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Latin American commodity exports

The case of cotton fibre

Alberto Orlandi*

One of the economic activities that has been most seriously affected by the current crisis of the Latin American economy is the production and exportation of commodities.

In the case of cotton, a product which is of such vital importance to some countries of the region, this difficulty has been further aggravated by a structural crisis whose signs had already been evident in recent decades, particularly as a result of the strong competition of synthetic fibres.

In this article, a brief analysis is made of trends in the production, trade and consumption of cotton fibre in the world; this is followed by a review of the factors that have influenced this competition, stressing its implications for Latin America. Later on, a description of the general features of the cotton industry in the region serves as an introduction to a more detailed study of five country cases: Argentina, Paraguay, Mexico, Guatemala and Nicaragua.

Although the five cases are very different in many respects (as regards the importance of cotton in the national economy, the economic agents that are present in cotton production and trading, public policies, etc.), they nevertheless have one thing in common: there has been a process of erosion of the profitability of the cotton industry which has accelerated in recent years and has raised serious doubts regarding the future viability of this crop.

The author then discusses the attempts that have been made, so far not very successfully, to achieve international co-ordination in the area of cotton, and, in conclusion, evaluates briefly the different ways in which the cotton-growing countries of Latin America have responded to the current crisis.

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This article is a summarized version of a broader study (*América Latina y la economía mundial del algodón*) to be published soon.

Introduction

One of the fundamental concepts of Latin American structuralist economics, in its most genuine and original expression,¹ has been that one of the main obstacles to development is the chronic deterioration of the terms of trade of commodity-exporting countries, as the relative prices of their commodities have fallen constantly *vis-à-vis* the prices of imported manufactured goods.

What made it difficult to overcome this situation within the existing scheme of world economic organization was basically a difference in the income-elasticities of demand, which appear to be lower with respect to commodities than with respect to industrial goods.

This was one of the most important reasons for the creation of UNCTAD in the mid-1960s. Thus, strategies regarding commodities and, above all, concerning commodity price stabilization agreements became the axis of international co-operation for development.

This approach was criticized from several angles. Some considered it reductionist, in that many Latin American countries were going into economic spheres that transcended the mere extraction and exportation of raw materials; others felt that it had been overtaken by events, in view of the oil crisis which led to an increase in the relative prices of some commodities.

In practice, although there is no question that the share of commodities in overall Latin American exports has declined, they are still very important, accounting for over 40% in the region as a whole and over 70% when the oil-exporting countries are excluded.

Moreover, the arguments which explain—beyond sharp short-term fluctuations—the chronic deterioration of relative prices are fundamentally valid for most commodities other than oil, which is a very special case.

Thus, in times of crisis such as the present, commodity prices tend to fall more than would

¹In this regard, see R. Prebisch, *The Economic Development of Latin America and its Principal Problems*, United Nations, New York, 1949; ECLA, *Economic Survey of Latin America*, Santiago, 1949; R. Prebisch, *Nueva política comercial para el desarrollo*, Mexico City, Fondo de Cultura Económica, 1964; and R. Prebisch, *Hacia una estrategia global para el desarrollo*, United Nations, New York, 1968. These documents are reproduced in a recent publication entitled *La obra de Prebisch en la CEPAL (Selección de A. Gurrieri)*, Mexico City, Fondo de Cultura Económica, 1982.

seem justified in light of the level of world economic activity, at least as long as there are no direct mechanisms for protecting them.

The economic resources of much of the population of many Latin American countries and a decisive proportion of their capacity for procuring foreign exchange depend on commodities; therefore, it is often impossible to establish measures to restrict supply so as to adjust it to depressive periods (in Guatemala, these proportions are 20% for both cotton and coffee; in Nicaragua, 25% for cotton and 20% for coffee). This is particularly true in the case of agri-

cultural and mining goods, which have a minimum production period of several years, but it is also true in the case of annual crops such as cotton, inasmuch as it would be very difficult to replace them by other crops, at least over the short term.

This article presents a description and a critical evaluation of the cotton industry in Latin America, particularly from the standpoint of its role in exports. Emphasis is placed on those elements serving to throw light on the current situation, which may be defined as one of crisis, both conjunctural and structural.

I

Cotton fibre in the world

More than 65 million bales (a bale weighs 480 pounds) of cotton were produced throughout the world in 1980. This is more than twice the amount produced in 1950 and almost 50% more than the production for 1961. This means that, despite the considerable competition of synthetic fibres, cotton production has grown steadily throughout the postwar period.

At the same time, however, the relative share of the various regions of the world has changed. The United States, which accounted for around one-third of total world production up to the 1960s, has seen its share drop sharply to its present level of 18%. For the drop in the United States' share there has been a corresponding increase, in percentage terms, by the centrally planned economies, particularly China and the Soviet Union, whose shares of total world production now amount to 19% and 22%.

The developing countries, for their part, have expanded their output of cotton at the same rate that world production has increased, thus maintaining a 40% to 45% share throughout the postwar period. The same may be said of Latin America, whose share in total world production has not changed significantly over the last two decades (a trend which was also maintained by Brazil, the main producer of the region). Mexico's share, however, has fallen steadily.

Between 1960 and 1980, the area sown with cotton remained constant at a worldwide level of around 82 million hectares. However, its distribution among the different areas of the world changed in approximately the same way as trends in production. Consequently, increases in production have been due to substantial increases in yields, which in turn are the result of technological innovations relating to the development of new varieties, pest control, mechanized harvesting and the use of fertilizers.

Without taking sides in the controversy which has arisen regarding the ecological damage caused by the excessive use of pesticides and fertilizers and the heavy impact of production costs, which absorb much of the increase in yields, it should be noted that yields have indeed increased remarkably both at the worldwide level (from 316 to 433 kg per hectare between 1960 and 1980) and also in Latin America (from 300 to 409 kg/ha). Some countries, such as Mexico, El Salvador and Guatemala, had some of the highest yields in the world in 1980. This was particularly true of Guatemala, which with 1 238 kg/ha ranked second in the world, after Israel and before Australia and Egypt.

