

# **The State and Nontraditional Agricultural Exports in Latin America: Results and Lessons of Three Case Studies**

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This report presents the results of case studies on nontraditional agricultural exports in Petrolina-Juazeiro (northeastern Brazil), Ecuador, and Guatemala, analyzing the role of public policy in developing these products and the effects of nontraditional agriculture on the rural poor. The studies showed that the State played a central role in developing nontraditional export crops. This included an array of economic and sectorial policies in support of market functioning and private sector development, as well as active and strategic intervention aimed at solving specific problems. Some of the most important areas of action include the provision of public goods (infrastructure and research), the availability of long-term credit, and joint activities with the private sector, primarily through producer associations. The study also showed that nontraditional export crops had a variety of effects on the rural poor. The number of small producers that became incorporated depended largely on government action to enable small producers to have access to credit and on the prospects of small producers for engaging in contract agriculture with agroindustrial companies. In addition, there were particularly positive effects on wage-earning workers, including the creation of new jobs, worker training, and improved working conditions. The magnitude of these effects depended on the technology required for the various crops, the characteristics of the labor market, the manner in which consumer concerns about working conditions were addressed, and, above all, the functioning of labor institutions—such as unions, laws and regulations, and government regulatory entities—in the country and region under consideration.

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## Introduction

The significant growth of nontraditional agricultural exports is one of the outstanding characteristics of Latin American agriculture in the 1990s. The nontraditional export crops in question are primarily high-value products, important examples of which include flowers, fruits, vegetables, and organic crops. The exportation of these crops has increased to meet higher demand in industrialized countries, reflecting growing concern on the part of consumers about the effects of food on health and the possible harmful effects of chemical inputs and foods with high fat contents. In addition, in the mid-1980s most Latin American governments implemented policies promoting nontraditional export crops—often with the support of the IDB and other international organizations—with the objective of generating foreign exchange and creating new sources of employment and income for the rural poor.

The increase in nontraditional agricultural exports represented successes for many Latin American countries in several respects. In addition to generating foreign exchange, the exporters of nontraditional crops gained access to demanding markets on the basis of the quality and availability of their products at specific times of year when there was insufficient supply and the highest prices. The particular characteristics of these crops, such their perishability and the concentration of production in accordance with specific cycles, made it necessary to implement numerous innovations in production technology, organization, and coordination, as well as intensive training for rural workers.

In view of the lessons it may be possible to learn from the history of nontraditional agricultural exports, the Inter-American Development Bank, through its Sustainable Development Department, decided to carry out a study in several Latin American countries. The objective of this study was to examine the role of public sector policies and actions in the emergence and development of nontraditional agricultural exports, the characteristics of private sector actions and the relationship between the private sector and the public sector, and the effects of nontraditional agriculture on the most disadvantaged sectors of the rural population. The results of this study will improve understanding of the factors involved in the development of nontraditional agricultural exports and will provide useful lessons for designing policies, programs, and projects. These lessons will not be limited to nontraditional agriculture; they will also provide more general insights into how to support the emergence of new activities that will have a positive impact on the rural economy.

The study on nontraditional agricultural exports considered three cases: the Petrolina-Juazeiro region in northeastern Brazil, Ecuador, and Guatemala. The Petrolina-Juazeiro region has an area of 53,000 km<sup>2</sup> and covers parts of the states of Pernambuco and Bahía en la Cuenca del Río São Francisco; it has a population of 510,000. Until the early 1970s, the region shared many problems with the rest of the rural northeast; specifically, the highest poverty rate in the country, a semiarid climate, and periodic droughts that limited the possibilities for agricultural production. By the end of the 1990s, Petrolina-Juazeiro had developed a major agricultural industry based on irrigation and was known throughout Brazil as the country's largest producer of tropical fruits, with exports of approximately US\$70 million per year. In addition to export crops (primarily mangos and table grapes), Petrolina-Juazeiro produces a wide range of high-value crops for high-income segments of the domestic population, including bananas, coconuts, passionfruit, onions, tomatoes, and asparagus. Not only are large- and medium-sized companies involved in producing nontraditional crops, but so are small producers. More and more small producers have started to cultivate these crops, and they have achieved yields that are similar or even superior to those of the companies. In addition, approximately 40,000 permanent workers, or 30 percent of the rural workforce in the region, were employed in the cultivation of nontraditional crops in 1996.

