

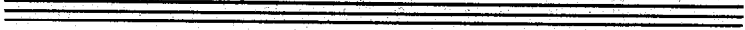


Agricultural Development in Latin America and the Role of Research and Technological Change: An Overview

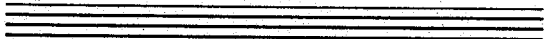
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The Sir John Crawford Memorial Lecture has been sponsored by the Australian government since 1985 in honor of the distinguished Australian civil servant, educator and agriculturalist who was one of the founders of the Consultative Group on International Agricultural Research (CGIAR). Sir John (1910-1984) was the first chairman of the CGIAR's Technical Advisory Committee.

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Enrique V. Iglesias
President, Inter-American Development Bank

The International Scene and the Latin American Economy

For the third consecutive year since the Berlin Wall collapsed and the Cold War came to an end, the world continues to seek out a new balance of political and economic power. From a system with essentially two poles we have moved to one of many poles, a system that is now being entrenched in new or strengthened alignments and trade agreements. These systemwide changes have opened up great opportunities but also pose formidable challenges — challenges that no country, country grouping, or region can elude.

Latin America today is responding to these new challenges and opportunities. The region is undergoing a process of transition that encompasses sweeping changes in its economic, political, and institutional structures. Armed with new philosophical conceptions, it stands on

the threshold of the twenty-first century and a new millennium as a revitalized, progressive, and modern region. We wish to build a new Latin America, one that is open to and integrated with the new face of the world, with one chief goal: modernization and a relevant role on the international scene.

There is no need to dwell on the region's experiences in the past ten years. Suffice it to say that the 1980s, coming at the end of a series of significant economic and social advances made in Latin America since the Second World War, brought with them an acute crisis attended by serious setbacks in both the economic and the social spheres. The region has emerged from that crisis with a strong political will, equipped with new ideas and prepared to undertake vast macroeconomic reforms, entrench democratic institutions, improve living standards — especially in those segments of society that have most lagged behind — and secure its development on an environmentally sustainable basis.

The most significant changes are undoubtedly those which have to do with opening economies up to external trade and finance, and the preeminent role given to markets and the private sector in capital formation and the allocation of productive resources in general. Also important is state reform, which involves redefining the public sector's role in the economy and in promoting development, reducing its involvement in those areas of the production of goods and services where the private sector is most efficient, and strengthening its ability to meet its fundamental responsibilities. Although defining the respective spheres of action of states and markets is something that must be undertaken according to conditions reigning in each country, there are certain universal orientations that reflect a true consensus. It is generally agreed, for instance, that the state has inalienable responsibilities in designing and applying policies

geared to stabilization and socially equitable development, ensuring that markets work effectively, and creating conditions to improve productivity and economic and social efficiency in general.

Agriculture as an Element of Economic Development in Latin America

In a context of new patterns of production and economies that are open to international competition on both domestic and world markets, agriculture has a significant contribution to make to economic development and improved social welfare in Latin America. With its natural resources and its abundant rural work force, and the rich potential of modern technology, the sector can play a central role in regional development in the 1990s. Before that can occur, however, Latin American agricultural exports will need to be made more competitive to give them greater market access — internationally, to take advantage of new opportunities arising with changes in the world economy, and in industrialized countries in particular, given their more liberal trade policies and reinvigorated economies.

Agriculture has been a source of ongoing concern to Latin American governments in the past, among other reasons because of the persistent gap between expectations and results in a productive sector that has tended to lag behind in the context of regional development as a whole. Its contribution to total gross domestic product fell gradually and steadily from 17 percent in 1960 to just over 10 percent in 1990.

For years agriculture absorbed most of the work force, up to 54 percent in 1950 and 32 percent in 1980, but productivity was relatively low, aggravating poverty

among the rural population and spurring migration to urban centers. Those living in rural areas as a proportion of total population declined from 50 percent in 1960 to 29 percent in 1990, while their numbers in absolute terms increased only marginally, at an average rate of 0.1 percent per annum.

