



FOOD SECURITY TRENDS AND PROSPECTS IN LATIN AMERICA

Solon Barraclough and Peter Utting

Working Paper #99 - August 1987

Solon Barraclough was the Director of the United Nations Research Institute for Social Development until he retired in 1984, since when he has continued to work as a consultant. In the spring semester of 1987 he was an invited fellow at the Kellogg Institute.

Peter Utting is a social scientist from Australia. Since 1978 he has been living in Nicaragua where he is working at the Research Center on Agrarian Reform (CIERA). He is also an occasional consultant for UNRISD.

This paper draws heavily on some of the major findings of research on food systems development and food security carried out by UNRISD between 1979 and 1986. Barraclough was project coordinator of the UNRISD study and both he and Utting prepared the project's overview report. An earlier version of this paper was published in *Lateinamerika: Analysen und Berichte* 10 (Hamburg: Junius, 1986).

ABSTRACT

This paper analyzes the problems, trends and prospects for food security in Mexico, Nicaragua, Bolivia, and Chile. There are three main sections: The first evaluates the state of food security in the four countries. The second examines the development of their national food systems and the problems of food security in an historical context. Finally, the authors assess the prospects for food security in the region as a whole.

RESUMEN

Este ensayo analiza los problemas, tendencias y perspectivas respecto a la provisión de alimentos en México, Nicaragua, Bolivia y Chile. Hay tres secciones principales: la primera evalúa el estado de la provisión de alimentos en los cuatro países. La segunda examina el desarrollo de sus sistemas nacionales de alimentación y los problemas de provisión de alimentos en un contexto histórico. Finalmente, los autores estiman las perspectivas para la provisión de alimentos en toda la región.

INTRODUCTION

This paper is about food systems and food security trends and prospects in Latin America. It is primarily concerned with the socioeconomic and environmental relationships determining peoples' livelihoods, their access to food and other necessities and their access to land, technology, markets and jobs. It reports on the Latin American component of a research project undertaken by the United Nations Research Institute for Social Development (UNRISD) between 1979 and 1986 in cooperation with researchers and institutions in ten countries in Latin America, Africa, and Asia.

The organization of the production, processing, distribution and consumption of food is a major component of all human societies. Also, as is well known, food tends to be relatively more important the poorer a person or society is, because a higher proportion of their incomes are used in feeding themselves. Analysis of food security issues forces the researcher to examine socioeconomic and political relationships and processes and their interactions with the natural environment from the standpoint of human needs. It provides a window, so to speak, for viewing and analyzing social development. This kind of research calls for looking at food systems.

I. EVALUATING FOOD SECURITY

Just a decade ago Barraclough was asked to write an article on agricultural production prospects in Latin America for a special issue of World Development dealing with food issues.

The 1976 article reviewed available data on poverty and malnutrition in the region. While estimates varied widely--they still do--there was a general consensus that from over one-sixth to one-half of the region's population did not have sufficient income to allow them to have access to adequate food by international standards. Review of additional research and data generated since 1986--including the case studies undertaken by UNRISD in Mexico, Nicaragua, Chile, and Bolivia--suggest that the food security situation has not improved since the early 1970s and may have become worse for some social groups.

In evaluating the state of food security in the four selected countries, the UNRISD research took into account a range of criteria relating to levels and degrees of sufficiency, autonomy, reliability, sustainability, and equity of national food systems.

The normative concept of food security used for the research signifies an assured supply and distribution of food to all social groups and individuals adequate in quality and quantity to meet their nutritional needs, as well as effective demand above this minimum. Food systems offering security should have the following characteristics: 1) the capacity to generate a sufficient internal food supply (via production, adequate storage and stocks and imports) to meet the basic food needs of all social groups and also of expanding effective demand; 2) have a maximum of autonomy and self-determination, reducing vulnerability to international market fluctuations and external political pressures (autonomy does not imply autarky, however, but rather dependability while taking prudent advantage of gains to be had for specialization); 3) be reliable so that seasonal and cyclical variations in access to food are minimized; 4) possess long-term sustainability (i.e. the production base [the ecosystem] should be preserved and improved); 5) finally it should ensure equity, meaning, as a minimum, dependable access to adequate food for all social classes, groups and strata.

This broad normative concept of food security was deliberately chosen. Conventionally accepted approaches to food issues through economic planning and

models tend to concentrate on abstractions such as gross national product and effective demand. This excludes from consideration the livelihood of all those who find themselves outbid for even essential foods or lack the wherewithall to produce them. It is with awareness of this distortion of social science favoring power holders and ignoring the weak that UNRISD proposes the evaluation of food systems from the viewpoint of their capacity to ensure the adequate feeding of the whole population. Food security as commonly used in international discourse has generally only meant sufficient supplies and stocks to ensure that market demands are met without severe shortages and violent gyrations in prices. This concept of food security disregards the question of distribution--whether or not all social groups have actual access to sufficient food. The research reported here explicitly rejects this narrow definition of the most basic of human needs.

Sufficiency

A national food system should have the capacity to generate sufficient food (through production, stocks and imports) to meet the entire population's basic nutritional needs as well as effective demand above this minimum. A first rough estimate of the degree of food sufficiency is made by comparing FAO estimates of daily per capita availability of calories and proteins with FAO norms of daily per capita requirements.

Considerable variations in the levels of sufficiency of national food systems in the four countries studied are reflected in the different levels of per capita calorie availability. Only in Bolivia is this significantly below FAO norms. Nicaragua, Chile, and notably Mexico either reach or exceed the recommended norms. The protein supply situation is more deficient with no country reaching more than 76 percent of FAO norms. Bolivia registers a highly insufficient protein supply. Mexico and Bolivia show a significant increase in per capita calorie and protein supply between the mid 1960s and the early 1980s.

Autonomy

The concept of a national food system's autonomy or self-determination, like that of dependency, is primarily a qualitative one. It implies power relationships and the presence or absence of alternatives as well as the degree of physical dependency on flows of goods, services, and technology among countries.

Some indication of the degree of autonomy of national food systems may be had by estimating the degree of self-sufficiency in cereal production. All four countries are highly dependent on imports of cereals. The degree of dependency on imported cereals has increased over the past decade in Mexico, Nicaragua, and Chile. Mexico and Nicaragua import nearly one-fourth of total cereals consumed and Chile and Bolivia over one-third.

A more inclusive indicator of the growing dependency of many national food systems is the amount of food system imports altogether (including the FAO categories of food, other agricultural commodities, fish and forestry products, agro-inputs and agro-machinery). In Mexico and Nicaragua, food system imports have increased by 750 and nearly 300 percent from 1970 to 1983, respectively. They increased only slightly in Bolivia because of its extremely limited import capacity. In all four countries food system imports account for between 20 and 35 percent of total merchandise imports. The extent to which food system export revenues can finance food system imports has been decreasing in Mexico and Nicaragua. It has increased slightly in Chile and Bolivia but this is explained by the growth of timber exports from both countries and also of fish exports from Chile, and continued growth in exports of these renewable natural resources is not sustainable. The relation of food system imports to total agricultural GDP gives a clearer indication of the extent to which the agro-food sector really depends on foreign imports. In all four countries, food system imports

accounted for between 21 and 31 percent of agricultural GDP in 1983. Food system imports as a percentage of agricultural GDP would appear to be increasing since 1970, notably in Mexico and Nicaragua. In the case of Nicaragua, however, this increase is partially accounted for by imports of capital goods required for relatively large-scale investment programs in agriculture and agro-industry which in the longer term may well decrease dependency on food imports.

Dependency of the food system is also indicated by its vulnerability to political and economic pressures from supplier and buyer countries. However, the contemporary experience of Nicaragua and the recent history of Chile during the Allende regime, in relation to economic aggression from the United States, indicate that it is relatively easy to find alternative suppliers and markets.

Reliability

A food system's reliability is primarily affected by fluctuations in food production, imports, storage, and distribution. These in turn are conditioned by a host of other factors such as climatic variability, relative prices, government policies, import capacity, transport facilities and infrastructure, and political instability, to mention only a few. In Central America during recent years food systems have been extremely unreliable for many large social groups who have become refugees for political reasons, or who have been displaced from their homes for political reasons or war.

Not one of the national food systems under consideration may be said to be reliable. Over the past decade all four countries have been affected by droughts and floods, and instability in per capita cereals production has been the norm. The Chilean study brings out the importance of government policy in explaining year-to-year fluctuations in wheat, oil seed and sugar beet production. Where production is in the hands of commercial producers, acreage sown and yields of annual crops are affected by relative product prices and the availability of inputs and credit.

The capacity of national food systems, particularly in smaller economies, to sustain required levels of food imports has been affected by instability of export earnings, notably during the 1980s, reflecting sharp fluctuations in world commodity prices. The volume of food system exports may also be affected by changes in cropping patterns, as occurred for example in Mexico from maize to sorghum and in Nicaragua from cotton to sorghum in response to changing relative prices.

Long-term Sustainability

The criterion of long-term sustainability of the food system refers primarily to the preservation and improvement of the ecological base for agriculture.

The long-term stability or sustainability of these national food systems is being undermined by processes of ecological deterioration related particularly to the poor use of soils, deforestation and the inadequate management of water sources. Interactions of natural ecosystems with processes of commercial crop and livestock expansion, forest exploitation, population growth in areas of largely self-provisioning agriculture, industrialization including mining and petroleum extraction, and urbanization have resulted in serious ecological deterioration in all the study countries.

In Tabasco, Mexico, extensive drainage infrastructure, railroads and roads were constructed in response to the demand for plantation crops in the area during the 1930s, '40s, and '50s. These upset the region's natural water regime in large coastal areas, causing serious damage to their agricultural potential. Indiscriminate deforestation in the semiarid altiplano and high valleys in Bolivia and the "norte-chico" in Chile, for mine-props, construction and locomotive or other fuels during the late 19th and early 20th centuries, greatly reduced these regions' agricultural potential. Large areas of north central

Chile that were once forested and productive are now practically desert. A more recent phenomenon in Latin America has been the widespread deforestation associated with cattle expansion. This has often occurred in tropical regions with fragile soils unsuited for annual cropping. When cleared for pasture, these soils soon lose their original fertility and are prone to erosion. This was studied carefully in Tabasco where pasture expansion caused a shortening of traditional peasant crop rotations leading to lowered productivity and incomes for most peasant farmers.