In the case of Ecuador, nontraditional export crops went from less than US\$4 million in 1985 to more than US\$200 million in 1998. This contributed to diversifying the country's exports, which had consisted for the most part of petroleum and a number of "traditional" agricultural products, the most significant of which were bananas, cacao, and coffee. The most significant nontraditional crops are flowers (primarily roses), which yielded US\$141.4 million (70.7 percent of total exports); broccoli, which yielded US\$13.1 million (6.6 percent of total exports); and fruits (primarily mangos, passionfruit, lemons, pineapples, and melons), which yielded US\$41.3 million (20.7 percent of total exports). In 1998, nearly 70,000 rural workers were permanently employed in nontraditional agricultural and agroindustrial work, to which figure we should add 140,000 workers employed in sectors such as ground and air transportation, and the manufacture and sale of agricultural inputs, equipment, and packing containers. Nontraditional export crops are mainly cultivated in the La Sierra region (flowers and broccoli) and the La Costa region (tropical fruits), where they have largely replaced extensive ranching and, in some cases, crops intended for the domestic market, such as potatoes, rice, and wheat, which require significantly less labor. The producers are generally large- and medium-sized companies; only the cultivation of passionfruit is dominated by small producers.

Finally, in Guatemala nontraditional export crops yielded only US\$9 million in 1975, which represented 1.4 percent of total exports and 2 percent of agricultural exports. In 1998, however, these products yielded US\$224.4 million, or 8.7 percent of total exports. Guatemala's most important nontraditional export crops are fruits (mangos, melons, and berries), vegetables (broccoli, snow peas, cabbage, and cauliflower), ornamental plants, and organic crops (especially coffee). Production is concentrated in the following regions: a) the western altiplano (primarily in the departments of Sacatepequez and Chimaltenango), where vegetables are cultivated by small producers, cooperatives, and companies specializing in contract agriculture, and where berries and ornamental plants are cultivated by producers that are characterized by a high level of capitalization and occupy relatively small areas, nevertheless representing significant investments; b) the eastern region, where mangos (department of Zacapa) and melons (departments of Zacapa, Chiquimula, and El Progreso) are cultivated by large producers and, in the case of melons, by multinational corporations; and c) the southern Pacific coast (departments of Retalhuleu, Suchitepéquez, Santa Rosa, and Escuintla), where mangos are cultivated by large producers and a limited number of small producers.

The following questions were asked in all three cases:

- What actions by the public and private sectors led to the development of these crops?
- Under what conditions and by what actions did the public sector influence the effects of nontraditional agricultural exports on the rural poor, including small producers and wage-earning workers?

## **The Role of the Public Sector in the Development of Nontraditional Crops**

### ***Macroeconomic and Sectorial Policies***

A framework of market-friendly economic and sectorial policies was of crucial importance in the development of nontraditional agricultural exports. These included policies intended to control inflation; reforms that lowered barriers to foreign trade, diminished the role of the State in determining the prices of products and inputs, and reduced the interference of the State bureaucracy; and policies that strengthened confidence in property rights.

However, these market-friendly policies were not sufficient to bring about the emergence of nontraditional agriculture. In addition, they did not signify a reduction in State intervention in general, but rather a reduction in intervention in areas characterized by inefficiencies combined with active intervention in several specific areas, such as the provision of public goods (infrastructure and research), the availability of long-term credit, and joint activities with the private sector aimed at solving specific problems.

