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# Trade and agricultural development in the 1980s and the challenges for the 1990s: Latin America

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## ABSTRACT

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Trends in agricultural trade for South and Central America are documented and the reform process is discussed. Performance of the agricultural sector of the region is evaluated. Challenges for policy makers are reviewed, ranging from macroeconomic policy to science and technology.

## INTRODUCTION

Latin America is the home of the Prebisch thesis about the declining terms of trade. It is the region of the world in which import-substituting industrialization was practiced most intensively during the post-World War II period and in which dependency theory had its greatest influence on economic policy. These practices caused most governments in the region to take strong measures to cut themselves off from the international economy and thus to forego the benefits from what has been a significant expansion of international trade in the period since the end of World War II.

The intensive pursuit of import-substituting industrialization in Latin America caused agriculture to be neglected by policy makers, and to suffer predatory trade and exchange rate policies which heavily taxed the sector

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by indirect means. The domestic terms of trade tended to shift against the agricultural sector due to high levels of protection for the industrial sector, and a combination of grossly overvalued currencies (arising from implicit export taxes and implicit import subsidies), explicit export taxes, embargoes on exports, and large *confiscos* on exports – all of which pushed agricultural prices below their border price equivalents.

The stage of development in the region is such that most countries are classified in the World Bank tables as lower-middle-income. At the end of the 1980s only Haiti appeared among the low-income countries. Venezuela, Brazil, and Uruguay appeared as upper-middle-income countries. The distribution of in-country income in the region, with a few exceptions, is highly skewed. At the beginning of the 1980s, Brazil and Mexico, and sometimes Argentina, were classed among the Newly Industrialized Countries (the NICs) (McMullen, 1982). By the end of the 1980s that label was reserved for the Asian Tigers of Hong Kong, Singapore, South Korea, and Taiwan.

Latin America is where most of the international debt crisis of the 1980s was concentrated. The region has long had an endemic problem with inflation. During the 1980s, however, inflation became almost pathological in some countries, with annual rates ranging between 2000% and 3000%. The attempts of policy makers to deal with their external debt and domestic inflation problems have led to significant reforms in economic policy during the decade of the 1980s. The need to earn foreign exchange has caused policy makers to take measures which integrated their economies more effectively into the international economy by lowering barriers to trade and pursuing more realistic exchange rate policies. These policies inherently reduced the discrimination against agriculture.

Latin America is also a region in which some very interesting experiments in macroeconomic policy have occurred. Chief among these have been the attempts at establishing anticipated devaluations of currencies as a means of bringing about macroeconomic stability, a popular experiment at one time in the Southern Cone countries (see Corbo and de Mello, 1987). The major policy reforms Chile has undertaken in the period following the downfall of Allende have also been particularly significant, especially in light of the rapid growth rates they have induced. Cuba has had its Fidel Castro and its experiments with a centrally planned economy. Colombia has been interesting because it never discriminated against its agriculture to the same extent other Latin American countries did (see Schuh and Brandão, 1992). Finally, Latin America is an important source of cocaine for the United States market, and in some Andean countries this demand, and the resulting strengthening of the currency, has created special exchange rate problems.

## AGRICULTURAL TRADE AND TRADE POLICY

Imports of food are relatively unimportant as a share of total merchandise imports in the region, although there is a great deal of variation among countries (Table 1). This share has remained relatively stable for the region as a whole, despite the fluctuations from year to year for individual countries.

The region is a significant importer of cereals, mainly of wheat. Feed grains have become somewhat more important over time as a modern poultry industry has emerged around the major cities. A modest but still significant share of the imports of cereals is accounted for by food aid.

TABLE 1

Food and agricultural commodities as share of imports and exports, Latin American countries, 1965, 1988, and 1989 (percent)

Country	Share of merchandise imports			Share of merchandise exports		
	Food			Other primary commodities (excluding fuels, minerals and metals)		
	1965	1988	1989	1965	1988	1989
Haiti	19	14	23	57	23	37
Bolivia	19	15	11	3	8	27
Dominican Republic	24	16	12	88	53	76
Honduras	11	8	13	90	79	85
Guatemala	11	6	11	86	59	74
El Salvador	15	15	14	82	68	74
Ecuador	10	5	9	96	48	48
Colombia	8	9	7	75	49	42
Paraguay	14	15	9	92	88	90
Peru	17	19	38	54	20	29
Chile	20	2	4	7	18	33
Costa Rica	9	5	8	84	59	72
Mexico	5	16	16	62	7	13
Panama	11	9	15	63	66	78
Brazil	20	14	9	83	31	31
Nicaragua	12	25	12	90	89	94
Uruguay	7	9	7	95	52	60
Argentina	6	4	4	93	70	59
Venezuela	12	11	12	1	1	2
LA and Caribbean <sup>a</sup>	12	12.0	12	48	29	29

Source: World Development Report (1990, 1991, 1992), World Bank, Washington, DC (tables 15 and 16).

<sup>a</sup> Weighted averages.

Agricultural commodities are far more important on the export side of the trade accounts (Table 1). In 1989 they accounted for more than 70% of merchandise exports in eight of the 19 countries for which data are available, and over 85% in three countries. Countries for which agricultural exports have tended to be relatively unimportant include Bolivia (an inland country), Chile, Mexico (in recent years), and Venezuela, countries that have been major exporters of minerals or petroleum. Agriculture in these countries suffers from the Dutch disease created by a strong currency, although Chile's agricultural export performance has improved significantly as it has rationalized its economic policies. Consistent with trends in the global economy, the share that agriculture accounts for of total merchandise exports has declined significantly between the mid-1960s and the end of the 1980s.