Equity

The most striking cases of unequal access to food by different social groups are to be found in Latin America. Considerable variations in the nature and extent of inequality of access to food were found in all four study countries. Mexico has the highest per capita income level but chronic malnutrition is experienced by large sectors of the rural population. The precise configuration of "vulnerable" social groups varied by country and region. On the whole, urban access to food tended to be more reliable than that in rural areas.

Evidence in Mexico was marshalled to show that malnutrition among many poorer social groups, and especially rural malnutrition, is very serious and possibly worsening. Estimates vary but serious child malnutrition in rural areas apparently reaches 45 percent in the southeast and 35 percent in the north. Small peasants who lost their lands and became part-time workers suffered deterioration in their nutritional status while peasants who had larger land holdings and were thus able to adopt new production lines and technologies improved their access to food, as did those displaced peasants who could find permanent employment.

In Chile, where over 80 percent of the population is located in urban areas, the biggest problem is that of access to employment and cash incomes. The research suggests that the number of households with inadequate earnings to acquire sufficient food increased from 47 percent in 1969 to 61 percent in 1984. Calorie and protein availability per person have apparently fallen about one-sixth between 1973 and 1983 with most of this decrease being absorbed by the lower-income 60 percent of the population.

In Bolivia, daily calorie intake for many of the urban unemployed or self-employed is inadequate, as is that of the majority of the rural population. Samples of urban and rural children reveal not only generally high levels of malnutrition but also significant regional variations, with levels of malnutrition in the lowlands considerably less than in the altiplano where an estimated 62 percent of rural children were found to be malnourished.

In Nicaragua, relatively abundant land and shortage of labor meant historically that malnutrition did not reach the same extremes as in many other Latin American countries. However, sharp regional variations were evident particularly between the pacific coastal region and the much poorer interior northern region. Since the revolution, redistributive policies have attempted to offset the effects of a severe economic crisis and the war on access to food for low-income groups. It is apparent, however, that these have been more effective in the cities and in that sector of the peasantry (approximately one-half) integrated into agrarian reform programs than for the rest of the rural population.

The high degree of inequity of distribution in the richer countries is brought out by the following comparison. Mexico and Chile are among the countries with the highest per capita income in Latin America, while Bolivia and Nicaragua have among the lowest in the whole region (only Haiti has an average per capita income less than Bolivia's). Average food availability per capita is well above requirements and has been growing in Mexico, is ample in Chile (although it has declined since 1973), is almost sufficient in Nicaragua, and is

only really deficient in Bolivia, according to FAO standards. Yet, undernutrition and inadequate access to food for significant numbers of the population have been serious problems in all four countries and, paradoxically, seem to have been increasing most during the past decade in the two richest countries. A brief review of the evolution of these countries' food systems, and especially of recent growth processes and policies, helps to explain why this is the case.

II. THE EVOLUTION OF NATIONAL FOOD SYSTEMS

All four Latin American countries shared the heritage of the Spanish conquest and were part of the Spanish empire for three centuries until their independence in the early 19th century. The territories that are now Mexico, Nicaragua, Bolivia and Chile, however, had different geographies, natural resources, climates and pre-conquest societies. Their development during the colonial and post-colonial periods was correspondingly divergent, with the result that their present-day food systems show many differences as well as similarities.

Mexico was the seat of the Aztec empire, while Bolivia formed part of the heartland of the Inca empire that stretched at its zenith from Colombia in the north to central Chile in the south. Both these indigenous societies had highly sophisticated social organizations, including their agriculture and food systems. These food systems supported large populations with relatively dependable and adequate food supplies. Some estimates put the number of inhabitants in pre-conquest Bolivia and Peru as close to that in the same region today. The regions that are now Nicaragua and Chile were much less densely populated than they are now. Sedentary agriculture for self-provisioning was predominant in north and central Chile and in the Pacific coastal zones of Nicaragua, but these food systems were largely autonomous for each kinship group. The extensive areas of southern Chile and central and eastern Nicaragua were inhabited by tribes depending mainly on hunting and gathering for food supplies.

After the Spanish conquest the conquistadores initially administered the conquered Indians through *encomiendas*, a system under which the indigenous population paid tribute and supplied forced labor for Spanish farms, towns and mines. These *encomiendas* were soon superceded by large estates (*plantations* and *haciendas*) while Indian communities not incorporated in these *latifundia* continued to pay tribute and supply non-free laborers. The imperial power's primary interest was that these *plantations*, *haciendas*, mines, and tribute-paying communities produce surpluses for export to Spain and for maintenance of the military garrisons and civilian administrators of the Empire. This land tenure system was accompanied by authoritarian political and social structures and vast and growing inequalities of wealth, power and social status.

Indian populations in all four countries were soon almost obliterated. This was due in part to war and harsh treatment but much more to the natives' lack of resistance to Old World diseases such as measles and smallpox and to the disruption of indigenous societies.

The Europeans brought new farming techniques, iron tools, cattle, and many new crops such as wheat, sorghum, sugarcane, coffee and alfalfa. European food systems were enriched in return by potatoes, corn, tomatoes, many new varieties of beans and squash, cacao and countless other foods that soon became staples in the Old World.

During the colonial period, Mexico was the administrative center for all Central America north of Panama including Nicaragua. Bolivia's dependency was transferred from Lima, Peru, to Buenos Aires in the late 18th century, reflecting in part Argentina's greater capacity to supply cheaper wheat for laborers in the mines and towns than the wheat previously obtained from Chile via Lima. The food systems in all four regions were dualistic in the sense that

the white rulers had more diversified and dependable sources of food from imports and local sources than did the Indian and mestizo majorities.

Independence from Spain did not change the situation much. The same large landowner oligarchies continued to hold the dominant economic and political power. Indian majorities were second-class citizens at best and in Mexico and Bolivia where they were most numerous they remained virtual slaves. Independence, however, created national governments and little by little this led to the emergence of national food systems during the late 19th and early 20th centuries.

Mexico

Until the end of the 19th century, it is difficult to speak of a food system of national scope in Mexico. The country was composed of numerous regions that were largely self-sufficient. With the construction of an extensive railroad system during the 1880s and 1890s, as well as the consolidation of a strong central government in Mexico City, large areas of the nation were integrated into a growing national market or linked directly to the international market through export trade. By 1910, grains and beef circulated over relatively great distances through channels controlled by large-scale intermediaries with sufficient capital and social contacts to coordinate credit and sales under the difficult circumstances caused by rudimentary transport and banking structures.

The continuous encroachment of large estates upon peasant holdings, as well as a series of urban provisioning crises brought on by drought and voracious speculation, contributed to the eruption of the Mexican Revolution of 1910, and to consequent wartime disruption of much of the supra-local food system. By the time the revolution ended in 1917, the great estate owner had ceased to be an important part of the governing coalition of the country, although many haciendas were not immediately broken up by revolutionary forces. Members of post-revolutionary governments were divided on the subject of whether food should be provided primarily by modern private farmers, modelled along the lines of counterparts in the United States, or by smallholders granted land through an agrarian reform program. Despite large-scale participation of the peasantry in the 1910 Mexican Revolution, agrarian reform was limited to relatively few regions until the Cárdenas administration in the 1930s. As social tensions increased during the depression era, agrarian reform was implemented throughout most of the country, accompanied by widespread peasant mobilization. Large haciendas and many large commercial farms, including foreign enterprises, were expropriated and their land redistributed to the workers and peasant communities. Expropriated lands were distributed in communally owned ejidos. Land assigned to ejido members could not legally be mortgaged or sold. Between 1930 and 1940 the ejido holdings increased from 800,000 to 3.5 million hectares while the number of landless laborers declined from 68 to 36 percent of the rural workforce.

In the 1940s, however, agrarian development policy was oriented away from the peasantry towards the private sector and commercial farming. With rapid economic growth, the access of the peasantry to credit, inputs, and government support services became increasingly restricted relative to that of commercial farmers. In the 1950s a program of systematic subsidies for agricultural inputs and machinery boosted productivity on commercial farms and further polarized rural society. The ongoing marginalization of the peasantry experienced throughout recent decades has accelerated the dissolution of self-provisioning agriculture, and landlessness has increased.

In practice, pressure from the organized peasantry forced the State to distribute land but--with the exception of the short period between 1936 and 1940--usually without vital complementary services such as credit, marketing and technical assistance. At the same time, public resources began to be channelled

largely toward investment in public works, which permitted the creation of prosperous areas of modern commercial farming.

Road building was especially important from the 1930s onward in tying new agricultural areas into the sphere of national food commerce and permitting the elaboration of a growing network of intermediaries who channelled goods outward from hitherto remote villages toward expanding urban areas. Without alternative sources of credit or transport and in the absence of any form of specialized organization for marketing, small producers who needed to sell their goods were at the mercy of intermediaries.

However, low rural prices, especially for small producers, were by no means converted into a benefit for final food consumers, whether urban or rural. Patterns of speculation, which differed little from those of pre-revolutionary times, made it increasingly difficult to feed the buying public of Mexico which confronted high prices and not infrequent scarcity. As the country entered a period of rapid growth around the turn of the 1940s, encouraged by opportunities created by World War II, inflationary pressures compounded traditional provisioning difficulties and made governmental intervention in the grain trade inevitable. During the following decades a system was elaborated which permitted the continual marginal regulation of the national market for basic grains. This stabilized the provisioning of basic grains in urban areas, but did not eliminate speculation by intermediaries in the more remote rural areas nor ensure an adequate and reasonably priced supply of food staples to most rural people.

The pattern of increasing duality among food producers was mirrored among consumers in very unequal terms of access to staples on the part of urban and rural residents. As early as the 1940s all residents of Mexico City began to receive subsidized corn tortillas and wheat bread--a benefit enjoyed by no other part of the Mexican population. During the 1950s the needy of the nation's capital also began to receive subsidized milk. At the same time, experiments with officially sponsored retail stores in the capital marked the initiation of what was to become a major effort to regulate the prices of a wider variety of basic goods in urban areas, including rice, beans, cooking oil, canned fish and a number of other processed foods. When an incipient agricultural crisis brought the plight of traditional agriculture--sustaining a very large number of rural people--to national attention in the 1970s, these programs were expanded to reach most smaller urban and some rural areas.

