The Impact of the New Economic Model on Latin America’s Agriculture

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Summary. — This paper examines the changes in policy instruments and public institutions under the New Economic Model (NEM) that have affected Latin American agriculture, with particular attention to Brazil, Mexico, and Chile. In general, production has increased, while acreage and rural employment have declined in many countries, in the context of a shift from traditional to nontraditional products. There has been a sharp reduction in the number of small farmers, often accompanied by a greater inequality. While the rural sector needs efficient public institutions, the retreat of the state has left important gaps not (yet) filled by the private sector, with negative consequences in particular for small producers. © 2000 Elsevier Science Ltd. All rights reserved.

Key words — Latin America, Brazil/Chile/Mexico, agriculture, structural reforms

1. INTRODUCTION

The “New Economic Model” (NEM) in Latin America was ushered in, notwithstanding certain exceptions such as the early reformer Chile, toward the end of the decade of the 1980s. It was then that national governments began to act on the realization that the public sector policies of the past were no longer sustainable. In agriculture, the situation was characterized by an overbearing state: public entities for marketing and storage of agricultural produce, trade restrictions and production quotas, price bands and other producer subsidies, multiple exchange rates, restrictions on property rights in land, and so forth. With more market-friendly ideas taking hold in the region, the state began to pull back also in agriculture. In addition, many believed that the past wrong of the “urban bias” had to be put right through sector neutral policies.

Taking a look back after more or less a decade of reforms, our initial premise is that the reformers have overshot in some respects. We want to draw attention to the possibility that the rollback of the state’s involvement in the rural economy has created certain vacuums that could not be filled by private agents. The question arises if, in the effort to reduce the weight of the state, enough attention has been given to the possibility of market failures, which are especially relevant in the rural context. For instance, if not the state, who will provide infrastructure works in remote rural areas? In the area of R&D, will the private sector cover only high-margin activities such as the development of genetically altered plants? In extension services, are positive externalities too prevalent for private firms to take up the work formerly done by public agencies? Before dramatically reducing or even dismantling state activities in these areas, answers to the above questions should be known.

Above and beyond the problem of market failure, in practice the state also has to take a social and at the same time economic issue into account: what about those small and peasant producers at the margin of viability? They usually have insufficient human and other capital to move into other significantly more productive activities, either in their own locality or through migration. Given the sheer magnitude of their numbers in most countries of the region, it is hard to see how policy makers could ignore them or pretend to tackle the issue through social programs alone. Clearly, a balance has to be struck between social programs sustainable in a budgetary sense, and productivity-enhancing programs, taking into

*We are grateful to Jorge Katz, Wilson Peres, Nola Reinhardt and Pedro Tejo for their draft comments, and the latter for his research assistance.
account possible market and government failures as well as civil society at large. On the other hand, policies should avoid the creation of a dependency culture that may artificially maintain subsistence agriculture in the medium to long term.

Last, but not least, it must be remembered that the global policy environment has important implications for domestic reform efforts. As desirable as it is, for example, to liberalize agricultural trade, policy makers should not overlook in their reformatory zeal the multitude of protective measures, producer subsidies, and other competition-distorting instruments still applied to agriculture in the developed countries.

Before proceeding, a cautionary note is necessary: the task of arriving at meaningful conclusions about the impact of reform policies on Latin American agriculture is not an easy one. It cannot be pointed out strongly enough that intellectual honesty requires careful interpretation of economic statistics, a basic rule especially in the case of developing countries where the raw data often are of constrained reliability. In addition, the analytical framework we have at our disposal is far from complete. Moreover, the line between macroeconomic stabilization programs and market-oriented structural reforms often becomes blurred and in order to isolate different policy consequences, the analytical separation of structural reform proper (trade, finance, tax, labor, and privatization policies) from macrostabilization in monetary and fiscal policy would be needed. Finally, in regard to the desirability of profound structural changes in agriculture over time, it must be remembered that it is a general characteristic of economic development that the relative weight of agriculture in the economy declines.

The paper is structured as follows: the next three sections, respectively, outline first the current conditions of Latin American rural sector, the main characteristics of the reforms, and their overall impact on the agricultural sector. Then follow three sections on the analysis of Brazil, Mexico, and Chile, and the final section contains the main conclusions.

2. THE RURAL SECTOR IN THE 1990S

Presently, some 123 million people live in rural areas in Latin America. Due to migration and declining birth rates, the rural population has reached a plateau in absolute numbers, with its mean shifting toward middle-aged people. Of rural inhabitants, some 33 million have agriculture (here understood to mean primary production) as their principal occupation, along with another eight million living in urban areas. This total of 41 million represents approximately 25% of the Latin American economically active population (EAP). Around 55% of the rural population live in poverty, with 33% in indigence. The occurrence of poverty among self-employed farmers is higher than among the rural occupied workforce at large, mainly due to low levels of physical (including land and water) and human capital (Dirven, 1997).

The average annual productivity growth, measured by the output to labor force ratio, of agricultural labor over the last two and a half decades (1970–94) has been a solid 2.3% (mainly due to a stagnation of agricultural labor from a regional point of view), much higher than in the nonagricultural sector, where it actually was slightly negative (–0.3%). This notwithstanding, labor productivity in agriculture still lags behind nonagricultural activities, and usually significantly so, the average for the region standing at one third of nonagricultural labor productivity (Ocampo, 1998).

Within the rural areas there are clearly zones that have a richer natural resource base and better human capital than others. Often, they coincide with a more developed transport, communication, and service infrastructure along with less poverty and more diverse income opportunities. At the same time, as distance increases from urbanized zones or district capitals to deep rural hinterlands, a gradient of decreasing access to infrastructure, services, and markets as well as increasing poverty and indigence is observable. The poorer regions seem to be caught in a vicious circle of stagnation, where the lack of opportunities leads to resignation, which in turn leads to a loss of interest in further schooling and training, resulting in poor human capital.

As to the 14 million rural nonagricultural EAP, social, communal and personal services account for some 29% of the total, the manufacturing industries for another 22%, trade for 18%, and construction for 11% (Klein, 1992). Preliminary evidence from Mexico and Brazil (Durston, 1998) shows that the participation of rural youths in nonagricultural activities is much higher than that of the rural population at large, and among that group, the number of
young women is greater than in remunerated agricultural activities.

