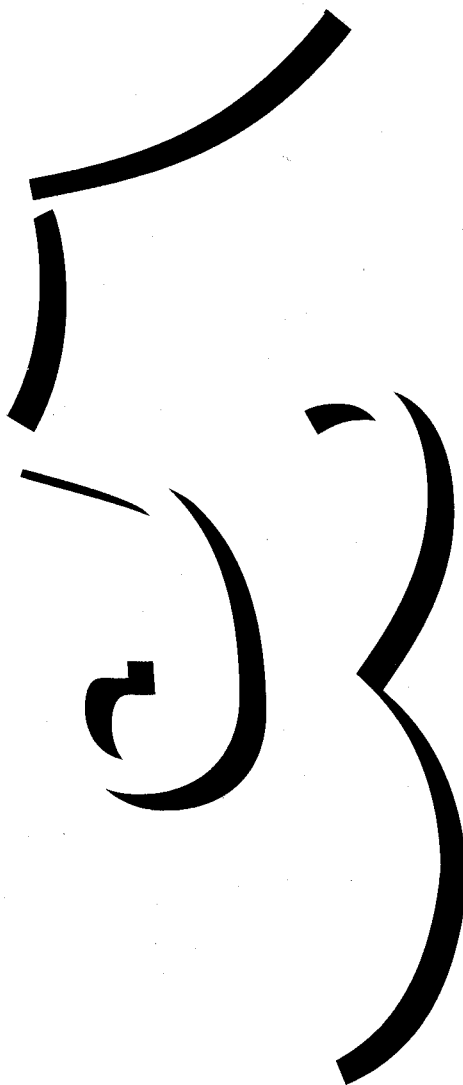


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REVIEW



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CONTENTS

Latin America and the Caribbean and the world economy <i>Gert Rosenthal</i>	7
Foreign capital inflows and macroeconomic policies <i>Andras Uthoff and Daniel Titelman</i>	13
Financial repression and the Latin American finance pattern <i>Marcos Antonio Macedo Cintra</i>	31
Policies for competitiveness <i>Wilson Peres</i>	49
Industrial policy and promotion of competitiveness <i>Osvaldo Rosales</i>	59
Open regionalism and economic integration <i>Juan A. Fuentes K.</i>	81
Changes in the urban female labour market <i>Irma Arriagada</i>	91
Water management and river basins in Latin America <i>Axel Dourojeanni</i>	111
Public policies and the competitiveness of agricultural exports <i>Milton von Hesse</i>	129
Agroindustry and changing production patterns in small-scale agriculture <i>Alejandro Schejtman</i>	147
National private groups in Mexico, 1987-1993 <i>Celso Garrido</i>	159
China's economic reform and opening to the world: a retrospective and prospective view <i>Li Cong</i>	177
Guidelines for contributors to <i>CEPAL Review</i>	185
Recent ECLAC publications	186

Public policies and *the competitiveness of* agricultural exports

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This article analyses the behaviour of the region's agricultural exports in the period following the onset of the debt crisis and makes some recommendations regarding public sector action with a view to improving the competitiveness of such exports. Section I describes the main trends which have been shaping international agricultural markets in recent decades and which have also marked their future trends. Section II shows how the region's agricultural supply has reacted to these changes. Finally, in section III –on the basis of a stylized representation of the behaviour of agricultural products in international markets– some criteria are laid down for the design of policies aimed at promoting the development of medium- and long-term competitive strategies for exportable agricultural supply, especially in order to facilitate the incorporation of the agricultural sectors with least capital (small and medium-sized producers) into the benefits of a development strategy aimed at integration with the rest of the world. As far as public intervention is concerned, the implicit thesis of the analysis is that although the adjustment and greater openness have brought some progress towards macroeconomic stability and some export growth there are still flaws in domestic markets –due rather to microeconomic factors– which hinder the incorporation of lower-income producers into the benefits of export agriculture.

I

The formation of international agricultural markets

An understanding of the functioning of international agricultural markets in the light of the trends which have shaped them will be very useful, in the following sections, for appraising the competitive behaviour of Latin American export agricultural supply (especially in the period since the reform processes) and analysing public sector participation in the design of a medium- and long-term competitive strategy to approach international markets more efficiently.

1. The impact of economic development and of changes within the household on food consumption habits

Since the end of the Second World War, the high-income countries have undergone a process of economic growth which has been accompanied by major changes in the structure of households and has thus also affected household lifestyles. In the member countries of the Organization for Economic Cooperation and Development (OECD), which represent around 75% of the markets for Latin American agricultural exports, since the war there has been a steady increase in per capita income,¹ the average number of persons in each household has gone down,² and there has been increasing incorporation of women into the labour market.³

These three features associated with economic development have had direct or indirect repercussions on food consumption habits and have thus also affected demand for agricultural products. A first effect which should be noted is the empirical observation that as individuals' income increases, the share of food in their expenditure structure goes down in relative importance, although in absolute terms spending on such items may increase (a phenomenon known as Engel's Law in the economic literature). Together with this reduction in the proportion of income spent on food, there is a qualitative improvement in the diet of the better-paid inhabitants, since generally speaking as income rises there is also increased concern for suitable nutrition and good health.

The increase in real income makes it possible to use spare time for activities unconnected with daily work. Holiday travel brings people into contact with new kinds of foods (especially fruit and vegetables considered exotic by dwellers in the Northern Hemisphere), and on their return tourists demand them in their home areas. The sports practised in their free time have also helped to improve the diet of high-income persons, since such sports are associated with the consumption of healthy products of low fat content (generally fruit and vegetables).

□ The author is indebted to Emiliano Ortega and Geraldo Müller, with whom he had many valuable discussions at various stages in the preparation of this article. He also wishes to express his gratitude for the comments and suggestions made by Martine Dirven and Rinske Warner, of the ECLAC Agricultural Development Unit, and by the editors of *CEPAL Review*. Any errors, omissions or misinterpretations are of course entirely the responsibility of the author.

¹ According to World Bank figures, the per capita gross national product of the high-income countries (expressed in constant 1990 dollars) went up from US\$10 828 to US\$19 590 between 1965 and 1990: i.e., it almost doubled. At the present time, the per capita product of those countries is nine times that of the Latin American and Caribbean countries (World Bank, 1992).

² Between the early 1960s and the early 1980s, the percentage of large households in the total number of households went down in countries such as Germany (from 14% to 8%), Sweden (from 13% to 6%), France (from 20% to 15%) and the Netherlands (from 27% to 13%), while the percentage of single-person households increased (Schwartz, 1988).

³ Thus, for example, in the United States female participation in the labour force has been increasing steadily from 32% in 1947 to 39% in 1965 and 51% in the early 1980s (Bustillo and Barrett, 1993).

The improvements in income, together with the tendency to form households in which there are only a small number of persons and the increased incorporation of women into economic activities outside the home, have endowed food consumers in the industrialized nations with two further characteristics. The first is higher spending on meals outside the home, and the second is the desire to consume foodstuffs which are of high quality but can be easily and quickly prepared.