Largely abandoned for half a century to unregulated interaction with private intermediaries and moneylenders, and often caught up in a spiral of ecological deterioration, peasant holdings in the aggregate were clearly producing less. At the same time, commercial agriculture shifted notably toward the cultivation of feedgrains, and out of foodgrains, in response to profitable opportunities generated by the expanding urban demand for animal products. National production of corn and, to a lesser extent, wheat, lagged behind consumption requirements which were met increasingly through importation.

The crisis was in part attributable to an official pricing policy which had made the production of basic grains unprofitable; and in 1975 the Mexican government began a series of upward adjustments of guaranteed prices. Of equal importance was the decision, taken in 1979, to invest a sizeable proportion of growing public revenues from oil exports in supporting peasant agriculture through providing subsidized fertilizer to small grain producers, increasing the flow of credit (at subsidized rates) toward the latter, and initiating a program of "shared risk" which would make crop losses less devastating for peasant cultivators. This package of benefits was administered through the Sistema Alimentario Mexicano (SAM), which in addition attempted to strengthen programs (such as village-level grain storage and local cooperative retail ventures linked to the National Popular Subsistence Corporation) which could improve the position of rural consumers. There is some evidence that the SAM program did

encourage basic grain consumption, but the effort was discontinued in the wake of the national financial crisis of 1982. The SAM program collapsed as soon as oil revenues began to falter. It had not been accompanied by serious structural reforms or by large-scale popular mobilization. The country still imports huge quantities of grain, and the provisioning problems of the Mexican countryside have not been resolved.

Mexico's development strategy since 1940 has become increasingly export-oriented, first to promote agro-exports and tourism and later exports of petroleum and some manufactured goods. At the same time, governments have maintained import substitution policies for many basic industries, such as steel. Food imports increased rapidly after 1965, however. The cheap food policy for urban consumers conflicted with the goal of increasing food autonomy. The peasantry could have increased food production considerably if given adequate additional resources, support, and incentives, but these were not forthcoming. Meanwhile, commercial farmers concentrated their resources in other more profitable lines of production oriented towards higher-income markets, both domestic and foreign. Some put their capital in urban speculations or abroad.

The Mexican research suggests a number of measures to improve food security. It places much emphasis on the need to halt environmental deterioration via improved water management, more attention to the problems of managing tropical soils and greater care in the use of agricultural technologies, such as heavy machinery, designed for different ecological conditions.

The research also suggests a number of ways to improve access to food by the urban poor. It emphasizes the need to reform the food marketing system in order to reduce the margins of wholesalers and intermediaries. This is particularly pertinent now when urban food subsidies are being cut because of the economic crisis. The research also draws attention to the need to provide greater price and other incentives, resources, and services for peasant producers of staple foods such as maize.

A principal conclusion of the research, however, is that the accelerating marginalization of the peasantry, and the explosive growth of the numbers of urban poor who have only precarious employment, incomes and access to food, can only be reversed by a major change in development strategy and in the present dualistic social structure. A strategy oriented to meeting the basic needs of the rural and urban poorer majorities implies the mobilization and organization of these groups so that they can participate more effectively in political processes in pursuit of their own vital interests.

Peasant revolt was an important component of the Mexican revolution and in some areas such as Morelos it was a truly agrarian revolt. The Cárdenas agrarian reform was based on peasant mobilization. Since 1940, however, peasant organizations have been systematically co-opted or repressed whenever their demands have become an obstacle to the dominant development strategy. In spite of this, in the late 1970s peasant and farm workers did manage to organize effectively to counteract deteriorating livelihoods in a few areas such as the Yaqui Valley where they became an important social force for improving their own food security. In many other regions of the country peasant organizations are increasing their capacity for effective economic and political action, which may help to bring about a more peasant-based development strategy. This will be extremely difficult, however, and will necessarily imply alliances with urban social forces to improve the food security of both.

Nicaragua

The Nicaraguan economy had only weak links with world markets until the expansion of coffee production in the late 19th century. There was no semblance of a national food system, however, until the agro-export boom following World

War II. The rapid expansion of cotton, sugar and cattle production for export during the 1950s and '60s was reflected in spectacular growth of GNP. During this same period large sectors of the population were nonetheless experiencing growing food insecurity.

As a new class of agricultural entrepreneurs emerged, many peasants in the Pacific region were forced off the land and migrated to the cities or to the agrarian frontier. While some became permanent agricultural laborers, a much larger number could only find seasonal employment. As a result of this process of displacement, production of the major staples of corn and beans moved to more marginal lands, particularly in the interior region of the country where climatological conditions were unsuited to these crops and infrastructure was totally lacking. In consequence, yields of corn during the 1970s were among the lowest in Central America and post-harvest losses accounted for as much as 30 percent of production.

The development of itinerant grain production and cattle production in the interior was to have a major impact on the ecological system as massive deforestation took place to develop pasture lands. These eventually covered five million hectares. The total crop area amounted to only 700,000 hectares during the 1970s, and half of this was taken up by export crops.

With the development of the agro-export economy, tertiary sector activities expanded rapidly in the cities. As the access of the rural population to resources became more difficult, urbanization accelerated, particularly in the capital, Managua. By 1979 half the country's population was urban.

The Central American Common Market initiative, which promoted industrial development during the latter part of the 1960s and the 1970s, failed to develop the type of import substitution industrialization that could absorb excess labor in the cities and save on foreign exchange. Instead, capital-intensive food processing and chemical industries were established which were highly dependent on imported raw materials, inputs and capital goods. Technological modernization associated primarily with the agro-export sector, combined with dependent industrialization, caused total food system imports to expand rapidly.

In summary, the pre-revolutionary Nicaraguan food system facilitated the profitable expansion of the country's agro-exports. Wages and the prices of basic foodstuffs were kept low. Sufficient food reached the labor force to assure its productivity and social reproduction, although not its health, well-being or security. Livelihoods were precarious for the rural and urban poor, forcing them to offer their labor at low wages to agro-export activities. Land tenure, transport, marketing and credit systems were designed to serve the large commercial producers' interests and especially those of the Somoza group. Although the Somoza interests only owned about one-fifth of the agricultural land, they controlled nearly all the financing, processing and marketing of agro-exports. The police power of the State was employed to prevent any disruption of the system either by overly effective competition from other entrepreneurs (foreign or local) or by popular movements and organizations. The social tensions generated by the above processes of change were held in check by political repression. Eventually a sharp recession in agro-export growth and increasing levels of repression and corruption following the Managuan earthquake in 1972 led to the collapse of the system in a popular revolution that culminated in 1979.

The new Sandinista government placed a strong emphasis on autonomous and egalitarian development, diversifying international trade and promoting food security and satisfaction of basic needs. The State intervened directly in the food system, controlling approximately 25 percent of agricultural production and 35 percent of the food industry, as well as certain marketing activities, notably in basic grains procurement and distribution. A series of redistributive policies which introduced agrarian reform measures, cheap credit

for many rural producers, a cheap food policy, and improved social services and employment opportunities has meant improved access to resources for large sectors of previously marginal social groups. This has been reflected in rapidly declining levels of infant mortality and increased levels of per capita consumption for most major food products, particularly from 1982.

However, after 1983 the cumulative effects of U.S.-backed invasions by counter-revolutionary forces, economic blockade measures imposed by the Reagan administration, and declining export revenues severely constrained development efforts. Also, a series of planning biases favored urban sectors and large-scale State agro-industrial enterprises. Many peasant producers could not obtain basic consumer goods such as shoes and clothing or the simple tools, seeds and other imports required for producing basic grains.

After 1980 fiscal and monetary policies were used for the rapid expansion of "basic needs" programs, investment in agriculture and agro-industry, and credit to both commercial farming and the peasantry. Combined with large-scale defense expenditures, these policies contributed to large government deficits which were mostly met by increasing the money supply. As the government attempted to keep the prices of food and other basic necessities low through price controls and subsidies, there was a growing disequilibrium between demand and supply.

In 1985, the deteriorating economic situation, accentuated by war and the economic blockade, called for austerity measures. Food subsidies, which had reached 3.7 percent of GDP in 1984, were virtually eliminated. Instead, government policy regulating distribution of basic food and manufactured products concentrated on establishing a more equitable distribution system to ensure that both rural and urban consumers had at least minimal access to a range of essential products.

The post 1985 emphasis on rural distribution was intended to correct a series of imbalances that had arisen during the early years of the revolution. Price controls and partial rationing of basic necessities had benefited the urban population more than the rural. These measures were relatively effective in guaranteeing access to a minimum quantity of basic food products by the urban poor. Administrative difficulties, poor transport, and the war, however, made it difficult to extend these benefits to rural areas, especially in the interior of the country.

The negative effects of the war had been accentuated in rural areas by government policies which discouraged traditional merchants. At the same time, the government was still unprepared to assume these merchants' crucial functions. This is an important point. The research in many countries points to the need for major transformations in marketing relations and structures in order to overcome the historical disadvantage of peasant producers in relation to middlemen: the Nicaraguan experience on the other hand highlights some of the possible tensions that may arise if traditional marketing relationships are disrupted prematurely. There is often a time lag between the dismantling of the old structure and the consolidation of a new one.

A key feature of the Nicaraguan revolution has been the organization of low-income urban and rural social groups and their active participation in the political process. Organizations representing urban workers, rural laborers, women, young people, and urban neighborhood dwellers expanded rapidly following the revolution. Initially, however, peasant producers had little direct representation. This situation changed in 1981 when the National Union of Farmers and Cattlemen (UNAG) was formed and rapidly incorporated more than half of the country's agricultural producers. The active role of this organization has been instrumental in improving the access of important sectors of the rural population to inputs, credit, basic consumer goods and land. In practice, there has been a tendency for UNAG's demands to reflect the interests of the small- and medium-sized commercial farmers rather than those of the poorest peasants.

Demands associated with improved access to markets and high guaranteed prices have been more common than those calling for land redistribution. This reflects the importance of the middle farming sector in Nicaraguan agriculture.