As regards *consumption* of cotton fibre over the last few decades, there has been a definite

increase, in both absolute and relative terms and in both developing and centrally-planned-economy countries. At the beginning of the 1980s, these two areas already accounted for 80% of world consumption (compared with 60% in 1960) while the industrialized countries' share dropped to half during the same period, i.e., from 40% to 20% approximately. In this regard, it is interesting to note that, despite the fact that most of the trade in cotton takes place outside the

markets of the industrialized countries, they are the ones who set the prices.

It is no less important, also, to note the evolution of apparent consumption of cotton in the Chinese People's Republic, which, from a level lower than that of Europe or the United States in 1961, has now reached the point where it is equivalent to around one-fourth of the world total and is thus higher than that of the industrialized countries as a whole (see table 1).

II

Cotton and synthetic fibres

Between 1955 and 1978, world consumption of textile fibres as a whole grew by 3.9% per year on average, while the population grew by 1.9%. Offhand, this would seem to indicate that, even on a per capita basis, the increase in consumption was dramatic.

A breakdown of these figures, however, will show that the increase in consumption of cotton fibre (2.1%) was very similar to the population growth rate, while that of cellulosic artificial fibres was only slightly higher (2.3%); on the other hand, the share of synthetic fibres rose from 5% in 1960 to 35% in 1979.² The average annual increase in consumption of synthetic fibres fell from its extraordinarily high level of 21% between 1960 and 1970 to 9.5% for the period 1970-1978, but although cotton consumption rose significantly in absolute terms, its share of total fibre consumption fell from 68% in 1960 to 48% in 1979.

As might be expected, the fundamental reason for this persistently downward trend may be explained by the evolution of the relationship between prices of natural and synthetic fibres,

which has been particularly favourable to synthetics, especially since the 1970s. Table 2 shows, however, how the combined effect of the increase in oil prices and the drop in cotton prices has caused the situation to change again, from 1977 onwards, at least in the United States domestic market.

It is expected that in future, although this price ratio will continue to be a fundamental variable that must be taken into account, it will be more stable than it has been in the past and that the erosion of the competitiveness of cotton *vis-à-vis* synthetic fibres will be checked.

Even so, taking into account both structural factors (population growth rates, evolution of world demand for textiles, etc.) and elements of a more sectoral nature (increased synthetic fibre production capacity in the centrally planned and developing countries, evolution of relative prices, consumer preferences), the available projections all indicate that the share of cotton in world fibre consumption will still fall, albeit more gradually from its current level (48%) to 42%-45% in 1990.³

²See table 8. Textile fibres may be natural or artificial. The natural ones are plant fibres (cotton, jute, kenaf, sisal, hemp, henequen, etc.), animal fibres (wool, silk) and mineral fibres (asbestos). Artificial fibres are classified as cellulosic (rayon and acetate) or non-cellulosic; the latter include organic fibres (nylon, polyester, polyvinyl, and polyurethane) and inorganic fibres (glass or metal).

³For projections of world cotton consumption, see World Bank, *Price Prospects for Major Primary Commodities*, Washington, January 1980; and US Department of Agriculture, Foreign Agricultural Service, *World Cotton Production and Use: Projections for 1985 and 1990*, Washington, June 1979. See also World Bank, *International Cotton Market Prospects*, Staff Commodity Paper No. 2, Washington, June 1978.

Table 1
 PRODUCTION, CONSUMPTION, EXPORTS AND IMPORTS OF COTTON FIBRE BY MAJOR COUNTRIES AND REGIONS

(Thousands of 480-pound bales)

Region	Production				Consumption				Exports				Imports			
	1961		1980		1961		1980		1961		1980		1961		1980	
	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%	Volume	%
Industrialized countries	14 350	32.3	11 865	18.1	18 924	40.7	13 354	20.3	6 727	39.1	6 401	32.2	10 667	60.4	7 861	39.5
(United States)	14 313	32.2	11 122	17.0	8 463	18.2	5 891	9.0	6 658	38.7	5 926	29.8	...	...	...	...
(Europe)	...	...	...	...	6 887	13.7	3 439	5.2	...	...	...	...	6 378	36.1	4 327	21.8
Developing countries	18 373	41.4	26 681	40.8	13 280	28.5	24 490	37.3	8 642	50.2	9 197	46.2	3 439	19.5	5 734	28.8
(Latin America)	6 029	13.6	7 594	11.6	2 893	6.2	4 720	7.2	3 472	20.2	3 005	15.1	223	1.3	357	1.8
(Brazil)	1 942	4.4	2 820	4.3	1 250	2.7	2 500	3.8	151	0.9	40	...	...	...	...	...
(Mexico)	1 979	4.5	1 595	2.4	400	0.9	760	1.2	347	2.0	820	4.1	...	...	...	...
Countries with centrally planned economies	11 691	26.3	26 797	40.9	14 313	30.8	27 886	42.5	1 851	10.8	4 300	21.6	3 568	20.2	6 579	33.1
(Soviet Union)	7 017	15.8	14 275	21.8	6 199	13.3	9 300	14.2	1 759	10.2	4 300	21.6	...	...	...	...
(China)	4 675	10.5	12 430	19.0	5 795	12.5	15 200	23.2	...	...	...	...	473	2.7	3 000*	15.1
<i>World Total</i>	<i>44 414</i>	<i>100.0</i>	<i>65 450</i>	<i>100.0</i>	<i>46 517</i>	<i>100.0</i>	<i>65 627</i>	<i>100.0</i>	<i>17 220</i>	<i>100.0</i>	<i>19 898</i>	<i>100.0</i>	<i>17 675</i>	<i>100.0</i>	<i>19 881</i>	<i>100.0</i>

Source: International Cotton Advisory Committee.

* Estimates.