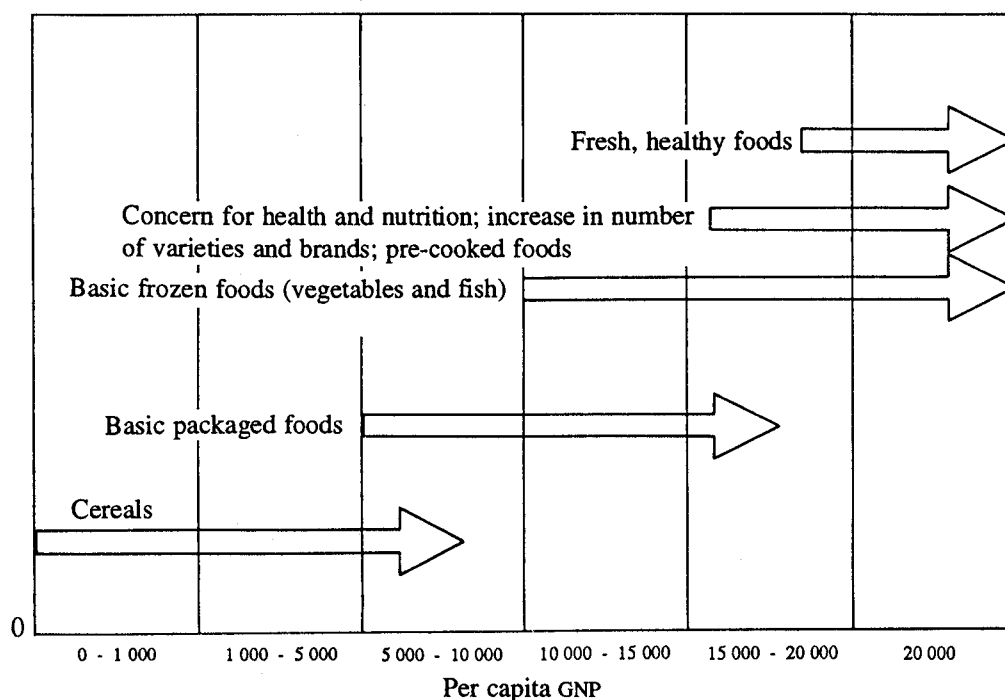
These changes in the conduct of consumers in the most highly industrialized countries have caused food consumption in the main markets for Latin America's agricultural exports to display the following trends:⁴ i) replacement of fresh foodstuffs by prepared products (dehydrated soups, instant purée, frozen foods, precooked dishes, fruit juices and pulps, etc.); ii) an increase in the consumption of fresh tropical fruits and out-of-season vegetables; iii) an increase in

the demand for foodstuffs corresponding to a single portion (250-300 grams). Thus, in the particular case of fruits, those of high unit weight, such as pineapples, are mostly consumed at times of public holidays, when guests are invited to the buyers' homes; iv) reduction in sugar consumption; v) reduction in consumption of beef, an increase in that of white meats (especially chicken), and a recovery in the demand for fish; vi) reduction in the demand for liquid milk (except that of low fat content), an increase in the demand for milk products (yogurt, cheese, desserts), and replacement of butter by margarine; vii) an increase in meals eaten outside the home (especially in fast-food establishments),⁵ with an upward trend in the number of vegetarian restaurants and the introduction of salad bars in restaurants.

Generally speaking, these trends tend to spread as countries increase their per capita income (figure 1).

FIGURE 1

World: Level of development and food consumption trends



Source: *The Economist*, London, 4 December 1993.

⁴ These trends have been noted by the Commission of the European Communities (1991), Jones Putnam (1991), Reig (1992) and Lutz, Blaylock and Smallwood (1993).

⁵ In 1954 only 4% of total spending by average Americans on meals outside the home corresponded to fast-food establishments, but now the figure is 34% (*Food Review*, vol. 14, No. 3, July-September 1991).

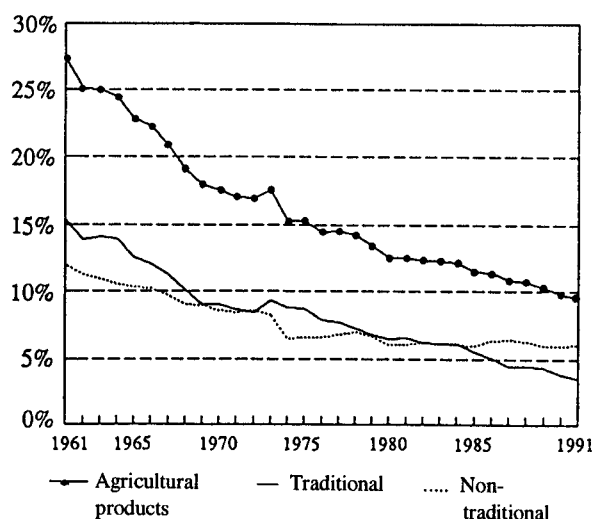
At low per capita income levels (less than US\$5 000 per year) food consumption typically consists of basic foodstuffs (such as cereals) with a minimal level of processing and without any marketing strategies that seek to differentiate between brands and qualities. When a country's per capita income is over US\$5 000, the presence of packaged foodstuffs begins to be noticeable, although in a rudimentary manner. At higher per capita income levels, food demand begins to come closer to the consumption patterns described earlier. It is important to note, however, that these consumption patterns characteristic of the industrialized economies tend to be imitated by the higher-income segments even in less developed countries.

2. The evolution of the world market for agricultural products

If we look at the evolution of world imports of agricultural products as compared to total imports of goods over the last thirty years (figure 2), we immediately note the steady decline in the relative importance of agricultural imports within world trade in goods. Thus, whereas at the beginning of the 1960s world agricultural imports represented over 25% of world purchases of goods, their share is now less than 10%. It may be noted that the decline in the relative importance of agriculture in world trade should not come as a surprise in a world which is advancing in terms of economic development: if the share of foodstuffs in personal spending patterns goes down as income increases, and if a certain percentage of spending on food is imported (to make matters simpler it will be assumed that this percentage is constant), then it is only to be expected that as countries develop, their agricultural imports (which reflect their spending on food) will lose relative weight within total imports (which reflect the aggregate spending of countries).⁶

⁶ Nevertheless, the specialized literature tends to consider that this downward trend has been excessive in recent decades because of the high levels of government intervention in international agricultural trade. See, for example, World Bank (1986) and ECLAC (1993a).

FIGURE 2
World: Imports of agricultural products as a percentage of total imports of goods



Source: Prepared by the ECLAC Agricultural Development Unit on the basis of information from the AGROSTAT data base of the United Nations Food and Agriculture Organization (FAO).

The second feature which is worth noting is the change in the structure of world agricultural imports. It may be seen from figure 2 that the agricultural products considered as traditional in Latin America have been losing ground to non-traditional products in the structure of world agricultural imports.⁷ Thus, in the 1960s traditional products averaged 54% of world agricultural purchases, but their share is now only 37%. The changes in consumption patterns on world markets, together with government intervention in agricultural markets, have played a leading role in these trends in world agricultural imports, depressing demand for traditional products and boosting the development of non-traditional markets.

⁷ Traditional agricultural products are those which, in various sub-periods of the period between the two great economic crises of the twentieth century, formed part of the list of products accounting for over three-quarters of Latin American exports. Non-traditional products are the remainder. For a fuller analysis of these concepts, see ECLAC, 1993a, chapter II.

II

Latin America's response to the changes in international agricultural markets

The competitiveness of a product on a given market is usually measured through the evolution of its share of that market. According to calculations made on the basis of the FAO's AGROSTAT data base, the share of Latin American⁸ agricultural products in world trade has gone down from 9.6% in the 1960s to a little over 7% at the present time.