The patterns of agricultural trade in the region are primarily between the countries of the region and the industrialized countries. When Valdés and Muchnik (1984) did their study of Latin American agricultural trade, more than 70% of all Latin American farm exports were sold to industrialized countries; only 7–9% were exported to other countries of the region. That percentage has probably not changed significantly in the intervening period. Food exports from the region are largely accounted for by the Southern Cone countries (Argentina, Chile, Paraguay, and Uruguay). In 1973–77, for example, 80% of food exports originated in these countries, with Argentina dominating the total (Valdés and Muchnik, 1984). This share has not likely changed in the intervening period.

Associated with the prevalence of the Prebisch thesis in the region has been a prevalence of trade pessimism. Policy makers have been persuaded that they could not compete successfully in international markets, especially with the United States. However, some outstanding success stories cast doubt on this thesis. Brazil, for example, in a very short period of time, took away a significant share of the world's soybean market from the United States, despite exchange rate and other restrictive policies which discriminated against the sector (see Santana, 1984). It also rapidly captured the global frozen orange juice market, and became very important as an exporter of poultry products. Similarly, Colombia rapidly became a major exporter of flowers to the industrialized countries.

Indices which show the trends in the value of total exports and total imports for Central and South America are presented in Table 2 together with indices on the trends for individual commodities. The 1970s, a decade of rapid economic expansion for the international economy as a whole, was a period of significant growth in exports for both regions, with South America performing somewhat better than Central America. Imports of agricultural commodities grew at an even more rapid rate, however, espe-

TABLE 2

Trends in exports and imports of agricultural commodities, Central and South America, 1969–71, 1978–80, and 1987–88 (Indices, 1969–71 = 100)

	Central America			South America		
	1969–71	1978–80	1987–88	1969–71	1978–80	1987–88
Value total agric. exports	100	343	333	100	393	418
Value total agric. imports	100	713	822	100	504	399
Agricultural trade	100	232	187	100	353	423
Exports						
Cereal	100	78	39	100	280	165
Oil Crops	100	665	323	100	1544	2592
Fiber	100	277	71	100	173	173
Tobacco	100	486	291	100	664	1117
Vegetable/Fruit, Nuts	100	250	370	100	389	667
Sugar	100	156	193	100	400	194
Beverage	100	554	512	100	358	302
Fruit/Vegetable Juice	100	2467		100	1859	5648
Live animal	100	278	276	100	159	36
Meat production	100	261	126	100	239	259
Dairy production	100	320	90	100	639	798
Farm inputs	100	403	167	100	1073	1463
Imports						
Cereal	100	1293	1202	100	589	308
Fiber	100	196	424	100	177	472
Tobacco	100	278	217	100	322	142
Vegetable/Fruit, Nuts	100	1275	717	100	414	263
Beverage	100	983	900	100	394	242
Live animal	100	761	869	100	199	164
Meat production	100	505	1776	100	785	728
Dairy production/Eggs	100	531	903	100	465	514
Farm inputs	100	451	487	100	452	415
Oil crops	100	3787	6838	100	1994	4008
Sugar				100	1423	710

Source: ERS data tapes, WAS-55 (1989).

cially in Central America. Exports in both regions leveled out during the decade of the 1980s, and imports continued to rise in Central America while declining significantly in South America.

Exports of oil crops increased dramatically over the 20-year period, mostly exports of soybeans from Brazil and more recently Argentina. Exports of fruits and vegetable juices have also expanded greatly, in both sub-regions, as have fruits, vegetables, and tobacco (from South America). With the exception of tobacco, these are nontraditional exports.

Exports of cereals from Central America declined significantly over the two decades, and during the 1980s from South America. Exports of fibers

and sugar also declined, in both sub-regions, as did live animals from South America and dairy products from Central America in the 1980s. Sugar exports suffered from the increasingly restrictive protectionist policies of the United States.

On the import side, oil crops grew dramatically in relative terms for both sub-regions. In the case of Central America, imports of oil crops grew at the fastest rate, followed by imports of meat products, cereals, dairy products/eggs, beverages, and live animals. These data for Central America tend to be dominated by Mexico. Growth in agricultural imports were not so significant in South America, although after oil crops, the increases in imports of meat products and sugar were rather significant.

In summary, variations in the growth rates of agricultural imports and exports suggest significant shifts in trade patterns for the various countries of the region. On the export side, the significant development has been the rapid expansion in nontraditional exports. This suggests that Latin American countries are not as unable to compete in international trade as has been so widely believed in the region.

In general, Latin American countries have in the past been poor exporters in large part because of trade and exchange rate policies that have discriminated against their agricultural sectors (see Schuh and Brandão, 1992, for some evidence). Anne Krueger, Maurice Schiff and Alberto Valdés have provided the leadership for a large and comprehensive global study (1992) of government policy towards agriculture in the developing countries. They analyzed in detail the direct and indirect price interventions in 18 developing countries and their impact on agricultural output and trade during the period 1970–1984. Included in their sample were five Latin American countries Argentina, Brazil, Chile, Colombia, and the Dominican Republic.

The empirical analysis for their study involved a comparison of domestic prices with border-price equivalents for some 26 agricultural commodities. The study attempted to assess the effects of sectoral and domestic price policies, as well as industrial and macroeconomic policies. In the latter case, special emphasis was given to assessing the effects of trade and exchange rate policies.