Table 2
EVOLUTION OF THE RATIO BETWEEN COTTON FIBRE PRICES AND
POLYESTER PRICES IN THE UNITED STATES
1955-1981

Year	Cotton ^a (US cents per pound)	Polyester ^b (US cents per pound)	Cotton/ polyester (percentages)
1955	40	160	25
1960	39	126	31
1965	31	85	36
1970	31	41	76
1974	65	46	141
1976	76	53	143
1977	54	57	95
1979	69	60	115
1980	88	74	119
1981 ^c	89	85	105

Sources: US Department of Agriculture, *Cotton and wool: outlook and situation*.

^a Strict Middling 1-1/16" at mill in United States.

^b "1.5. denier" FOB United States mills.

^c January-July.

III

The international cotton fibre trade

The proportion of world cotton production that enters the circuits of international trade has fallen over the last two decades. Between 1961 and 1980, it fell from 59% to approximately 30%; of particular importance in this regard is the fact that countries such as Brazil and Peru and in particular China have assigned a growing proportion of their production (100% in the cases of Brazil and China) to the domestic market.

Since the absolute quantities of cotton exported throughout the world have grown at very slow rates (see table 1), most of the growth of textile demand has been in the trade of yarns and made-up articles. Suffice it to say that, in terms of value, the latter category represented less than

half of the total trade in fibre in 1961, whereas the opposite is now true: trade in made-up articles is more than double the world trade in fibres.

The export of textiles and made-up articles is one of the areas in which the success of the recently industrialized countries is most evident. This explains why, in 1980, the volume of cotton fibre imported by Hong Kong and Korea alone was equivalent to half that of all Western Europe.

As regards Latin America, its share in world cotton fibre exports, after having risen to 25%-30% in the late 1960s, fell both in absolute and in relative terms to the current level of three million bales, which is equivalent to only 15% of total world exports.

IV

Trends in prices

The price series presented herein were taken from the magazine *Cotton Outlook*, published in Liverpool. These figures, which are recognized throughout the world and accepted as reliable, refer to a grade with a high unit value (extra-long Egyptian cotton), one of medium value (Mexican cotton) and, finally, one with a rather low unit value (United States cotton) (see table 3).

The price series have been deflated by the CIF price index of exports of manufactures from the developed countries. These series make it possible to appreciate the problems created by the heavy fluctuations that have occurred in current and constant values.

At the same time, a long-term trend towards lower prices is to be observed. This was accentuated in 1981-1982 and has given rise to doubts about the prospects of cotton as an export crop capable of generating an appreciable amount of foreign exchange, especially in the Latin American countries.

Because there is a close relationship between export and domestic prices and because, in general, there are no price guarantee mechanisms, the erratic behaviour and the chronically low level of cotton prices have seriously reduced income from cotton production, to the extent that in many cases, when this has been possible, it has been replaced by other crops.

V

General characteristics of the cotton industry in Latin America

The organization of cotton production and marketing varies greatly from one area of the world to another, depending on how land ownership, production, credit, and domestic and external marketing systems are organized.

It appears that the increasing cost of inputs⁴ has brought about a concentration in the structure of ownership of cotton land at the world level. This is true of both the United States and most of the developing countries. In Latin America, over the last 20 years, the trend has been towards an increase in the average size of cotton production units, particularly in Mexico and Central America, where the decrease in the profitability of marginal land has apparently led to the expulsion of a large number of cotton grow-

ers. In addition, these changes may also be due in part to the availability of alternative food or non-food crops.⁵

In addition to the changes that have taken place over time, there are still traditional differences in the average size of cotton production units in the different countries. In Central America, this indicator ranges from a minimum of 24.5 ha in Costa Rica (1980) to a maximum of 439 ha in Guatemala (also 1980).⁶ These averages may, of course, conceal very different situations at the two extremes of the statistical sample. Thus, for example, although in 1978 the average size of a cotton farm in El Salvador was just over

⁴In this regard, see International Cotton Advisory Committee, *Survey of Costs of Production of Raw Cotton*, Washington, October 1981.

⁵In this regard, see ICAC, *Survey of Crops Competing with Cotton*, Washington, November 1979.

⁶See Permanent Secretariat of the General Treaty on Central American Economic Integration, *Situación actual y perspectivas del algodón y la semilla de algodón*, Guatemala, 1980.

Table 3
EVOLUTION OF COTTON PRICES

(US cents per kg)

Year	United States ^a		Egyptian ^b		Mexican ^c	
	Current dollars	Constant dollars at 1980 prices	Current dollars	Constant dollars at 1980 prices	Current dollars	Constant dollars at 1980 prices
1950	92.2	447.6		79.8	387.4	
1951	101.4	412.2	247.8	1 007.3	91.9	376.6
1952	95.5	379.0	187.8	745.2	95.2	377.8
1953	80.0	333.3	116.0	483.3	83.1	346.3
1954	82.9	351.3	129.0	546.6	85.8	363.6
1955	82.2	342.5	128.5	535.4	81.8	340.8
1956	64.4	261.8	161.6	656.9	74.3	302.0
1957	63.5	247.1	137.6	535.4	74.1	288.3
1958	67.5	249.1	93.7	345.8	70.8	261.3
1959	58.2	225.6	79.8	309.3	62.5	242.3
1960	59.7	226.1	108.0	409.1	65.5	248.1
1961	63.5	239.6	99.4	375.1	67.2	253.6
1962	63.1	240.8	92.4	352.7	65.0	248.1
1963	60.4	228.8	92.2	349.2	64.6	244.7
1964	59.5	222.0	108.0	403.0	65.0	242.5
1965	59.1	214.9	112.9	410.6	63.5	230.9
1966	56.4	200.7	110.2	392.2	62.2	221.4
1967	56.9	199.7	117.5	412.3	67.7	237.5
1968	62.2	233.0	129.4	484.6	68.6	256.9
1969	56.2	209.7	139.3	519.8	62.6	233.6
1970	60.4	203.4	138.0	464.7	67.7	228.0
1971	71.9	224.0	136.0	423.7	78.3	243.9
1972	75.8	214.7	143.5	406.5	82.7	234.3
1973	124.3	295.3	223.8	531.6	139.1	330.4
1974	130.1	249.2	338.6	648.7	145.9	279.5
1975	115.5	193.1	285.3	477.1	123.2	206.0
1976	162.0	266.5	300.9	494.9	174.8	287.5
1977	145.0	219.7	333.4	505.2	162.9	246.8
1978	138.9	177.9	295.6	378.5	160.7	205.8
1979	149.5	167.0	338.3	378.0	170.7	190.7
1980	187.2	187.2	337.9	337.9	207.1	207.1
1981 January-June	194.8		345.8		205.0	

Source: World Bank, *Commodity Trade and Price Trends*, Washington, 1981.