If we make a distinction between traditional and non-traditional products, we see that Latin America's share in the market for traditional products has remained steady at around 12.1% in recent years, after going down from 14.2% to 12.8% between the 1960s and the 1970s. In the case of non-traditional agricultural products, however, Latin America has been gaining ground in world exports of fruit and vegetables (excluding bananas, which are considered to be

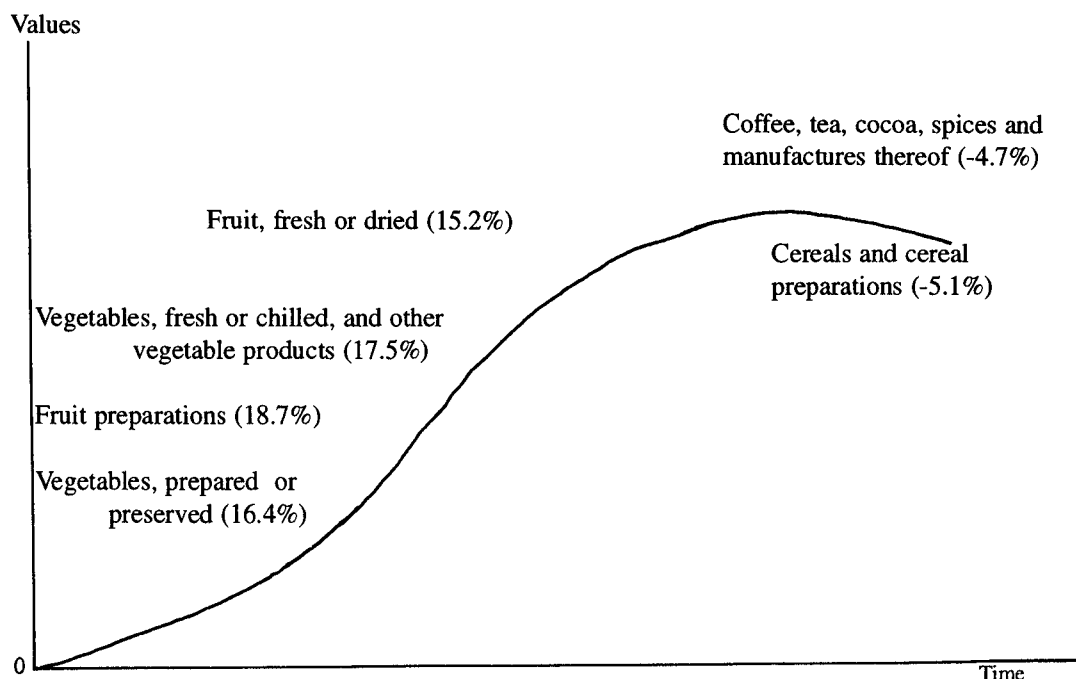
a traditional product). Thus, between the 1960s and the present day, Latin American fruit and vegetables have almost doubled their share of the world market for these products.

Another way of measuring the competitiveness of Latin American agricultural export supply is to analyse whether, after the initiation of the adjustment and trade openness processes, there have been changes in its structure which reflect the trends observed in world markets. A simple way of making such an evaluation is to plot the growth rates of different categories of agricultural products during the period after the outbreak of the crisis and compare them with consumption trends in the various markets.

Figure 3 (prepared on the basis of annex 1) shows the growth rates of some major categories of

FIGURE 3

Latin America: Agricultural export trends, 1983-1992



⁸ Latin America is represented by the 11 member countries of ALADI.

Latin American agricultural export products⁹ during the period 1983-1992. It may be seen from the figure that one group of products –the most dynamic ones– displayed an upward trend in international markets, while the less dynamic products registered negative growth rates during the period in question, although the export values involved are quite significant for the region. This is because these latter products correspond to fully consolidated international markets and the stage at which they stand in their life cycle is one of stagnation or decline.

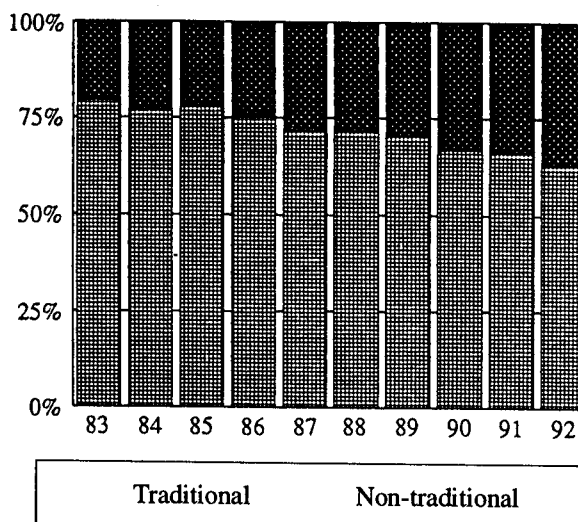
According to figure 3, Latin America's agricultural exports would appear to have reacted positively to the consumption trends registered in world markets. Thus, the highest average annual growth rates of export values in the period 1983-1992 were registered in the cases of processed fruit, fresh or frozen vegetables, processed vegetables, and fresh or dried fruit. In contrast, those which turned in the most negative performance were cereals and preparations thereof and other traditional products such as coffee and cotton.

Likewise, among livestock products the annual average growth rate of exports of poultry and poultry products (8.3%) was far higher than that of beef exports (0.6%). Fishery sector exports also grew a good deal faster than the average for agricultural exports. The greater dynamism of the products listed above –most of which fall into the category of non-traditional exports– indicates that Latin America's export supply has been adapting to the changing consumption patterns in international markets.

However, even though the above indicators suggest that in the period since the crisis Latin America's agricultural export supply has tended to adapt to the changes taking place in international market conditions and has occupied a good place among the most dynamic sectors, the bulk of the region's agricultural exports still consists of products corresponding to the structure of production prevailing in the region before the adjustment and trade openness programmes.

Figure 4 shows the evolution of the structure of Latin American agricultural exports between 1983 and 1992. It may be noted that although non-traditional products steadily increased their share in the

FIGURE 4

Latin America^a: Agricultural exports, 1983-1992

Source: ECLAC Agricultural Development Unit, on the basis of the ECLAC External Trade Data Bank for Latin America and the Caribbean (BADECEL).

^a Ten countries: Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Uruguay and Venezuela.

region's agricultural export supply (from one-fifth of the total in 1983 to over a third by the end of the period), most of the exports still consist of traditional products whose markets are the slowest-growing and display the biggest distortions (see annex 2).

Moreover, if a detailed study is made of the composition of the non-traditional exports it will be noted that although these exports grew and diversified during the period they still only consist of a limited number of products, concentrated in certain countries. Thus, for example, in the sample of 10 countries analysed in figure 4, in 1992 75% of the exports of fruit and vegetable juices corresponded to Brazil (basically orange juice), 95% of the region's exports of tomatoes came from Mexico, 86% of the region's grape exports were from Chile, and 82% of the exports of cut flowers and foliage came from Colombia. It will also be noted that there is not sufficient diversification of buyer markets, which could mean some vulnerability in time.¹⁰

⁹ The Latin American countries considered for this purpose were Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Uruguay and Venezuela.

¹⁰ For a detailed analysis of the features of the region's non-traditional agricultural export supply, see ECLAC, 1993a, chapter III.

III

Public intervention in the formulation of a competitive agricultural export strategy

In this section, an analysis is made –within the context of economic theory– of public intervention in the design of a competitive strategy aimed both at improving the performance of the region's agricultural exports in international markets and at promoting the diversification of regional agricultural supply. The purpose is to facilitate the incorporation of the agricultural sectors with the lowest levels of capital (basically small and medium-sized producers) into the benefits of export agriculture, especially of non-traditional products.

In the rest of this article, "competitive strategy" will be understood as the design of a set of measures aimed at the long-term maintenance of the economic benefits derived from export activity on international markets. These benefits must be commensurate with the levels of risk that the exporting firm, country or region would be willing to accept in an optimal situation.