Furthermore, it should be noted that the role of the State varied considerably in each case, with the State playing a more active role in Petrolina-Juazeiro and a less active role in Guatemala and Ecuador. These differences were not merely the result of political factors; instead, greater public intervention was motivated by the need to compensate for an initially unfavorable position with regard to competitive advantage. This means that the role of the public sector in promoting new activities in the agricultural and rural sector will depend on the competitive advantage in existence at any given time, requiring a more active role when there are fewer advantages in terms of natural resources, location, and the size of the domestic market. Consequently, project designs should be more in keeping with the particular characteristics of the country and region under consideration than with models that are independent of these characteristics.

### ***Infrastructure***

Public sector investments in infrastructure (electric power, highways, irrigation) were crucial in each of the cases studied. These strategic investments removed impediments to the emergence or development of nontraditional crops. For example, investments in the production and distribution of electricity made it possible to increase the use of irrigation, and the construction of irrigation infrastructure made it possible to introduce and expand new crops that could not be cultivated under the preexisting climatic conditions. In addition, public investments in infrastructure had a greater impact on regions with fewer initial competitive advantages (Petrolina-Juazeiro), resulting from such factors as their greater distance from markets and less favorable climatic conditions for agriculture.

### ***Technological Development***

Public research played a vital role in identifying new products with the potential to be exported and adapted to the natural resource conditions in each case, in identifying varieties appropriate to regional conditions, and in studying production issues such as potential yield, response to irrigation, water usage, and potential diseases and pests. In each case, the results of public research served to attract private investment, lowering perceived risks and the cost of beginning new activities. However, the public sector had a substantially greater role in research in Petrolina-Juazeiro than in Ecuador or Guatemala. Analysis of all three cases suggests that the public sector should play a more active role in research in regions which have been identified as having economic and productive potential but which have not attracted the interest of the private sector due to a lack of information.

### ***The Availability of Credit for Investment***

Long-term credit was crucially important in the development of nontraditional agricultural exports. The involvement of the public sector provided those producers who could not obtain loans from private banks due to the perceived high risk of new activities with access to capital during the initial stages of crop development, promoting broader participation by small and medium-sized producers.

## **The Role of Producer Associations**

The private sector played an essential role in the development of nontraditional agricultural exports. One of the newest and most effective means of involving the private sector was through export producer associations; among the most important were Valexport in Petrolina-Juazeiro, Agexpront in Guatemala, and Expoflores in Ecuador. Unlike cooperatives and associations that were traditionally supported by rural development projects, these associations were not created for the purpose of jointly marketing inputs and products or for processing the products of their members. These associations were established in order to:

- Maintain continuous communications with the State in order to provide public institutions with information on problems that these institutions could solve and on the types of support required to do so.
- Solve problems which limited access to markets and which could not be remedied without the participation of all of the producers. These problems were based on the need for all agricultural exports to comply with certain quality standards and be free of pests (for example, fruit flies in mangos) that could limit access to foreign markets. The purchasers of nontraditional agricultural products—usually distributors and supermarket chains—had quality requirements that had to be met by all exporters, given that the failure of even a few exporters to meet these requirements could have harmed the image of the exporting region or country and limited access to foreign markets for all.

The interrelationships between these associations and the private sector demonstrated that the State and international organizations could implement a wide range of actions in support of the export sector through producer associations. In particular, they could actively support the establishment and strengthening of these associations, underwriting part of their costs during the first several years—as was the case with virtually all of the most successful associations that were studied—without comprising their autonomy or their ability to pressure public institutions to improve their performance. In addition, the histories of the associations that were studied demonstrated that a particularly opportune time to promote the establishment of such associations was during times of crisis when producers were facing serious problems that had to be solved through collective action, such as the need to pressure State institutions to enter into negotiations on opening a particular market or the need to fight a new disease or pest.

## **The Participation of Small Producers in Nontraditional Export Crops**

The number of small producers involved in the cultivation of nontraditional export crops varied considerably in each case and for each crop. There were significantly more small producers in Petrolina-Juazeiro and Guatemala than in Ecuador. As for crops, the largest number of small producers were engaged in the cultivation of tomatoes, broccoli, and snow peas through contractual arrangements with agricultural processing companies.