^a CIF Liverpool. For the period 1950-1956, prices are for middling 15/16" cotton; afterwards, for 1" middling cotton.

^b CIF Liverpool. For the period 1951-1962, prices are for Karnak fully good; after 1963, Menouth fully good.

^c St. middling 1-1/16" CIF Northern Europe. Before 1974, CIF Liverpool; 1955-1959, St. middling 1-1/2".

30 hectares, 27 farms (out of a total of 3 275) controlled one-fourth of all production, while in Guatemala, in 1979, 40 producers controlled slightly less than half the cultivated area.

As regards *forms of ownership*, private ownership is predominant in Latin America, with the notable exceptions of Nicaragua (where 15% of cotton land is nationalized), Mexico (where 50% consists of *ejidos*) and Peru (which has a strong co-operative sector).

Credit systems also vary very considerably, ranging from the cases of Brazil and Mexico (where more than 50% of production is financed with public credit) to the other extreme, in Guatemala (where slightly over 10% of production costs are financed by national, public and private banks).

Domestic marketing, another fundamental aspect of the cotton industry, has also followed very different patterns throughout the world and in Latin America.

In some countries of the region, the cotton market is regulated basically by the free play of supply and demand, as is the case in Guatemala and Paraguay. At the other extreme is Nicaragua, where cotton marketing has become a State monopoly. In between these cases are countries such as Peru and Ecuador, where price-support mechanisms are applied; or others, where co-operative marketing structures play an important role (Argentina, Brazil, El Salvador and Mexico), while finally there are countries where the State undertakes to purchase part of the crop (Peru and Mexico).

Another fundamental difference lies in the systems used in the different countries for *ginning operations*.⁷ There has been a trend towards concentration of ginning plants, and this has created idle capacity, especially in countries with a long-standing cotton-growing tradition.

⁷Ginning is the mechanical separation of fibre from the seeds. The cotton fibre is made into bales ready for export, while the seed is used in the preparation of edible oils.

In addition, whereas in some cases ginning operations involve public capital (Mexico, Nicaragua, Peru) or co-operatives (Argentina, Brazil, Mexico, El Salvador), in others (Guatemala and Paraguay) this process is a private-enterprise activity linked either backwards (to the sectors of production) or forwards (to the marketing sectors).

Finally, the differences with respect to the systems used for *external marketing* are also significant. Exporting enterprises of foreign origin (some of the most active in Latin America are Volkart, Esteve, Cargill, Continental, McFadden, Itoh and Bunge and Born) seem to be less important now at the global level, but they are still predominant in countries such as Paraguay and Mexico, or they at least maintain a strong presence, as in Argentina and Guatemala. In other situations, external marketing structures linked either to national private enterprise (Guatemala, Mexico), to national cotton co-operatives (Argentina, El Salvador) or the public sector (Peru, Mexico and Nicaragua) play a role whose importance varies from case to case.

In addition to playing a role as an exporting agent *per se*, the public sector indirectly influences cotton exports by establishing the legal framework within which these activities are carried out.

Thus, for example, Brazil so encouraged the export of yarns and made-up articles that it practically disappeared from the international cotton fibre market. Other countries have either refused to subsidize cotton fibre or in some cases have even imposed export taxes on it (see table 4).

Finally, all producer countries apply legal measures to protect local industry from imports of fibre. The few exceptions to this rule refer to special grades (extra-long staple for the textile industry in Argentina, Brazil or Mexico) or special situations (e.g., the quota of 20 000 tons granted by Argentina to Paraguay).

Table 4
SUMMARY OF LEGISLATION APPLICABLE TO THE EXPORT OF
COTTON IN LATIN AMERICA

Country	Taxes or obstacles to exports ^a	Export subsidies
Argentina	None	Special reimbursement (7%)
Colombia	None	CAT (15% of value)
Guatemala	0.075 quetzal/lb (1982)	None
Mexico	Mex. \$ 14/kg (1982)	None
Nicaragua	None	None
Paraguay	Between 4 and 5% (1982) <i>ad valorem</i>	Freedom to dispose of 50% of foreign exchange earnings
Peru	US\$ 18.48 per 46-kg quintal (1980/1981)	None

Source: ICAC, USDA and field surveys.

^a Legislation specifies in what currency the tax is to be paid and the year of application. In the case of variable taxes, the applicable level is based on a price of US\$ 0.70/lb.

VI

Individual country cases

1. Argentina

We shall begin our analysis of specific situations of fibre-exporting countries⁶ with Argentina, because it is a country in which cotton exports play a basically subsidiary role, inasmuch as domestic production is mainly directed at supplying the domestic market.

With total production estimated at 620 000 bales for the 1981/1982 season, Argentina ranks third among the cotton-producing countries of Latin America. Thus, it has managed to halt the gradual deterioration which had been taking place in its cotton production.

Both the volume of production and the volume of exports have fluctuated greatly, according to the ups and downs of the national textile industry, of international prices and, fun-

damentally, of the exchange situation. Exports, for example, have ranged from zero, or near zero, up to a maximum of over half a million bales during the 1979/1980 crop season (see table 5).

