ISSN 1011-7741

IICA

RURAL DEVELOPMENT IN LATIN AMERICA

AN EVALUATION AND A PROPOSAL

Alain de Janvry
Robin Marsh
David Runsten
Elisabeth Sadoulet
Carol Zabin

12 June, 1989
PROGRAM PAPERS SERIES

WHAT IS IICA?

The Inter-American Institute for Cooperation on Agriculture (IICA) is the specialized agency for agriculture of the inter-American system. The Institute was founded on October 7, 1942 when the Council of Directors of the Pan American Union approved the creation of the Inter-American Institute of Agricultural Sciences.

IICA was founded as an institution for agricultural research and graduate training in tropical agriculture. In response to changing needs in the hemisphere, the Institute gradually evolved into an agency for technical cooperation and institutional strengthening in the field of agriculture. These changes were officially recognized through the ratification of a new Convention on December 8, 1980. The Institute's purposes under the new Convention are to encourage, facilitate and support cooperation among the 31 Member States, so as to better promote agricultural development and rural well-being.

With its broader and more flexible mandate and a new structure to facilitate direct participation by the Member States in activities of the Inter-American Board of Agriculture and the Executive Committee, the Institute now has a geographic reach that allows it to respond to needs for technical cooperation in all of its Member States.

The contributions provided by the Member States and the ties IICA maintains with its twelve Permanent Observer Countries and numerous international organizations provide the Institute with channels to direct its human and financial resources in support of agricultural development throughout the Americas.

The 1987-1991 Medium Term Plan, the policy document that sets IICA's priorities, stresses the reactivation of the agricultural sector as the key to economic growth. In support of this policy, the Institute is placing special emphasis on the support and promotion of actions to modernize agricultural technology and strengthen the processes of regional and subregional integration.

In order to attain these goals, the Institute is concentrating its actions on the following five programs: Agricultural Policy Analysis and Planning; Technology Generation and Transfer; Organization and Management for Rural Development; Marketing and Agroindustry; and Animal Health and Plant Protection.

These fields of action reflect the needs and priorities established by the Member States and delimit the areas in which IICA concentrates its efforts and technical capacity. They are the focus of IICA's human and financial resource allocations and shape its relationship with other international organizations.

The Member States of IICA are: Antigua and Barbuda, Argentina, Barbados, Bolivia, Brazil, Canada, Chile, Colombia, Costa Rica, Dominica, the Dominican Republic, Ecuador, El Salvador, Grenada, Guatemala, Guyana, Haiti, Honduras, Jamaica, Mexico, Nicaragua, Panama, Paraguay, Peru, St. Lucia, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, the United States of America, Uruguay and Venezuela.

The Permanent Observer Countries of IICA are: Arab Republic of Egypt, Austria, Belgium, Federal Republic of Germany, France, Israel, Italy, Japan, Netherlands, Portugal, Republic of Korea and Spain.

PLAN OF JOINT ACTION FOR AGRICULTURAL REACTIVATION IN LATIN AMERICA AND THE CARIBBEAN

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Cover Design: Mario Loaiza
Layout: Juan Montero
Typesetting: Giselle Madrigal, Olga Cascante
Editor: Michael J. Snarskis
Production: Marcelle Banuett
Series Editor: Michael J. Snarskis

IICA
ID–12 Rural development in Latin America : an evaluation and a proposal / by Alain de Janvry . . . [*et al.*]. – San José, C.R. : Instituto Interamericano de Cooperación para la Agricultura, 1989.
155 p. ; 25 cm. – (Programa Paper / IICA, ISSN 1011-7741 ; no. 12).

1. Desarrollo rural – América Latina. 2. Pobreza rural – América Latina. 3. Política económica – América Latina. 4. Recesión económica – América Latina. I. Janvry, Alain de. II. Título. III. Serie.

AGRIS E14 DEWEY 330.9

PROGRAM PAPERS SERIES No. 12
ISSN 1011-7741

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PREFACE

The Ninth Inter-American Conference of Ministers of Agriculture (ICMA), held in Ottawa, Canada in September 1987, mandated IICA to develop a Plan of Joint Action for the Reactivation of Agriculture in Latin America and the Caribbean. This task was to be developed in close relationship with IICA's member countries and other international organizations engaged in the development and advancement of the agricultural sector in the region.

Germane to this task has been the development of position papers with ideas, proposals and alternative courses of action, considered important instruments to elaborate a strategy for the reactivation of the agricultural sector in LAC, a current IICA priority.

The struggle against rural poverty has met with only limited success in the LAC countries. Although some progress has been achieved in a few countries, the absolute number of rural poor has increased. Thus, the latest figures show that there are almost 170 million poor in the hemisphere. Most of them are in the agricultural sector, with limited access to land, credit and government services.

The economic crisis that has affected these countries during the past decade has had deleterious effects upon the agricultural sector in general and in particular on medium- and small-scale farmers. These groups have seen a reduction in both their productive capacity and their sources of employment in the last ten years.

Furthermore, the already difficult economic and social situations imposed by the international economic crisis were further agravated by the burdensome conditions for debt adjustment and loans, imposed by multinational lending institutions. The general austerity measures encouraged by these adjustment programs have severely reduced public expenditures, and the budgetary allocation to agriculture, thus further agravating the difficult operating circumstances of special programs and/or projects specifically oriented toward the rural poor.

Although the sheer numbers of small- and medium-scale farmers are acknowledged, their productive and consumer potential has rarely been fully recognized by policy- and decision-makers. The present economic crisis, along with the rebirth of democratic nations in LAC, require the full participation of small farmers at many levels of the decision-making process, as well as their true incorporation in the process of socioeconomic development. This is necessary in order to ensure healthy rates of economic growth and appropiate scales of redistribution of wealth.

This thematic document was originally presented as one of the four discussion papers in the International Seminar on "The Role of the Small-Farmer Subsector in the Processes of Reactivation and Rural Development" that took place at IICA Headquarters in San Jose, September 26 to 28, 1988. Alain de Janvry, David Runsten, Elizabeth Sadoulet and Carol Zabin are in the Department of Agricultural and Resource Economics, University of California at Berkeley, while Robin Marsh is with the Food Research Institute, Stanford University, Stanford, CA.

This event was part of the seminar program promoted by IICA's Program III, Organization and Management for Rural Development (PROADER), as well as the calendar of technical events the Institute is promoting in order to analyze relevant topics within the field of rural development and to further the achievements of the Plan of Joint Action for Agricultural Reactivation.

IICA is proud to present this important contribution to the governmental and nongovernmental institutions of Latin America and the Caribbean, and especially to the hundreds of professionals involved in the complex issues of rural development.

Félix Cirio
Coordinator, Plan of Joint Action for
Agricultural Reactivation in Latin
America and the Caribbean

Fausto Jordán Bucheli
Director, Program III
Organization and Management for
Rural Development

SUMMARY

The central hypothesis advanced in this study is the explicit recognition of the heterogeneity of rural sector of society, based on its social, economic, demographic and geographic differentiation. Thus, the authors argue that this fact demands "tailor-made" strategies of development better suited to address broader categories of the rural population; yet, at the same time, they should be sufficiently specific in order to respond to their particular needs. This differentiated perspective on the development strategy should replace the blanket alternatives envisaging all rural inhabitants as similar, consequently promoting the same development strategy for all of them.

Studies on the agricultural sector show that, in spite of rural development efforts, income inequality has remained at the levels of the 1960s. In addition, absolute rural poverty has remained higher than its urban counterpart, reaching the 65% mark in Ecuador and the 85% level in Bolivia. In fact, almost 60% of the rural population lives in absolute poverty. This portion of the rural population owns –on the average– less than two hectares of land, usually of low productive potential, and still doesn't have adequate access to technology, education, inputs and several other elements required for agricultural production and development.

In spite of this apparently unresolved problem, the peasantry offers an untapped potential for socio-economic development and integration in society. The absolute population size of this sector has increased steadily during the last three decades, represented by a 4% increase in the EAP in 30 years (from 61% in the 1950s to 65% in 1980s). In fact, the agricultural sector can contribute to economic growth by: a) generating foreign exchange via exports of agricultural products or import substitution; b) reduction in the production costs of nontradable agricultural products and of tradables if prices are maintained above the international level; c) generating employment and the retention of EAP in the agricultural sector; and d) broadening domestic markets for industry through the activation of linkage effects with agriculture.

The information available permits one to conclude that, as a result of the dynamic nature of the peasantry, this subsector might be divided into two subsets: the subfamily peasant household and the family peasant household, both with their own characteristics and responses to exogenous forces. The first group is semiproletarianized and relies heavily on wage labor; they act as a buffer between the urban and rural labor markets and fluctuate between these markets according to the prevailing economic conditions. On the other hand, the latter group has the potential to become capitalists, owning sufficient resources to compete with commercial farmers. Clearly indicated is the need for two different approaches to rural development projects in order to effectively reach a specific clientele.

Although the important contribution of the agricultural sector to the aggregate rates of economic growth is widely recognized (as is the need it has for a continuous flow of new investment in order to attain a predetermined economic target), the real investment figures show a contradictory tendency. In fact, the investment flow has decreased significantly during the last five years as a result of public austerity, public credit constraints, rising interest rates and foreign exchange restrictions, which particularly affect the import of key agricultural inputs.

The agricultural sectors of many countries in LAC can be important contributors to a strategy of economic reactivation as a result of a possible general improvement of the terms of trade and the likelihood of a rise in international market prices. Both reasons ought to be sufficient to maintain investment in the agricultural sector in the short run.

Furthermore, given the present levels of population increase and the future rates of economic growth aspired to by these countries, it is important to emphasize that very few of them would be able to sustain economic growth over time without a successful food/feed agriculture, which in turn will ensure the generation of foreign exchange by means of exports and/or through import substitution. At the same time, sustaining agricultural growth over time requires the creation of effective demand through income effects originating in other sectors of the economy.

In view of the fact that the prospects for further industrial development and/or traditional export goods are deemed bleak, there is only one way out of this impass –successful agricultural development in the food and feed sectors.

In addition, the political environment has changed significantly in favor of democratization in most countries of the hemisphere. During long periods of obscurantism, many new socio-political organizations have mushroomed at the grassroots level, as well as at the decision-making levels, providing renewed and better prepared bases for rural development with a heavy dose of participatory democracy.

The emergence of new social movements, the redefinition of the role of the state, and the strong winds of decentralization and local participation all seem to indicate that the old strategies of rural development programs and projects might soon be superseded by new approaches to the process of rural transformation.

Here, the authors propose a new formula for rural development; their strategy envisions agriculture as a source of economic surplus, but, contrary to the traditional models, this surplus is mostly retained and allocated within the sector. Moreover, the rural development projects might be part of a national program carefully articulated with the macroeconomic policy framework, and the providing of public goods and services supporting decentralized schemes of grassroots organizations.

As a result of the redemocratization processes, it appears that the period of underinvestment in the peasant sector is reaching its end. The anti-peasant bias that prevailed up to now has resulted in a limited allocation of government revenues to public goods and a restrained access to public services. The new winds of democracy might induce planners to properly account for important externalities accruing in some rural development projects. These might represent increased intersectoral and final demand linkage effects, ecological effects, and social effects. Thus, if these externalities were properly accounted for and internalized, it is possible that most of these projects would be profitable. Consequently, rural development projects might no longer be looked upon as mere social welfare programs, but as socially bankable investments.

The review of a large sample of rural development projects leads the authors to affirm on the one hand that, in the context of "farm-oriented rural development," the issue of land distribution and reform cannot be ignored if the goals of this rural development strategy (raising productivity, income, and general welfare of the rural poor) are to be attained. In addition, land distribution often must be accompanied by the provision of basic infrastructure and services required to cultivate the land productively, without negative environmental effects.

On the other hand, "household-oriented" rural development projects for subfamily farmers are basically self-employment activities realized at the household or at the community level, usually outside peasant agricultural production. The government can play an important role in supporting these activities, and at the same time facilitate small-farmer participation in the design, implementation, management, and evaluation of such projects. In addition, the rural development processes could be enhanced through increased cooperation between the state and local organizations.

Seldom does the benefit from "farm-oriented projects" accrue to subfamily house-holds, since a major proportion of their income is generated from non-farming activities. Therefore, if the government is unable to adopt measures to ease land constraints, the rural development activities promoted for this group need to be geared to increasing peasants' access to other resources and to improve the terms of trade for consumption expenditures. It is important to realize that rural women play an important role both at the productive and reproductive levels, and these types of projects might be instrumental in strengthening their participation in the decision-making processes.

By their own nature, these development projects promote community participation and have served to strengthen and consolidate the non-governmental organizations (NGOs). In fact, the absence of strong government institutions promoting these activities within the agricultural sector has facilitated the participation of NGOs. They have become one of the new actors in the rural scene during the last decade. One of the most promising features of the examples evaluated by the authors is the possibility of incorporating grassroots efforts in a systematic fashion into the development process.

Although these type of activities are only part of the picture, if they are accompanied by state action providing positive economic incentives through favorable terms of trade for peasant production within a balanced regional planning effort, they could become the basis for a new strategy to uplift this portion of the rural population.

Finally, the authors discuss the relevance of complementary activities linked to the small-scale industrial development which has sprouted in some countries during the last decade. They show that the restructuring of mass production into smaller units, facilitated by the availability of a new set of technologies, has created opportunities within rural towns and spawned multiple sources of "rural employment."

Agroindustry can also complement rural development projects through the generation of new sources of employment. It requires careful nurturing of cooperative forms of production, in order to minimize risk and cost, at the same time ensuring that producers receive a fair share of the benefits that will accrue.

1

INTRODUCTION

Rural development projects were introduced on a massive scale in essentially every Latin American country starting in the early 1970s. This was due to a combination of internal and external factors. Internally, land reforms that for a decade and a half had spread over the continent, initially as a reaction to the Cuban Revolution, were brought to an end. While these reforms rarely resulted in effective land redistribution in favor of the peasantry and the landless, they definitely gave landowners strong incentives to modernize their estates if they wanted to avoid expropriation on an efficiency basis (Colombia, Ecuador) and often to reduce the size of operational units to escape expropriation on a maximum size basis (Chile, Peru). With the support of abundant credit and of the newly released technology of the Green Revolution, they led to higher levels of land productivity. By the early 1970s, however, keeping open the chapter of land reforms had become a source of social instability and a deterrent to the large investments needed in the modernization effort (de Janvry 1981; Grindle 1988). Most countries thus shifted from land reform to rural development as a strategy to accommodate the demands of the rural poor.

Externally, a significant boost was given to the rural development strategy by the World Bank's commitment of large sums of credit for investment in integrated rural development programs (RDP). The Bank's leadership induced many bilateral assistance programs and private donors to also endorse the rural development strategy. A large number of institutions started their own programs, including special secretariats attached to the presidency, ministries of agriculture and social welfare, regional corporations, universities, and non-governmental organizations (NGOs) of both the intermediate and grassroots types. This multiplicity of rural development initiatives led to experimentation with a wide variety of approaches, some clearly better adapted to a particular type of rural poor than others. In general, however, the record has been mixed. Today, while the strategy has lost some of its original shine and momentum, as reality inevitably proved to be harder to transform than expected, and donor fatigue has set in among its international supporters, the strategy remains the centerpiece of development initiatives to reduce rural poverty and, often, to improve the domestic supply of food as well.

It is the purpose of this study to show why a new approach to rural development could become a key component of a strategy to restore growth in the Latin American economies and serve, simultaneously, to reduce rural poverty. We proceed for that purpose in five steps. In Chapters 2 and 3 of this study, we establish the two conditions that give a new lease on life to rural development initiatives in the 1980s. The first condition developed in Chapter 3 is the adjustment to the economic crisis that has led virtually every Latin American country to implement stabilization, liberalization, and structural adjustment policies and programs in order to face up to foreign sector and inflationary crises. While the crisis itself creates severe constraints on the availability of domestic and foreign investable funds and while international market prices are highly depressed and uncertain, appreciation of the real exchange rate offers, in many countries, the possibility of improving the level of incentives for

the production of tradable goods. This can serve to not only dynamize agriculture, a sector that produces fundamentally tradable goods, but also to make investment in rural development initiatives socially and privately profitable. In an appropriate macroeconomic context, RDPs can thus be looked at, in the 1980s, as potentially bankable projects instead of social welfare programs, thus opening a new range of opportunities to reduce rural poverty.

The second condition that favors rural development in the 1980s, developed in Chapter 3, is the return to democracy that has followed the economic crisis in many Latin American countries. While the changes in political regimes were often more formal than real, they do offer the possibility for new actors to emerge on the political scene and to claim their rights in renegotiating social contracts. In addition, the years of authoritarian regimes have induced the emergence of new grassroots social movements and the massive penetration of NGOs in rural development initiatives. While enormous difficulties do remain, which we are not trying to underestimate here, we explore how these political and social changes create the possibility of transforming a strategy of agricultural development into one where the peasantry can also be given the opportunity to seize, as a result of a redefined approach to RDP, the new market opportunities offered by adjustment in the economic policies.

A key premise of this study is that rural poverty is highly socially, demographically, and geographically differentiated, and that there consequently cannot exist a unique rural development strategy for all the rural poor. In Chapter 4 we analyze the determinants of rural poverty, both in the long run in terms of structural causes –since even rapid economic growth in the 1960s and 1970s failed to reduce rural poverty– and in the short run in terms of the specific impact of the economic crisis on particular social groups. We also characterize the determinants of rural poverty for each social group using social poverty maps based on asset ownership, sources of income, and access to public goods and services. The information in Chapters 2, 3, and 4 thus provides the building blocks on which a strategy of rural development is established.

We show, in Chapter 5, that peasants have gained in share of the rural labor force during the last 40 years, but that they have lost in market share. This indicates that successful agricultural development does not necessarily create the conditions for rural development. In spite of this loss in market share, we show that the peasantry, both subfamily and family farms, remains an important source of production of food for the domestic market and of labor-intensive export crops such as coffee and cocoa. As a result, a successful strategy of rural development can make an important contribution to increasing the supply of crops for both import substitution and exports.

In Chapter 6 we make the argument that one of the main reasons why the record of rural development projects, in passing the key tests of sustainability and replicability, has been modest is because they have too often not been individually and socially profitable. Indeed, the single most important necessary condition for adoption is that the new opportunities and recommendations offered by RDPs be individually profitable for the households involved. In addition, for public investment in RDPs to be sustainable and replicable, it must be socially profitable and competitive with alternative public projects. Private and social profitability must hold jointly as necessary conditions for success: the first for individual adoption of the project's recommendations to follow and the second for public investment to happen. We show that the boundary between bankable and welfare projects can be significantly expanded to the benefit of the former through 1) improved economic incentives as a result of macroeconomic adjustments to the economic crisis; 2) removal of constraints to investment in rural development activities, including underinvestment in public goods for peasants and

socially biased access to resources and institutions; and 3) internalization of the positive externalities created by rural development, including linkage, ecological and social effects.

In Chapter 7, we present a strategy of agricultural and rural development that is consistent with the economic and political framework of the 1980s. This strategy is centered on the key role that agriculture can play in the reactivation of the Latin American economies. These roles include the generation of foreign exchange through exports or the saving of foreign exchange through import substitution, the reduction of inflationary pressures on the price of wage goods, and the creation of effective demand for other sectors of the economy. At the same time, the strategy acknowledges that agricultural development is necessary but not sufficient for rural development. With rural poverty highly differentiated, we identify the structure of a set of RDP initiatives tailored to the different types of rural poor and to their specific sources of income.

In Chapters 8 to 10, we establish the conditions to improve the chances of success of RDP initiatives. We do so by reviewing a large number of case studies of RDPs which we classify according to the types of RDPs identified in the rural poverty maps. They include: farm-oriented RDPs where the objective is to enhance land and labor productivity in family farms; household-oriented RDPs which assist households in subfamily farms engaged in a wide portfolio of income-generating activities as a substitute for access to productive assets; land reform and colonization programs to increase access to productive assets; employment creation in agricultural activities and the rationalization of labor markets; and the creation of off-farm employment in activities linked to agriculture through backward, forward, and final demand linkages and located in the rural areas.

Finally, Chapter 11 is a summary of the arguments developed in this monograph and of the policy and programmatic implications that derive from them.

2

ECONOMIC IMPACT OF THE CRISIS ON AGRICULTURE

The crisis of the 1980s has brought to an end a remarkable three decades of sustained economic expansion. As Table 2.1 shows, between 1970 and 1980, GDP for the continent as a whole grew at the average annual rate of 5.2 percent. This growth was dominated by industry, which benefited from import substitution policies and export subsidies, while agriculture was trailing behind at an annual growth rate of 2.7 percent (Figure 2.1). Significantly fueled by a rapidly rising foreign debt and a falling real exchange rate (defined here as the ratio of the price of tradable to nontradable goods), imports had been growing faster than exports, the former at the average annual rate of 8 percent and the latter at 5.3 percent. In agriculture, rapidly rising incomes had made livestock the most dynamic subsector, with a growth rate of 4.1 percent compared to 2.7 for cereals (Table 2.1 and Figure 2.2). Depreciation of the real exchange rate had, like in the other sectors of the economy, stimulated imports (rising in volume at a growth rate of 7.4 percent) relative to exports (4.3 percent) (Figure 2.3). Favorable international terms of trade for Latin American agriculture, however, partially compensated for this imbalance between imports and imports as the unit value of agricultural exports rose by 11 percent annually while that of agricultural imports only rose by 9.3 percent (Figures 2.4 and 2.5).

The crisis of the 1980s changed this growth scenario markedly. Between 1980 and 1986, the annual growth rate of GDP fell to only 1 percent and the growth rate of the volume of imports was negative and equal to -9 percent. It is, however, remarkable that the growth rate of agriculture, trailing the rest of the economy in the 1970s, far exceeded it in the 1980s (Figure 2.1). While this growth rate fell from 2.7 percent in the 1970s to 1.9 percent in the 1980s, it was nearly double that of the general economy in the latter period: 1.9 percent for agriculture compared to 1.0 for the economy. Thus, agriculture clearly became the relatively most dynamic sector of the economy in the adjustment period. This was due to a combination of policies implemented during the adjustment period and of a carry over of prior policies. During the period, stabilization led to a general appreciation of the real exchange rate that favored the production of tradable goods. Liberalization reduced export taxes on agriculture and import tariffs on industrial inputs. The benefits of investments realized in the 1970s, a period with plentiful foreign exchange and public budgets, carried over into the 1980s as many projects were coming to maturation. On the side of effective demand, agricultural products were benefited, in a period of falling real incomes, by having a lower income elasticity of demand than industry and services. A significant space also existed for import substitution in many staple foods after a decade of debt and oil-induced Dutch disease.

With improved production incentives for tradables and reduced domestic absorption due to falling real incomes, the balance of agricultural trade improved significantly; and agriculture became a major source of foreign exchange earnings (through exports) and savings (through import substitution). As Table 2.1 and Figure 2.3 show, the volume of agricultural exports increased at the annual growth rate of 3.1 percent between 1980 and

Table 2.1. Latin American Economic and Agricultural Performances, 1970-1986

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	GROWTH RATES 70/80	80/86
GDP (Index)	198.1	209.4	223.7	232.0	248.0	257.0	271.0	285.0	298.0	318.0	336.0	341.0	338.0	327.0	338.0	349.8	361.4	5.2	1.0
Exports (Index)																			
Volume	100	101.1	107.7	118.6	114.7	112.0	120.6	130.2	145.5	161.8	176.3	195.2	200.5	216.5	231.7	243.4	222.0	5.3	4.6
Unit Value	100	101.9	111.3	148.0	233.1	219.8	237.6	262.6	253.1	308.2	371.1	360.7	320.3	298.6	307.0	291.1	261.7	13.3	-5.4
Imports (Index)																			
Volume	100	106.1	113.6	128.6	162.6	159.0	159.5	175.6	186.3	200.5	228.5	233.6	191.1	139.3	148.1	151.3	144.0	8.0	-9.0
Unit Value	100	104.7	111.3	130.6	177.5	193.2	199.9	208.9	224.4	262.1	310.1	327.1	320.9	314.5	309.1	298.0	287.3	11.4	-1.6
Ag. Production (Index, 100 = 1979-81)																			
All Agriculture	77.5	78.3	79.1	81.4	83.8	85.4	87.6	92.8	95.4	97.2	98.5	104.3	104.8	104.9	108.5	112.6	110.7	2.7	1.9
Crops		76.9	76.5	77.7	85.3	85.1	84.9	91.9	93.4	96.4	98.2	105.5	105.6	104.7	112.2	116.8	112.4	3.0	2.4
Cereals		78.2	73.8	79.5	84.0	87.2	94.5	92.7	91.8	91.3	96.8	111.9	115.5	106.6	116.1	119.3	116.9	2.7	2.5
Livestock		70.9	73.7	75.8	79.6	84.6	90.0	93.0	96.4	96.9	99.5	103.6	103.9	104.0	103.5	107.1	109.6	4.1	1.3
Food	74.3	74.3	75.1	78.0	81.6	84.9	89.6	92.6	95.2	98.8	99.3	103.9	108.7	105.5	109.6	112.9	113.4	3.3	2.1
Agricultural Trade																			
Exports Volume	70.2	66.8	68.4	72.0	69.3	72.0	82.0	100.0	95.0	98.0	92.0	110.0	104.0	121.0	116.0	127.0	108.0	4.3	3.1
Unit Value	36.4	37.4	43.7	61.3	79.0	79.0	79.0	81.0	89.0	95.0	113.0	92.0	87.0	80.0	90.0	79.0	92.0	11.0	-3.2
Value (millions $)	7681	7453	8857	12465	15796	17374	19941	24755	25886	28862	31958	31282	27722	30060	32127	31071	30903		
Imports Volume	45.0	47.0	50.0	55.0	63.0	55.0	56.0	63.0	78.0	82.0	110.0	107.0	93.0	101.0	98.0	100.0	88.0	7.4	-2.7
Unit Value	38.8	42.5	47.1	62.8	84.1	85.0	86.0	83.0	81.0	96.0	100.0	104.0	93.0	77.0	87.0	75.0	80.0	9.3	-5.0
Value (millions $)	2263	2483	2847	4114	6396	6183	8284	6869	8370	10450	14370	14587	11438	11157	11104	9938	9338		
Exports/Imports	3.39	3.00	3.11	3.03	2.47	2.81	3.17	3.60	3.09	2.76	2.22	2.14	2.42	2.69	2.89	3.13	3.31		

Source: – For GDP, trade volumes and unit values see: Economic Survey of Latin America.
– For agricultural production, trade volumes, and unit values, see: FAO yearbooks.

1986, while that of agricultural imports fell at the rate of 2.7 percent. The ratio of the value of exports to that of imports, which had declined during the decade of falling real exchange rates from 3.4 in 1970 to 2.1 in 1981, rose to 3.3 in 1986. The hemispheric self-sufficiency ratio, which had declined continuously between 1960 and 1980, increased between 1980 and 1985 as a result of import substitution and falling domestic demand. For cereals, self-sufficiency increased from 93 percent in 1980 to 95 percent in 1985.

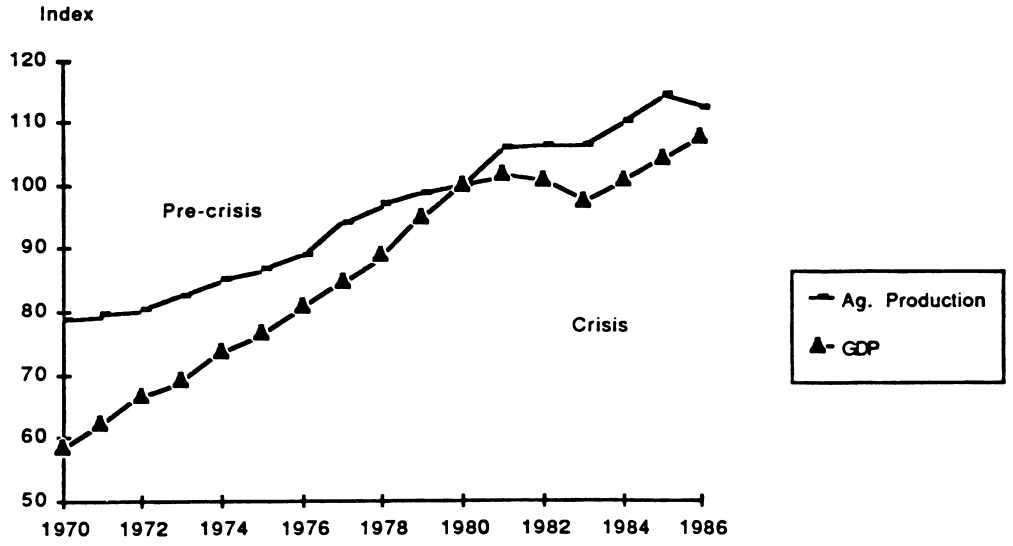

Fig. 2.1 Indexes of GDP and Agricultural Production, Latin America, 1970-1986

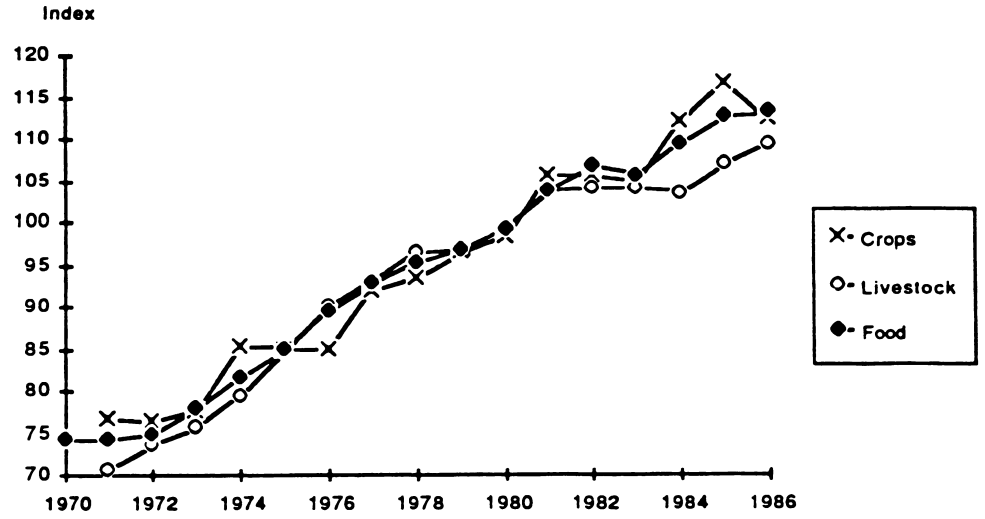

Fig. 2.2 Indexes of Agricultural Production, Latin America, 1970-1986

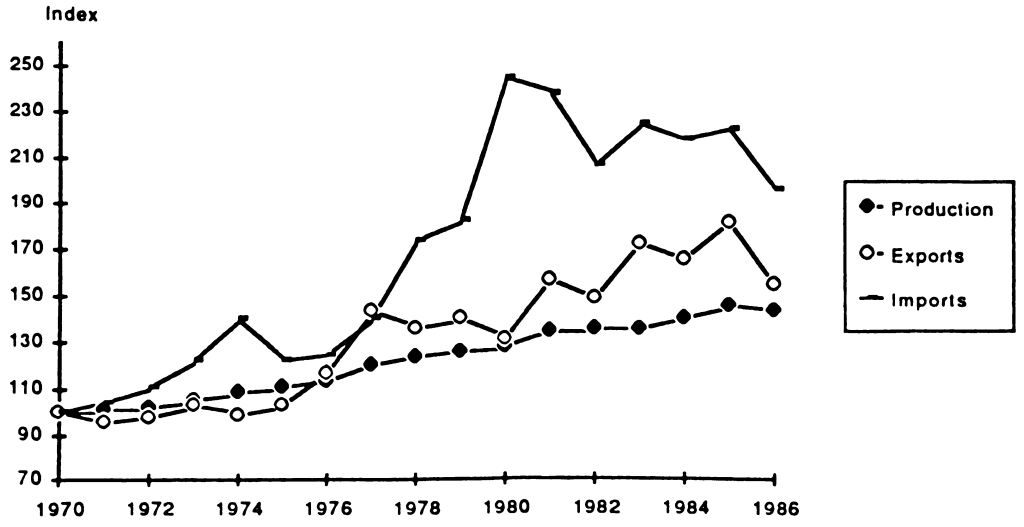

Fig. 2.3 Indexes of Agricultural Production and Trade, Latin America, 1970-1986

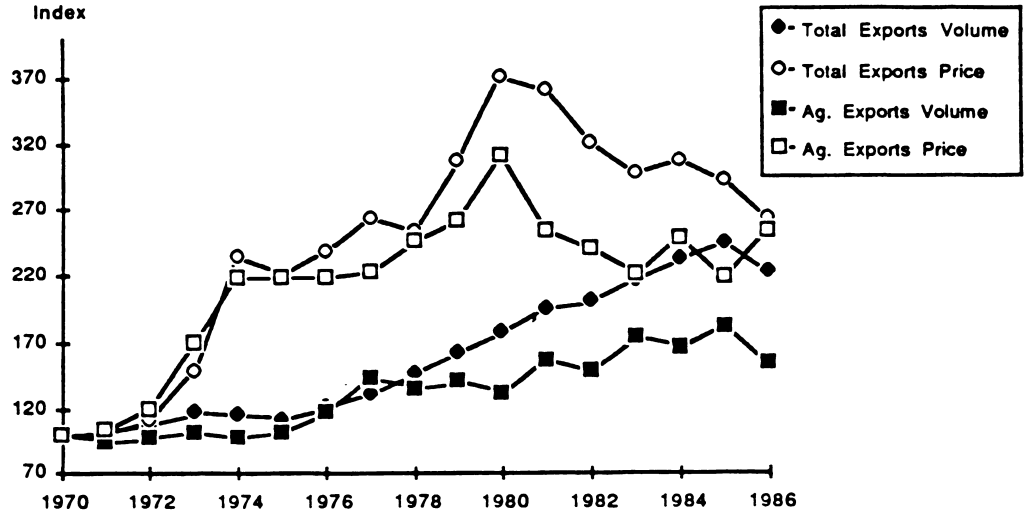

Fig. 2.4 Indexes of Total and Agricultural Exports, Latin America, 1970-1986

Deterioration of the international prices for many agricultural commodities implied that the unit value of both exports and imports fell between 1980 and 1986. Falling prices, however, affected imports more than exports, as tropical goods, with the exception of sugar, were less affected by trade regulations in the United States and the EEC than temperate climate goods. Thus, as shown in Table 2.1, the unit value of imports declined at the annual rate of 5 percent while that of exports declined at 3.2 percent. Between 1980 and 1986, the balance of agricultural trade improved by 23 percent.

Turning to the growth performance of agriculture in specific Latin American countries, we see in Table 2.2 and Figures 2.A1 to 2.A7 (see Appendix to Chapter 2) that it has been particularly strong in Brazil, Chile, Ecuador, and Peru. While livestock was growing faster than food crops in every country before 1980, this was no longer the case during the crisis with the growth of crops outpacing that of livestock in half on the countries in Table 2.2. Clear also from the figures are the increasing sectoral disparities in growth performances after 1980, indicating the occurrence of major adjustments in relative prices.

Compared with other economic sectors, this relatively better performance of agriculture suggests the possibility of capitalizing on agriculture as an important element of a strategy of economic recovery for the Latin American countries (IICA 1988). This strategy remains, however, subject to several difficulties which have kept the performance of agriculture below its potential and which will need specific attention in the future if the strategy is to be effective. They include:

Real Exchange Rates and Terms of Trade for Agriculture

It is well known that international prices for a number of key agricultural commodities have fallen dramatically since 1980 and are currently extraordinarily low. Since, at the same time, exchange rates have been massively devalued to adjust to the foreign sector crises, it is not clear what the net of these two effects has been on the real exchange rate and, hence, on the potential terms of trade for the agricultural sector and for the agroexports of specific countries. We investigate this first question in this section. Second, the wisdom of basing a strategy of economic development primarily on the agricultural sector requires some anticipation of what will happen with international prices and how the Latin American countries' comparative advantages in agriculture will be affected. While it is more difficult than ever to make forecasts of the evolution of world prices, some important changes can nevertheless be anticipated that give guidelines as to what may happen with price levels.

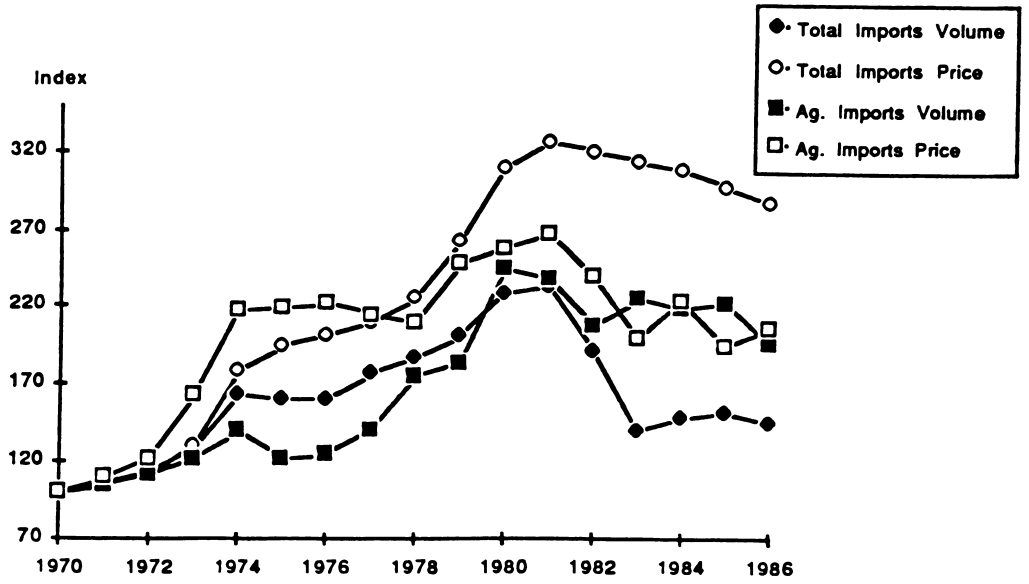

Fig. 2.5 Indexes of Total and Agricultural Imports, Latin America, 1970-1986

Table 2.2. Agricultural Production in Selected Latin American Countries (1979-1981=100)

	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	GROWTH RATES 71/80	80/86
Argentina																		
Total	75.88	73.89	81.24	86.09	87.76	94.54	94.2	98.97	102.59	95.76	101.85	107.65	104.37	107.79	103.97	107.89	3.5	1.4
Crops	76.96	72.58	84.40	91.53	90.27	95.4	93.99	97.93	103.83	94.19	102.16	115.93	113.07	115.8	107.62	113.28	3.1	2.4
Food Crops	76.66	73.61	81.55	88.06	88.79	93.85	92.98	98.25	102.11	95.57	102.32	107.58	104.51	107.66	104.14	108.56	3.3	1.5
Livestock	76.97	80.90	79.65	81.21	87.49	95.66	96.6	103.18	101.01	98.14	100.64	92.69	86.03	92.72	98.43	100.02	3.4	0
Brazil																		
Total	73.47	75.12	74.14	84.48	84.53	83.21	91.67	88.77	92.86	100.21	106.93	108.25	107.48	113.32	124.1	114.59	3.3	2.7
Crops	75.44	76.28	73.79	85.61	84.53	81.95	92.21	86.58	92.19	99.99	107.62	106.27	103.38	113.92	126.49	115.35	2.9	2.9
Food Crops	67.68	70.50	73.28	80.27	83.73	89	93.5	88.81	92.76	103.01	104.21	112.52	107.58	114.64	123.1	116.96	4.3	2.8
Livestock	84.25	89.08	73.14	78.79	81.74	85.78	86.96	90.43	93.35	102.58	104.09	110.37	109.19	106.48	110.49	107.94	4.6	0.8
Chile																		
Total	82.20	76.76	69.06	82.42	88.8	86.4	94.8	89.3	96.3	97.7	106.0	103.8	99.4	104.5	107.8	118.1	2.9	2
Crops	90.85	88.88	74.32	80.03	83.5	82.8	100.4	91.8	99.3	97.3	103.4	102.2	97.8	111.6	115.4	124.3	1.9	3.7
Food Crops	84.96	79.32	71.32	82.72	88.7	86.5	94.8	89.2	96.3	97.7	106.0	103.8	99.3	104.4	107.7	118.3	2.5	2
Livestock	73.76	84.69	64.48	86.51	92.4	88.2	85.3	86.3	90.7	99.2	110.0	108.5	101.9	98.5	98.8	105.1	3.8	-0.4
Ecuador																		
Total	81.02	79.31	81.79	90.22	91.8	94.1	95.6	93.3	96.2	100.1	103.7	108.5	91.9	104.2	118.6	122.0	2.5	3
Crops	92.54	87.59	89.76	100.34	101.4	102.0	99.5	89.7	93.2	101.1	105.7	108.2	82.8	98.6	120.3	120.7	0.7	2.6
Food Crops	81.78	79.28	80.72	89.98	91.9	93.8	95.4	93.7	95.4	101.1	103.5	107.4	92.3	103.4	117.5	119.6	2.5	2.6
Livestock	87.15	71.31	73.57	76.71	79.6	83.1	90.8	96.7	100.2	98.6	101.2	108.4	108.4	113.9	115.6	123.3	4.7	3.6
Mexico																		
Total	74.84	76.39	78.38	81.77	80.39	81.82	89.47	97.59	93.84	100.22	105.94	102.11	108.56	109.26	109.15	110.83	3.3	1.5
Crops	76.47	79.13	82.05	83.66	82.76	76.94	87.13	96.49	90.14	99.6	110.06	97.66	105.86	109.05	111.11	108.06	2.4	1.1
Food Crops	72.24	73.61	75.75	77.90	80.07	81.52	88.9	97.12	93.56	100.03	108.41	102.46	109.22	110.52	110.84	112.83	3.6	1.6
Livestock	81.69	84.92	87.84	72.99	74.94	82.26	88.7	93.6	94.25	100.24	105.51	109	114.41	113.27	113.17	122	5.6	2.7
Peru																		
Total	101.83	99.43	102.73	105.26	99.92	101.83	103.19	102.42	104.31	94.34	101.34	105.23	101.43	112.85	111.23	110.12	-0.2	2.6
Crops	108.55	103.41	105.47	108.44	102.25	105.09	107.28	102.99	107.48	91.5	101.02	106.04	95.22	114.89	111.5	112.34	-0.6	3.2
Food Crops	104.20	103.05	105.18	108.87	104.24	106.06	108.53	104.21	104.43	93.64	101.93	111.02	103.64	115.29	113.67	112.36	-0.6	2.9
Livestock	86.85	87.98	89.56	95.82	97.31	99.67	99.95	97.79	98.3	97.97	105.73	109.58	112.13	107.87	110.41	116.56	1.4	2.1
Venezuela																		
Total	78.17	77.48	81.33	83.07	94.57	86.93	90.58	96.9	100.7	99.82	99.48	98.11	104.7	102.87	107.51	111.36	3.1	1.9
Crops	81.62	76.71	78.98	85.18	91.85	79.37	100.04	97.56	102.36	101.08	98.56	98.95	97.56	99.07	109.88	121.48	3.3	2.9
Food Crops	78.85	78.62	79.55	81.78	92.43	88.94	89.5	96.27	100.3	99.9	99.79	98.34	105.12	102.83	108.2	110.26	3.6	1.7
Livestock	83.01	86.13	71.44	70.08	81.04	81.25	81.5	89.79	92.95	100.92	108.14	107.85	116.79	117.75	120.96	124.86	5	3.5

Source: FAO Production Yearbook, 1986 and 1981.

Effective Exchange Rates

We show, in Table 2.3, the evolution of the nominal exchange rate deflated by the wholesale price index (WPI) for 16 Latin American countries between 1970 and 1986. Compared to the year 1970, we see that this exchange rate was significantly overvalued in the 1970s and that the degree of overvaluation had increased rapidly throughout the 1970s as the nominal exchange rate fell relative to the domestic rate of inflation. This was due to the combination of primary commodity export booms in many countries and debt accumulation in all of them, creating massive inflows of foreign currency. This trend was reversed after 1980-81 when most exchange rates were massively devalued relative to domestic inflation. The effective exchange rate, also in Table 2.3, is the appropriate measure of the relative value of domestic and international prices and gives an approximation of the price of tradable relative to nontradable goods without accounting (by contrast to the real exchange rate) for domestic trade distortions. It is measured here as the ratio of the nominal exchange rate multiplied by the U.S. WPI and divided by the domestic WPI. Except in Brazil, Honduras, and Peru, the effective exchange rate had indeed fallen between 1970 and 1981, sometimes very sharply, indicating the growing terms of trade squeeze on tradable goods.

After 1981, the reverse trend is observed. Commodity booms and debt accumulation are over. Exchange rate devaluations are in general far greater than changes in the ratio of domestic to international prices. Monetary adjustments thus provide positive incentives to the production of tradable goods.