So-called agrarian reform measures had been introduced by the Somoza regime during the mid-sixties. Their main objective, however, was to use colonization programs to deflate social tensions affecting cash crop production in the Pacific coastal region. It was not until after the 1979 revolution that effective measures were taken to improve the situation of the poorer peasantry through improved access to land, inputs, credit and support services. By the end of 1986 approximately half the peasant population, or 62 thousand families, had received new lands. In all, 99 thousand families have received security of tenure through programs granting land titles to cooperative members, individual producers and indigenous communities.

The Somocista properties confiscated immediately following the Revolution were largely retained as State enterprises which formed part of the Area of People's Property (APP), accounting originally for 18 percent of all agricultural lands and increasing slightly to 20 percent by 1983. This area was subsequently reduced to 13 percent by the end of 1986 as land was handed over to the peasantry. With the confiscation of Somocista properties, the expropriation of unproductive and idle lands, and the purchase of a number of properties, the size of large-scale private property (equals anything over 350 hectares) was reduced from 2 million hectares in 1979 to 569 thousand hectares in 1986, or from 36 percent to 10 percent of all agricultural lands.

During the Somoza period, Nicaragua's development strategy was agro-export led and designed to benefit primarily the relatively small social group associated with the Somoza dictatorship. This strategy required a high level of repression. The post-revolutionary government's strategy has been basic needs oriented and is, in part, a peasant-based strategy. Its social support resides primarily in the urban low-income groups and the peasantry. However, a large part of the country's domestic food supply and industrial production is derived from agro-industry and imports purchased from agro-export revenues. For example, most of the country's edible oils come from cottonseed, while hides and tallow from cattle--beef is another major agro-export--support the leather goods and soap industries. This heavy dependency on agro-industry has also caused the government to give a high priority to several large-scale agro-industrial projects.

The options available to the Nicaraguan government for improving food security are severely restricted by constraints that are largely externally imposed. These are, firstly, the war and the economic blockade backed by the United States, and secondly, reduced export revenues largely accounted for by low world commodity prices experienced during the first half of the 1980s. Overcoming the first constraint requires a different response on the part of the United States administration and its willingness to comply with international law. The second problem requires not only an upturn in world commodity prices (as experienced in 1986 with coffee) but also new patterns of insertion in the world market.

Since 1979 Nicaragua has increased trade with Western and Eastern Europe, Canada, Japan, and other Latin American countries, while imports from and exports to the United States--they were nearly one-third of the total in 1978 and over two-thirds in the 1950s--have virtually ceased with the economic blockade. In the longer term, the government believes it will be necessary to consolidate its new more diversified trade patterns with particular emphasis on Central American, Caribbean and other Latin American markets. It will also be necessary to change Nicaragua's traditional policy of exporting raw materials and increase the degree to which these are processed within the country; for example, it would be more advantageous to manufacture cotton cloth than to export raw cotton and then reimport the finished cloth. The government intends

to develop new industries based on the country's abundant natural resources, both for more diversified exports and to meet the need of a growing internal market.

Of course, such profound changes in economic and social structures cannot be accomplished overnight. The most acute problems currently facing the government are how to survive in the face of world recession and U.S. aggression. For this reason it adopted a survival strategy in 1986 with major emphasis on the mobilization of domestic resources and energies. Many large-scale investment projects had to be slowed or scaled down to release resources for immediate consumption needs and the war effort. As was seen above, a high priority has been given to efforts to achieve a more equitable distribution of food and other basic necessities among rural and urban populations. At the same time the government is attempting a better distribution of land and other productive resources among small and medium producers.

Bolivia

In Bolivia, a dual food system had developed under the control of the colonial authorities. The large number of workers in the mines and the urban populations in Spanish administrative centers could not always be fed conveniently and cheaply enough merely from tribute and from production by newly established Spanish-controlled haciendas. Some of their needs were met by food imports. The country began to import significant quantities of staple foods, mainly wheat, and some luxury foods from Chile and later from Argentina, with the return trips of the convoys freighting silver, gold, and other precious metals to seaports for shipment to Spain. The rest of the population, mostly rural, continued to depend essentially on local food systems. This duality has persisted, with many modifications, until the present. The most notable change in recent decades is that products such as wheat (mostly imported), sugar and vegetable oil are now consumed in all parts of the country including remote highland communities.

The expansion and consolidation of the hacienda system during the late 19th century to include most of the best agricultural lands and over half the agricultural population in the altiplano and valleys modified the colonial food system. The rural markets of Indian communities disappeared when the Indians were incorporated into the haciendas. The creole hacendados took control of marketing hacienda produced food in the towns as a principal means of extracting more surplus from their Indian populations, mostly for the accumulation of personal wealth. Traditional local markets all but disappeared in many areas while the Indian peasants on the haciendas became mere serfs. There seems to be little doubt that their food security became extremely precarious during the hacienda period. Although some hacendados invested in improved technologies and infrastructure, most did not. When exports increased rapidly during the "tin boom" in the early 20th century, growing food requirements in the mines and cities were met not so much by an increase in local food production as by an expansion of food imports. This was facilitated by newly established rail links with Chile and Argentina.

The great depression caused a drop in exports and hence in food imports during the decade after 1927. With the end of the Chaco war in 1935, many demobilized soldiers remained in the cities. Rapid urban growth after 1936, and the recovery of world markets for tin and other metals, caused the demand for food in the cities and in the mines to increase rapidly once more. Increased export earnings permitted Bolivia's annual food imports to increase by over 600 percent between 1937 and 1944. Food amounted to nearly one-third of all imports during this period.

The 1952 Revolution and the agrarian reform of 1953 had a profound effect on the food system. The agrarian reform law legalized a de facto process of land redistribution that occurred when peasants took over many haciendas during

the revolution. Supposedly all latifundia were expropriated and hacienda lands were redistributed to the peasants formerly cultivating them as serfs. More than 30 million hectares were affected by land reform activities and more than 400,000 families have benefited from land allotments. A large part of the food surplus previously marketed by the hacendados in the cities was either consumed by the newly liberated campesinos or simply not produced. Although food imports continued at about pre-revolutionary levels, food shortages developed in the cities. These gave rise to numerous ad hoc rationing arrangements. Within the following decade, rural markets had been re-established and were flourishing even in areas from which they had disappeared decades earlier. Women predominated in these revived market centers. Peasant production increased on the ex-haciendas and a significant portion was sold so that food flows from the land reform beneficiaries to the cities after 1960 surpassed pre-1952 levels. There seems to be little question that food consumption and security of most liberated peones on the ex-haciendas improved considerably in the decade after the revolution.

Despite the agrarian reform, concentration of land ownership is still relatively high in Bolivia. A number of large estates were granted exemption from expropriation on the grounds of being "commercially-oriented agricultural enterprises." In the 1970s, concentration has increased as land reform authorities have granted land in large units to settlers in the tropical plains.

During the 1960s and 1970s the vast majority of public and private investments in agriculture were made to stimulate production by larger commercial farmers and agro-industries, particularly in the tropical Santa Cruz region. The completion of an all-season road link from Santa Cruz to Cochabamba and La Paz had made the eventual development of a truly national food system more feasible. The government's strategy was apparently one of agricultural import substitution and export promotion. During the period, the country became self-sufficient in rice (a tropical crop but mostly in peasant hands), cattle (mostly produced by large ranchers), and sugar (about one-half from large producers), and it became for a few years in the mid-1970s a net exporter of cotton (mostly from large commercial producers). Production of traditional food staples such as potatoes, maize, etc. produced by the campesinos in the highlands and valleys did not expand as rapidly, however, because their terms of trade deteriorated and only minimal public investments were made to support peasant producers of these crops.

The expansion of sugar and cotton production required large initial investments of imported expertise, machinery, inputs and equipment. Moreover, recurrent operating costs for these big commercial farms and agro-industries had a high component of imported pesticides, fertilizers, spare parts, etc. At the same time, there were other large public investments in expanding agro-processing capacity for wheat, milk and vegetable oils, since these were being imported (partly in processed forms) in significant quantities. The new processing facilities were subsequently used at only a fraction of their rated capacities, making for high unit cost, and this in turn left Bolivian processed industrial food products more expensive than imports, necessitating subsidies for the processing enterprises. Most of the wheat milled in Bolivia was imported as were significant proportions of the milk and vegetable oils. Consequently, the great efforts during the last three decades to make Bolivia less dependent on food imports yielded rather mixed results.

Government policies since 1960 not only favored large commercial farming and agro-industries (mostly in the Santa Cruz region) over peasant agriculture, but they also benefited many urban classes at the expense of the peasants. This was done by keeping urban food prices relatively lower than they would have been if the government had not resorted to large food imports, which were often heavily subsidized (mostly by the exporting countries with unmarketable surpluses). The terms of trade during the 1970s tended to move against highland

peasant producers with the food they sold becoming progressively less valuable whether measured by the amount of fertilizer or by the basket of non-food consumer goods that the same quantity of peasant food sales would buy.

Changing government macro-economic policies have frequently altered the short-run terms of access to food of different social groups. For example, the austerity program implemented in the late 1970s included drastic cuts in government spending, credit restrictions and control of both wages and food prices. This program was accompanied by shortages of basic consumer goods and prejudiced the real purchasing power of both the rural and urban poor. It was particularly resented by peasant producers in the altiplano and the valleys who were unable to exchange their food surpluses for the same quantities of consumer goods and production inputs as before. On the other hand, the current austerity program, which was initiated in a period of hyperinflation in mid-1985 and which abolished price controls but froze most wages and lifted restrictions on imports, had the immediate effect of depressing real wages and salaries more than the terms of trade for most small food producers in the altiplano and valleys. The urban poor throughout the country, and agricultural wage laborers who are numerous in the Santa Cruz lowland areas, appear to be suffering relatively more than most peasant producers from this new austerity package. Peasant producers in new lowland colonization areas have also apparently suffered a relative worsening in their terms of trade.

In spite of a costly import substitution strategy in force since 1960, food system dependency is about the same in 1985 as it was in 1950. Dependency on food imports in total food consumption has increased during the 1981-1985 period. In 1979-81 about 56 percent of the Bolivian food consumed (in terms of calories) came from peasant producers, 26 percent from imports and 18 percent from large and medium-sized commercial farmers. Food imports are mostly consumed in the cities and mining areas which are dependent on imports for nearly 50 percent of their food calories, while peasants as a whole rely on peasant production for most of their calorie intake.