Although cotton plays a relatively minor role in Argentine agriculture as a whole, this is not the case in the provinces of Santa Fe and, in particular, El Chaco, where 23% and 58% respectively of national production are concentrated. In El Chaco, during the period 1974-1979, cotton represented between 45% and 65% of the agricultural GDP and between 10% and 15% of the total GDP.

Ownership of cotton farms is very scattered in Argentina and this has held back the modernization of the sector. According to figures referring only to the province of El Chaco, 70% of the cotton farmers had holdings of less than 20 hectares and 93% had less than 50 hectares in 1974. It is considered that a modern production unit should be at least 50 hectares in size.

⁶Brazil and Colombia have deliberately been excluded, as they mainly export textiles and made-up articles. The study of their cases would require a very different approach which would go beyond the scope of this article.

Table 5
 ARGENTINA: BASIC STATISTICS ON AREA SOWN, PRODUCTION, YIELD, DOMESTIC
 CONSUMPTION, EXPORTS AND IMPORTS OF COTTON FIBRE,
 1950/1951 TO 1980/1981

Year ^a	Area sown (thousands of hectares)	Production (thousands of bales)	Consumption (thousands of bales)	Exports (thousands of bales)	Imports (thousands of bales)	Yield (kg/ha)
1950/1951	461	471	445	274	12	222
1955/1956	533	563	523	2	10	230
1960/1961	418	569	502	66	29	296
1965/1966	443	530	515	34	71	260
1970/1971	367	385	480	209	37	229
1975/1976	433	611	533	393	15	307
1976/1977	543	740	540	348	12	247
1977/1978	621	1 015	480	427	38	356
1978/1979	702	800	505	321	37	248
1979/1980	585	670	470	543	22	247
1980/1981	343	380	380	157	60	241

Source: National Rural Economics and Sociology Service of the Ministry of Agriculture; International Cotton Advisory Committee.

^a Cotton-growing years, from 1 August to 31 July.

The predominance of small farms has led to the presence of intermediaries (*acopiadores*) between producers and gin operators, except in those cases where geographical proximity or a particular spirit of initiative on the part of either the producer or the processor made it possible to avoid this.

Thus, between 50% and 55% of production is channelled through *acopiadores*, while the rest is distributed between producer co-operatives⁹ (between 30% and 40%) and direct sales (the remaining 5% to 10%).

The aforementioned share of co-operatives in marketing is the result of a similar level of participation in ginning operations. The remainder is carried out by commercial companies which purchase raw cotton either from intermediaries or directly from farmers.

The cotton sector of Argentina is now going

through a serious crisis, largely because of the convergence of three highly negative factors: a) the international situation, which has caused cotton prices to fall; b) the heavy overvaluation of the Argentine currency from 1977 to 1981, which depressed the prices received at that time by farmers, and c) the extremely high level of bank interest rates during those same years. As a result of this situation, which is similar to that affecting other peripheral crops in the country, the cumulative debt backlog of the cotton sector of El Chaco in February 1982 was equivalent, according to official estimates, to the value of two complete harvests.¹⁰

The gradual devaluation of the Argentine peso which took place from 1981 onwards, as well as several other measures specifically directed at the cotton sector (special reimbursement arrangements for exports at a rate 7% higher than the official exchange rate¹¹ and the

⁹Most of these co-operatives were created during the 1930s and 1940s. They are currently going through a very critical stage, particularly because they are heavily indebted. The co-operatives only take part in marketing and ginning operations, with agricultural production as such remaining in private hands.

¹⁰See Ministerio de Economía de la Provincia del Chaco, *Análisis de la situación: Sector primario*, Resistencia, March 1982.

¹¹This measure replaced a previous one which had the opposite effect and which, along with other minor taxes, represented a levy of approximately 7.5% on cotton exports.

allocation of a special fund of 270 billion pesos to cover payments made to cotton farmers according to the area sown), undoubtedly helped alleviate the producers' situation. Nevertheless, according to official estimates, even with a government contribution of 900 000 pesos per hectare, receipts for the crop would only cover direct operating costs. As may be seen in table 6, even with yields of 1 300 kg per hectare of raw cotton—i.e., 430 kg/ha of fibre—the crop would bring losses if total production costs were considered; thus, far from being alleviated, the indebtedness situation has probably got worse.¹²

Let us now look beyond the current difficulties, however, and turn our attention to external marketing activities.

As has been mentioned above, the total volume of cotton exports has fluctuated sharply from one year to another, though always maintaining a secondary position with respect to production for the national textile industry. In any event appreciable quantities have been freed for export, and this activity brought in annual for-

eign exchange income of over US\$ 100 million on average for the years 1977-1980.

When the costs of ginning, freight, insurance and financial and other charges are deducted, and the exchange rate of the moment is taken into account, international prices also determine domestic prices.

Shipments are concentrated in the post-harvest months, i.e., between April and August, and are generally made by traders representing the large multinational companies (Bunge and Born, Cargill, Esteve, Cotton Roster) which have offices in Buenos Aires.

So far, efforts to use other channels for exports have not succeeded; among other alternatives, consideration has been given to the possibility of sending Argentine fibre to the Asian countries via the Chilean port of Antofagasta.¹³ Asia—particularly China, Taiwan, Japan and Hong Kong—currently receives more than 70% of Argentine cotton fibre exports, whereas in the late 1960s its share was not as high as that of the European countries.

In brief, the situation in Argentina is as follows: i) cotton exports play a secondary role with respect to domestic consumption; ii) the sector is going through a serious crisis, which gives rise to

¹²Of particular importance is the impact of labour costs, which may amount to 40% of total costs. In addition, little progress has been made in the process of mechanization, among other things because of the small average size of holdings. It is important, however, to bear in mind that this was the situation in mid-1982; the effect of any measures that may have been taken after that date is not yet known.

¹³There is a currently very under-utilized railway to this port.