The authors found that for the five Latin American countries, the relative price of the 26 agricultural commodities would have been 42 percent higher during the period covered by the study in the absence of government intervention. That indicates the extent to which the domestic terms of trade had been shifted against the agricultural sector. An important aspect of their findings was that indirect taxation due to high levels of protection for non-agricultural importables and gross misalignment (overvaluation) of exchange rates accounted for nearly two-thirds of the total

taxation of agriculture. The extent of the anti-trade bias towards agriculture in these policies is illustrated by the fact that price distortions in agricultural importables tended to be consistently positive (an import subsidy), and on the order of between 10% and 20%, while the distortion against exportables tended to be negative, and on the order of up to 10%.

These price distortions have had an overall negative impact on agricultural output and growth. By use of an econometric model, the authors found that removal of the distortions in prices would have increased the annual growth rate for agriculture between 0.1 in Chile, 0.7 in Argentina, and 1.2 percentage points in Brazil. Increases in growth rates of between 0.7% and 1.2%, accumulated over a period of a decade or more, will have a very significant effect on agricultural output.

The international debt crisis which many countries of the region experienced during the 1980s provided significant incentives for policy reforms, especially of trade and exchange rate policies. The International Monetary Fund's stand-by and monitoring agreements, linked to disbursements by the IMF and commercial banks, stressed the need to realign exchange rates and reduce fiscal deficits. The World Bank extended agricultural sector and trade loans conditioned on the elimination of subsidies and the opening of trade by means of reducing tariffs and eliminating non-tariff barriers to trade. More generally, the International Monetary Fund and the World Bank collaborated with each other and individual countries to co-sponsor adjustment programs needed to help individual countries gain access to badly-needed foreign exchange.

Reform efforts have, however, been uneven and often not sustainable. Some countries, such as Mexico and recently Argentina, have undertaken dramatic and reasonably well-sustained reform programs, in each case reaping substantial benefits in terms of growth. Chile is the outstanding example of a country that has sustained an almost classic reform effort, and with good results. Brazil, on the other hand, has had difficulty in sustaining its efforts at reform and is faced with significant political difficulties in implementing the painful measures such reforms entail.

Table 3, taken from Nogues and Gulati (1992), illustrates chronologically the measures taken by a representative group of countries during the 1980s. The progress illustrated here should be placed against the general failure of reforms attempted by Southern Cone countries during the early 1970s (see Corbo and de Mello, 1987). Another important feature of the needed reforms has been the need to undertake substantial fiscal reforms to balance fiscal budgets. This has been one of the most difficult reforms to carry out because it entails the privatization of large parastatal corporations, some of which are important to the agricultural sector. Privatization often involves increased unemployment among those employed in the



TABLE 3

Sequencing of economic performs, selected Latin American countries, 1980–90

ARGENTINA										
Import liberalization	Extensive use of import licensing				Increased export subsidies and export incentives			Gradual removal of licensing and reduction of export subsidies		Acceleration of import liberalization and removal of subsidies
1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
CHILE										
Uniform tariff of 10%				Uniform tariff of:				Uniform tariff of 15%		
				20%	35%	20%				
1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
COSTA RICA										
High protection and high export					Some import liberalization; Lower protection and high export subsidies					
1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
MEXICO										
High tariff protection and extensive use of import licensing					Maximum tariff reduced to 20%; Dismantling of import licensing; Remaining NTB coverage at 20% of tradeable production				Relatively stabilized trade regime	
1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990
PERU										
Import liberalization and lower export subsidies		Increasing tariffs and NTBs			High tariffs, extended QRs and multiple exchange rates				Removal of NTBs, reduction of tariffs, and export subsidies	
1980	1981	1982	1983	1984	1985	1986	1987	1988	1989	1990

*Source:* Nogues and Gulati (1992).

TABLE 4

Estimated trends in real exchange rates, selected Latin American countries, 1980–91 (indices, 1980 = 100) <sup>a</sup>

Year	Mexico	Venezuela	Ecuador	Brazil	Chile	Peru	Argentina <sup>b</sup>	Colombia
1980	100	100	100	100	100	100	100	100
1981	91	94	89	108	109	91	182	99
1982	176	90	96	108	146	100	291	96
1983	137	80	103	123	140	99	263	105
1984	114	115	105	131	150	116	277	112
1985	131	102	121	129	167	121	295	137
1986	155	88	140	120	153	72	274	137
1987	138	159	186	115	156	68	291	137
1988	115	166	210	154	191	138	260	140
1989	118	152	190	156	186	72	295	151
1990	108	154	181	87	162	135	212	161
1991	109	165	194	86	165	116	130	150

Source: Bank of the Republic, Colombia.

<sup>a</sup> These estimates of the real exchange rate, produced by the Bank of the Republic in Colombia, use wholesale prices as the basis of the adjustment, except for Peru and Ecuador, which use the consumer price index. In addition, the official exchange rate was used as the basis of the estimates for 1980 to 1984. In 1985 and 1986 a weighted average of the three prevailing exchange rates was used; for 1987 and 1988 a weighted average of the official rate and the free rate was used; and for 1989 the free market rate was used. Finally, between August and December 1988, the exchange rates for Brazil, Chile, Argentina, and Peru took the free-market rates.

<sup>b</sup> These estimates are taken from Dorbusch (1992).

public sector, at the very time unemployment is up generally due to the pursuit of restrictive macroeconomic policies.

The indices in Table 4 provide estimates of trends in real exchange rates for a selected set of countries during the 1980s. These indices show the general tendency of countries of the region to devalue their currency in real terms over the course of the decade, and in some cases by dramatic proportions. They also show what a fitful and uneven process it has been in some countries, which is explained in part by the tendency to fix exchange rates in the presence of high and unstable rates of inflation.