While this is the general pattern, there is, of course, heterogeneity across countries and, to show this, we have regrouped countries with similar patterns of movements in their real exchange rates in Figures 2.A8 to 2.A12. In Figure 2.A8, Argentina, Ecuador, Mexico, and Guatemala show sharp increases in effective exchange rates after 1980 with the result that, by 1987, the levels they reach are far higher than in 1970. In Figure 2.A9, Bolivia, Chile, Colombia, Panama, and Paraguay also show a turning point in their effective exchange rates by 1980, but without reaching higher levels in 1987 than in 1970. This is also the case in Costa Rica and Venezuela, but with a turning point that only occurred in 1983. Other countries do devalue sharply in 1980-81, but fail to continue to devalue sufficiently in order to protect their effective exchange rates from the differential of domestic relative to U.S. inflation. This is the case, in Figure 2.A10, for Brazil, Peru, and Uruguay. Finally, El Salvador and Honduras, in Figure 2.A12, show continued declines in their effective exchange rates since 1980.

Commodity Prices

Table 2.4 gives the evolution of international commodity prices, in nominal terms, between 1970 and 1987. Dramatic falls have occurred since 1980 in the prices of the commodities where interventionism by the U. S. and the EEC has been most severe. This includes a fall of 53 percent in wheat, 49 percent in maize, 48 percent in rice, and 77 percent in sugar (Figures 2.6 and 2.8). By contrast, the prices of tropical products such as bananas, coffee, and cocoa have held well (Figure 2.7). This is also the case for beef and wool.

Since most Latin American countries export tropical and/or animal products, the price index for their exports has performed better that that for the grains. These indexes were calculated using the 1977-1979 export shares by country. Clearly, 1980 was a turning point for most countries with rising export prices through the 1970s and falling in the 1980s (Figure 2.A13). The turning point came earlier (1977) for the coffee and cocoa exporters (Figures 2.A15 and 2.A17). Since 1980, the fall in prices has been between 30 percent for the countries with large exports of tropical products to 40 percent for the countries with mainly cereal exports.

Table 2.3. Latin America – Index of Effective Exchange Rates

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
US WPI	41.05	42.42	44.29	50.11	59.54	65.04	68.07	72.24	77.86	87.82	100	109.13	111.33	112.73	115.41	114.86	111.52	114.5
Exch. Rate/WPI																		
Argentina	432.1	376.4	377.9	288.8	227.2	320.5	204.5	236.7	189.5	125.6	100	114.1	168.7	166.8	158.9	185.3	177.2	246.9
Brazil	215.1	208.4	195.3	172.8	148.1	139.4	127.7	118.8	110.3	105.5	100	84.9	84.9	102.4	97.0	98.8	90.7	84.8
Chile	456.8	365.2	347.0	331.2	213.3	224.9	166.0	164.3	169.1	133.2	100	91.7	111.7	116.8	119.6	138.2	136.2	130.0
Colombia	325.1	317.0	293.0	247.5	201.2	190.2	173.5	145.1	131.3	111.8	100	92.9	86.9	67.9	95.0	107.3	120.0	120.0
Costa Rica	311.8	293.1	278.3	239.8	204.8	181.9	166.4	154.8	143.8	123.7	100	153.6	126.6	110.4	111.1	114.0	116.1	117.7
Ecuador	272.2	300.4	278.2	246.2	199.6	175.1	150.1	138.7	118.8	107.3	100	91.3	93.6	119.9	138.2	121.9	175.9	168.6
El Salvador	306.4	324.0	306.1	252.7	201.6	198.1	147.1	99.9	124.6	115.6	100	90.9	83.6	78.5	74.1	65.1	98.7	74.8
Guatemala	264.3	259.0	260.9	226.3	185.9	165.5	149.6	132.5	128.0	116.0	100	89.5	95.0	94.2	69.1	72.3	126.5	150.1
Mexico	268.3	256.1	251.0	217.0	177.4	160.2	162.0	167.6	146.1	123.7	100	65.9	126.5	129.9	106.6	106.2	137.9	162.5
Honduras	217.0	212.2	204.8	194.7	172.8	159.2	151.8	140.0	132.4	116.1	100	91.4	83.9	77.5	74.0	71.8	68.6	67.3
Panama	300.5	285.1	263.0	237.9	182.6	160.2	148.6	136.8	131.5	115.3	100	90.9	83.9	87.3	86.4	86.7	103.2	96.5
Uruguay	356.8	304.6	344.5	251.8	195.0	213.0	209.4	195.3	170.3	122.5	100	96.3	109.7	157.0	143.8	147.2	132.0	120.6
Bolivia	271.8	262.3	275.6	315.1	193.6	179.3	171.6	156.7	143.6	122.5	100	75.7	67.1	85.4	83.7	99.1	115.0	119.8
Paraguay	462.9	410.6	346.7	251.3	192.5	167.1	165.3	153.0	135.8	107.4	100	86.6	86.1	70.6	87.8	106.8	62.7	122.8
Peru	187.5	175.4	163.8	149.8	127.9	109.1	115.1	121.6	143.7	123.9	100	83.5	84.0	92.7	93.6	112.8	60.5	52.1
Venezuela	264.4	255.8	241.4	221.4	188.9	166.2	155.2	140.7	131.1	120.0	100	87.6	81.3	76.0	105.7	98.1	89.9	105.1
Effective Exchange Rates																		
Argentina	177.4	159.7	167.4	144.7	135.3	208.4	139.2	172.4	147.5	110.2	100	124.6	210.1	187.6	183.4	212.8	197.6	282.7
Brazil	88.3	87.5	86.5	86.5	88.2	90.6	87.0	85.8	85.9	92.5	100	92.7	94.6	115.4	112.0	113.5	101.1	97.1
Chile	187.4	154.9	153.7	166.0	127.0	146.3	126.6	118.7	131.7	116.7	100	100.0	124.3	133.9	138.0	158.4	151.9	146.8
Colombia	133.4	134.5	129.6	124.0	119.6	123.7	118.1	104.6	102.2	98.0	100	101.3	96.6	99.1	109.8	123.3	133.9	137.4
Costa Rica	128.0	124.3	123.3	120.1	121.8	118.3	113.3	111.8	111.8	108.4	100	167.7	141.2	124.5	128.3	131.0	129.5	134.8
Ecuador	111.7	127.4	123.2	123.4	118.8	113.9	102.2	100.2	92.5	94.0	100	99.6	104.4	135.2	159.5	140.0	196.2	215.9
El Salvador	125.8	137.5	135.6	126.8	120.0	126.9	100.1	72.1	97.0	101.5	100	99.2	93.3	88.4	85.5	74.8	110.1	85.8
Guatemala	108.5	109.9	116.5	114.4	110.7	107.7	102.0	95.7	99.6	101.6	100	97.7	105.6	106.1	102.9	83.0	141.0	171.9
Mexico	110.1	109.5	111.2	108.7	105.8	104.2	110.2	121.2	113.7	108.4	100	93.7	140.9	148.5	123.0	122.0	153.6	188.0
Honduras	89.1	90.0	90.7	97.6	102.7	103.6	103.3	101.1	103.1	103.4	100	99.7	93.4	87.3	85.4	82.2	76.5	77.0
Panama	123.3	121.0	116.5	119.2	106.7	104.2	101.1	100.1	102.4	101.1	100	99.2	93.5	96.4	99.7	99.8	115.1	112.8
Uruguay	146.5	129.2	152.8	126.2	116.1	136.5	142.5	141.1	132.6	107.3	100	105.1	122.1	177.0	166.0	169.1	147.2	138.1
Bolivia	111.6	111.3	122.1	157.9	115.3	116.6	116.8	114.7	112.0	107.3	100	82.6	97.0	98.2	98.5	113.8	128.2	137.2
Paraguay	190.0	174.2	153.5	125.9	114.6	108.7	112.5	110.5	105.6	94.1	100	96.9	95.9	79.8	101.4	124.7	92.3	140.8
Peru	77.0	74.4	72.5	75.0	76.2	71.0	78.3	87.9	111.9	108.5	100	91.2	93.5	104.5	108.3	129.5	89.8	59.7
Venezuela	108.5	108.4	108.9	111.0	112.4	108.1	105.7	101.7	102.1	105.2	100	95.8	90.5	85.7	122.0	112.7	100.2	120.3

Source: IMF, International Financial Statistics.
WPI is the Consumer Price Index for Bolivia, Honduras, and Peru and the Wholesale Price Index for the other countries.
The Effective Exchange Rate is the nominal exchange rate multiplied by the ratio of the US WPI to the domestic WPI.

Table 2.4. Latin America — International Prices for Agricultural Exports and Production, 1970-1987

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
International Commodity Price (nominal index)																		
Wheat	26.5	26.5	30.7	49.0	80.9	70.1	61.8	46.3	62.4	78.9	100	92.8	81.2	87.8	66.2	59.1	48.3	47.2
Maize	34.7	33.9	35.7	58.7	75.5	73.3	66.0	54.4	63.0	73.8	100	88.1	65.5	76.9	79.5	64.4	53.7	51.3
Rice	33.2	29.7	33.9	80.7	125.0	83.7	58.7	62.8	84.7	77.1	100	111.3	87.7	63.8	56.2	50.1	48.5	52.2
Sugar	12.8	15.7	25.4	33.1	103.6	71.3	40.3	28.3	27.3	33.7	100	58.9	29.3	29.5	18.2	14.2	21.2	23.2
Beef	47.0	48.5	53.3	72.5	87.0	47.8	57.0	54.4	77.1	104.0	100	89.1	88.1	86.0	81.5	77.6	75.5	85.5
Bananas	44.4	37.6	43.2	44.1	49.2	66.0	70.3	72.8	76.7	87.1	100	107.4	100.2	114.8	98.8	101.7	107.2	99.9
Coffee	31.7	29.6	32.4	40.6	43.5	45.5	88.2	134.3	103.6	102.8	100	81.3	83.1	78.2	82.4	85.9	109.6	88.6
Cocoa	25.9	20.7	24.7	43.4	59.9	47.9	77.9	145.6	130.7	126.5	100	79.8	66.9	82.4	92.0	86.6	75.0	72.6
Soybeans	40.8	44.2	48.6	98.0	93.5	74.2	78.1	94.6	90.6	100.5	100	97.3	82.5	95.1	95.2	78.0	70.3	72.3
Cotton	32.6	37.7	39.9	52.4	70.3	59.4	84.2	78.4	77.4	82.2	100	90.5	77.2	90.0	85.3	65.8	56.2	60.9
Wool	26.3	28.3	48.7	85.0	66.3	54.5	74.6	79.0	60.7	97.9	100	91.6	79.5	74.0	72.8	72.3	75.9	94.3
Groundnuts	46.2	51.2	51.2	75.5	121.9	92.4	83.9	109.0	124.7	113.5	100	127.7	81.1	78.7	88.0	72.5	64.9	58.4
International Price Index for Exports																		
LA	29.9	30.0	34.9	50.3	69.5	58.9	70.8	88.8	78.3	83.7	100	80.8	69.8	71.9	69.8	65.5	73.6	80.7
Argentina	37.4	38.7	43.7	72.6	77.7	65.3	67.9	67.4	75.8	90.8	100	91.6	79.1	83.4	82.0	70.5	64.2	88.8
Brazil	33.9	33.9	37.9	63.0	67.9	58.1	79.7	111.9	96.1	100.1	100	86.1	78.2	82.4	84.4	77.8	85.2	88.2
Chile																		
Colombia	32.2	30.2	33.0	41.1	44.6	46.7	87.4	130.2	101.7	101.3	100	82.5	83.5	79.9	83.1	85.7	107.6	70.2
Costa Rica	36.6	33.6	37.7	44.9	48.4	52.6	78.1	104.2	90.5	96.1	100	89.4	87.0	88.9	85.4	87.7	102.7	78.6
Cuba	12.8	15.7	25.4	33.1	103.6	71.3	40.3	28.3	27.3	33.7	100	58.9	29.3	29.5	18.2	14.2	21.2	23.2
Ecuador	32.7	26.3	32.2	42.5	51.0	51.4	80.0	123.3	107.0	107.7	100	87.2	81.3	88.8	90.0	90.1	98.2	77.9
El Salvador	31.1	30.2	33.1	41.9	49.3	48.3	85.9	122.9	97.3	97.3	100	81.7	80.3	78.0	80.4	80.5	99.2	88.6
Guatemala	31.4	31.3	34.7	44.0	54.6	51.2	81.5	108.6	89.9	92.3	100	82.6	78.2	78.3	78.3	76.0	89.6	89.2
Mexico	34.1	34.7	37.6	46.7	53.7	50.2	82.7	105.6	91.8	96.4	100	85.3	81.7	83.2	83.2	78.4	86.2	74.6
Honduras	38.2	35.2	39.4	46.7	49.3	54.0	78.3	97.2	86.0	95.5	100	91.7	88.8	92.3	87.1	88.6	100.6	81.9
Panama	36.3	32.2	38.5	41.8	61.1	65.2	84.8	67.4	67.7	76.6	100	94.0	82.6	92.1	79.0	80.3	87.4	79.6
Uruguay	38.5	38.5	46.0	76.0	79.3	57.1	82.7	63.8	79.7	98.7	100	94.4	80.4	76.8	74.1	70.4	70.1	81.4
International Price Index for Production																		
LA	33.1	32.9	37.3	56.3	73.3	62.6	68.5	70.7	75.9	86.7	100	89.6	77.6	75.8	73.4	67.5	86.4	82.3
Argentina	40.8	42.3	46.9	66.7	70.1	58.6	61.8	59.6	75.4	94.3	100	90.7	80.2	82.3	78.4	70.9	66.7	73.1
Brazil	34.5	34.0	36.0	58.4	69.8	59.4	72.3	90.9	88.2	92.2	100	88.2	76.5	78.5	77.4	72.4	76.3	86.9
Chile	37.0	37.7	43.0	64.1	73.1	59.7	58.3	52.6	69.7	87.9	100	89.3	77.5	75.7	70.9	65.2	61.4	67.2
Colombia	33.7	32.3	35.8	49.1	55.9	51.3	78.5	108.9	93.9	97.3	100	85.2	80.2	78.3	78.8	78.9	93.6	89.2
Costa Rica	35.5	33.0	37.2	48.8	57.2	55.1	74.4	97.7	89.0	94.3	100	89.2	82.3	84.1	81.0	81.3	92.4	74.3
Ecuador	33.7	30.9	34.8	46.2	55.3	53.8	77.5	108.3	94.8	97.8	100	87.2	80.8	83.4	82.9	82.8	93.4	72.7
El Salvador	31.7	31.0	34.4	45.0	55.1	51.6	80.5	109.0	90.6	93.1	100	82.3	77.6	76.7	77.7	76.2	90.6	86.8
Guatemala	32.6	31.8	35.2	45.4	54.6	52.1	79.8	106.0	89.7	93.3	100	83.6	78.9	79.3	79.3	77.5	90.4	89.3
Mexico	33.3	33.3	37.3	52.7	67.9	59.7	69.4	78.3	76.8	85.4	100	85.1	73.4	76.2	74.3	68.3	71.1	84.0
Honduras	35.6	33.0	36.9	45.4	51.1	53.5	78.0	103.2	89.5	94.5	100	88.0	84.3	85.9	83.5	84.6	98.5	75.0
Panama	36.4	34.0	39.0	53.0	66.5	60.3	67.2	78.4	79.4	87.1	100	91.9	79.9	82.9	78.3	75.3	82.5	73.1
Uruguay	41.2	42.0	46.6	72.5	86.5	54.8	59.3	57.5	76.0	96.5	100	91.0	81.0	81.0	75.6	71.1	69.3	78.6
Bolivia	34.9	34.7	39.6	55.7	68.9	56.7	66.7	76.5	78.2	87.9	100	87.0	74.9	76.6	73.1	69.1	73.4	88.0
Paraguay	38.4	39.8	43.6	65.8	72.0	61.7	72.1	78.4	81.8	92.4	100	92.2	80.2	86.7	83.5	73.4	72.0	74.2
Peru	30.8	30.5	34.9	51.3	71.0	58.4	71.0	86.0	81.3	85.2	100	84.3	71.2	70.6	69.0	65.4	74.0	81.3
Venezuela	35.4	34.0	37.8	52.2	59.2	53.8	74.1	97.5	89.8	95.9	100	87.2	80.1	79.9	78.7	77.8	88.5	70.7

Sources: For prices, see: UNCTAD, Monthly Commodity Price Bulletin. Specification: Wheat: Argentina, Trigo Pan, f.o.b. Maize: Argentina, c.i.f. North Sea Ports. Rice: Thailand, white, 5% broken, f.o.b. Bangkok. Sugar: Caribbean ports, f.o.b. bulk basis (I.S.A.). Beef: All origins (mainly Australia), US Ports. Bananas: Central America and Ecuador, f.o.b. US Ports. Coffee: Composite Indicator Price 1976 (I.C.A.). Cocoa: Average daily price, New-York/London. Soybeans: US No. 2, yellow, c.i.f., Rotterdam. Cotton: Mexico, c.i.f., North Europe ports. Wool: UK Dominion Clean: 50's. Groundnuts: Any origin, shelled, c.i.f., European Ports.
For trade shares 1977-1979, see: D. Timms and M. Shane, World Agricultural Trade Shares, 1962-85, USDA ERS, 1987.
For production shares 1977-1979 evaluated at international prices: computed by the authors.

Finally, since there is an important component of nonexported goods in the commodities produced, the price index of agricultural production was not as affected as that of exports. As seen in Table 2.4, the price index of agricultural production shows a somewhat smaller decline, but still on the average equal to 38 percent since 1980. For most countries (Figures 2.A19, 2.A21, and 2.A23), the turning point was in 1980, while it was in 1977 in the countries with a large share of tropical products (Figure 2.A25). We must consequently conclude that the nominal international prices of both agricultural exports and production for all the Latin American countries has fallen sharply since 1980, but more for the former than for the latter.

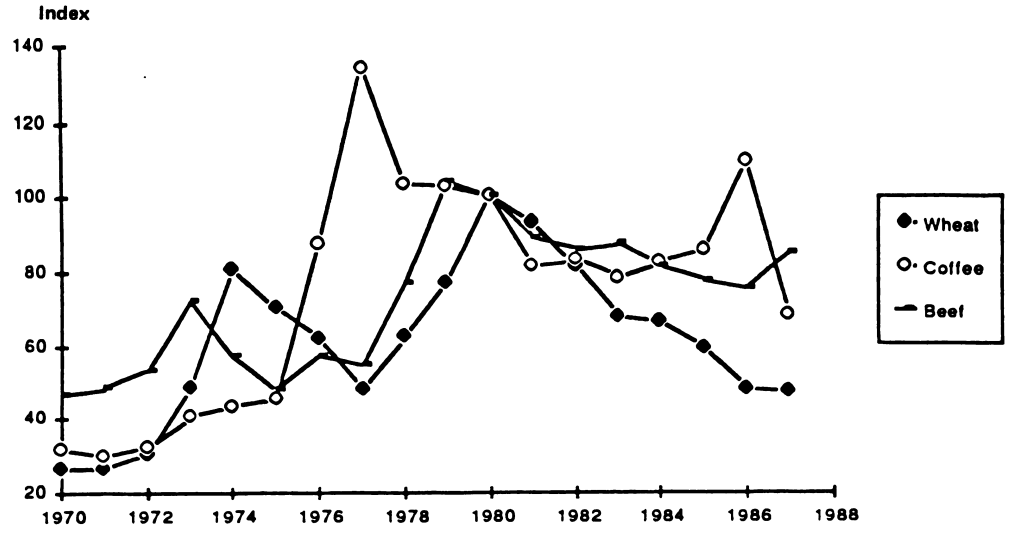

Fig. 2.6 Indexes of Commodity Prices, 1970-1987

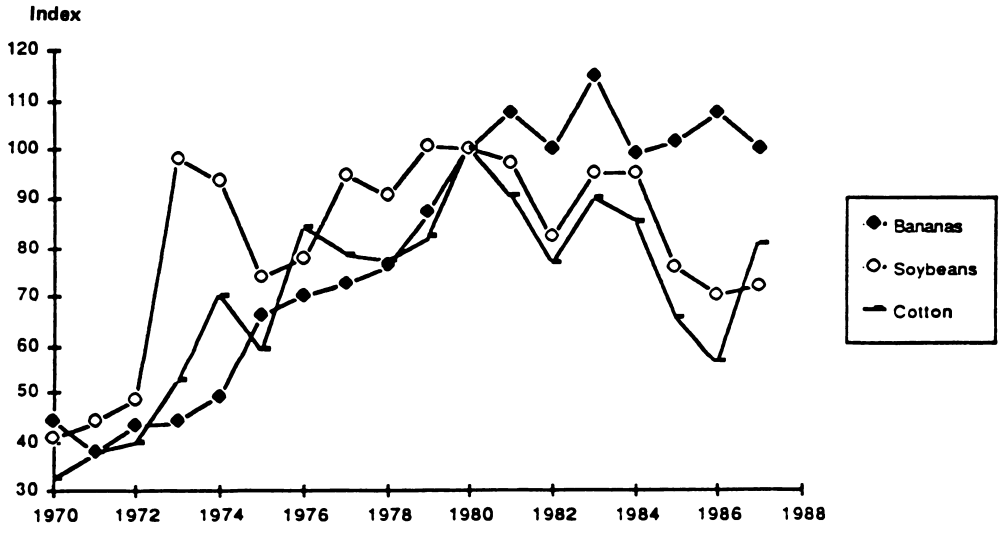

Fig. 2.7 Indexes of Commodity Prices, 1970-1987

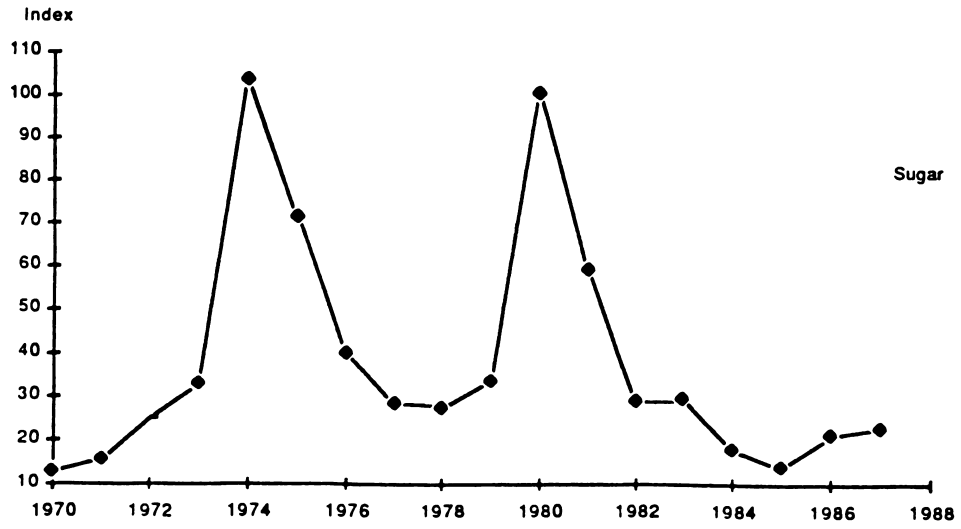

Fig. 2.8 Indexes of Commodity Prices, 1970-1987

Index of Potential Agricultural Terms of Trade

We can now calculate the effective exchange rates for exports and for domestic production which give us the potential terms of trade for these products' free-of-trade distortions. This is done in Table 2.5. The potential terms of trade for agricultural exports is the product of the exchange rate by the ratio of the international price index of exports to the WPI. The results show that there are a number of countries where devaluation of the exchange rate since 1980 far overwhelms the negative international price movements (Figures 2.A14, 2.A16, and 2.A18). This is the case for Argentina, Ecuador, Guatemala, and Mexico. Only Brazil, El Salvador, and Honduras have strongly negative terms of trade effects. In the other countries, the decline in the terms of trade is only modest.

This is also the case for the agricultural terms of trade for production based on international prices (Figures 2.A20, 2.A22, 2.A24, and 2.A26). Argentina, Ecuador, Guatemala, and Mexico show strong gains since 1980. Brazil, El Salvador, Honduras, and Peru show sharp declines. Most other countries have modest falls on the order of 10 to 20 percent.

Thus, we conclude that the potential terms of trade for Latin American agricultural exports and production need not have been seriously affected by the combination of exchange rate devaluations and falling international market prices, even though the evolution of these terms of trade has been highly uneven. Countries with strong appreciations of their real exchange rates have been able to compensate for falling international prices, particularly if they produce tropical commodities, the prices of which have been relatively more favorable. This is the case for Argentina, Ecuador, Mexico, and Guatemala. In these countries, not only have the potential terms of trade for agriculture improved significantly since 1980, but they also are, in 1987, above the levels which they had in 1970. These are the countries where a strategy of agriculture-led growth could be most promising. They show that, even under the current low international prices, this strategy is indeed possible.

Table 2.5. Latin America — Index of Potential Agricultural Terms of Trade*

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Agricultural Terms of Trade for Export Products Based on International Prices Price Index for Exports* Exch. Rate/WPI																		
Argentina	161.6	145.8	165.0	209.8	176.4	209.3	139.0	160.9	143.5	114.2	100	104.6	149.3	139.0	130.3	130.6	113.7	169.3
Brazil	72.9	70.0	74.0	108.7	100.6	81.0	101.8	133.0	106.0	105.7	100	73.1	68.4	64.3	61.6	76.9	77.2	57.9
Chile																		
Colombia	104.6	95.6	96.6	101.8	89.8	88.8	151.7	186.9	133.5	113.3	100	76.7	72.6	70.2	78.9	92.0	129.2	84.2
Costa Rica	114.2	98.6	105.0	107.6	99.0	95.7	130.0	161.2	129.9	118.9	100	137.3	110.4	98.1	94.9	100.0	119.2	92.5
Ecuador	88.9	84.9	89.6	104.8	101.8	90.1	120.0	171.1	127.2	115.5	100	79.6	76.2	106.5	124.4	109.7	169.2	146.9
El Salvador	95.3	97.7	101.4	105.9	99.4	95.7	126.3	122.7	121.2	112.7	100	74.3	67.3	61.2	59.6	52.4	97.9	51.3
Guatemala	83.1	80.9	90.5	100.4	101.8	84.8	122.2	143.9	115.1	107.1	100	73.9	74.3	73.7	69.8	54.9	113.4	103.9
Mexico	91.5	89.7	94.5	105.6	95.3	80.4	133.9	177.6	134.1	119.3	100	73.2	103.3	108.2	86.7	83.3	121.8	121.5
Honduras	62.8	74.6	80.7	90.8	65.0	66.0	115.8	136.1	116.5	112.7	100	83.8	74.3	71.5	64.5	63.4	69.1	55.1
Panama	109.0	91.7	101.2	99.5	111.7	104.5	96.2	93.4	89.1	88.3	100	85.5	89.3	80.4	68.2	69.6	90.2	76.7
Uruguay	137.4	117.4	165.4	196.3	154.7	121.7	131.2	124.2	135.8	116.4	100	90.9	88.1	123.8	106.6	103.7	92.6	96.2
Agricultural Terms of Trade for Production Based on International Prices Price Index for Production* Exch. Rate/WPI																		
Argentina	176.4	159.1	177.2	196.5	159.2	187.6	126.4	142.2	142.9	118.6	100	103.5	151.3	137.1	124.6	131.3	118.2	180.6
Brazil	74.3	70.1	74.3	100.7	103.4	82.7	92.4	108.1	95.1	97.3	100	74.9	65.0	60.4	75.1	71.8	71.0	56.6
Chile	169.0	137.5	149.3	212.3	156.0	134.2	108.4	66.5	117.6	117.1	100	81.8	86.5	89.9	84.8	88.8	83.6	67.3
Colombia	109.6	102.3	104.9	121.5	112.6	97.6	136.2	158.1	123.3	108.6	100	79.1	89.8	86.8	74.9	84.6	112.4	83.1
Costa Rica	110.7	96.7	103.6	117.1	117.1	100.1	123.8	151.3	127.8	116.7	100	137.0	104.4	92.9	90.0	92.7	107.3	87.4
Ecuador	91.8	92.9	96.9	113.7	110.3	94.2	116.4	150.3	112.8	105.0	100	79.5	75.7	100.1	114.5	100.9	164.4	137.0
El Salvador	97.1	100.5	105.2	113.7	111.1	102.3	118.4	108.8	112.6	107.6	100	74.9	65.0	60.2	57.6	49.6	89.4	50.0
Guatemala	86.1	82.3	91.8	103.7	101.6	86.2	119.5	140.5	114.8	106.2	100	74.8	75.0	74.6	70.7	56.0	114.3	104.0
Mexico	89.4	86.0	93.6	114.4	120.4	95.7	112.4	131.3	112.2	105.7	100	73.0	92.9	99.0	79.2	72.5	98.1	104.0
Honduras	77.1	70.0	75.5	88.4	88.1	85.2	118.4	144.5	118.5	111.6	100	80.4	70.7	66.6	61.8	60.5	87.6	50.4
Panama	109.3	97.1	102.5	126.1	121.5	96.6	99.6	108.7	104.4	100.5	100	83.5	87.1	72.4	65.9	65.3	85.2	72.0
Uruguay	147.0	127.9	167.3	182.4	133.5	118.8	124.1	112.2	129.5	118.2	100	87.6	88.9	127.2	108.7	104.6	91.5	94.8
Bolivia	94.9	91.0	109.1	175.6	133.4	105.2	114.5	121.4	112.5	107.7	100	85.8	85.2	85.6	81.2	88.5	84.4	81.4
Paraguay	177.8	163.4	151.1	165.3	138.6	103.2	119.1	120.0	110.9	99.3	100	81.9	89.1	81.2	73.4	79.7	59.5	91.2
Peru	57.8	53.4	57.1	76.6	90.8	83.8	81.6	107.1	116.9	105.5	100	70.4	59.6	65.5	64.7	73.6	59.6	32.0
Venezuela	93.7	86.9	91.3	116.7	111.6	89.1	115.1	137.3	117.7	115.1	100	76.5	85.1	80.7	83.3	76.3	79.6	74.3

* Potential terms of trade with perfect substitution between domestic and foreign goods.
Source: Computed by the authors.

Observed Changes in the Terms of Trade for Agriculture

The calculations, presented in Table 2.5, of the potential terms of trade for agricultural exports and agricultural production reflect the terms of trade which countries could have experienced had they not introduced distortive trade and domestic trade and domestic price policies and if there is perfect substitution between domestically produced and imported commodities. The "passing through" of international to domestic prices is, however, frequently hampered –in addition to exchange rate movements– by import tariffs and export taxes, domestic price controls, rising marketing margins, industrial protectionism, and input price subsidies. The data in Table 2.6 give direct observations of the terms of trade for

Table 2.6. Changes in the Terms of Trade for Agriculture, 1976-1984

Country	Terms-of-trade concept[a]	1976	1980	1984	Percentage change
		(index, 1980 = 100)			1984/1976 percent
Argentina	All agriculture/machinery and fertilizer	73	100	109[b]	149
Brazil	All agriculture/machinery and fertilizer	103[c]	100	27	26
Colombia	All agriculture/machinery and fertilizer	60[d]	100	71	118
Guatemala	All agriculture/wholesale price index	85	100	79[b]	93
Honduras	All agriculture/wholesale price index	107	100	81	76
Mexico	All agriculture/machinery and fertilizer	87	100	100	115
Panama	All agriculture/wholesale price index	110	100	107	97
Uruguay	All agriculture/machinery and fertilizer	56	100	111	198

a Ratio of price received by farmers for all agricultural products over either an index of machinery and fertilizer prices or the domestic wholesale price index.

b 1983.

c 1979.

d 1978.

Source: United Nations, FAO **Production Yearbook** (Rome: United Nations, Food and Agriculture Organization, 1987).

agriculture measured as the ratio of agricultural product prices to either an index of machinery and fertilizer prices or the domestic WPI when the former is not available. Unexpectedly, this ratio is, except for Brazil, systematically higher than the potential terms of trade for 1984 in Table 2.5. This indicates that, in the face of very low international prices, the Latin American countries have not let domestic prices fall to the level of international prices. Except for Brazil and Honduras, the terms of trade for agriculture have either improved relative to 1980 or stayed approximately at the same level.

While the terms of trade thus seem to have favored or been neutral to agriculture since the beginning of the crisis, it remains clear that high rates of inflation, induced in part by exchange rate devaluations, and high price volatility in the international market, have created considerable uncertainty in the interpretation of price signals. This suggests the need for effective price stabilization policies to shelter domestic price movements from international price volatility while not creating systematic price distortions. More importantly, it suggests the need to successfully implement stabilization of both the foreign account and inflationary pressures before economic liberalization can result in effective investment incentives for agriculture. Recent work by Corbo and de Melo (1987) for the Southern Cone countries indeed indicates that economic liberalization, without prior successful stabilization, is rarely effective. The Asian countries, which showed the road to effective liberalization, never had to simultaneously confront the problems of inflation and liberalization, having already solved the first by the time liberalization was implemented.

Prospects for Future International Agricultural Prices

While world prices for agricultural commodities have never been as depressed as in early 1988, they also never have been as uncertain. As a result, making predictions about the future course of international prices is extremely difficult.

There are basically two ways in which predictions can be made. One is to expect a continuation of the current policies and to base predictions primarily on changes in world supply and demand within that context. Following this approach, the World Bank's predictions for the average annual growth rate in real prices between 1987 and 2000 are as follows (Akiyama and Mitchell 1988):

	Percent
Rice	−1.1
Wheat	−2.0
Maize	−1.4
Soybeans	−2.87
Coffee	0
Cocoa	0.3

These forecasts thus lead to falling real prices for food and feed grains and to constant prices for tropical goods. It is, however, unlikely that these predictions will prove true. This is because there are mounting pressures for major adjustments to occur in the levels of protectionism currently applied to their agricultures by the United States and the EEC. Strong pressures are also exercised on Japan by the United States to liberalize its agricultural trade. The alternative approach to predicting future price levels is thus to make them conditional upon alternative policy scenarios.

It is clear that the current agricultural trade situation is both absurd and tragic. Absurd because the United States and the EEC spend enormous public budgets to subsidize their agricultural sectors by supporting higher farm prices. In 1986, this cost was $26 billion in the United States and in excess of $24 billion in the EEC, where it absorbed more than 70 percent of the Community's budget. This leads to rising interest rates and inflationary pressures, major causes of concern for the recovery of the advanced economies. It also raises the level of nominal wages for industrial employment. And it has relatively little long-run impact on farmers' incomes, is highly regressive on the distribution of income in agriculture, creates heavy costs on taxpayers and consumers, and leads to large efficiency losses in the economy at large. General equilibrium models for the United States developed separately by Kilkenny and Robinson (1988) and by Hertel estimate that the cost of agricultural protectionism on the economy is of the order of $9 billion to $12 billion. On the international market, it induces trade wars that threaten to spill over to industrial trade as well. This situation is also tragic because the counterpart of accumulating surpluses in the MDCs and of extraordinarily low international prices is a stagnating LDC agriculture and an increasing incidence of famines. The Uruguay round of the General Agreement on Tariffs and Trade (GATT) negotiations and formation of the Cairns group by 14 agricultural free traders (including, in Latin America, Argentina, Brazil, Chile, Colombia, and Uruguay) show recognition of the urgent need to reduce these massive distortions. It is consequently likely that the global economic cost of agricultural protectionism will force descaling of trade restrictions, in spite of the opposition of the farm lobbies, simply because the cost of agricultural protectionism has become too expensive for the economy at large in the MDCs. Yet, it is at this stage impossible to predict how quickly these negotiations will progress.

Several recent studies have attempted to estimate the impact on international prices of agricultural liberalization in the OECD countries in the year 1990. Tyers and Anderson's (1988) results show that, relative to base projections without liberalization for 1995, the world market price levels would rise by the following percentages:

	1995 Percent change in international price level due to liberalization
Wheat	25
Coarse grains	3
Rice	18
Beef and lamb	43
Pork and poultry	10
Dairy products	95
Sugar	22
Weighted average	30

Predicted changes in the level of prices are large, particularly for wheat, beef and lamb, dairy products, and sugar. While it is impossible to predict when liberalization would actually occur, they support the proposed strategy of investing in agriculture. Because the LDCs are large importers of temperate food products, liberalization in the industrialized countries would create a gain for the LDC farm producers of these same products, but a loss for consumers and a small global net loss. If, however, trade is also liberalized for the tropical products, which are a major source of foreign exchange earnings for the LDCs, there would be a welfare gain not only for producers but for the economies at large (Tyers and Anderson

1988; World Bank 1986). It is, consequently, to the LDC's advantage that GATT negotiations on agricultural trade liberalization be directed at all products simultaneously.

The Food and Agricultural Policy Research Institute (Iowa State University and the University of Missouri- Columbia) makes the following price forecasts with and without agricultural trade liberalization by the United States, the EEC, Japan, Brazil, Argentina, and most importing countries (Johnson *et al.* 1988):

		Projected annual percentage growth rates in real prices to 1995-96	
	Actual prices 1986-87	With no trade liberalization	With trade liberalization
	Dollars (U.S.) per metric ton		
Wheat	117	0.6	2.0
Rice	79	1.1	3.0
Soybeans	207	−1.1	−2.2

Similar to the World Bank's price forecasts, Roningen, Dixit, and Seeley (1988) (using the USDA's SWOPSIM model) predict that, without trade reform, the secular decline in agricultural prices would continue to the end of the century. If, however, the developed countries liberalize their agricultural trade, prices would increase –with the largest gains in meat, dairy products, and sugar. Their forecasts of real price changes are as follows:

		Projected annual percentage growth rates in real prices to 2000	
	Actual prices 1984-85	With no trade liberalization	With trade liberalization
	Dollars (U.S.) per metric ton		
Ruminant meats	2 240	0.2	1.0
Nonruminant meats	1 695	−1.0	0.3
Dairy products	2 598	0.2	1.5
Wheat	152	−0.4	0.0
Coarse grains	128	−1.1	0.3
Rice	252	0.8	0.4
Soybeans	517	−1.1	0.1
Sugar	114	0.5	1.5
Aggregate	1 193	−0.3	0.4

Particularly after the large exchange rate devaluations of the 1980s, the Latin American countries have significant comparative advantages in the production of labor-intensive fruits and vegetables for exports. Moulton and Runsten (1986) have estimated that the production cost of broccoli in 1986 was 4.6 cents (U. S.) per pound in the Bajio region of Mexico as compared to 13.6 cents in California. Mexican frozen broccoli imported into California cost,

after payment of import tariffs, 26 cents compared to 33 cents for California produce. These export markets have expanded rapidly. Between 1978 and 1985, the average annual growth rate of U. S. imports from Mexico was, in volume, 24.2 percent for frozen broccoli and 15.7 percent for frozen cauliflower. In 1985, the shares of U.S. imports were as follows:

	Frozen broccoli	Frozen cauliflower
Mexico	82.1	89.3
Guatemala	16.4	7.7
El Savador	0.2	0.0
Costa Rica	0.1	0.0

Labor-intensive fruits, vegetables, and cut flowers are thus an area where the Latin American countries can capture rapidly expanding markets. This requires integration into international markets, usually through contracting with multinational corporations, and effective monitoring of technological transfers. If peasant organizations exist, these contracts can be passed to small producers and serve as a dynamic basis for rural development, as in the case of the Cooperative ALCOSA in Guatemala that we will study in Chapter 10.

Investment in Agriculture

Success of a strategy of economic reactivation that attributes a key role to the agricultural sector requires that a flow of new investments be maintained in that sector. This has, however, not been the case, and new investments in agriculture have fallen sharply since 1980. This has been due to public budget austerity, public credit constraints and rising interest rates, foreign exchange restrictions on the import of key inputs, and higher prices for imported inputs. As Table 2.7 shows, imports of fertilizers and tractors have fallen at an average annual rate of 2.8 and 7 percent, respectively, between 1980 and 1985. Thanks to import substitution, domestic use has continued to grow since 1980, although at a lower rate than in the 1970s. Falling investment in agriculture is, additionally, due to the loss of priority given to public investment in that sector. Government expenditures in agriculture, as a share of total government expenditure, have fallen from an average of 6.7 percent in 1980 to 4.5 percent in 1984

Table 2.7. Average Latin American Annual Growth Rates in Factors of Production, 1970-1985

	1970-1980	1980-1985
	percent	
Fertilizers		
Consumption	9.4	0.6
Imports	7.9	−2.8
Tractors		
Numbers in service	4.8	3.1
Imports	5.5	−7.0

Source: United Nations, FAO, **Trade Statistics** (Rome: United Nations, Food and Agriculture Organization, various years).

(Twomey 1987). This likely reflects the weak bargaining power of agriculture in a period of enhanced competition for access to shrinking government outlays. This is particularly serious, since a high elasticity of supply response and productivity growth in agriculture both depend on a continuous flow of new investments. In addition, successful structural adjustment in reallocating resources toward the production of tradable goods and in redefining the choice of factors toward the use of nontradables requires a high elasticity of substitution between nontradables and tradables among both products and factors. This also depends on new investments.

Unless explicit priority is given to agricultural investment in the national allocation of public investable funds, and unless stabilization is carefully managed not to squeeze agriculture from access to public credit and foreign exchange, it is unlikely that the current performance of agriculture can be sustained over time once the lag in maturation of past investment projects is over. Alleviation of the debt burden and access to new international loans are also essential to increase the availability of investable funds for agriculture. In that sense, resolution of the debt crisis is an essential component of a strategy of economic reactivation based on agriculture.

For countries that are net importers of the commodities which currently have highly depressed international prices, provided these prices are seen to be temporary aberrations soon to be corrected, import tariffs on these commodities can serve as a source of government revenues. Such revenues are crucial in a period of fiscal austerity. They can be used to finance the promotion of import substitution in the same commodities which are currently imported (milk, wheat, and corn in much of Latin America) or to stimulate investment in other sectors (labor-intensive fruits and vegetables, for example) with future international comparative advantages. In addition, they can be used to finance the cost of protectionism of farm export sectors, such as rice, which are not currently competitive in the world market but would be so after international prices regain less distorted levels. Taxing food imports to protect exporting sectors in a temporary phase of extraordinarily low international prices would thus allow avoiding decapitalization of physical and human capital from sectors that should play an important role in the economy once the distortions of industrialized country protectionism are reduced.

The Necessity of Agriculture in Future Growth

The above two sections have made the argument that agriculture can be an important element of a strategy of economic reactivation for Latin America based on two reasons. One is that the terms of trade for agriculture have, in general, improved since 1980, even though this has been quite uneven across countries and they generally remain below the level of the early 1970s. The other is that, while current international market prices are highly depressed and uncertain, the likelihood that they will rise in the future seems to be a credible motive for continued investment in agriculture in the short run. Price incentives are still necessary, but far from sufficient to elicit supply response. Other determinants of supply response include the land tenure system, the availability and access to public goods and services, and investment in human capital, among others (Streeten 1987). We do not discuss here these other determinants of agricultural development.

In this section, we make, instead, the further argument that very few Latin American countries would be able to sustain economic growth over time without a successful food/feed agricultural sector. This is because the export prospects for nonagricultural commodities, both mining and industrial, as well as for tropical products, are relatively modest in the near

future. Food/feed agriculture will thus be needed to generate foreign exchange through exports and/or to save on foreign exchange expenditures through import substitution. At the same time, sustaining agricultural growth over time requires the creation of effective demand through income effects that will have to originate in other sectors of the economy in addition to agriculture. We thus deduce that a balanced growth will be necessary, focusing not only on investment and productivity growth in agriculture but also on investment and productivity growth in the other sectors of the economy. Successful agricultural development is thus necessary but not sufficient for reactivation of the Latin American economies. To make this point, we present the growth paths derived from a simple dynamic general equilibrium model of a typical LDC.

Specification of the Model

The model which we use to establish the role of agriculture in economic growth has three sectors, reflecting the contrast among importing sectors, exporting sectors, and nontradable sectors (de Janvry and Sadoulet, forthcoming). The agricultural sector producing food/feed (A) is importing; consequently, there is an initial space for import substitution which can help the country save on foreign exchange. The industrial sector (and tropical agriculture such as coffee, cocoa, bananas, and sugar) (T) is exporting and is thus key in generating foreign exchange. Services, construction, and the informal urban economy form a nontradables sector (NT).

Use of inputs in the three sectors is as follows: The agricultural sector uses land, which is in fixed supply, and labor. The nontradables sector uses capital, which is in fixed supply in that sector, and labor. The export sector uses labor and two types of capital goods which are imperfectly substitutable: domestic capital and imported capital. The productivity of imported capital is higher than that of domestic capital. And the productivity of the total stock of capital increases with the size of that stock, reflecting economies of scale and learning by doing.