The ability to involve small producers in the cultivation of nontraditional export crops was related to the specific characteristics of the crops, the possibility of engaging in contract agriculture, and public sector actions.

### ***Specific Characteristics of the Crops***

Several characteristics of nontraditional export crops made it difficult for small producers to adopt them:

- The high capital requirements of many nontraditional crops, including financing for major investments (such as irrigation infrastructure and the building of greenhouses) and working capital for purchasing inputs and hiring workers, as well as the problems experienced by the majority of small producers in gaining access to capital; and,
- The complexity of the technologies used to produce quality products at specific times of year, as well as the difficulties of small producers in obtaining technical assistance.

On the other hand, it was shown that other specific characteristics of nontraditional export crops worked in favor of increasing the number of small producers:

- Negative economies of scale in the cultivation process. In addition to being labor-intensive, nontraditional export crops require a great deal of monitoring by workers in order to ensure good product quality. As a result, various nontraditional crops are characterized by increases in production costs per hectare and by decreases in quality once a certain area has been exceeded.
- The rapid return on capital of various nontraditional crops. Given that small producers must earn sufficient income from production to support their families, they often face difficulties in cultivating perennial crops, which take two or three years to generate income after the initial investments that are required. By contrast, crops with short growing cycles encourage greater participation by small producers, because they can receive income more rapidly.
- The specific characteristics of organic agriculture. Small producers have several advantages over larger producers in the cultivation of organic crops. Organic agriculture involves replacing conventional technology with a range of technologies that include manual and biological methods of controlling weeds, diseases, and pests, replacing conventional fertilizers with organic fertilizers, and implementing soil conservation measures. For most crops, these changes result in production costs similar to those of conventional technology, with the distinction that chemical inputs and machinery are replaced by labor. This turned out to be advantageous for small producers, since they had access to a larger labor supply and had limited resources for purchasing inputs and machinery. In addition, the adoption of organic production methods by small producers generally resulted in a rapid increase in yield, whereas the adoption of these methods by larger producers resulted in a significant initial decrease in yield (of up to 40 percent).

### ***Contract Agriculture***

In several of the cases that were studied, contract agriculture enabled small producers to overcome problems concerning access to credit, technical assistance, and marketing. However, while it was possible to increase the number of small producers in some cases (producers of industrial tomatoes in Petrolina-Juazeiro and broccoli in Guatemala), in other cases (such as producers of broccoli in Ecuador), the processing companies chose to enter into contracts with large and medium-sized producers. This was due in part to the high cost of negotiating and overseeing a large number of contracts with small producers. In addition, dependency on a large number of suppliers entails frequent quality problems that could result in serious losses. Finally, production by small producers under contract requires processing companies to provide producers with technical assistance. In the case of Guatemala, the cost of providing technical assistance was relatively low, because rural producers already had a tradition of cultivating vegetables. Rural producers in the mountains of Ecuador, however, were used to raising crops such as wheat, barley, and corn; as a result, companies would have had to invest a considerable amount in technical assistance aimed at training small producers to cultivate broccoli and other vegetables.

## *Credit*

Credit was made available to small producers through public institutions (for example, el Banco do Nordeste do Brasil in Petrolina-Juazeiro). This was done in two ways: providing small producers with financing under the condition that they enter into contracts with processing companies, and providing direct financing by relaxing credit conditions (especially the requirement for real property guarantees).

Taken as a whole, these factors enable us to draw the following conclusions:

- Strategies for supporting small producers will be more successful if support is provided for crops with particular characteristics that make them better for use by small producers, including crops with short growing cycles, crops characterized by negative economies of scale, and crops that are produced organically. Furthermore, small producers could begin by concentrating on crops with short growing cycles and later incorporate perennial crops, after which time they could use a combination of both.
- Contract agriculture is a method with great potential for increasing the number of small producers involved in nontraditional agriculture. Possible actions by the public sector include lowering the cost of negotiating and overseeing contracts, which could be accomplished through such measures as improving the legal framework that governs contracts and providing credit to producers who participate in contract agriculture.
- Flexibility in the application of credit conditions and the availability of credit to small producers are essential in order to enable small producers to participate in new activities, especially if these activities require large amounts of capital.