Table 6
ARGENTINA: ESTIMATED PROFITABILITY PER HECTARE OF COTTON FOR
SEASON 1981/1982, FOR DIFFERENT YIELD LEVELS

(1 000 kg)	Yield (raw cotton)		
	1 000 kg/ha	1 200 kg/ha	1 300 kg/ha
Total cost	5 819 553	5 062 252	4 770 953
Operating costs	3 296 814	2 952 351	2 819 866
Current price	2 977 500	3 573 000	3 870 350
Current price plus fiscal contribution	3 877 500	4 473 000	4 770 350
Current price less total costs	-2 842 053	-2 246 553	-1 948 803
Current price less operating costs	- 319 314	276 186	573 936
Current price less total costs, plus fiscal contribution	-1 942 053	-1 346 553	-1 048 803
Current price less operating costs, plus fiscal contribution	580 686	1 176 186	1 473 936

Source: Ministry of the Economy, El Chaco Province.

doubts about the viability of the crop over the medium and long terms, and iii) this situation, which is common to the country's other peripheral crops as well, can only be solved if the public sector, considering the enormous social significance of the crop in the provinces concerned, intensifies support measures.

2. Paraguay

The cotton situation in Paraguay is very different from that of Argentina. In Paraguay, cotton production grew very rapidly during the 1970s and this commodity became the country's major ex-

port, with a share of between 30% and 40%, i.e., the highest proportion of any Latin American country and one of the highest in the world.

As is shown in table 7, this increase was partly due to technical causes (the introduction of high-yield varieties, the use of modern inputs, etc.) and partly to what may be called social causes (increased ginning capacity, with the resulting breakdown of the former ginning "cartel"; increased monetarization of the rural economy, with the resulting increase in the value of cotton as a cash crop; introduction of new economic agents, especially new immigrants).

Table 7

PARAGUAY: BASIC STATISTICS ON AREA SOWN, PRODUCTION, YIELD, DOMESTIC CONSUMPTION, EXPORTS AND IMPORTS OF COTTON, 1965-1981

Year	Area sown (thousands of hectares)	Production (thousands of bales)	Yield (kg/ha)	Domestic consumption	Exports (thousands of bales)
1965	56.7	63.8	245		49.6
1970	46.0	60.6	287		51.5
1971	33.2	26.8	176		13.3
1972	57.2	81.0	308		34.9
1973	81.1	130.6	351		85.4
1974	93.2	137.3	321		80.2
1975	100.0	152.5	332		121.8
1976	109.0	164.6	326		149.9
1977	200.2	348.1	378		270.1
1978	284.9	434.4	332		393.1
1979	312.5	359.1	250		352.2
1980	259.5	348.3	292		346.1
1981	302.9	484.9	348		416.0

Source: Ministry of Agriculture.

In terms of area sown, cotton is the most important crop of the country and has alternated in first place with maize. In geographical terms, the distribution of cotton production throughout the various regions is almost entirely in line with the density of the rural population. In terms of land tenure, it is estimated that there are around 80 000 cotton holdings in the country, with an average area of approximately four hectares.

Producers operate individually and sell their

crops to intermediaries (*acopiadores*) or subintermediaries (truck owners or local agents of medium-sized and large *acopiadores*). The *acopiadores* also often act as *de facto* representatives (although they do enjoy a certain degree of commercial and financial autonomy) of domestic or foreign gin operators or exporters.

As regards the internal organization of production and marketing, free enterprise structures are predominant. The public sector and co-operatives play only a minor role.

Moreover, the *acopiador* plays a very important role in Paraguayan cotton agriculture, often going beyond the strictly economic sphere. Producers are very dependent on *acopiadores*, who provide financing arrangements (personal loans, occasional assistance) on a purely informal basis, and who are perceived by the farmers as being the personification, at the local level, of the political authorities, regardless of whether or not the *acopiador* is formally invested with such authority by virtue of holding a post in the public administration or in the dominant party.

It is estimated that *acopiadores* obtain a net margin of between 5% and 15% of the FOB export price. This is an unusually high proportion compared with the rest of Latin America.

As has been mentioned above, co-operative structures are very deficient in Paraguay. There is a National Co-operative Centre, which offers credit and ginning facilities, but it controls no more than 1% of national production. However, the Ministry of Agriculture has tried to promote the creation of Producer Committees which, although lacking legal status, are organized to carry out joint sales of cotton, purchasing of inputs, etc. Another notable exception is that of the co-operatives run by the Mennonite communities in the north of the country.¹⁴

As regards the ginning stage, it is important to note that, contrary to what happens across the border in Argentina, this operation appears to be more closely linked to the final stages of the marketing process (i.e., sales to domestic industry or for export) than to production or internal marketing. Given the low level of domestic consumption (approximately 5% of total production), there is a very close *de facto* link between gin operators and exporters which is not evident in other Latin American countries; in these circumstances gin operators/exporters account for 10% to 20% of the FOB export price.

¹⁴These communities are made up of followers of a Protestant religious group founded in Germany in the nineteenth century. Since 1930, when the first groups of Mennonites arrived in Paraguay, they have grown cotton together with other products (dairy products, livestock, vegetables and peanuts). These groups account for around 2% of the total production of the country and are exceptional not only because of their co-operatives, but also because they strongly favour mechanization and 25% of their total harvesting is mechanized.

Almost all ginning-exporting enterprises are nationally owned, with the notable exceptions of CAPSA (*Compañía Algodonera Paraguaya S.A.*), which belongs to *Compañía Transnacional Continental*, and *Algodonera Guaraní*, which belongs to Esteve. These two firms control around one-third of ginning operations and exports. Ginning companies are also frequently involved in the oil industry, which uses cottonseed as its main raw material.

It is also worth mentioning the tax burden which, through a series of complicated taxes,¹⁵ accounts for between 4% and 5% of the FOB Asunción price. The effect of these taxes is limited by the fact that they are calculated on the basis of appraisals (*valores de aforo*) which have not been changed since 1976, and therefore, even with the current depressed prices, only represent around one-third of the FOB prices actually obtained.