There is surplus labor in both the agricultural and the nontradables sectors. In these two sectors, the real wage is exogenous, following a Lewis-Leibenstein-Stiglitz theory of efficiency wage. Income sharing occurs between the employed and the unemployed, determining the level of real **per capita** income. Unemployment is shared between agriculture and the urban traditional sector, which maintain the same rates of unemployment through migration between them. There is no surplus labor in industry, and the wage in that sector is determined by the opportunity cost of labor, i.e., by the real per capita income in agriculture and the informal sectors adjusted for a cost of migration. Real income effects in the A and NT sectors, consequently, occur only through employment effects. In the T sector, employment is determined by equation of the value marginal productivity of labor to the wage. There are six social classes: workers in the A, NT, and T sectors; landlords in the A sector; and entrepreneurs in the T and NT sectors.

The demand system is a linear expenditure system which has as parameters the income shares, the income elasticities, and the flexibility of money. Grain demand is the sum of the direct demand for food grains and the demand for feed grains derived from the consumption of animal products. The elasticities of both food and feed grains decline with income. As consumption patterns shift, with rising incomes, from the direct consumption of food grains to the consumption of animal products, the total elasticity of food and feed grains is rising in the transition phase.

The industrial sector generates foreign exchange. In order to reflect the fact that most LDCs will face only modest prospects for industrial exports in the decades to come, as a consequence of slow growth in the MDCs and industrial protectionism, we specify that only a constant share of the LDC's industrial output can be exported. Foreign exchange earnings from the T sector and foreign exchange savings from the A sector are used for two purposes. First, any demand for food that is not satisfied by domestic production has first priority in the use of foreign exchange. In that sense, rising import demand for food is never obtained at the cost of food security. Second, the balance of foreign exchange is used to import capital goods for the T sector. The model thus belongs to the generation of two-gap growth models: both domestic savings and foreign savings are used for capital accumulation, but it is the availability of foreign savings which is binding on capital accumulation. Since, in addition, imported foreign capital goods have a higher productivity than domestic capital goods, the availability of a surplus of foreign exchange is highly determinant of the growth rate of the T sector. The source of growth for the NT sector is the level of effective demand which it faces. This is due to the fact that the stock of capital in that sector is fixed and that there is surplus labor. The higher the elasticity of substitution between labor and capital, the higher the elasticity of supply response of that sector.

Alternative Development Strategies

Figures 2.9, 2.10, and 2.11 show the trajectories over time for GNP and agricultural imports under three alternative development strategies. In the first (Figure 2.9), food/feed agriculture is neglected as there is no productivity growth in that sector. Productivity growth is confined to the tradables sector (industry and tropical agriculture). The stagnation of agriculture implies that food imports are rising rapidly. Because only a constant fraction of the tradables sector can be exported, reflecting limited export prospects for industry and tropical goods, rising food imports place a drain on the availability of foreign exchange to import capital goods for the tradables sector. The result is that, while GNP increases slowly at first, foreign exchange shortages lead to overall economic stagnation and decline. Clearly, unless a country has privileged export prospects for its tradables sectors, neglecting food/feed agriculture leads to stagnation. Agricultural development is thus necessary for economic growth under these conditions.

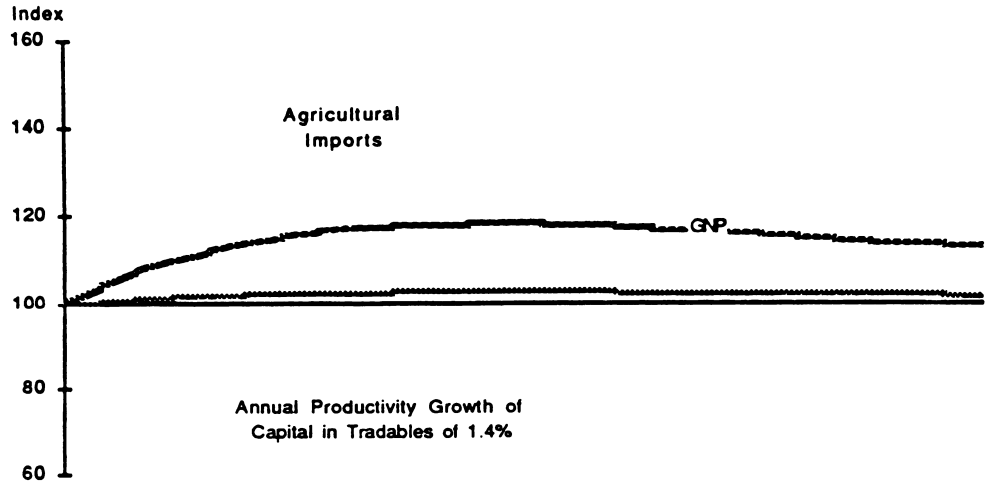

Fig. 2.9 Growth in GNP and Agricultural Imports with Different Development Strategies

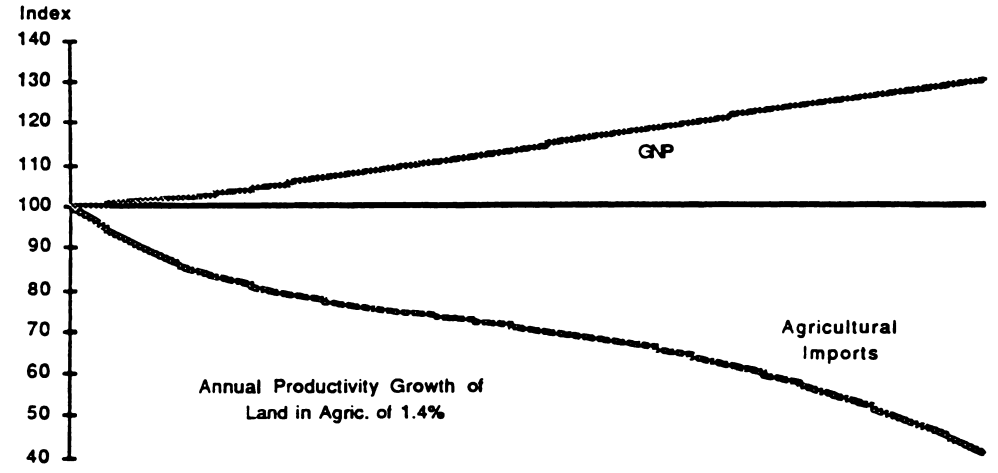

Fig. 2.10 Growth in GNP and Agricultural Imports with Different Development Strategies

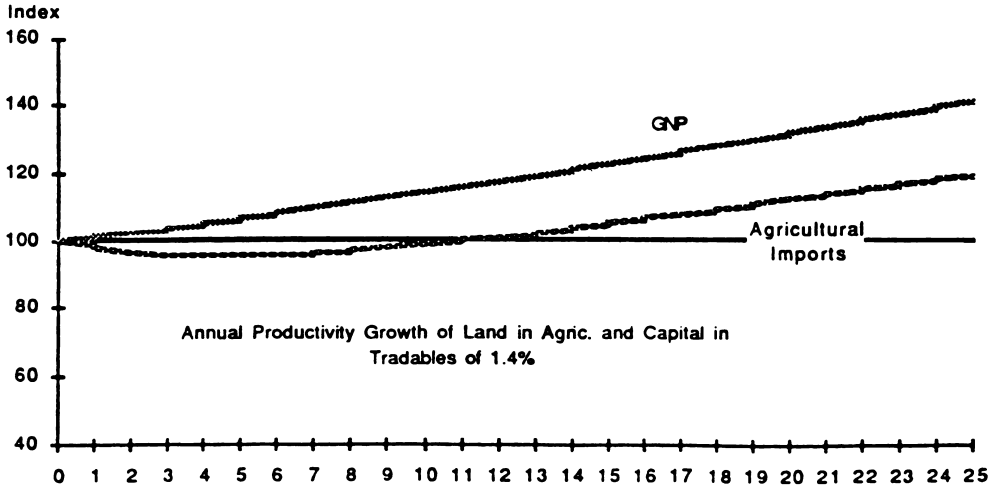

Fig. 2.11 Growth in GNP and Agricultural Imports with Different Development Strategies

In Figure 2.10, the growth strategy is one where food/feed agriculture is the engine of growth while the tradables sector is neglected. Productivity growth occurs in agriculture while it stagnates in industry. This leads to an appreciable growth in GNP and to a rapid decline in food/feed import demand. We thus see that, by comparing the trajectories in Figures 2.9 and 2.10, if productivity growth is to occur in only one sector, priority should be given to agriculture. Agricultural development is thus both necessary and sufficient to sustain economic growth in the short run. Once the country runs out of possibilities of import substitution, however, either income effects will have to be created by productivity growth in industry to enhance domestic effective demand or exports of food/feed agriculture will have to be possible. Without either one, the strategy of agriculture-led growth will run its course

after exhaustion of import substitution possibilities, as domestic prices will fall, the incentive to invest in agriculture will decline, and productivity growth will stagnate.

A strategy of economic development that is sustainable in the long run will thus require intersectoral balance with productivity growth in both agriculture and industry. This is shown in Figure 2.11. We see that the growth rate of GNP is higher than with either industry-led growth or agriculture-led growth. Food/feed dependency decreases at first, but subsequently imports rise due to the strength of the income effects which balanced growth creates. This indicates that agricultural prices will not fall and that the inducement to invest in agriculture will remain unabated. Balanced growth is thus sustainable over the long run. Rising food dependency is a symptom of economic success, not of failure. As John Mellor observed, most countries with successful industrial takeoffs have indeed fallen into increasing food dependency until saturation of food consumption (Engel's Law) eventually allowed domestic agriculture to catch up with domestic demand.

We thus conclude that, in a context where the prospects for industrial, primary, and tropical agricultural exports are modest, there is no escaping the need for successful agricultural development in the food and feed sectors. Additionally, a balance needs to be maintained in intersectoral investment in order to stimulate productivity growth in both agriculture and industry and sustain the growth of the domestic market for agriculture.

APPENDIX TO CHAPTER 2

COUNTRY DATA ON PRODUCTION, EXCHANGE RATES, AND POTENTIAL TERMS OF TRADE FOR AGRICULTURE

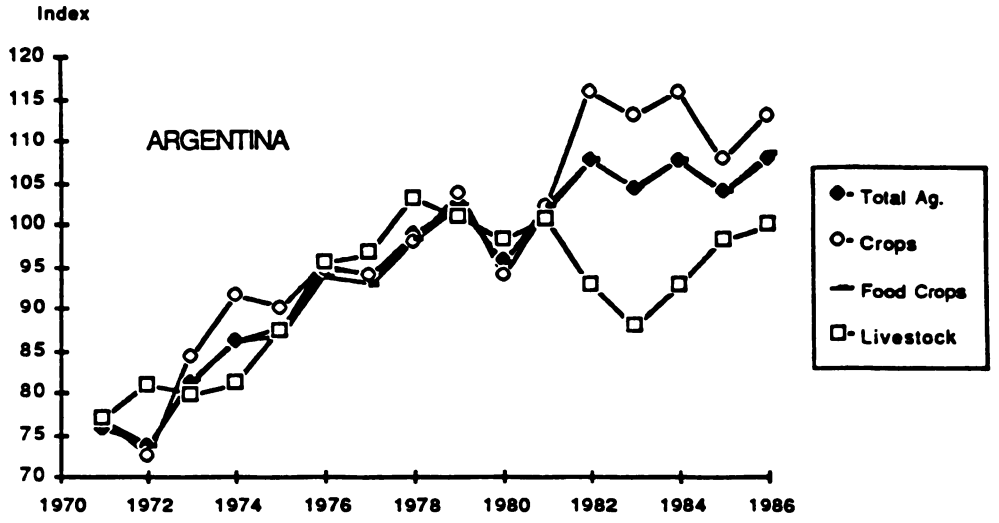

Fig. 2.A1 Indexes of Agricultural Production (Argentina), 1970-1986

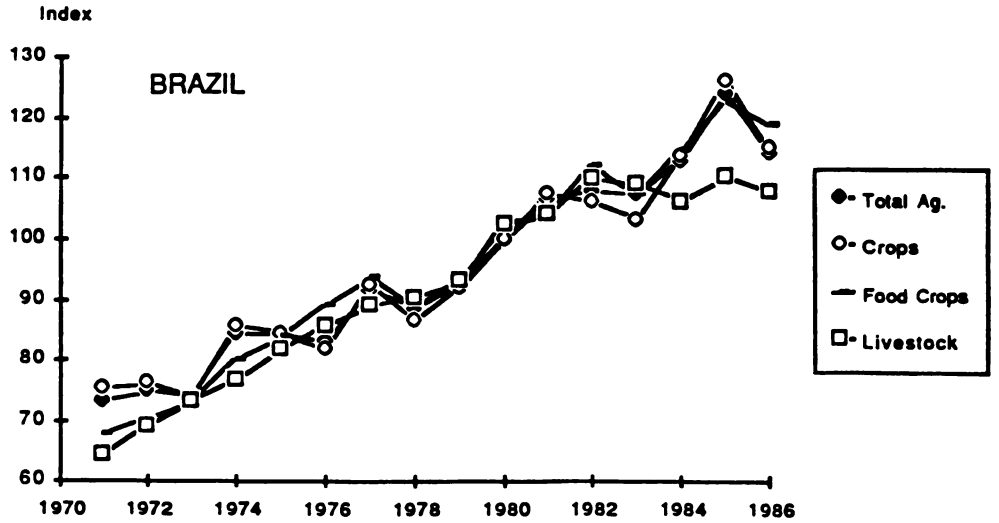

Fig. 2.A2 Indexes of Agricultural Production (Brazil), 1970-1986

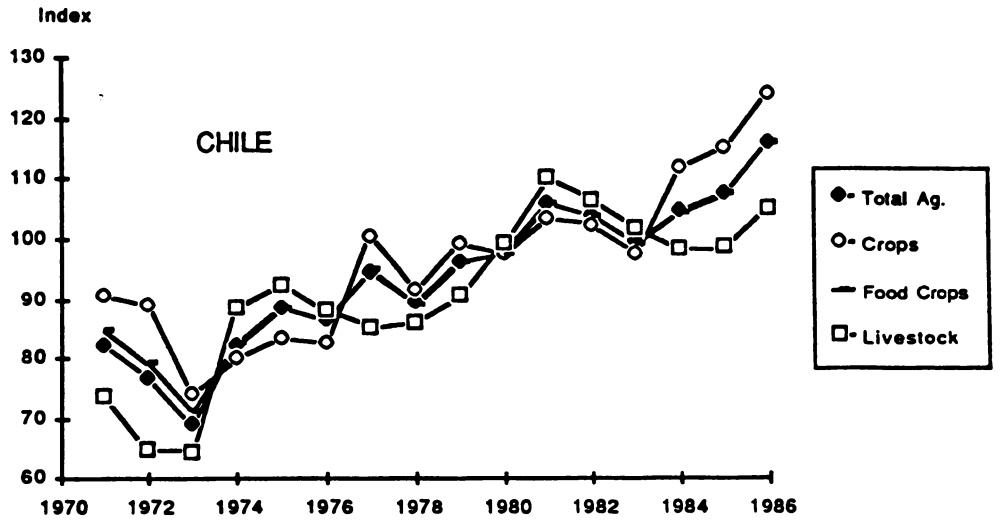

Fig. 2.A3 Indexes of Agricultural Production (Chile), 1970-1986

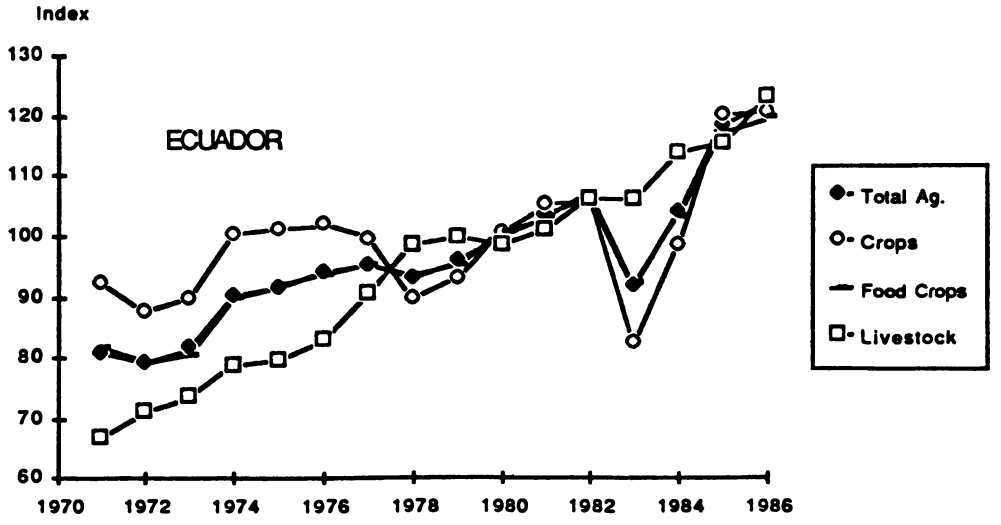

Fig. 2.A4 Indexes of Agricultural Production (Ecuador), 1970-1986

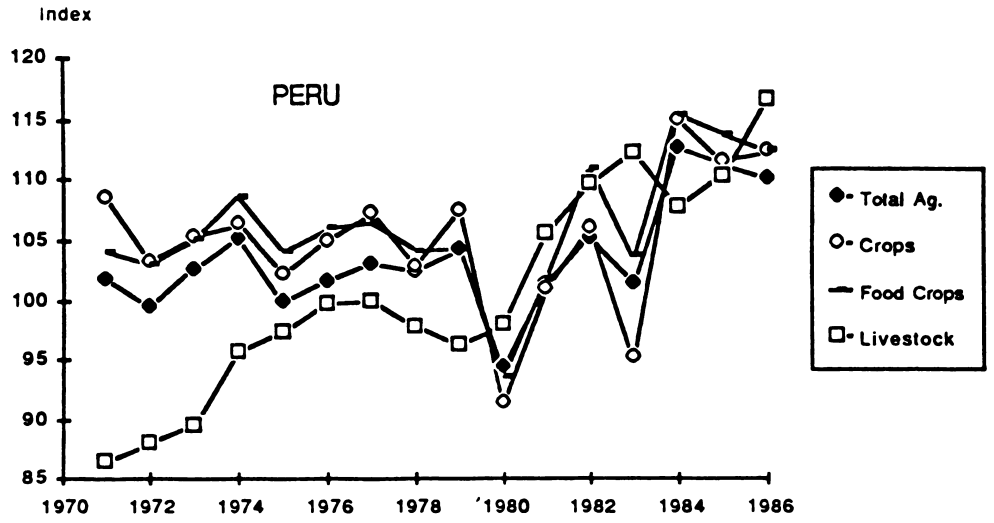

Fig. 2.A5 Indexes of Agricultural Production (Peru), 1970-1986

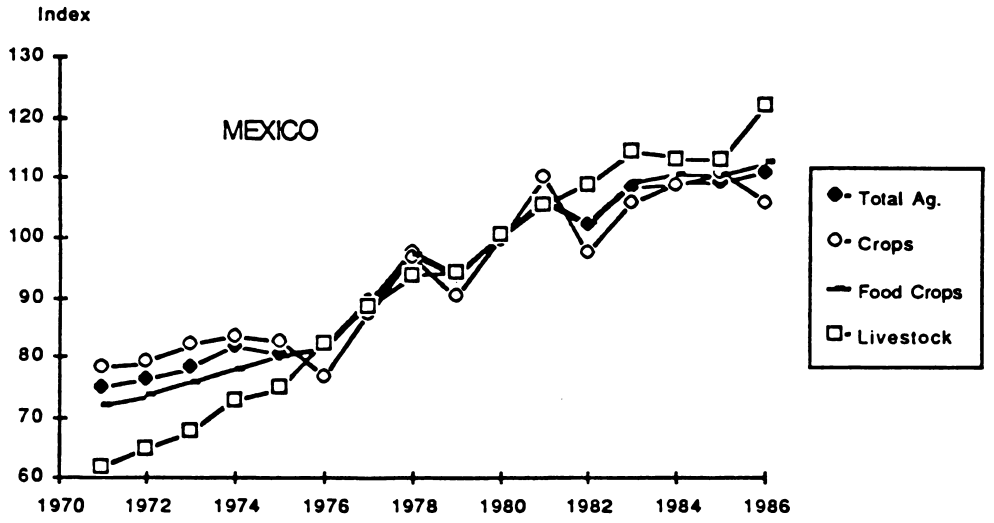

Fig. 2.A6 Indexes of Agricultural Production (Mexico), 1970-1986

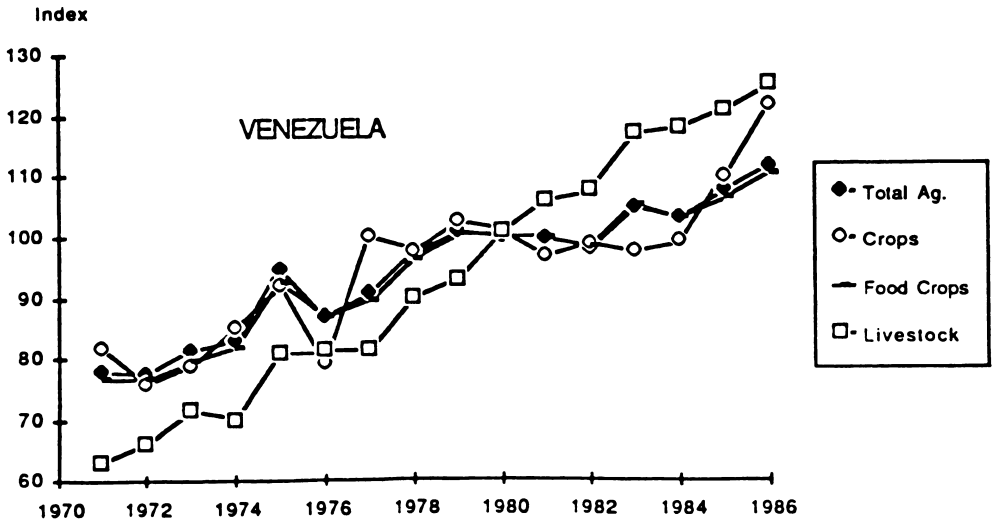

Fig. 2.A7 Indexes of Agricultural Production (Venezuela), 1970-1986

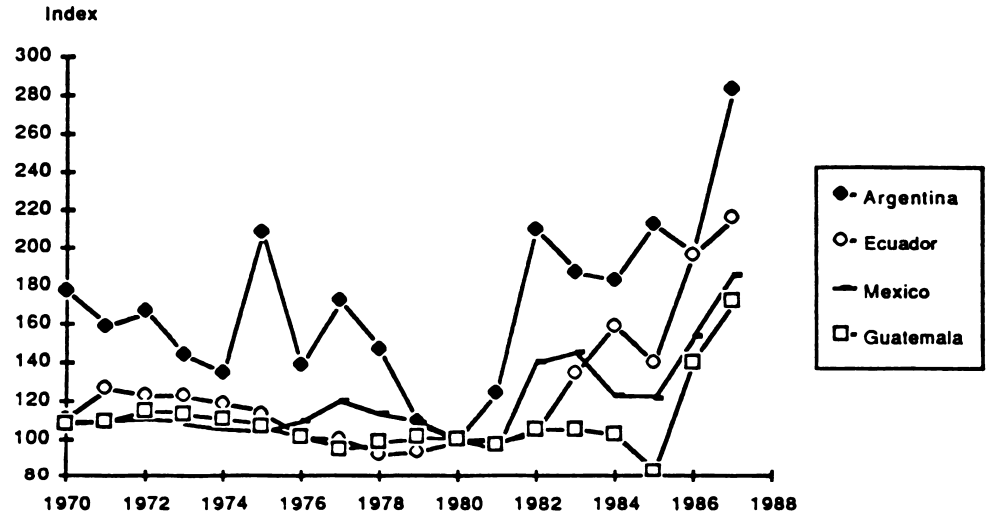

Fig. 2.A8 Indexes of Effective Exchange Rates, 1970-1987

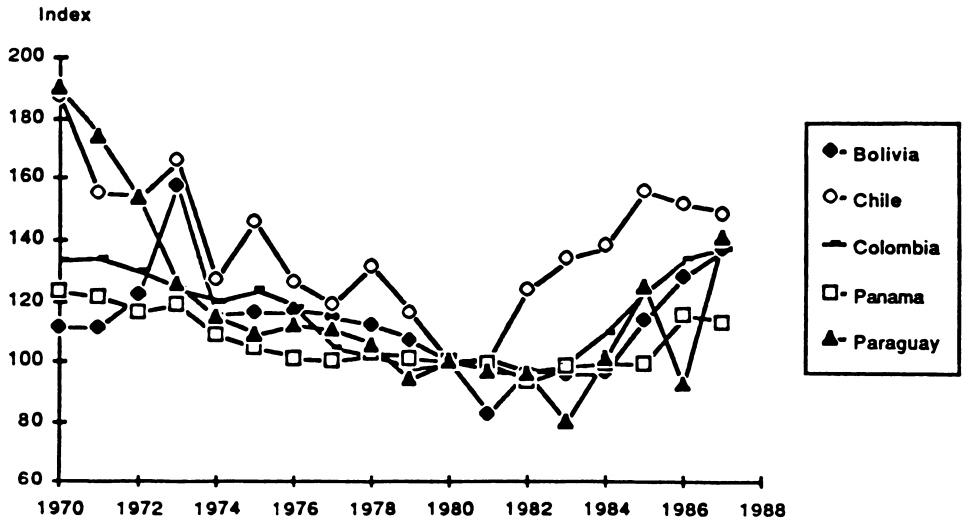

Fig. 2.A9 Indexes of Effective Exchange Rates, 1970-1987

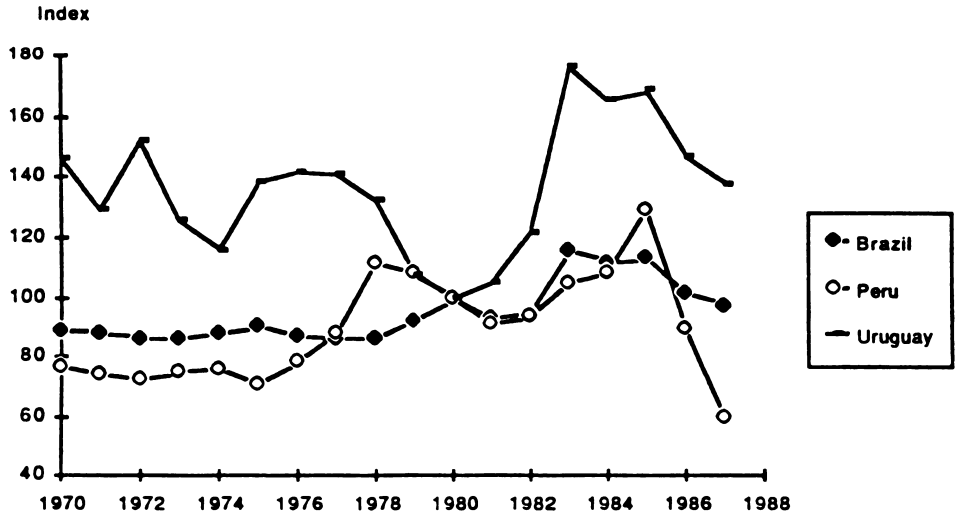

Fig. 2.A10 Indexes of Effective Exchange Rates, 1970-1987

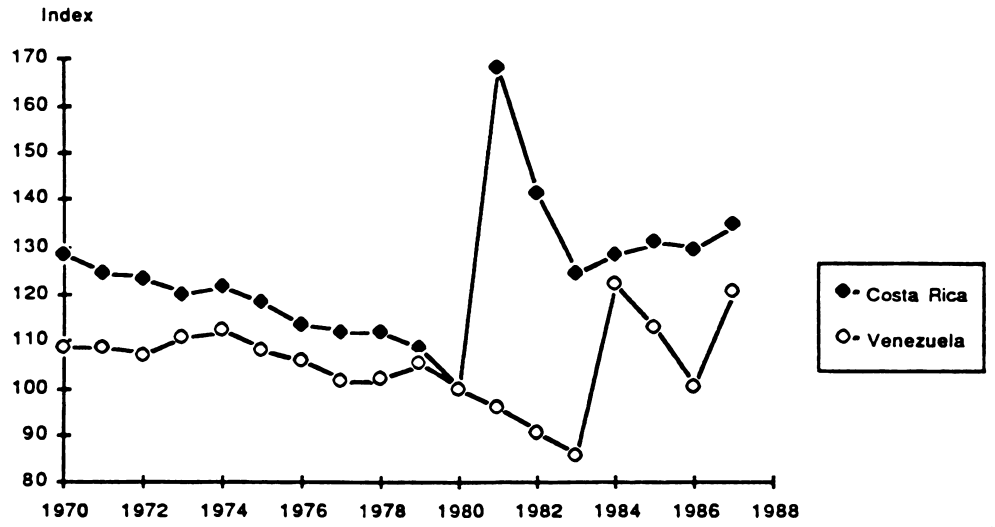

Fig. 2.A11 Indexes of Effective Exchange Rates, 1970-1987

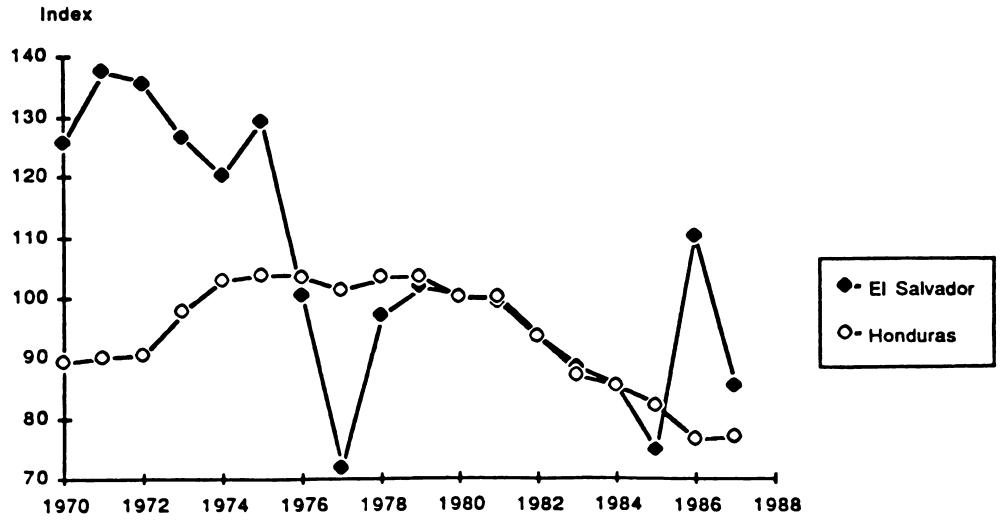

Fig. 2.A12 Indexes of Effective Exchange Rates, 1970-1987

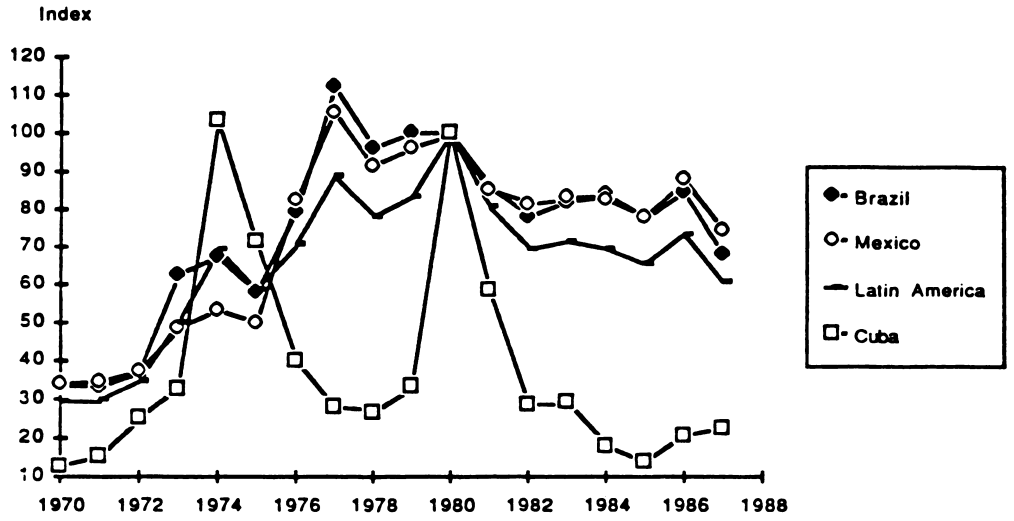

Fig. 2.A13 International Price Index for Exports

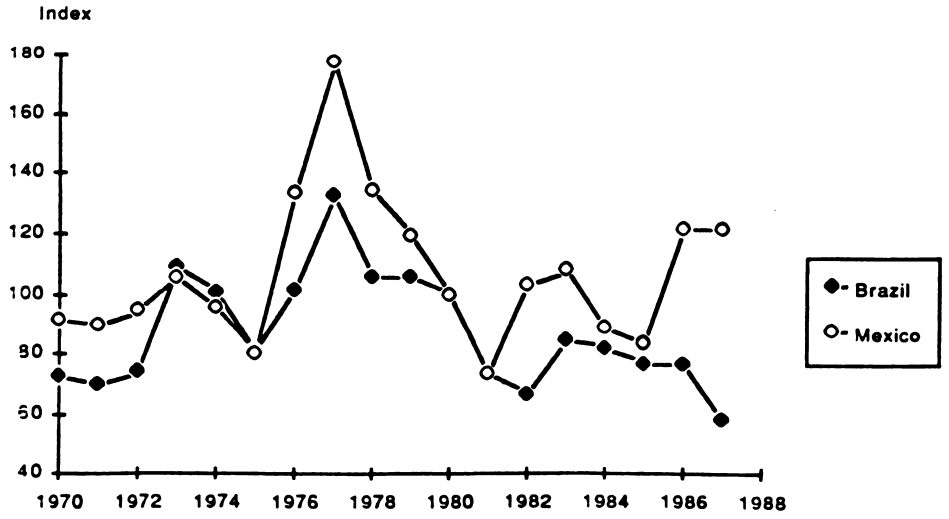

Fig. 2.A14 Agricultural Terms of Trade for Exports Based on International Prices

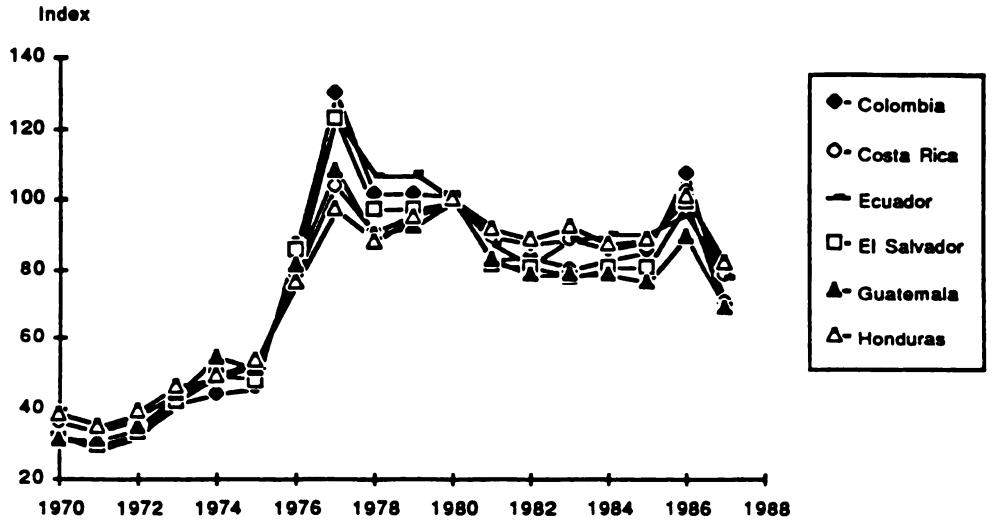

Fig. 2.A17 International Price Index for Exports

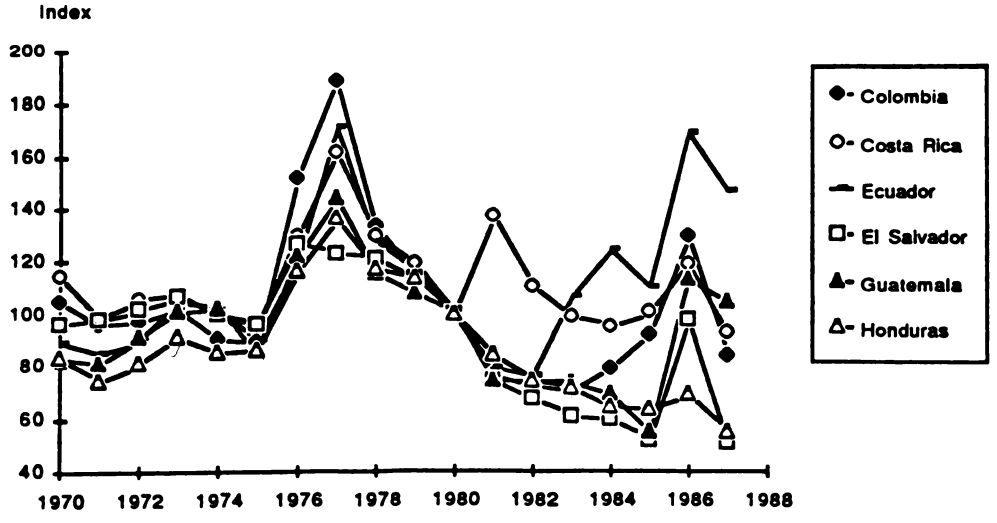

Fig. 2.A18 Agricultural Terms of Trade for Exports Based on International Prices

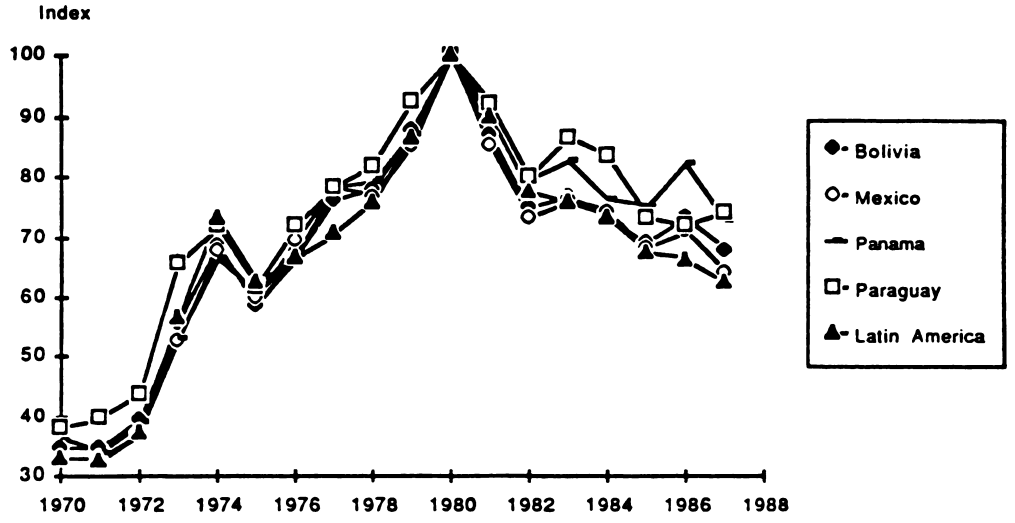

Fig. 2.A21 International Price Index for Production

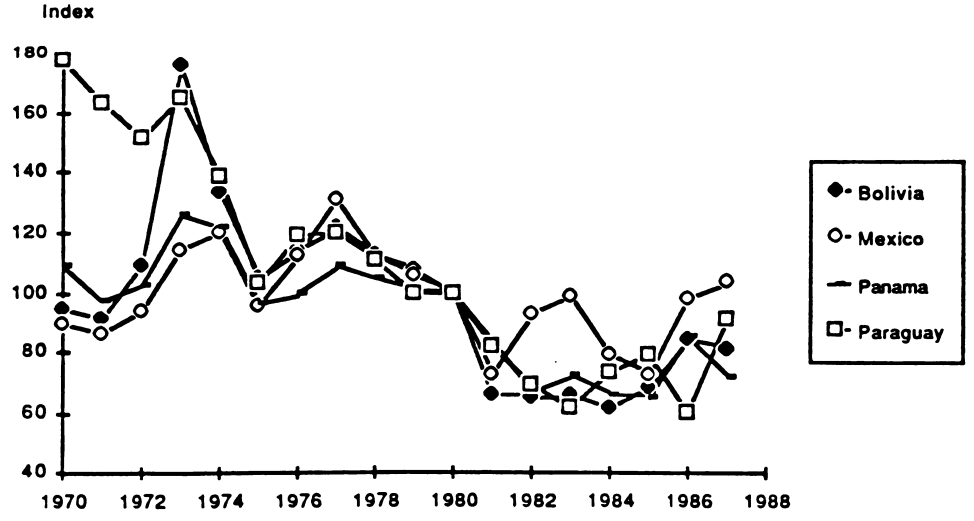

Fig. 2.A22 Agricultural Terms of Trade for Production Based on International Prices

3

THE POLITICAL ECONOMY OF RURAL DEVELOPMENT

Adjustment of the Latin American economies to the crisis of the 1980s has created economic conditions which are potentially favorable to promote agricultural development and to give agriculture a key role in their reactivation. This is due to appreciation of the real exchange rate and to creation of opportunities for import substitution in agriculture and other tradables after decades of overvalued exchange rates under import substitution industrialization and of depreciation of the real exchange rate due to debt accumulation and commodity export booms in the 1970s. We have seen that this opportunity is fraught with several difficulties due to the fiscal austerity of the state under stabilization policies, to possible foreign exchange constraints on the import of capital goods, and to abnormally low international market prices for temperate agricultural goods. We have shown, however, that all these difficulties can be overcome. Agricultural development in turn creates the context for bankable rural development projects. While the two are not synonymous, we will identify several approaches to potentially successful rural development according to the level of assets and the sources of income which characterize particular types of rural households.

In this chapter, we argue that not only is the economic context potentially favorable to a new round of rural development initiatives but that this is also true of the political context. This is due to a unique combination of 1) the emergence of new social actors with claims on the political process; 2) an explosion in the number and diversity of new social movements organized at the grassroots level; and 3) a return to formal democracy in most countries (with Chile and Paraguay as the current exceptions) under conditions where fiscal austerity prevents legitimacy from being obtained by pork-barrel politics and corporatist bargaining and where it must, consequently, be sought by political concessions. The result is to not only make rural development possible by the opening of a new political bargaining space, but also to make it a necessary ingredient of a legitimating formula able to preserve participatory democracy. We follow the implications of the emergence of new social movements and of the redefinition of the role of the state in the context of economic crisis and redemocratization to argue that traditional rural development projects may often be supplanted by a new approach. A better formula is to replace them by national programs for the definition of an appropriate policy context and for the delivery of public goods and services; and by public support to decentralized grassroots organizations whenever possible.

The New Social Actors

We will show in Chapter 5 that the size of the informal economy, both rural and urban, has grown rapidly during the last 30 years. The peasantry, as a share of the agricultural labor force, has increased from 61 percent in 1950 to 65 percent in 1980. In the urban economy, the informal sector has increased from 13 percent of the total labor force in 1950 to 19 percent in 1980. This indicates the incapacity of the modern sector in both the rural and urban areas to

create enough productive employment to absorb a growing labor force. It also shows that labor-intensive, small-scale farms and firms can be highly competitive with modern centralized firms in the Latin American context, characterized by surplus labor and high transactions costs.

These new social actors are not only numerically important, but they are also qualitatively different from what the poor were in the past. This is due to the fact that, even though the successive Latin American development models have been unable to reduce dualism and to significantly raise the real income levels of a large share of the population, they have been effective in the provision of public goods and services throughout the phase of state-led growth that ended with the economic crisis of the 1980s. Thus, the poor today are better educated, in better health, and have a longer life expectancy than they did in the 1950s (Annis 1987b), even if these basic needs indicators have generally declined since 1980. With the extensive development of markets, infrastructure, and communications, they are also less isolated and strongly integrated in the market economy on both product and factor sides. Many of the marginal peasants with no net marketed surplus participate extensively in the agricultural, urban, and international labor markets. And there is a growing integration between agricultural and nonagricultural labor markets.

These new social actors have also gained in importance as knowledge of the causes of their poverty and of the rationality of their behavior has improved. In agriculture, this has come from two fronts. One is the emergence of the "new agrarian studies," initially largely of Asian origin, which has helped understand the rational choice basis of a number of contractual and institutional arrangements that were previously considered archaic or irrational (Bardhan 1984; Basu 1984). This is, for instance, the case with sharecropping contracts, which have been shown to be rational in spite of their apparent inefficiency in the best world of perfect markets and perfect information. In a second-best world of imperfect and missing markets, sharecropping may, indeed, be the most efficient form of contract. This is the case, for instance, when markets for insurance, for labor recruitment and supervision, or for specific inputs such as family labor and bullocks, are missing. The other source of information on the dynamics of poverty has come from widespread experimentation with a whole array of rural development interventions (de Janvry 1981). In many cases, the initial premises about the causes of poverty on which projects had been designed were proven wrong. Careful project evaluation and monitoring, in turn, permitted the revision of these fallacious assumptions and the gradual evolvement toward a better understanding of poverty. Demystification of the causes of poverty is important in allowing the new social actors to place more effective claims on the rest of the social system.