3. THE CHARACTERISTICS OF THE REFORMS

The reforms have essentially been twofold. On the one hand, they were the result of the adjustment of public finances that had to be reigned in to get to more sustainable macro-variables such as public debt and inflation. On the other hand, they responded to a new development paradigm where the market and the private sector were to play more of a protagonist role, and the government was to retreat from production-related tasks and reduce regulation, with exceptions like the regulation of natural monopolies.

Policies toward the agricultural sector were no exception, although they were often applied later than in other sectors (in many countries in the late 1980s or early 1990s) and in more partial ways, maintaining higher tariffs for “sensitive” products, programs in research, extension, credit, commercialization, etc. It is also important to remember that sector policy reforms in Latin America were by no means identical across countries, differing in regard to the time of their implementation, as well as in scope and depth.

In summary, apart from the general reform goals such as price and trade liberalization and so on, reform of agricultural policies had mainly the following aims: deep changes to property rights regimes in land and water, but also for intellectual property rights (for example, in biotechnology); land market liberalization and the deregulation of the labor market (although there were always special provisions for the agricultural sector and their control was never easy); elimination of development banks, specific credit lines and minimum lending requirements to agriculture for the private banking sector; demand-driven and co-financed investment in rural infrastructure, services, and research; and, finally, demand-driven and remunerated private extension services (Morales, 1999, 1998).

The reforms, because of their supposedly sector-neutral character, were expected to eliminate the previous bias against agriculture. In addition, the comparative advantages of the region in natural resources would help agriculture and in particular export agriculture; and inefficient and clientelist government interventions would be replaced by demand-led, mostly private supply at market prices. Previously curtailed initiatives (because of government crowding out) or nonremunerative prices would be liberated and production factors would flow according to their competitive advantages. In sum, agriculture would be highly favored by the reforms. Sector growth and exports would boom well beyond historical levels.

So far, at the country level the outcomes seem to lag behind expectations in most cases, with some notable exceptions such as Chile, to which we will return later. At the regional level growth has also been below historical trends. Thus, based on ECLAC estimates, the regional average yearly sector growth was 2.5% for 1991–97 as against 3.5% for 1971–80 (and 1.8% for the “lost decade” of the 1980s). Although agricultural exports exceeded imports two to one, in 1991–96 the yearly average export growth was 5.2% in current dollar value terms (2.8% in volume terms), against 11.1% in current value terms for imports (8.7% in volume terms).

One explanation is the fact that various macroeconomic variables, in particular exchange and interest rates, have reached levels not favorable to exports and investments in the long run. At the same time, the expectations as to the rapid and dynamic response of the private sector frequently were overly optimistic. The critique brought forth against the previous public interventions was in part too harsh. Although their implementation had frequently left much to be desired, the reasoning behind them was often correct.

4. IMPACT OF THE REFORMS

There have been important structural changes in Latin American agriculture over the last decades as can be seen in Figure 1. The figure shows a production index for the major product groups over the past two and a half decades, with the 1970–75 line representing 100, and the axes showing increments of 100 as well. By far the strongest increase has been in oilseeds, while tubers have stagnated. In a sense these changes fit reform expectations: momentum for export agriculture, predominantly oilseeds, fruits, and vegetables, and retreat of traditional products like roots and tubers. It is interesting to note, however, that the initiation of this transformation pre-dated the reforms.
The changes also indicate a further polarization of rural production, since the most dynamic products are being produced by relatively large-scale modern farms, while the least dynamic ones are by and large produced by small-scale traditional farmers.

Furthermore, FAO data and individual country censuses show a relatively clear direction of changes in land use from the late 1980s until the present: a steep decrease in cultivated land (although Mexico is an exception in this regard), and also in permanent crops. Much of the land was converted to permanent pastures for extensive cattle ranching, some of it to forest plantations, or directed toward nonagricultural uses. There are several explanations for this phenomenon, all of them valid for most countries, but with differences in emphasis: lack of working capital due to unavailability of credit plus high interest rates, partially linked to the dismantling of public credit institutions; the fall in profitability due to the sustained decline in world prices combined with lower import taxes and high exchange rates, insufficiently compensated by falling input prices and rising yields of many annual crops; conversion of agricultural land to urban developments and tourist resorts; lack of reliable manpower and therefore shift to extensive cattle raising; guerilla activities (in certain countries) and other security problems which led to a lack of supervision, low investment, and low manpower use strategy; and finally, higher yields resulting in increased production despite decreasing land use.

The opening up of the economies created downward pressure on agricultural prices due to increased import competition and the liberalization of domestic markets, as well as a drop in import prices for agricultural inputs (which in the early to mid-1990s coincided with high exchange rates). This, in turn, encouraged the increased use of imported capital goods and agricultural chemicals. At the same time, increased demand for agricultural products resulted from the renewed economic growth in the region after the “lost decade” of the 1980s. An additional factor in rising per capita incomes was the rise in real wages, related to the stabilization of some of the macro-variables, especially the inflation rate. In many countries these phenomena reinforced each other and both domestic demand and production boomed.

When linkage effects between agriculture and the rest of the economy are taken into account,
another relevant aspect emerges. Recent studies on clusters around agricultural production point to evidence that the opening of the economies to imports of goods and capital has had strong modernization and scale increase effects on production. New linkages have been created, especially to services (accounting, advertising, laboratories, etc.), some at the local level, others in bigger cities. At the same time, “declustering” can be observed, particularly regarding utilization of domestic technology and engineering know-how as well as nationally produced machinery and tools (Dirven & Ortega, 1998).

Beyond these generalizations, the following sections will give a more detailed analysis of the particular situations found in Brazil, Mexico and Chile. Brazil was chosen because it is by far the largest country of the region, contributing 35% of the region’s agricultural GDP and 32% of its population economically active in agriculture. Brazil is also the most important partner in the MERCOSUR trade agreement (where Argentina, Paraguay and Uruguay are full partners, Bolivia and Chile associated countries). Mexico, besides being a part of the North American Free Trade Agreement (NAFTA) is the second most important country along the same indicators (20% share of regional agricultural GDP, and 21% of economically active population in agriculture). Chile is of interest because it is an early reformer, from 1973 onward. Its economy is much smaller than Brazil’s or Mexico’s, but it has been extremely successful in turning from a net importer into a net exporter of agricultural produce, becoming one of the most important world exporters of several agricultural and agro-industrial products. Last but not least, Chile has served as a reform model for other countries not only in its general economic and social policies, but also for its agricultural policies.

