketchy information on the distribution of nonland input use, of land and labor utilization, and resource productivities by size of farm. Few of these country censuses include the number of landless households and how they participate in economic activity.

Only a small number of country studies, sponsored by the Agency for International Development in the early seventies, have collected information on the distribution of institutional credit between small farmers and large land owners.

The above review of social indicators provides examples of the limitations of existing indicators. The challenge to the further development of social indicators is to provide an analytical basis for existing indicators, and to collect reliable, comprehensive, and comparable data for those indicators found to be useful for policy and program purposes. More effort at the international level to develop distributive indicators to complement the national accounts and social indicators, is especially needed.

LEGISLATIVE MANDATES OF THE U.S. CONGRESS AND NEEDED INDICATORS

Congressional amendments in 1973 to Public Law 480 (The Agricultural Trade and Development Assistance Act of 1954) and the Foreign Assistance Act (FAA) of 1961 reflect the concern that despite a creditable GNP growth rate in many LDCs, the distribution of the benefits of this growth was often extremely uneven. The U.S. Agency for International Development (AID) responded to this problem with equity-oriented and poverty-focused strategies. The rising and widespread unemployment in LDCs, which first became apparent in the sixties, generated initial interest in formulating labor-intensive strategies to equalize per capita income and labor productivity in urban and rural areas. The fact that large farmers had historically been the main beneficiaries of most aid programs and projects in agriculture contributed to AID efforts to emphasize employment-generation and income-distribution objectives in its programs and policies.

The 1973 amendments to P.L. 480 and the FAA required as a condition of U.S. assistance that the LDC's be more responsive to the needs of the poor majority. Another amendment to the Foreign Assistance Act in 1975 mandated that the President establish appropriate criteria to assess the commitment and progress of countries toward fulfilling the objectives of FAA. It is this latter amendment that points to the need for additional development indicators.

Public Law 480

P.L. 480 as amended through October 1, 1977, contains four Titles, of which I and III are especially relevant.

Title I: Concessional Sales

Under Title I, the United States, through the Commodity Credit Corporation (CCC), finances the sale and export of commodities with the actual sales being made by private U.S. suppliers to foreign importers, government agencies, or private trade entities (PTE's). More than 71 percent of the value of all P.L. 480 commodities shipped from July 1976 through the end of June 1977 were financed under Title I, included all concessional sales (made at terms more favorable to the recipient country than to a commercial buyer). These sales are currently made either as dollar credit convertible local currency credit sales to foreign governments or PTE's.

Section 6(b) of the Act states that agreements for the sale of agricultural commodities for dollars on credit terms shall include provisions to assure that the proceeds from the sale of such commodities are used for "such economic development purposes that directly improve the lives of the poorest of their people and their capacity to participate in the development of their countries". It specifies that priority should be given to countries that agree to use the proceeds from the sale of commodities in accordance with the country's agricultural development plan, which should be designed to increase access of the poor in the recipient country to an adequate, nutritious, and stable food supply, and should provide for such objectives as making farm production equipment available to farmers, making credit available on reasonable terms and conditions for small farmers, assisting farmers through extension programs and technical information to improve the marketing, storage, transportation, and distribution of agricultural commodities, and developing the physical and institutional infrastructure supporting small farms. Furthermore, the recipient country's economic development plan should provide for participation by the poor, insofar as possible, at the regional and local levels and should reach the largest practical number of farmers in the recipient country. Section 103 of the Act contains a provision that the President shall:

- o Take into account efforts of friendly countries to help themselves toward a greater degree of self-reliance, including efforts to increase their own agricultural production, (especially "through small family farm agriculture"), and to improve per capita production, facilities for transportation, storage, and distribution of food commodities, and to reduce their rate of population growth. These self-help measures must be designed to "contribute directly to development progress in poor rural areas and to enable the poor to participate actively in increasing agricultural production through small farm agriculture".
- o Take steps to assure a progressive transition from sales for foreign currencies to sales for dollars. Section 112(b) of the act requires the Committee on Agriculture, Nutrition, and Forestry of the Senate, or the Committee on the International Relations of the House of Representatives to submit to the President in writing information demonstrating that an agreement will "directly benefit the needy people in a country".