In any case, Latin American countries have become much more reform-minded during the course of the 1980s and in some cases have implemented what in the past would have been viewed as unprecedented reforms, especially of trade and exchange rate policies. Economic policy has become much more market-oriented, the importance of playing to one's comparative advantage is being given greater priority, and significant attempts are being made to integrate national economies into the international economy.

## PERFORMANCE OF THE AGRICULTURAL SECTOR

Agriculture tends to account for a relatively modest share of GDP in the region, ranging from less than 10% in Peru, Mexico and Venezuela to up to 30% in poor countries such as Haiti. The share that food makes up of total household consumption ranges between 23% and 46%, with most countries in the upper 30s. Data on average daily caloric supplies show that on average, people in the region are reasonably well-fed. However, these aggregate data mask important malnutrition problems among the poor.

The 1980s was a period of stagnant economic growth for most countries in the region. All sectors experienced poor economic performance, although agriculture tended to perform better than the other sectors. This stronger performance on the part of agriculture was largely accounted for by Brazil, which accounts for 33% of the value added for the regional agricultural sector. However, the growth rate for agricultural GDP during the 1980s was significantly below levels achieved in the period from 1965 to 1980.

Evidence that the performance of agriculture during this decade was generally poor is provided by the data on food production per capita in Table 5. As of 1988, food production had done little more than keep up with population growth compared to the 1979–81 base, and this ‘satisfactory’ performance for the region as a whole was largely accounted for by Brazil. Only four (Paraguay, Chile, and Uruguay, plus Brazil) of the 19 countries for which data are available experienced increases in food production per capita, with Brazil experiencing the largest.

Performance in food production for the region as a whole had improved significantly by 1990, however, even though the growth rate in GDP for the sector as a whole had declined by this date. The improved performance was widespread among the countries in the table, with only Nicaragua and Argentina doing more poorly when the longer period is considered.

Data on trends in some selected agricultural aggregates are presented in Table 6 with a disaggregation between Central and South America and a comparison of performance between the 1970s and the 1980s.<sup>1</sup>

Each of the agricultural aggregates for Central America grew at a rapid rate during the 1970s, and then at a slower rate during the 1980s. For South America, the increase proceeded at comparable rates for the two decades, with only a modest decline during the 1980s. By the end of the 1980s, total crop production had expanded significantly more in South America, while livestock production had expanded significantly more in

<sup>1</sup> For an important analysis of regional trends in the 1970s, see Valdés and Muchnik (1984).

TABLE 5

Miscellaneous data on the food and agricultural sector, Latin American countries, 1974 to 1990

	Fertilizer consumption <sup>a</sup>			Average index food production per capita (1979–81 = 100)	
	1970–71	1987–88	1989–90	1986–88	1988–90
Haiti	4	25	41	95	94
Bolivia	7	19	23	95	109
Dominican Republic	334	556	504	95	90
Honduras	156	190	185	76	83
Guatemala	298	656	728	92	91
El Salvador	1043	1262	1064	87	97
Ecuador	133	232	338	97	100
Colombia	287	945	902	100	104
Paraguay	98	69	89	106	116
Peru	300	622	411	96	100
Chile	322	544	800	105	113
Costa Rica	1001	1806	2027	89	91
Mexico	232	753	728	93	102
Panama	387	657	541	95	90
Brazil	186	485	430	108	115
Nicaragua	215	433	648	71	58
Uruguay	485	420	454	103	109
Argentina	26	45	46	97	93
Venezuela	170	1580	1507	94	96
LA and Caribbean <sup>b</sup>	201	451	468	100	106

Source: World Development Report (1990, 1992), World Bank, Washington, DC (table 4).

<sup>a</sup> Hundreds of grams of plant nutrient per hectare of usable land.

<sup>b</sup> Weighted average.

TABLE 6

Trends in aggregate indicators for agricultural sector, Central America and South America, 1969–71 to 1987–89 (indices, 1969–71 = 100)

	Central America			South America		
	1969–71	1978–80	1987–88	1969–71	1978–80	1987–88
Total agricultural production	100	141	156	100	129	161
Total crop production	100	129	136	100	131	174
Total live-stock production	100	164	194	100	127	143
Total food production	100	144	166	100	132	165

Source: ERS data tapes, WAS-55 (1989).

TABLE 7

Trends in production of principal crops, Central America and South America, 1969–71 to 1987–89 (indices, 1969–71 = 100)

	Central America			South America		
	1969–71	1978–80	1987–89	1969–71	1978–80	1987–89
Wheat	100	116	182	100	128	184
Rice	100	135	156	100	133	176
Corn	100	118	129	100	112	153
Sorghum	100	163	210	100	167	111
Soybeans	100	180	207	100	891	1,676
Peanuts	100	118	53	100	80	56
Cottonseed	100	119	56	100	99	116
Sugar	100	134	166	100	139	144
Total cereals	100	127	152	100	123	158
Roots, tubers	100	154	157	100	132	179
Fruits	100	129	139	100	132	179
Vegetables	100	175	223	100	131	160
Coffee	100	131	151	100	116	144

Source: ERS data tapes, WAS-55 (1989).

Central America. There appears to be some regional specialization in production taking place.