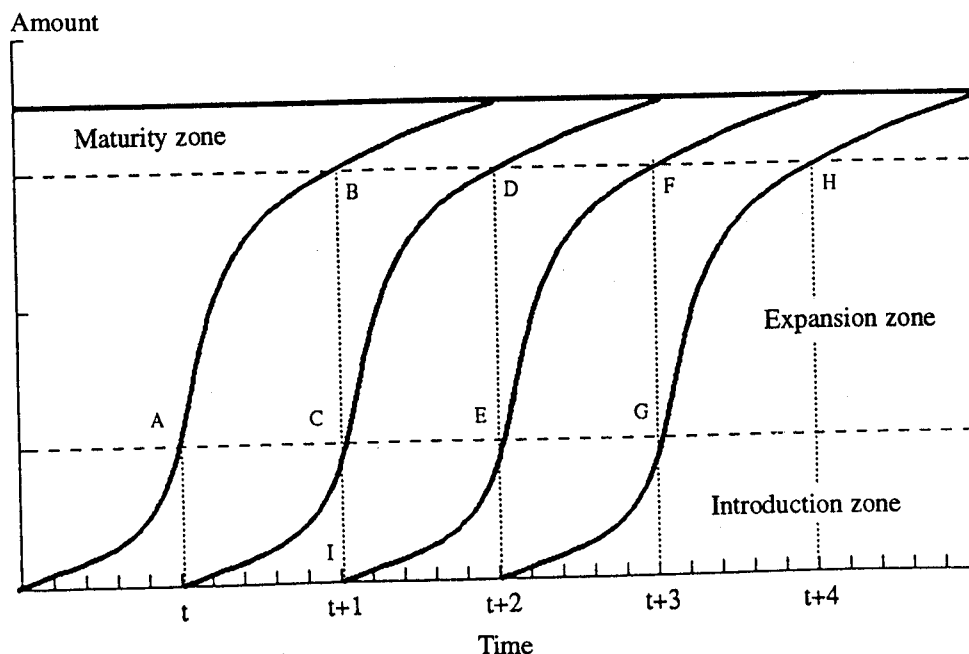
Before beginning to discuss public intervention in a strategy of this type, however, an idea should be gained of the typical dynamics of agricultural products in international markets.

1. Broad lines of a dynamic competitive strategy

Figure 5 shows the life cycles of four agricultural products traded on the international market at four different times. Generally speaking, each life cycle can be characterized, in simple terms, by three stages. The first stage extends from experimentation to the introduction of a new product on a given market; in the second stage, demand for the product thus introduced on the market begins to grow until it reaches a stage of maturity; and in the third and final stage demand for the product has now matured and

FIGURE 5

Design of a marketing strategy for agricultural products



therefore stabilizes or may even go down with the passage of time.

In figure 5, these three stages in the life cycles of agricultural products make up three zones which we have called introduction, expansion and maturity. Each of them has different levels of profitability and risk. The introduction zone generally involves a high level of risk associated with the initial investments, but if the product meets with good acceptance on the market it can mean a high rate of return per unit of product.¹¹

In contrast, the maturity zone, which is characterized by consolidated and stable (and in some circumstances declining) markets, does not generally involve much risk. In this case, the profitability of export activity is determined by the volumes exported, since the rate of return per unit of product is low. This zone is typical of the "traditional" export products.

Finally, the expansion zone is in an intermediate position, in which good profitability per unit of product is obtained with an acceptable level of risk. This zone corresponds to markets for products where there is good customer acceptance but for some reason demand exceeds the existing traditional supply. The cost of entering such markets is thus less than that of introducing a new or exotic product.¹²

The three zones therefore represent different combinations of risk and profitability. It may be assumed, then, that at any given moment (for example, at any point between $t+1$ and $t+2$ in figure 5) a country's agricultural export structure will be made up of three types of products: one type in the introduction zone, one in the expansion zone, and one in the maturity zone.

¹¹ According to data of the U.S. Department of Agriculture, in 1991 alone 12 398 new food products were placed on the market in that country. Most of them are extensions of products already on the market, involving new sizes, flavours, packaging designs, etc. Many of these new food products are a response to consumers' ecological and health concerns. Putting a new product on the market can mean expenditure of over US\$100 million, spread over research and development, experimental marketing, publicity, inventory control and financial costs. Although no precise data are available, according to some analysts' estimates between 80% and 95% of the new products placed on the United States market turn out to be a failure. Those that pass the test, however, earn high rates of profits. For further details, see Gallo, 1992.

¹² One of the features of this stage is that there are already marketing circuits for the product.

The weight of each of these types of products within the agricultural export structure will depend on the aggregate degree of aversion to risk of the country's agricultural export sector. If it is considered that this level will be "normal", however, it may be expected that most exports will be in the expansion zone and smaller proportions will be in the introduction and maturity zones. In this sense, from an intertemporal point of view the best situation from the country's standpoint would be to keep its risk structure stable over time, along with the corresponding level of profitability.

Such a strategy would mean, for example, that if given export agents wanted to remain at a level of risk and average profitability characteristic of the expansion zone for a prolonged space of time, they would have to be able to move from one product to another. Thus, let us assume that in period t a certain export sector (which can be represented as an individual firm) enters the world agricultural market offering, for example, mangoes. As demand for the product in question is rising at that time, it is in the interest of the export firm to stay in the market for a time (defined by the period between t and $t+1$), as long as the conditions of risk and profitability which optimize their own profit function prevail. In other words, the optimum strategy for that firm between period t and $t+1$ is determined by segment AB.

As from period $t+1$, however, the risk and profitability conditions which characterized the mango market change, since this product enters the maturity zone (with the entry of many new firms into this market). When the firm is at a point like B, it is faced with the following alternatives: a) To continue producing mangoes, but now within the maturity zone (with low risks and low profitability); or b) To change its product line, in which case it again has two options: i) to invest in a new product as yet unknown on the market, thus entering the introduction zone (of high risk and high profitability) and hence passing from point B to point I, or ii) to invest in a product which is not so new (i.e., already accepted on the market) and thus stay in the expansion zone, hence passing from point B to point C.

For an export firm which is at a point such as B and decides to change its product line, this change does not necessarily mean that it will completely cut off its connection with the previous product. Passing from B to C or I may indeed mean a change of product (for example, changing from mangoes to

pineapples), but it can also mean the differentiation or modification of the product (for example, changing from mangoes to mango juice). The main challenge that must be faced by those formulating economic policy at the present time is how to establish –within the prevailing economic model– an agricultural export development strategy which makes it easier for a firm which is at point B to follow the desired path, which may be B, C, D, E, F, G or H. Public sector action must therefore favour private sector decision making based on an optimizing form of conduct in the light of its risk and profitability preferences.

2. Public intervention in designing a competitive agricultural export strategy

A diagnostic study of the crisis which affected Latin America in the 1980s noted that one of its main causes was the excessive role of the State in the economy, to the detriment of private enterprise (Balassa, Bueno, Kuczynski and Simonsen, 1986). The measures which accompanied the adjustment and economic openness programmes in the region were therefore designed to promote the competitiveness of firms through the establishment of a stable macroeconomic setting, the review of the size and functions of the State, and the reworking of the legal framework.

In this context, specific State participation in the promotion of export agriculture is limited mainly to the provision of the basic infrastructure (roads, ports, certain types of irrigation works); to the collection, processing and dissemination of national production and foreign trade statistics; to the generation and dissemination of information on present and future weather conditions, and to the work of enforcing the observance of certain plant and animal health requirements.