Moreover, to palliate the negative effect of these anachronistic export taxes, exporters are allowed, under certain conditions, to dispose freely of 50% of the foreign exchange they obtain.¹⁶

Table 8 shows the different stages from production to hypothetical delivery at the port of Liverpool. A careful look at these figures will show to what extent Paraguay suffers the direct economic consequences of its being a landlocked country. Freight costs from Asunción to Buenos Aires, plus related expenses (lines 4, 5 and 6) account for more than 10% of the final CIF price. If to that is added the cost of freight from Buenos Aires to Liverpool, the final share will amount to 20%, which obviously increases the difference between the CIF Europe price and the FOB Asunción price.¹⁷

¹⁵These taxes vary according to the quality of the cotton exported. They consist of exchange taxes, customs duties, additional customs taxes, substitute income tax, official paper and stamps, port fees, fees for sanitary inspection and fees of the Cotton and Tobacco Control Bureau. Bank commissions and transport and dispatch costs, as well as dispatchers' commissions, must also be taken into account. The estimate of 4-5% of FOB value refers to the total amount of all these taxes plus export expenses.

¹⁶In April 1982, this was equivalent to a subsidy of around 15% of the FOB export price.

¹⁷In the cases of the other countries, this share rarely amounts to 8%.

Table 8
PARAGUAY: MAKEUP OF EXPORT COTTON PRICE, MARCH 1982

1.	CIF Liverpool price	US\$ ct./lb	61.8
2.	(Equivalent in US\$/ton)	US\$/ton	1 361.64
3.	Freight - Buenos Aires/Liverpool	US\$/ton	91.48
4.	River freight - Asunción/Buenos Aires	US\$/ton	32.55
5.	Transfer costs in Buenos Aires	US\$/ton	8.00
6.	Other costs (insurance, interest, commission)	US\$/ton	105.61
7.	FOB Asunción price	US\$ ct./lb	51.00
8.	(Equivalent in US\$/ton)	US\$/ton	1 124.00
9.	Exporter's income: 50% at 126 guaraníes	G/ton	70 834.76
10.	Exporter's income: 50% at 160 guaraníes	G/ton	89 948.90
11.	Total income	G/ton	160 783.66
12.	Discount for taxes, fees and export costs	G/ton	11 579.00
13.	Cost ex factory (i+L-M)	G/ton	149 204.66
14.	Costs and profits of ginning plant	G/ton	35 457.00
15.	Cost of raw material at ginning plant	G/ton	113 747.66
16.	(Equivalent per kg)	G/kg	113.75
17.	Cost of raw cotton at ginning plant (deducting value of seed and estimating yield at 34%)	G/kg	38.68
18.	Value of seed and linters (per kg of raw cotton)	G/kg	7.10
19.	Actual cost of raw cotton at factory	G/kg	45.78
20.	Tax, 1.5%	G/kg	0.69
21.	Transport, storage, handling and other costs	G/kg	2.81
22.	Discounts for humidity, quality, purity, etc.	G/kg	0.50
23.	Approximate margin of <i>acopiador</i>	G/kg	2.00
24.	Producer's price	G/kg	39.78

Source: Author's calculations based on data supplied by the Ministry of Industry and Trade.

Note: It is important not to be misled by the conversion from dollars to guaraníes (lines 8 and 9) or from tons to kilogrammes (lines 15 and 16).

Items 9 and 10 represent the two components of the exporter's gross income (depending on whether or not he is free to dispose of foreign exchange received), which is reflected on line 11. The cost of fibre leaving the ginning plant (line 13) is obtained by deducting taxes, fees and costs (line 12).

Line 14 shows the gross margin obtained by the processor-exporter, which, as may be seen, accounts for more than 20% of the FOB Asunción price. A preliminary estimate shows half this figure to be attributable to fixed and variable costs and the other half to profits. The remainder represents the basic cost of the fibre (not counting operating costs), which is reflected in lines 15 and 16 and is converted to the cost of raw cotton (line 17) by applying a conversion rate (see table 2) of 34%.

This value, plus the selling price of seed and

linters¹⁸ (line 18), gives the cost of raw cotton at the ginning plant. This is reflected on line 19. To obtain a fair market price for the product, it would still be necessary to deduct the ginning tax, transport, storage, classification and other costs, grade discounts and the approximate margin of the *acopiador*¹⁹ (items 20, 21, 22 and 23). The producer's price thus established (last line) amounts to 24.7% of the FOB export price, i.e., 20% of the final CIF price at European ports.

According to data compiled by the Central Bank of Paraguay,²⁰ cotton exports from Para-

¹⁸These products are residues of the ginning operation.

¹⁹These figures do not take into account the possibility of further sub-intermediaries being involved.

²⁰Central Bank of Paraguay, Department of Economic Studies, *Boletín Estadístico*, monthly publication.

guay go to different destinations from those of other Latin American countries, inasmuch as the share of Asian countries is much lower (only 10%), while sales to European countries are still large (over 75%).

As in the rest of Latin America, the situation with respect to cotton in Paraguay is not free of problems. It is our impression, however, that even though cotton production began relatively late, it is strongly entrenched in the economic and social life of the country and that further modernization of agricultural and commercial practices must necessarily be accompanied by improvement of conditions on the international market if the crop is to be made fully profitable.

3. Mexico

With a production of 1 375 000 bales in 1981, Mexico was the second largest cotton producer of Latin America, next to Brazil, and ranked ninth worldwide. During that same year, it exported 675 000 bales, thus consolidating its position as the largest exporter of the region.

Cotton has been grown in Mexico since the pre-Columbian period. It was traditionally

grown in the tropical areas, without irrigation, and then moved north (Sonora, Sinaloa, Baja California and La Laguna), as irrigation techniques developed in the United States were introduced. At present, 90% of Mexican cotton production is concentrated in the north of the country.