Data on the trends in production of the major crops in the region are presented in Table 7. A number of points should be highlighted. The first is the dramatic expansion in the production of soybeans in the region, especially in South America. The production of fruits and vegetable also expanded significantly, as did the production of total cereals. Sorghum production expanded rapidly in Central America during both decades. It did the same in South America during the 1970s, but declined significantly during the 1980s. The production of peanuts declined significantly over the two decades in both sub-regions, with production trends for cotton being uneven. The production of roots and tubers declined in South America, but increased in Central America, although mostly in the decade of the 1970s.

Data on some additional aggregate indices are summarized in Table 8. Total agricultural production per capita increased modestly over the 1970s in Central America, but then declined in the 1980s almost to the level it had been at the beginning of the 1970s. South America, on the other hand, was able to sustain the gain it experienced during the 1970s. This same pattern was traced for food production per capita. Crop production per hectare increased during the 1970s for both regions. However, it continued to rise during the 1980s in South American, while leveling out in Central America.

TABLE 8

Selected aggregate indices (1979–81 = 100), Central and South America, 1968–71, 1979–81, and 1986–88

	Central America			South America		
	1969–71	1979–81	1986–88	1969–71	1979–81	1986–88
Agricultural production						
per capita	91	100	91	94	100	101
Food production per capita	89	100	94	93	100	101
Crop production per ha	81	100	101 <sup>a</sup>	87	100	113 <sup>a</sup>

Source: ERS data tapes, WAS-55 (1989).

<sup>a</sup> Average of the year 1986–87.

Data on trends in yields for the principal crops are presented in Table 9. These data are consistent with the aggregate index on yields, referred to above. What is perhaps most significant in this table is the significant increase in yields experienced in South America during the 1980s, a decade of economic turmoil. These data suggest that the favorable shift in the domestic terms of trade due to policy reforms in the region have led to an intensification in production in this region.

Despite this trend, the use of fertilizer at the end of the 1980s was still rather modest for Latin America as a whole (Table 5). Moreover, the use of fertilizer varies a great deal among the countries of the region. El Salvador, Colombia, Costa Rica, and Venezuela stand out as making the most intensive use of fertilizers. Haiti, Bolivia, Paraguay, and Argentina are towards the bottom of the list. The failure of countries such as Argentina

TABLE 9

Trends in yields of principal crops, Central and South America, 1969–71, 1978–80, and 1987–89 (indices, 1969–71 = 100)

	Central America			South America		
	1969–71	1978–80	1987–89	1969–71	1978–80	1987–89
Wheat	100	127	141	100	108	149
Rice	100	128	144	100	108	139
Corn	100	131	140	100	113	136
Soybeans	100	97	96	100	123	155
Total cereal	100	132	146	100	114	140
Peanuts	100	95	74	100	109	139
Seed cotton	100	123	128	100	103	180
Sorghum	100	117	124	100	136	133

Source: ERS data tapes, WAS-55 (1989).

and Brazil to make more effective use of this modern input are due to policies which have discriminated severely against their agricultural sector.

The shift in cotton and soybean production from Central to South America seems to be explained in part by the significant increase in yields in these crops in the latter region. Another significant feature of these data is the apparent spread of the high-yielding varieties of rice and wheat in the region.

To conclude, these data show that the agriculture of Latin America was fairly dynamic during the 1980s, although not enough to do much more than keep up with population growth rates. There were significant increases in yields among the major crops, but these were not sufficient to generate increases in either total agricultural production per capita or in food production per capita. Moreover, production did not increase enough to provide significant increases in supplies of exports to help earn foreign exchange. Production did expand sufficiently to help replace the decline in imports of food over the decade, however.

#### CHALLENGES FOR POLICY MAKERS

Agriculture has the potential to contribute significantly to economic development in many, if not most, countries in Latin America. To date, agriculture in the region has not realized its potential, and the revitalization of this sector will necessitate improvements in economic policy, strengthened institutions to serve agriculture, and substantial investments in the physical infrastructures that serve the sector. This section is devoted to a discussion of these issues.<sup>2</sup>

##### *Macroeconomic policy*

The key to having a vital agricultural sector is to provide a proper economic environment for investment in agriculture and to provide adequate incentives to producers and workers. Although considerable progress has been made in reducing discrimination against agriculture by means of macroeconomic policy, there is still much to be done.

The starting place should be with monetary and fiscal policy. Policy makers should have as a goal the implementation of neutral monetary and fiscal policies. A neutral monetary policy is one which stabilizes the price level – an important feature of the economic environment if owners of

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<sup>2</sup> For a more extensive discussion of policies to promote agricultural development in the region, see Schuh and Brandao (1992, chapter 10).

wealth are to invest in modern inputs and not in the ownership of land as a hedge against inflation. A stable price level is also important if producers are to make sound short-term production decisions.

A neutral fiscal policy is one which seeks to balance the budgets of national governments over, say, a three-year period. A neutral fiscal policy is probably key to obtaining a neutral monetary policy. Obtaining a neutral fiscal policy will require the privatization of all parastatals except those that need to be in the public sector – such as those that support agricultural biological research. A neutral fiscal policy will also require that the fiscal policy itself be improved in most countries. This will include taxing agriculture by transparent and conventional means on the same basis as other sectors of the economy.

The third essential component of macroeconomic policy is a sound foreign-exchange-rate policy. Although it is controversial in Latin America, there is little alternative in today's world to pursuing a flexible exchange-rate policy. Even with neutral domestic monetary and fiscal policies, external shocks can still impose the need for substantial domestic reallocation of resources between the tradeable and nontradeable sectors. The advantage of a flexible exchange rate is that the effects of these shocks will be spread widely in the economy, and the adjustment will start almost immediately after the shock is felt. That keeps the economy from getting out of adjustment, and reduces the adjustment required of individual sectors. A fixed exchange-rate system, on the other hand, allows the pressures of the external shocks to accumulate, and then requires major adjustments in individual sectors as devaluations occur.