Table 1 shows the behavior of some important variables for the time periods we found to be most pertinent for each of the three countries. The economic reforms were implemented in different periods at diverse degrees of intensity in the three countries in question (see the table note for an explanation).

5. THE BRAZILIAN CASE

In the last two decades the Brazilian agricultural sector has been confronted with substantial changes in (macro)economic policies, and its response to this new reality has led to enormous transformations. They can be summarized as strong decreases in the number of agricultural enterprises and in the labor force. While agricultural prices fell, this was compensated by decreased production costs, a trend toward the reduction of land prices, and a strong increase in the productivity of certain products. Two main changes in the production pattern were the increased importance of cattle production and of the domestic market. The most significant consequences are concentration of wealth and gains in productivity in certain regions and for certain products. Expansion of the agricultural frontier as the main method to increase production declined in importance and agriculture is being integrated more into the economy as a whole, therefore becoming more vulnerable to the changes in macroeconomic conditions (David, 1998, 1999a,b).

The main pillars of the reforms were:

Trade liberalization. The opening up of the sector to international competition in the second half of the 1980s has proved beneficial for many exporters and cut production costs through cheaper imported inputs. On the other hand, the impact on formerly protected and export-subsidized products has been negative. Cotton production, for example, fell by over 50% during the 1990s, also due to producer support paid in competitor countries. The MERCOSUR agreement had a negative effect on some regions and products. As a direct consequence, a significant number of rural inhabitants emigrated to Uruguay and Argentina (EXAME, 1996; Waniez, 1992).

Retreat of the state as a rural development agent. Until the recession at the beginning of the 1980s and the external debt crisis put an enormous strain on public budgets, subsidized producer credits, guaranteed prices, development of infrastructure, and R&D had been at the core of sector policy. The state’s partial withdrawal intensified transformations that had begun earlier, like the modernization of cultivation methods and agriculture’s integration with the industrial and service segments of the economy (Dias & Amaral, 1998). The private sector did not fully replace the state, however, especially with regard to public goods. For example, agricultural R&D tends to have public goods characteristics and is therefore
Table 1. Brazil, Chile and Mexico: some main indicators, 1970–97\(^a\)

<table>
<thead>
<tr>
<th></th>
<th>Brazil(^b)</th>
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<th>Chile(^c)</th>
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<th>Mexico(^d)</th>
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<tbody>
<tr>
<td><strong>Annual growth in agriculture and forestry GDP(^e) (%)</strong></td>
<td>5.0</td>
<td>2.8</td>
<td>1.0</td>
<td>4.1</td>
<td>-6.5</td>
<td>4.3</td>
<td>6.3</td>
<td>6.5</td>
<td>1.4</td>
<td>3.2</td>
<td>0.5</td>
<td>1.3</td>
<td>2.2</td>
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<tr>
<td><strong>Annual growth of trade in agricultural food products(^f);(^g) (%)</strong></td>
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<tr>
<td>Export value</td>
<td>2.6</td>
<td>-1.9</td>
<td>0.7</td>
<td>12.4</td>
<td>-19.4</td>
<td>17.4</td>
<td>15.6</td>
<td>11.7</td>
<td>9.6</td>
<td>-3.5</td>
<td>5.8</td>
<td>7.4</td>
<td>14.7</td>
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<tr>
<td>Import value</td>
<td>20.0</td>
<td>-6.7</td>
<td>15.0</td>
<td>18.6</td>
<td>22.7</td>
<td>5.4</td>
<td>-8.5</td>
<td>22.9</td>
<td>9.9</td>
<td>19.9</td>
<td>7.9</td>
<td>15.0</td>
<td>2.9</td>
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<td><strong>Employment</strong></td>
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<tr>
<td>Annual growth, agricultural EAP</td>
<td>0.7</td>
<td>-1.1</td>
<td>-1.7</td>
<td>-1.5</td>
<td>1.3</td>
<td>1.2</td>
<td>1.6</td>
<td>0.6</td>
<td>0.3</td>
<td>1.9</td>
<td>0.6</td>
<td>0.3</td>
<td>0.2</td>
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<tr>
<td>Urban open unemployment rate</td>
<td>n.a.</td>
<td>5.8</td>
<td>4.5</td>
<td>5.3</td>
<td>4.4</td>
<td>13.0</td>
<td>11.2</td>
<td>7.4</td>
<td>6.3</td>
<td>n.a.</td>
<td>4.7</td>
<td>3.1</td>
<td>4.8</td>
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<td><strong>Annual growth of inputs (%)</strong></td>
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<tr>
<td>Agricultural tractors in use</td>
<td>11.9</td>
<td>3.3</td>
<td>1.4</td>
<td>1.8</td>
<td>0.1</td>
<td>0.1</td>
<td>1.3</td>
<td>3.9</td>
<td>21.3</td>
<td>4.0</td>
<td>2.1</td>
<td>0.7</td>
<td>0.0</td>
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<tr>
<td>Fertilizer consumption</td>
<td>9.6</td>
<td>5.3</td>
<td>1.7</td>
<td>5.3</td>
<td>9.8</td>
<td>-2.2</td>
<td>11.6</td>
<td>6.2</td>
<td>n.a.</td>
<td>10.7</td>
<td>-0.8</td>
<td>-3.4</td>
<td>-3.2</td>
</tr>
</tbody>
</table>

\(^a\) *Sources*: Gross domestic product of agriculture and forestry: ECLAC, Agricultural Development Unit, estimated on the basis of official figures compiled by the Statistics and Economic Projections Division of ECLAC. Unemployment: ECLAC, Economic Development Division, based on official figures; all others: FAO, FAOSTAT Agricultural Data.

\(^b\) *Note*: Brazil: (i) 1970–81 was characterized by strong import subsidies for agricultural machinery and parts as well as credit subsidized by negative real interest rates; (ii) 1981–87: guaranteed prices for producers and stronger credit subsidies, with negative interest rates reaching over 30%; (iii) 1987–93: end of credit subsidies and first steps to initiate trade liberalization; (iv) 1993–97: further opening-up of the economy leads to the MERCOSUR free-trade agreement.