In the following paragraphs, however, the aim is to analyse the question of whether public participation in the development of export agriculture in Latin America (with emphasis on non-traditional products) should be limited exclusively to the items mentioned above, or should be broadened. This is of particular interest in view of the fact that the rural sectors of countries such as Ecuador, Mexico, Peru or Venezuela are demanding a bigger share in the benefits of the development strategy embarked upon.

A recent World Bank study (Jaffe, 1993), which analyses 15 successful experiences with high-value

agricultural products in nine developing countries,¹³ shows that although in most cases the export “take-off” took place parallel with or subsequent to the introduction of macroeconomic and trade reforms, in almost all cases the governments played a decisive role by adopting support measures which facilitated the success of the experiences in question. Public sector participation went beyond the provision of basic infrastructure, to cover research and technology transfer programmes, product inspection and certification and, in over half the cases, improvement of public information. Other types of public intervention highlighted in the study are government-level negotiations on access to certain markets and assistance in product promotion on international markets.¹⁴

The following analysis of public sector participation in designing a competitive strategy for export agriculture is made in the context of economic theory, and especially of the latest advances in economic development theory. Unlike the more traditional approach of the Arrow-Debreu model, in which competitive equilibrium does not allow of the presence of any institutions other than the market and property rights, the view of agricultural development currently in vogue in the world’s most important academic centres –known as the “theory of agricultural institutions” (De Janvry, 1994) or the “economy of rural organizations” (Hoff, Braverman and Stiglitz, 1993)– holds that the existence of other economic institutions in the agricultural or rural sector reflects rational responses by the economic agents to market problems.

¹³ The cases described are those of fresh tomatoes in Mexico; out-of-season vegetables in Kenya; fresh citrus fruit in Israel; temperate-zone fruit, processed tomatoes and fishery products in Chile; frozen concentrated orange juice and soybean products in Brazil; meat and soybean products in Argentina; poultry products, tuna and shrimp in Thailand; and high-value processed foods in Taiwan.

¹⁴ The successful experience of Chilean export fruit-growing in the last 15 years (a frequently cited example of the potential benefits of export agriculture) was the result of a joint effort by the public and private sectors over a period of several decades. The role of the State in investment in technology and human capital, in the identification of suitable varieties, in furthering the availability of credit, etc., was of fundamental importance in the attainment of spectacular results after the adjustment and the subsequent opening-up to the exterior. Fuller details of this and other experiences are given in ECLAC, 1990; Jarvis, 1992, and Legarraga, 1993.

Although both approaches posit economic rationality –understood as a process in which, in the light of different resource constraints, the economic agents adopt the best possible decisions in terms of their own well-being– they differ with regard to the socially optimal nature of the equilibrium attained. According to the Arrow-Debreu model, the sum of private decisions leads to an equilibrium which is socially efficient.¹⁵ The economy of rural organizations theory, in contrast, holds that the equilibrium deriving from individual optimization processes is not necessarily efficient from a social standpoint, since markets are not perfect. The market flaws on which this latter approach focuses are due basically to the absence of certain markets (e.g., the risk market), the existence of imperfect information, and the transaction costs of the economy. Thus, public intervention in a context of imperfect markets can give rise to improved efficiency for society as a whole if it focuses on actions which are profitable from a social point of view but not from a private one (Hoff, Braverman and Stiglitz, 1993).

The present article maintains that in the current Latin American context –in which most of the economies are relatively open to the exterior and are deregulated– market flaws persist (fundamentally of a microeconomic nature) which hinder the incorporation of the least-capitalized sectors of agriculture into a development strategy based on exports. According to the model described in section 1 of this chapter, such flaws would hinder, for example, the passage from point B to point C by an enterprise which –in line with an optimization process– decided to pursue a dynamic strategy following the path A, B, C, D, E, F, G, H.

In order to move from point B to point C, the agricultural producer needs sufficient information on markets to enable him to minimize the risks associated with his decision to change his line of activity (for example: supply and demand conditions on external and internal markets, consumption trends, protectionist barriers, evolution of prices, etc.). When he has identified the product characteristic of point C, on the basis of this information and in line with his own preferences, he needs the technical and financial capacity to produce it. In addition, he must be confi-

dent that his competitiveness on international markets will be backed up by the quality of the product supplied. Finally –above all if he is a small or medium-sized producer– he must have a certain amount of negotiating capacity –both domestic and external– so as to enable him on the one hand to share the risks involved in the marketing process and, on the other, to secure the opening-up of markets which had previously been closed.

a) *The development of information markets*

The opening-up of the Latin American economies to the exterior has meant that the information needed by export firms to compete efficiently on international markets goes beyond the information generally provided by the public sector as part of its routine activities (national statistics, weather conditions, etc.). We know from experience that if economic agents do not have the necessary information, their production and export decisions may be sub-optimal and may affect the well-being of society as a whole.¹⁶ It is therefore essential that firms and countries should have timely information (statistical and conjunctural) on the situation of international markets, at least as regards price evolution, demand behaviour, market access restrictions, and the situation of potential competitors.

This information is generally available to big firms that have an operational system for this purpose or have sufficient resources to hire the services of one or more of the firms which specialize in this type of information. For smaller firms, however, the high cost of obtaining the basic information needed to decide whether to enter export markets may cause them to give up this effort. Thus, since information for smaller firms is a public good, the public sector should provide the basic information, especially if the costs of generating it are only marginal, since governments have diplomatic missions all over the world.

An example which illustrates the need for information on international markets in order to maximize the benefits of export agriculture is provided by a survey carried out by the ECLAC Agricultural Development Unit on the situation of non-traditional export crops in 14 Latin American countries: Argentina,

¹⁵ Efficiency is understood in the sense given to it by Pareto, whereby no individual in society can be better-off without at least one other individual being worse-off.

¹⁶ This is clearly illustrated by the well-known “prisoner’s dilemma” when competitive (Nash) equilibrium is reached.

Bolivia, Colombia, Costa Rica, the Dominican Republic, Ecuador, El Salvador, Guatemala, Honduras, Mexico, Nicaragua, Paraguay, Peru and Uruguay. A number of these countries are carrying out public or private promotional efforts in respect of quite a limited range of products.

Thus, for example, eight countries of the region plan to expand their shares in the markets for berries and citrus fruit, while seven countries have high hopes of increasing their exports of mangoes, melons and cut flowers and foliage. At least six different groups of countries have a special interest in increasing their supplies on the world asparagus and pineapple markets. The results of these strategies of the various countries, which were formulated on the basis of the past situation in world markets for these products, may lead to the saturation of some of them if they exceed their demand capacity. This would adversely affect the advances in well-being which it is hoped to obtain through these promotional efforts.

b) *Research and transfer of technology*

One of the features of the structural adjustment policies applied in Latin America has been the reduction of fiscal spending. Because of this reduction, the public and semi-public institutions engaged in agricultural research have suffered budget cuts and have lost ground and presence (ECLAC, 1991, p. 45). This reduction in public financing is estimated to have led to a level of investment in research and technological development lower than that considered socially desirable.