The New Social Movements

Following the upheavals of 1968 in the Western societies, there has been an explosion in the number, diversity, and complexity of new social movements with their origins at the grassroots (de la Cruz 1985). These movements have taken an extraordinary number of forms, including NGOs that serve as intermediate organizations and a wide variety of institutions such as Christian-based communities, self-help committees, neighborhood associations, peasant leagues, producer associations, production or services cooperatives, women and youth movements, cultural groups, and ecological movements. Their emergence can be traced to a number of fundamental changes in Latin American society:

1. *The collapse of the development model, that prevailed from the 1940s to the end of the 1960s, based on a strong role of the state in economic and social affairs.* This model was

characterized by Keynesian economics, assuming the form of import substitution industrialization in Latin America, and by the welfare state. It was highly effective in generating economic growth for three decades, but started to run out of steam in the 1970s and came to an abrupt end with the economic crisis of the 1980s. The state itself became delegitimized in both its economic and welfare functions. Collapse of the development model of the 1940s thus also entailed a crisis of the state. After Keynesian economics followed a thrust toward liberalism and open economy models. The welfare state was followed by increasing decentralization and transfer to self-help organizations with many social responsibilities previously assumed by the state.

2. *The weakening of traditional class positions.* This has been due to an increased overlapping of traditional class positions, based on asset ownership, as a result of the growing prevalence of pluriactivity in a large segment of Latin American society. As we shall see in the poverty maps of Chapter 4, most peasant households derive their incomes from a variety of sources including control of assets for agricultural production, petty entrepreneurship in crafts and trade, and the sale of labor. This pluriactivity creates contradictory class positions with consequent individualization of the goals of collective action. Class-based collective action thus becomes displaced by membership to multiple *ad hoc* associations corresponding to the variety of interests present in a diversified household. As Touraine (1980) has observed, the rise of new social movements is directly related to the decline in importance of the traditional social classes as the organizing mode.

3. *The destruction of traditional organizations under bureaucratic authoritarianism (Collier 1979).* Before the generalization of bureaucratic authoritarian governments in the 1960s and 1970s, the traditional modes of organization were the political parties, the labor unions and, in several countries, production cooperatives. These organizations were centered at the point of production and largely dominated by men. Under authoritarianism, destruction of these traditional movements displaced organization from the point of production to that of consumption. The neighborhood became the place where democratic organizations could be preserved in the cracks of a repressive regime. And women, who had been generally kept from assuming leadership roles in the traditional organizations, often acquired a prime responsibility in these new social movements. Two decades of authoritarianism thus created a nuclearization of the forms of organization and an explosion in their numbers. They, of course, had to operate under the severe constraints that a repressive environment, lack of resources, and lack of communications implied.

4. *The role of the Catholic church and of international organizations.* For the church, this role was reinforced by the explicit mandate to focus on poverty established at the Catholic Bishops' Conferences of Medellin (1968) and Puebla (1969). Strong ideological currents present in the church at the time included liberation theology and the philosophy of Paulo Freire on the role of education for social liberation (Annis 1987a). The church was active in promoting grassroots organizations. Base ecclesiastic communities reached 100,000 in Brazil and had a key role in the restoration of democracy. Other institutions which played an important role in the diffusion of grassroots organizations include the Alliance for Progress which, in the 1963 Punta del Este Charter, established the Community Development movement; international NGOs and the Peace Corps, which offered resources, political protection, and the experience of the U. S. civil rights movement; and the World Bank, which promoted the concept of integrated rural development in the international assistance community after 1973.

These new social movements promote a wide variety of causes and interests. First and foremost, they are directed at very pragmatic pursuits to improve the welfare of their constituency. Their general common goal has been described by Heller (1981) as the promotion of "radical necessities": autonomy, decentralization, the atomization of power, the promotion of liberty and of a new morality, environmental protection, and democracy. In economic terms, these movements have the dual purpose of reducing transactions costs within the organization and of acting externally as pressure groups to influence legislation and access to public goods and services to the benefit of their members. These new social movements also reinforce the traditional forms of grassroots organizations, particularly among ethnic groups. Together, they provide a new basis on which rural development efforts can be implemented.

In Mexico, emergence of the new social movements has been key in successful instances of breaking the traditional deadlock between official (government-controlled) and independent (opposition) organizations. After 1980, new social movements have often allowed a pragmatic convergence between these two types of organizations and thus the opening of a political space for organized groups to negotiate with government (Fox and Gordillo 1988). This new departure thus creates a unique opportunity to initiate a distinct phase of rural development projects, with a division of labor between the state responding to pressures from the social movements for a favorable policy context and the delivery of public goods and services, and new social movements assuming the leadership of project initiatives at the grassroots level.

Return to Democracy Within the Context of Economic Crisis

It was, of course, the economic crisis itself which delegitimized the authoritarian governments that happened to be in power in the late 1970s when it struck in all the Latin American economies. The return to formal democracy thus occurred in the very special context of governments unable to seek legitimation through pork-barrel politics and the handing down of welfare programs in exchange for submission because of austerity imposed by stabilization programs. This was in direct opposition to not only the long history of Latin American governance, but also to the handling of government during the bonanza years of debt accumulation and commodity export booms when a significant share of the foreign exchange inflows was captured by government. In the 1970s, political lobbying was directed at appropriating a share of the government's windfall gains. Rural development programs were often mounted top down, like the Mexican SAM, to allow the peasantry to gain a due share of these public rents (Schejtman 1988).

Returning to democracy in the context of the economic crisis thus has two important implications for rural development, one economic and the other political:

1. *Decentralization and self-help for budgetary efficiency.* The foreign sector crisis of the 1980s called for 1) stabilization policies to restore balance in the foreign account and to combat inflation using devaluation of the exchange rate and budgetary austerity and 2) structural adjustment programs to reallocate resources from the nontradable sectors of the economy, which had hypertrophied during the decade of Dutch disease (where the debt and commodity booms created a strong depreciation of the real exchange rate), to the tradable sectors. In order to mitigate the negative impact on economic growth, this was generally accompanied by: 1) liberalization to reduce the trade distortions

introduced by import substitution industrialization policies; 2) privatization to reduce the public budget cost of maintaining deficit public sector firms; 3) decentralization of public sector activities and quest for greater public sector efficiency in order to trim down significantly on public sector employment; and 4) promotion of self-help activities by grassroots organizations and the informal sector in order to pass to the private sector some of the functions previously fulfilled by the welfare state. For economic imperatives, the state is, according to this last reason, increasingly induced to stimulate grassroots organizations instead of looking at them as the traditional enemy to be held in check.

2. *Legitimation through political concessions.* Public sector austerity makes economic concessions by the state in exchange for subordination of the recipients of public rents increasingly difficult. As a result, preservation of the fledging democracies achieved by economic delegitimation of the authoritarian regimes cannot be made by economic means. This requires instead the making of political gestures, fundamentally greater access to political participation by the new actors and the new social movements (Tendler 1987; Fox and Gordillo 1988). This political opening creates a space for the negotiation of new democratic contracts. Rural development initiatives emerging from the grassroots thus can potentially find more receptive political support than in the past. In particular, cooperation between NGOs and grassroots organization, on the one hand, and public sector agencies, on the other, could find greater economic and political possibilities than in the past.

A note of caution is, however, in order. Return to democracy was often more formal than real. The historical highly unequal distribution of productive assets has been unaffected by the political changes as the land reforms promised in electoral platforms have as yet failed to materialize. And the economic structure still fails to incorporate in the modern sector the majority of the labor force. The economic crisis prevents any significant short-run transformation of the economic structure. And access to political power inevitably remains grounded on an untransformed distribution of economic power. Thus, while a new political space does exist for rural development and while recent economic adjustments can favor the informal sector, the road ahead remains one with significant battles to be fought if successful rural development is to become a reality.

From Integrated Projects to Public Programs and Grassroots Organizations?

Integrated rural development projects have been the main organizational form which government and international assistance initiatives have taken since the World Bank's entry into the field in 1973. In recent years, the concept of integrated projects has been heavily criticized. This is due to the enormous difficulties of mobilizing and coordinating the performance of a multiplicity of public agencies that have traditionally been managed as independent fiefdoms and have a weak organizational basis (de Janvry 1981; Leonard 1984). In addition, once a regional project is defined, it tends to develop far from the central political process and to rapidly lose public attention and budgetary support. The transformations in the economic and political context which we have described above open the possibility of replacing the integrated project approach by a combination of public programs and decentralized grassroots initiatives. By public programs, we mean national initiatives which are not confined to a particular rural development project. These public initiatives include: 1) the definition of a macro and sectoral policy framework favorable to rural development; 2) an institutional context that is not biased against peasants and the rural areas; and 3) the delivery of public goods and services such as infrastructure and technology that correspond to

an optimal level of investment in an undistorted economy. Clearly, these initiatives are the unique responsibility of the state, and they are complementary to private investment. An active role of the state thus remains key to the success of a rural development strategy.

At the project level, the traditional top-down integrated rural development approach should be replaced by a decentralized set of grassroots, self-help, and NGO initiatives. As we shall see in a number of case studies developed in Chapters 8 and 9, these organizations can be very successful at the level of the project itself, but their effectiveness is limited by precisely what public initiatives are supposed to provide them with: an appropriate economic context, availability of new technological alternatives for peasant farming systems, access to loanable funds, infrastructure and other public goods, public education, etc. If the state fulfills its functions through national programs, as suggested above, these factors, which have traditionally limited the effectiveness of grassroots initiatives, could be overcome. This approach should thus allow for a new partnership between public and private initiatives in rural development. Other critical factors which have been identified at the level of grassroots organizations remain to be overcome: the lack of access to productive assets for peasants and to resources for the NGOs, excessive territorial competition and lack of coordination among NGOs, time horizons which are too short, and lack of sufficient leadership talents. In addition, as projects evolve toward a combination of programs and decentralized institutions, careful monitoring will have to be done to make sure that mistakes serve as a source of learning and that new forms of exploitation are not introduced to replace the old ones.

Rural Development as Both a Possibility and a Necessity

We have argued that there exists –in the context of adjustment to the economic crisis and of the emergence of new social actors, new social movements, and a return to democracy– a new opportunity to launch successful rural development initiatives. This new opportunity creates the possibility of using rural development to stimulate agricultural growth and the economy of the rural areas and to reduce rural poverty. This possibility is also a necessity. While economic reactivation can be done without the peasants, by stimulating instead the medium and large farms of the agricultural sector, preservation of democracy requires the social incorporation of peasants and of other members of the informal sector. It is because we believe that many Latin American governments will recognize both this possibility and necessity that we will advance, in the rest of this study, the outlines of a multipronged strategy of rural development.

4

THE STRUCTURE AND DYNAMICS OF RURAL POVERTY

The Structure of Rural Poverty

Important progress has been made in the provision of basic needs and amenities to the rural areas during the decades of rapid economic growth. The 1960s and 1970s saw significant declines in infant mortality and improvements in life expectancy and adult literacy. It is notable, however, that the absolute number of rural poor has failed to decline. Income inequality has also either worsened or stayed at the same high level as in the 1960s. In addition, rural poverty remains much higher than urban poverty: While 26 percent of urban households were below the poverty line in the 1970s, this percentage was 62 percent for the rural areas (Altimir 1982). Food and Agriculture Organization estimates for the late 1970s and early 1980s show that the percentage of rural population characterized as being in absolute poverty remained staggeringly high, reaching percentages such as 65 in Ecuador, 67 in Colombia, 68 in Peru, 73 in Brazil, 78 in Haiti, and 85 in Bolivia (Table 4.1). For the 19 countries in Table 4.1, with a total population of 320 million around 1980, the average share of the population in the rural sector is 42 percent. Of these, an average of 57 percent is in absolute poverty. Even before the crisis of the 1980s, rural poverty evidently had long-run structural determinants that made its eradication resilient to economic growth.

The leading causes of rural poverty by far are the lack of access to sufficient land and low productivity of land use for a majority of the rural population. As Table 4.2 shows, there has been a continuous increase in the number of subfamily farms in almost every Latin American country. For the 17 countries for which data over time are available in Table 4.2, the number of small farms increased at the annual compound growth rate of 2.7 percent between 1950 and 1980. The average size of these farms declined from 2.1 hectares in 1950 to 1.9 hectares in 1980 (see Chapter 5), this in spite of the on-going land reform programs. It is on these small farms that the bulk of Latin American poverty is located. These data clearly reveal the deepening dualism of the agrarian structure and the incapacity of the rest of the economy to offer sufficient employment opportunities in other activities to allow resorption of this surplus into the rural labor force. This is indicated by the fact that the incidence of rural poverty is observed to increase with the share of the labor force in agriculture (de Janvry, Sadoulet, and Wilcox 1986). In the period of rapid economic growth, the main factor which helped to alleviate rural poverty (and made it fall as a share of the rural population) was, consequently, found outside of agriculture through labor absorption in other sectors of the economy. Commercial agriculture, by contrast, has been unable to create additional employment opportunities (in spite of significant economic growth) due to mechanization, land concentration, and substitution of crops by extensive livestock operations. The result is that employment in commercial agriculture increased by only 16 percent between 1960 and 1980, while the peasant sector increased by 41 percent; and migration, induced by successful economic growth, was not sufficient to reduce the share of the peasantry in total agricultural employment as it increased from 61percent in 1960 to 65 percent in 1980.

Table 4.1. Latin American Rural Poverty Estimates, 1975-1982

Country	Year	Total population	Proportion of rural population to total	Percentage of rural population in absolute poverty	Number of rural absolute poor
		millions	percent		millions
Argentina	1975	25.5	32.0	19	1.6
Brazil	1980	122.5	32.0	73	28.5
Bolivia	1975	4.9	69.6	85	2.9
Colombia	1980	26.0	30.0	67	5.2
Costa Rica	1980	2.3	56.0	34	0.4
Dominican Republic	1978	5.3	51.0	43	1.2
Ecuador	1980-1982	8.3	54.7	65	2.9
El Salvador	1978	4.5	59.4	32	0.9
Guatemala	1977	6.6	62.2	25	1.0
Haiti	1977	5.4	76.6	78	3.2
Honduras	1978	3.4	65.9	55	1.2
Jamaica	1982	2.1	50.0	51	0.6
Mexico	1975	64.0	59.0	49	18.5
Nicaragua	1978	2.6	47.9	19	0.2
Panama	1978	1.0	47.4	30	0.3
Paraguay	1978	3.0	61.2	50	0.9
Peru	1977	16.5	43.0	68	4.8
Trinidad and Tobago	1977	1.0	78.7	39	0.3
Venezuela	1980	15.0	20.0	56	1.7

Source: United Nations, FAO, data cited in Scott (1987).

With insufficient access to land, availability of off-farm sources of income is crucial in complementing household income on subfamily farms. As Table 4.3 shows, it is likely that as much as two-thirds of the farm households across Latin America derive more than half of their income from off-farm sources –principally wages from employment both in agriculture and in a wide variety of other activities, many of which are linked to agriculture through forward, backward, and final-consumption linkages. Any strategy aimed at reducing rural poverty must, therefore, address not only the issues of access to land (land reform and colonization schemes) and of labor productivity on family and subfamily farms (RDP), but also those of employment creation and the level of wages paid in agriculture and in rural nonagricultural activities.

Several important structural transformations of the rural labor market have occurred during the 1960s and 1970s and have generally not favored peasant households. Permanent workers have been increasingly displaced by temporary workers, worsening the problems of

Table 4.2. Number and Average of Subfamily and Family Farms, 1950-1980

Countries	Years	Farm size (ha)	Number of farms (thousands)	Percent of farms	Percent of area	Average farm size (ha)
Argentina	1947	0-25	161	3.6		
		25-100	128	29.1		
	1960	0-25	181	39.7	1	9.7
		25-100	127	27.9	4.4	60.5
	1969	0-25	226	42	0.9	8.9
		25-100				
Brazil	1950	0-10	711	34.4	1.3	4.3
		10-50	833	40.4	8.7	24.2
	1960	0-10	1499	44.9	2.4	4
		10-50	1219	36.5	11.4	23.4
	1970	0-10	2520	51.4	3.1	3.6
		10-50	1593	32.5	12.3	22.7
	1980	0-10	2599	50.4	2.5	3.5
		10-50	1625	31.5	10.2	22.9
Chile	1955	0-5	55.8	34.9	0.3	1.4
		5-20	39.1	24.4	1.5	10.5
	1965	0-5	123.7	48.8	0.7	1.7
		5-20	63.1	24.9	2.1	10.2
Colombia	1954	0-5	505	54.9	3.3	1.8
		5-20	245	26.6	8.5	9.6
	1960	0-5	757	62.5	4.5	1.6
		5-20	283	23.4	10	9.7
	1971	0-5	701	59.6	3.7	1.6
		5-20	278	23.6	8.7	9.7
Costa Rica	1950	0-5	17	39.5	2	2.2
		5-20	13	30.2	7.6	10.6
	1963	0-5	25	38.5	2	2.1
		5-20	19	29.2	7.5	10.6
	1973	0-5	35	45.5	1.9	1.7
		5-20	18	23.4	6	10.4
Dom. Republic	1950	0-5	210	76.4	13.7	1.5
		5-20	50	18.2	20.2	9.4
	1960	0-5	385	86.1	20.9	1.2
		5-20	47	10.5	18.5	8.9
	1971	0-5	235	77	12.9	1.5
		5-20	51	16.7	16.9	9.1
Ecuador	1954	0-5	251.7	73.1	7.2	1.7
		5-20	57.7	16.7	9.4	9.8
	1974	0-5	344.8	66.7	6.8	1.6
		5-20	96.3	18.6	11.8	9.7
El Salvador	1950	0-5	140.5	80.6	12.4	1.4
		5-20	22.9	13.2	14.4	9.6
	1961	0-5	193.3	85.2	15.6	1.3
		5-20	22.8	10.1	13.7	9.5
	1971	0-5	236.8	86.9	19.7	1.2
		5-20	24.7	9.1	16.4	9.7

Table 4.2. (Continued)

Countries	Years	Farm size (ha)	Number of farms (thousands)	Percent of farms	Percent of area	Average farm size (ha)
Guatemala	1950	0-7	308	88.4	14.4	1.7
		7-22	27	7.7	8.4	11.6
	1964	0-7	365	87.4	18.6	1.8
		7-22	37	8.9	13	12.1
	1979	0-7	469	88.2	16.5	1.5
		7-22	40	7.6	12.1	12.4
Honduras	1952	0-5	88	56.4	8.1	2.3
		5-20	47	30.1	18.4	9.8
	1974	0-5	125	64.1	9.1	1.9
		5-20	47	24.1	17.8	10
Mexico	1950	0-5	1004	72.6	0.9	1.4
		5-20	160	11.6	1.2	10.6
	1960	0-5	900	65.9	0.8	1.5
		5-20	197	14.4	1.1	9.8
	1970	0-5	609	59.7	0.6	1.4
		5-20	181	17.7	1.4	10.9
Nicaragua	1952	0-7	17.9	34.8	2.3	3
	1963	0-7	51.9	50.8	3.5	2.6
	1971	0-7	37.5	43.8	2.2	3.5
Panama	1950	.5-5	44.4	52	8.3	2.2
		5-20	29.1	34	22.3	8.9
	1961	.5-5	43.7	45.7	5.3	2.2
		5-20	33.0	34.5	17.2	9.4
	1971	.5-5	41.3	45.4	3.7	1.8
		5-20	27.8	30.5	13.1	9.5
	1981	.5-5	50.2	49.1	3.9	1.7
		5-20	28.0	27.4	12.1	9.6
Paraguay	1956	0-10	103.7	69.3	2.3	3.8
		10-50	38.2	25.5	3.9	17.2
	1961	0-10	112.3	69.8		
		10-50	40.2	25		
	1981	0-10	131.9	54.5	2.2	3.6
		10-50	92.5	38.3	7.5	17.7
Peru	1961	0-5	728	83.6	5.8	1.4
		5-20	107	12.3	5	8.3
	1972	0-5	1085	78	6.6	1.4
		5-20	232	16.7	8.7	8.8
Uruguay	1951	1-20	35.8	42	1.8	8.3
		20-100	27.3	32	7.5	46.4
	1961	1-20	39.8	45.8	1.9	8
		20-100	25.2	29	6.9	46.4
	1970	1-20	35.2	45.7	1.7	7.9
		20-100	21.0	27.2	5.9	46.2
	1980	1-20	28.1	41.2	1.4	8
		20-100	18.8	27.5	5.6	47.3
Venezuela	1950	0-5	126	53.7	1.2	2.1
		5-20	70	29.6	2.9	9.2
	1961	0-5	156	49.3	1.4	2.3
		5-20	99	31.4	3.5	9.1
	1971	0-5	126	43.8	1	2.1
		5-20	90	31.3	3.1	9.2

seasonal unemployment. As Table 4.4 shows, increasingly fewer agricultural workers are recruited from among subfamily farms and more from households radicated in rural towns and cities. At the same time, the share of rural EAP working in nonagricultural activities has also increased very rapidly and reached percentages such as 23 in Brazil, 16 in Ecuador, 41 in Costa Rica, and 42 in Mexico. This increasing integration between rural and urban labor markets has induced a convergence between agricultural and other wages in the 1960s and 1970s, with real agricultural wages rising faster than nonagricultural wages (Table 4.5). It has, however, reduced employment opportunities for marginal farmers who face town-based competitors (for example, the so-called *boias frias* in Brazil) with lower recruitment costs and with no conflicts in labor allocation at peak labor needs between the labor market and their own land plots (Klein 1984).

A convenient approach to the analysis of rural poverty and to the identification of programs to combat it consists of constructing social poverty maps which categorize the rural poor by access to land and by sources of income within each region. This was done for the Ecuadorean Sierra in Table 4.6, Cajamarca in Peru in Table 4.8, Puebla in Mexico in Table 4.9, and two communities near Patzcuaro in Mexico in Tables 4.10 and 4.11. The maps clearly show that rural poverty is highly differentiated and that, consequently, there cannot exist a unique approach to rural development to combat rural poverty. It also shows that there is no solution for a large majority of the rural poor from increased productivity of land use. In the Ecuadorean Sierra, for instance, on the 34 percent of farms of less than one hectare, agriculture generates only 19 percent of total household income; and the total of rural landless households and marginal farmers (farms less than one hectare) represents 43 percent of the total rural population. Similar patterns are observed in the other communities for which poverty maps are available. Therefore, programs must be directed toward the income-

Table 4.3. Sources of Income

Region	Year	Farm size	Share of farm households	Shares of income derived from:		
				Farm	Wages	Other
		hectare	percent		percent	
Cajamarca (Peru)	1973	0–3.5	72	23	50	27
Puebla (Mexico)	1970	0–4	71	32	58	11
Garcia Rovira (Colombia)	1972	0–4	20	79	16	5
South Bolivia	1977	0–5	67	38	62[a]	
Region IV (Chile)	1976	0–5	59	47	40	13
Vertentes (Brazil)	1979	0–10	16	–[b]	56	–
Northwest Altiplano (Guatemala)	1978	0–3.5	85	29	59	12
El Salvador	1975	0–2	71	64	27	9
Sierra (Ecuador)	1974	0–5	77	37	44	19
Coast (Ecuador)	1974	0–5	77	48	41	11
Chamula (Mexico)	1973	–	–	11	89[a]	

a Sum of wages and other.

b Dashes indicate no data available.

Source: De Janvry, Sadoulet and Wilcox (1986).

generating capacity of the particular portfolios of activities which characterize different categories of rural households; and they must look beyond the farm toward employment creation in rural-based nonfarm activities linked to agriculture.

Table 4.4. Structure of Employment of Economically Active Population (EAP) in Agricultural and Rural Sectors

Country	Year	Share of agricultural EAP of urban origin[a]	Share of rural EAP working in nonagriculture
		percent	
Brazil	1970	12.3	15.2
	1980	17.7	23.4
Pernambuco	1970	13.1	b
	1980	16.3	
São Paulo	1970	26.6	
	1980	38.0	
Costa Rica	1963	5.4	29.1
	1973	6.2	41.2
Ecuador	1962	6.5	19.3
	1974	6.8	26.4
Mexico	1970	23.8	23.1
	1980	26.0	42.4
Nicaragua	1963	11.0	12.8
	1971	11.7	20.0
Peru	1961	18.3	20.1
	1972	23.7	18.8
Puerto Rico	1960	6.5	56.1
	1970	11.8	80.8

a Census definition of urban is as follows: Brazil (unspecified); Costa Rica (administrative centers of cantons); Ecuador (capitals of provinces and cantons); Mexico (center of population with at least 2 500 inhabitants); Nicaragua (administrative centers of departments and **municipios**); Peru (populated centers with 100 or more occupied dwellings; Puerto Rico (center of population with at least 2 500 inhabitants and employed persons only).

b Blanks indicate no data available.

Source: De Janvry, Sadoulet and Wilcox (1986).

Table 4.7 extends the social poverty map for the Ecuadorean Sierra to account for social differentiation in access to government benefits. It shows that the benefits of education and health are received principally by the rural landless who live in rural towns. The benefits of agricultural development programs such as irrigation and reforestation are, by contrast, disproportionately captured by the largest farmers. It is only the expenditures on land reform and rural development which are received by the family farms (one to 20 hectares). However, even they hardly benefit the RDP subfamily farms (0 to one hectares) at all; and they only represent 3.1 percent of total government expenditures on rural benefits. These data clearly show the pervasive institutional biases that exist against peasants. Removing these biases will be one of the key conditions for successful rural development initiatives.

Economic Crisis and the Dynamics of Poverty

The economic crisis of the 1980s has also had highly differentiated effects on the welfare of rural households according to the quantity of assets they control and to the structure of their sources of income. Rising food prices due to real exchange rates appreciation; falling employment opportunities, particularly in the nontradable sectors (construction and services); and sharply falling real wages in all sectors of the economy have had devastating

Table 4.5. Average Annual Growth Rates in Real Agricultural and Nonagricultural Wages, Latin America, 1965-1984

Country	Level of wage	Agriculture		Nonagriculture	
		1965-1980	1980-1984	1965-1980	1980-1984
		percent			
Argentina	Average	−2.3	a	−2.4	
Brazil	Average	3.5	− 4.3	1.4	− 9.2
Chile	Minimum	2.0	− 0.6	−3.3	− 6.6
Colombia	Average	3.3	− 1.2	0.2	4.9
Costa Rica	Average	5.8	− 4.5	3.0	− 4.5
Ecuador	Minimum	1.1	−12.2	2.2	−14.5
El Salvador	Minimum	−1.1	−12.4	1.3	− 8.6
Guatemala	Average	−2.1	3.2	−4.0	− 1.0
Honduras	Minimum	0.2	1.1	−3.6	− 2.2
Mexico	Minimum	3.4	−12.4	2.5	−12.8
Panama	Minimum	2.0	− 0.6	−1.7	− 3.7
Paraguay	Minimum	−0.5	− 3.5	−2.7	− 3.5
Uruguay	Average	−0.7	− 6.5	−3.9	− 2.9
Weighted average[b]		2.5	− 6.0	0.7	− 8.4

a Blanks indicate no data available.

b Weighted by the agricultural and nonagricultural labor force, respectively.

Source: Calculated from wage data in de Janvry, Sadoulet and Wilcox (1986).

Table 4.6. Social Poverty Map for Ecuador Sierra and Rural Development Program Areas[a]

	Farm size (hectares)					
	Land-less	0.1 - 1	1 - 2	2 - 5	5 - 20	20+
			①			
	percent					
Households	14.6	28.1	14.7	16.9	15.9	9.8
Assets						
Farms	0.0	34.1	20.0	23.0	16.1	6.8
Land	0.0	1.7	3.1	8.0	17.6	69.6
Livestock	a	7.3	7.2	15.0	22.1	48.4
Family labor allocation						
Male, on farm	0.0	21.7	28.0	35.4	42.9	46.7
Female, on farm	0.0	46.8	48.5	44.9	44.3	44.1
Male, off farm	50.0	28.1	21.5	18.3	11.0	8.6
Sources of income						
Farm income	0.0	28.4	49.8	66.7	76.9	74.6
Agriculture	0.0	19.0 ②	43.7	62.0 ③	70.8	70.4
Handicrafts and trade		9.4	6.1	4.7	6.1	4.2
Wage income	85.9	53.8	45.1	26.6	11.4	4.6
Agriculture	32.6	20.2 ④	22.9	14.6	5.2	1.3
Nonagriculture	53.3	33.6	22.2	12.1	6.2	3.3
		⑤				
Other nonfarm income	14.1	17.8	5.1	6.7	11.7	20.8
	U.S. dollars, 1985					
Net income						
Per household	548	663	499	652	1 178	6 639
Per capita	103	125	96	123	186	1 236

a ① Colonization (Amazon and Coast) and land reform (Sierra).
② Household-oriented rural development.
③ Farm-oriented rural development.
④ Employment creation and labor market rationalization.
⑤ Rural linkages.

b Blanks indicate no data available.

Sources: IFAD, "Special Programming Mission to Ecuador," preliminary draft (Rome: International Fund for Agricultural Development, 1987).

effects, not only on the urban poor but also on rural households who are net buyers of food and highly dependent on the availability of off-farm employment.

Table 4.5 shows how agricultural wages, which had registered steady real gains between 1965 and 1980 in a majority of the Latin American countries, fell sharply and systematically across all countries except Colombia between 1980 and 1984. For Latin America as a whole, real wages declined during the crisis at the average annual rate of 6 percent in agriculture and 8.4 percent in nonagriculture. In the latter, the largest fall was in the nontradable sector (construction and services), which had offered important off-farm sources of income for the landless and marginal farmers during the years of economic boom.

Small net-selling farmers, by contrast, have often been able to benefit from adjustment in the terms of trade (e.g., Peru), provided the price gains have not been captured by merchants through rising marketing margins (which has commonly been the case, for example in Ecuador). Since the production technology of small farmers is less intensive in capital (and hence in credit) and in imported inputs than that of larger farmers, the former are potentially the ones who could have benefited most from adjustment.

As Table 4.6 and the other social poverty maps show, however, they constitute only a small fraction of the rural poor. Yet, it is this improvement in their terms of trade that gives the possibility of successfully organizing the farm-oriented RDPs analyzed in Chapter 8.

Welfare losses due to falling real incomes for the landless and marginal farmers have been compounded by falling expenditures on public goods and services for the rural areas as stabilization policies severely restricted fiscal outlays. Between 1981 and 1984, public expenditures on health fell in real terms by 5 percent in Costa Rica, 14 percent in Peru, 16 percent in Chile, 10 percent in Brazil, 22 percent in Venezuela, and 30 percent in Uruguay (Scott 1988).

While household-level data are still largely not available to obtain a detailed characterization of the impact of the economic crisis on rural welfare and while different

Table 4.7. Social Poverty Map for Ecuador Sierra: Per Capita Imputed Government Benefits (U.S. dollars per year)

Government programs	Rural landless	Farm sizes			
		0–1	1.5	5–20	20+
		hectares			
Education	91.5	17.2	25.0	16.8	26.4
Health	34.4	0.8	1.5	2.3	8.3
Irrigation	0.0	0.4	2.0	3.7	35.3
Reforestation and others	28.5	4.9	9.5	8.2	159.2
Land reform	0.0	0.4	2.0	2.4	1.3
Rural development	0.0	0.8	3.9	4.5	0.0
Total	154.4	24.5	43.9	37.9	230.5

Source: Kouwenaar 1986.

countries have responded markedly differently to the economic crisis, we can safely conclude that the rural landless and small net-buying farmers have been particularly adversely affected. Because they already were the poorest group in Latin American society, they are, at the moment, the target group most in need of an effective investment strategy to reduce rural poverty.

Table 4.8. Social Poverty Map for Cajamarca, Peru, 1973

	Farm size (hectares)				
	Land-less	0.25-3.5	3.5-11	11-30	30-100
	percent				
Households	13.3	59.0	16.9	7.7	3.1
Assets					
Land	0.5	17.3	21.7	27.2	33.3
Oxen	3.1	47.1	23.1	18.5	8.2
Capital goods	3.8	42.0	24.7	19.9	9.6
Total assets	5.4	35.4	20.6	20.8	17.8
Family labor allocation					
Male, on farm	65	73	79		a
Female, on farm	35	27	21		
Sources of income					
Farm income					
Agriculture	1.0	10.0	19.6 ③	42.0	26.1
Animals	18.8	10.0	27.0	24.4	62.1
Handicrafts & processing	9.3 ②	7.3	4.2	2.3	0.8
Trade	10.3	12.5	10.4	3.6	3.3
Wage income	55.5	48.6 ④	23.5	11.4	5.7
Other nonfarm income					
Remittances, rentals	5.1	10.9 ⑤	15.3	16.3	2.0
	U.S. dollars, 1973				
Net income					
Per household	165	138	179	292	356
Per capita	30	25	29	45	45

a Blanks indicate no data available.

Sources: C.D. Deere, "The Development of Capitalism in Agriculture and the Division of Labor by Sex: A Study of the Northern Peruvian Sierra," Ph.D. dissertation (Berkeley, California: Department of Agricultural and Resource Economics, University of California, 1978).

Table 4.9. Poverty Map for Puebla, Mexico, 1970

Household types	Wage earners	Very poor peasants	Peasant workers	Poor peasants	Family farms	Business farms
			hectares			
Range of farm sizes	0-4	0-2	0-4	2-4	4-8	8+
Average farm size	1.5	1.4	2.2	2.9	6.5	15.7
			percent			
Households	9.3	20.9	12.6	27.5	25.3	4.4
Assets						
Land	4	7	7	21	43	18
Machinery	2.1	4.6	16.3	16.6	25.9	34.5
Animals	6.0	12.8	7.0	22.6	37.3	14.3
Total assets	4.4	9.4	11.3	18.4	32.2	24.3
Sources of income						
Farm income						
Agriculture	16	22	23	38	52	58
Animals	2	3	6	8 ③	13	7
Trade	0	18 ②	0	12	3	18
Wage income	82	57 ④	69	42	32	9
Other income	0	0	2	0	0	8
			U.S. dollars, 1970			
Net income						
Per household	360	271	629	402	675	1 975
Per capita	63	44	116	61	87	298

Source: C. Benito, "Rural Development in Pueblo: A minimum Package Approach," unpublished manuscript (Berkeley, California: Department of Agricultural and Resource Economics, University of California, 1975).

Table 4.10. Poverty Map for Patzcuaro Region, Mexico, 1982

	Landless	Small holders	Large holders
		percent	
Households	22.2	47.2	30.6
Assets			
Capital	8.9	31.2	59.9
Sources of income			
Farm income	26.4	63.5 ③	72.2
Wage income			
Agriculture	12.1 ④	1.9	0.4
Mexico migration	31.1 ⑤	14.4	11.0
U. S. migration	30.4	20.2	16.4
		U.S. dollars, 1982	
Net income			
Per capita	207	365	333

Source: I. Adelman, E. Taylor, and S. Vogel, "Life in a Mexican Village: A SAM Perspective" (Berkeley, California: Department of Agricultural and Resource Economics, University of California, June, 1987).

Table 4.11. Social Poverty Map for the Lake Patzcuaro Region, Michoacan, Mexico*

INCOME	FARM SIZE (hectares)[1] 0.5-5	5.1-8	8.1-12	> 12
	Percent			
Households	25	26	36	13
Sources of income				
Farm income	55.5	51.7	62.1	78.0
Crops	31.0	29.4	38.6	41.0
Livestock[2]	14.8	17.0	16.8	29.0
Other on-farm	9.7	5.3	6.7	8.0
Wage income	40.0	43.0	32.0	14.0
Agriculture	5.5	9.5	10.0	1.6
Nonagriculture	12.0	11.2	6.2	2.3
Children	22.5	22.3	15.8	10.1
Small business	4.5	5.3	5.9	8.0
Gross income (estimate)				
Per household[3]				
Mexican pesos (1 000s)	608.4	535.5	503.4	1 177.6
1/86 dollars[4]	1 521	1 338	1 258	2 944
6/86 dollars[5]	1 067	939	883	2 066

* From field survey of "ejidatarios", small private land-holders and sharecroppers from 16 communities in eight municipalities, 1986. Stratefied random sample = 154 farm households.

1 Farm size = "owned" area plus area rented in for share-cropping, so that farm size is always > zero. sharecropping, including 5 landless households.

2 Income from the sale of animals and byproducts.

3 Estimated gross **median** income. Total sample median income: $ 597 681 pesos = US$ 1 494 (1/86), US$ 1 048 (6/86).

4 January 1986 exchange rate, US$ 1 = 400 pesos, harvest time.

5 June 1986 exchange rate, US$ 1 = 570 pesos, using average forward selling date for maize.

Source: Robin Marsh, Ph.D. dissertation, in progress, Food Research Institute Stanford University, 1988.

5

THE ECONOMIC IMPORTANCE OF PEASANTS

We have seen, in the previous chapter, that rural poverty remains extreme in Latin America in spite of three decades of successful economic growth. This suggests that there are structural determinants to poverty which are such that economic growth alone is unlikely to offer a solution. Rural development interventions will, consequently, be necessary if poverty is to be reduced and not merely displaced to the urban areas.

We will argue, in the next chapter, that there are ample opportunities to organize rural development projects as economically viable social projects, and not merely as welfare programs. This is due to both the special context that characterizes agriculture in the 1980s and to a correct accounting of the benefits created by successful rural development projects. Before we show this, however, we need to establish the economic importance of peasants as agricultural producers and to observe how their position has changed over time, which is our purpose in this chapter.

Numerical Importance of the Peasantry

Over the last 30 years, the share of the agricultural economically active population (EAP), in total EAP, has fallen in every Latin American country with the exception of Haiti (de Janvry, Sadoulet, and Wilcox 1986). For Latin America as a whole, this share has decreased from 54 percent in 1950 to 32 percent in 1980 (Table 5.1). In spite of this rapid decline, the size of the peasant sector has increased in almost every country in both absolute number and in share of agricultural EAP. For Latin America as a whole, the number of peasants has increased by 44 percent between 1950 and 1980. As a share of agricultural EAP, the peasant EAP has increased from 61 percent in 1950 to 65 percent in 1980. In commercial agriculture, by contrast, EAP has increased by only 19 percent over the same 30 years, indicating the importance of laborsaving technological change and of the substitution of labor-intensive crops by labor-extensive livestock in the process of modernization of Latin American agriculture. The result has been to accumulate surplus labor in the peasantry and to displace marginality towards the urban traditional sector. As Table 5.1 reports, the ratio of urban traditional EAP to peasant EAP has increased from 38 percent in 1950 to 84 percent in 1980.

De Janvry, Sadoulet, and Wilcox (1986) have shown that the size of the peasant sector tends to vary countercyclically with the economy. When the economy grows rapidly, migration pull factors attract peasant EAP towards the urban areas and the growth rate of the peasantry is reduced. When the economy slows down, the peasantry serves as a refuge sector for surplus population and its growth rate increases. The size of the peasantry is, consequently, not an indicator of its ability to compete with commercial agriculture. It is an

Table 5.1. Numerical Importance of the Peasantry in Latin America[a]

	Units	1950	1960	1970	1980
Total population	million	146.8	202.0	265.0	336.5
Agricultural EAP	–	27.8	31.8	34.5	34.7
Agricultural EAP/total EAP	percent	53.7	48.7	41.7	31.7
Peasant EAP	million	18.2	18.5	22.1	26.1
Peasant EAP/total EAP	percent	34.3	29.1	27.0	23.0
Peasant EAP/agricultural EAP	–	60.7	60.5	63.7	65.1
Urban traditional EAP/total EAP	–	13.1	15.6	16.9	19.3
Urban traditional EAP/peasant EAP	–	38.2	53.6	62.5	83.9

a "Peasantry" is defined as workers on own account and nonpaid family members, excluding professionals and technicians. "Urban traditional" includes workers on own account and nonpaid family members in nonagricultural activities, excluding professionals and technicians, and domestic services.

Source: Shares of EAP in traditional agriculture and in traditional urban in PREALC, **Mercado de Trabajo en Cifras, 1950-80** (Geneva: International Labor Organization, 1982).

indicator of both the lack of sufficient economic growth and of the structural failure of economic growth, in agriculture especially, to create enough employment opportunities to retain the rural population.

One possible hypothesis to explain the developmental dynamic of peasants is that there are two subsets in the peasantry with markedly contrasted dynamics. Subfamily peasant households (to use CIDA's terminology and definition, which correspond to the ability of a farm to employ less than the full family) are the ones who act as a refuge sector and whose numbers vary countercyclically with the economy. These peasant households are highly semiproletarianized and, consequently, rely heavily on off-farm sources of income, on wage labor most particularly. Solution to their poverty must be found through greater access to land (land reform and colonization), through improved employment opportunities, or through the introduction of nonagricultural activities in their households or small rural communities.

Family farms, by contrast, can become capitalized (Lehman 1982; Archetti and Stolen 1979) and have enough productive resources to eventually compete effectively with commercial farms, provided the institutional context is not too severely biased against them. This is the group where farm-oriented rural development programs can have a significant impact on both production and welfare. Due to the fundamental role of effective demand on their levels of production, this sector would be largely demand-led and its size would vary cyclically with the rest of the economy. When the urban economy does well, the incomes which it creates in the popular classes generate an expanding effective demand for the wage goods which family farmers produce. The engine of these peasants' welfare is thus the level of effective demand for wage goods in the economy. And their level of welfare is the image of that of the urban Table 5.1 population. We now provide evidence on the contrasted importance of subfamily and family farms and on their relative dynamics.

Control of Assets by Subfamily and Family Farms

It is clear that any typology of farms that tries to contrast subfamily to family and to commercial farms on the basis of size is a very rough first approximation. Land is not homogenized for quality differentials (except in Chile). Placing farm size boundaries between farm households which are net sellers of family labor (subfamily farms) and net buyers of labor (commercial farms) is not only difficult to establish in general, but leaves the definition of a family farms as one that is neither of the former two. We have no way of resolving this problem here and will use a size definition of the three types of farms which adapts to what is generally accepted to be the size of each of the three farm types in each country.

Starting with the subfamily farms, Table 5.2 shows that the number and area of subfamily farms have increased in almost every country. For Latin America as a whole, we estimate that the average annual growth rate in the number of farms during the last 30 years has been 2.7 percent, while the average annual growth rate in the area in subfamily farms has been 2.3 percent. The result is that the average farm size has decreased from 2.1 hectares in 1950 to 1.9 hectares in 1980, an annual decline of -0.4 percent. Subfamily farm households are thus increasingly squeezed on a declining land base, forcing them to rely more and more on off-farm sources of income.

Table 5.3 gives similar data for family farms. Between 1950 and 1980, the area in family farms has increased at exactly the same average annual rate as that in subfamily farms, 2.3 percent. Their number has, however, not increased as rapidly as that of subfamily farms, and their average area has, consequently, stayed nearly constant at 17 hectares. This contrast supports the idea that the subfamily sector is a refuge sector that absorbs the welfare cost of developmental failures in the economy at large while the family farm sector is able to at least defend the *status quo* in terms of access to assets.

Role of the Peasantry in Agricultural Production

The data in Table 5.4 give the share of peasant agriculture in crop and livestock production for six Latin American countries around 1980. The definition of peasant is the same as that of the above subfamily and family farm households combined. We see that peasant production is, indeed, very important in both food and cash crops. On the average for the six countries, it is 40 percent for crops and livestock, 41 percent for coffee, and 33 percent for cocoa. In Bolivia and Perú, more than half of crop and livestock production originates in the peasantry.

As the Latin American economies and agricultures have grown rapidly during the 1970s, have the two categories of peasants been able to maintain their shares of domestic agricultural production? We use, in Tables 5.5 and 5.6, the 1970 and 1980 agricultural censuses for Brazil and Uruguay, the only two countries for which comparable census data over time are available to us, to answer this question. The data show that peasants, in both the subfamily and family categories, have rapidly lost their shares of domestic agricultural production in virtually every crop.