\(^c\) *Chile*: (i) 1973–83: intensity of policy changes leveling off over time, unified tariff structure and decreasing real exchange rate; (ii) 1984–89: the crisis of the early 1980s brings an abrupt rise in tariffs, which are subsequently gradually reduced again, along with fixed minimum import prices, and the trade regime changes to a model defined by export-led growth; (iii) 1990–97: marked by further tariff reductions and decrease of the real exchange rate as well as the implementation of several bi- and multinational trade agreements.

\(^d\) *Mexico*: (i) 1970–82: strong elements of a closed economy; (ii) 1982–88: external debt crisis, slow elimination of a large number of import license requirements and price liberalization; (iii) 1988–94: tendency to roll back trade liberalization until NAFTA can be put in place; certain tariffs rise and some import licenses are restored; (iv) 1994–97: rules are established within the framework of NAFTA for a further opening-up of the agricultural sector, accompanied by additional bilateral negotiations and continuation of other pro-active programs.

\(^e\) Includes fisheries for Brazil.

\(^f\) Includes crop and livestock primary and processed products.

\(^g\) At current value, corrected by price index of industrial countries.
only partially assumed by private enterprises.

Rural finance. Rural public credit increased from US$6.9 billion in 1970 to 29.2 billion in 1989, with a negative interest rate of 38%. At the beginning of the 1990s the amount of total credit (US$6.6 billion) was inferior to that at the beginning of the 1970s, and the interest rate reached levels between 11% and 12% per annum (David, 1997, p. 254). The scarcity of credit and its high cost is changing the way agriculture is being financed and how it interacts with agro-industry, demonstrated by alternative methods of farm capitalization, complemented by credits from agro-business or exporters. Furthermore, foreign investment received a significant boost through the Exchange Resolution No. 63 of the Brazilian Central Bank. Likewise, the universal pension system, strengthened by the 1988 Constitution, has turned out to be an important supplement of family incomes, financing production processes and helping to retain the population in the rural areas, especially in the poorest regions. During the second half of this decade the special credit programs directed at small farmers that have no access to the formal banking system, like PRONAF, and the credit program for beneficiaries of the agricultural reform, PROCERA, in practice serve the more organized and better-off farmers concentrated in the South-Central region of the country. Despite attempts to better distribute the benefits, they still go mostly to the upper segments of the target population.

The latest agricultural census reveals some of the main changes in the structure of the rural economy. One clear outcome is a reversal in the growth of cultivated acreage. While the cultivated surface, including all forms of land utilization, grew at a rate of 15% (46 million hectares) during 1975–85, a loss of 10 million cultivated hectares took place during 1985–96 6 almost one-fourth affecting permanent crops. Such a reduction can represent positive changes resulting from higher productivity. On the other hand, it may reveal simply a decrease in the activity level of the sector. Therefore it is of great importance to explain the type of productive change behind this reduction of utilized surface in agriculture and livestock.

The reduction of natural prairies in favor of artificial ones is a fact in most of the regions of the country since the mid-1980s, with an insignificant net loss of two million hectares. This has resulted in improved production conditions, not only in cattle (meat), especially in the Central-Western region, but also in the dairy sector, particularly in Minas Gerais. The productivity increase during 1985–95 in livestock farming of 21% on a national level is also very meaningful, especially in the Central-Western region. There, the increase of cultivated prairies and of spending on animal feed (in spite of their price reduction) suggests new dynamism of the livestock sector (David, 1999b).

The relation between the reduction in cultivated surface and the productivity behavior of the 20 crops making up the bulk of sector GDP helps to clarify the characteristics of the productive transformations in agricultural land use. The evaluation of a productivity variation indicator (Laspeyres index) of a product basket consisting of those 20 agricultural products shows that during 1985–95 a decrease in productivity took place, with \( L = 0.97\% \) (meaning that the basket’s productivity in 1995 was 97% that of 1985). But the same indicator for a second basket containing only corn, rice, beans, soya and cotton reveals important productivity gains \( (L = 1.46) \), thus helping to explain the reduction of cultivated area (David, 1999a).

Another important revelation of the 1996 census is a strong reduction in the number of agricultural holdings to 4.86 million, a little less than the 1975 level. Compared to 1985 this is a loss of approximately one million holdings, a reduction of 16.2%, and a trend observable in most of the states. At the same time, indices of land distribution show an increased concentration in the ownership pattern during 1985–95. Land redistribution programs were not sufficient to counter the tendencies brought on through scale economies. These stem both from the characteristics of the most dynamic products, i.e. those based on livestock and forestry activities, and from the transfer to producers of the cost of financing and risk, implying large-scale production at higher initial investment. Along with the differential gains in productivity described earlier, the cost of inputs was strongly reduced, favoring the more modern farmers who intensively used fertilizers, pesticides, animal feed, and medicines. In the case of fertilizer prices, the reduction was equivalent to minus 42.68% on average. A strong drop in the prices of agricultural products can also be shown, however, on average, 53% during the
study period. These two factors together excessively punish small farmers. The most notable example of concentration is the case of the Center West, where holdings of up to 10 ha decreased dramatically in number (more than −50%), whereas all other size categories increased at between 2% and 15%.

Another important fact is the absolute reduction of the labor force in farming activities. In the previous 1985 census, a significant deceleration in the growth rate of farming employment was observable, but it remained positive. The new census confirms a reversal of this trend, which was already suggested by the data in the 1991 demographic census. During 1985–96, the agriculturally active population has gone down from 23.4 million to 19.9 million, in other words, an annual loss of 2.4%. The decline in employment is directly related to the decrease in the number of holdings, especially those with less than 10 ha. The average correlation coefficient of employment and small holdings is 0.62 and therefore higher than the coefficient of the big holdings, indicating that a strategy of employment generation should focus on small producers.

The reduction in cultivated area, employment, and incomes in large parts of the Brazilian rural economy are indicators of the critical situation in the affected zones. The observed changes, even though they may correspond to a rationalization of the production mechanisms aiming for higher rents, imply an enormous social cost, leaving millions of small farming operations lacking feasible conditions or alternatives.