There is a special reason why a flexible exchange-rate system would be of value in the future. If major policy reforms continue to be made and are sustained in the future, the economies of the region are likely to expand rapidly in the decade ahead. There will likely be a substantial inflow of capital into the region, both in response to the improvement in economic policy and due to the recovery in economic growth. In fact, a recovery of net capital inflows into the region started in 1990, and the net transfer of resources to the region turned positive in 1991, after almost a decade of being negative (CEPAL, 1992; Calvo, Leiderman and Reinhart, 1992).

With flexible exchange rates, the effect of those capital inflows is to bid up the value of the domestic currency in foreign exchange markets. The benefits of the improved policy which attracts those investments would thus be widely spread in the economy. Moreover, the resource adjustments consistent with a rise in the value of the currency – a shift out of the production of tradeables and into nontradeables – would begin immediately. This would make for a more efficient use of national resources. In the absence of flexible exchange rates, the benefits of the policy reforms



would not be as widely spread, and there would be the same accumulation of pressures for a revaluation – with similar large shocks to particular sectors as has been experienced in the past from major devaluations.

In the short term, the rise in the value of currencies in Latin America is not likely to be large. Policy reforms which lower protectionist barriers to trade, and the expected recovery in economic growth, will likely lead to a significant increase in imports. This growth in import demand will keep downward pressures on the value of national currencies.

### *Trade policy*

Two important aspects of trade policy have been neglected by many countries in the region. The first is the extent to which an overvalued exchange rate is a tax on the agricultural sector. The second is the extent to which high protective tariffs lead to an overvalued currency. As policy makers have pursued successive rounds of import substitution by extending and raising the level of protective measures, they have driven the distortion in the exchange rate to be ever larger.

Attempts to reduce the barriers and distortions to trade will require coordinated efforts to realign the exchange rate at the same time. One of the reasons for high levels of protection has been the gross overvaluation of currencies. Levels of protection can and should be lowered as exchange rates are adjusted to more realistic levels. Eventually, the exchange rate should be freely floating and the level of protection should be low and uniform across sectors.

A common concern of those involved in agricultural development in the region is the dumping of exports by the developed countries, especially the United States and the European Economic Community. It should be considered, however, that more realistic exchange rates and reductions in the level of protection for the manufacturing sector will do a great deal to shift the domestic terms of trade in favor of agriculture. Also, under the rules of the GATT, policy makers are justified in imposing countervailing duties against export subsidies. Finally, food aid should be used as income transfers to poor people so that disincentive effects are minimized. Most countries in the region have the administrative ability to use food aid in these ways.

Another concern is the protection the developed countries provide for their own agricultural sectors, especially in the form of nontariff barriers (NTBs). Data on the tariff equivalents of NTBs of the United States are provided in Table 10. The largest equivalent, and probably the most damaging in relation to Latin American agricultural interests, is for sugar.

TABLE 10

Nominal tariff equivalents for non-tariff barriers facing Latin American exports (percent)

Product description	Best estimate average tariff equivalent
Wheat	15
Dairy Products	25
Sugar	40
Rice	30
Meats (beef and veal)	15
Textiles	20

*Source:* Erzan and Yeats, 1992.

Finally, policy makers should remember that trade liberalization is its own reward. Unfortunately, the Multilateral Trade Negotiations have created the perception that a country lowers its barriers to trade as a favor to one or several countries. The truth of the matter is that the beneficiaries of lower trade barriers are a nation's consumers – including importers of raw materials and capital goods – in the form of benefits received from having a more competitive productive sector. Policy makers in Mexico, and to a lesser extent in Colombia, have recognized this point by unilaterally lowering their barriers to trade. Clearly, the labor adjustment problems created by trade liberalization must be dealt with, but policies to deal with these problems are needed, in any case.

### *Economic integration*

Mexico has recently signed a free trade agreement with Canada and the United States (the North American Free Trade Agreement, NAFTA). If ratified by the respective legislative branches of government, that agreement foresees a significant reduction in trade barriers among the three countries, including for agricultural commodities.

Many observers expect this new free trade area to eventually be extended to include the other countries of Central and South America. Chile and Venezuela have already applied for inclusion and other countries eye the large and well-to-do North American market with relish. It is not likely that countries such as Brazil, for example, will allow Mexico unfettered access to this large market without their competing for the benefits.

A Western hemisphere free-trade area could be a powerful source of economic growth for the region. The underlying resource endowments vary greatly across the region, with the result that specialization in production could bring substantial economic gains. Given time to adjust, international trade among countries within the region will likely increase significantly.

TABLE 11

Projections of effects of exclusive free trade arrangements on Latin American countries' exports to the U.S.