## **Nontraditional Export Crops and Wage-Earning Workers**

The effects of nontraditional export crops on labor depended on: a) the demand for workers in this sector, b) the balance between labor supply and demand in the region where the workers were located, and c) the existence of rural labor organizations, labor laws, and public sector entities responsible for enforcing these laws.

### *The Creation of Employment*

Nontraditional export crops made a significant contribution to the creation of employment, both in the growing phase and in sorting, packing and occasionally processing the harvest. Three points deserve mention:

- The positive effects of nontraditional agriculture on the rural population were more significant for wage-earning workers than for small producers, since the number of workers who earned wages was greater than the number of producers in each case.
- Although the proportion of rural workers engaged in nontraditional agriculture was rather low in some cases, this type of agriculture was primarily practiced in the poorest regions of the country—northeastern Brazil, the mountains of Ecuador, and central Guatemala—and in each case, it replaced the extensive ranching that had previously occurred in these areas; consequently, the net effect on labor demand was positive.
- Nontraditional agriculture was notable for the fact that it employed a high proportion of permanent, female workers.

## ***Training***

Nontraditional export agriculture required higher levels of education and training than traditional agriculture and thus was accompanied by intensive worker training. The specific knowledge that workers needed to possess concerned tasks related to irrigation technology and techniques (such as pruning and thinning) designed to ensure the quality required in foreign markets. In each of the cases studied, the training was provided by the companies themselves; the public sector did not play a significant role in this respect. In addition, the vast majority of the employers who were interviewed said that it was essential for workers to be literate, whether occupied in the field or in the plant. This was due to the fact that employees working with various products (mainly flowers and several fruits) had to prepare daily written reports for the various production areas about matters such as what work was accomplished and whether any problems had been detected. Several employers, technicians, and supervisors even stressed that workers should have a sufficient level of education to understand the processes in which they are involved, which not only would require primary education but also at least two years of secondary education.

Worker training had a very significant positive effect in that it promoted higher wages and permanent employment. Given that trained workers were scarce in each of the cases studied, companies tried to retain as permanent workers those in whom they had invested training. As a result, companies tended to pay trained workers higher wages and provide them with permanent employment in order to avoid the costs associated with hiring new workers.

## ***Wages and Working Conditions***

The development of nontraditional agriculture created favorable conditions for higher wages and improved working conditions. In each of the cases studied, a positive trend in worker income was observed, especially because workers were receiving benefits that are often lacking in traditional agriculture, such as monetary incentives for quality or productivity and overtime pay, which, though required by law, is not always provided. These improvements occurred for two reasons:

- Consumers in importing countries are very much interested in the conditions under which nontraditional crops are produced. The buyers often pressure the producers to improve working conditions, which are verified by means of organic certification requirements; this took place in Guatemala in particular. In addition, unions incorporated into their negotiating strategy the possibility of using their connections with their European counterparts to publicize problems with working conditions, which strengthened their negotiating position.
- A concentrated group of wage-earning workers was created in a particular geographical area, which facilitated unionization.

In spite of these conditions, the effects on wages and working conditions were different in each case, and they were much significant in Petrolina-Juazeiro than in Ecuador and Guatemala. This was due to the fact that these effects largely depended on the functioning of labor institutions on the local level, including the strength of rural labor organizations, labor laws, and the presence of public sector entities responsible for enforcing these laws.

In addition, it was observed that nontraditional export agriculture can, in the case of some crops, lead to significant health problems for workers. At the same time, the study revealed a clear tendency toward improved working conditions, primarily associated with employer concern about the perceptions of consumers in importing countries. Consequently, employers are more willing to negotiate improvements in working conditions than higher wages.

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