The region's agricultural exports have been chronically lackluster, both for internal reasons, including prevailing patterns of economic development, and because of the restricted supply of Latin American agricultural products to world markets. The results have shown up in various ways. First, the share of the region's total exports taken by agricultural goods — foodstuffs and raw materials — fell gradually from 56 percent in the mid-1950s to just over a third in 1988. Second, the share of Latin American goods in world exports of agricultural products declined over the same period from about 30 percent to 16 percent (ECLAC 1991).

Our intention is not to downplay growth in Latin American agricultural exports, especially in the years prior to 1980, but rather to note that they have been excessively low considering the region's potential and the trend in world agricultural trade indicated earlier.

Foreign exchange receipts from agricultural exports in Latin America climbed from about US\$9 billion in 1970 to US\$41 billion in 1990 as a result of a sustained and vigorous upward trend in export volume — interrupted only by a four-year decline from 1986 to 1989 — and a stimulating upturn in unit costs that remained in effect until 1980. Unfortunately, this trend was reversed beginning in 1981, and prices have been relatively depressed to the present day, largely outweighing the region's export efforts during the past decade.

Latin American agricultural exports have followed a generally downward trend over the past two or three decades. In many of the region's countries a combination of both internal and external factors have curbed or simply failed to encourage development in agricultural activities and exports. On the domestic front, a systematic slant in development strategies in many countries has given preference to import substitution, neglecting agricultural production and economic and social development in rural areas.

But there were also external factors limiting both demand for Latin American agricultural goods on developed country markets and access to those markets. Despite the solid economic growth posted by those countries in the post-war years, their demand for agricultural products from Latin America rose only marginally — and in some cases stagnated or declined — as a result of low population growth, high per capita consumption levels, and increased protectionism in trade.

According to OECD estimates, agricultural protectionism in the industrial countries imposes a burden in terms of fiscal subsidies and extra costs for consumers that translates into transfers to farmers in those countries on the order of US\$300 billion each year (ECLAC 1992). It is significant that this figure approaches the total value of 1989 world agricultural exports, at US\$301.35 billion (FAO 1990), high enough to entail very substantial adverse repercussions internationally on the efficient allocation of resources to the sector. Such protectionism also places developing countries at a serious disadvantage, including those in Latin America, where agriculture has a critical impact on overall economic activity, on exports, and on living standards for much of the population.

It is regrettable that the problem of agricultural subsidies in the industrialized countries continues to be the main obstacle to a successful outcome to the Uruguay Round. The countries of Latin America had placed high hopes on the talks ending successfully in order to expand their exports in a manner in keeping with the far-reaching process of trade reform and liberalization undertaken in recent years. The basic premise is that competitive international trade should be determined by comparative advantages and not by a patron state's ability to provide financial backing.

Agriculture and Economic Change in Latin America

Regardless of how the Uruguay Round ends, world agricultural markets in the 1990s will be increasingly competitive. Successful experiences in several Latin American countries have shown that the changes in the global economy, at the same time as they raise questions, hold out solid opportunities for expanding agricultural production and exports. Taking advantage of those opportunities will mean undertaking innovative action as to product structure and applying new technologies and trade strategies to enhance production efficiency and external competitiveness. Over the longer term, however, there is more potential in agroindustrial development, extending to both domestic and international markets, as it offers closer links with the rest of the country's productive activities and a greater capacity to generate value added and jobs, and creates new options for diversifying exports.

This overview sketches out the generally downward path taken by the agricultural sector in Latin America over the past three decades, and the correlation with a

scenario that has persisted in the region — one of poverty, malnutrition, and degradation of natural resources and the environment.

The current challenge facing agricultural activity in Latin America highlights the crucial importance of the sector's role as a pillar of economic recovery in general, and its potential contribution to balance of payments equilibrium, stable domestic prices, employment, and overall better living conditions for the Latin American people. It is significant that the International Development Strategy for the Fourth United Nations Development Decade has placed agriculture and food among its highest priorities.