	Food and feeds	Agricultural materials	Energy products	Ores and metals	Manu- factured goods	All exports
Total exports to the U.S., 1986 (\$ million)						
All eleven countries	6 998.8	445.7	9 589.2	2 301.0	14 477.5	35 105.9
Argentina	286.2	10.0	130.0	45.7	358.9	840.8
Bolivia	7.2	0.3	2.9	72.2	6.9	123.2
Brazil	1 870.4	144.5	378.9	408.1	3 766.7	6 681.2
Chile	285.3	40.6	0.5	354.0	55.8	818.6
Colombia	874.9	133.6	513.9	8.4	272.9	1 865.1
Ecuador	857.5	16.1	573.8	0.3	10.8	1 466.7
Mexico	2 394.1	84.8	3 539.2	833.5	9 498.8	17 071.6
Paraguay	23.2	0.7	0.0	0.0	5.5	30.4
Peru	223.7	7.0	192.6	168.2	117.0	757.8
Uruguay	34.2	7.1	0.0	164.3	101.9	472.5
Venezuela	142.1	0.9	4 257.4	246.4	282.2	4 978.0
Projected expansion for all dutiable items (\$ million)						
All eleven countries	292.6	15.9	145.2	18.5	2 452.7	2 925.0
Argentina	17.9	0.3	1.7	—	45.0	64.9
Bolivia	—	0.0	0.1	0.0	3.2	3.3
Brazil	163.8	0.1	7.0	2.2	774.2	947.3
Chile	6.4	0.5	0.0	6.0	9.8	22.8
Colombia	1.4	12.4	9.2	—	56.9	79.9
Ecuador	1.0	0.1	11.8	0.0	1.6	14.4
Mexico	96.4	1.9	51.7	5.3	1 484.5	1 639.8
Paraguay	1.7	0.0	0.0	0.0	1.2	2.9
Peru	0.2	0.1	2.4	2.6	20.0	25.3
Uruguay	0.6	0.5	0.0	—	45.4	46.6
Venezuela	3.2	—	61.3	2.4	10.9	77.9
Projected expansion for all dutiable items except 'Hard Core' NTBs (\$ million)						
All eleven countries	263.2	15.8	145.1	18.5	1 870.5	2 313.1
Argentina	15.2	0.3	1.7	—	44.8	62.1
Bolivia	—	0.0	0.1	0.0	3.2	3.3
Brazil	138.4	0.1	7.0	2.2	638.4	786.1
Chile	6.4	0.5	0.0	6.0	9.8	22.8
Colombia	1.4	12.4	9.2	—	7.8	30.8
Ecuador	1.0	0.1	11.7	0.0	1.6	14.4
Mexico	96.4	1.9	51.7	5.3	1 135.1	1 290.3
Paraguay	0.4	0.0	0.0	0.0	1.2	1.6
Peru	0.2	—	2.4	2.6	0.8	6.1
Uruguay	0.6	0.5	0.0	—	23.4	24.5
Venezuela	3.2	—	61.3	2.4	4.4	71.3

Source: Erzan and Yeats, 1992.

A recent paper by Erzan and Yeats (1992) attempts to measure the trade gains for Latin America in the event of a free trade agreement with the United States. Their results show that given the existing Generalized System of Preferences (GSP) and the reduction of import duties negotiated in the past, the capacity of the United States to extend tariff preferences to most Latin American countries is limited, except in cases such as Brazil and Mexico that actually face significant tariff barriers. The importance of a free trade agreement resides, then, on the removal of non-tariff barriers, in which case agricultural products would particularly benefit. Some 26% of food and feeds and 32% of other agricultural exports are currently subject to non-tariff barriers (see Table 11).

The estimate is that a full set of free trade agreement preferences would raise global Latin American exports by 8% or 9%. Table 11 shows the projections of the effects of an exclusive free trade agreement, from which it can be concluded that agricultural products would share nearly 21% of the increase in total Latin American exports, which is higher than the current share.

A final set of issues is how fast and in what sequence the process of regional integration should be expected to occur, and how significant, in practice, it could become for Latin American agriculture. In this respect, it should be noted that at the political level significant efforts have been made to strengthen regional integration efforts, and to gain access to the U.S. market through the Enterprise for America's Initiative. However, the only real progress is the Mercosur involving Argentina and Brazil, and the North American Free Trade Agreement. Moreover, eligibility requirements for inclusion in NAFTA have been established: reasonable monetary stability; adoption of free markets; fiscal reforms that do not rely on trade taxes; opening of the capital account; and a functioning democracy (Schott, 1992). Only Mexico and Chile currently meet these preconditions, although most countries are making serious attempts to attain them.

The domestic challenges facing policy makers to enable their countries to take full advantage of the potential of a free trade area are formidable. To begin, they will need to greatly strengthen their institutional infrastructure if their producers are to realize their potential in the new market. This includes more vital market information systems, a greater analytical capacity to understand changes in the global economy to back up that information system, and the development of capital market instruments to facilitate an expansion of trade.

In addition, the physical infrastructure needs to be greatly strengthened, including the communication, transportation, and port facilities. Most countries in the region have underinvested in the physical infrastructure serving their agricultural interior. This infrastructure needs to be strength-

ened if they are to capitalize fully on a general reduction in trade barriers. Moreover, the existing transportation system is primarily oriented towards bringing agricultural output to consumption centers, and especially to capital cities, thus the infrastructure oriented to export markets needs to be given special attention.

To realize the potential for within-region trade, massive investments will be needed to provide an inter-country transportation and communication system to tie economies within the region together more effectively. This is an important area for regional cooperation. It is also an important opportunity for international development banks such as the World Bank and the Interamerican Development Bank as they shift their activities away from supporting policy reform and towards the longer run task of helping to build the capacity to promote economic growth.

Policy makers will also need to develop and implement positive adjustment policies to facilitate the adjustment of labor to changing market opportunities. Even though this is likely to take over a decade or more, the reallocation of labor resulting from a free trade agreement is likely to be substantial. Labor market information systems and policies to facilitate domestic mobility of labor will provide the means of taking advantage of the benefits of freer trade more efficiently and more equitably.