In Brazil, with the exception of cassava, subfamily and family farms have lost production shares in every crop between 1970 and 1980. Using area to weight production shares, the subfamily farms' percentage share of crop production has declined from 18.6 in 1970 to 13.9 in 1980, a fall of 25.3 percent. For the family farms, the decline has been smaller. Their share

Table 5.2. Change in Average Farm Size, Subfamily (SF) Farms, 1950-1980

Country	Size range hectares	Earliest census			Latest census		Average annual growth rate		
		Year	Number of farms thousands	Average size hectares	Year	Number of farms thousands	Farm size	Number of farms percent	Area in farms
Brazil	0-10	1950	711	4.3	1980	2 599	−0.68	4.4	3.7
Chile	0-5	1955	56	1.4	1965	124	1.96	8.3	10.3
Colombia	0-5	1954	505	1.8	1971	701	−0.69	1.9	1.2
Costa Rica	0-5	1950	17	2.2	1973	35	−1.11	3.2	2.1
Dominican Republic	0-5	1950	210	1.5	1971	235	0.0	0.5	0.5
Ecuador	0-5	1954	252	1.7	1974	345	−0.52	1.6	1.1
El Salvador	0-5	1950	140	1.4	1971	237	−0.73	2.5	1.8
Guatemala	0-7	1950	308	1.7	1979	469	−0.43	1.4	1.0
Honduras	0-5	1952	88	2.3	1974	125	−0.86	1.6	0.7
Mexico	0-5	1950	1 004	1.4	1970	609	0.0	−2.5	−2.5
Nicaragua	0-7	1952	18	3.0	1963	52	−1.29	10.1	8.8
Panama	0.5-5	1950	44	2.2	1981	50	−0.83	0.4	−0.4
Paraguay	0.10	1956	104	3.8	1981	132	−0.21	1.0	0.8
Peru	0-5	1961	728	1.4	1972	1 085	0.0	3.7	3.7
Uruguay	1-20	1951	36	8.3	1980	35	−0.13	−0.1	−0.2
Venezuela	0-5	1950	126	2.1	1971	126	0.0	0.0	0.0
Latin America[1]			4 347	2.1					2.3

1 Average annual growth rate in number of SF farms = 2.7 percent.
Average annual growth rate in average size of SF farms = −0.41 percent.
Predicted average size of SF farms, 1980 = 1.89 hectares.

Sources: **Agricultural Census,** various years.

Table 5.3. Change in Average Farm Size, Family (F) Farms, 1950-1980

Country	Size range hectares	Earliest census			Latest census		Average annual growth rate		
		Year	Number of farms thousands	Average size hectares	Year	Number of farms thousands	Farm size	Number of farms percent	Area in farms
Brazil	10-50	1950	833	24.2	1980	1 625	−0.2	2.3	2.1
Chile	2-20	1955	39	10.5	1965	63	−0.3	4.9	4.6
Colombia	5-20	1954	245	9.6	1971	278	0.1	0.7	0.8
Costa Rica	5-20	1950	13	10.6	1973	18	−0.1	1.4	1.3
Dominican Republic	5-20	1950	50	9.4	1971	51	−0.2	0.1	−0.1
Ecuador	5-20	1954	58	9.8	1974	96	−0.1	2.6	2.5
El Savador	5-20	1950	23	9.6	1971	25	0.0	0.4	0.4
Guatemala	7-22	1950	27	11.6	1979	40	0.2	1.4	1.6
Honduras	5-20	1952	47	9.8	1974	47	0.1	0.0	0.1
Mexico	5-20	1950	160	10.6	1970	181	0.1	0.6	0.7
Nicaragua	7-14	1952	9	9.2	1963	13	0.0	3.4	3.4
Panama	5-20	1950	29	8.9	1981	28	0.2	−0.1	0.1
Paraguay	10-50	1956	38	17.2	1981	92	0.1	3.6	3.7
Peru	5-20	1961	107	8.3	1972	232	0.5	7.3	7.8
Uruguay	20-100	1951	27	46.4	1980	19	0.1	−1.2	−1.1
Venezuela	5-20	1950	70	9.2	1971	90	0.0	1.2	1.2
Latin America[1]			1 775	17.2					2.3

1 Average annual growth rate in number of F farms = 2.4 percent.
Average annual growth rate in average size of F farms = 0.06 percent.
Predicted average size of F farms, 1980 = 16.9 hectares.

Sources: **Agricultural Census,** various years.

in crop production fell from 35.1 percent in 1970 to 30.7 percent in 1980, a fall of 12.5 percent. It is the large farms, with sizes above 50 hectares, which have increased their share of crop production from 46.3 to 55.4 percent. The same occurred with livestock: The shares of subfamily and family farms fell, while that of the large farms increased from 79.4 to 83.3 percent.

In Uruguay, the loss in share of production for the subfamily and family farms was similar to Brazil. It declined in every crop, falling for the total of all crops from 7.2 percent in 1970 to 5.6 percent in 1980, a decline of 22.2 percent. For the family farms, the decline was from 17.5 percent in 1970 to 14.4 percent in 1980, a decline of 17.7 percent. In livestock, both categories of peasants lost production shares, while large farmers increased their share from 92 to 93.2 percent.

Clearly, this loss in production share by peasants would need to be confirmed in other countries before being extrapolated to all of Latin America. The two countries for which two consecutive censuses are available do support the view that 1) peasants still have an important share of total crop production (44.6 percent in Brazil in 1980 and 20 percent in Uruguay); 2) this share has been declining rapidly in the 1970s, and this particularly in the activities where production growth has been most dynamic; and 3) the loss in share has been greater for the subfamily farms than for the family farms. These observations make the point, once again, that successful agricultural growth does not imply successful rural development. For the latter to occur, long-standing antipeasant biases in the access to institutions need to removed, underinvestment in public goods for peasants needs to be corrected, and the full benefit derived from investment in rural development programs needs to be accounted for by internalizing the positive externalities created by rural development and transfering to peasants, under the form of subsidies, part of these external gains. We turn, in the following chapter, to an analysis of the economics of investment in rural development.

Table 5.4. Share of Peasant Agriculture in Crop and Livestock Production For Selected Latin American Countries, Circa 1980

Selected countries	Coffee	Cocoa	Crops and livestock
	Percent of total production		
Bolivia	75.0	a	80.0
Brazil	40.3	32.8	39.6
Chile			37.8
Colombia	29.5		44.1
Mexico	53.8	45.9	46.9
Peru	54.8	67.5	54.9
Latin America[b]	41.0	33.0	40.0

a Blanks indicate no data available.

b Only for countries included in this table.

Source: ECLA/FAO (1986).

Table 5.5. Brazil: Shares of Total Production by Farm Size, 1970 and 1980.

Year and farm size (hectares)	Products										
	Wheat	Rice	Millet	Cassava	Sugar cane	Cotton	Soya Beans		Oranges	Coffee	Cattle
	Percent of total production										
1970											
0-10	5.6	19.5	19.9	34.5	4.1	21.0	14.5	32.9	16.1	9.6	4.7
10-50	31.2	23.8	44.2	44.0	11.8	37.2	46.3	40.4	32.1	29.4	15.9
50+	63.2	56.7	35.9	21.5	84.1	41.8	39.2	26.7	51.8	61.0	79.4
1980											
0-10	2.1	13.3	14.8	37.9	1.8	15.4	4.1	27.0	6.1	9.9	3.7
10-50	29.3	14.5	41.0	40.0	7.8	37.8	29.3	39.3	23.9	30.4	13.0
50+	68.6	72.2	44.2	22.1	90.4	46.8	66.6	33.7	70.0	59.7	83.3

Sources: **Agricultural Census,** 1970 and 1980.

Table 5.6. Uruguay: Shares of Total Production by Farm Size, 1970 and 1980.

Year and farm size (hectares)	Products							
	Wheat	Rice	Maize	Sorghum	Potatoes	Sunflowers	Oranges	Cattle
	Percent of total production							
1970								
1-20	1.6	0.0	22.8	0.4	35.0	0.7	24.9	2.0
20-100	12.2	4.8	38.0	6.3	35.8	9.5	25.6	6.0
100+	86.2	95.2	39.2	93.3	29.2	89.8	49.5	92.0
1980								
1-20	0.5	0.0	20.2	0.4	24.4	0.4	10.5	1.4
20-100	7.7	2.7	36.5	5.8	30.7	8.3	20.6	5.4
100+	91.8	97.3	43.3	93.8	44.9	91.3	68.9	93.2

Sources: **Agricultural Census,** 1970 and 1980.

6

THE ECONOMICS OF INVESTMENT IN RURAL DEVELOPMENT

Rural development can be looked at as either a social investment, able to compete with alternative social projects, or as a welfare act. During the 1970s, the decade of Dutch disease (with unfavorable terms of trade for agriculture and plentiful public budgets), rural development had all too often been looked at as a welfare gesture toward the rural poor made in order to compensate them for unfavorable prices and to give them access to their due share of public revenues. Even though it had many remarkable components, the Sistema Alimentario Mexicano (SAM) illustrates this approach. It was introduced at the peak of the oil and debt booms when the terms of trade for peasant agriculture were highly unfavorable due to a vastly depreciated real exchange rate and when the Mexican treasury was flooded with foreign revenues. The end of the oil and debt booms also marked the end of the SAM program.

With improved economic incentives to agriculture due to appreciation of the real exchange rate in the 1980s and, as may be expected after industrialized countries' agricultural protectionism is reduced, the reactivation of agriculture points up rural development as a socially profitable investment which is an integral part of a strategy of agricultural development. The border between socially profitable and welfare projects can thus be displaced in favor of the former. We argue, in this section, that the realm of socially profitable projects can be further extended if the historical constraints on rural development were lifted, and if the accounting of the externalities which these projects create is properly done and these externalities sufficiently internalized to make the projects privately profitable.

The constraints which lead to underinvestment in rural development come from a long-standing bias in the allocation of public revenues to public goods for peasants and in their access to public institutions. Redemocratization of many Latin American countries in the 1980s creates a new opportunity to challenge the social rationale of the economic cost created by these constraints. The externalities which RDPs create take the form of intersectoral and final demand linkages effects, ecological effects, and social effects. If these effects are properly accounted for, even though some are clearly very difficult to quantify, the social internal rate of return of many RDPs can compare favorably with that of other public projects. Furthermore, if part of the net social gains which positive externalities create are taxed to subsidize households in adopting RDP recommendations, projects can be made individually profitable for the households involved, thus creating the necessary incentives for adoption.

Privately Profitable RDPs

For RDPs to introduce new opportunities which are privately profitable in a given macroeconomic context,[1] they must permit removal of a set of constraints which were preventing the households from adjusting from one equilibrium to another or from ever reaching a situation of equilibrium. The first situation would, for instance, occur in the context of changes in the terms of trade due to stabilization policies (such as provoked by the debt crisis or by the end of an oil or commodity boom) and the consequent need for structural adjustment; the second is the ancestral condition of Latin American peasants, marginalized from equal access to public goods and public institutions.

Underinvestment in public goods for peasants may come from the existence of transactions cost or from the adverse result of collective action. This contrasted origin of underinvestment has markedly different implications for the political economy of remedial RDPs. If it is due to transactions costs, such as an overall underinvestment in public goods, elimination of this disequilibrium creates net social gains that can be beneficial for all after proper compensations. Investing in removing these constraints should thus not be the source of major social conflicts, even if the benefits are not equally distributed in the end. This is not the case if underinvestment in public goods for peasants has its origins in rent-seeking activities with results adverse to them. In this case, distributional struggles are involved, and enough political power will have to be mobilized in favor of RDPs to lead to resource reallocation toward them –a more difficult proposition.

RDPs as compensating for disequilibria can be looked at as having their origins in two types of situations: underinvestment in public goods and constrained access to markets and institutions.

Underinvestment in Public Goods for Peasants

The two most important forms of underinvestment in public goods which can be relaxed by RDPs and which have proved to create conditions for private profitability are agricultural research and infrastructure.

It is well known that there has been a notable bias in the allocation of public funds to agricultural research away from the types of farming systems which peasants use and the crops which they produce. This is due to a variety of reasons that include 1) the difficulty of performing farming systems research (FSR), since it has to address simultaneously a large number of objectives and of combinations of activities; 2) the low benefit/cost ratios due to the high location and household specificity of particular farming systems; and 3) the lack of effective small farmers' lobbies to raise and stabilize public resources for FSR. In Latin America, a number of examples of successful technological innovations exist that have served as the basis for privately profitable RDPs. The success of several of the Integrated Rural Development (IRD) programs in Colombia, for instance in Antioquia, has been due to the effective role of the Colombian Agricultural Research Institute (ICA) in FSR. In Chile

1 Private profitability will clearly not hold in a macroeconomic context that is seriously biased against agriculture. Appropriate macropolicies (and especially exchange-rate policies) are necessary conditions for successful agricultural and rural development. This has been extensively discussed in the literature by, for example, Lipton (1977) and the World Bank (1978a, b).

(CET), Honduras (CATIE), and the Dominican Republic (Plan Sierra), highly profitable small-scale food production farming systems have been devised based on a combination of traditional knowledge and modern scientific innovations in the farmers' fields.

Public investment in infrastructure accessible to peasants has also proved to be a necessary condition to make private investment in peasant agriculture profitable. Most particularly, investment in small water projects has served to significantly relax the land constraints on small farmers. Small-scale irrigation projects of both the Ministry of Agriculture and an NGO like Central Ecuatoriana de Servicios Agricolas (CESA) in Tungurahua, Ecuador, have brought remarkable economic success to the communities benefited. Infrastructure investments have often been made through food-for-work donations of the World Food Program, complemented with the appropriate capital goods and managerial assistance. This approach to public work programs has proved to be highly successful among ethnic communities of the Altiplano, where a strong tradition of communal labor still prevails. Access roads to isolated communities with potential comparative advantages are also a key determinant of profitable private investment in these regions. The PIDER program in Mexico has thus had a strong focus toward investment in roads for the marginal areas of peasant concentration.

Constrained Access to Institutions

The most important constraints on small farmers are in their access to additional resources (especially land) and to credit, information, technology, and markets (especially for products, new inputs, and insurance). Because these constraints have been more effective on them than on commercial farmers, their shadow prices are often higher in the farms of the former than of the latter. If RDPs are successful in relaxing these constraints, they often can insure high private profitability. Since the constraints originate in market failures, they can be removed either by creating the missing markets or by institutional innovations through which access to these factors is provided.

It is clear that some of the most successful RDPs have been the ones that have been able to serve as vehicles for access to additional resources for land-constrained small farmers. This has been the main thrust of the POLONORESTE project in Brazil, which has, through private land development agencies, permitted colonization of new frontier land (Lacroix 1985). A recent evaluation of the integrated RDPs in Colombia similarly shows that projects have been more successful when they have helped peasants increase the land under cultivation or when they have focused on households with larger holdings, less resource scarcity, and greater security of tenure (Valencia González 1982). These observations demonstrate the obvious fact that the more RDPs approximate what redistributive land reform was supposed to achieve, the greater their likelihood of success.

The pioneer Puebla RDP in Mexico has proved to be successful, in spite of failing to generate technological innovations, because it created an institutional innovation in access to credit (Redclift 1983). Small farmers, previously marginalized from access to institutional credit, were organized in "solidarity groups" to collectively obtain loans with the land title of a single group member as the only collateral requirement. Access to credit, in turn, permitted adoption of locally known high-yielding variety and fertilizer technology. Those farmers who previously had access to credit were not significantly benefited by Plan Puebla. The RDP in El Palmar, Colombia, was also relatively unsuccessful in introducing new technologies and mainly benefited peasants by giving them access to abundant low-cost credit and, through that credit, to fertilizers, pesticides, and improved seeds (Reinhardt 1987). In Ecuador, credit

can be obtained by organized peasant communities from a special section of the Central Bank, FODERUMA, with the signatures of community officials and of Ministry of Agriculture technicians as the only guarantees, without collateral requirements. The rate of devolution of these loans has proved astonishingly high, especially if distributed to women. Finally, projects, such as the Caqueza RDP in Colombia, have attacked through contractual arrangement the market failure in insurance for peasant crops. Through a scheme of "share risk," peasants pay only for modern inputs, with a premium, if yields are above the average level with traditional technology. If the tendency to underreport yields can be held in check –another transactions cost– and management costs are not excessive, this institution can be effective in inducing less risk-averse behavior toward modern technology among peasants.

Finally, access to the production of new products, particularly labor-intensive export crops, has been at the basis of some of the most successful RDPs. This generally requires access to both new technologies and new markets. In many situations, this has been insured through vertical contracts with multinational agribusiness firms or through marketing cooperatives. Institutional innovations of this type have emerged in the production of vegetables for exports in Guatemala (Von Braun, Hotchkiss, and Immink, forthcoming) and in fruit production for exports in Chile (ETA, San Felipe).

Widespread experiences with RDPs have thus shown that, when these projects are directed at correcting disequilibria in the level of investment in public goods accessible to peasants and at relaxing constraints in their access to factors of production, private profitability can eventually be insured. The necessary condition for successful adoption of project recommendations and for sustainability and replicability of projects is thus attained at the level of the project itself.

Additionally, there exist projects that are not profitable for the households involved, but that are socially profitable because of the externalities they create. These externalities can be due to linkage effects, ecological effects, and social effects. We analyze them in the following section.

Projects that Create Externalities

Linkage Externalities

There are types of RDPs that create strong external effects in the rest of the economy through backward, forward, and final demand linkages. Thus, the social accounting of these projects –at social prices and with all positive externalities duly internalized– can make them profitable social investments even if they are not profitable for the individual households involved.

If the supply of specific sectors of the economy is demand-constrained, the backward and the final demand linkages effects unleashed by a project that creates these demands can be accountable as external effects. The recent studies of agricultural demand-led industrialization (ADLI) by Mellor and Lele (1973) and by Adelman (1984) pertain to this category of projects. In those, it is shown that a reallocation of public investment away from either import substitution industries protected by tariffs or subsidized export industries toward small and medium farms, together with productivity growth in agriculture, create agricultural incomes which increase the demand for industrial mass consumption goods. The result can be a higher growth rate, less poverty, and a more equitable distribution of income. If

adoption of productivity-enhancing technologies by peasant households were not profitable for them at market prices, part of the net social gains which the growth strategy creates could be taxed to subsidize their adoption.

If, by contrast, the supply of specific sectors of the economy is constrained by the level of agricultural supply, it is the forward linkages of agriculture that create positive externalities. This is particularly relevant for RDPs located in regions with considerable resource immobility and high transportation costs so that the cost of relaxing the agricultural supply constraint by trade is too high. In Plan Sierra in the Dominican Republic, resuming the rational exploitation of forests permitted reactivation of a highly labor-intensive local furniture industry. In the south of Ecuador, the RDPs of CREA in Cuenca have effectively stimulated cheese manufacturing through milk production, fruit processing through the expansion of orchards, and weaving through the raising of sheep. Here again, the social benefits derived in the forward industries could, if necessary, be partially taxed to subsidize the production of supply-constrained agricultural raw materials.

The calculus of the optimum taxes and subsidies involved with RDPs that generate linkage externalities is illustrated with Latin American data in Table 6.1. We contrast the private and the social benefits from three activities that could be promoted by RDPs: The horizontal expansion of cassava production though slash-and-burn, the vertical expansion of cassava

Table 6.1. Optimum Tax and Subsidy to Internalize Linkage Externalities, Latin America

Activity per hectare	Units	Cassava		Forestry (reforestation)		
		Horizontal expansion by Slash and burn	Adoption of fertilizers	Discount rates (percent)		
				2	5	8
Change in gross output	U.S. $/hectare	965	165	1 096	438	203
Change in costs	U.S. $/hectare	725	152	764	689	654
Private rate of return	percent	33	9	44	−36	−69
Forward linkage multiplier		1.09	1.09	1.92	1.92	1.92
Change in total output	U.S. $/hectare	1 052	180	2 105	842	389
Social rate of return	percent	45	18	176	22	−40
Maximum possible tax	U.S. $/hectare	87	15	1 009	403	186
Minimum subsidy needed	U.S. $/hectare	0	0	0	251	451
Rural development projects feasible						
Without subsidy		Yes	Yes	Yes	No	No
With subsidy		Not needed	Not needed	Not needed	Yes	No

Sources: For cassava: J. Ashby, "The Social Ecology of Soil Erosion," **Rural Sociology** Vol. 50, No. 3 (1985) pp. 377-396.

For forestry: P. Thege, Swedforest Consulting A.B., Danderyd, Sweden.

production through the adoption of fertilizers, and the reforestation of idle land. We see that the two cassava projects are privately profitable and, consequently, do not need subsidies to be successful. The forward linkage effects created by cassava production are small (1.09), as only minimal processing is involved, and the social rates of return are, consequently, also positive but not much larger than the private rates. The private profitability of reforestation depends on the rate of discount at which the project is evaluated. At a low discount rate of 2 percent, reforestation is privately profitable and does not require subsidization. Because the forward linkage effect of forestry is very large (1.92), as wood products serve as inputs for many industries such as furniture and construction, the social rate of return is significantly higher. At a discount rate of 5 percent, reforestation is not privately profitable. The external effect is, however, sufficiently large that it is possible to tax some of the external gains to subsidize reforestation in order to make it privately profitable. At a discount rate of 8 percent, however, reforestation is both privately and socially unprofitable. Consequently, there does not exist a scheme of taxes and subsidies that could make reforestation privately profitable. These examples serve to illustrate the fact that the field of application of privately profitable RDPs can be extended through partial taxation and subsidies, like in the above case where the rate of discount in reforestation projects is 5 percent.

Many of the activities linked to agriculture through backward, forward, and final demand linkages can be produced in small-scale, labor-intensive, decentralized industries located in the rural areas and with low import content. Particularly, if rural areas have captive resources (regional surplus labor), regional linkage effects will permit valorization of resources with zero national opportunity cost. If agricultural resources are, in addition, in limited availability relative to the population, promotion of nonagricultural activities linked to agriculture is likely to be the only viable strategy to reduce regional poverty, just as there is, in this case, no solution to rural poverty in agriculture alone.

Ecological Externalities

A typical situation across Latin America is one where poor peasants practice an ecologically destructive agriculture high in the watersheds while large commercial farms are located on irrigated flatlands in the valleys below. Because of the severe land constraint which they face in attempting to generate their subsistence needs, peasant households must mine the soil and create considerable soil erosion. Sedimentation, in turn, accumulates in the water reservoirs behind dams, thus compromising the hydroelectrical and irrigation programs for the lower parts of water basins. In a situation where the opportunity cost of oil and food imports has sharply increased with stabilization policies forced by the debt crisis, this externality created by peasant poverty is increasingly costly. Many countries, such as Ecuador, Colombia, and the Dominican Republic, have found that dam construction was often uneconomical as long as soil erosion by peasants in the watersheds continued unabated because of the excessively short useful life of the projects.

The ecological externalities created by the failure of rural development can be the surest way of generating national financing for RDPs. The social value of water for downstream users determines the "price" of a cubic meter of sediments in the reservoirs (Southgate 1986). This, in turn, determines the maximum subsidy that society should be willing to transfer to peasants in order to induce them to adopt soil conservation practices such as reforestation, contour farming and terracing, and organic practices like mulching and soil-covering crop mixes. If the maximum tax that downstream water users are willing to pay (per cubic meter of foregone sediments) is larger than the minimum subsidy necessary to make privately profitable the adoption of soil conservation practices by peasant households (that will reduce

Table 6.2. Optimum Tax and Subsidy to Internalize Ecological Externalities, Plan Sierra, Dominican Republic

Activity	Sedimentation per hectare	Rate of sedimentation	Area	Sedimentation per activity	Number of farms	Sedimentation per farm	Gross value		Minimum subsidy to reforest	Maximum possible subsidy	
							Production	Sedimentation		Direct shadow value[a]	Full shadow value[b]
	1	2	3	4	5	6	7	8	9	10	11
	tons per hectare per year	hectares per ton per year	percent of total[c]	10^3 tons per year		tons per farm per year	pesos per hectare, 1984	pesos per ton		pesos per hectare	
Forest	0.07	14.0	49.7	9.3	d		47[e]	671	0	0	0
Secondary forest	0.07	14.0	21.2	4.0							
Pasture	1.80	0.56	17.0	81.8	4 500	18.2	141	78	94	69	104
Coffee	1.90	0.53	3.0	15.2	4 500	3.4	1 500	789	–[f]	–	–
Sisal	21.00	0.05	0.5	28.1	351	80.1	345	16	298	837	1 256
Food crops	33.00	0.03	3.2	282.3	15 000	18.8	685	21	638	1 317	1 976

a Direct shadow value of electricity only; equal to 40 pesos per ton of sediment.

b Full shadow value of water including electricity, irrigation, and their multipliers; equal to 60 pesos per ton of sedimentat.

c Total area = 293 350 hectares.

d Blanks indicate no data available.

e Present value with a five percent discount rate.

f Dashes indicate not applicable.

Sources: Cols. 1 and 2: Dianne E. Rocheleau, "An Ecological Analysis of Soil and Water Conservation in Hillslope Farming Systems: Plan Sierra, Dominican Republic," Doctoral Dissertation, University of Florida, Gainesville, 1984.

Cols. 3, 5, and 7: Plan Sierra Survey, Plan Sierra, Santiago, Dominican Republic, 1984.

Cols. 4, 6, 8, 9, 10 and 11: Calculated.

sedimentation by at least one cubic meter), then RDPs that internalize ecological externalities can be individually profitable. Such a scheme has been successfully implemented by the Cauca Valley Corporation in Colombia, an institution that controls both the upstream and downstream parts of the watershed. When the two parts of the watershed are not institutionally unitized, a tax on electricity and irrigation water must be levied downstream to be transfered to a regional RDP upstream that will, in turn, subsidize the adoption by peasants of soil conservation practices.

The data for Plan Sierra in the Dominican Republic presented in Table 6.2 illustrate the types of calculations that permit determination of the levels of subsidies that should be transferred to RDPs that produce ecological externalities. Sedimentation per hectare (column 1) shows that the most problematic activities in terms of external costs are, in decreasing order, food crops, sisal, coffee, pastures, and forests. Multiplying these data by the area planted in each of these activities gives the total sediment contribution of each. The greatest source of sedimentation is, by far, food crops, in spite of the very small area planted (3.2 percent of total area), followed by extensive livestock (pastures), sisal, and coffee, with forests as the best alternative for soil conservation. Using the gross value of production per hectare (column 7) as an approximation for net income to owner-operators per hectare, the data in column 8 give the private benefit of a ton of sediments for upstream users where the RDP is organized. The highest value of a ton of sediments is when they originate in coffee production followed by forestry.

We use, as a first approximation, data on the shadow value of sediments for the downstream areas of a watershed estimated by Southgate (1986) for Ecuador[2].

Measuring the direct use of water in hydroelectrical production only, the shadow value of a ton of sediments appears to be of the order of 40 pesos per ton of sediments. If the shadow value of water includes, in addition, its value for irrigation as well as all the downstream multipliers that both electricity and irrigation produce, the shadow value of water would easily be above 60 pesos per ton of sediments. The minimum subsidy to induce upstream producers to reforest is given in column 9 as the loss in income associated with shifting from the current activities into forest. The maximum subsidy which society is willing to pay is the shadow value of the reduction in sedimentation implied by each of these shifts. At a shadow price of water of 40 pesos (column 10), upstream producers of food crops and sisal should be subsidized to abandon these activities. It does not pay downstream water users to subsidize livestock producers into reforesting because the minimum subsidy necessary to make the shift individually profitable to producers is above the maximum socially possible subsidy. At the more realistic water-shadow price of 60 pesos (column 11), downstream users should subsidize not only food and sisal producers but also extensive livestock operators, to induce them to abandon these activities and shift to forestry. With the actual transfer of these subsidies, an RDP that promotes reforestation can make its recommendations privately profitable and thus acceptable for peasant households and farmers. Therefore, it significantly broadens the field of application of economically feasible RDPs.

Externalities created by ecologically destructive peasant practices induced by poverty are not confined to national boundaries. Overgrazing in ecologically fragile areas leads to desertification and to climatic changes. Deforestation in tropical forests leads to loss of

2 These are, consequently, highly preliminary calculations presented here as an ilustration of the reasoning involved in calculating optimum taxes and subsidies. Actual figures for Plan Sierra will appear in Blas Santos' Ph.D. dissertation, University of California at Berkeley, Department of Agricultural and Resource Economics, forthcoming.

species. These externalities are particularly difficult to "price" because their effects are geographically diffused and often long term. They are also difficult to tax because the institutions which produce them and bear their consequences are generally not related through common legal systems. Yet, they can often be a powerful argument to generate international aid for RDPs aimed at reducing these externalities and to make these projects individually profitable. The international community must be convinced that environmental protection requires, as a prerequisite, the eradication of rural poverty and, hence, the financing of RDPs.

Social Externalities

There are many situations where the social cost of poverty can be reduced by successful RDPs. This is what Wynn Owen (1966) had called "farm financed social welfare" in his classical article, "The Double Developmental Squeeze on Agriculture." This is the case both when a minimum subsistence level must be insured through welfare schemes and when the failure of rural development creates negative externalities through urban and international migration.

Where a floor to poverty is set by social welfare programs, the social cost of these programs can often be reduced by increasing the productivity of resource use by the poor themselves. This is, for instance, the case in Chile where guaranteed employment programs (the PEM and POJ) absorb some 20 percent of the active labor force in the rural areas. Since extension services have rarely focused on peasant farms, there typically exists a large productivity gap that can be captured on those farms, either by relaxing effective constraints or by modest subsidies to the adoption of modern inputs. While this calculation has, to our knowledge, not been made in the Latin American context, in the Appalachian regions of Kentucky this justification for RDPs has been shown to be highly socially profitable. Assisting technological change on small farms both reduces welfare costs and increases tax revenues. Even with highly conservative figures on the adoption of technological change induced by RDPs and with commercial discount rates, the social cost benefit ratio is found by Smith, Hall, and Simon (1984) to be significantly greater than one. In this case, a modest extension effort would imply that three-fifths of those receiving public assistance would become ineligible, and the cost of welfare assistance would be reduced by two-thirds. Clearly, this reasoning applies more powerfully in countries with a more developed welfare state. This is why it is the European countries that tend to have the most comprehensive and expensive schemes of subsidies to RDPs.

Even where welfare schemes do not exist, the failure of rural development creates negative externalities that can be internalized by successful RDPs. Urban overcrowding, social unrest, and illegal international emigration are all associated with rural poverty. It is well known that massive amounts of national and international resources have been mobilized in support of RDPs in response to these pressures. This ranges from the financing of RDPs in the "pacified" areas of El Salvador, to the concentration of IRD projects by the Colombian government in the areas of guerilla activity, and to the organization of community development programs in the areas of Sendero Luminoso warfare in Peru. Just like with other externalities, the theory is that subsidizing RDPs may be less costly for society than the costs imposed on it by the failure of rural development.

It is also important to recall that many of the benefits from social investments in rural areas are captured, through urban migration, by the other sectors of the economy. For instance, much of the benefits from investment in education are transferred out of agriculture through

the brain drain that comes with migration. The components of RDPs that increase human capital formation in the rural areas are thus also an important source of social externalities. They justify the financing of rural education out of a tax base levied in the urban areas that capture the benefits of the rural brain drain.

Finally, migration creates external diseconomies at both ends of the migratory process. In the emitting rural areas, the selective nature of migration implies loss of the best human resources and decapitalization (Lipton 1977). At the receiving end, surplus labor, congestion, and rising costs of infrastructure create negative externalities. This premature migration has mainly been induced by erroneous policies such as exchange rate overvaluation that have turned the terms of trade against agriculture and pushed labor out of agriculture (Schuh 1987). At the receiving end, capital-intensive industry, induced not only by exchange rate overvaluation *cum* protectionism but reinforced by credit subsidies and tax write-offs on capital investments, has reduced the labor absorption capacity of the modern sector. Removal of these policy distortions and public investment in RDPs to induce higher incomes in peasant agriculture and decentralization of industry to the rural areas are thus part of the economic calculus of socially bankable RDP.

The central thesis of this study is that RDPs must no longer be looked at as social welfare programs, but as socially bankable investments. A calculus of the economics of investment in rural development is still, however, woefully lacking. A serious conceptual and empirical effort urgently needs to be made on this topic.

7

OUTLINE OF A RURAL DEVELOPMENT STRATEGY

Starting from an analysis of the economic expansion of the 1960s and 1970s and of the adjustments to the crisis of the 1980s, a growth strategy that is centered on the role of agriculture can be spelled out. In this role, agriculture is not looked at as a source of economic surplus to be transferred to the urban-industrial sector, as it was during the periods of import-substitution industrialization and of Dutch disease created by the oil boom and/or the rapid accumulation of an external debt. On the contrary, we start from a situation where agriculture is able to retain and freely dispose of a large part of the surplus which it produces, a situation consistent with the effects on agriculture of the economic and structural adjustments to the economic crisis. The contributions of agriculture to economic growth are, consequently, markedly different in this strategy from those which the classical and neoclassical growth models of the 1960s and 1970s attributed to it (see Adelman 1984). The proposed contributions of agriculture are:

1. *The generation of foreign exchange through exports of agricultural products or the saving of foreign exchange through import substitution.* Foreign exchange availability is, in turn, a determinant of the rate of industrial growth by permitting the import of raw materials, capital equipment, and intermediate goods –a level of imports which tends to be particularly binding in the current context of foreign sector crisis.

2. *The cheapening of nontradable agricultural products and of tradables with prices maintained above international levels through government intervention.* Lowering the price of wage-goods can allow the simultaneous increase of real wages and reduction of nominal wages, that is, to increase the welfare of workers and to stimulate employment and growth in industry by lowering labor costs (Lele and Mellor 1981). The key instrument with which to induce this price effect is the diffusion of landsaving technological innovations.

3. *The generation of employment and the retention of EAP in agriculture or in the rural sector as opposed to the freeing of labor for industrial employment (neoclassical model), or the generation of a labor surplus in order to keep the real industrial wage low (classical model) (Jorgenson 1969).* Here, the main effect of employment creation in agriculture is to raise incomes and effective demand for agriculture itself, as well as for the nontradable sectors of the economy.

4. *The broadening of the domestic market for industry through the activation of linkage effects with agriculture.* While the forward and backward linkages of agricultural production are important, the most significant are the final-demand linkages that have their origin in the expenditure of agricultural incomes (Hirschman 1959). It is in that sense that retention by agriculture of a larger share of the surplus that it generates

(instead of its transfer to the urban-industrial sector) can serve to dynamize a sector of small industries located in the rural areas, with high labor intensity and low import content and with a level of economic activity that is basically demand-led.

In the context of adjustment to the economic crisis and of the limited options that it leaves to reactivate the economy, a strategy of economic development can be centered on the performance of agriculture, can attribute a meaningful productive role to peasants, and can capitalize on the growth and employment multipliers induced by the growth of agricultural incomes. The logic of this strategy and the manner in which it can serve to identify investment strategies to combat rural poverty is summarized in Figure 7.1.

On the side of agricultural supply, the two starting points are:

1. *A rising real exchange rate –a product of the adjustments to the economic crisis and, especially, of devaluation of the nominal exchange rate– which raises the price of tradable goods (most of agriculture) relative to the price of nontradable goods (construction, services, and some perishable agricultural products).* The terms of trade for agriculture benefit, in addition, from a reduction in industrial protectionism. Since the rate of interest and the prices of imported inputs rise, producers must switch their technologies and activities toward those which are more labor and natural resources intensive. For price signals to induce an investment response, inflation must also be brought under control.

2. *A rising productivity in agriculture through the diffusion of landsaving technological change backed by investments in irrigation, infrastructure, and public goods for the rural sector.* Given the current condition of austerity in public expenditures (one of the basic components of stabilization policies), these investments require giving explicit priority to the rural sector in the intersectoral allocation of the national budget and increasing the efficiency in management of public sector funds.

Implementation of these two entry points –equilibrium prices and technological change and investment in public goods– induces a result that has been observed in the last five years: an agricultural sector, lagging in prior decades, which has become the relatively most dynamic sector of the economy.

Agricultural development is not, however, synonymous with rural development. On the supply side, reactivation of agriculture must be complemented by the specific reactivation of peasant production in order for the proposed development strategy to be effective not only in accelerating economic growth but also in reducing rural poverty. Past experiences have shown that there exists a sector of the peasantry with sufficient access to productive resources to be highly competitive with medium and large farms under two conditions:

1. The numerous antipeasant biases, which exist in the rural institutions and in the functioning of the markets in which peasants operate, are eliminated. Strong biases do indeed exist, particularly in the access to credit, appropriate technology, information, irrigation and infrastructure, and other public goods and services. Markets are also clearly less favorable to peasant producers due to their weak bargaining power with merchants, lack of access to public sector marketing facilities, and nonexistence of marketing channels which they directly control.

2. RDPs, oriented at enhancing peasant production, are organized, and they identify and help remove the main bottlenecks to peasant competitiveness. Even in an unbiased

institutional context, these programs will continue to be necessary due to the large number of peasants to be serviced and their poor access to public services.

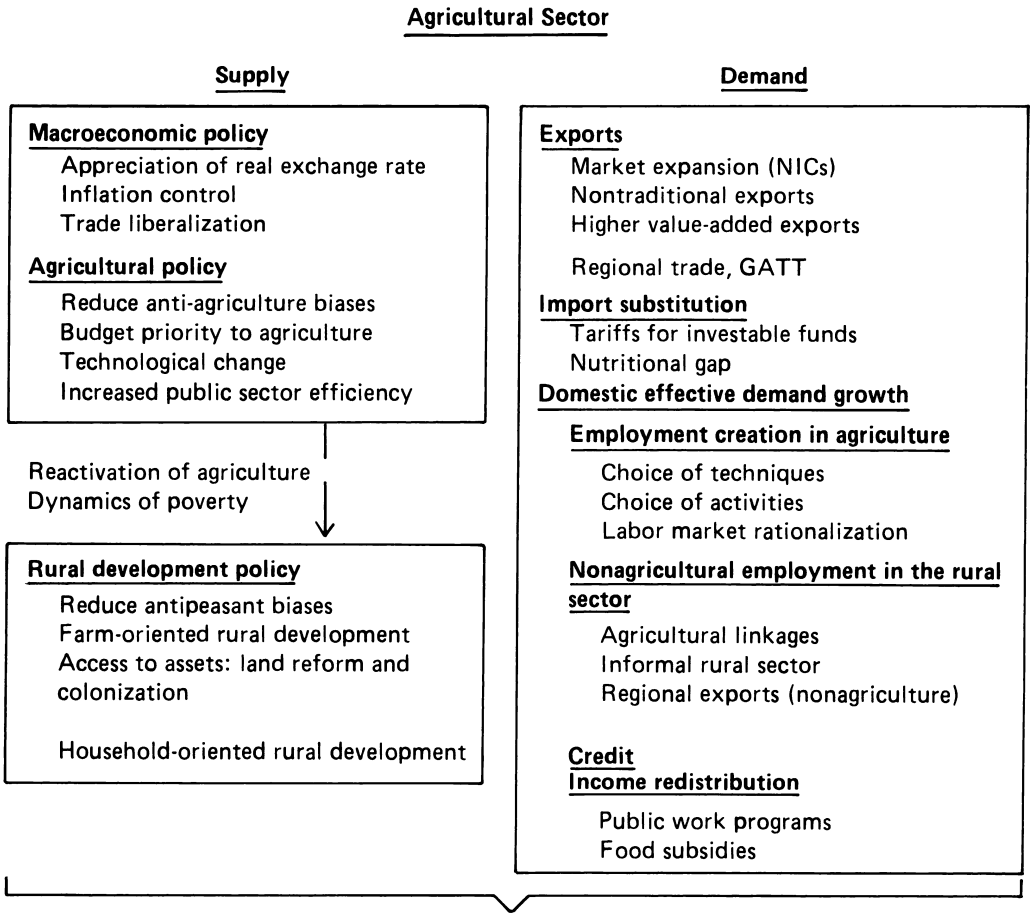

Fig. 7.1 Elements of a Strategy to Reduce Rural Poverty

In most countries during the 1960s and 1970s, as we saw in Chapter 5, the peasantry has lost ground in the share of the domestic market for the food products which it supplied. In order for peasants to benefit from a growing agriculture, it is essential that they maintain their share of the domestic market. Elimination of the antipeasant institutional biases and promotion of rural development are needed for that purpose. Given the fact that rural development must now occur in a context of improved real exchange rate, but of severe fiscal austerity, the style of RDPs must be markedly different from that which prevailed during the decade of oil boom and/or accumulation of external debt. During the boom of the 1970s, RDPs were fundamentally instruments to compensate for the depreciation of the real exchange rate and distribute to peasants their due share of the public rent. During the current adjustment to the crisis, rural development must 1) be seen as a productive social investment (an essential component of an economic strategy centered on agriculture and with an active participation in production by peasants) and not as a compensatory social welfare program; 2) be directed at reallocating resources in the small farm sector toward the production of tradable goods for either import substitution or exports; 3) promote the use of technologies with a low import content and low capital intensity; and 4) increase the efficiency of the public sector and, specifically, seek cheaper and more resource-efficient ways of organizing RDPs. Increased decentralization and participation are likely to be key for that purpose.

A rising agricultural supply must be accompanied by a simultaneous increase in effective demand (Figure 7.1). This is particularly essential for nontradable goods (which, consequently, have an inelastic demand) and for products with prices maintained above world market level and no further space for import substitution. If in these cases income effects do not shift demand, technological change leads to a falling gross sectoral income and to asset depreciation in the first case and to an increase in the fiscal cost of agricultural subsidies in the second.

While some peasant production is oriented at the export market, the bulk of the marketed surplus of peasants is directed toward the domestic food market. Expansion of this market depends upon the dynamism of the whole economy and, also, of incomes generated in the rural sector, which still harbors 34 percent of the total population and where the nutritional gap is particularly large. There exist programs for the rural sector which have the capacity of contributing simultaneously to the generation of incomes for the rural poor and expansion of the domestic market for peasant production. These programs include 1) the generation of employment in agriculture by eliminating the price distortions and the subsidies that induce the adoption of laborsaving machinery and the spread of grass-fed livestock at the expense of more labor-intensive crops; 2) the generation of higher farm incomes through greater access to land and water by means of land reform, irrigation, and colonization programs; 3) the generation of self-employment in activities developed within the farm that are complementary to agriculture, such as raising small animals, processing agricultural products, handicrafts, and trade; and 4) the generation of nonagricultural employment in the rural areas in small industries tied to agriculture through backward, forward, and final-demand linkages.

The heterogeneity of peasant agriculture and rural poverty has led us to identify, in the poverty maps of Chapter 5, five rural development strategies according to the access to land and the sources of income that characterize different social groups. In the following three chapters, we analyze in detail a number of case studies that illustrate each of these rural development strategies. Specifically, farm-oriented rural development programs are analyzed in Chapter 8, land reform and colonization schemes in the Appendix to Chapter 8, household-oriented rural development in Chapter 9, and the promotion of rural nonagricultural activities and employment creation in Chapter 10.

8

FARM-ORIENTED RURAL DEVELOPMENT

Introduction

In this chapter we will review several case studies of rural development efforts to increase land and labor productivity on small family-size farms in Latin America. We have selected cases that are generally considered "successful" even though not all of the components or activities achieved their objectives. The analysis focuses on lessons to be learned for replicability in the future.

There is no consensus on farm classification into family and subfamily categories as we saw in Chapters 5 and 6. Nevertheless, it is useful to look at farm size, cultivable area, and sources of income to identify the rural regions, communities, and households that are most likely to benefit from agricultural production projects and programs.

Food and Agricultural Organization (FAO) census data from 1970 and 1980 tell us that in Latin America there are approximately seven million farms with five hectares of land and under and another three million farms with between five and 20 hectares of land. In this chapter, we focus on those farm households in this group of 10 million that derive most of their gross income from farming and animal husbandry.

We have found that income from agriculture is positively correlated with farm size/cultivated area (Chapter 5, Tables 5.1 to 5.6), notwithstanding large variations in soil quality and water resources. On average, the larger the peasant farm the more likely it is that a majority of family labor will be used for on-farm activities rather than off-farm employment. Only where the opportunity cost of labor is very low, and migration is too costly, do peasants continue to exist on incomes generated from very small marginal plots. In general, these subfamily farm households are better served by "household-oriented projects" (see Chapter 9 for discussion).

We will see that farm-oriented rural development programs and projects are more likely to succeed when the initial assets of the target population are sufficient to warrant human and economic investment in agriculture as an "engine of growth." Within Latin America, that population may correspond to as many as four million farms, 12 million economically active peasants, and 30 million rural people (UCLA Statistical Abstract 1986) as potential direct beneficiaries. Indirect benefits from RDPs, reaching all sectors of the population, include 1) the generation of foreign exchange from increased export- and import-substitution production; 2) an increased supply of low-cost domestic foodstuffs, with the possibility to ensure the basic consumption needs of the growing sector of urban poor; 3) the generation of off-farm employment from backward, forward, and final demand linkages to agriculture; and 4) a decrease in the long-term ecological and social externalities that have resulted from resource abuse and neglect in the small-farm sector (see Chapter 6).

Lessons Learned from Farm-Oriented RDPs

Rural development efforts to raise agricultural productivity and income on small-family farms began in earnest following the major Latin American land reform movements of the 1960s and 1970s. Access to land through redistribution or colonization (see Appendix), and the generation of new landsaving technologies of the "Green Revolution" type, presented an opportunity to transform the upper peasantry into semicommercial farmers, with important benefits for national food production and for political peace in the countryside.