Title III: Food for Development

Title III as revised in 1977 describes the new Food for Development Program. Its objective is to establish a closer relationship between U.S. food assistance under Title I and the efforts of developing countries to increase the availability of food to the poor and to improve "their quality of life".

Section 301(a) states that "in order to establish a strong relationship between U.S. food assistance and efforts by developing countries to increase the availability of food for the poor and improve in other ways the quality of their lives, the President is authorized to encourage the use of sources provided by the concessional financing of agricultural commodities under this act for agricultural and rural development (including voluntary family planning, health and nutriton programs), by permitting the funds accruing from the local sale of such commodities to be applied against the repayment obligations".

Section 301(b) states that the overall goal of assistance under this title shall be "to increase the access of the poor in the recipient country to a growing and improving food supply through activities designed to improve the production and utilization of food, and to increase the well-being of the recipient country. Assistance under this title shall be used for programs of agricultural development, rural development, nutrition, health services, and population planning".

This section also states that "particular emphasis should be placed on activities which effectively assist small farmers, tenants, sharecroppers, and landless agricultural laborers, by expanding their access to the rural economy through services and institutions at the local levels and otherwise providing opportunities for the poor who are dependent upon agriculture and agriculturally related activities".

Foreign Assistance Acts

Recent amendments to the FAA, especially to Section 102, aim to strengthen the development and use of performance criteria. Specifically, Section 102(d), added to the FAA in December 1975, requires that the "President shall establish appropriate criteria to assess the commitment and progress of countries" toward the objectives for development assistance under Chapter I of the FAA. These objectives, given with special clarity in Section 102(c), emphasize "participation by the poor" and better employment and income opportunities for them in what is often called a participatory development strategy. Section 102(c) goes on to say, "assistance . . . should be used not simply for the purpose of transferring financial resources to developing countries, but to help countries solve development problems in accordance with a strategy that tries to increase substantially the participation of the poor. Accordingly, greatest emphasis should be placed on countries and activities which effectively involve the poor in development, by expanding their access to the economy through services and institutions at the local level and increasing labor-intensive production". Section 120(d) provides the assessment criteria. "For the purpose of assuring that development assistance furnished under this part is increasingly concentrated in countries which will make effective use of such assistance to help the poor toward a better life (especially such countries which are suffering from the worst and most widespread poverty and are in greatest need of outside assistance), the President shall establish appropriate criteria to assess the commitment and progress of countries in meeting the objectives set forth in subsection (c) of this Section and of other sections of this part. In establishing such criteria, the President shall specifically take into account their value in assessing the efforts of countries to:

- Increase agricultural productivity per unit of land through small-farm labor-intensive agriculture;
- Reduce infant mortality;
- Control population growth;
- Promote greater equality of income distribution, including measures such as more progressive taxation and more equitable returns to small farmers; and
- Reduce rates of unemployment and underemployment.

The International Development and Food Assistance Act of 1978 emphasized the basic human needs objective of development and re-emphasized the mandate for the development and use of indicators of commitment and progress of achievement of these objectives. Section 102 of this act states in part: "Development assistance provided under this chapter shall be concentrated in countries which will make the most effective use of such assistance to help satisfy basic human needs of poor people through equitable growth, especially in those countries having the greatest need for outside assistance". In order to make possible consistent and informed judgments in this respect, the President shall assess the commitment and progress of countries in moving toward the objectives and purposes of this chapter by utilizing the above-mentioned criteria.

In addition, in response to the United Nations Women's Year (1976) resolution, this act mandated that the U.S. assistance shall encourage and promote the participation of women in the national economies of developing countries and the improvement of women's status as an important means of promoting the total development effort". (The Percy Amendment).

Hence, section 102 of this act, while firmly committing the United States to the principle of providing for the basic needs of poor people and the integration of women in development, calls for the development of indicators, but does not spell out how they are to be developed.