At present, the country's low per capita food availability and its heavy dependence on commercial food imports and on food aid leaves the food system extremely vulnerable. (Wheat from food aid in 1983-84 amounted to about one-third of all wheat imports, and wheat imports to about one-fifth of national calorie consumption.) This vulnerability is further aggravated by the poor transportation network, as food cannot easily be moved from surplus to deficit regions. The collapse of tin and petroleum prices in the 1980s has left the country particularly dependent on food aid. The one dynamic economic activity--cocaine--is illegal and does not contribute much to food security.

The country's weak national industrial base also makes the Bolivian food system highly dependent on imports of basic non-food inputs and the consumer goods required to provide additional incentives for peasant producers. For example, Bolivia has ample resources of potash, phosphates and natural gas, but it has to import all of its chemical fertilizers. FAO global programming model projections for the year 2000 indicate that annual Bolivian fertilizer use would have to increase from an estimated 4,600 tons in 1975 to over 20,000 tons in the year 2000 to raise per capita calorie food availability by about 35 percent. Bolivian handicrafts, which once provided most basic non-food consumer goods for the population, are now produced primarily for tourists and for export as they cannot compete in national markets with cheap manufactured imports. Without a national industrial capacity to produce essential agricultural inputs and basic consumer goods, a relatively autonomous food system is unattainable.

An effective food strategy would require that the State reorient its agricultural investments and services towards the peasant sector. Just as important, it must reorient its macro-economic and social policies and programs in the same direction. Investments and services in health, education, housing, roads, recreation, etc., should all deliberately tilt towards the peasant sector

with at least the same proportion of resources directed to the peasantry as the proportion of peasants in the total population. In the economic sphere, investments in industry and services should be oriented to produce the agricultural inputs, services and consumer goods peasants require. Economic policies affecting global demand, savings, exchange rates, interest rates, trade, etc. should be planned taking into account their impacts on peasant incentives, on their productivity, and on their living levels.

Present economic and financial constraints put a clear limit on the coverage and size of investment projects in agriculture and related fields. Real progress in these areas is necessary for a successful peasant development strategy. Investments in many important fields do not require large foreign exchange components (a notable exception being electrification). The food-for-work projects fostered by the World Food Program and many other self-help projects in Bolivia demonstrate that much can be done with peasant organization and a minimum of outside resources.

Clearly, such a strategy calls for revolutionary changes in power relationships. It could not be adopted or implemented without effective mobilization and democratic organization of both the rural and urban poor and without alliances with progressive professional and other middle sectors.

Peasant organizations played a major role in the 1952 revolution and in land reform, although non-peasant economic and social interests have often been able to dominate initially successful peasant revolts and divert them from their original goals. A new national peasant union federation, the CSUTCB, was created in 1979, and has become the most important national peasant organization. It is now attempting to build a peasant controlled economic organization to support peasant producers with marketing, processing, inputs, agro-industrial production and technical services. It has also drawn up a proposal for an alternative agrarian reform law which recognizes that the peasants, who are half the population, should not be passive beneficiaries but should play a leading role in designing and executing policies and programs. The national socio-political context has not as yet allowed these peasant initiatives for improving food security to prosper.

Chile

Chile was one of the first Latin American countries to become relatively urbanized. By 1900, 40 percent of the population was urban, increasing to nearly 75 percent by 1970. This early urbanization meant that Chile was one of the first Latin American countries to develop a truly national food system. This was facilitated by a relatively good railway and road network that had been constructed in much of the country, primarily to serve the needs of mineral production and export. The country's economic growth and rapid consolidation of its political institutions were based largely on exports, first of copper, wheat and hides and later of saltpeter, and also on its key location in respect to Pacific coastal trade. An early alliance between merchants and large landowners resulted in the control of political and economic power by a close-knit oligarchy that was highly dependent on foreign capital and markets.

By the early twentieth century, with the advent of saltpeter and copper as major sources of income and with the U.S. replacing Chile as the major source of wheat for Peru, agriculture had languished. The Panama canal caused a sharp reduction in income from shipping. After 1940 the country became increasingly dependent on agricultural imports to keep food prices low for urban consumers. This policy was greatly facilitated during the 1950s and 1960s by the ready availability of cheap United States PL-480 food surpluses. After the great depression of the 1930s industry had been highly protected, largely dependent on State financing and foreign capital, and for the most part directed toward import substitution of those consumer goods that could be purchased only by the higher-income classes. This strategy of import substituting industrialization

continued when copper exports increased rapidly again during and after the Second World War.

Within this context, first the middle class, and later organized labor in some modern sector industries such as copper, were able to increase their privileges and incomes gradually through shifting political alliances and collective action such as strikes. Yet even as late as 1970 about 55 percent of the population was still earning less than two "vitaes."

The agrarian structure changed relatively little during the 20th century until the reforms of the late 1960s and early 1970s. As late as 1960 over 80 percent of the agricultural land was held by large estate owners (latifundistas), many of whom were also bankers, industrialists, merchants and political leaders. Some 70 percent of the rural population, meanwhile, were eking out a living on subsistence-sized plots, or were landless laborers on the large estates. The upper-income eight percent of the rural population received more of the total agricultural income than did this entire lower-income 70 percent.

After World War II, successive governments had pursued a development strategy emphasizing subsidies, credit and overvalued exchange rates to promote technological modernization of industry and large commercial farms. At the same time the government increasingly relied on food imports, especially of wheat and milk, in order to maintain relatively cheap supplies of food in the cities. This strategy failed even by its own criteria of increasing per capita agricultural growth significantly and creating a class of dynamic capitalist farmers.

In 1964 a new Christian Democratic administration with broad populist support initiated a reformist strategy including massive agrarian reform. This strategy was only partly successful in achieving its economic and social objectives. Agricultural production and investment increased, but only about one-fourth of the 100,000 rural families who had been supposed to benefit from agrarian reform actually received land. In large measure this was because of political factors. The government had failed to increase its popular electoral support significantly in either rural or urban areas while it had alienated its more conservative allies.

The Popular Unity coalition that came to power in late 1970 proposed to bring about a democratic and peaceful transition towards "socialism" within the institutional framework provided by the Constitution and Chilean law. The major copper mines and many other large companies, the banks, and the many remaining large landholdings were to be quickly expropriated or purchased. Real wages, both urban and rural, were to be increased substantially as were social programs for low-income groups such as the distribution of free milk for children and nursing mothers. Prices of basic necessities were to be held down as well as the incomes of high-income groups. Government spending for productive investments and social services was to be expanded sharply.

Initially this strategy was relatively successful. Industrial output and employment increased rapidly during 1971. Income redistribution and monetary expansion was accompanied by both greater effective demand for consumer goods and growing political support among low-income groups. Significant portions of industry, commerce, finance, agriculture, and mining were quickly incorporated into the "social sector." Union organization was rapidly expanded in rural areas. Those unions affiliated with the Allende coalition, both rural and urban, acquired increasing influence in industrial and governmental decision-making and administration.

The limits of the initial phase of the Allende administration's strategy, however, were soon reached in 1972. Without new legislation it became increasingly difficult to expand the "social sector" or to continue income redistribution. It was impossible for the government to obtain new taxes or other necessary fiscal reforms (to limit demand by higher-income groups while

raising additional government revenues) from an opposition-dominated Congress, even though many of the reforms desired by the administration had previously been proposed by the Christian Democrats. That part of "excess capacity" in industry that could easily be brought into production had already been absorbed in 1971 and new capacity could only be created slowly. In the face of uncertainty about property rights and inflation in the future, private savings and investments practically ceased. Government investments and even the purchase of vital inputs and replacement parts were severely curtailed by the disappearance of most traditional sources of foreign credits and especially by the cut-off of short-term commercial credits by U.S. and many European banks and multinational corporations. Monetary expansion had brought about increased demand and consumption for nearly all income groups, but in a highly irrational way as some groups could take much better advantage of the inflationary situation than others. Black markets flourished, property values plummeted and inflation leapt out of control. The crisis was accentuated by an increasingly well-organized and well-financed middle and upper-class opposition supported by Chilean and transnational capitalists, by the U.S. CIA and by many private conservative groups in Europe, the U.S., and Latin America. The opposition used a combination of sabotage, terrorist tactics, and strikes in key economic activities such as transport, retail trade and medical services to "destabilize" the economy. By early 1973 even some of the redistributive gains of the earlier period were being eroded while production and productivity were falling in much of the economy.

Agrarian reform was a major plank in the Popular Unity coalition's campaign platform as it had been earlier in that of the Christian Democrats. By mid-1972, the "reformed sector," including areas expropriated by both the Allende and the previous administration, encompassed about 36 percent of the country's productive farm land. It was controlled and worked by some 75,000 direct beneficiaries and employed another 37,000 part-time workers (accounting for about 18 percent of the country's total agricultural labor force), together with the responsible State agencies. The reformed sector accounted for about 30 percent of agricultural production. Smallholders (minifundia) accounted for another 30 percent of production (of which only half was marketed) and 60 percent of the agricultural labor force. About 56 percent of marketed production and 42 percent of the land was controlled by medium and large farmers. The agricultural land held in large latifundia had been reduced (through expropriation and voluntary subdivisions) from 56 percent in 1965 to only 3 percent in 1972.

The military coup in 1973 resulted in an authoritarian government that attempted to open the Chilean economy to foreign competition and to remove domestic subsidies and price controls. The volume and value of food system exports increased throughout most of the post-coup period, particularly in forest, fish, fruit and vegetable products. (Fruit and vegetable producers enjoyed a real comparative advantage in these lines of production because of favorable climate and soils and also because of substantial cumulative investments in infrastructure and technology that had been expanded during the 1960s and early 1970s. The neoliberal policies after 1974, with more favorable exchange rates for exporters than had prevailed during previous decades, made Chilean fruit and vegetable exports highly competitive in foreign markets.) At the same time, about one-third of the land expropriated under the agrarian reform was returned to the original owners on the excuse of legal technicalities. Another third was probably sold to larger farmers or urban investors by the campesino beneficiaries because of indebtedness and sharp reductions in government allocations of credit, technical assistance and marketing support for small farmers.