There has been an evolution in RDP objectives and methodologies as government ministries, multilateral lending institutions, and nongovernmental organizations have gained experience and learned what conditions and resources are basic for success. Analytical evaluation of past failures has been critical for this evolutionary process and has led to a proliferation of innovative approaches to farm-oriented RDPs, both as research and pilot efforts: community development, integrated rural development, experimental producer programs, crop diversification and commercialization programs, sustainable agriculture programs, farming systems research, cooperative production and marketing, grassroots-based self-management, and others.

What have we learned from these varied approaches? Basic lessons include:

1. The complex, heterogeneous characteristics of small-farm agriculture, not only as an economic activity but as a "way of life," determine that RDPs must use a *microregional systems approach* to technology generation and extension to ensure that resulting recommended practices are appropriate and profitable for the target population.

2. The inherent uncertainties of rainfed agriculture, and limited economic resources, lead most small farmers to be risk-wary; *strong research-extension-farmer linkages* are important to ensure that risk analysis is part of the research process, and farmer participation in technology generation and diffusion will greatly improve the chances of achieving high adoption rates.

3. Both 1) and 2) require that RDPs work with a *medium- to long-term outlook,* building on sequential activities within an overall strategy of "learning by doing." Success is enhanced when there is continuity in personnel over time, an active monitoring and evaluation unit, and the staff are local, competent, and highly motivated.

4. Technological advance is usually a necessary but very rarely a sufficient condition for RDP success; access to *complementary infrastructure and institutions* is essential to allow small farmers to fully benefit from RDPs: credit for working capital and longer term investments, nonformal education and technical assistance, roads and transportation, and warehouses and markets.

5. The RDPs, at the local or regional level, depend upon *favorable macroeconomic policies* in order to thrive and be sustainable in the long run. Unfavorable output/input terms of trade, inflation and price uncertainty, high interest rates, and institutionalized antipeasant biases in public resource allocation work as strong disincentives for farm-oriented rural development. Latin American governments facing fiscal austerity and recession must give explicit priority to RDPs to ensure a supportive macroeconomic environment.

6. Increasingly, RDPs are creating/promoting *rural organizations* as the most efficient vehicle for channeling credit and training services. Peasant organization is also an effective means for members to retain a larger portion of their marketable surplus and for demanding services and accountability from public institutions. Whether they take the form of producer associations, credit unions, cooperatives, or peasant unions, these organizations have the potential to "appropriate" RDP activities and move forward into new areas of development as project/program support is withdrawn. Grassroots organizations and self-management (*"autogestión"*) are especially relevant to projects covered in the next chapter on household-oriented rural development.

In the rest of this chapter, we will look at six examples of farm-oriented RDPs in Latin America and how they have contributed to our learning about the necessary conditions for success. The objective is not to evaluate these efforts but to extract from them positive elements that may be useful as "models" for future RDP initiatives. Their particular characteristics and achievements are summarized in Table 8.1.

Case Studies

Plan Puebla: Mexico

Plan Puebla (originally called Puebla Project) in Mexico was the first major effort in Latin America to bring Green Revolution (GR) technology to small farmers in a rainfed area. Its strategy has served as a model for regional rural development plans throughout Mexico and in various other developing countries whose experts have received training at the Center for Teaching, Research, and Training for Regional Agricultural Development (CEICADAR) in Puebla.

What first began in 1967 as a joint effort (funded by the Rockefeller Foundation) between the International Center for Maize and Wheat Improvement (CIMMYT) and the Graduate College of the Agricultural University of Chapingo (CP) evolved, after 1974, into a decade-long government/CP partnership which continues today to a limited extent. The longevity of Plan Puebla, with its unusual continuity in personnel, especially among the very competent and highly motivated "founding fathers" at CP, provides a unique opportunity to learn about the process of rural development among small farmers.

Much of what is taken for granted today about working with small farmers was not known or accepted in the early seventies when Plan Puebla staff members were dealing with these issues first hand, e.g., small farmers will adopt appropriate new practices irrespective of age, education, and farm size; heterogenous agroclimatic conditions require microspecific recommendations based on on-farm experimentation and validation; poor farmers require institutional support to adopt new practices, reduce risk, and ensure a market for their products; and rural development is most effective when farmer organizations play a leading role in the process. It is less important, therefore, to evaluate Plan Puebla for its particular achievements in the Puebla region than to understand the role it has played in redefining the concept of rural development in the last 15 years.

From the start, the basic objective of Plan Puebla was to increase maize production on a large number of small rainfed farms (average size equal to 2.5 ha) by adapting GR landsaving technologies to local conditions. Early on, there was a major setback when extensive agronomic research failed to develop a new maize variety that could compete favorably with

Table 8.1. Farm-oriented Rural Development Case Studies

Project Name	Implementing Agency	Source of Financing	Target Population	Main Objectives	Successful Components
Plan Puebla (Mexico)	Graduate Agricultural College (Chapingo), Ministry of Agriculture (SARH)	Rockefeller (1967-74), Mexican government (1974-present)	Sub-family and family farmers	Increase maize production and farm income	Bringing peasants and public institutions together; on-farm, microclimatic research; promoting peasant organization; long-term learning experience
IRD: El Palmar (Colombia)	Colombian government agencies, Coffee Federation, private banks	Colombian government, Coffee Federation, private banks	Sub-family and family farmers	"Technify" small farm production, increase farm income	Appropriate technological package; substantial linkage effects; transformation robust to macroeconomic changes
PRODERO (Honduras)	Honduran government agencies	Inter-American Development Bank, IFAD, Honduran government	Sub-family farmers, women's groups	Increase production of basic crops, diversification into cash crops, improve house-hold welfare	Two way communication between extensionists and farmers; low-cost, effective conservation innovations; employment creation through linkage effects
FMDR (Mexico)	Private-sector decentralized organization	Private endowment, fund-raising, international agency donations	"Mobilizable" stratum of the peasantry (family farmers)	Transformation of "upper" peasantry into small commercial farmers via capitalization and diversification	Provide family farmers with access to long-term credit; effective administration and technical assistance-bankable projects; bringing private sector into the rural development process
Consultores del Campo (Mexico)	Non-government local organization	International and binational agency donations, minimal self-financing	Sub-family and family farmers, rural communities	Promote optimization of production practices and social change through non-formal education	"Bottom up" technical assistance; effective non-formal education; design of alternative approach to "campesino development."
FSP/OFR: Caisan (Panama)	Agricultural Research Institute of Panama (IDIAP, CIMMYT	Government of Panama	Small maize producers	Generation and diffusion of appropriate technologies using FSP/OFP	Successful trial of FSP/OFR; expansion of project to national program scale; learning experience for FSP/OFR implementation worldwide

the local varieties, thus limiting the "newness" and impact of Plan Puebla recommendations. At the same time, it was an important and unexpected finding to discover the robustness of local seeds selected by farmers over many generations and that the productivity of these seeds could be substantially increased with improvements in cultivation methods and fertilization. The success of Plan Puebla was thus not in promoting technological innovations, but rather institutional innovations under the form of local organizations and access to credit.

Interpretations of existing data on adoption rates vary considerably (Diaz-Cisneros 1984; Gladwin 1977; Redclift 1983; Benito 1976; de Janvry 1981). However, it does seem clear that Plan Puebla's more than 800 on-farm experiments, translated into 56 different sets of recommendations, combined with innovative extension programs and, critically, access to credit, influenced directly and indirectly the farm practices of large numbers of small farmers. From regional surveys taken in 1967 and 1982, the average maize yield increased about 80 percent from 1.3 tons/hectare to 2.3 tons/hectare (3.2 tons/hectare for credit recipients using the complete package) (Diaz-Cisneros 1984). The impact on net income for the farm household has not been well documented, but in most cases was limited by the relatively small proportion of total household income derived from agriculture (less than 40 percent; see Chapter 4, Table 4.9). It thus benefited mainly family farms as opposed to subfamily farms.

Since 1982, the terms of trade for maize cultivation have deteriorated markedly (especially as compared with the SAM years, 1980-81), and whatever progress was made in maize productivity during the last 15 years is at risk, especially since the opportunity cost of labor in the Puebla region is quite high. However, farmers have responded to the "crisis" by organizing intercommunity associations (*La Cooperativa Chololan, Union de Ejidos El Porvenir*) that are sufficiently influential with local and state authorities to make their needs known and to push for appropriate solutions, such as better treatment and terms from lenders and insurance inspectors, water projects to diversify into horticulture, access to direct marketing in Puebla, etc. These organizations benefited greatly from prior experience in small credit solidarity groups, and their influence in the region stems, in large part, from the skills and exposure gained during their long association with Plan Puebla.

Another important outcome of Plan Puebla is a small research project directed by CP scientists since 1981 in Puebla and the state of Veracruz. The objectives and strategy of this project were formulated after working with farmers during Plan Puebla and were clearly influenced by its lack of success in making a larger impact on total net income, especially after 1982. The dual objective to promote farm diversification by integrating crop and livestock production and to raise labor productivity by means of "intermediate" mechanization responded to the need to increase the value of total farm production while decreasing the household's vulnerability to unfavorable macroeconomic conditions. The project strategy emphasizes a "systems approach" to technology generation with traditional agronomic practices used as a baseline for research.

In sum, Plan Puebla as a learning experience and as a trial strategy for small farm-oriented rural development has had important multiplier effects 1) through its associated research and training center, CEICADAR; 2) in promoting farmer organizations that have evolved and endured, and enjoy considerable influence with state authorities; 3) with various research project offspring, including internationally recognized research on crop and livestock integration; and, perhaps most importantly, 4) in redefining our thinking about the process of agricultural and rural development in small-farm regions.

IRD: El Palmar, Colombia

The strategy of IRD became very popular in Latin America during the 1970s and received considerable attention and support from international donors and banks. Similar to Plan Puebla in the overall objective to increase small-farm production with an "integrated" package of GR technology, credit, technical assistance, and supporting physical and social infrastructure, IRD projects have gone one step further in promoting the transformation of subsistence farmers into producers of commercial crops for export and urban markets. Small farmers would then enjoy the benefits of dynamic growth thus far monopolized by the large farm sector and would help resolve the growing food deficit problem in an increasingly urban Latin America.

The IRD strategy was implemented on a national scale in Colombia beginning in 1976 with funding from the World Bank, the Inter-American Development Bank, binational aid from Canada, and counterpart government funding. Within the small-farm sector, most projects were located in relatively high-potential areas in terms of natural resources, access to markets, and farmer receptivity to change.

Targeting the "upper strata" of the peasantry has been criticized for its diversion of scarce resources away from the poorest landholders and landless (Reinhardt 1983; Marsh 1983). However, it is clear that the risks involved in adopting IRD-type technological packages would be too high and costly for very marginal farmers or farmers with scarce labor resources. A different approach to resource development that encompasses total household income is more appropriate for this large sector of the peasantry.

A case study of the community El Palmar, located one hour from Cali in the Cauca Valley, was conducted in 1978-79 and 1983 as an example of an area that has had access to the government and private services associated with IRD projects without being an IRD site *per se* (Reinhardt 1983, 1988). This study analyzes the impact of agricultural transformation on small-farm output and income, including landless and "land-poor" households, and focuses in particular on some of the long-term effects of IRDPs that are often overlooked.

In the 1970s, after completion of the Cali-Buenaventura highway running through El Palmar, farmers were encouraged by favorable marketing conditions and access to credit and extension services to "technify" their farming systems. Traditional low-input cultivation of subsistence crops and coffee was gradually replaced by high-input vegetable production and modern coffee cultivation.

Most small farmers in El Palmar, including the "land poor," participated to a lesser or greater degree in the "technification" process with generally positive results. The new landsaving, labor-using techniques were well suited to farmer resources and, together with adequate credit, technical assistance, and markets, enhanced adoption and profitability. Even landless workers were able to gain from the transformation through sharecropping arrangements with landholders. Furthermore, there were notable backward, forward, and final demand linkage effects from the increase in agricultural output and income, bringing added services and employment to the El Palmar community (Reinhardt 1988, Chapter 6).

It is interesting to note that the economic "boom" in El Palmar was sustained even after the coffee boom of the seventies ended, prices began to decline, and production costs per hectare increased substantially with high inflation in the early 1980s. Apparently, the strong devaluation of the Colombian peso more than compensated for domestic inflation, so that

coffee cultivation remained profitable and urban demand for vegetables continued. Reinhardt (1988) concludes:

> "Commercial and technological development does not necessarily impoverish peasant households. On the contrary, this development can bring new resources into the peasant community to substitute for the declining land base and complement the growing labor force, as occurred in El Palmar."

Nevertheless, there are longer-term consequences to the process of agricultural modernization that were already manifest in 1983: loss in soil fertility, problems with insect resistance to pesticides, labor scarcity with the rise in the opportunity cost of farm labor, increased indebtedness from greater dependence on purchased inputs, and a decline in the productivity of traditional crops. Risk-averse farmers have responded by returning a portion of their land to traditional coffee cultivation and subsistence crops. This strategy of "selective adoption" allows small farmers to participate in high-income crop production at less risk than the profit-maximizing strategy of "full adoption."

The case study of El Palmar illustrates the conditions that are necessary for the successful transformation from traditional to modern agricultural production on small farms and the likely effects in terms of output, income, linkages, and long-term resource depletion. Those conditions include 1) diffusion of a technological package suitable for land-scarce family farms; 2) proximity to urban markets, adequate demand, and favorable prices; 3) availability of abundant, low-cost labor; 4) provision of IRD-type services: credit, technical assistance, warehouses, and transportation; and 5) for the landless, the option to engage in sharecropping. The IRDPs in Colombia that did not meet these conditions were generally unsuccessful (Reinhardt 1988:233-4).

Finally, the El Palmar experience affirms the importance of economic diversification and risk reduction for resource-poor farmers. Technological change aimed at maximizing income is not as well suited to small farmers as would be a transformation strategy based on longer term resource optimization. In fact, "technification" that involves heavy risk may do more harm than good when the consequences for the overall farming system are not adequately considered.

PRODERO: Honduras

The RDP for the Western Region of Honduras (PRODERO) is an example of a successful government-administered integrated rural development pilot program financed primarily with international agency loans. Although the first stage of the program (1981 to 1987) experienced considerable disruption from constant changes in top personnel and bureaucratic delays in fund disbursement, these problems were eventually overcome. Strong political interest in the program has encouraged planning for a second stage, with promises for continued international support.

PRODERO's targeted population is small farmers in the isolated, thus far neglected, western Honduran states of Copan, Ocotepeque, and Lempira. The majority of these farmers own less than five hectares of very marginal land and produce at levels far short of subsistence needs. The principal objective of the integrated credit, technical assistance, marketing, and infrastructure components is to increase yields for traditional crops, mainly maize and beans, to permit farmers to obtain a marketable surplus. In addition, an agricultural research program was established to develop microclimatic production strategies that include diversification into cash crops.

The main production innovations recommended to farmers are low-cost methods of soil conservation and fertilization that very effectively combat severe erosion problems. The result has been an increase in average maize yield of more than 300 percent, from 400 kilos/hectare to 1,400 kilos/hectare (El PRODERO 1987).

Key to this success is an extension program that fully incorporates farmer participation in the planning, demonstration, validation, and evaluation processes through collaborative work with producer organizations. Furthermore, PRODERO has engaged local farmers with leadership qualities to serve as extension assistants in the interest of promoting technological change from the "bottom up." Credit services and technical assistance are linked by requiring borrowers to participate in courses on social motivation and water and soil conservation and to engage in on-farm trials. The program has learned that, when these requirements are not enforced, the default rate increases markedly.

The agricultural research component of the program has been successful in developing new varieties for traditional crops and production recommendations for nontraditional crops; however, adoption by local farmers remains low. Inadequate collaboration between the research and extension components, marketing difficulties, and high economic and climatic risk are obstacles for achieving higher adoption rates of nontraditional production strategies (Schild 1986, v. 2, Chapter 3). These difficulties show the limits of farm-oriented rural development directed at subfamily farms.

PRODERO also includes features of household-oriented rural development. It has successfully managed a program offering credit and technical assistance to over one hundred womens' groups for income-generating activities and house and hygiene improvement. Beneficiaries also include landless workers employed in new agro-industries and workshops established with PRODERO credit lines. The manufacture of family-size silos has helped farmers to preserve and market grain surpluses year-round.

In sum, PRODERO is a positive example of a government effort to improve the welfare of small farmers in an isolated, marginal region at relatively low cost ($20 million). Perhaps the most outstanding feature of the program has been a willingness to sacrifice tight governmental control to permit a flexible strategy of "learning by doing." Decisions regarding specific objectives and implementation are left to the local staff to work out with farmers in a two-way learning process that continues to move PRODERO forward.

FMDR: Mexico

The Mexican Foundation for Rural Development (FMDR) is a private sector institution working in 17 Mexican states to promote increased productivity and income among the "mobilizable stratum" of the peasantry.

The FMDR is headed by a board of directors made up of businessmen and professionals and is managed by a director and staff in Mexico City and local coordinators and technical staff at the regional centers *(centrales de desarrollo)*. The employee total is approximately 200 (Thiesenhusen *et al.* 1987). The FMDR is financed mainly from interest earnings on the endowment established by its board members and from local fund-raising activities and partly from international donations. It is also heavily dependent upon the collaboration of the Mexican government as discussed below.

Ideologically, FMDR leaders conceive of the organization as an alternative to government rural sector programs with their reputation for being inefficient, corrupt, and unresponsive to

small farmers' needs. The idea has been to link the upper peasantry and entrepreneurs under the umbrella of a holistic model for rural development based on "socialized action that educates" –Basic Social Educational Program (BSEP). In practice, however, local staff have experienced considerable difficulty understanding and promoting the somewhat vague and esoteric social aspects of the model, giving priority to the implementation of concrete economic strategies.

In his analysis of this problem, Thiesenhusen questions the whole idea of searching for a national "model" for rural development, saying that "strong social differentiation and resource heterogeneity" in the countryside require "flexible manners of coping in pragmatic ways with individual problems." Nevertheless, the "charismatic, inspired leadership" of the FMDR founders, along with their long-term view of development, have been instrumental in recruiting "extremely able professionals whose integrity is unimpeachable" (Thiesenhusen *et al.* 1987:4, 251).

The FMDR works as an intermediary between commercial banks and small-farmer clients providing part of the required loan guarantee (collateral), credit supervision, and technical assistance. The credit program is dependent upon the collaboration of the government development fiduciary (FIRA) for covering 60 to 80 percent of the guarantee for FMDR-sponsored loans, as well as the costs of feasibility studies and technical assistance. Furthermore, FMDR relations with the private banking community have prospered, in large part because of government regulations that require all commercial banks to lend at least 2 percent of their portfolio to low-income producers. Therefore, although it is true that FMDR provides an alternative to farmers who are distrustful and dissatisfied with official credit agencies, it is also true that FMDR could not survive without public support for its programs.

The FMDR recommended "microprojects" for economic development are based on detailed regional studies that identify local resources, constraints, and aspirations. The objective is to enable farmers to move out of traditional maize cultivation into higher value activities: cash crops, improved livestock, dairy intensification, fruit cultivation, agro-processing, etc. Survey income data (Thiesenhusen *et al.* 1987) indicate that FMDR has been successful at helping upwardly mobile small-farmer communities to overcome stagnation and institutional biases and become incipient members of the rural "middle class." The clients who stand most to gain are those with the greatest human and physical assets initially, with the possibility to accept higher levels of risk and indebtedness.

Success in raising the productivity and income of poorer peasant communities has been limited to those few regional centers with peasants as board members *(Centros Campesinos).* Their grassroots input ensures an understanding of poor farmer circumstances and needs, for example, assistance with low-cost, low-risk innovations for maize intensification and crop/livestock integration. The long-term FMDR goal is for each regional center to become a *Centro Campesino* as peasant groups are gradually "weaned" from FMDR sponsorship.

In conclusion, we can say that FMDR provides an important and innovative example of a private sector initiative for farm-oriented rural development. By "betting on the winners," the program has achieved considerable economic success, enabling some better-off peasants to enter a new status of middle class producers.

Part of the success of FMDR can be attributed to the inspired leadership of its founders and highly capable and motivated local staff. Furthermore, FMDR has been able to partially fill the "development gap" left open by inadequate and ineffectual official programs and, at the

same time, take advantage of substantial government financial support. Finally, we have seen that linking peasants with entrepreneurs is useful for designing profit-maximizing economic strategies that work well for the "mobilizable stratum" of the peasantry. However, only when peasant leaders are brought into the planning process can we expect development programs to adequately reflect the circumstances and needs of the peasant majority.

Consultores del Campo, A.C.: Mexico

Consultores del Campo, A.C. (CC) is an NGO funded from international agency donations. It has worked on rural undevelopment in the region of Patzcuaro, Michoacan, since 1977 and, during a decade of gradual expansion, has reached some 50 rural communities with its varied agricultural programs. The CC founders view their methodology as an alternative approach to "campesino" development and hope that it will someday be incorporated into government programs on a national scale.

The objectives, strategies, and programs of the CC project have evolved from pure technical assistance to reflect an increasingly broader view of development needs. The current methodology stresses nonformal education in technical, social, and organizational understanding and skills for farmers, women, and youth.

After an intensive internal evaluation, CC coordinators became aware of the strong limits to raising farm productivity and income from maize production and that, in the modern world of complex institutional and market transactions, it is vital to combine a diversified economic portfolio with complementary social and organizational skills. It has been an enormous challenge to try to develop this understanding into a concrete strategy for action with extremely limited human and financial resources.

The most outstanding feature of the CC methodology is its practice of "campesinos teaching campesinos." The extension agents are all local small farmers chosen for their leadership qualities and agricultural abilities. These *técnicos* receive technical training and basic literacy, social, and economic education from the program coordinators. They are expected to carry out on-farm experiments in preparation for their work as extension agents in two to four communities in the vicinity of their home community. They receive a salary somewhat above the rural minimum; however, it is clear that their effectiveness in the field depends upon a high level of social motivation and dedication *(mística)*.

It would be remiss to discuss CC without mentioning its now famous initial contact with communities as purveyors of an innovative, low-cost method for *tuza* control (a rodent akin to the gopher). Having identified a production problem that was severe and common to many farmers in the region, the CC founders set upon the task of finding a solution and, after exhaustive trials, came up with a simple corn kernel/strychnine combination. Used properly, the poisonous bait is an effective control that will increase maize yields by over 30 percent per hectare on average.

This successful entry opened the way for further communication with the communities, both as technical farm advisors and as promoters of social change. Technical programs concentrated on raising productivity in maize and bean cultivation by "optimizing" traditional practices in combination with appropriate modern innovations. In fact, the recommendations offered by CC are only moderately different from the standard government package for the region (e.g., lower plant density, more phosphorus at planting,

greater use of organic fertilizers, use of less toxic pesticides, etc.). The greatest difference between the two programs has not been in the technical field but in their perceived effectiveness among the target communities.

In a survey of CC and Agricultural Ministry (SARH) extension agents (Marsh 1986), we found that, compared with SARH agents, CC *técnicos* attend fewer communities, spend a larger proportion of work time on "client" fields, spend less time collecting information and preparing reports, know a much higher percentage of clients by name (including family members), and perceive a higher degree of adoption of recommended technologies in the communities they serve. Furthermore, SARH extensionists demonstrated considerable concern that their job effectiveness is compromised by the overwhelmingly negative perceptions by farmers of the official agencies they serve. Not surprisingly, CC coordinators and *técnicos* benefit greatly from their independent status and from their bottom-up approach to working with small-farm households.

A random survey of 154 small-farm families from 16 different communities covered by CC and/or SARH programs (Marsh 1986) confirms these perceptions on the relative quality and reliability of technical assistance agents. Referring to SARH agents, the following comments were typical: "They impose their ideas on us, at our risk." "They only come when we're working with the Bank." "Their recommendations are costly and 'burn' the plants." In contrast, comments about CC agents were generally favorable: "He explains to us what he's already tried in his field." "He shows alot of interest in us." "We have improved our yields somewhat...we've seen the results."

Interestingly, however, the survey production data for sample farmers show little difference in maize/bean yields obtained in CC and SARH communities (maize only plots: 1,653 vs. 1,371 kilos/ha.; maize/bean plots: 1,615 vs. 1,677 kilos/ha. of maize; and 65 vs. 156 kilos/ha. of beans). That CC farmers obtained less than half the average bean yield of SARH farmers is particularly surprising in view of CC claims to great success in the area of pest control for beans. Further work with the data will shed greater light on these preliminary findings, but it is already clear that there is a split in the subjective perceptions and the objective results of the CC maize/bean production program.

The economic return to rainfed maize/bean cultivation in Mexico is very low, especially with the rather high opportunity cost of labor in the Patzcuaro region and high inflation in production costs and consumer goods. While refraining from abandoning this all-important subsistence and cultural activity, CC has diversified into other higher value production areas: new fodders, fruit cultivation, improved livestock, beekeeping, and handicraft and processing activities for womens' groups.

More importantly, CC is deeply involved in an effort to work with communities to establish more advanced forms of organization that promise greater influence with the dominant public and private forces in the region. Impressive achievements have already been made in the formation of over a dozen community "credit unions" that offer a low-cost credit alternative to the official lending programs. The CC hopes that in the future an intercommunity organization of credit unions can be formed to extend their economic potential and political influence (similar to organizations in the Plan Puebla region).

In sum, CC is a small but important example of a NGO farm-oriented rural development effort. We have learned that initially CC focused exclusively on bottom-up technical assistance and, after intensive internal evaluation, decided that the organization needed an overhaul in objectives and strategy. The decision to de-emphasize the technical aspects of

CC, and work instead on an overall strategy for community development, responds in part to the limited impact that a resource-poor NGO can make on rainfed farming productivity and net income. Rather, CC hopes to capitalize on its excellent communication with local communities, and its considerable skills in nonformal education, to facilitate peasant organization and self-management *(autogestión)*. Variations of this strategy are being designed, implemented, and evaluated by NGOs throughout Latin America, especially in situations where the terms of trade for peasant agriculture have deteriorated markedly.

On-Farm Research: Caisan, Panama

As a final case study, we have chosen a pilot project for training in the Farming Systems Perspective/On-Farm Research (FSP/OFR) methodology, carried out by the Institute for Agricultural Research of Panama (IDIAP) in coordination with CIMMYT, between 1978 and 1982.

The important methodological breakthrough of FSP/OFR owes a great deal to the lessons learned from previous farm-oriented RDPs, including Plan Puebla, IRD in Colombia and elsewhere, and the microexperiences of NGOs throughout Latin America. The FSP/OFR approach to technology generation and diffusion for small farmers is becoming an integral part of official and private RDPs in an increasing number of countries, and we expect this trend will continue.

The Caisan area of Panama is an area with favorable agroclimatic conditions chosen as a site for the IDIAP/CIMMYT trial in order to maximize its chances for success with limited government funding. The stages followed for the trial project, which have become standard for all FSP/OFR programs, were as follows (Martínez and Arauz 1983):

1. Informal survey conducted with farmers to identify the prevailing farming system and major production problems.
2. Formal survey of randomly selected farmers to study farmer circumstances and constraints in detail.
3. Define "recommendation domains" based on variances in farmer circumstances: agroclimatic, economic resources, access to markets, etc.
4. Select best research opportunities for increasing short-term productivity and income in each domain.
5. First research cycle: a) on-farm experimentation for prescreening of innovations; b) levels trials with repetitions; and c) initial recommendations made for producers and policy changes, new lines of research charted.
6. Second research cycle.
7. Third research cycle.
8. Verification trials of technological options in several locations with farmer participation: net economic benefits calculated using marginal risk analysis.
9. Demonstration plots worked by representative farmers, "field days" organized to observe procedures and results.
10. Evaluation of adoption rates.

This research process which "began and ended with the farmer" generated a few simple technological innovations that together decreased average cost per hectare of maize by 25 percent. The "appropriateness" of these practices for local farmers is clear from the high adoption rates achieved after only three research cycles (43 percent for zero tillage, up to 80 percent for no fertilization). In the end, the recommended package did not result in yields significantly superior to those obtained with traditional farmer practices, but was successful in increasing average net return, enhancing long-term soil fertility, and reducing the need for scarce labor. In other words, FSP/OFR worked well at identifying and removing important constraints to farmer productivity with low-cost, low-risk innovations.

The achievements of the trial program were sufficiently convincing for the Panamanian government to have the FSP/OFR methodology expanded on a national scale. The IDIAP currently supervises several Regional Research Programs throughout Panama.

It is no easy matter to move from a small pilot project to a national FSP/OFR program. Many obstacles lie in the way, not least of which is the extreme heterogeneity of small-farmer conditions in most countries and the shortage of motivated and capable personnel to supervise and evaluate on-farm research. We end this section by enumerating some of the key components to be included in any national On-Farm Research Program for farm-oriented rural development (Martinez and Arauz 1983; Cernea, Coulter, and Russell 1985):

1. Thorough understanding and respect for the prevailing farm system.
2. Generation of simple innovations that increase average net returns and enhance long-term productivity.
3. Participation of representative farmers throughout the research process.
4. Implementation of appropriate policy changes in light of research results (to ensure adoption feasibility).
5. Decentralized administrative and financial control over field research (to ensure expeditious implementation).
6. On-going training of researchers and extension agents in the FSP/OFR methodology.
7. Effective linkages between researchers and extensionists and between on-farm and experimental station research.

Conclusions for Farm-Oriented Rural Development

In this monograph we are interested in readdressing the issue of rural development in Latin America in light of past experiences and the economic constraints and opportunities that these countries currently face. It is especially important during this period of austerity not to waste scarce resources, by focusing investment only on the kinds of interventions that are likely to succeed.

The cases studied in this chapter reflect only a small fraction of the total Latin American experience with farm-oriented rural development, which is vast and constantly evolving.

Nevertheless, together they cover the principal types of strategies currently employed to raise small-farmer productivity and income. In this brief concluding section, we outline some of the more important lessons to be learned from the case studies which may serve as general guidelines for the design, implementation, and evaluation of future interventions.

In the area of technology generation and diffusion, we have learned the importance of microclimatic "farming systems" research, based on production constraints identified in coordination with farmers. In most cases, rainfed farmers are risk-averse and prefer productivity-enhancing innovations that minimize risk. Therefore, research that leads to recommendations that lower per-hectare costs in the short run, and conserve resources in the long run, are likely to result in higher adoption rates than strictly profit-maximizing strategies.

It follows that RDPs aimed at transforming traditional farmers into cash-crop producers usually meet with only partial success. Small farmers will likely choose to diffuse the agroclimatic and financial risks associated with commercial agriculture by "selectively" adopting the recommended practices and setting aside some land for continued cultivation of subsistence crops.

In line with small farmers' quite rational strategy of ensuring subsistence and minimal income through diverse on-farm and off-farm activities, RDPs tend to serve this sector best when they offer diverse production programs rather than concentrating on single commodities. Diversification into cash crops, fodder crops, or improved livestock seems to be the key element for raising total small-farm income. The "mobilizable stratum" of the peasantry is especially well served by RDPs that provide access to investment credit, provided that the loan terms are favorable and markets exist for their products.

In terms of multiplier effects and sustainability, the RDPs that are most successful are those that 1) produce employment opportunities through linkage effects and 2) promote ongoing rural organizations. Both of these elements are fundamental for spreading the benefits of the rural development initiative beyond the direct target population and for ensuring that RDP achievements endure and grow beyond the often short-term life of a program or project.

In particular, intercommunity organizations, formed in conjunction with or as offshoots of RDPs, have the possibility of wielding considerable political influence with the public and private forces that determine policies which greatly effect the small-farmer sector. Without that influence, farmers are vulnerable to changes in macroeconomic policies (and regional and local power groups) which can undermine the best efforts of any rural development effort. Finally, with regard to internal RDP planning and organization, the following conditions are strongly associated with effective intervention:

1. A medium- to long-term outlook, with continuity in programs and personnel.

2. A competent, highly motivated staff, especially the researchers and extension agents who work directly with farmers.

3. Decentralized administrative and financial control.

4. An overall strategy of "learning by doing" which ensures adequate farmer participation and an appreciation of the complexity of small-farming systems.

APPENDIX TO CHAPTER 8

LAND REFORM AND COLONIZATION

Introduction

Farm-oriented rural development programs and projects are oriented toward small farmers with land. Whether from purchase, pre-Colombian land rights, or as beneficiaries of land redistribution or colonization, targeted RDP households have achieved access to this most vital rural resource (land) and are, therefore, among the privileged in rural Latin America.

The fundamental obstacle for spreading the benefits of RDPs to poorer peasants is their inadequate or non-existent access to cultivable land, minimizing the economic use of agricultural credit and technology. "Adequate" land is variable, depending upon soil fertility, rainfall, and access to markets. In very general terms, however, at least five hectares of rain-fed land, or two hectares of partially irrigated land, would be sufficient to make a living from agriculture.

Subfamily households with only a few hectares of rainfed land must supplement income with off-farm wage labor, while the landless peasantry depend entirely on wage income and access to sharecropping or tenant arrangements. The number of landless and "quasi-landless" grows with the parcelization of subfamily plots from generation to generation, leading to the proliferation of marginal, overexploited *minifundios.*

In Latin America, the burgeoning ranks of the landless contribute heavily to the equally burgeoning ranks of the under- and unemployed. Although the linkage effects of farm-oriented RDPs may ameliorate this problem, their focus on farm productivity rather than employment creation limits the usefulness of this strategy for providing economic opportunities for the landless. To meet the huge labor demand of the next few decades (2.7 percent increase in the labor force/year), there will either have to be renewed efforts at land reform or massive employment creation outside of agriculture (Thisenhusen 1988). In the next few pages, we briefly review the first option.

Land Tenure in Latin America

Although land reform programs were instituted in many Latin American nations in the 1960s and 1970s, the historically-rooted sharp inequality in land tenure was not substantially altered as a whole. Today, this "bimodal" structure persists in most of Latin America. It has been estimated that in the 1980s large commercial agricultural holdings account for 22 percent of total farm units and 82 percent of total occupied area, leaving the remaining 78 percent of small-family holdings with only 18 percent of total occupied area (Lopez-Cordovez in Thiesenhusen 1988).

This "bimodalism" or "dualism" is testimony to the minimal impact of land reform, despite initial intentions to the contrary by reform advocates. In Colombia, 10.6 percent of total

cultivable land was affected by reform, benefiting 9.2 percent of farm families (95 percent of land titles granted were for public land in colonization zones, although not redistribution of privately held land) (Marsh 1983). The figures for Chile and Ecuador are similar.

In Peru, Mexico, and Bolivia, reform extended to a much larger sector of the population –30 percent, 43 percent, and 75 percent of farm households, respectively. However, extremely skewed land distribution still prevails in these countries: In Peru, 88 percent of farms under 5 hectares occupy 14.3 percent of cultivable land (Thiesenhusen 1988); in Mexico, 52 percent of farms occupy 1.0 percent of agricultural land; and in Bolivia, 60 percent of farms occupy 0.5 percent of agricultural land (UCLA 1986). Clearly, most of these small-farm households are sub-subsistence, and many are quasi-landless.

The Politics and Economics of Land Reform

Although the need for land reform in Latin America (for both equity and economic reasons) has been accepted by most Latin American nations in the postwar era, bringing the idea of reform to fruition has proved very difficult, largely for political reasons.

On the one hand, when acute landlessness and peasant impoverishment lead to organized protest and rural violence, threatening food production, land reform may become politically expedient. By ceding to the demand for land, the State acquires a new supportive constituency of reform beneficiaries. Peasants with land (especially adequate land) tend to be a "conservative social force" in society (de Janvry 1981; Thiesenhusen 1988).

On the other hand, large landholders, who stand to lose from effective land reform, are a powerful interest group in Latin America. The rural elite, *latifundista* and agri-capitalist alike, together with their urban allies, have shown a united front in their vociferous opposition to land reform movements. This opposition is behind the common violent clashes between landless peasants and "paramilitary" forces. All in all, anti-reform advocates have successfully contained the extent of effective land reform in most of Latin America.

Both reform advocates and opponents have used economic arguments to bolster their positions. Reform advocates point to studies and figures that show the efficiency of small-holder agriculture, especially since the advent of Green Revolution scale-neutral technology. Indeed, studies have confirmed an "inverse" relationship between farm size and land productivity (for Mexico, Brazil, and Barbados, see Thiesenhusen 1988). This relationship results from the intense use of family labor and low-cost inputs to maximize output from scarce resources.

Postreform figures indicate that, after a lag, overall production on beneficiaries' land has surpassed prereform levels to meet increased household demand and still provide a marketable surplus. Thus, reform beneficiaries enjoy higher incomes, on average, than before land reform, with positive employment effects for nonbeneficiaries (Thiesenhusen 1988).

Land reform opponents counter with the "economies-of-scale" argument, especially in reference to important cash crops. They argue that illiterate peasants, with no managerial experience, cannot be expected to maintain the same production levels as large-scale farm managers. Even if it were possible to maintain production levels after land reform, the costs to the State of providing beneficiaries with the prerequisite social and physical infrastructure would be unsustainable.

Indeed, the integrated rural development projects providing this infrastructure have been costly, limiting the extent of benefits to a minority of "eligible" households. Where land reform has not been followed up by complementary credit and technical services, production levels remain far below potential.

The Colonization Argument

Strong political opposition to land reform has led governments to seek less controversial solutions to the problems of increasing landlessness and rural unrest. Colonization of frontier land is an option that has been tried throughout the region with varying success. Overall, however, the enormous economic, ecological, and human costs of most colonization efforts seem to outweigh the relatively short-term economic and political benefits.

The fiscal costs involved in government-directed colonization projects are especially great, beginning with the selection of colonists; the construction of principal and feeder roads in difficult terrain; and the provision of at least minimal social- and land-titling services, credit, inputs, technical assistance, and often a guaranteed income for the first period of adjustment.

In Colombia the cost of settling one *colono* family in the 1970s (with minimal services) was estimated at US $8,000, while the cost of establishing a family on redistributed land in the interior of the country (with a complete package of services, including housing, electricity, and running water) was one-third less at US $5,400 (Marsh 1986).

Furthermore, the objective of directed colonization efforts (to settle landless, unemployed families on "vacant" public lands) is usually fraught with difficulties, sometimes ending in complete abandonment of the region with the government absorbing heavy losses. Part of the difficulty stems from the initial selection of *colonos;* when families are chosen simply because of economic need, or political expediency, without regard to agricultural experience and willingness to assume the hard work and tremendous risks of *colono* life, there is a high incidence of discontent, agricultural failure, and abandonment.

Spontaneous colonization by families in search of land and a better life, without expectations of government assistance, tends to fare somewhat better. In Caqueta, Colombia, the Colombian Institute of Agrarian Reform has assisted several thousand subsistence *colonos* to become small ranchers with in-kind credit at reasonable interest rates (Marsh 1986).

In colonization areas, livestock production is often preferred over agriculture because of the low fertility of most jungle soils, making them inappropriate for sedentary annual cultivation. However, this emphasis tends to favor *colonos* and entrepreneurs with access to sufficient land to make a living from extensive ranching. In Caqueta, this has meant that the "newly arrived and poorer colonos" are not eligible for in-kind credit. In other colonized regions as well, land concentration from speculation and the uncontrolled sale of small homesteads is a growing problem, repeating the land tenure inequalities of the interior.

Aside from the socioeconomic difficulties of settling *colono* families, there is much international concern over the grave ecological and ethnocultural consequences of colonizing and exploiting vast areas of native forestland. In *The Dilemma of Amazonian*

Development, researchers on the Amazonian regions of Ecuador, Bolivia, Peru, and Brazil discuss the long-term costs of unchecked development of the Amazonia, including:

1. The loss of medically, economically, and biologically important animal and plant species.

2. The destruction of indigenous peoples and their ways of life.

3. Unpredictable changes in weather patterns as a result of massive deforestation.

4. The environmental degradation of soil, water, and air resources from conversion of forest to pasture and annual cropping.

Summing up the frustration of the book's authors with ill-conceived, planned, and executed colonization and economic development projects in the Amazonia, Moran (1983) concludes: "The myopia toward Amazonian resources is such that one wonders if there will be any forest left when this century is over."

Conclusion

We have seen that neither the land reforms of the 1960s and 1970s nor the alternative of colonization have significantly altered the bimodal land tenure system of Latin America. Therefore, the benefits of farm-oriented rural development programs and projects are limited to a privileged minority of peasants who have access to adequate land.

Rural development strategies aimed at raising the productivity, income, and welfare of the rural poor cannot ignore the fundamental question of land distribution and reform. The rural poor without access to adequate land are subject to exploitation as traditional producers of low-priced domestic staples and as workers for sub-subsistence wages (a system of "functional dualism;" de Janvry 1981). Rural-to-urban and international migration are the clearest options out of rural poverty for these subfamily farm households and for the under- and unemployed landless.

Nevertheless, land reform is a necessary but not a sufficient condition for eliminating rural poverty. Access to land, without regard to its quality, location, and agricultural potential, or to the complementary inputs needed to realize that potential, does little to resolve the problem of poverty. Both the equity and economic objectives of land reform, implemented efficiently and free from political ties, are needed to generate a just and dynamic agricultural sector.

The goal of future land reform in Latin America should be to reach as many poor rural households as possible with adequate land and the basic infrastructure and services required to farm that land productively without creating costly ecological and ethnocultural externalities. This has proven very difficult in colonization zones, leading one to the conclusion that redistribution of privately held cultivable land is still the better solution. Once there is effective land reform, farm-oriented RDPs can begin to serve a much wider population and, therefore, make a greater contribution to social justice and economic growth.

9

Household-Oriented Rural Development for Subfamily Farmers

Introduction

We have seen in Chapter 4 that about two-thirds of all peasant households in Latin America have access to less than 5 hectares of nonirrigated land or less than 1 hectare of irrigated land. Most of these households are unable to maintain all of their members from farming activities and probably earn less than half of their total income from farming. A rough approximation suggests that about 7 million people fall into this category (FAO Census data; UCLA 1986). These households engage in diversified livelihood strategies in which farming is supplemented by wage labor (both in the home community and as migrants), artisanry, animal husbandry, and a variety of other activities (Table 4.3). These subfamily farmers are able to maintain their base in their home communities through such supplementary activities while, in effect, subsidizing the modern agricultural or urban sectors by accepting wages at levels below those needed to maintain themselves and their families if they did not have their subsistence base.

The very heterogenous nature of the activities that peasants engage in to complement their agricultural production makes description and evaluation of household-oriented RDPs difficult. The working definition of household-oriented strategies used here is self-employment of the rural poor, at the household or community level, in activities outside peasant commercial agricultural production. Also included here are projects aimed at reducing expenditures. This chapter attempts to discuss, in general terms, how governments can play a role in supporting household-oriented efforts. It stresses the importance of incorporating poor peasants as active participants in the design, implementation, and management of projects and uses three detailed case studies to illustrate the ways in which rural development efforts could benefit from increasing the state's cooperation with local organizations and grassroots efforts.

Targeting the Subfamily Farm Sector: The Failure of IRD

As stated in Chapter 2, in the early 1970s Latin American governments shifted their agricultural policy focus from land reform to investments in RDPs aimed at augmenting rural production and incomes without requiring major redistributive measures. The availability of oil revenues and international loans, and the support that the World Bank gave to integrated RDPs, resulted in significant investment in credit programs, new technologies, input and output marketing programs, irrigation, and economic infrastructure as well as in rural education and health care. These projects generally addressed the peasantry as a homogenous group and did not target specifically the subfamily farmers or the landless.

Subfamily farm households are largely unable to benefit from the farm-oriented IRD programs discussed in Chapter 8 for four interrelated reasons:

1. The proportion of income that this sector earns from farming is quite small, simply because the land they have access to is of limited size and/or poor quality. Thus, relaxing the constraint on other parts of the production process, such as credit and input prices and availability, often cannot sufficiently change the returns to labor to raise total household income to a significant degree. Technologies for rain-fed agriculture have largely failed to significantly raise yields and returns to labor at the same time.

2. If the land constraint is not eased, specific measures must be implemented both to increase peasants' access to other assets and to better the terms of trade for their economic activities relative to their consumption expenditures. This requires careful analysis of peasant activities and of the economic and institutional environment in which they operate. Often programs conducted by large bureaucracies impose projects from the top down, with little understanding of existing household strategies, local resources, and local constraints on returns to economic activities. Too often, IRD has tried to substitute commercial systems of economic organization for traditional subsistence systems without attempting to build on the accumulated knowledge that peasants have and without understanding the social webs which these traditional systems embody. This is especially tragic in areas with fragile ecologies such as the Amazon, where destruction of the environment and cultural dissolution have been the consequences of economic growth.