In a recent study (Jarvis, 1992) it is argued that as technological change is the main factor in sustained agricultural growth, and in view of the fact that the knowledge obtained from agricultural research is a public good, then if markets tend to be competitive, private investors can only appropriate a portion of the benefits of such research. Thus, in deregulated macroeconomic contexts which favour business competition, private sector expenditure on agricultural research and development may be below the level that would be considered optimal from a social point of view. In this respect, Jarvis suggests that public intervention in agricultural research is necessary, either directly or through subsidies for private research. Public participation must not be limited solely to the development of technology, but must also include the study of new exportable products and the identification of niches in international

markets.¹⁷ If the development strategies followed by the countries of the region include the incorporation of low-capital sectors into the benefits of export agriculture, it is not desirable that enterprises should bear the cost of technological research and development individually. It would be more efficient to try to take advantage of the economies of scale offered by the joint execution of such efforts.

c) *Agricultural producers' capacity to finance projects*

In the past, both Latin America and other regions tackled the lack of finance by setting up special banks for agriculture. In general, in Latin America these specialized institutions were owned and run by the State. Since they functioned in a highly distorted macroeconomic context and were accompanied by ill-advised measures aimed at solving the problems of agricultural financing, however, these public institutions generated growing deficits and their allocation of credit was extremely inefficient.

For this reason, when the deregulation and external openness programmes began to be applied in the region, the agricultural banks were eliminated in many cases. Now that the private commercial banks of most of the countries of the region are deregulated, agricultural producers—especially those operating on a small or medium-sized scale—have only very limited access to commercial credit.¹⁸

This rationing of credit¹⁹ is not due to the existence of controls or ceilings on interest rates, to excessively high compulsory reserve requirements, or to the obligation to maintain certain lines of subsidized credit—which are the classic reasons adduced in studies such as those by McKinnon (1974) and Shaw (1973)—but to such factors as the lack of capital to back up the credit or problems of unequal availability of information.

¹⁷ It should be noted that such diverse fields as medicine, cosmetics and agroindustry can now be interesting alternatives for the export of non-traditional agricultural products.

¹⁸ The problems of agricultural credit in Bolivia, Colombia, Mexico, Peru and Venezuela after the application of the adjustment and external openness programmes are analysed in *Debate Agrario*, 1993.

¹⁹ By rationing of credit we mean the situation in which the financial market does not give credit to all the agents who request it, even when they are willing to pay the opportunity cost of the resources in question.

Problems of unequal availability of information arise when the firm requesting credit has more information than the bank on the probabilities of success of its project.²⁰ For the banks, obtaining this information is difficult and costly, because the profitability of agricultural projects generally depends on many different aspects: soil quality, weather conditions, the kind of technology used, the type of product, the location of the demand for the product (domestic or external market), price variations (which are related to the seasonal nature of production and market intervention), availability of water, access to storage and transport infrastructure (roads, ports), the interactions with agroindustry, the structure of the marketing system, etc.

The financial system's inability to monitor every project individually, because of the complexity of the information required, means that even in a situation of free financial markets the private commercial banking system does not fully cover the financing needs of agricultural producers, because expanding credit to this sector in a context of incomplete information would raise the level of risk and could reduce the expected profits of the banks.

If, in a situation of excess demand for credit with inequalities in the availability of information, the commercial banks decide to raise their interest rates in order to be able to provide loans for more projects, it may be that the soundest (lowest-risk) projects may withdraw from the financial market, leaving the riskiest ones. This would alter the composition of the banks' portfolios and reduce their expected profits (Stiglitz and Weiss, 1981).

Lack of financing obliges producers—especially the small and medium-sized ones—to seek resources from the informal sector, from agroindustries, or from suppliers of inputs, or else to try to raise the necessary funds themselves or, at worst, postpone their projects.

The foregoing has meant that levels of investment have been registered in agriculture which may be considered as being below the optimum levels from the social point of view. This is why it is necessary to formulate public policies designed to eliminate or offset the factors leading to rationing of credit in the sector.

d) *Export product quality*

Since the adjustment and external openness processes, Latin America's competitive position in international agricultural markets, both for traditional and non-traditional products, has generally been based on products of low cost and low quality. The region's comparative advantages in the production of agricultural goods for export to the industrialized countries have consisted basically of low labour costs, the seasonal nature of some crops, and the relatively exclusive nature of the production, especially in the case of tropical crops.

These advantages, however, are not enough to form the basis for a medium- and long-term sectoral development strategy. Experience has shown that as depressed areas emerge from their situation of stagnation, the opportunity cost of labour tends to rise and is naturally reflected in higher wages. Consequently, unless an effort is made to progress from a competitive position of low costs and low quality to one of high value and high quality, the region's agricultural export supply will tend to lose ground in relative terms in international markets. The other two factors on which Latin America's current comparative advantages are based—the seasonal nature of crops and the region's relatively exclusive position as regards the growing of certain products—could also be weakened in the medium and long term as more developing countries embark on agricultural export strategies and advances continue to be made in biogenetics and biotechnology. Furthermore, the trend among consumers in the most highly developed countries is towards a preference for high quality products rather than those of low cost. It is therefore necessary to do everything possible to export quality rather than just low prices, if this export strategy is to be sustainable beyond the short term.

In this context, public participation should be aimed at protecting exporters who invest in measures designed to improve the quality of their products while maintaining internationally competitive costs, for—as Akerlof noted in 1970—one of the main problems in the marketing of developing countries'

²⁰ If the bank could be sure that the firm requesting the credit could not possibly act in a misleading manner when asked for information on the project which it desired to carry out, then there would be no problem of unequal availability of information. However, the possibility of deceit does exist, and the costs that the bank must incur in order to ascertain whether the producer was lying or not are quite high.

agricultural products is that low-quality products traded by unscrupulous agents tend to drive good-quality products off the market (Akerlof, 1970). In market economies, the answer of private agents to this problem is the introduction of brands which identify the product and guarantee its quality. However, this is basically observed in economies which have risen above a certain level of per capita income or in those –such as South Africa or New Zealand– where the State has a monopoly of the marketing of the products in question. In Latin America, public participation designed to safeguard the quality of agricultural export products could, for example, take the form of a seal of quality guaranteeing the standard of the products of firms which comply with certain requirements laid down by some specialized public or private institution recognized on the import markets. Such a seal would be differentiated and awarded in the light of both the plant and animal health requirements of the destination markets and the quality demanded by consumers according to their market segment, in order not to prejudice those producers who decide to aim their production at segments of consumers who attach more importance to lower price rather than top quality.

e) *Negotiating capacity*

Most of the countries of the region are now seeking to incorporate themselves into international markets to an ever-increasing extent, so it is essential that the local export supply should have a certain level of capacity for negotiations on the destination markets.

This negotiating capacity should be aimed firstly at defending the place gained on international markets against protectionist measures that go beyond the limits set by GATT (GATT, 1993). Secondly, it should seek to win specific markets –such as that of Japan– where bilateral negotiations at the government level (for example, on the plant and animal health regulations applied to exports) play a decisive role. Finally, it should deal with the marketing of products on international markets. The lack of association and coordination among producers means that very often the risks inherent in trade in perishable products are assumed almost entirely by the producers themselves, especially when production is organized on a competitive basis, whereas the marketing structure is oligopolistic. In such a case, public action should, for example, seek to further the development of product trade associations or promote competition in sectors related to product marketing (Hill and Bender, 1993).