In brief, the objectives of the FAA as modified by recent amendments are to assist developing countries:

1. To increase their overall development and growth, with emphasis on agricultural development;
2. To equalize the distribution of the incremental benefits of growth;
3. To reduce unemployment and underemployment;
4. To integrate women in development;
5. To eliminate poverty and provide basic human needs;
6. To enhance the quality of life of the poor;
7. To adopt integrated rural development to help the poor and small farmers;
8. To increase agricultural production through small scale farming, and land-intensive cultivation and to maximize output per unit of land; and
9. To reduce infant mortality and control population growth.

Most of the concerns of Congress, as well as those of foreign assistance agencies and recipient countries have not been accompanied by the design of appropriate indicators nor the collection of associated data. To address these concerns and to implement appropriate policies, as well as to measure the commitment and progress of countries in achieving these objectives, a new set of indicators, namely the distributive indicators needs to be designed. These new indicators should be able to monitor the allocation of inputs among different farm units and rural income classes.

Designing appropriate indicators and collecting related data however are difficult tasks. As the previous review of development and social indicators show, simple and meaningful indicators of development continue to elude social scientists. Moreover, there are significant obstacles to establishing and maintaining a set of appropriate indicators. Countries for which data are needed most are generally those that lack both financial and technical capabilities. Also, there is the important requirement that the indicators conform to standards. Traditionally, therefore, the international agencies have undertaken these responsibilities. However, much of the needed data are considered to be sensitive in nature; hence, country governments are understandably reluctant to share such information with the international agencies. Nonetheless, only these agencies are capable of undertaking the required task of designing appropriate indicators and collecting the associated data.

The United States provides a major portion of funding for the international agencies. Hence, U.S. representatives to these agencies are in a strong position to provide guidance on these issues and to play a more active role in influencing policies on indicator design and data collection. With respect to economic indicators, support should be provided for the ICP projects. In the area of social indicators, the emphasis should be on the theory of social development and its measurement as well as on efforts to collect additional data to monitor progress in selected areas such as unemployment, income distribution and resource allocation. Finally, it is recommended that U.S. representatives to the international agencies promote the establishment and maintenance of a set of distributive indicators as suggested previously.

FOOTNOTES

1/ Underscored numbers in parenthesis refer to sources cited in the bibliography at the end of this report.

2/ Primary sector means agriculture (including forestry, hunting, and fishing and mining). Secondary sector means industrial production that is contributed by manufacturing and construction.

3/ Dualistic economies are those characterized by the coexistence of a small exchange sector and a large subsistence sector.

4/ GDP refers to the gross output within the geographical boundaries of countries irrespective of the ownership of factors of production, whereas GNP consists of GDP plus net factor income from abroad.

5/ Purchasing power parities measure the amounts of each country's currency required to buy equivalent quantities of goods and services.

6/ International dollar has the same purchasing power over total U.S. GDP as the U.S. dollar in a given year, but with a purchasing power over subaggregate (components of GDP) determined by average international prices instead of by U.S. relative prices. For details, see (26).

7/ For example, indicator 6, extent of social mobility, is measured by: (1) the ratio of the population five to nineteen years of age enrolled in primary and secondary schools; (2) the importance of the indigenous middle class; and (3) the presence or absence of prohibitive cultural or ethnic barriers to upward social mobility.

8/ The correspondence points are derived from a best-fitting curve in a multi-dimensional scatter diagram involving all the indicators in question. But because of lack of a general mathematical method, by which the best-fitting curve can be defined even in two dimension, a scatter diagram method was used by the authors. For details see (29 pp. 81-91).