The research in Chile highlights the negative impact for food security of "neoliberal" economic policies since 1973. These resulted in almost complete

elimination of barriers to foreign imports and the elimination of nearly all subsidies and price support mechanisms. As a consequence of these policies (and also of the deepening world economic recession), income distribution has become more polarized, domestic production of certain basic goods has declined and unemployment has increased dramatically. Payments to labor, as a percentage of national income, fell from 63 percent in 1972 to only 49 percent in 1980, while the percentage of the economically active population considered openly unemployed increased from about 3 percent to nearly 20 percent between 1971 and 1982 and remains at this level. Wheat production was seriously affected. The virtual elimination of internal price supports, and falling prices in world markets, caused real wheat prices for farm producers to decline by 30 percent between 1974/78 and 1979/82. Production and sown area fell by 25 percent. Monetary policy and high interest rates had also contributed to declining production. To deal with this situation, the government provided commercial wheat producers with easier access to credit and inputs and reintroduced higher guaranteed wheat prices in 1983 that were above the world market price but well below the EEC internal price. The positive response of wheat production was immediate.

Infant mortality rates in Chile have apparently continued to fall during the last decade in spite of a general worsening of the food situation of poorer groups. This is attributable to several decades of improving health services and education and especially to the complementary feeding program for young children that had begun early in the present century. The program had expanded to cover minimal nutritional needs of all children under sixteen and of nursing mothers in the early 1970s. Since 1973 it has been cut back to cover only pre-school children. The program remains extremely effective, however, in reaching nearly all children under six in both urban and rural areas.

The government's development strategy since 1973 has been export oriented and has been classified by both supporters and critics as "neoliberal." It rests on a social base that consists primarily of important segments of the upper and middle classes and some other social elements with which the government has clientelistic ties, such as the armed forces. In this sense, it represents a sharp break with the more popular-based and basic needs oriented strategy that had been evolving in the 1960s and early 1970s.

In Chile peasant unions and political competition for peasant votes played an important role in bringing about the agrarian reform of the late 1960s and early 1970s. After the military coup unions were abolished or tightly controlled. Given the long history of peasant unions and cooperatives, however, it may be expected that they will again become an important social and political force in the future.

It is evident that, at the macro-level, the only way to guarantee a stable adequate degree of food security is through a transformation of the country's social structure and economy. Such a transformation should be oriented towards the achievement of a substantive increase in the capacity to generate jobs and income consistent with the possibility of meeting the needs for food and other essentials of the entire population. It should also diminish the Chilean economy's high degree of vulnerability to price fluctuations in the international market. This requirement has profound political and social implications.

On a more specific level, one prerequisite for an improvement in the food system is an agricultural policy capable of consistently stimulating increases in production and productivity. Special emphasis should be placed on providing better incentives and support for the small producers who still control an important part of the cultivated land and who supply a significant proportion of the country's basic foods. At the same time, it will be essential to devise ways and means of limiting and reversing the reconcentration of landholdings, so as to restore the achievements of the agrarian reform of 1967-73 that were

partially lost in subsequent years. With the agricultural work force now reduced to only 15 percent of the total, this should not be as difficult as in more agrarian countries.

Moreover, policies concerning marketing and distribution will be crucial for the interests of both the producers and consumers. Attention should also be given to the importance of developing strategies to regulate agricultural imports and exports in the search for stability in the country's food supplies. Similarly, there should be regulation of monopoly practices in agricultural processing and marketing as, for example, in the case of flour millers who can purchase cheaply from producers (or abroad) and sell dearly to bakers and consumers because they have no effective competition.

Assuming the eventual emergence of a democratic government which is sensitive to popular pressures and needs, the State will have to take the lead in designing and implementing programs to supplement the incomes and access to food of the most vulnerable sectors of the population. This could be done through selective wage increases, the substantive augmentation of family allowances, and selective subsidies on basic foods for low-income consumers. Some positive results could be obtained merely by controlling prices in markets dominated by monopolies or oligarchies. Steps should be taken to reduce the current high value-added tax. Chile and many other countries have had considerable experience with such kinds of programs. They could become effective very rapidly in the context of a development strategy more oriented towards meeting basic needs and promoting more autonomous development. State institutions could become more responsive to popular needs if there were greater participation in their activities by organized groups of workers and low-income consumers at the local community level as well as regionally and nationally.

III PROSPECTS FOR IMPROVING FOOD SECURITY

A strong implication to be drawn from these case studies is that groups of people suffering from food insecurity have little likelihood of improving their situation unless they mobilize themselves politically at the local level and produce enough impact to force their governments to adopt effective national food strategies. The UNRISD research concludes that only the national State has the potential capability to deal effectively with the employment, fiscal investment, and income transfer problems which must be solved to ensure food security. However, many unforeseen interactions of national policies with diverse local socio-economic systems and local ecosystems may make solutions extremely difficult. Similarly, interactions of national policies with international systems result in many obdurate complications.

The conclusions of the investigation emphasize the need for policies to stimulate peasant production and to generate more broad-based productive employment. Without the organized participation of the peasantry in the implementation of policies and programs designed to reach them, there is a high probability that even well-designed strategies will be deformed and inoperable.

The need for effective representation in political decision-making and participation in programs affecting them applies with equal force to other low-income groups whose food security is precarious. Landless laborers, the near landless and the urban poor also require organized representation in political processes so that they can press more effectively for policies generating more employment, better working conditions, improved education and health services, and for access to adequate food at prices they can afford. Moreover, if they do not participate in the execution of such programs, the benefits are likely to be diverted to groups other than those for whom they were intended.

Many of the most acute food security problems are associated with economic growth processes such as agro-export growth, petroleum booms and rapid urbanization that receive their dynamic impulses from national and world markets and events, not local ones. The food insecurity and deprivation for many groups

in pre-revolutionary Nicaragua and in Mexico, for example, were aggravated by agro-industrial and cash crop expansion stimulated by increased demand in world and national markets. Instead of benefiting most peasant producers this growth in production and income resulted in increased concentration in the control of land, separating many peasants from their means of livelihood. This was caused in part by government policies benefiting primarily urban and rural elites. It was also caused by social and political structures that generated these kinds of governments and that excluded peasants and workers from real participation. Food problems were made worse by ecological deterioration accelerated by agro-industrial growth. Moreover, when world markets subsequently contracted, displaced peasants had no subsistence plots to feed themselves when real wages fell and unemployment increased. The solutions to local food problems generated by such processes require national-level policy changes and structural reforms because they imply sectoral and inter-class transfers of resources and changes in national power relationships among social groups, such as profound agrarian reforms.

In judging the feasibility of policies to improve food security it is useful to ask: which social groups stand to benefit or to be hurt? What social forces (organized interest groups and the broader class interest supporting them) could be mobilized to support such policies? What social groups would pay the costs of food production and consumption subsidies and how much would these costs be?

Moreover, in Third World food-deficit countries it is extremely difficult to provide peasants with price subsidies and to subsidize food consumption of low-income consumers by applying agricultural policies similar to those adopted by the developed countries. The room for maneuver in designing a food and agricultural policy is inversely proportional to the importance of agriculture in the national economy. In a country where food production represents over one-fourth of GNP, for example, it is much more difficult to obtain resources from the "rest" of the economy to subsidize agricultural production. In developed countries, where agriculture tends to have little relative weight in the economy as a whole, net transfers to agriculture are easier to make. The greater the relative importance of food consumption as a proportion of national income, the less flexibility governments have in their food and agricultural policies. For example, price policies for farmers that imply sharply higher food prices for low-income consumers, or huge subsidies for food consumers, or sophisticated and efficient public administrations, are not usually feasible in low-income countries.

Another conclusion suggested by the research is that small nation States are really not very viable economic enterprises in present day Latin America. Many Latin American specialists believe that Bolivia, Nicaragua, Chile or even Mexico could find solutions to many of their economic problems much more easily by working in concert with other Latin American countries facing similar problems. Size of markets and resource limitations would be relaxed through regional economic integration while political union could transform extreme dependency to a status, if not of equality, at least of greatly enhanced bargaining power. Unfortunately, elites in each country have vested interests in the status quo and clientelistic ties with transnational institutions and rich country governments. This makes regional integration possible only under two conditions. The first would be greater subordination to the United States and other industrialized powers which under present conditions would imply continued mass poverty. Alternatively, regional integration could be achieved by popular-based governments seeking greater regional autonomy, articulated growth and self-reliance throughout the region. Given these countries' present social, economic and political structures, this path to regional integration could only be taken after radical structural reforms.

1. Crucial Issues and Dilemmas

Food security, as defined above, can only be achieved through a veritable socioeconomic transformation--far-reaching qualitative and quantitative changes in the social relations, market structure and technologies affecting the food system. Any government attempting to bring about such a transformation will face fundamental issues concerning the structure of society--the power relations among social classes, special interest groups and individuals. These issues cause basic policy dilemmas. "Policy-makers" usually do not have much choice: events and social forces beyond governmental control determine the outcome. The dilemmas over the crucial food security issues discussed below arise because policies which go no further than what is "politically possible" will probably not make matters better and may indeed allow them to get worse, resulting in continued mass poverty, hunger and possibly social disintegration. On the other hand, if policies are adopted which do go further than the "politically possible," the government may very well be overthrown or, at best, the persons "responsible" will lose their jobs and the new policies will be reversed. The research indicates that at least five aspects of this central dilemma will be at the crux of policy debates in countries attempting to achieve food security.

The participation dilemma concerns the degree of democratic participation in establishing societal goals and priorities and in designing and running programs to achieve them. It has to do with the form of leadership which is acquired by different social forces and the degree to which they participate in making and implementing decisions. Solutions will depend much more on the pre-transformation social structures in each society than on any ideal stereotype that political leaders or theoreticians may have in mind. Both the UNRISD food system and participation research programs suggest that no food security strategy aimed at benefiting the poor will succeed unless it involves political mobilization at the local level of the poor themselves. As we argued above, without their organized participation it is unlikely that any such strategy would be adopted in the first place, and even if it were, without popular participation it would most probably be deformed or rendered inoperable, not least because of the power of local elites. Moreover, if food security for large popular groups in poor countries is to be achieved rapidly there must be some State intervention in the market. Not only must luxury consumption be curtailed but some form of rationing or other non-market distribution of food, other basic necessities, and production inputs may become necessary. This is because production structures in small developing economies cannot be expanded and reoriented rapidly towards production for satisfying basic needs.