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ANNEX 1

Latin America (10 countries): ^a Agricultural exports, 1983-1992

A. Total agricultural exports, millions of dollars										
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
<i>Crop-farming exports</i>	13 749	16 205	15 552	15 356	13 335	15 218	15 256	17 274	17 200	18 283
Fruit, fresh or dried	766	834	1 073	1 195	1 333	1 505	1 641	2 013	2 712	2 745
Edible nuts, fresh or dried	114	107	160	167	143	169	165	205	194	259
Vegetables, fresh or frozen	419	575	525	846	602	683	628	1 207	1 097	1 791
Cereals and cereal preparations	3 156	2 492	2 468	1 408	897	1 156	1 384	1 786	1 490	1 964
Coffee, tea, cocoa, spices and manufactures thereof	5 302	6 507	6 568	7 721	5 688	5 571	4 881	4 051	4 097	3 445
Sugars, sugar preparations and honey	957	893	596	700	664	847	773	1 064	911	1 067
Cotton	433	508	457	229	400	564	724	781	839	412
Oil seeds and oleaginous fruits	790	1 567	1 650	992	1 066	1 561	1 820	2 082	1 773	1 818
Vegetable products, raw	208	224	231	252	266	344	400	441	530	636
Vegetables and fruit, processed	847	1 718	1 016	1 014	1 311	1 692	1 680	2 284	1 755	2 055
Vegetables, processed	85	105	100	117	149	177	285	309	306	334
Fruit, processed	54	69	55	76	104	114	138	185	204	253
Other fruit and vegetables, processed	708	1 545	860	821	1 058	1 401	1 258	1 791	1 245	1 468
Beverages and tobacco	700	727	763	757	876	1 013	1 077	1 267	1 676	1 918
Edible products and preparations, n.e.s.	57	52	48	76	89	113	84	93	125	172
<i>Livestock exports</i>	2 380	1 924	1 892	2 081	2 164	2 575	2 627	3 029	3 041	3 121
Live animals, mainly for food	217	127	192	294	217	232	277	440	442	407
Meat and meat preparations	1 747	1 446	1 370	1 408	1 543	1 794	1 786	2 003	2 188	2 323
Dairy products and birds' eggs	88	40	49	70	59	105	200	199	151	122
Wool and other animal hair (except tops)	293	282	246	261	302	380	294	317	194	181
Crude animal materials	35	30	37	47	44	64	70	69	66	88
<i>Exports of animal and vegetable oils, fats, meal and waxes</i>	4 159	4 527	4 084	3 566	3 937	5 643	5 749	5 162	5 020	5 542
Animal oils and fats	31	45	48	33	28	41	36	29	41	28
Fixed vegetable oils and fats	1 121	1 779	1 809	897	964	1 340	1 375	1 613	1 549	1 525
Animal or vegetable oils or fats, processed; waxes	25	26	32	32	33	43	80	77	70	74
Feeding stuff for animals	2 983	2 676	2 195	2 604	2 911	4 218	4 258	3 443	3 360	3 915
<i>Forestry exports</i>	1 042	1 199	989	1 181	1 526	2 073	2 267	2 087	2 087	2 653
Primary (wood and cork)	304	300	258	303	451	591	677	761	817	887
Secondary	738	899	731	878	1 075	1 482	1 590	1 327	1 270	1 766
<i>Fishery exports</i>	1 013	1 185	1 318	1 504	1 861	1 866	1 900	1 963	2 495	2 688
Fish, fresh, chilled or frozen	235	212	364	413	531	554	648	828	1 051	1 088
Fish, dried, salted or in brine; smoked fish	11	10	15	14	15	23	29	28	40	65
Crustaceans, fresh, chilled, frozen, salted, etc.	798	892	847	954	1 132	1 117	1 027	891	1 137	1 214
Fish, crustaceans or molluscs, prepared or preserved	59	71	93	122	182	173	196	216	266	321
<i>Total agricultural exports</i>	22 433	25 040	23 836	23 688	22 822	27 375	27 800	29 516	29 844	32 286
<i>Total exports</i>	78 110	87 039	84 892	70 237	77 842	89 859	100 802	104 196	107 619	112 336

B. Proportion of total agricultural exports, by product categories (%)

<i>Crop-farming exports</i>	61.3	64.7	65.2	64.8	58.4	55.6	54.9	58.5	57.6	56.6
Fruit, fresh or dried	3.4	3.3	4.5	5.0	5.8	5.5	5.9	6.8	9.1	8.5
Edible nuts, fresh or dried	0.5	0.4	0.7	0.7	0.6	0.6	0.6	0.7	0.6	0.8
Vegetables, fresh or frozen	1.9	2.3	2.2	3.6	2.6	2.5	2.3	4.1	3.7	5.5
Cereals and cereal preparations	14.1	10.0	10.4	5.9	3.9	4.2	5.0	6.0	5.0	6.1

(Continued on next page)

ANNEX 1 (Continued)

B. Proportion of total agricultural exports, by product categories (%)										
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
Coffee, tea, cocoa, spices and manufactures thereof	23.6	26.0	27.6	32.6	24.9	20.3	17.6	13.7	13.7	10.7
Sugars, sugar preparations and honey	4.3	3.6	2.5	3.0	2.9	3.1	2.8	3.6	3.1	3.3
Cotton	1.9	2.0	1.9	1.0	1.8	2.1	2.6	2.6	2.8	1.3
Oil seeds and oleaginous fruits	3.5	6.3	6.9	4.2	4.7	5.7	6.5	7.1	5.9	5.6
Vegetable products, raw	0.9	0.9	1.0	1.1	1.2	1.3	1.4	1.5	1.8	2.0
Vegetables and fruit, processed	3.8	6.9	4.3	4.3	5.7	6.2	6.0	7.7	5.9	6.4
Vegetables, processed	0.4	0.4	0.4	0.5	0.7	0.6	1.0	1.0	1.0	1.0
Fruit, processed	0.2	0.3	0.2	0.3	0.5	0.4	0.5	0.6	0.7	0.8
Other fruit and vegetables, processed	3.2	6.2	3.6	3.5	4.6	5.1	4.5	6.1	4.2	4.5
Beverages and tobacco	3.1	2.9	3.2	3.2	3.8	3.7	3.9	4.3	5.6	5.9
Edible products and preparations, n.e.s.	0.3	0.2	0.2	0.3	0.4	0.4	0.3	0.3	0.4	0.5
<i>Livestock exports</i>	10.6	7.7	7.9	8.8	9.5	9.4	9.5	10.3	10.2	9.7
Live animals, mainly for food	1.0	0.5	0.8	1.2	0.9	0.8	1.0	1.5	1.5	1.3
Meat and meat preparations	7.8	5.8	5.7	5.9	6.8	6.6	6.4	6.8	7.3	7.2
Dairy products and birds' eggs	0.4	0.2	0.2	0.3	0.3	0.4	0.7	0.7	0.5	0.4
Wool and other animal hair (except tops)	1.3	1.1	1.0	1.1	1.3	1.4	1.1	1.1	0.6	0.6
Crude animal materials	0.2	0.1	0.2	0.2	0.2	0.2	0.3	0.2	0.2	0.3
<i>Exports of animal and vegetable oils, fats, meal and waxes</i>	18.5	18.1	17.1	15.1	17.2	20.6	20.7	17.5	16.8	17.2
Animal oils and fats	0.1	0.2	0.2	0.1	0.1	0.2	0.1	0.1	0.1	0.1
Fixed vegetable oils and fats	5.0	7.1	7.6	3.8	4.2	4.9	4.9	5.5	5.2	4.7
Animal or vegetable oils or fats, processed; waxes	0.1	0.1	0.1	0.1	0.1	0.2	0.3	0.3	0.2	0.2
Feeding stuff for animals	13.3	10.7	9.2	11.0	12.8	15.4	15.3	11.7	11.3	12.1
<i>Forestry exports</i>	4.6	4.8	4.1	5.0	6.7	7.6	8.2	7.1	7.0	8.2
Primary (wood and cork)	1.4	1.2	1.1	1.3	2.0	2.2	2.4	2.6	2.7	2.7
Secondary	3.3	3.6	3.1	3.7	4.7	5.4	5.7	4.5	4.3	5.5
<i>Fishery exports</i>	4.9	4.7	5.5	6.3	8.2	6.8	6.8	6.7	8.4	8.3
Fish, fresh, chilled or frozen	1.0	0.8	1.5	1.7	2.3	2.0	2.3	2.8	3.5	3.4
Fish, dried, salted or in brine; smoked fish	-	-	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.2
Crustaceans, fresh, chilled, frozen, salted, etc.	3.6	3.6	3.6	4.0	5.0	4.1	3.7	3.0	3.8	3.8
Fish, crustaceans or molluscs, prepared or preserved	0.3	0.3	0.4	0.5	0.8	0.6	0.7	0.7	0.9	1.0
<i>Total agricultural exports</i>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ECLAC, Agricultural Development Unit, on the basis of information from the ECLAC External Trade Data Bank for Latin America and the Caribbean (BADECEL).