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APPENDIX

BASIC DATA TABLE

Measures of Real Per Capita Income, Shares of Income Devoted to Private and Public Consumption and to Capital Formation, and Price Levels for Gross Domestic Income and its Components: 1950, 1960–1977*

		1950										1960									
	AFRICA	y	RGDP	P	c	P^C	I^d	P^I	g	P^G	POP	y	RGDP	P	c	P^C	I^d	P^I	g	P^G	POP	
1	Algeria	12	358	44	aa	aa	aa	aa	aa	aa	8753	19	641	51	60	49	29	66	23	48	10800	1
2	Angola	14	447	34	aa	aa	aa	aa	aa	aa	4105	13	490	40	72	41	11	46	16	23	4806	2
3	Benin	7	219	41	aa	aa	aa	aa	aa	aa	1648	6	226	47	71	49	13	61	20	34	2050	3
4	Botswana	6	191	39	aa	aa	aa	aa	aa	aa	443	5	211	45	79	48	7	56	21	31	524	4
5	Burundi	11	383	31	aa	aa	aa	aa	aa	aa	2360	7	271	36	81	39	6	42	13	7	2869	5
6	Cameroon	10	301	46	aa	aa	aa	aa	aa	aa	4955	8	286	43	68	43	11	52	18	28	5681	6
7	Central African Rep.	9	289	34	aa	aa	aa	aa	aa	aa	1311	7	274	40	69	41	13	52	22	32	1500	7
8	Chad	8	271	33	aa	aa	aa	aa	aa	aa	2615	7	279	34	79	41	8	47	16	17	3016	8
9	Congo, Peop. Rep. Of	12	328	36	aa	aa	aa	aa	aa	aa	824	10	308	42	71	46	38	63	23	34	969	9
10	Egypt, Arab Rep. Of	11	319	62	73	63	9	67	18	44	20461	10	378	56	66	56	14	70	21	46	25929	10
11	Ethiopia	3	115	62	83	66	2	57	15	22	16251	4	154	41	74	44	10	53	16	19	20093	11
12	Gabon	20	547	49	aa	aa	aa	aa	aa	aa	461	17	521	57	48	52	33	74	18	44	472	12
13	Gambia, The	6	194	46	aa	aa	aa	aa	aa	aa	269	6	229	54	64	51	11	67	28	52	327	13
14	Ghana	14	459	32	aa	aa	aa	aa	aa	aa	4368	16	582	37	67	38	20	47	16	22	6804	14
15	Guinea	6	215	36	aa	aa	aa	aa	aa	aa	2687	6	255	42	74	43	5	48	20	30	3183	15
16	Ivory Coast	12	431	46	aa	aa	aa	aa	aa	aa	2666	12	490	53	66	54	13	64	17	34	3300	16
17	Kenya	8	267	40	78	40	14	64	16	19	5813	7	274	48	72	46	13	79	18	28	8017	17
18	Lesotho	3	91	35	aa	aa	aa	aa	aa	aa	747	3	115	41	98	49	2	41	19	20	870	18
19	Liberia	6	120	42	aa	aa	aa	aa	aa	aa	741	11	284	49	56	46	22	62	19	37	978	19
20	Libyan Arab Rep.	9	67	85	aa	aa	aa	aa	aa	aa	1029	8	168	99	122	83	46	105	33	56	1349	20
21	Madagascar	10	312	37	aa	aa	aa	aa	aa	aa	4560	8	312	43	71	44	10	53	23	37	5474	21
22	Malawi	4	119	42	aa	aa	aa	aa	aa	aa	2701	4	141	49	79	52	9	64	22	36	3419	22
23	Mali	4	116	37	77	39	7	45	19	25	3277	4	171	28	74	30	9	37	19	19	4050	23
24	Mauritania	9	256	30	aa	aa	aa	aa	aa	aa	781	9	291	35	68	39	27	53	25	34	970	24
25	Mauritius	21	737	54	70	55	17	60	14	32	479	16	524	56	71	57	29	72	18	36	662	25
26	Morocco	11	382	70	76	72	16	81	15	28	8953	10	383	63	71	65	10	75	18	41	11640	26
27	Mozambique	11	352	37	aa	aa	aa	aa	aa	aa	5709	11	421	42	74	44	9	50	17	27	6546	27
28	Niger	5	173	51	aa	aa	aa	aa	aa	aa	2283	5	197	60	76	62	7	72	19	38	2876	28
29	Nigeria	6	188	36	79	37	6	39	13	10	33230	8	269	34	77	37	11	43	15	13	42367	29
30	Rhodesia	18	469	35	aa	aa	aa	aa	aa	aa	2415	21	625	40	62	40	23	50	16	27	3605	30
31	Rwanda	5	175	37	aa	aa	aa	aa	aa	aa	2211	4	143	43	78	45	6	52	16	20	2762	31
32	Senegal	14	444	48	aa	aa	aa	aa	aa	aa	2536	13	505	55	75	57	8	59	23	47	3076	32

*See Notes at the end of the table.