6. THE MEXICAN CASE 7

(a) The timing of the reforms

Mexico’s agricultural sector has performed rather poorly over the last two decades, with an annual agricultural GDP growth consistently below the regional average and below Mexico’s population growth rate. With more than 25% of its EAP in agriculture and a sector participation in GDP of less than 6%, there is an enormous labor productivity gap between the agricultural and the nonagricultural sectors (the former being one-fifth of the latter), and an equally impressive gap in incomes.

Mexican reform efforts picked up in the mid-1980s. Beginning in 1986, when it joined the General Agreement on Tariffs and Trade (GATT), Mexico started a relatively fast external liberalization of its economy. This culminated in the 1992 signing of the North American Free Trade Agreement (NAFTA), which took effect in 1994. Since then, Mexico has signed several other trade agreements with individual Latin American countries or subregions. During 1982–88, average import taxes were initially strongly reduced, increased relatively afterward, and since the signing of NAFTA have again been gradually diminished. These developments have to be seen in the context of the aftermath of the 1982 debt crisis and the 1994 “Tequila crisis,” leading to strong fluctuations (under and overvaluations) of the exchange rate, which in turn have had important effects on competitiveness and profitability.

Domestically, liberalization policies starting around 1988 influenced prices of agricultural inputs in different ways. Some (water, electricity, fertilizers, improved seeds, credit, insurance) used to be highly subsidized, while others (locally made agricultural machinery) were strongly protected, leading to high prices for low-quality goods. Price controls on staple foods or agro-industrial inputs and guaranteed prices for other important crops were gradually relaxed, though deliberately slower for corn and beans, the two main components of the Mexican diet. As a result, Mexican farmers are now increasingly exposed to the great price volatility that characterizes the international markets of agricultural products.

The rapid dismantling of the state commercialization apparatus left some regions without alternatives, leading to serious marketing problems. 8 As a response, Agricultural and Livestock Marketing Support and Services (ASERCA) was created in 1991. Although ASERCA was given many responsibilities (farmer organization, construction of marketing infrastructure, development of information systems, creation of a stock market, export promotion), it works mainly through giving incentives to consumers (mostly industrial ones) to purchase national rather than imported produce.

The streamlining of Banrural, the main state banking institution for the agricultural sector, started in 1988 and resulted in the closing of half of its branch offices and the reduction of its client base from 800,000 to 220,000. The remaining farmers were divided up into groups with high income and potential, who would have to turn to private commercial banks in the
The research and extension services have also undergone great changes, mainly toward a reduction of operations, their decentralization, concentration on some core activities, and a greater participation of clients in the definition and co-financing of other activities.

Major changes were introduced in tenure legislation: in 1992, Article 27 of the Constitution was modified with the goal of liberalizing land markets. A new National Water Law was also approved. The first relaxes most prohibitions as to land tenure and transfer and at the same time abolishes the constitutional right to a parcel of land for each Mexican citizen. The latter concerns mainly the transfer of the Water Districts from Government management to the users.

Faced with the uneven effects of those reforms and the resulting discontent of large parts of the rural population, the government in 1993 started to introduce new programs: Procampo, a direct payment per hectare, intended to foster modernization and conversion to more competitive crops; Alianza para el Campo, essentially a subsidy for the purchase of agricultural machinery, for the genetic improvement of cattle, and for the installation of fertirrigation systems; and the “Kilo for Kilo Program,” the free exchange of seeds obtained by the farmer for certified, high-quality seeds. As from July 1998, a new social security regulation will gradually give full coverage (medical, disability, old age) to the 1.7 million temporary agricultural workers, beginning with a subsidy to the employer of 60% of the payment and declining to zero over six years.

(b) The effects of the reforms on different subsectors

All these reforms had considerable, albeit different, effects on Mexican agriculture: dynamic subsectors (poultry, vegetables, fruits) emerged alongside slowly growing (cereals, industrial crops, milk) and declining ones (cattle, pigs, oilseeds).

The poultry sector has grown more than threefold over the last 15 years. On the one hand, lobbying obtained it special import protection, and on the other hand, its efficiency at converting feed to meat allows it to sell at lower prices than cattle and pig meat, an important factor in a middle-income country, explaining the high growth in domestic demand. Ownership in the poultry sector is highly concentrated. The sector has integrated vertically over the years (from feed production to marketing) and improved efficiency up to United States’ standards. The vegetable and fruit sectors have practically doubled production in the same period. There, the US market was the driving force. In Sinaloa, the main vegetable exporting state, most farmers are large-scale, and state of the art technology (fertirrigation, improved seeds, plasticulture, etc.) is used on some 40% of the production area.

Because of the elimination of guaranteed prices, and the consequent drop in profitability of various crops, many modern farmers have opted for planting corn on irrigated land, thus boosting acreage and yields. The other cereals have had more mixed destinies, with higher acreage but lower yields for sorghum, lower acreage but higher yields for rice, barley and wheat, and lower acreage and stagnation of yields for beans. Deregulation of the markets increased the planted acreage of several industrial crops. But for coffee and cocoa, mostly in hands of small-scale farmers, technology has remained stagnant and several climatic and pest problems have caused a fall in yields. For cotton, on the other hand, with the introduction of transgenic seeds, short-cycle varieties and better practices, yields have improved, but acreage has fallen. The privatization of sugar factories and an increased export quota to the United States has encouraged additional planting of sugar cane, while the fierce competition of synthetic fibers has caused a severe contraction in henequen acreage and yields.

Oilseeds is a subsector with apparently no comparative advantages in Mexico. The elimination of guaranteed prices and input subsidies on the one hand and opening up of the economy on the other have induced a drastic decline in acreage, with the exception of copra. Cattle and pig meat production also went through important adjustment processes. Those farmers
that survived have improved yields and cost structure and, in pork, they have integrated vertically. The production structure has moved to bigger and more capitalized farmers.

In general, the educational level and managerial capacity of the farmer has been essential for adapting to the new “rules of the game,” available technologies, and shifts in price structures. Those that were able to do so have modernized and gained in efficiency, also often increasing the scale of production. Some farmers have benefited from the transfer of knowledge and know-how from the agro-industry with which they have vertical coordination agreements. At the other end of the spectrum, some 50% (or 1.4 million) of corn and bean farmers produce for their own consumption and use very little inputs. The main policy changes have affected them little, except for Procampo, which has definitely increased their incomes.