The accumulation dilemma concerns the extent to which the State should give priority to large-scale capital-intensive farming and agro industry versus labor intensive peasant production. It also concerns the extent to which popular demands for immediate increased consumption should be sacrificed for longer-term productive investments. The research suggests that peasant mobilization (including that of landless workers) and peasant alliances with small commercial farmers and with groups of urban workers and low-income consumers may be able to contribute significantly to a peasant-based strategy of accumulation that leads to meeting longer-term food security goals. This often requires profound land reforms and other changes in production relations. It implies new intersectorial relationships with emphasis on the creation of an industrial structure capable of meeting basic needs of low-income people for consumer goods and of peasant producers for agricultural inputs, and capital goods. It also means new relationships between the cities and the countryside. It implies new relationships between the external (export) and internal sectors so that the earnings from exports will be invested in a home economy oriented towards popular needs and reinforcing complementary linkages between agriculture and the rest of the economy. Furthermore, it is imperative that the State invest, or stimulate investment, in agro-industry, processing nationally

produced raw materials both to increase potential export revenues and substitute imports. It further implies a high priority for public investment in basic education, research and technical assistance, and in roads, irrigation and other basic infrastructures. Such investment can stimulate a more autonomous, diversified and articulated economy.

The accumulation dilemma for government planners frequently comes down in practice to making decisions on the types of investments to be made or encouraged by the State--especially the priorities accorded to large-scale capital-intensive versus peasant production, and to production for export versus that for home markets. Finding the proper balance (and linkages) between micro-incentives and macro-economic growth is a key issue: here social science research can help in reaching more rational decisions. The research provides evidence that the sum of small investments by countless peasant producers may turn out to be as crucial for food security and future growth as are large projects financed by the State or other sources. Obviously there must be complementary investments to ensure adequate marketing structure, transport services and the like.

The institutional and equity dilemma concerns the types of institutions which should to be encouraged to take the most active role in food production and distribution--State farms, private commercial agriculture, peasant cooperatives, State or private marketing channels, etc. It also concerns the extent to which aspirations for greater equity should be subordinated to the need to maintain material incentives to increase food production. The research suggests that what is required is flexibility--that food security and economic growth can be achieved through a great variety of institutional arrangements if genuine participation of the poorer social groups can be obtained and maintained and gross inequities minimized. It also suggests the importance of agrarian reform in an effective national strategy to achieve economic growth oriented towards meeting popular needs. Both material and moral incentives are required.

A fourth dilemma arises in relation to ecological issues owing to frequent contradictions between the short-term goal of producing sufficient food and the long-term goal of a stable food system, and to the conflicting interests of different social groups and economic actors with regard to improving the natural environment. This dilemma takes various forms. The planning horizons of governments, economic enterprises and individuals tend to be short, while the solution of most ecological issues requires long-term planning to ensure a desirable ecological base for future generations. The costs of investments for improving water management, soil conservation measures, forest protection and reforestation, etc. are immediate but the benefits accrue over decades and centuries. If standard accounting measures are applied to measure costs versus benefits, the rate of interest is crucial. But it is highly illogical and counterproductive to discount future benefits at say two or three percent when economic cycles result in relatively low interest rates, and at nine or ten percent when real interest rates are high. Moreover, the benefits of protecting the environment are diffused among many social groups. On the other hand, private costs and benefits from exploiting the environment accrue to particular social groups and classes. Domestic and foreign private investors, for example, may reap high profits from exploiting forest or soil resources indiscriminately while the long-term costs would be born by peasants and urban consumers yet unborn. Another aspect of this dilemma appears in the selection of technologies. The research in Mexico showed how clearing of tropical forests and the use of imported ready made technologies, especially heavy machinery and intensive irrigation, to increase food production rapidly were applied at high ecological costs. Unfortunately, alternative cost-effective technologies more adapted to local conditions and more appropriate for maintaining the sustainability of the food system are not always available. These need to be developed through research and experiment. There is also the problem of how to

diffuse technologies such as these among large numbers of dispersed small-scale producers, often located in relatively inaccessible areas.

The international market dilemma concerns the terms that a country striving for greater food security should seek in order to reinsert its economy in international markets. (The regional integration aspects of this dilemma were mentioned earlier.) The research in Nicaragua suggests that, particularly in small countries dependent on agro-exports for most of their foreign exchange, it is necessary to break old lines of dependency if an agrarian transformation towards greater food security is to be achieved. This is primarily because so many powerful interest groups that grew up based on traditional patterns of dependency would block needed structural reforms. Such a rupture in old dependency lines is bound to be particularly costly when a great power perceives that its privileged position is under threat if a State in its orbit tries to follow a more autonomous development strategy. Without breaking the traditional ties between wealthy and powerful national interest groups controlling agro-exports and the transnational interests to which they are linked, it may be virtually impossible for popular-based social forces to transform the food system.

The international market dilemma in larger countries such as Brazil, Argentina, and even Mexico, with diversified resources and exports and with a potentially large internal market, is equally crucial but to some extent qualitatively different from that in small ones such as Nicaragua or Bolivia. Regional common markets designed to promote collective self-reliance among developing countries with similar food security goals may be a prerequisite for the smaller developing countries. Otherwise it would be virtually impossible for them to achieve food systems with even minimal autonomy, self-determination and reliability.

These five issues will be at the crux of policy debates in countries attempting to improve food security for those who do not enjoy it. Governments of industrialized countries should recognize the complex and profound nature of the crisis in food security in developing countries. The research leaves doubt about whether small and weak poor nations can really implement effective national food strategies of the kind required to eliminate hunger, unless the international economic and political order becomes more supportive. The "sovereign" nation State is an historical anachronism in the modern world, not only when it comes to solving problems of food security but for many other reasons. The present world system makes it virtually impossible to manage the world economy rationally, or to avoid an eventual nuclear holocaust. Unfortunately, efforts to improve food security have to begin with the present international order of "sovereign" States, some being considerably more sovereign than others. In fact, the world system and national and subnational systems are so interdependent that progress towards greater equity and rationality in one can probably not advance very far without parallel changes in the others.

2. Possible Scenarios

Prospects for improving food security in Latin America are crucially conditioned by overall socioeconomic and political developments in the region. Economic prospects are not encouraging as the world economy seems to be in a period of prolonged depression reminiscent of the 1930s and the 1880s. Even if there should be a recovery in the world economy in the near future, the possibilities for improving food security for the poor will largely depend upon the kind of development strategies followed in the Latin American countries. These in turn will be strongly influenced by political forces in each country and by their relationships with the United States.

In 1976 Barraclough projected three possible scenarios for future Latin American food security prospects. The most likely prospect for food security

seemed to be a continuation of recent trends, which is what has occurred. He did also suggest, however, that as a result of growing class conflicts, the continuation of past trends would imply increasing political repression along the lines of Pinochet's Chile and the military regimes in Brazil, Argentina and Uruguay. The repressive "custodial State" appeared to be the wave of the future. This has not happened to the extent he had anticipated. In fact, there have been encouraging changes towards more democratic regimes in several countries, including Brazil, Bolivia, Argentina, Peru and Uruguay. The inability of repressive military governments to deal effectively with basic socioeconomic problems such as food security is apparently as destabilizing for them as it is for elected civilian administrations. In several countries, though, where civilian governments have replaced military ones in recent years, the power of the military has essentially remained intact. This is particularly obvious in the case of the Central American countries of El Salvador, Guatemala and Honduras.

A second scenario implied the "Puerto-Riconization" of many Latin American countries with their economies becoming much more closely integrated with that of the United States. This did not seem particularly likely, given the recession in the world economy and protectionist tendencies in the United States, restricting both large-scale commodity imports and immigration from Latin America. Developments in this respect have in fact been ambivalent. While immigration to the U.S., mostly illegal, from Caribbean and Latin American countries has continued to grow, it is only by a fraction of what it would have been if barriers had been lowered. With the economic crisis of the late 1970s and early 1980s, restrictions on imports and immigration have increased in the U.S. and other industrialized countries. The Caribbean Basin Initiative announced by the U.S. administration in 1982 has never gotten off the ground. The U.S.'s relative share in Latin American trade has been diminishing ever since the 1950s. However, the European Common Market's share and that of Eastern Europe have not increased significantly as a result. Rather, the share of the region's trade with other Third World countries and Japan has grown instead.

While the scenario of generalized integration into the U.S. economy still appears unlikely, there are important exceptions to this rule among the Latin American nations, notably the Central American countries of Costa Rica, El Salvador and Honduras. Ever since the 1970s, these economies have become increasingly dependent on external finance from the U.S. During the 1980s this process has intensified, with the U.S. subsidizing the economies of the three countries with injections of relatively large quantities of economic and military aid to enable the U.S. to maintain its political and military hegemony in the area.

A third scenario assumed a trend in Latin America towards truly democratic governments based on wide popular support from the poorer sectors of society. It was assumed that the priorities of these democratizing States would be those of achieving autonomous and articulated growth aimed at meeting popular needs and aspirations. The Cuban experience had already shown by 1976 that critical poverty and malnutrition could be eliminated rather quickly and educational and health levels could be rapidly improved even without formal democracy if these really became primary objectives of the State. The Frei and Allende administrations had demonstrated that rapid progress could be made along these lines by reformist governments as well as revolutionary ones. The Chilean military coup, however, indicated that international and domestic obstacles to profound democratic structural reforms were very great and perhaps insurmountable in Latin America, especially if the reforms implied abrupt breaking of traditional lines of dependency and more "socialist" planning of the economy. For this reason the article ascribed a low probability to their occurrence in the coming decade. In actuality, only in Nicaragua did a radical

change in this direction occur between 1976 and 1986. The Nicaraguan experience outlined earlier has confirmed both the difficulties and possibilities of such a development strategy.