APPENDIX (--continued

		1950									1960									
		y	RGDP	P	c	P^C	I^d	P^I	g	P^G	POP	y	RGDP	P	c	P^C	I^d	P^I	g	P^G	POP	
33	Sierra Leone	6	204	44	na	na	na	na	na	na	1809	7	261	51	74	53	7	60	17	29	2165	33
34	Somalia	7	219	31	na	na	na	na	na	na	1826	6	226	36	72	38	10	46	21	27	2226	34
35	S. Africa	26	806	54	63	53	19	59	14	35	13863	26	992	58	61	58	20	69	14	37	17310	35
36	Sudan	10	336	35	na	na	na	na	na	na	9322	11	410	41	75	43	9	48	15	19	11256	36
37	Swaziland	5	161	42	na	na	na	na	na	na	283	7	268	49	54	45	15	60	21	40	305	37
38	Tanzania, United Rep	5	158	34	na	na	na	na	na	na	8210	5	181	39	72	40	10	49	17	22	10201	38
39	Togo	6	178	43	na	na	na	na	na	na	1212	5	183	50	79	54	9	64	21	35	1506	39
40	Tunisia	13	446	48	na	na	na	na	na	na	3530	13	508	51	71	52	13	62	21	41	4221	40
41	Uganda	9	273	37	73	37	8	40	14	15	5158	8	283	39	73	40	8	47	17	22	6006	41
42	Upper Volta	4	131	35	na	na	na	na	na	na	3589	4	149	40	73	42	7	51	21	29	4354	42
43	Zaire	4	158	51	53	46	16	58	16	33	14143	5	193	49	57	44	8	58	22	41	17725	43
44	Zambia	16	615	31	na	na	na	na	na	na	2467	19	851	36	51	32	23	42	17	27	3139	44
	ASIA																					
45	Afghanistan	4	146	34	na	na	na	na	na	na	11830	4	152	40	74	43	13	53	14	13	13736	45
46	Bangladesh	9	288	29	na	na	na	na	na	na	40574	7	272	38	78	36	7	40	15	14	51406	46
47	Burma	4	113	51	72	51	6	57	18	33	18380	4	150	46	68	46	10	59	23	38	22258	47
48	Hong Kong	12	429	115	na	na	na	na	na	na	1974	16	661	66	83	69	21	88	16	31	3075	48
49	India	7	244	44	77	45	10	51	14	17	363282	8	294	33	73	34	14	42	15	15	436903	49
50	Iran	14	388	37	na	na	na	na	na	na	16913	17	526	43	72	48	17	48	11	38	21554	50
51	Iraq	14	446	45	na	na	na	na	na	na	5180	17	611	52	50	46	19	62	20	45	6807	51
52	Israel	28	1045	202	93	145	40	162	25	149	1258	40	1587	105	71	96	28	108	19	96	2114	52
53	Japan	18	589	40	63	38	22	46	14	29	83625	31	1173	53	58	52	38	65	12	36	94096	53
54	Jordan	6	185	34	na	na	na	na	na	na	1237	10	335	39	79	43	18	56	34	45	1695	54
55	Korea, Rep. Of	8	247	32	79	32	7	36	15	18	20356	9	358	62	81	63	9	77	19	46	24695	55
56	Kuwait	124	1874	79	na	na	na	na	na	na	152	199	5538	92	14	135	6	157	7	200	278	56
57	Lebanon	27	945	75	na	na	na	na	na	na	1443	25	953	68	79	66	16	78	16	40	1857	57
58	Malaysia	17	471	44	na	na	na	na	na	na	6187	17	536	51	61	49	15	48	13	45	7908	58
59	Nepal	6	192	23	na	na	na	na	na	na	8316	6	212	27	80	30	8	36	13	6	9327	59
60	Pakistan	10	263	53	76	54	5	52	17	32	36450	8	282	38	78	40	14	50	20	28	45851	60
61	Philippines	10	300	84	80	77	9	137	13	50	20988	13	460	72	79	67	10	125	13	42	27561	61
62	Saudi Arabia	13	325	56	na	na	na	na	na	na	3916	18	535	65	43	61	10	78	17	61	4787	62
63	Singapore	22	760	65	na	na	na	na	na	na	1022	20	807	75	88	79	13	78	16	37	1634	63
64	Sri Lanka	11	307	59	64	59	12	67	15	33	7678	10	316	50	70	51	12	62	19	36	9889	64
65	Syrian Arab Rep.	15	345	47	na	na	na	na	na	na	3495	12	442	55	74	56	10	64	20	40	4561	65
66	Thailand	8	303	37	70	37	11	43	17	22	20010	8	293	45	70	47	14	58	17	26	26392	66
	EUROPE																					
67	Austria	32	1031	65	63	63	25	71	15	51	6935	45	1677	71	59	69	27	80	15	62	7048	67
68	Belgium	55	1807	75	74	76	17	67	14	58	8639	60	2271	73	66	74	20	75	15	62	9153	68
69	Cyprus	19	688	72	79	73	17	78	16	40	494	22	886	72	77	78	17	81	18	49	573	69
70	Denmark	56	1865	68	67	67	24	64	12	62	4271	64	2428	72	62	70	27	74	13	73	4581	70
71	Finland	40	1292	79	62	77	22	83	14	66	4009	51	1890	79	58	76	29	88	14	71	4438	71