The smaller-scale and more traditional market-oriented farmers, by far the largest group, are the ones that seem to have lost out most with the new policies. Job creation has been low or negative and, as per the National Employment Survey, the percentage of males employed in agriculture receiving no cash remuneration (e.g., family workers, or sharecroppers) has increased consistently since 1991, reaching 36% of total male EAP in agriculture in 1996. Real wages in all sectors have fallen since 1982, but the most drastic fall has been in agriculture (−63%). According to ECLAC data, poverty levels increased in the aftermath of the early 1980s’ crisis to reach a peak in 1989 of 49% of rural households, with 23% of households below indigence level (note that the percentages on poverty include those of indigence). By 1994 these levels had come down slightly to 47% and 20%, respectively, to rise again and reach 53% and 25% in 1996, the last year for which figures are available.

(c) Conclusion

Mexico gives an example of reforms in two phases, where a first period of drastic reforms of policies and institutions, which indeed had severe flaws, was followed by serious problems because private sector response was not what the reformers had hoped for. The second period saw the introduction of a series of new policies, programs and institutional changes to foster private sector investments and credit, research and extension, infrastructure development, etc. These programs were often accompanied by subsidies supposed to decline over time. Private sector response, however, is seen as lagging and many subsidies are being maintained at their initial high levels.

Mexico also illustrates that the reform programs, because of their neutrality, elicit the response of the better-off farmers already involved in the more dynamic crops or already established in the more dynamic regions, thereby exacerbating the already strong existing inequalities.

7. THE CHILEAN CASE

In the Chilean case, the starting point of the analysis is the abrupt change in economic policy that occurred after the coup d’état in 1973. Three phases can be distinguished: in the first phase, a strict adherence to the new general policy prevailed; then, as a response to the crisis of the 1980s, a second phase emerged, with policies that amounted to the consolidation of an agro-export model along with increased opening up to external competition; a third phase of policy changes contributing to this consolidation began in the early 1990s. As a result of all three, agriculture has experienced important structural alterations, as evident in the contrast between the censuses of the 1970s and the 1990s.

Specific sector policies had the following characteristics in the three phases:

(a) 1974–83

Generally speaking, the new economic model of this phase focused on stronger reliance on individual initiative as opposed to the previous organization of economic activity in the sector along cooperative lines and certain collectivist tendencies. This implied a shift to market mechanisms, a liberalization of financial and labor markets, and a scaling down of public projects, such as in irrigation.

The proposed reforms were centered on changes in land ownership, ending traditional land reform, activating the land market, and, in general, strengthening legislation to guarantee the right to private property. In addition, a new water code was implemented that fostered a free market in the resource, thus directing its use to more profitable activities. Effects in this regard were strongest in the center and north of the country, where water is scarcer than in the
south. Furthermore, internal and export price controls were eliminated, mainly for food, inputs and other essential nonagriculture goods. At the beginning of 1974, a restructuring of the tax base took place with the implementation of a value added tax. By 1979, this had developed into the tax with the strongest impact on agriculture, in spite of the increases in land tax based on an implicit land rent. Finally, even though the new framework regarding foreign investment after 1974 was not sector specific, it had strong effects on agriculture and agro-industry. Although foreign investment only started to increase significantly in 1987, its role in providing financing, technology and knowledge was crucial in the early period.

The most relevant policy aspect of this reform period was that specific agricultural policy was almost nonexistent. Initially, there was a deliberate attempt to maintain sectoral neutrality. Nevertheless, there were some limited areas in which the state did have special policies toward agriculture. Research institutes and technology transfer were supported, as well as the programs in charge of sanitary protection and others performing similar activities. At the same time, there were interventions—albeit briefly—in the prices of some basic products through still existent state marketing organizations. Further going against the general policy framework, subsidies were also granted to activities such as forestry plantations. This was crucial for forestry development and later exports.

(b) 1984–89

The period after the severe economic crisis of 1982–83, during which unemployment and the fall in overall GDP reached double-digit levels, was marked by a considerable easing of the more orthodox approach of the previous phase. Many believe that this shift in emphasis was decisive in reversing the production declines that had taken place during those years. Policies included increased tariff protection, devaluation of the currency, and interventions to promote exports.

The real exchange rate was increased by 25% in 1985 and 13% in 1986, reaching by 1988 a level 70% higher than in 1982–83. Only toward the end of the 1990s did the real exchange rate start to decrease. Tariffs, on the other hand, were increased from 10% to 20% and afterward to 35% in 1985. This process was not reversed until 1988, when they were lowered to 20%. Price bands for wheat, vegetable oil, and sugar were implemented in 1984 as a means of counteracting the devastating effects of international price volatility on some domestic sectors. Along the same lines, a special commission (Comisión Nacional de Distorsiones) was created inside Chile’s Central Bank to address perceived price distortions such as dumping.

Other interventionist policies included special legislation, introduced at the end of 1985, to encourage private investment in irrigation projects through subsidies, although this apparently did not lead to any significant increase in irrigated area. An export promotion policy beginning in 1985 allowed exporters to easily recover import duties for parts and raw material, and also to obtain rebates for local inputs, all this in the framework of the Uruguay Round (under which these programs will be abolished by 2003). With regard to technological policy, although direct state participation is decreasing, the state created funds to support private sector research and development by subsidizing up to 20% of the costs.

(c) 1990–98

When the first democratically elected government after 17 years of military rule took office, the foundations of the existing economic model remained largely untouched. But, the two governments since the transition have placed considerably more emphasis on equity considerations and social policy.

There was also a discernable shift in agricultural sector policy. There was a recognition of the increasing heterogeneity of the agricultural structure, with a modernized, highly competitive commercial agriculture on one hand, and a small farm, traditional crops subsector in stagnation or decline on the other. Consequently, a certain strengthening of the role of the state was implemented, with public disbursements to the sector reaching approximately US$190 million in 1995, equivalent to 7% of agricultural GDP.