### *Credit institutions*

The credit system for agriculture in most Latin American countries tends to be dominated by strong government control. Unfortunately, these institutions are oriented towards channeling subsidized credit to producers, and almost totally neglect the mobilization of savings and the important function of intermediation. Moreover, although the motivation for government intervention is to provide cheap credit to small producers, the programs are largely ineffective in attaining that goal.

Reforms are needed that will create true financial intermediaries, and which mobilize the savings likely to result from a revitalization of the agricultural sector, and allocate them to productive activities in both the farm and nonfarm sectors. This will be the key to promoting decentralized economic development, and will help facilitate the adjustment of labor that is likely to be such an important feature of the next decade. The problem of rural poverty, however, will have to be addressed by other means as well.

### *Agricultural research*

A well-respected agricultural research system is critical for revitalizing the agricultural sectors of most Latin American countries, and for promoting economic growth in general. Most countries have grossly underinvested

in agricultural research, despite the accumulated evidence that investments in such research have very high social rates-of-return – in many cases as high as 80%, and even exceeding 100% (see Hayami and Ruttan, 1985).

Too often, policy makers and others in the region fail to recognize how investing in the development and distribution of new production technology contributes to economic development and who the ultimate beneficiaries should be. Unfortunately, there is a tendency to believe that new production technology is for the benefit of the producers, especially the large producer, and thus that its income distribution effects are largely negative. In point of fact, the benefits of technological progress in non-tradeable commodities tend to be realized by domestic consumers in the form of lower prices, and in a relative sense by low-income consumers. Even in the case of tradeables, the increase in foreign exchange earnings which technical progress in these sectors makes possible helps finance higher growth rates and thus are widely spaced in the economy.

Strengthening agricultural research in the region will be especially challenging. First, an important part of biological research has to be done in the public sector since the private sector cannot usually capture its benefits. Second, not enough attention has been given to paying the salaries needed to attract well-trained scientists, or to providing them with the operational support they need. Third, not enough attention has been given, with a few exceptions, to a strategic analysis of research goals. The balance among applied, strategic, and basic research is largely neglected, as is the relative attention given to tradeables versus nontradeables.

Another set of issues concerning agricultural research involves the establishment of linkages with external research centers. Three countries hosting research centers belonging to the CGIAR system are located in the region and are equipped to provide plant material and other assistance to national agricultural research systems. Similarly, linkages of domestic researchers with those in the developed countries would help promote the latest in research methodology and techniques.

Finally, a great deal could be done to provide incentives to the private sector to do more research in the region. This requires legislation that provides more protection for intellectual capital, including patent rights for new innovations.

### *Rural poverty*

Perhaps the most striking feature of the rural sectors of Latin America is the extent to which they are characterized by massive poverty. Although visitors to capital cities are often traumatized by the visible poverty they see in urban ghettos, the invisible poverty of rural areas tends to be more severe and more pervasive.

The traditional response to this problem has been recommending land or agrarian reform. This recommendation is based on the highly-skewed distribution of land holdings in most countries of the region, and a rather widespread tendency to romanticize about the Mexican Revolution, which many people believe alleviated rural poverty. It fails to recognize the political difficulties and fiscal costs of bringing off a successful land reform. It also fails to recognize the extent to which the Mexican land reform has institutionalized rural poverty, even though it has tended to reduce some of the premature migration from rural to urban areas by keeping the producer tied to the land.

Most importantly, perhaps, this recommendation fails to recognize the extent to which a redistribution of land is a one-time gain, and the extent to which it fails to prepare the beneficiary for participation in a modern market economy. A key reason for the prevalence of poverty in rural Latin America is that governments in the region have grossly underinvested in the human capital of their rural populations. Illiteracy is pervasive among most rural populations, the level of educational attainment is substantially lower among rural populations than among urban populations, and the provision of health care is less for rural populations than for urban populations.

The cause of poverty among the rural populations is massive low productivity, largely associated with the failure to invest in the human capital of these groups. Governments can change these circumstances through investments in the education of their rural populations, and in the health care services provided in rural areas. Increasing the human capital of these population groups will help them to take advantage of new technology, while at the same time enabling them to obtain gainful employment in the nonfarm sector. From a policy perspective, such investments do not involve a tradeoff between a higher rate of economic growth and a more equitable distribution of income. To the contrary, such investments are the key to higher rates of economic growth.

Unfortunately, those measures take effect only over the long-run. But the alleviation of poverty takes time. In the short-term, shifting the terms of trade in favor of agriculture and promoting trade will provide immediate benefits to the poor in agriculture. Expanding rural education and training programs will also better equip agricultural workers for nonfarm employment.

#### CONCLUDING COMMENTS

The agricultural sectors of most Latin American countries have the potential to contribute importantly to the growth of their general economies,

especially if modernization is promoted by investments in the capacity for agricultural research, in education and improved health care of the rural population, and in the physical infrastructure. The coming decade will likely be a critical period for these countries, and especially for their agricultural sectors. After a decade of economic stagnation and drastic reforms of economic policy, most countries in the region are poised for a period of rapid economic expansion. The increases in per capita incomes which that expansion will bring will lead to substantial increases in the demand for food, and to an upgrading of diets.

These increases in demand will put extraordinary demands on the agricultural sector, especially if a regional free-trade area comes into existence, and if the global economy recovers the impetus for economic growth as well. Unless the agricultural sector is revitalized, agriculture can and likely will be a constraint on general economic growth. Either food prices will rise, with broad-based reductions in real incomes, or foreign exchange earnings will have to be allocated for the import of food instead of for the promotion of a more rapid rate of economic growth. Policy makers have little choice but to allocate more resources for the development of their agriculture if they truly want sustainable economic growth.

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