APPENDIX --continued

1977

	SOUTH AMERICA	y	RGDP	P	c	P^C	i^d	P^I	g	P^G	POP
103	Argentina	41	2295	55	64	55	19	60	14	41	26049
104	Bolivia	12	630	64	67	66	18	83	17	41	5155
105	Brazil	31	1717	52	60	53	27	64	14	34	116127
106	Chile	30	1744	55	74	58	10	53	16	40	10552
107	Colombia	20	1076	84	67	45	20	49	11	27	25003
108	Ecuador	18	1045	54	61	55	25	70	15	32	7318
109	Guyana	14	666	43	61	43	22	59	26	44	827
110	Paraguay	17	821	52	68	55	21	67	14	23	2809
111	Peru	22	1175	45	69	47	15	53	18	34	16362
112	Surinam	28	1610	78	41	66	35	100	19	75	369
113	Uruguay	32	1811	53	70	56	15	57	15	39	2867
114	Venezuela	48	1792	64	53	60	36	77	15	61	13521
	OCEANIA										
115	Australia	68	3759	122	61	118	25	122	15	136	13991
116	Fiji	23	1110	66	65	67	19	80	18	50	590
117	Indonesia	10	341	39	65	39	16	49	17	24	141777
118	New Zealand	58	3288	92	60	90	27	100	15	94	3167
119	Papua New Guinea	na	na	na	na	na	na	na	na	na	2854

NOTES

Definitions:

y:	Real per capita gross domestic income expressed as a percentage of that of the United States.
RGDP:	Real per capita gross domestic product expressed in 1970 United States dollars.
P:	Price level for gross domestic income (PPP_{GDY} ÷ Exchange Rate).
c:	Percentage of real gross domestic income devoted to private consumption.
P^C:	Price level for private consumption (PPP_C ÷ Exchange Rate).
i^d:	Percentage of real domestic income devoted to *domestic* capital formation.
P^I:	Price level for *domestic* capital formation (PPP_I ÷ Exchange Rate).
g:	Percentage of real gross domestic income devoted to public consumption.
P^G:	Price level for public consumption (PPP_G ÷ Exchange Rate).
POP:	Population.
PPP:	Purchasing power parity.
NB:	$c+i+i^d+g=1$

where i^f is Net Foreign Investment. Therefore, $i^d(=1-c-i^d-g)$ can be estimated as a residual.