The main thrust of sector policy, however, has been trade liberalization. Tariff reduction schemes were negotiated through trade agreements with different countries, consequently linking the sector closely to the general conditions of Chilean external trade, despite some exceptions for agriculture. Thus, global tariffs
declined to 15% and then to 10% by January 1999 (although the effective rate is 7.4%, due to the numerous bilateral and multilateral commercial agreements subscribed to by the country). Recently approved legislation aims at a further reduction to just 6% by the year 2003.

Interestingly, the growth pattern of Chile’s agricultural GDP can roughly be correlated to the different policy phases described above (see Figure 2): weak growth during the initial years, followed by a drop in output during the crisis years, only to regain sustained growth until recently, with a slight drop in agricultural GDP in 1996–97. Certain subsectors, such as fruit production and forestry, have been best able to adapt to changing circumstances and weather adverse conditions over the years, emerging as strong, dynamic producers primarily geared toward exports. The same is true for a number of agroindustries, such as vegetable processing, or the entire wine processing chain, where exports grew tenfold during 1990–97 (from US$30 million to 300 million). But many traditional farming activities, such as wheat and cattle, fell into decline in an environment of greater external opening and less state protection.

Over a period of 20 years, the agricultural area dropped by 2.3 million hectares while forested areas increased by 1.7 million hectares, implying a net reduction of approximately 600,000 hectares, equivalent to 2% of the available land. The main decrease involved land used for crops and improved pastures as well as poor soils and lands of indirect use, while natural pastures, forestry plantations and forests increased. Traditional crops experienced the greatest decline in cultivated area, leading to a reduction of annual crop acreage by 320,000 hectares. More than half of this corresponded to cereals, certain vegetables, and tubers (−25%) as well as various industrial crops (−18%). At the same time, permanent crops—which turned out to be very dynamic, especially fruits—increased by almost 120,000 hectares. The already mentioned strong forestry development was also part of the dynamic activities.

These changes led to significant shifts in the structure of the agricultural economy. Gaining in importance were medium-sized holdings as the best manner to organize production, although small and big operations were able to specialize in some specific production segments. There were also losers in this process. Some regions of the country became more environmentally vulnerable, native Chilean forest was destroyed, and a significant number of smallholdings were eliminated. Therefore, affected rural households had to seek productive alternatives, and large farms that turned out to be inefficient under the prevailing policy framework had to adjust. Eighteen thousand smallholdings disappeared, affecting a similar number of rural households. On the other hand, around 3500 large holdings, unable to modernize and to become more efficient, also vanished.

On and off-farm investment in equipment, machinery and infrastructure characterized the dynamic sectors. A new pattern in agro-industry also developed, linked to this deep techno-
logical transformation. These changes manifested themselves on all levels of production and product handling as well as in distribution and marketing, domestically and abroad.

Regarding changes in agricultural employment during the period covered by the censuses, a similar pattern to the one described above emerges: in the 10 years before the take-off of the sector in the mid-1980s, sector employment was about two-thirds lower than after that point in time. It continued to rise steadily until peaking out in the early-1990s and has since remained by and large stationary. There were, however, significant structural changes. Much of the newly created employment is temporary labor, with shortages in peak harvesting seasons, and sometimes harsh working conditions, and on the other hand occasional over-supply of farmhands during the off season.

In conclusion, the Chilean case suggests some intriguing lessons. The history of Chilean agriculture since the early 1970s, but especially beginning in the mid-1980s, is one of impressive modernization and technology adaptation, capturing new markets with new products and booming exports. Among the prime examples is the stunning success of Chilean salmon exporters, after having introduced the species to the country only in the 1970s, or that of wine exporters, after making significant strides in quality control and other aspects of production.

At the same time, it is a history of profound structural shifts that has left parts of the rural population behind. In sum, a better use of resources in agriculture took shape, but in a sector that is now more concentrated and exclusionary than in the past. While inequity in income distribution is still of grave concern to policy makers, it is important to note that the state has made impressive advances in the fight against poverty. Based on ECLAC statistics, rural poverty during 1987–97 declined drastically, from 45% to 26%, while extreme poverty (indigence) fell even more sharply over the same period, from 17% to 8%.

8. CONCLUSION

The transformations of the last decade have led on the one hand to significant increases in production and productivity, although not always translated into corresponding profits, of a few products, and on the other hand to the decline in acreage of annual crops, the sharp reduction in the number of small farmers and, in many countries, a decrease of the rural agricultural population, often accompanied by a larger poverty gap. An important question is whether the globalized market economy indeed has shifted optimal scales toward the larger producers as would seem evident from a simple observation, or whether free market rules in a context of highly concentrated property and imperfect and missing markets leads to the marginalization of otherwise perfectly viable enterprises.

In all countries, the concentration of marketing and the globalization of distribution systems, brands and advertising seem to lead to the increased marginalization of small enterprises, be they agriculture, industry, or service related. Subcontracting by agribusiness (agro-industries, exporters, supermarkets) with individual small farmers or small farmer organizations is usually cumbersome, especially in view of the imperfect markets, for credit in particular, obliging agribusiness to engage in tasks which are not part of their core business.

The question posed by Valdés (1992, p. 4) for Chile may be valid for other countries as well:

(...) perhaps the most complex unfinished business in Chilean agriculture after fifteen years of reform is how to address the needs of small farmers, who are geographically scattered, usually located in disadvantaged areas, and remain separated from the sector's newly found dynamism.

The problems have much to do with the private sector not replacing the state in conditions of low returns and high risks. Moreover, the strongly wealth concentrating effects of the market economy when superimposed on already very unequally distributed human and physical capital, complicated further by imperfect or nonexistent markets, is especially relevant in the rural economy.

At the same time, the emphasis put by policy makers on increasing the export orientation of the economies has failed to give due attention to the important dynamic impacts of local demand on agriculture and agribusiness and to the fact that Latin American agriculture caters primarily to the domestic market. The stabilization policies, especially their effect on inflation, have in turn had an important effect on real incomes, felt especially in the lower income strata. This has led to the substitution of inferior goods for higher quality ones, giving a
special impetus to animal protein products and diversified foods with a higher processing content. This has frequently had a dynamic effect on the agricultural subsectors oriented toward the domestic market.