Advancing technologically and making agricultural products more efficiently and more competitively will be crucial to raising living standards for large segments of the Latin American population. First are the effects on domestic food supply, which through expansion and falling costs can push up real wages and purchasing power for low-income groups, especially in urban areas. Second, expanding and diversifying agricultural production, while improving productivity and efficiency in the use of natural resources and production, is the most effective way to create better-paid rural job opportunities. We must keep in mind that the centuries-old pattern of poverty in rural Latin America has gone hand in hand with lagging sector production. The ranks of those living in extreme poverty in rural areas swelled from 75.2 million in 1970 to 79.5 million in 1989, representing 65 and 61 percent of the rural population, respectively. Persistently unequal distribution in the agricultural sector has become a problem that will need to be effectively addressed in the 1990s in the context of the movement toward changes in production, modernization, and openness to outside competition that is now under way in many of the region's countries.

The Contribution of Agricultural Research and Technological Change

Key to developing and modernizing agricultural production in Latin America, within an increasingly open economic model, is to generate and absorb new technologies to help boost the productivity of labor, land, and invested capital. Once the agricultural frontier can be expanded no further, it becomes vitally important to discover and disseminate new agricultural techniques. Rather than undertaking a new green revolution, regional development makes it imperative to assimilate technological and institutional changes that will contribute to stimulating growth and new patterns of production in the agricultural sector. To this end, it is necessary in turn to bolster research systems by allocating more resources and by enhancing the collective work done by the extensive network of specialized agencies, both public and private: foundations, universities, international centers, nongovernmental organizations, producers' associations, and national and multinational corporations.

The human and budgetary resources absorbed by public sector agricultural research activities in Latin America increased appreciably between the 1970s and the mid-1980s, to a yearly budget of over US\$700 million and a staff of about 9,000 researchers. Regrettably, another of the many pernicious effects of the economic crisis in the past decade was a drastic reduction in public sector funds budgeted for agricultural research. There is little likelihood that this will be corrected in the near future, and special efforts will be needed to improve the use of available budgetary resources and ensure that they are applied to those issues with highest priority. Various formulas have been put forward to make agri-

cultural research in the region more effective, such as decentralizing operations and budgets at national research institutes and integrating and coordinating institutes with subregional networks, as well as more precisely defining priority issues on the research agenda.

The current agenda of cooperative agricultural research programs includes two particularly important areas that need to be enhanced at the regional level. They are, first, biodiversity and biotechnology, and second, training for human resources. We are confident that this can be done through greater cooperation among national research efforts on a regional scale and by strengthening regional specialized agencies. The experience gained within the international agricultural research system has been truly invaluable, particularly with respect to areas such as generic technologies that can be applied to similar agroecological areas, taking advantage of economics of scale in research, creating technically excellent research teams, and maintaining germplasm banks.

The work done by the centers affiliated with the Consultative Group on International Agricultural Research has been extraordinarily effective in promoting agricultural research for the benefit of the Latin America countries. The three international centers established in the region — the International Center for Tropical Agriculture, the International Center for Maize and Wheat Improvement, and the International Potato Center — have helped expand the capacity of many national research programs. These programs receive, test, adapt, and disseminate technologies developed in collaboration with the international centers, and have substantially improved agricultural research. The international centers play a very valuable role in complementing the work done by national and regional systems, either by helping to make

national efforts more effective or by paying special attention to strategic research in crucially important agroecological areas.

Still, relations between regional organizations and national and international agricultural research centers can be reinforced through improved and closer coordination and complementarity in their activities. This means coming up with more precise definitions of regional and subregional priorities. A specific proposal has been put forward by the IICA and the IDB in this connection to design, over the coming twelve months, an institutional mechanism to coordinate activities in the field of agricultural technology. It is hoped that this will generate a greater flow of specialized information and an improved identification of research priorities at the regional level, which would make a significant contribution to maximizing the scarce budgetary resources currently available.