3. Until recently, such programs ignored the important role that women play both in agricultural and other productive and reproductive activities within household livelihood strategies in the family farm, subfamily farm, and landless sectors throughout Latin America (Deere and Leon 1987). At best, special women's components have been introduced into projects, often after they have started (Chaney 1987). Yet, because agricultural production is made the centerpiece of the projects, programs for women often remain marginalized and do not gain access to sufficient resources.[1]

4. Since many of these programs are conducted through existing bureaucratic structures, or at least must count on their support for implementation to proceed, rural elites, either within or outside the government, are often able to appropriate the newly introduced resources for their own use. In an analysis of factors contributing to the success of World Bank projects, Judith Tendler (1983) concluded that successful projects depended on strong interest-group support. Projects directed at the rural poor, however, often lack the political influence to assure that project resources are fairly allocated. This is most pronounced for social groups such as indigenous people or women whose access to government institutions and political expression is extremely limited.

The Actors: Local Organizations, NGOs, and the State

As this monograph has argued, the economic crisis of the 1980s presents both a challenge and a new opportunity to promote rural development even for the sector of resource-poor

1 Recent efforts have resulted in improvements in women's participation, and important knowledge has been accumulated and analyzed in project evaluations; see, for example, U.S. AID, Office of Women in Development, Internâtional Center for Research on Women, the Pathfinder's Fund, Women in Development.

subfamily farms addressed in this section. The resources previously made available for rural development, because they fueled hierarchical patronage systems, often substituted for local institutional development that could harness local resources. "As the patronage system is gradually extended down toward the village level, local self-help initiatives are systematically –if unintentionally– stifled. As villagers learn to wait for outsiders to bring them charity, their own resources go unmobilized and as a consequence the total amount of resources mobilized for local development may actually decline" (Korten 1987). Analysis of the ways in which local institutional structures can be built that efficiently use limited outside resources and that can mobilize local resources is especially important in times of fiscal austerity –when large injections of resources will not take place.

An important new development in both rural and urban arenas in Latin America is the plethora of grassroots and intermediary NGOs. The grassroots groups include production or marketing co-ops, self-help housing associations, labor unions, peasant leagues, and church groups, and share a common attempt to actively work for their own self-betterment. They often work closely with nonprofit intermediate groups that provide training, technical aid, and access to government and international foundation resources. They have been successful in building the trust of disenfranchised groups and in breaking the patterns of dependency and paternalism that stifle development efforts.

Grassroots development offers no simple solution to poverty alleviation, however. The attempts at "development from below" have met with mixed success for many reasons –most importantly, because they are attempting to counteract an environment in which their constituents have little access to political and economic resources and in which biases against peasant production prevail. Operating in this constrained environment, however, they have shown the capacity to increase peasants' bargaining power in the economic relations they are engaged in, put existing resources to better uses, and mobilize the energies of the poor. In incremental ways, grassroots efforts can change the way existing things work (institutions, market structure, and production processes) in order to increase the welfare of the poor (Tendler 1987).

Grassroots/NGO efforts rarely have been able to expand and affect more than very limited numbers of people. Their strength often lies in the close working relation they build with an homogeneous social group that is lost when they try to expand their activities (Tendler 1987). Often the niche they find is just that, and taking on more activities or involving greater constituencies brings them up against structural features of the economy that are not possible to change from the bottom up.

The state inevitably has a major role to play in poverty alleviation and rural development. Although both the state and NGOs have been involved in most kinds of rural development investments discussed here, there is a division of labor that avoids the dichotomy of "bottom up" and "top down" and instead looks for healthy micro-macro linkages (Annis 1987a, b).

As has been argued throughout this monograph, it is essential that price incentives do not discriminate against peasant production, and that budget priority be secured for the rural sector. The stabilization policies that governments are implementing in response to the debt crisis are increasing the competitiveness of informal sector activities, including the self-employment of the rural poor. In this situation, "getting the prices right" may also contribute to alleviating poverty. Government policies should take this into consideration by not continuing to favor capital-intensive production over labor-intensive production.

In addition, institutional biases against peasants must be removed. Legal frameworks must secure peasant property rights, especially in indigenous areas where land disputes divert and impede local development efforts and in squatter settlements (in both large cities and rural towns) where the poor are organizing to provide self-help housing. Governments often deal with difficult property rights decisions by letting them rot or fester in bureaucratic labyrinths that stifle productive self-help efforts.

Access to financing is another important area that the state should promote. Credit programs of what Tendler calls the "minimalist" type for the self-employed poor have worked well in many areas of the world. The programs have raised incomes substantially, reached significant numbers of people, and had remarkably high repayment rates (Tendler 1987). The most successful programs were those that 1) provided credit distributed to small peer groups who take on the burden of selecting trustworthy borrowers because they can continue borrowing only if every one in the group has paid up; 2) did not provide financial analysis and extension services; 3) required savings as a prerequisite to borrowing; and 4) financed activities in the trade and service sector rather than more risky productive activities (Tendler 1987; Reichmann and Weber 1987).

Policy recommendations put forth by NGOs are often essential for their effective operation and should be sought, welcomed, and carefully considered by public sector policymakers. The state can also provide, through incentives and complementary investments, regional planning that can strike a balance between specialization for export (based on comparative advantage) and regional self-sufficiency. Thus, it can coordinate local bottom-up efforts that approach development in an *ad hoc* and spotty matter and incorporate them into a more cohesive regional development model.

Adequate public investment in the economic and social infrastructure of the rural sector is justified in view of the high cost of request, namely, a malnourished, poorly educated, and alienated mass of rural-to-urban migrants. The provision of social infrastructure can be targeted to the poor in two ways. First, investment in primary education, adult literacy, and informal education, instead of in higher education, and investment in primary health care and nutrition, is a way to target these long-term investments toward the poor. Second, involving the beneficiary groups in the design, implementation, and supervision of these programs can make them more effective both by creating accountability in bureaucratic agencies and by putting to use local resources and knowledge.

Diversified Household Strategies: Rural Development on Many Fronts

Careful analysis of the household livelihood strategies needs to be the basis of rural development strategies for the subfamily farm sector. It was already pointed out that projects limited to farm production cannot provide a solution to the poverty of this sector. Projects that increase the productivity of agricultural production must be complemented by improvements in other economic activities or relations in which the households are engaged. These include:

1. Bringing existing resources into higher-value use. This includes such projects as improving pastureland to support increased animal husbandry and commercial forest exploitation through community logging operations.

2. Increasing productivity in agricultural production processes through adoption of appropriate technology. This includes small-scale irrigation, crop improvements, and mechanization of small-scale agricultural processing.

3. Improving the terms of trade for peasant production by providing competition to local monopolistic intermediaries. This would include creating alternative marketing and purchasing channels controlled by peasants or accountable to their interests.

4. Transforming traditional products/production systems so that they have a commercial component. This includes craft production for exports.

5. Processing local agricultural production in household or community micro-enterprises in order to retain the value-added locally. This includes, for example, household- or community-based cheese-making, furniture-making from local wood, and fruit preservation.

6. Credit programs for artisanry production, trade, and services.

7. Intensifying expenditure-saving activities within the household. This includes household gardens and small animal husbandry.

From this menu of household-oriented projects, recommendations on what to support and what not to support are difficult to make, especially when thorough comparative studies have not been made. It is beyond the scope of this monograph to make suggestions about what specific activities should be supported. Instead, the purpose of this list is to give an idea of the breadth of projects that can potentially benefit subfamily farmers in order to create a context for the following very diverse case studies.

Case Studies

This section reviews a variety of RDPs that have more or less successfully targeted the subfamily farm sector and have designed and implemented projects in which the rural poor are active participants in the design, implementation, and management of RDPs. They are meant to dramatize our point that important roles exist for both the state and local organizations and that cooperation between these two actors should be encouraged. Table 9.1 gives a summary of the main features of the five case studies presented in this chapter.

Community Appropriation of Forestry Exploitation in Oaxaca, Mexico

This section documents the evolution of forest exploitation in a mountainous region of southern Mexico. It illustrates how a state-promoted paper mill expropriated forest resources from the local Indian communities under the assumption that they were unable to manage their own resource. It also describes how some communities have regained control over the forest through political struggles and proved their ability and will to manage this resource more rationally than the parastatal paper mill (e.g., by raising incomes for loggers as well as revenues for the communities and providing training for community members). This example dramatizes the possibility of including peasants in a process of promoting agro-industry and its linkage with raw material production rather than creating an adversarial relation in which peasants are forced to fight at each step to defend their resources and demand their right to be active participants in the development process. It is included in this section on household-oriented strategies because wood production provides a ready-cash income that complements villagers' agricultural production, becoming an important part of the livelihood strategy for communities with forest resources and an alternative to migration in some cases (Zabin, forthcoming).

Table 9.1. Household-Oriented Rural Development Case Studies

Project Name	Implementing Agency	Source of Financing	Target Group	Main Objectives	Successful Elements
Village Store Network Mexico	Mexican government CONASUPO and COMPLAMAR agencies	Mexican government	Grain-deficit peasant 3 villages Mexico	Improve nutrition Break power of local monopolists	Food subsidy delivery Limited peasant organization
Community Forestry Oaxaca, Mexico	Mexican NGO and village communal authorities	U.S. private foundation/ private loans	2 indigenous communities of about 3 people each, Oaxaca, Mexico	Local control of resources Increase community revenues, Wages	Community control of resources Training Community revenues
Cultural revitalization/ development Oaxaca, Mexico	Mexican Ministry of Education and Mexican NGO	Mexican government/U.S. congressional foundation	About 20 communities of 3 ethnic groups, Oaxaca, Mexico	Cultural revitalization, Culturally-appropriate econ. development	Cultural revitalization, Self-empowerment Education
Women's gardens Plan Sierra Dominican Republic	Dominican private and civil sector board of directors	Dominican Republic/ government/ international grants	100 000 inhabitants of El Sierra, Dominican Republic	Improve nutrition Raise family production	Increase family production (no data on nutrition)
Women's Cheese-making Bolivia	OAS/PTAMC local coop and peasant organiza-tion	OAS/USAID	30 families in community of Chawirapampa, Bolivia	Increase income Women's empowerment	Small increase in income Organiza-tional capacity Women's empowerment

About 500,000 cubic meters of wood are logged in Oaxaca annually, 85 percent of which is obtained on *ejido* or communal lands (INEGI 1985). Forest exploitation on a large commercial scale began only in 1956 when a newly built parastatal paper and pulp mill obtained, by presidential decree, exclusive concessionary rights for 25 years to log the communal forestlands of a group of Indian communities in two regions of Oaxaca (Tamayo 1982). The mill also successfully lobbied for the construction of a paved highway, placed strategically for forest exploitation, which was constructed by the agency in charge of rural development for the area, the *Comision del Papaloapan,* one of Mexico's first regional planning/integrated development programs. The state, through its agrarian reform agency (SRA), regulated the forest activity and set the price *(derecho del monte)* that the parastatal paid for every cubic meter of wood it extracted. While, in principle, regulating private capital in the interests of the communities, the SRA actually extended its paternalistic relationship with the Indians by controlling contracts with the paper mill and the use of communal revenues from the sale of stumpage (Zabin, forthcoming).

From the beginning, forest exploitation became a source of conflict between the communities and the state. Communities mobilized to raise the level of revenues paid to them, to require accurate documentation about how much wood was cut, to demand the right to work as loggers in their own community (at first, the company brought in skilled workers from other states), and to improve wages and working conditions. Work stoppages that lasted several years, as well as the irrational overexploitation of the forest, especially after the parastatal will realized its property rights were not eternal, characterized the last 10 years of the concession (Martinez Luna 1984). By 1981, a regional peasant organization had formed for the defense of the communities' forest resources, and it was able to stop renewal of the concession.

Several important gains were made as a result of this struggle. First, more competition was introduced into forestry exploitation, as other lumber mills gained access to wood in the previously concessioned areas. Second, the political struggle provided the impetus for some communities to organize communal forestry businesses themselves and gave them access to an NGO that was set up to provide them with technical assistance. A minority of communities, that had previously been under the concession, successfully organized communal businesses administered within the traditional structures of communal obligations, the cargo system. These villages have experienced increases in income for loggers and revenues for the community.

In a case study of one community, the communal forestry business was started with a loan from a regional privately owned sawmill that was a competitor of the large paper mill. The community preferred this private loan to credit from what they perceived as an unreliable government bank. While profits were several years in coming, the communal business provided more public services than the paper mill ever did, including a small community loan fund and the purchase of a communal truck used both for the village authorities and as a village bus system. The community business was structured so that villagers could chose their work schedules to avoid conflict with the agricultural work cycle. In 1986, 23 percent of families surveyed had at least one member working part of the year in forestry, providing them a ready-cash income while waiting for the yearly harvest. The opportunity to work in the woods especially helped the poorer strata of the community, more dependent on a daily or weekly wage. It helped them to purchase their own chain saws with interest-free loans, and loggers who owned their own chain saws could earn about three times the going daily wage for agricultural labor (Zabin, forthcoming).

The project has required the careful technical and administrative assistance from a small NGO operating with foundation funding. Members of the NGO began working with the regional political organization during its attempt to regain control over the forest resource, and it developed trust with the communities based on its involvement in this struggle. The NGO began to work setting up communal forestry businesses with several communities in the region after the paper mill lost its concession. With intensive work, it began training programs to teach the communal authorities how to negotiate with government bureaucracies and the technical and administrative skills necessary to run the business. For example, when the paper mill had been in control of logging, villagers did not know how to measure the amount of wood they were cutting, leading to cheating by the company documentors. Working closely with villagers, the technical aid people have been able to devise methods to increase the accountability both of the buyers of community logs and of the community administrators of the business.

Technical assistance, carefully and diligently applied, has shown that a rapid learning curve can be followed. An important development that has taken place recently is that the community has successfully negotiated with the Ministry of Agriculture to take over the technical services that communities must pay the bureaucracy to do (mostly marking the trees to be cut in accordance with sustained yield management), saving the community the fees previously rendered for this service and, by all accounts, doing a better job. The communal forestry business is also carrying out a new resource assessment study. In cooperation with the NGO, means are being devised by community members who hunt and graze their cattle in the woods to incorporate the "folk" knowledge of the woods, making better use of the manpower instead of bringing in a team of expensive technical experts to do the same job.

An interesting feature of communal logging is its operational organization. Work is not carried out collectively, but rather in small teams of two or three whereby a logger is paid for the amount of wood he cuts; and he, in turn, pays his helpers. Other activities, such as road maintenance, are carried out by wage laborers who are paid a daily wage by the community business. Management is elected in the community assembly for a period of service of three years, as part of the system of communal obligations, the cargo system. Unlike traditional cargos, the managers are paid a salary for their service that provides an income in the middle range of the village's income distribution but is substantially less than what they could earn as migrants. This integration within the traditional system of obligations has functioned well because work obligations and rewards are clearly understood and agreed upon. Under this system, the disputes over workloads, so common to production cooperatives, rarely arise.

This case study is an example of community appropriation of an activity previously carried out on a large scale using community members only as wage laborers. Today, not only are working conditions substantially better for community forestry workers but the community business has served as a training ground for the development of skills that are now being carried over to higher level processing, including the operation of a small-scale community sawmill and a carpentry workshop. It has also increased the peasants' bargaining power with the state. Negotiations with high-level actors in the Ministry of Agriculture have allowed the communities to increasingly take over the functions of an inefficient bureaucracy. While management of the business has not been without problems, the avoidance of conflict with the community has resulted in smoother production.

Forest exploitation controlled by Indian communities provides no guarantee that the irrational mining of the forest will not occur. Experience shows that environmental degradation is not limited to private businesses, but also is a common feature of peasant

agriculture when there are externalities involved. In this situation, the company, whose "property rights" to the forest were always a source of political conflict, engaged in overexploitation. In the case study community in Oaxaca, however, most community members see the need to manage the forest with sound conservation practices, and silvicultural techniques have been improved to promote regeneration. As one community member put it, "the company didn't care about the forest because it wasn't theirs, but this has been our homeland for hundreds of years, so we will care for it for our children."

It is significant to note the importance of the favorable economic environment affecting forest exploitation. The logging activity was started as part of a large agro-industrial project to produce paper domestically and, as such, fit into the import-substitution strategy of the Mexican state. It received full state infrastructural support, including the building of a strategically placed major highway, and has been faced with favorable prices that, until 1986, rose faster than the rate of inflation. With the deepening crisis, real prices have begun to fall, since the demand for wood basically depends on demand from the domestic economy, and already profits for the communal businesses are falling.

Cultural Promotion and "Ethnic Development" in Oaxaca, Mexico

A key point of this monograph has been that local organization and the active participation of beneficiaries are essential ingredients for making rural development work. Yet participatory, representative, and investable grassroots local organizations do not always exist just waiting for an RDP to arrive. Although there is a "thickening web of grassroots organizations" in Latin America (Annis 1987a), a characteristic feature of underdevelopment is the lack of organization, the lack of mechanisms of political expression for the poor, and the temporary nature of most social movements that coalesce around a common purpose for particular moments in time, but do not carry forth a long-term vision of structural change. For groups that face social and cultural discrimination and oppression as well, such as women and minority ethnic groups, an important prerequisite of grassroots development is a process of reinvindication, of recognition and analysis of one's situation in the context of the nation's political economy. Approaches to informal education inspired by the pioneering work of Paolo Freire have been developing all over Latin America. The following case study, again in Oaxaca, Mexico, illustrates an attempt to promote grassroots development and self-determination through a cultural revitalization program.

Since the Revolution of 1910, the Mexican government has tried to integrate Indians into a national society that has generally denied cultural pluralism and viewed Indian culture as an impediment to progress (Varese 1985). This integrationist policy orientation, following centuries of colonial domination, has resulted in "cultural fragmentation and the individual and collective formation of a rejected and devalued ethnic identity" (Varese 1985).

An innovative effort to contribute to ethnic development[2] was carried out by a group of community members and an interdisciplinary team of professionals, first under the auspices of the Oaxacan Branch of Culturas Populares (URO) in the Mexican Ministry of Public Education and continued with the participation of a civil association, *Grupo de Apoyo al*

2 Ethnic development is defined as development controlled and directed by the indigenous people in accordance to their cultural values and collective aspirations.

Desarrollo Etnico, A.C.[3] (GADE). The URO program used a participatory educational approach to "train" bilingual cultural workers, called promoters, from Indian communities in the region, who then went back to their communities and initiated cultural and economic projects designed to promote cultural revitalization. In an attempt to avoid the top-down approach common to so many programs initiated from outside the indigenous communities, the URO program provided intellectual and educational support and limited financial resources so that the promoters could initiate projects and activities of their own design in their communities. Cultural promotion was seen as a tool for ethnic development by rebuilding indigenous peoples' self-confidence, by sparking and contributing to a collective debate about viable political and economic strategies for the region, and by building the ethnic identity needed to bring together people to carry out such strategies.

In the eight-month training course, participatory teaching methods were used to conduct a collective exploration of popular ethnic knowledge. Quoting Varese (1985):

> "This kind of exploratory project has a number of aims, but the principal one is to restore to participants a sense of security and confidence in their own systems of thought and knowledge and their way of looking at the world; in their own ethnic language; their history, which has been restored to them; their land, whose importance they have rediscovered; their forms of social, political and economic organization, their place in the regional framework; and finally the social future of their ethnic communities.
>
> "The method of teaching is such that the exposition of cultural questions and reflection upon them are not separated from research and proposals for practical projects. The idea is to avoid disassociating learned theoretical concepts from the possibility of applying them in practice and from the ability to do so. Thus the course is designed to train people to think about culture rather than to copy it; to produce militants and activists rather than scientists."

The promoters went back to their communities and initiated a variety of projects according to their perceptions of what was needed and possible in their communities. Some were research and promotion projects such as bilingual pamphlets on the use of medicinal plants and the rehabilitation of traditional dances. Others were artistic, such as theater workshops with young people in the villages that provided a forum for social commentary about matters pertaining to the communities. Productive projects were also initiated, including carpentry workshops, crafts workshops of traditional silk cultivation and pottery technologies, and a small irrigation project to raise maize yields.

The point of all these projects was to generate reflection and discussion in the communities about what was happening to them in the face of the accelerating integration of the region into the national economy. This view of the educational process as a way to regenerate the social and cultural vitality of a group of people so that they can become active agents of development rather than passive recipients of welfare or victims of underdevelopment is echoed throughout Latin America and has been put into practice through a variety of projects and forums (Dorfman 1984). It is based on the belief that marginalized groups have the capacity to make the difficult choices about the trade-offs that development entails, i.e., the trade-offs between investment and consumption, social cohesion and efficiency, and

3 The activities reviewed here were just one component of GADE's activities, which also included many diverse efforts to promote ethnic development through research, education, and "action" projects but focused on the cultural and educational aspects of ethnic development.

tradition and economic growth. Only this active participation of such groups can lead to a model of development in which material welfare is combined with social and cultural vitality and with democratization.

Yet, the coordination of such investment in human capital by community promoters and their integration into a rural development planning and implementation process is a difficult task when neither government development agencies nor peasant social movements have the institutional capacity or the will to absorb or foster their participation. The promoters, operating within the sphere of their own communities, initiated experimental small-scale productive projects that explored the possibilities of regenerating the "traditional" economic system. The peasant economy, for at least its recent history before major road construction in the 1960s, was based on subsistence farming and peasant-controlled exchange of supplementary goods through the well-known Meso-American Indian markets.

Yet, the economic integration that has occurred since the first major road in the area was built has destroyed this self-provisioning system. Specialization in two products –coffee and wood– and increased migration has meant that subsistence farming and production for the local market has occupied a smaller and smaller component of peasants' livelihood strategies. Given the resources that peasants have access to, and the opportunities they face, they have chosen to reduce their involvement in the intra- and inter-community "peasant" economy in order to migrate or specialize in commercial production for sale outside the region.

In this case, community projects consisting of production aimed at the local market, such as furniture, pottery, and weaving, were not economically viable because of demand saturation and/or price competition from cheaper industrial goods brought in from urban centers. The injection of small amounts of capital, organizational impetus, and access to technical assistance was not enough to make most peasant-oriented production attractive when compared to market-oriented activities.

Given the change in the region's economic structure in the last 30 years, such attempts at rebuilding the self-provisioning system are self-defeating. The only project that sparked replication by other peasants and other communities was a small-scale "rustic" irrigation project that diverted small watersheds for irrigating subsistence maize crops. This project raised productivity for the main subsistence staple crop that has, to a limited degree, survived the specialization of the economy and still forms part of peasants' diversified livelihood strategies. Its applicability was limited, however, by the lack of water in many areas.

These "peasant oriented" projects point to the difficulty of promoting viable projects under unfavorable terms-of-trade conditions and a demand-constrained regional economy. This experiment of "culturally appropriate" productive projects made clear that a development path compatible with cultural values and building on local human resources must also conform to the requirements of economic competitiveness. This means that rather than building on a static idea of culture embedded in certain traditions or technologies, an economic strategy would have to build on the more dynamic dimensions of culture such as community organizational institutions. The "learning process approach," in this case, generated ample discussion in the communities about the development alternatives facing them.

The URO/GADE approach also indicates the limits to a bottom-up approach as a viable economic strategy in a highly integrated environment. Efforts at organization using basically

only local resources and knowledge can help support the subsistence activities of peasant households but cannot significantly change conditions in the local economy, which is so strongly affected by state policies, market forces, and institutions beyond its borders.

The forestry project and the small-scale experimental projects, both taking place in the same region of Oaxaca, raise issues about how to shape the region's integration into the national economy in such a way as to benefit the local indigenous peasantry. Specialized market-oriented strategies are inadvisable if pursued exclusively because they expose the local economy to price fluctuations in a limited number of products. A healthy regional economy is one in which specialization for export is combined with a diversified productive base that can, at least partially, satisfy local consumption needs.

An important role for the state is to promote balanced regional development. As is generally the case, the NGOs in the region did not have the resources, the policy tools, or the interest in initiating a comprehensive effort at regional planning, instead operating on a somewhat ad hoc basis while trying to use their resources in as effective a manner as possible. Regional economic planning can, however, benefit from the participation of community leaders and local organizations and the experience that grassroots efforts embody. They should be incorporated into a broad learning process that is so essential to rural development (Korten 1980). Instead of looking upon peasant organization as a threat, the state should view it as a resource in the design and implementation of rural development.

CONASUPO-COPLAMAR: Peasant Stores in Mexico

The next project to be analyzed addresses the position of peasants as consumers. For subfamily farmers, who are often concentrated in isolated areas with poor communications, local intermediaries often control marketing, purchasing, and credit channels, locking peasants into complicated local systems of control and surplus extraction. The following national program in Mexico attempted to weaken these systems by providing competition in basic grain markets as well as a targeted subsidy to rural net grain-buying communities.

This program consisted of the creation of a network of rural stores run by peasant communities in conjunction with a basic food delivery system administered through a state-owned enterprise, CONASUPO-DICONSA. It was one of the important initiatives that came out of the rural development efforts in Mexico during the SAM period. This program was initiated "from above" by COPLAMAR, the "National Plan for Depressed Zones and Marginal Groups," during the Lopez Portillo Administration. The peasant rural stores served over 13,000 villages as of 1987 and are especially important in the poorest rural areas of southern Mexico, where peasants are net buyers of corn (Fox 1988).

The peasant store network was conceived as a way to extend Mexico's generalized food subsidies to the rural poor. Food prices were three to four times as high in rural areas as in cities, due both to high transportation costs and monopolistic control by local merchants (Fox 1988). Reformist planners within the federal government, lacking the political strength to respond to the major peasant political demand for continued land reform, sought a way to increase peasant bargaining power with private grain traders who were often local monopolists, village merchants, and moneylenders.

Before the implementation of the CONASUPO-COPLAMAR peasant store program in 1979, Conasupo, the state-owned wholesale food enterprise, and Diconsa, Conasupo's retail subsidiary, had served rural areas through the operation of concessions run by private entrepreneurs or other government agencies. Yet DICONSA itself, in an official document,

recognized the problems of delivering food in this way: "the enterprise's experience shows one essential operational problem: the guarantee of the final destination and the price of the products in the rural stores which, because of their number and isolation, complicate supervision. The operation of concessions, which face a market in which prices of basic products are three or four times the official price in the cases of maize, sugar, and beans, makes it practically impossible to avoid corrupt practices involving the deviation of the products to other stores and industries or their sale at prices above those officially established" (DICONSA, cited in Fox 1988).

CONASUPO-COPLAMAR planners decided that they would need to both invest in developing their own infrastructure (mainly rural warehouses and trucks to guarantee the control over the resources needed for food delivery) and to promote genuine community participation so that peasants would be directly involved in the supervision and management of operations. Regional warehouses, numbering 260, were built that were to be used exclusively to serve the rural stores. Over 3,000 trucks were purchased in the first two years of the program in order to provide the food delivery system with its own transportation network.

Organizers were sent to rural communities to promote the formation of community food committees that were elected in formal community assemblies. The community had to agree to take responsibility for supplying the locale and operating the store and to send two representatives to the monthly meetings at the regional warehouses. The village representatives formed the "community food councils" *(consejos comunitarios de abasto),* whose task was to oversee the warehouse operations and make certain that the stores it served were supplied with merchandise.

These mechanisms of participation were intended to make the bureaucratic apparatus more accountable to its ostensible clients. Since limited amounts of grain were made available to the rural distribution network, diversion to private intermediaries would leave the village stores empty. The village committee could then go to the community food councils, who could use their organization and resources to pressure DICONSA to deliver food to the rural warehouses as well as to assure that it was delivered to the villages from the warehouses. The community food councils functioned as oversight committees that provided social counterweights to offset the power local elites traditionally wield over the rural development policy implementation process (Fox 1988).

The actual degree of participation and democratic control that developed varied throughout the village peasant store network. In some areas, local elites were able to control the food committees or render them powerless to actively mobilize. Fox's research concluded that about 50 of the 200 CONASUPO-COPLAMAR programs that were in existence by 1982 were effectively supervised by democratic community food councils and considered this a significant success, taking into account the top-down nature of the initiative (Fox 1988). They were most successful in areas where local and regional organizations already existed. In some areas, especially in the state of Oaxaca, the community food councils became a strong political force that actively monitored the food delivery system by periodically calling for audits and providing continuous pressure on DICONSA when supplies were not delivered.

Conflict arose around the role of the community food councils as some bureaucrats and local elites fought, in a variety of ways, the pressure from below to democratically run the warehouses. When the peasant organizations tried to use the program's infrastructure to start a marketing program for peasant products on the back run from food delivery, DICONSA

officials were able to stop their efforts. Once again, officials saw peasant organization as a threat instead of a resource. Their initiative to use the rural development infrastructure more efficiently, by filling the trucks both going into and coming out of the villages, was stymied instead of incorporated into the program so as to increase its benefits.

The program has been able to provide significant amounts of low-cost food to the rural poor and is the major source of grain for peasants in rural areas with a corn deficit. A survey done by SOMEX, a government bank, showed that prices deviated from the regulated prices by only two percent of the rural stores, showing the program's effectiveness in providing price competition to local traders. It was much harder, however, for organized communities to influence the allocation of goods from Mexico City to the regional warehouses. The same survey estimates that there were supply problems in 60 percent of the communities, probably due both to diversion to private intermediaries and to lack of supplies from the purchasing wing of CONASUPO. This is still a vast improvement over the situation before the stores were in place (Fox 1986, Chap. 6).

The SOMEX study also analyzed the costs of DICONSA. It found that the rural food store system suffered losses that increased with the degree of remoteness of the area. Prices were not adjusted to cover the cost differential between urban and rural delivery, in effect providing an extra subsidy over and above the generalized food subsidy then prevailing in Mexico. Since the urban component of DICONSA generated profits, the rural component was largely supported by an internal redistribution within the enterprise (Fox 1986, Chap. 6).

There was quite a bit of doubt as to whether the CONASUPO-COPLAMAR program would survive the change in presidential administration in 1982. While COPLAMAR did not survive, the village store system was folded into the CONASUPO-DICONSA system and has continued. The program had created a constituency of almost 13,000 communities and would have been politically costly to cut back. Moreover, the fact that it successfully targeted the rural poor made it more defensible than other larger and inefficient programs and has contributed to its survival even as many other RDPs were cut (Fox 1988).

In conclusion, the CONASUPO-COPLAMAR project was a food delivery system designed to weaken the monopolistic power of local merchants in rural communities in Mexico by providing a low-cost alternative for basic food procurement for poor peasants. It created the infrastructure that made competition in food delivery possible both by building rural warehouses and by promoting the peasant organization that was necessary to make the system work. It also provided a targeted food subsidy by charging the same prices in rural and urban stores, absorbing the higher costs of rural delivery.

The CONASUPO-COPLAMAR program is a positive example of the ways in which rural development programs can successfully target the subfamily farm peasant sector by involving the beneficiaries directly in the implementation process in order to provide them with the political resources to hold bureaucracies accountable. By providing an opportunity for the creation and consolidation of representative local organizations, policymakers at the federal level can change the incentives facing local level rural development implementors that so often favor local elites. The CONASUPO-COPLAMAR program, however, allows peasant organization only to a limited degree. Instead of incorporating peasant initiatives, as soon as they overstep the original plans of the program they are seen as threats and are squashed. If the state had negotiated with the organizations, and incorporated their initiatives into the program, the program's benefits could potentially have been increased and the resources for rural development been used more efficiently.

The CONASUPO-COPLAMAR program provides an interesting example of a state enterprise serving an important function in the rural economy. The food delivery system clearly provides important competition to local merchants. Moreover, community-run stores, which are another alternative to private merchants and often a very appealing project for community organizations, have a low record of success because they prove to be managerially difficult, unable to develop the regional infrastructure to compete with private regional procurement and delivery systems, and tend to have contradictory and competing social and economic goals (Tendler 1983; Flora *et al.* 1985).

Household Economic Strategies and the Participation of Women

The importance of women's contribution to peasant household livelihood has been widely recognized, especially since the research efforts spawned by the U. N. Decade for Women. The long hours worked by women, their contribution to their children's maintenance, their importance in subsistence agriculture, especially in the Andes and other places with high male outmigration, have been well documented (Deere and Leon 1987). The generally very low productivity of women's activities has also been noted, as well as the lack of investment in technologies that could raise it. The position of women in the rural economy and the added burden that the crisis has placed on them warrants special discussion of their participation in RDPs.[4]

Although significant changes have appeared since the U. N. Decade for Women began in 1975, many development initiatives remain biased against women. Investments are still more frequently funneled to male activities, and the communication problems between extension agents (usually men) and peasant women have been extensively documented. Although many Latin American governments have created women's bureaus mandated to incorporate women into the development process, few have "developed the mechanisms or channeled the resources to translate abstract goals into concrete policies and programs benefiting rural women as a whole" (Deere and Leon 1987:10). Many of the significant attempts to incorporate women into development projects have been undertaken or promoted by international agencies such as the U. N. and USAID (Chaney 1987). The following is a brief analysis of several recent projects that have made serious attempts to incorporate women.

In the last 10 years, two basic institutional approaches to women's participation can be distinguished: The first is the integration of a women's component into large-scale integrated RDPs, and the second consists of isolated small projects whose main or exclusive focus is women. Controversy exists about which approach is more effective. The ability to reach many more people, the possibility of coordinated planning that can address simultaneously the many activities that peasant households are engaged in, the complementary delivery of basic services, and the abundance of experts and advisors make IRD a potentially powerful tool for the integration of women into the rural development process. Yet, as Chaney points out, IRD projects usually focus on male activities and, at best, add special women's components that are understaffed and underfunded (Chaney 1987:192, 206). However, the isolated, fragmented, and tiny (in terms of the number of women affected) projects that are the other main alternative in women's programming are also replete with disadvantages (Chaney 1987:192).

4 Recently, important information has been accumulated and analyzed in project evaluations. See, for example, the U.S. AID Office of Women in Development, International Center for Research on Women, the Pathfinder's Fund Women in Development.

Two main types of activities that women's projects support should also be distinguished: income earning and income conserving (expenditure reducing). Feminist scholars have documented the importance of income-earning activities because of the increased power within households that these can afford women. Besides the explicit goal of promoting the empowerment of women, these scholars argue that empowerment is a prerequisite to the full integration of women into the development process. Yet, Chaney cautions against dismissing projects that are income conserving rather than income earning. She argues that, in particular situations, especially for undercapitalized, labor-intensive ventures such as artisanry production, the returns to women from engaging in income-earning activities are extremely low compared, for example, to the real economic returns from subsistence food production.

Whatever their position in this particular debate, most scholars concerned about women in development agree that women's empowerment and organization are key to successful women's projects. Echoing the theme of this paper, the creation of an interest group composed of development beneficiaries is necessary for successful implementation of projects, to assure that services and resources are channeled to them in an effective manner. Communication of female peasants with male extension agents has been notoriously unsuccessful both because of their insensitivity to women's conditions and the common socialized passivity and timidness of the women themselves. Thus, a recent comprehensive analysis of the state and rural women in Latin America since the U. N. Decade for Women concluded that collective self-empowerment must be a key component of any project, through education, the promotion of women's organizations, and access to resources (Deere and Leon 1987:263).

Integrated Rural Development and Expenditure Reduction: Household Gardens in the Caribbean

Chaney (1987) has analyzed the women's components of two large-scale IRD projects, Plan Sierra in the Dominican Republic and the II Integrated Rural Development Project (II IRDP) in Jamaica, whose similarity in ecological conditions and project design provide an important opportunity for comparative evaluation.

The women's components of the Jamaican and the Dominican IRD projects were added in the early 1980s and had not been included in the original projects' design and planning documents. The focus of both components was nutritional: intensive family garden plots that were planned so that the selection of vegetables complemented the starchy staples already integrated into the local diet. Nutritional education was also a central part of the women's projects.

In Jamaica, a corps of 20 women's component officers was trained to work with the peasant women. Many of the women's officers had relatively little training and generally were accorded less status than the (usually male) extension officers in whose team they worked. In the Dominican Republic, Plan Sierra financed 10 women's *promotoras* that worked with 123 peasant women's organizations that had been established as a result of 20 years of organizing by the Catholic Church. Also, in Plan Sierra, the women's component incorporated the ideas of a workshop held with representatives of the peasant women's organizations into the project's design.

Chaney (1987:194) argues convincingly that the emphasis on expenditure-reducing activities over income-earning activities was appropriate in the case of these two projects. Gardening was easily integrated into the set of activities that women engaged in, took relatively little time, and saved significant time and money expended in obtaining food from the market . Moreover, it brought into more intensive use a resource the women did have access to, land, and brought relatively high returns to labor compared with the income-earning activities available to these isolated women.

By 1984, 6,525 household gardens cultivated by women had been established in Plan Sierra, the program was expanding into animal husbandry and was in the process of being fully integrated into the larger IRD project. In the Jamaican case, many of the 822 gardens that were set up in its first year were no longer in existence two years later and, by 1984, the women's component was headed towards oblivion (Chaney 1987:203). Chaney attributes the greater success of the Plan Sierra project to the existence and incorporation of strong women's organizations, the full support of the IRD project directorate (including support for women extension agents), and the general high quality of the IRD project as a whole (see previous chapter).

Income-Earning Activities: Milk Production and Cheese-Making in Bolivia

The following case is a fairly typical example of a small-scale income-generation project for women. Based on the community development approach to rural development, the Appropriate Technology for Rural Women Project (PTAMC) of the OAS, in cooperation with the ministries of Agriculture of Ecuador and Bolivia, initiated a series of local projects designed to create women-based organizations as a mechanism to introduce a variety of appropriate technologies to improve production and living standards (Flora 1987:223). In the early 1980s, members of Chawirapampa, a small, highly unified, nucleated farming community in the Lake Titicaca region, became informed about PTAMC through their projects in nearby communities and requested to work with it on a project in their own village. After several experiments with other technologies, the project focused on improving cheese-making technologies, since cheese-making was an activity currently carried out by women in their homes with time-consuming methods. A small cooperative was organized, and PTAMC brought in equipment to mechanize cheese production and hired an experienced Swiss technician to train the local women.

The small cheese factory purchases milk from the 30 women members of the cooperative as well as from other milk producers in the community. Since the factory has not reached its capacity, efforts to improve pasture land and increase milk production have been introduced as complementary activities to cheese production. Currently, each of the 30 women participating in the project works two days in the factory once every two weeks. She or her husband also makes a trip to La Paz to market the cheese after completion of her two-day shift. The women's organization decided not to pay their members for their shifts in the factory, but rather use the significant revenues to finance the organization (Flora 1987:224). A major benefit seen by the women is that they can sell their milk production to the factory and obtain revenues in that way. While the project suffers from organizational problems, the women have increased their voice in the community and have established a low but regular income source through the sale of milk (Flora 1987:225).

The cheese produced in the project is marketed in La Paz in the local offices of the government agencies that the coop members learned about in the course of the project's

implementation: PTAMC, UNICEF, the Ministry of Agriculture. While such informal marketing is not uncommon in Bolivia, in this case it obviously depends on the good will of a few key bureaucrats and could not be expanded easily. As in many small projects, commercialization is a major limiting factor because the creation of efficient marketing channels often requires an effort that exceeds the resources of small production-oriented projects.

In an evaluation of this and other income-earning projects for women, Flora points to several of the same factors contributing to success as Chaney notes in her analysis of the larger projects. First, she points out that the new activities must fit in to the existing household survival strategy and division of labor. Second, she notes the importance of organization and stresses the need for training and empowerment as key components to build the organizational capacity necessary for successful project implementation.

There have been hundreds of attempts at small-scale, income-generating projects incorporating or focusing on women in Latin America. Singling out a few as shining examples for replication is not possible because their strength often lies in their adaption to local situations. This also is their weakness: They benefit very few people, they are dependant on fragile markets that cannot be expanded significantly, and often they are built on the organization of a small homogeneous group. The preceding case is one example that illustrates both the strengths and limitations of this kind of project. While it is difficult to see how central governments could incorporate elements of the project into national policies or programs, the project does illustrate the kind of local initiative that could be supported by decentralized local government agencies and facilitated by government cooperation with local and international NGOs.

Conclusion

All across Latin America, in both rural and urban areas, the poor are organizing. How can governments support these self-help efforts and incorporate the poor as productive participants in a revitalized development effort in the postcrisis era? This section has attempted to show that grassroots efforts are a tremendous resource for the development process because they create structures through which rural development investment can be channeled to effectively reach the target population. It has also discussed the fragmentary nature of their influence and the difficulties grassroots projects have in moving beyond the very small niche in the household economies which they attempt to transform. Grassroots efforts must be accompanied by state action that provides positive economic incentives through favorable terms of trade for peasant production, within a balanced regional planning effort. The possibility of forming a "democratic social sector" in the context of the crisis, and peasant response to it, is real and is a positive development worthy of government support (Fox and Gordillo 1988).

10

LINKAGE EFFECTS, NONAGRICULTURAL ACTIVITIES, AND EMPLOYMENT CREATION

Many students of development have come to appreciate the extent to which peasant households wear various hats and depend on a variety of sources of income, including farm production, local employment, migratory employment, and household/community-based nonfarm enterprises. As discussed extensively above, typical farm-oriented rural development projects are really only viable means to raise incomes for a limited stratum of the peasantry. While smaller peasants may also benefit from agricultural assistance specifically designed for their situation, they and the landless will benefit much more from efforts at employment creation in rural regions.

In Chapter 4, it was shown that the share of the rural economically active population working in nonagricultural activities had increased substantially. This is true throughout the developing countries and is accompanied by relatively slow growth of agricultural employment (ILO 1983).

The high rate of circular migration from rural areas argues for a strategy of rural development that focuses on off-farm employment creation (Grindle 1988). In this chapter, we take up that theme, concentrating on several issues: 1) rural industrialization is a difficult enterprise which must be guided by the logic of urban industrialization and, therefore, should be regionally oriented, building carefully on the advantages of rural areas; 2) the unequal distribution of land in Latin America may be a barrier to broad-based agroindustrial development although there are surprisingly successful examples at hand of just such effects; 3) regional development cannot be a top-down process but must build on people's own skills and desires if it is to be sustained; 4) a much greater commitment must be made to solve the credit and marketing problems of small businesses; and 5) successful rural development in a context where increasing numbers of people are landless or near landless may require rupturing traditional rural political arrangements to allow workers to form unions, cooperatives, and other types of collective organizations for improvements in wages, working conditions, and consumer terms of trade.

Rural Nonagricultural Employment

As the source-of-income data presented in Chapter 4 indicate, rural nonfarm income is extremely important not only for the landless but for large numbers of small landholders as well. While nonagricultural income of the landless in the Ecuadorian Sierra accounted for 67 percent of total household income, it also represented 51 percent of income for peasant families with less than one hectare of land and 27 percent of income for families with one to two hectares (Table 4.11).

Of course, a considerable proportion of such income comes from migrant remittances in many countries of Latin America, rather than from significant local rural activities. People often must seek employment to survive, and migration may be the only alternative. Migration, when it is successful, is a cumulative phenomenon, and there are many villages virtually depopulated of working-age males. In some instances, migration leads to *less* economic activity in rural areas, as lands are left idle and stores and services close up for lack of customers (Mines 1986). Remittances are often spent in the consumption of goods from outside or for certain services such as construction of houses.

In this scenario, the village is not seen as a place for business investment. This is particularly true of unfavored regions in deserts or mountains, far from cities, with a marginal agricultural land base and few exploitable natural resources. Building roads to such areas may merely facilitate migration rather than increasing rural production (Grindle 1988). However, it is difficult to envisage alternative rural development schemes for such unfavored regions which would have an equivalent effect on incomes, and the rest of the discussion in this chapter does not offer such solutions, focusing instead on more favored areas.

The range of nonfarm economic activities in rural areas is quite restricted. Small enterprises throughout developing countries are usually concentrated in the following ranking (ILO 1983):

1. Wholesale and retail trade
2. Manufacturing
3. Community and personal services
4. Transport and communication
5. Construction

Data from 1970 for rural nonfarm employment in Chile, Colombia, and Brazil show the following ranges of proportions (World Bank 1978a):

	Chile	Brazil	Colombia
		percent	
1. Commerce	10.1	12.9	18.9
2. Manufacturing	19.4	24.1	33.0
3. Services	26.9	33.6	33.0
4. Transport and utilities	7.8	8.7	6.6
5. Construction	10.4	14.7	8.4
6. Other	25.4	6.0	0

These data indicate that manufacturing is quite important in rural Latin America, unlike other developing areas where wholesale and retail trade often account for 50 percent or more of nonfarm employment (ILO 1983). Studies have shown that most services are actually repair services, which suggests that they may be linked to agriculture and small-scale manufacturing.

On the other hand, it is usually argued that the strong linkages in rural areas are final demand linkages and that rising agricultural incomes will increase local demand for personal goods and services. There are two problems with this. First, highly unequal distribution of land, as is the case in many areas of Latin America, means that there are relatively few landowners who benefit from agricultural prosperity, and they are often urban-based or urban-oriented, thus contributing little to local demand. Second, rising incomes among the poorer farmers may lead to consumption of cheap manufactured goods from cities and increasing mechanization of agriculture. This may well lower their demand for locally produced goods and services (ILO 1983). This process has been long debated, and we do not have sufficient data to resolve it here. However, such problems suggest that many rural enterprises will probably not find sufficient demand locally and will have to be linked to broader markets in regional, national, and international cities. It is with this notion that we proceed to examine possibilities in manufacturing.