The Chilean case shows that sector growth gained momentum after the 1982 crisis, almost 10 years after the first wave of liberal reforms. Causes and effects are not clearly identifiable and thus it is impossible to prove if Chile is a model for others or a fortunate exception. What is clear, however, is that the first wave of reforms in Chile did inspire similar measures in other countries of the region. Often, these followers did not pay due regard to a second wave of Chilean policies, this time more proactive, such as the promotion of exports, research, extension, credit, human capital formation and assistance in contract negotiation, as well as a whole set of social programs focused at the extremely poor areas and people. There may be a lesson in Chile’s softening of the more orthodox instruments for later reformers.

Mexico is a clear example of an energetic try at a second wave of pro-active reforms in order to foster the participation of the private sector in activities previously in government hands. It is equally obvious that in spite of these efforts, the private sector has in general, so far, responded very weakly and much less than expected. When it has responded it has been, rather logically, in highly dynamic subsectors, regions and agents.

The Brazilian case is illustrative regarding the effects of changes in prices that in this case were mostly unidirectional, dropping for inputs as well as at the farm gate, coinciding with a severe credit constraint. Thus, farmers who had access to credit or own capital were able to modernize and increase yields thanks to a more intensive use of inputs. In most cases yield increases more than offset the drop in prices, allowing further capitalization of the operation. The contrary, however, was true for those farmers who could not keep up. The overall result is a moderate overall increase in yields and output, but reflecting a further segmentation of Brazilian agriculture.

The experiences of these countries suggest that policy formulation for the region should be approached within a basic framework of several major questions to be answered for the specific situation found in each country: (a) which type of agents made important gains or losses? (b) which reforms caused what gaps and where? (c) where is it desirable that the private sector fill these gaps? (d) are the pecuniary incentives sufficient to attract the private sector or does it require government initiative? In light of this, we think that a hard look should be taken at the reforms and the premises on which they were based on the one hand, and the socioeconomic, idiosyncratic, and political realities on the other, and whether the sequencing and depth of the past and proposed reforms are in line with the existing institutional framework. This includes an assessment of where reform progress has been too weak until now, as in the case of the creation of formal property in land. This is a crucial issue in Latin American rural development, where often the majority of rural land holdings are informal. Finally, as the most basic requirement for growth, a serious (quality wise) and massive (quantity wise) effort to improve general and technical education both for school-age children and for young to middle-aged adults must be made; simultaneously, the health situation of the general public must be improved. There is also agreement that persistent rural poverty is one of the pressing concerns for policy makers in the region and that a concerted effort of the private and public sector is crucial.

Furthermore, we recommend that governments:
— make serious and innovative efforts at improving the access of all rural dwellers to markets, especially credit and insurance markets and those for the commercialization of their products. Innovative programs to reach further away areas have been tried in some countries with good results, and efforts at compiling and divulging best practices are needed;
— increase the information about and transparency of markets;
— work at innovative and income enhancing initiatives with the young- to middle-aged farmers, taking a look at agricultural and nonagricultural forward and backward linkages—both in production and consumption—identifying the geographic location of each, the bottlenecks and potential new activities;
— break the rural–urban and agricultural–nonagricultural divide of policies, institutions and programs;
— comb through much of the social aid programs with the goal to direct benefits to those most in need.
Finally, we would like to point out that whatever the different evaluations of the results of the reforms, most observers agree that the statist past was unsustainable. Nevertheless, evidence for the three countries that were analyzed here in detail—as well as evidence for other countries in the region—shows clearly that the retreat of government from the provision of some inputs and services has caused gaps that were not (yet) filled by the private sector. This is the case not only for those goods and services that are usually considered to have public good characteristics, such as research and development (R&D), extension services, and irrigation infrastructure, but also for those that are typically private goods, such as fertilizers, transport and marketing services. This question can become especially relevant when quantities are too small, locations too remote, infrastructure too deficient, or risks too high to make them attractive to the private sector.

There have been some recent efforts to privatize the provision of some goods and services previously considered public, with government oversight and co-financing. Initial evaluations are showing sobering results: no great efficiency gains with respect to overall costs (that is, the direct costs of the programs plus the costs of bidding procedures, evaluation of proposals, administration, and control of results); tendency of the subcontractors to propose conservative, low cost and low risk activities, near to their home-base, with short-term objectives, often repetitive irrespective of local conditions or activities (especially training) already carried out; great difficulties in learning from mistakes or successes of other contractors; etc. Obviously, the elimination of the centralized, paternalistic, bureaucratic top–down programs of the past is a step in the right direction, but the characteristics of many of the outsourced programs are problematic and are clearly not the expected panacea.  

NOTES

1. According to the definition of “rural” in the last population census of each country. It has to be pointed out that there are seven different types of definitions of “rural” presently in use throughout the region. In addition, these change over time and hardly any two countries use the exact same ones.

2. FAO revised its EAP base after 1995 and therefore we have preferred not to use post-1994.

3. Labor productivity growth was significantly below that average in most of the countries that are still in the early stages of demographic transition. Most of these show a high share of agricultural EAP in total EAP and a low GDP per capita.

4. On the view that on an economy-wide basis there was no “growth-puzzle” (in the sense that real performance did not fulfill expectations) in Latin America during the post-reform period, see Fernández-Arias et al. (1997).

5. “Region” is somewhat loosely defined as “Latin America and the Caribbean,” and aggregate figures include dozens of countries of extremely different characteristics and economies, where furthermore Brazil and Mexico due to their sheer size weigh in heavily. Thus, these figures have to be taken as only an indication of historical trends and do not form a reliable base for deductive analysis at the country level.

6. The period of the last census was the productive agricultural year (1995–96), not the calendar year.

7. This section is based largely on Salcedo (1999).  

8. For example, rice in Veracruz, soybeans and wheat in the Northeast and sorghum in Tamaulipas.


10. This section is based in large part on the analysis by Portilla Rodríguez (1998) and Tejo (1999).

11. Reference is made to the Law Decree 600 promulgated in 1974, and to the mechanism of conversion of the external debt called Capítulo XIX of 1985.

12. Law 18450.

13. See, for example, Echeverría (1998), or the evaluation of Sur Consultores—privately-owned consultancy firm in Chile specialized in extension—as to their own strategy (conversations with some of their staff).
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