^a Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Uruguay and Venezuela.

ANNEX 2

Latin America (10 countries):^a Traditional agricultural exports, 1983-1992

A. Traditional agricultural exports, millions of dollars										
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
<i>Crop-farming products</i>	11 301	12 523	12 410	11 757	9 417	10 622	10 621	11 036	11 068	10 808
Bananas, fresh or dried	311	332	427	498	504	574	671	845	1 237	1 208
Coffee and coffee substitutes	4 503	5 401	5 270	6 685	4 655	4 631	4 208	3 326	3 458	2 850
Wheat, rice, barley, maize, unmilled	3 083	2 385	2 383	1 344	820	1 060	1 228	1 574	1 255	1 717
Cocoa	632	838	1 021	771	770	708	479	523	420	376
Sugars, sugar preparations and honey	957	893	596	700	664	847	773	1 064	911	1 067
Cotton	433	508	457	229	400	564	724	781	839	412
Oil seeds and oleaginous fruits	790	1 567	1 650	992	1 066	1 561	1 820	2 082	1 773	1 818
Tobacco and tobacco manufactures	593	599	607	539	538	677	718	840	1 175	1 359
<i>Livestock products</i>	1 079	813	770	841	946	1 221	1 109	1 252	998	1 009
Meat of bovine animals, fresh, chilled or frozen	787	532	525	579	644	840	815	934	804	828
Wool and other animal hair (except tops)	293	282	246	261	302	380	294	317	194	181
<i>Animal and vegetable oils, fats, meal and waxes</i>	4 104	4 455	4 005	3 502	3 875	5 558	5 633	5 056	4 909	5 440
Fixed oils and fats of vegetable origin	1 121	1 779	1 809	897	964	1 340	1 375	1 613	1 549	1 525
Feeding stuff for animals	2 983	2 676	2 195	2 604	2 911	4 218	4 258	3 443	3 360	3 915
<i>Forestry products</i>	302	296	253	292	425	511	580	604	631	687
Other wood in the rough or roughly squared	40	40	52	47	67	92	59	97	107	131
Wood, simply worked, and railway sleepers of wood	262	256	200	246	358	419	522	506	523	556
<i>Fishery products</i>	1 033	1 104	1 211	1 367	1 663	1 671	1 675	1 718	2 189	2 302
Fish, fresh, chilled or frozen	235	212	364	413	531	554	648	828	1 051	1 088
Crustaceans, fresh, chilled, frozen, salted, etc.	798	892	847	954	1 132	1 117	1 027	891	1 137	1 214
<i>Total traditional agricultural exports</i>	17 819	19 192	18 649	17 759	16 327	19 582	19 620	19 665	19 794	20 246
<i>Total non-traditional agricultural exports</i>	4 614	5 848	5 188	5 929	6 495	7 793	8 180	9 851	10 050	12 041
<i>Total agricultural exports</i>	22 433	25 040	23 836	23 688	22 822	27 375	27 800	29 516	29 844	32 286
B. Proportion of traditional agricultural exports in total agricultural exports of the region, 1983-1992 (%)										
<i>Crop-farming products</i>	50.4	50.0	52.1	49.6	41.3	38.8	38.2	37.4	37.1	33.5
Bananas, fresh or dried	1.4	1.3	1.8	2.1	2.2	2.1	2.4	2.9	4.1	3.7
Coffee and coffee substitutes	20.1	21.6	22.1	28.2	20.4	16.9	15.1	11.3	11.6	8.8
Wheat, rice, barley, maize, unmilled	13.7	9.5	10.0	5.7	3.6	3.9	4.4	5.3	4.2	5.3
Cocoa	2.8	3.3	4.3	3.3	3.4	2.6	1.7	1.8	1.4	1.2
Sugars, sugar preparations and honey	4.3	3.6	2.5	3.0	2.9	3.1	2.8	3.6	3.1	3.3
Cotton	1.9	2.0	1.9	1.0	1.8	2.1	2.6	2.6	2.8	1.3
Oil seeds and oleaginous fruits	3.5	6.3	6.9	4.2	4.7	5.7	6.5	7.1	5.9	5.6
Tobacco and tobacco manufactures	2.6	2.4	2.5	2.3	2.4	2.5	2.6	2.8	3.9	4.2
<i>Livestock products</i>	4.8	3.2	3.2	3.5	4.1	4.5	4.0	4.2	3.3	3.1
Meat of bovine animals, fresh, chilled or frozen	3.5	2.1	2.2	2.4	2.8	3.1	2.9	3.2	2.7	2.6
Wool and other animal hair (except tops)	1.3	1.1	1.0	1.1	1.3	1.4	1.1	1.1	0.6	0.6

(Continued on next page)

ANNEX 2 (Continued)

B. Proportion of traditional agricultural exports in total agricultural exports of the region, 1983-1992 (%)										
	1983	1984	1985	1986	1987	1988	1989	1990	1991	1992
<i>Animal and vegetable oils, fats, meal and waxes</i>										
Fixed oils and fats of vegetable origin	18.3	17.8	16.8	14.8	17.0	20.3	20.3	17.1	16.4	16.8
Feeding stuff for animals	5.0	7.1	7.6	3.8	4.2	4.9	4.9	5.5	5.2	4.7
	13.3	10.7	9.2	11.0	12.8	15.4	15.3	11.7	11.3	12.1
<i>Forestry products</i>										
Other wood in the rough or roughly squared	1.3	1.2	1.1	1.2	1.9	1.9	2.1	2.0	2.1	2.1
Wood, simply worked, and railway sleepers of wood	0.2	0.2	0.2	0.2	0.3	0.3	0.2	0.3	0.4	0.4
	1.2	1.0	0.8	1.0	1.6	1.5	1.9	1.7	1.8	1.7
<i>Fishery products</i>										
Fish, fresh, chilled or frozen	4.6	4.4	5.1	5.8	7.3	6.1	6.0	5.8	7.3	7.1
Crustaceans, fresh, chilled, frozen, salted, etc.	1.0	0.8	1.5	1.7	2.3	2.0	2.3	2.8	3.5	3.4
	3.6	3.6	3.6	4.0	5.0	4.1	3.7	3.0	3.8	3.8
<i>Total traditional agricultural exports</i>	79.4	76.6	78.2	75.0	71.5	71.5	70.6	66.6	66.3	62.7
<i>Total non-traditional agricultural exports</i>	20.6	23.4	21.8	25.0	28.5	28.5	29.4	33.4	33.7	37.3
<i>Total agricultural exports</i>	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: ECLAC, Agricultural Development Unit, on the basis of information from the ECLAC External Trade Data Bank for Latin America and the Caribbean (BADECEL).

^a Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Mexico, Paraguay, Uruguay and Venezuela.