Rural Industry and the Logic of Industrial Development

The starting point for any discussion of rural industry must be a consideration of the process of industrial growth in a market economy. Recent analysis of this process has focused on the nature of transactions costs and market failure outside the firm and the existence of economies of scope within the firm. That is, we can think of the firm at any point in time as undertaking a certain set of tasks and buying on the market, or contracting out, other tasks. A vegetable processing firm might grow its own vegetables, make its own packaging, produce its own electricity, manage its own fleet of trucks for transportation, or it might buy each of these things from suppliers. The decision depends on the efficiency of markets for such goods and services and the extent of transactions costs involved in procuring them (Williamson 1975).

Thus, suppliers arise in an area both to specialize in tasks that local firms have had to do themselves or to substitute for the importation of supplies from outside the region. This is eminently an urban process; in fact, such linkages and the growth they induce are almost the defining characteristics of dynamic cities. As Jacobs (1985) has argued, a city grows first by exporting goods to other regions, which leads to increasing imports (both producer and consumer goods) which, in turn, leads to new growth, as firms arise to substitute locally-produced goods for the imports. Some of these import-substitute goods are subsequently improved upon, exports expand, and the process continues.

This type of development occurs at a small-scale level, building on indigenous skills, and in the process creates new skills and capabilities. It usually occurs in cities because disintegrated production processes often need spatial proximity to keep transaction costs down (Scott 1988). These agglomeration economies are a strong force mitigating against dispersed industrialization in rural areas. There are, consequently, good reasons why industrial growth occurs in cities.

In fact, for a firm to leave the city, it usually must be able to live without a network of suppliers in close proximity. To locate a plant far from suppliers is risky since a breakdown in supplies of inputs or spare parts may be costly. Thus, good transport and communications infrastructure is usually a precondition to relocation (Scott 1988).

Studies have shown that plants that locate far from suppliers tend to be larger, more capital-intensive, and vertically integrated with more standardized outputs and production processes. They are thus able to "de-skill" production and go in search of a cheaper labor

force. Almost by definition, then, such plants will have few linkage effects when they are transplanted away from a city, and their maintenance will be sensitive to wage costs (which, on an international level, are highly influenced by exchange rates). Thus, export zones and rural areas around the world have competed for such plants, only to see little local effect beyond plant wages; often the plant will be closed and moved to a still cheaper area.

However, transplanting can often occur from a city to its surrounding region without much cost. Thus, rural areas located close to growing cities can benefit from a natural process of dispersion.

Also, if transplanting occurs on a large enough scale to reach a critical mass, it may be possible to turn the process into autonomous growth. This is evidently the lesson of Taiwan, where local capital was invested in light industry (and later, heavy industry) to complement and compete with the transplants (Jacobs 1984). In this sense, worldwide subcontracting is a double-edged sword; in the short run it provides cheap production for a firm, but in the long run it creates competition (Scott 1988). Access to final markets may still be a problem, though, as we will see in the discussion of the frozen vegetable industry below.

In summary, industrial development is fundamentally an urban phenomenon. Rural areas surrounding cities can benefit from such growth. Beyond this "exurban" dispersion, we can expect in rural areas mainly de-skilled transplants with few linkages. It would be very difficult to create a garment industry in rural villages, but it is possible to disperse standardized sewing tasks for homework out of a regional city's garment industry or to subcontract more complex tasks to small village firms. Virtually all other rural industry either will be resource-based (e.g., agroindustry), will build on some indigenous skills of rural residents, or will serve an import-substituting function for some other rural industry (e.g., agricultural inputs). In looking at data on rural manufacturing from a variety of countries, a World Bank study concluded, "Within manufacturing, most rural employment is accounted for by four broad groups of activities: a) food processing; b) textiles and wearing apparel; c) wood, including sawmilling, furniture-making, and general carpentry; and d) metal, including blacksmithing, welding, fabrication, and the making of tools and equipment. All four categories appear to have retained their importance no matter what level of development has been reached in a particular country" (World Bank 1978a:25).

For example, In Jamaica, a study of rural small-scale firms firms found the following distribution of employment (ILO 1983:71):

	percent
Textiles and garments	30.1
Crafts	23.0
Repairs	16.2
Woodwork (including carpentry)	11.5
Food processing	6.8
Metal products	5.7
Other manufacturing	6.5

Again, the range of industry is restricted, the skills to be built upon rather well delimited.

Regional Development and Flexible Production

All of the above is based on a conventional, mass-production view of industry. However, one of the principal ideas being discussed around industrialization and the restructuring of the world economy is flexible specialization (Piore and Sabel 1984; Cohen and Zysman 1987; Sabel 1987). Seen to arise from the breakdown of a system of mass production for mass markets that has characterized much of world industry, Sabel explains it as follows: "Mass production is the manufacture of standard products with specialized resources (narrowly-skilled workers and dedicated machines); flexible specialization is the production of specialized products with general resources (broadly skilled labor and universal, typically programmable, machines). Mass production thus depends on the increasing separation of conception from execution and flexible specialization on their integration" (Sabel 1987:40).

Sabel distinguishes three variants of flexible specialization: 1) the Japanese ***kanban*** system, where many small suppliers and subcontractors are usually clustered spatially around a large firm; 2) the internal decentralization occurring within large West German firms; and 3) a regional cluster of small firms, as in northern Italy. Sabel describes this last:

> "(The) . . . small-firm variant is characteristic of many of the technologically progressive industrial districts producing such goods as machine tools, knit wear, ceramics, shoes, motorcycles, electronic musical instruments, furniture, special machines, and textiles in what has come to be called the Third Italy: the region bounded roughly by Venice, Bologna, Florence, and Ancona. In this system small and medium-sized firms specializing in different manufacturing processes combine to produce final products according to the shifts in demand. The firms form consortia to secure economies of scale in obtaining credit, marketing products, or conducting generally applicable research. If there are economies of scale in one manufacturing operation, a large firm –owned perhaps by a consortia of its customers– is formed to realize them" (Sabel 1987:41).

In Latin America, Sabel argues, industrialization has been synonymous with large firms and mass production. And future industrialization may well continue along this path as the remaining mass-production activities shift out of the more developed countries. However, there are opportunities for flexible specialization in many large Latin American firms, as they often have excess capacity and are organized as a collection of semiautonomous shops under one roof. Lacking many local input markets, such firms have had to internalize transactions that elsewhere would have been contracted out. To achieve flexible specialization, these firms would now have to move to adopt programmable automation (the most sophisticated new flexible machinery) as well as to develop the missing network of suppliers (Sabel 1987:46). That is, continuing to adopt "best practice" technology along with a wage advantage would ensure competitiveness of Latin American industry on world markets if quality, design, and marketing problems were solved; in addition, developing a better network of small subcontractors might create the kind of autonomous industrial growth which is crucially needed.

Sabel (1987:47) cites evidence that this process of subcontracting is feasible using the example of the Singapore machine-tool industry, where foreign firms created their suppliers by selling equipment at favorable rates, buying at high prices, and providing technical assistance. Lall (1979) discusses the creation of such linkages by Indian truck manufacturing firms which were quite successful. He notes that the inclusion of many small suppliers required the support of government policies since transaction and training costs were initially

higher with very small firms. Our example below of vegetable contracting exhibits similar characteristics. Thus, backward vertical linkages are difficult where markets do not exist and must be created; to create such linkages with small firms may well require the innovative support of government policies.

This suggests that many problems of industrialization in Latin America may lie in the historic support for large-scale, mass production firms and the consequent failure to properly support small-scale, entrepreneurial businesses usually referred to as the informal sector. These small enterprises are often characterized by negative accounting rates of profit, and they compete partially by operating outside of certain laws, usually paying very low wages and by using underremunerated family labor. To support such a situation, one must see informal sector wage labor as essentially apprenticeships toward their own businesses or toward formal sector employment (Dowds, forthcoming). Many rural areas have long-standing patterns of apprenticeship in skilled activities and, in fact, provide most of the human capital in these trades for the whole economy (World Bank 1978a). That such skills are largely drained off to urban areas through migration is partly due to the lack of investment which builds on such skills in rural areas. This type of autonomous nonformal education and vocational training represents considerable investment upon which can be built expanded small-scale enterprise development.

It is easy to underestimate the importance of small rural nonfarm enterprises. For example, Chuta and Liedholm (1984) cite studies which estimated that 67 percent of all industrial employment in Jamaica was in rural firms averaging 1.8 employees, and 95 percent of rural industries in Honduras employed fewer than five workers. These small-scale enterprises are also importantly linked to agriculture, both in production and demand relationships, but especially to small-scale agriculture. However, large-scale and small-scale enterprises, both in agriculture and linked to it, can be complementary. The government may have difficulty supporting informal sector enterprises directly, but it might loan money indirectly through larger firms by stipulating that they create linkages to small firms.

Shoe Industry

Sabel suggests that small- and medium-sized firms grouped in a region could, in fact, create permanent-innovation, small-firm economies in Latin America on the Italian model. He cites the example of the shoe industry around Nova Hamburgo in Brazil as a potential example. Here we explore the potential of the shoe industry in and around Leon, Mexico.

The Leon shoe industry is composed of a number of factories and thousands of small workshops *(talleres)*, subcontractors specialized in certain tasks *(maquilas)*, and family units *(picas)*. Most of the town depends on the industry, as do many surrounding villages. One estimate in 1980 put total employment at 300,000 (Calleja 1984).

Although the shoe industry is one of the few industries in Mexico not centered in the capital, it has not been a priority for the government. Protected by tariffs, largely Mexican-owned, the industry did little exporting. This was mostly due to a low level of quality control in both materials and products (Boon 1980:83). There is little infrastructure; training schools are just starting, and there is no provision for design. In fact, most designs are copied from abroad or foreign consultants are contracted. Wages in the factories were high, given that all production was for the internal market. This led to overly capital-intensive production in the factories, de-skilling of production jobs, and limiting the factories' desire to subcontract production to

small producers, an important element in Spain, Italy, and elsewhere (Boon 1980:107, 118, 177). One result was that skilled shoemaker training, a province of the small shops, was declining.

Brazil, on the other hand, had targeted the shoe industry and provided various export subsidies. Of course, there was considerably more foreign involvement in the Brazilian industry which may have provided better access to designs, technology, and markets. While Mexican exports to the United States of nonrubber footwear increased from 4.0 million pairs to 5.5 million pairs in 1970-1984, Brazil's exports to the United States increased from 2.4 million pairs to 109.7 million pairs over the same period. This tremendous growth has created a prosperous region in Brazil, while the Leon industry has experienced a crisis.

Leon is located on the edge of some extremely poor areas of Mexico, many of which are so arid as to have few prospects for a viable agriculture. Decisive support for a regional industry such as the Leon shoe industry is perhaps the best course for employment creation in this area. As the city grew and prospered, it would create other industries and incorporate an expanding number of villages into its sphere of influence, and such growth could be based on traditional skills. As Boon (1980:84) observed, "home or family industry in Leon can produce shoes almost handmade, using superior materials, at a lower cost price than factory made shoes." He suggests that the problem of the small shops lies in access to credit, to markets, to "superior materials," and to fine design. To demonstrate the benefits of such production, Boon (1980:95) notes: "Factory IV, for example, has an artisan group among its factory workers which, for the highest shoe qualities, does cutting, folding, sewing, and even lasting and bottoming operations manually. No better example can be supplied of the feasibility of labor-intensive shoe production in low-wage countries because factory IV pays the highest wages, and has the highest labor costs of all the factories . . ."

As we shift away from mass production, best practice technology in many industries may well consist of relatively simple techniques combined with skilled labor. Since the vast majority of rural enterprises exhibit just such characteristics, regional development based on groups of such firms –given access to capital and markets, whether through cooperatives or subcontracting arrangements– may be the best path for rural industrialization. Shoes and leather goods, textiles and clothing, and solid wood furniture are all important examples. They are fairly labor-intensive, they have viable simple technologies available, and the products can be sold not only in distant cities but also as rural consumer goods. Grindle (1988) found a number of examples of textile and garment workshops in rural Mexico and, of course, there are numerous regions of Latin America with long traditions of weaving. We should note that craft production often fulfills the same criteria of skilled labor with simple techniques. It can usually be carried on in a dispersed manner, but enterprises suffer similarly from lack of capital and markets and can be assisted through marketing cooperatives.

Many of these nonagricultural activities are related through linkages to agriculture since agriculture is still the principal activity being carried on in rural Latin America. Leather goods production is potentially linked to cattle raising, although both the Brazilian and Mexican shoe industries import a substantial proportion of their hides. As noted above in the example from Plan Sierra in the Dominican Republic, furniture production can be closely linked to lumbering activities, although this kind of link is not at present widespread. Cheese production is tied to milk and, in most parts of the world, this is a spatially close link. Weaving is dependent on wool although, again, imports and synthetics have made significant inroads. These industries can be stimulated by increasing productivity and production in the agricultural inputs, lowering costs and in many instances substituting for costly imports.

Thus, even though the share of the population actually engaged in agriculture declines, this does not mean that agriculture is less central to rural development strategy. On the contrary, to develop nonfarm industry and services, one must build on the economy that presently exists. In the following examples, we thus focus on agriculturally based enterprises.

Nontraditional Vegetable Export from Guatemala and Mexico

A fascinating example suggestive of the potential of agroindustrial investment for improving incomes and techniques of smallholders has been unfolding in Guatemala for about 10 years. The initial investments certainly were not intended to benefit peasants, but economic forces led the project in this direction, and several studies have concluded that participants have indeed benefited in various ways. In the following section, we trace through the history and results of Guatemalan highland vegetable production, then compare it to the parallel but large-farm-based development of frozen vegetable exports in the Mexican Bajio.

Alimentos Congelados Monte Bello, S.A. (ALCOSA) was initially set up in 1971 by the Latin American Agribusiness Development corporation (LAAD) with funds from the U.S. Agency for International Development (AID). The intent was to freeze fruits and vegetables for the small Central American market and to build toward export of specialized products to the United States. The firm was purchased in 1975 by Hanover Brands, Inc., a United States-based food processing company and, with additional funding from LAAD/AID, ALCOSA was expanded and reoriented toward freezing a few labor-intensive vegetables for export (Kusterer *et al.* 1981). The crops chosen were primarily cole crops, broccoli, cauliflower, and brussels sprouts, which have historically been grown in relatively cool climates and which require considerable hand labor not only in the fields but especially in the processing plant. The plant was expanded again in 1981 after having overcontracted for raw product the previous year.

The ALCOSA plant is located near the highlands, 20 kilometers south of the capital. Initially the company leased land in the area, growing its own cole crops. This strategy was gradually abandoned, and these farms were phased out by 1980. At first in the 1970s, the company tried to expand its sources of supply by contracting with moderate-sized commercial farmers who were willing to participate in a potentially highly profitable scheme. However, most of them had no experience with vegetable production and none of them had any experience with cole crops. Many were absentee farmers who lived in the city and had other business interests and probably did not give the crops the daily attention they require. As a result, yields and quality were lower than expected, and there were disputes over grading and pricing. Such disputes have been common in all countries of the world where contract farming has been employed, especially where the firm is a monopsonist and controls grading.

In any event, ALCOSA had also pursued contracts with smallholders in the highlands beginning in 1976 and, when this proved successful, shifted contracts toward the indigenous peasantry until, by 1980, 2,000 such smallholders produced 95 percent of the cole crops (Kusterer *et al.* 1981). This peasantry had the advantage to the firm of long experience producing a variety of vegetables for local markets (including cauliflower) and, since broccoli is an easier crop to grow than cauliflower, they proved themselves the most efficient and highest quality producers of that as well. The peasants also were not unhappy with the prices at first. It was concluded in 1977 that producing for ALCOSA was the most profitable farm alternative available to smallholders.

However, by 1980 the number of producers and area of supply had expanded sufficiently so that more was produced than the firm could process. This oversupply crisis was partly borne by the firm but also by peasants who could not afford it. Also, the firm had tightened grading standards to the point where producing for ALCOSA was less profitable than producing vegetables for alternative markets (Kusterer *et al.* 1981; von Braun *et al.* forthcoming).

Nevertheless, apart from the riskiness inherent in involving smallholders in any vegetable scheme, two studies of the effects of ALCOSA's contracting both concluded that the principal result was to improve incomes and agricultural productivity of the peasantry. In most villages, the ALCOSA scheme introduced new crops, production credit, new chemicals and fertilizers, and greater knowledge and sophistication in marketing opportunities. Most striking was the degree to which contracts became concentrated in the poorest strata of the peasantry, who gained the most in income terms. Thus, while some tendency toward social differentiation was detected, in most villages the scheme had the opposite effect of improving income distribution.

Since the poorer peasantry also provided a significant amount of local wage labor, these market opportunities tightened the local labor market (as demand for labor increased at the same time as families spent more time on their own plots) and raised local wages. Also, poorer peasants were able to substitute own production for migration to the lowlands.

A surprising finding of the von Braun study was that, in one particular area where a cooperative was formed and where average farm size was 0.7 hectares, participation in the ALCOSA scheme had positive spillover effects in maize production. Thus, even though area allotted to basic food crops declined, their yields increased to compensate. This was accomplished in part by interplanting corn and vegetables and obtaining higher yields of both from the same piece of land than other areas achieved separately (Kusterer *et al.* 1981:61). This was also attributed in part to technical assistance both from Swiss advisors and from government agronomists. It constitutes one of the few instances where such contracting schemes have been shown to have positive effects on peasant food production. The important thing to recognize is that such effects are, indeed, possible and that peasants can participate in such schemes and at the same time maintain some food security. Intensive vegetable production requires so little land, and some vegetables have such short seasons (transplanted broccoli matures in 60 days), that there is much room for complementarity.

The problems peasants usually face in this regard are institutional. For example, in the Guatemalan case most of the villages involved were long-time vegetable producers for urban markets, had access to roads, and were able to get credit through the contracting firm, regional cooperatives, or the government bank. Further, in the area where the cooperative was formed, producers benefited from extensive assistance by NGOs and by the clout the cooperative was able to bring to marketing. Of course, farmers did not all join the cooperative by choice; rather, it was given a monopoly in the area on access to ALCOSA. Since the cooperative provided benefits both to the peasants and to ALCOSA (by lowering transaction costs), it is perhaps a good model for similar schemes elsewhere.

The situation in Guatemala has evolved so that, by 1987, five companies other than ALCOSA processed frozen vegetables in Guatemala, and six other companies were operating in fresh vegetable export. The cooperative is now processing dried vegetables and starting up its own freezing facility as well as shipping fresh vegetables to Europe, the United States, and urban Central American markets (von Braun *et al.*, forthcoming, p. 38).

A similar industry was created in central Mexico in the Bajio starting with Birdseye in 1967. Birdseye contracted with large growers (10 to 3,000 hectares) who had generally had experience growing vegetables for Mexican markets, for export, or for the canneries which had earlier located in the region. The very largest growers, dissatisfied with prices, began to build their own freezing plants in the late 1970s, a process which accelerated after the 1982 devaluations. Also in the 1980s the Mexican industry was entered by Green Giant, Campbells, and other large U.S. corporations to meet the challenge of expanded production out of Mexico and Central America. The Mexican firms are too small to attempt to sell directly under their own brands in the U. S. market, which means they either produce under contract to one of the transnationals, under contract to some other firm in the United States, or on the open market through brokers. However, in 1986 it was estimated that they had as much as a 30 percent (10 cents per pound) advantage in IQF broccoli (CIF U.S.) over California firms which were in the same structural position. This cost advantage has translated into relatively high profits which has driven the rapid expansion in Mexico and Guatemala.

The combination of expansion of freezing capacity and the vertical integration of the largest farms with their own plants meant that contracting firms in Mexico had to go farther and farther afield to secure supply, both geographically and in terms of size. Thus, considerable effort was expended in convincing grain growers (sorghum/wheat) to devote the time needed to grow vegetables and, for the first time, significant groups of small *ejidatarios* were contracted.

The general effect of the industry has been to reinforce the development of capitalist agriculture and the unequal distribution of income in the region. Smallholders did not have access to what proved a profitable business for larger growers even though many had good, irrigated land, proximity to roads, and experience producing vegetables for urban markets. In general, the firms were able to get sufficient product of good quality from the large farms, were leery of the transaction costs involved in dealing with smallholders, were daunted by the sheer numbers of *ejidatarios* who would have to be found, and hired personnel who shared the class bias against peasants in the region. In a 1983 farm survey, all growers of such freezing vegetable crops agreed that it was at least as profitable as any alternative short of exporting the crops themselves.

In Guatemala, Kusterer reported that ALCOSA was paying 5-6 cents/pound for Grade 1 broccoli and that transaction costs (including transport) were about 3 cents/pound. In Mexico, firms were paying smaller growers about 6.5-7 cents/pound for Grade 1, and transaction costs were estimated at a little over 2 cents/pound but might be higher if the firm also had to loan machinery and working capital. In contrast, large growers were paid 9-10 cents/pound or more, but transaction costs were less than 1 cent/pound. Firms are thus able to deduct transaction costs from the prices paid peasants and still interest them in producing the crops. It would thus appear that the bias against smallholders in Mexico is unwarranted, except that the firms have to supply inputs, credit, and technical assistance, which means they have to share in the risk of growing the crop. By contracting with large growers who provide these things themselves, the firm avoids this risk.

Because of the larger number of plants now processing these crops in Mexico, competition for product among them is significant. This has bid up the price for large growers and made the *ejidatarios* more attractive suppliers. However, if someone were to organize *ejidatarios* into cooperatives, or if the government were to provide credit or research/extension for these crops to the *ejidatarios,* they would be even more attractive to the firms. In Guatemala, ALCOSA could not get the desired quality of product at a competitive cost out of either its

own farms or the larger growers, which drove them to deal with thousands of peasants. To replicate this elsewhere, it may be necessary to alter the incentives to such firms. This not only spreads direct benefits, it also creates more employment since peasant producers use more labor-intensive methods.

This type of vegetable production can be remunerative and is, in fact, suited to peasant production, and peasants can compete with large-scale capitalist production. The Guatemalan case demonstrates that it need not compete with food production. Technical assistance from the government in this regard would be useful. However, it is important to protect peasants from higher risks and monopsony, and diversified cropping, diversified markets, and cooperative formation would all help.

Such schemes have limited generality and may require significant infrastructure. Access to roads is important, and road-building with labor-intensive technologies in viable agricultural areas would thus be a good social investment. Land must be of sufficient quality and water of sufficient quantity to guarantee fairly high yields. Small-scale irrigation projects that benefit peasants would do this. Experience growing vegetables is significant. Many poor rural regions do not meet these criteria in the same sense that many strata of the peasantry are not viable targets for farm-oriented rural development. However, that a successful project can be implemented where the average farm size is less than one hectare suggests that the possibilities might be greater than imagined.

It is also unclear what the effect of these schemes is on nonparticipants. They should benefit if they work off-farm and wages rise, but they may suffer from pressures in the land market. It is very difficult to spread the benefits of such development evenly. However, the Guatemalan cooperative, open to all in the area, provides as good a model as one might hope for.

Agroindustrial schemes are backward-linking, but such linkages are really subcontracting arrangements developed carefully by the contracting firms. If governments want the benefits of private credit and technical assistance to flow to smallholders, as well as the increased use of labor, they have to provide the necessary macropolicy context and access to public goods and services to peasants. It will probably also be important for governments to become involved in research on such crops, to sustain the industry over time, to find complementarity with food crops, and to counteract excessive prescription of chemicals by risk-averse firms. The Guatemalan cooperative found that they could use less frequent applications of smaller quantities of cheaper insecticides and get better results, but they needed outside technical assistance to determine this.

Transnational corporations provide access to markets in developed countries for agroindustrial products. They also act as conduits of technology. In both the Guatemalan and Mexican cases, they played important roles in getting the industry started. However, these experiences show that, over time, indigenous firms may arise to compete and to capture more value-added even if they cannot gain access to final markets. In this sense, fears that the transnationals will somehow absorb all profits are unfounded. Nevertheless, there is the possibility that only large growers will have sufficient access to capital to move to this second stage and that the contracting firms will end up with large networks of smallholders who cannot finance their own processing facilities. This inequality can be avoided by supporting cooperatives of smallholders and giving such cooperatives access to credit as in the Guatemalan example.

Intermediaries and Cooperatives

The emphasis on the cooperative in the preceding example suggests that, in general, small producers can benefit from cooperative marketing as it improves their terms of trade, pools risks, and eliminates monopsonistic intermediaries. Such cooperatives tend to function best when they focus on a set of related economic activities, when they are participatory, and when they are formed from the bottom up, responding to perceived needs of the members (Tendler 1983). Agricultural marketing cooperatives can be powerful forces in rural development, achieving a scale sufficient to operate in the increasingly internationalized environment of agriculture. In this section we discuss several such examples.

One such bottom up intermediary organization is the *Central Lanera Uruguaya,* a federation of local woolgrowers' cooperatives formed in 1967 (Ferrin 1987). It was formed in response to problems smaller growers had in obtaining good prices for their output. It now has 3,000 members and markets 10 percent of Uruguayan wool. Much as a labor union helps to raise wages and working conditions in nonunion firms, so the existence of the cooperative has caused large wool-buying firms to improve their terms to all growers. It is now being copied by livestock, grain, and dairy federations. Over time it was able to develop the capacity to process and export wool. However, dependence on raw material exports and the failure to develop sufficient industry has been the central problem in Uruguay in this century. Therefore, such organizations should be encouraged to integrate forward into further production of finished goods.

Another such cooperative is the *Central Regional de Cooperativas Agropecuarias, El Ceibo,* in Bolivia (Healy 1987, 1988; Tendler 1983). Formed in 1977, it is a federation of 35 local cooperatives of approximately 850 cacao growers, indigenous settlers in the Alto Beni region. The cooperative was formed after peasants were able to bypass intermediaries in 1976 and export cacao to the United States, thus demonstrating the potential returns if such intermediaries could be eliminated. Over time the cooperative has obtained fermenting and drying facilities, trucks to control transport costs, a warehouse in La Paz to store cacao and reduce spoilage while bargaining with buyers, a small chocolate factory in La Paz, and access to export markets.

This cooperative has received little government support and, in fact, cacao production in general has received little public assistance. There is apparently only one agronomist in the country familiar with cacao problems, and the cooperative had to create its own extension service when threatened with ruin from disease, sending members to other countries to train. The project has benefited from considerable outside support, however, including the Catholic church, the Inter-American Foundation, and German and Swiss assistance groups. *El Ceibo* has recently found markets in Europe for organic cacao and is developing organic production methods, and it wants to construct its own large chocolate factory in La Paz to become a completely integrated firm.

The persistence of the cooperative over 10 years despite enormous adversity is attributed by Healy to the highly democratic nature of the organization where officers are rotated frequently and are not highly paid. The organization manages to retain young people in the rural Alto Beni region by teaching them skills they can use in positions of responsibility in the cooperative. This type of bottom-up cooperative, where forward linkages increasingly benefit the peasant members and the focus is on a crop that can be processed and marketed worldwide, is a highly desirable form of rural development.

A third example comes from the agroindustrial program of the Mexican government which began in the late 1970s. Oriented from the start toward building agroindustries for *ejidal* groups, and without the capacity to really go out and organize *ejidatarios,* the field offices had to depend on organized groups of *ejidatarios* coming forward with proposals for projects. This had the beneficial consequence that a number of projects actually responded to the needs of the peasantry rather than being imposed on them from above. In the state of Guanajuato, both a dehydrator for *flor de xempoalxochitl* and a plant to process lentils were constructed in this manner and proved highly beneficial to the groups by improving their terms of trade.

Again, there are clear limits to this type of strategy. Such projects are costly and still do not resolve control over final markets even if they improve the bargaining position of the peasant groups. Their success depends on the adequate organization of the peasantry, something which has historically been difficult to achieve given rural power structures. And they often depend on certain preconditions (water, infrastructure) necessary to grow the types of crops involved. Marketing cooperatives are the key to achieving sufficient scale to compete, a necessary institution to cope with imperfect markets. Rural cooperatives have often failed in developing countries due to corruption, personal rivalries, lack of leadership, and poor management (Chuta and Liedholm 1984; Tendler 1983). Where they arise from the bottom up, attempting to circumvent intermediaries and narrowly focused, they would seem to have high potential for success if supported by favorable government policies.

Conclusion

Nonfarm employment is growing more rapidly than farm employment in rural Latin America. The sector is characterized by small-scale "informal" enterprises, often linked to agriculture or to larger firms in regional cities, and by the increasing development of agroindustry. There is a well-defined set of industries with specific skills upon which to build a rural strategy.

Mass production industrialization is being restructured in the developed countries as new technologies create a basis for alternative strategies such as flexible specialization. Mass production industrialization in large firms failed to provide the employment growth needed in Latin America. The present industrial restructuring provides an opportunity to support more small-scale, flexible, and diverse industry centered in regional towns and cities with links to rural enterprises.

Agroindustrial development, like farm-oriented rural development projects, often requires certain preconditions such as infrastructure and water. In this sense, its general applicability is limited. However, there are ample opportunities to include smallholders in such schemes, as they can often produce at lower cost by accepting lower returns. Their interests would be better protected, and transaction costs lowered, if they could be organized into marketing cooperatives. This would allow for diversification of markets and risks. Such cooperatives would also provide a vehicle for extension efforts in basic food crops; one example in Guatemala suggests that agroindustrial participation can have positive spillover effects on productivity in such crops and that it is not a zero-sum situation.

11

SUMMARY AND CONCLUSIONS

1. Since the early 1980s, the Latin American economies have been going through a major economic crisis that has brought to a halt 30 years of sustained economic expansion. This crisis has had extraordinary economic and social costs. With the burden of debt still hanging on these economies, slow growth in the world economy, depressed agricultural markets, and rising industrial protectionism in the MDCs, the resolution of this crisis is still not in sight. Yet, adjustments in economic policy, largely forced by the economic crisis, have created new opportunities to define an effective program of agricultural and rural development (IICA 1988). It is the thesis of this study that agriculture can indeed play a significant role in restoring economic growth to the Latin American economies and that this can set the framework to implement a new generation of economically viable RDP that could help significantly reduce rural poverty.

2. Policy adjustments to the foreign sector crisis have forced reduction of the high levels of industrial protectionism introduced in the context of import substitution policies. They have also brought to an end the phase of debt and/or oil induced "Dutch disease" where depreciation of the real exchange rate has cheapened food imports, creating highly unfavorable terms of trade for the agricultural sector. Since the early 1980s, stabilization, liberalization, and structural adjustment policies and programs have been implemented in virtually every country and following the same general principles, even though implementation has taken a wide variety of forms and degrees of intensity. While foreign exchange constraints and public budget austerity have sometimes been detrimental to investment in agriculture (the first by constraining the import of chemicals and capital goods; the second by restricting public investment and the availability of institutional credit), appreciation of the real exchange rate for agriculture has created, in most countries, the possibility of providing positive price incentives to agriculture. Indeed, we observe that agriculture has become the relatively most dynamic sector of the economy in virtually every country since 1980.

3. While the new policy context creates the possibility of dynamizing agriculture, which produces principally tradable goods, there are a number of difficulties that need to be overcome if this opportunity is to be seized:

    3.1. Implementation of stabilization policies must not bear negatively on the import of means of production for agriculture. Since the price of capital goods rises relative to that of labor, this import constraint is not so serious for laborsaving machinery as it is for landsaving fertilizers and chemicals. Equally, fiscal austerity, introduced to control inflationary pressures, must not restrict access of agriculture to credit which is essential for the purchase of working capital, due to the time lags involved, and for productivity-enhancing new investments.

    3.2. Public budget austerity implies making tough choices regarding intersectoral priorities. There are usually political pressures not to give priority to agriculture

and to make it bear an undue share of the adjustment. This must be avoided due to the key role that agriculture is called to play in structural adjustment, particularly on the foreign sector through agro-exports and import substitution. More cost effective ways of running public goods programs must be sought in order to compensate for falling levels of public expenditures.

3.3. Falling international agricultural prices may more than compensate for rising exchange rates and result in a deterioration of the terms of trade for agriculture. Indeed, there are several countries in the region where these terms of trade have sharply deteriorated. In most, however, either the main commodities produced are not affected by protectionism in the MDCs or exchange rate devaluations have been sufficiently massive to compensate for both inflation and falling international prices. Furthermore, most countries in the region are net importers of cereals. With the possibility of import substitution, temporarily low international prices can provide an opportunity to introduce import tariffs that protect the domestic terms of trade and create a sorely needed public investable fund that can be used to finance import substitution in agriculture.

4. Social and political changes that have occurred through the 1970s create a unique opportunity to initiate a new strategy of rural development in Latin America. These changes include:

4.1 The emergence of new social actors who are both quantitatively (with the growing importance of the urban and rural informal sectors) and qualitatively (education and health) different from those in the past.

4.2 The emergence of new social movements that bloomed with the collapse of the welfare state model, as a response to bureaucratic authoritarianism, and with the assistance of the church and international organizations. They include both NGOs that serve as intermediate organizations and an extraordinary variety of grassroots movements.

4.3. A return to democracy in most Latin American countries in a context of economic crisis and forced budgetary austerity. These lead governments to seek bureaucratic decentralization and the promotion of self-help organizations for budgetary efficiency. It also forces them to gain legitimation through political concessions instead of the distribution of institutional rents in exchange for subordination.

5. Terms-of-trade adjustments for agriculture allow the redefinition of the meaning of rural development from a set of antipoverty programs (in the context of the Dutch disease in the 1970s and the need for social compensation to the weak sectors by a well-endowed welfare state) to an investment strategy with social rates of return competitive with those of other social projects. The border between bankable and welfare projects can thus be shifted in favor of the former not only as a result of terms-of-trade adjustments but also by:

5.1. Removing the historical constraints on peasant agriculture resulting from underinvestment in the relevant public goods and a biased access to public institutions.

5.2. Failing to internalize, in the social accounting of RDPs, the positive social and ecological externalities which they create. The first include "farm financed social welfare" (Owen 1966) and the returns from investment in human capital. An example of the second is the reduction of sedimentation in water reservoirs coming from soil erosion in the watersheds created by peasants' survival agricultural practices.

6. Displacement of the border between bankable and welfare RDPs in favor of the former does not endow them with the potential of eradicating all rural poverty. Indeed, many of the "poorest of the poor" are simply not bankable, even at social internal rates of returns with the most exhaustive internalization of externalities. In that sense, turning to bankable RDPs as the exclusive solution to absolute poverty is an illusion. It leaves the need for a welfare state to assume the basic needs of the population most at risk including, for example, the aged, the disabled, the sick, and, in general, the unemployable. This unemployable fraction of the labor force tends to itself increase with the overall level of poverty as the nutritional and public health conditions get worse. It also includes the populations in marginal regions with resource fixity and outmigration as the only solution.

7. Rural poverty is highly socially differentiated, and the dynamic of that poverty is quite specific to particular groups. Key among structural determinants of poverty is access to productive assets. The economic crisis also affected rural poverty highly selectively, with family farms eventually benefiting from the terms-of-trade adjustment while subfamily farms and landless households were hurt by rising food prices and falling employment opportunities, in the nontradables sector particularly. The differentiated nature of rural poverty was characterized for several regions by social poverty maps that identify different types of rural poor in terms of access to productive assets and sources of income.

8. The extensiveness of rural poverty remains staggering throughout Latin America. Even though the agricultural labor force has declined as a share of the total labor force in every country, the peasantry has increased rapidly in both absolute number and as a share of the agricultural labor force. We showed that this sector is largely a refuge sector for surplus labor and that its size consequently tends to vary countercyclically with the growth rate of the economy which determines migration opportunities. Due to the size of the peasant sector, most countries could not eradicate rural poverty with an agricultural strategy alone. This implies the need to promote employment creation in nonagricultural activities located in the rural areas and with either linkages with agriculture or flexible specialization and subcontrasts with firms exporting outside the region. Comprehensive regional development and decentralization of economic activity remain sorely needed in all the Latin American countries.

9. Even though the peasantry, including both subfamily and family farms, has lost a significant fraction of its market share during the last decade or two, it remains an important supplier of both food and export crops. With appreciation of the real exchange rate creating economic incentives for both import substitution and agro-exports, the peasantry can have an important role to play in increasing output supply. Agricultural development, however, is not synonymous with rural development. In order to allow peasants to at least maintain their current market share, special programs of rural development will have to be organized to reduce antipeasant biases in the institutional and policy framework and to help them access institutions.

10. The differentiated nature of rural poverty implies that there cannot exist a unique type of rural development intervention with the pretense of being equally effective for all rural poor. We started, for that reason, from social poverty maps to identify specific RDPs that can attack the causes of poverty which affect each particular social group. Because rural development is thus not unique, but highly complex and changing, it must be decentralized, participatory, and designed as a learning process. We identified six types of rural development interventions, five of which are bankable and the last a welfare program:

    10.1 Farm-oriented RDPs for the upper subfamily and family farms.

    10.2 Household-oriented RDPs for the lower subfamily farms.

    10.3 Access to additional productive assets for the landless and subfamily farmers through land reform and colonization.

    10.4 Employment creation and labor market rationalization.

    10.5 The promotion of employment in nonagricultural activities related to agriculture through backward, forward, and final-demand linkages or in activities characterized as flexible specialization with subcontracting.

    10.6 Welfare-oriented programs for the unemployable and other nonbankable social categories.

11. The field of "new agrarian studies," which has originated largely not in Latin America but in Asia, has demonstrated the extraordinary complexity of social relations in agriculture (Bardhan 1984; Basu 1984). This is because many markets in LDC agriculture are either nonexistent or incomplete. What markets fail to do is performed by institutional arrangements, contracts, and interlinked transactions. These analyses have demonstrated that rural development interventions, which are not based on an understanding of the rationality of the social relations in existence, may well lead to a worsening of the welfare of the parties involved. The implication is that the design of rural development interventions must be based on a thorough prior analysis of the social logic of rural social relations.

12. Because this knowledge will always be imperfect, because there is no well-established theory of rural development, and because the solutions sought have to be tailored to a differentiated population, this implies the need to:

    12.1 Embody in project design a continuing learning process based on observation, learning from successes and failures, and monitoring.

    12.2 Build in project design a progressive approach where the project starts on a reduced scale and in a concentrated geographical area where it can establish solutions and demonstrate their validity before it spreads geographically and socially.

    12.3 Seek participation of the households involved.

    12.4 Make a commitment of project support over a significant period of time.

13. Sustainability of RDPs has been a major difficulty with the approach. Based on the experience of a number of programs reviewed in the previous three chapters of this study, we conclude with the following nine recommendations:

Recommendation 1.

The most important necessary condition for success of a socially bankable rural development strategy is a favorable *macroeconomic and sectoral policy* toward agriculture. Key, in particular, is 1) the removal of economic distortions against agriculture that have been associated with overvalued exchange rates, import substitution industrialization policies, and transitory Dutch disease-created depreciations of the real exchange rates and 2) increasing the share of agriculture in public investment due to the key role which it is called to play in the phase of adjustment to the economic crisis. The making of social policy (rural development) must, consequently, not be dissociated from that of economic policy. The public authority which assumes responsibility for rural development must be involved in the design of macro and sectoral policy and his office must, consequently, be staffed with some high-level economists.

Recommendation 2.

Successful agricultural development is necessary but not sufficient for rural development. Key to rural development is to eliminate the historical *antipeasant biases* in the access to i) markets (competitive marketing margins and efficient passing-through effects); ii) institutions (formal credit); and iii) public goods and sevices (technology, infrastructure, information, and education).

Recommendation 3.

Sufficient access to *productive assets* is a key requisite for success of farm-oriented rural development. For that reason, redistributive land reform remains a precondition to rural development. It should be promoted whenever extensively used lands remain and the political will exists. Colonization in the lowland tropical forests should, by contrast, largely be held in check because of the ecological costs and the ethnic conflicts which it usually creates.

Recommendation 4.

The opportunity set for *socially bankable RDPs* can be significantly expanded with an appropriate internalization of the positive linkage, ecological, and welfare externalities which rural development creates. This requires careful economic analysis and design of an optimum scheme of taxes and subsidies to make privately profitable the program's recommendations, particularly those that involve costly conservation investments (reforestation and soil conservation techniques). Even after this is done, there will remain a fringe of rural poor that cannot be incorporated in socially bankable rural development and for whom welfare-oriented projects will still be necessary.

Recommendation 5.

Because rural poverty is highly *socially differentiated,* the social cost of adjustments to the current economic crisis is also highly unevenly distributed in the population. While static social poverty maps are available for many countries, the distribution of the social costs of the crisis is still largely unknown. This will require the collection of household-level data over

time in order to design programs able to protect the sources of income of the rural poor and to design transitory welfare programs such as targeted food subsidies and direct income transfers to compensate the losers.

Recommendation 6.

It is clear that there no longer exists a solution to rural poverty in Latin America today out of agriculture alone. It is for that reason important to redefine rural development into *regional development* and to seek the development of sources of income in nonagricultural activities located in the rural areas.

Recommendation 7.

Heterogeneity of the rural population implies the need to define a *multiplicity of approaches to rural development* that are specifically targeted to differentiated subsets of the rural population. The main components of the five approaches we have identified are:

A. Farm-oriented rural development (an IRD approach with a targeted clientele of family farms and with well-established priorities, e.g., credit, irrigation, and marketing).

B. Household-oriented rural development (which stresses the multiplicity of home-based activities on subfamily farms, the key role of women, and of investment in human capital).

C. Access to land (redistributive land reform whenever possible and minimal or carefully monitored colonization in the tropical lowlands).

D. Agricultural employment creation (decrease the policy biases against agricultural employment –especially those favoring capital-intensive technology and extensive livestock– and rationalize rural labor markets).

E. Regional nonagricultural development (incentives to investment in micro-enterprises linked to agriculture and to export-oriented industries based on the principle of flexible specialization and subcontracting).

Recommendation 8.

Some of the keys to sustainability and replicability of rural development initiatives observed in the case studies analyzed include:

A. Investment in *human capital* for outmigration from the marginal areas and for enhanced flexibility across activities in the well-endowed areas.

B. Investment in *infrastructure,* with a priority ordering focusing first on the regions with the greatest potential comparative advantages.

C. Assistance to the emergence of peasant *organizations* and incentives to *participation.* The role of organizations is not only to enhance the internal efficiency of programs but also to allow for social incorporation of the target communities so they can place demands on the state on their own behalf.

D. *Decentralized* RDPs, both administratively (which requires training in management and monitoring systems) and financially (to allow projects or regions to mobilize their own resources as much as possible by fiscal decentralization).

E. *Monitoring and evaluation:* Projects must be designed as a learning process where information is systematically gathered and lessons continuously extracted from successes and failures.

F. *Real rates of interest* in rural development credit schemes must be positive not to lead to rapid decapitalization of financial institutions and not to induce rent-seeking activities.

Recommendation 9.

The combination of new social movements and redemocratization should lead to redefining rural development as a *social contract* between the state and grassroot organizations inducing a division of labor based on the comparative advantages of these two institutions. The state must manage a macro and sectoral policy context favorable to rural development and an unbiased delivery of public goods and services. This should be done in the context of national *programs* as opposed to localized projects. NGOs and grassroot organizations should be the managers of projects in accordance with their comparative advantages. These organizations need to gain access to public resources, and their initiatives need to be coordinated both among themselves and with public programs. Decentralized state-led RDPs should be preserved only for those areas where the above combination of national programs and grassroots organizations is not operative.

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This document was edited and published by the Editorial Service, Directorate of Coordination of Institutional Affairs of the Inter-American Institute for Cooperation on Agriculture. Members of the Editorial Service and of IICA's Print Shop participated in preparing it. Printing was completed in June 1989, with a press run of 1 200 copies.

PROGRAM III: Organization and Management for Rural Development

The objective of IICA's Program on Organization and Management for Rural Development is to provide support to its Member States in strengthening their capabilities to design and implement rural development policies, systems, programs and projects. To achieve these ends, it emphasizes providing technical cooperation aimed at:

- Identifying the problems of the rural poor and executing policies designed to overcome rural poverty.

- Improving the performance of institutional systems concerned with rural development and promoting the delivery of integrated services to the population.

- Upgrading the skills required for drawing up and managing rural development programs and projects with the participation of beneficiaries.

- Promoting and strengthening farmers' organizations and improving management skills.

Priority areas of action should be based on the interests and problems of the rural poor, and should facilitate self-sustained development (ownership of the means of production, training, research and technical assistance, marketing, credit and basic infrastructure). Moreover, the capacity of these groups to reduce or overcome poverty should be fostered, with a view to enabling them to take responsibility for their own projects and tap the support available for improving their technical and management skills, and for developing a participatory approach.

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