3. Opportunities and Obstacles

In 1976, it was clear that Latin America's resources of agricultural land and water as well as available technologies were more than adequate to increase food production much more rapidly than population growth, and to do so at reasonable costs so that increased food production could be competitive with food imports if the real costs of these imports were taken into account. This analysis has now been confirmed by FAO's comprehensive analysis of the region's agriculture "towards the year 2000."

The conclusions of the 1976 analysis were pessimistic, given the major social and political obstacles that would have to be overcome for the food security situation to improve. Traditional peasant agriculture was being continually squeezed. The peasants generally had inadequate resources and services. Many were becoming semiproletarian workers in commercial agriculture or forced to migrate to the cities. Landlords, merchants and others extracted whatever surplus peasants were able to produce. As a result, they had neither possibilities nor incentives to increase their food production. The same was true for larger commercial farmers, but for different reasons. These had more to do with high opportunity costs, oligopolistic markets, heavily subsidized food imports and lack of sufficient domestic effective demand rather than lack of resources, capital or adequate technologies.

In summary, demand structures in Latin America, as well as production structures, presented crucial bottlenecks for increasing food production and access to food by low-income groups. Food systems of the rural poor usually depended primarily on local production. Effective demand in peasant communities increased more or less in proportion to population while their lands and other capital resources were stagnant or shrinking. Effective demand by the urban poor for basic food staples also increased only in proportion to population because of low incomes. Traditional agriculture lacked sufficient resources and incentives to fill this demand, with the result that it had to be met by commercial farmers or by imports. Commercial farmers usually found it most profitable to produce for export, or for high-income domestic markets, or to invest their capital abroad. Governments found it more expedient, because economically advantageous for their principal support groups, to import food in order to cover deficits in the production of staples consumed primarily by the urban poor. The alternative would have been to make the necessary investments and take the political risks required to increase domestic production of these staples and to redistribute real purchasing power in favor of the poor. Because of embedded structural dependency relationships these government decisions were reinforced by a coincidence of interest of local elites with those of foreign investors and of international financial institutions.

There seems to be little reason to alter the rather pessimistic views of a decade ago about short- and medium-term prospects for significantly improving Latin American food security. The principal obstacles remain social and political, not technical.

Optimists still point to the nearly unlimited food production prospects offered by new technologies such as genetic engineering and bio-technology in general. There is no reason to believe, however, that these would benefit the poor any more than the poor benefited from the "green revolution" technologies during the sixties and seventies--or indeed than the native Indians benefited from the new technologies brought by the Conquistadores--unless there are profound structural changes. The problem is not so much lack of food or of possibilities to produce more but societies that concentrate the benefits of

economic growth in the hands of the rich and powerful while marginalizing the majority of the population.

The most likely prospect still appears to be a continuation of past trends in food security for the region as a whole, at least for the next decade or two. There will probably be new attempts in some countries to transform existing socioeconomic structures. There is not much ground for optimism that they will be successful. Even if some attempts do succeed, the social and economic costs are likely to be high. The experiences of Cuba, Chile, Nicaragua, and Grenada are instructive, as were the fates of the Cárdenas reforms in Mexico, the Valasco administration's reforms in Peru, and the Arbenz reforms in Guatemala.

A scenario that included a generalized trend in Latin America towards democratic governments peacefully achieving food security (in the sense used in this paper) is attractive, but hardly likely. At the international level it would imply that rich country governments, and especially that of the United States, recognize that their real self-interest is best served by popular-based governments in Latin America no matter if they profess themselves or are labeled socialist. If these popular governments are dedicated to improving the livelihood of their people they would necessarily be determined to break old lines of dependency. The U.S. would have to accept that building a more just and democratic world political system and international economic order should have a higher priority than maintaining its traditional hegemony in the region.

A second prerequisite for such a scenario would be recognition by Latin American elites that their own longer range survival depends on structural reforms which would deprive them of many of their privileges. They would have to give up their monopoly on economic, social and political power and accept genuine power-sharing with the campesinos, the urban poor and other social groups.

A third requirement would be the mobilization and effective democratic organization of peasants, landless workers, urban workers and informal sector members, professionals and the like, to improve food security and achieve autonomous and articulated growth throughout the region.

If these three prerequisites were to occur simultaneously, the dilemmas mentioned above could be quickly solved. Malnutrition and hunger could be eliminated within a decade or so. Economic growth could proceed rapidly, benefiting poorer majorities, instead of primarily elites and only a portion of the rest of the population. The natural environment could be protected and improved. Latin America could soon be a leading center of prosperity, human dignity and culture. Since miracles seldom occur, and even more seldom occur simultaneously, the Latin American peasants and the urban poor should still expect the worst. Perhaps if they become well organized and articulate they could become an effective enough pressure group to spur traditional Latin American elites and the United States to set the other two miracles in motion.

ENDNOTES

Food Systems and Society: Problems of Food Security in Selected Developing Countries, draft overview report prepared by S. Barraclough and P. Utting, UNRISD, March 1986.

Food problems transcend economic sectors, national boundaries, and social classes. The researchers attempted to use a "structural system approach" focusing on food systems at national, international, and subnational levels; Rolando Garcia, Food Systems and Society: A Conceptual and Methodological Challenge, UNRISD, Report No. 83.5.

Solon Barraclough, "Agricultural Production Prospects in Latin America," World De-velopment, 1977, nos. 5-7, pp. 459-476, Pergamon Press, printed in Great Britain.

FAO estimated that there were 36 million people in Latin America with serious malnutrition (FAO, *Población, Suministro de Alimentos y Desarrollo Agrícola* [Rome: FAO, 1975]). The World Bank spoke of 55 million of "absolute poor" in Latin America (Robert S. McNamara, Address to the Board of Governors [Manila, Philippines: 4 Oct. 1976]), while the ILO estimated 118 million Latin Americans as being "seriously poor" and 73 million as "destitute" (ILO, *Employment, Growth and Basic Needs* [Geneva: ILO 1976]).

Looking at similar international data sources a decade later does not shed much additional light on the extent of malnutrition in the region. All agree that the nutritional situation is much better in Latin America than in Africa or most of Asia, but the data are far from satisfactory. The World Bank and FAO estimate that the share of the regions' population suffering from food energy deficiencies may have fallen by one-fifth (FAO) or one-third (World Bank) between 1970 and 1980, but they base their estimates on assumptions of unchanged income distributions and greater per capita availability of food, not on new field data. (World Bank, *Poverty and Hunger: Issues and Options for Food Security in Developing Countries*, 1986.) The World Bank is much more cautious in another publication, limiting its estimates of Latin American poverty to 1970 data. (Oscar Altimer, *The Extent of Poverty in Latin America*, World Bank Staff Working Paper number 522, 1982.) Fragmentary nutritional surveys from various Latin American countries do not indicate much overall change since 1970. All these sources agree, however, that poverty and malnutrition are still serious problems and much more prevalent in rural than in urban areas.

Andrew Pearse, *Seeds of Plenty, Seeds of Want: The Social and Economic Implications of the Green Revolution*, Oxford University Press, (with UNRISD), 1980.

Both the norms and the estimates of food availability are debatable. The norms are based on average per capita requirements estimated by a committee of FAO-WHO experts in consultation with other specialists. Availability is based on "food balance sheets" that take into account estimated production, losses, changes in stock, imports, exports, etc. There are numerous places in this chain of estimates and assumptions where serious errors can creep in. Moreover, the data are not adjusted for seasonal variations, differing age structures and activity levels of the population and losses within the household, but are simple averages. More important, they say nothing about actual distribution among subnational regions, among social groups, and throughout the year.

Cynthia Hewitt de Alcántara who prepared UNRISD's Green Revolution study of Mexico and directed the food systems study of Mexico City (and who has just joined UNRISD's staff) provided part of the material for this section. The remainder was provided by the SAS-UNRISD team headed by Dr. Rolando García; SAS also prepared four case studies on Mexican food systems that the Institute plans to publish.

This section is based on research by CIERA (Centro de Investigaciones y Estudios de la Reforma Agraria) headed by Orlando Nuñez with the participation of UNRISD consultants Peter Utting and Peter Marchetti.

This section is based on research done by CERES directed by Jorge Dandler and on an IFAD special programming mission that was led by Solon Barraclough.

"Oprimidos pero no vencidos." *Luchas del campesinado aymara y quechua de Bolivia, 1900-1980*, Silvia Rivera Cusicanqui, UNRISD Report No. 85.1, Geneva, 1986; *Bolivia: la fuerza histórica del campesinado*, F. Calderón and J. Dandler (eds), UNRISD (forthcoming).

Confederación Sindical Unica de Trabajadores Campesinos de Bolivia.

This section is based in large part on a report prepared for UNRISD by a GIA (Grupo de Investigaciones Agrarias) team led by Jaime Crispi and Gonzalo Martner.

One vital was the officially estimated minimum income necessary for "subsistence." Social stratification and income differences were particularly great in rural areas.

S. Barraclough and José Antonio Fernández, *Diagnóstico de la Reforma Agraria Chilena* (Mexico, D.F. Siglo XXI, 1975).

These dilemmas have been treated more extensively by S. Barraclough and P. Marchetti in "Agrarian Transformations and Food Security in the Caribbean Basin," *Towards an Alternative for Central America and the Caribbean*, edited by George Irwin and Xabier Gorostiaga (George Allen and Unwin, London, 1985).

"Algunas reflexiones sobre las relaciones de Estados Unidos y América Latina" by S. Barraclough, and "Las Relaciones entre América Latina y Japón" by Akio Hosono, *El Pacto Andino, América Latina y la Comunidad Económica Europea en los Años 80's*, BID-INTAL (Buenos Aires, 1984).

See *Envío*, Centro América 1979-85, Nos. 55-56, January/February 1986, Instituto Histórico Centroamericano, Managua.

One might also mention Grenada, but there the change to an administration concerned primarily with meeting basic needs occurred after a military coup, not a popular uprising or democratic elections. There was some initial progress towards improved food security for the poorer sectors, but the government was soon overthrown as a result of internal dissension and U.S. military intervention.

La Agricultura Hacia el Año 2000: Problemas y Opciones de América Latina, FAO, Rome, 1981.