The CGIAR model of a decentralized international public organization devoted to technological change has been a very effective institutional innovation, judging from the impact of the new technologies adopted by millions of agricultural producers in many countries over the past three decades. The Inter-American Development Bank, as an agent of economic and social development in Latin America and as a member of the CGIAR, has a special interest in contributing to the Group's activities in strategic decisionmaking concerning its future actions, particularly with respect to research priorities by activity, agroecological region, and productive sector. We are confident that the CGIAR will pursue its fruitful work in support of technological and institutional innovation to augment agricultural productivity, channeled through strategic and applied research, by improving policy frameworks, preserving natural resources, and strengthening national research systems. All this will

contribute to creating sustainable and ecologically appropriate production systems for the benefit of all of humanity.

The IDB, Latin American Agricultural Development, and Agricultural Research

I would now like to turn to our vision of how the Inter-American Development Bank will be taking on these challenges in the coming years. Our basic premise is that agriculture has a vitally important role to play in the region's strategy of economic and social development and change, and that technology is a crucial element in making it more productive and more competitive. The Bank will reinforce its emphasis on supporting efforts to upgrade technology and institutions in the region's countries. In addition to financing investment and technical cooperation projects, the Bank's strategy is to play a leading role in promoting activities to generate and transfer technology, and to act as a catalyst in mobilizing official and private resources to expand and enhance research and development in agricultural technology. Also, as part of its dialogue with Latin American governments on seeking out and applying macroeconomic policies, the Bank has an opportunity to bring a positive influence to bear on the priorities accorded to agricultural development and to promoting research and upgrading technologies in each of our borrowing member countries.

The Bank has supported national research networks through loans and technical cooperation funding. In the past decade, for instance, investment projects in the field of agricultural technology have been implemented in Argentina, Bolivia, Brazil, Chile, Ecuador, Honduras,

Jamaica, Paraguay, Uruguay and Venezuela. There have been many other loan operations in the agricultural sector — which accounted for a fifth of our lending portfolio in the region in the years between 1961 and 1991 — not to mention the numerous technical cooperation projects with research components that have been funded. In the years to come we will continue to strengthen our contribution to the region's agricultural development in order to more effectively promote technological advances and to make agricultural production more efficient, in an overall setting of policies of structural change and with an emphasis on opening up trade to competition and promoting a leading role for the private sector in developing the agricultural sector in our member countries.

At the regional level, the Bank has encouraged the creation of various cooperative programs and subregional research networks, which are essential for technological and institutional development. The economic integration efforts undertaken recently by the Latin American countries — including in MERCOSUR, in Central America, the Andean Group and the Caribbean, and under several bilateral agreements — have put forward new requirements for technical assistance at the subregional level, to support cooperation on biotechnology and training of human resources and to promote local and foreign investment by the private sector and the transfer of technology. The Bank will maintain and deepen its support to the region in the form of financing and technical cooperation, placing special emphasis on activities to identify research priorities in strategic areas, such as the coordination of research programs now under way.

At the international level, the Bank is interested in expanding and improving its contribution to agricultural research through training for scientists at international

centers, in the knowledge that the efforts of these organizations have benefited the region greatly and that there are areas of complementarity between them and the Bank. We are prepared to support strengthened action by centers in Latin America, to promote funding flows from various sources for agricultural research in the region, and to coordinate our work with the World Bank and other institutions to bolster the CGIAR system.

I would like to conclude by reaffirming the momentous importance of making strides in agricultural research in Latin America at this critical juncture, as the region undertakes to meet the historic challenge of transforming its basic production structures, boosting efficiency in production, and improving competitiveness on domestic and international markets, within a context that can reconcile economic growth with social equity and environmental sustainability. Though the challenge is a formidable one, we have no choice but to take it up.

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