Cotton-growing boomed during the period 1953-1958, when 925 000 hectares were harvested and 435 000 tons of fibre were produced. Production then declined to the current level of 375 000 hectares and between 320 000 and 350 000 tons (see table 9).

Parallel to this, the share of cotton in total exports fell from around 25% in 1955 to the present figure of less than 2%.

In general terms, the role of cotton in the country's economy is similar in some ways to its role in Argentina. Production levels have tended to stagnate, the domestic textile industry is given priority over export activities, and the share of cotton in total exports is relatively low. Also as in Argentina, this apparent decline in the importance of cotton within the national economy contrasts with its great importance to the regional economies where it is concentrated, i.e., El Chaco

Table 9
MEXICO: AREA SOWN, PRODUCTION, YIELD AND DOMESTIC CONSUMPTION OF
COTTON, 1929-1981

Year or yearly average	Area sown (thousands of hectares)	Production (thousands of tons)	Yield (kg/ha)	Domestic consumption (percentage of total production)
1929	199	58	268	...
1935-1940	287	71	250	...
1940-1946	362	99	274	...
1947-1952	619	206	328	...
1953-1958	925	434	465	26.6
1959-1964	815	481	591	24.9
1965-1970	638	486	772	33.9
1971-1976	408	360	895	51.6
1977	420	418	997	56.4
1978	350	366	1 048	47.2
1979	377	356	940	46.1
1980	372	329	883	46.1
1981	375	348	980	52.4

Source: ECLA, *Monografía del algodón en México* (P.P.A/21/01), Mexico, 1978, and United States Department of Agriculture.

and Santa Fe, in Argentina, and the north and northwest, in Mexico.

An analysis of the social structures of cotton production shows the fundamental significance, as in the rest of Mexican agriculture, of the *ejido* system, i.e., the unique way in which agricultural co-operativism has been practiced in this country since the agrarian revolution.

While the *ejido* sector controls slightly less than half of both production and area sown, it receives most of the considerable resources (approximately 8 billion pesos) which the public sector, through the National Rural Credit Bank, has channelled to cotton producers.

Financing terms are favourable (rates lower than market rates, with ample opportunity for contracting credit insurance) and it may therefore be said that the strategy for supporting the cotton sector has been carried out through credit financing. In recent years, however, as policy has begun to be aimed at providing more massive support for the food sector, cotton producers have been faced with a situation in which they are at a relative disadvantage compared with other producers.

Also similar to the case of Argentina was the fact that the overvaluation of the national currency seriously eroded the profitability of cotton growing in 1981 and up to mid-1982, when devaluation took place.²¹

Since in general there are no guaranteed or support prices for cotton, domestic prices follow the trend of international prices. The product is usually sold through co-operatives or, in the case of larger holdings, by the individual producers themselves.

In very exceptional cases, the Federal Government intervenes, through ALGOCOMEX (*Algodonera Comercial Mexicana*, a public enterprise which normally operates on an equal footing with private firms), to protect producers, making massive purchases at prices higher than those prevailing on the market. This is what happened in 1974, when Mexico had a very large harvest (2 230 000 bales), which in turn was a result of the exceptionally high prices obtained during the previous season, when the government estab-

²¹At the beginning of 1982, for example, domestic production costs were higher than international prices.

lished an intervention price of 500 pesos per 100 pounds (i.e., 40 US cents per pound), by virtue of which ALGOCOMEX purchased 45% of the crop, as compared with the usual 20% to 25%.

Also as in the case of Argentina, ginning is in some respects a collateral activity usually associated with the phases of production (ginning plants are owned either by co-operatives or by individuals) or of marketing.

In 1971, 21% of the installed ginning capacity belonged to co-operatives, 8% to the public sector and the remaining 71% was in the hands of large producers or commercial firms.²² This situation now seems to have changed in favour of co-operatives and the public sector.

It should also be noted that there is a State ginning tax of between 1% and 4% which can be financed by the Federal Government.

In Mexico there are a dozen large marketing firms which control around 80% of total cotton sales, for both the domestic and the export markets, and which also own a large part of the installed ginning capacity. Nine of these, representing almost 50% of total sales, are transnational (Esteve, Volkart, Hoenberg, Itoh, Allenberg, McFadden, Toyoshima and Anderson Clayton, in order of importance); two are private national firms (Longoria and *Algodones del Pacifico*) and one is public (ALGOCOMEX).²³

As might be expected, the transnational corporations are much more involved in foreign sales (69% in 1980) than in domestic sales (31%), while the opposite is true of the private national firms (13% compared with 40%) and ALGOCOMEX (18% compared with 29%).²⁴

During the 1930s, 1940s and 1950s, the local processing of raw materials in general, and of cotton in particular, became extremely important because of the import-substitution process that was taking place in Mexico. Thus fibre consumption increased, in both absolute and relative terms. During the 1960s, import substitution in the cotton textile industry practically stagnated,

²²See ECLA, *Monografía del algodón en México* (P.P.A/21/01), Mexico City, 1978.

²³Along with ENAL of Nicaragua and ENCI of Peru, ALGOCOMEX, is one of the few public cotton-marketing enterprises in Latin America.

²⁴See ECLA, *The Mexican cotton industry and the transnational cotton-marketing oligopoly*, Santiago, Chile, 1982.

and this was the main reason for the loss of dynamism of domestic demand for cotton.

A second and scarcely less important factor was the rapid growth of synthetic fibre production in Mexico. It should be noted that both the availability of oil resources and the presence in Mexico of large petrochemical complexes, both domestic and foreign, undoubtedly accelerated this process. Thus, by 1979 consumption of synthetic fibre was higher than that of cotton, and indeed, the trend was more pronounced in Mexico than at the world level (see table 10).

Table 10
MEXICO: DEMAND FOR NATURAL
AND SYNTHETIC FIBRES,
1950-1979

(Percentages of total demand)^a

	1950	1960	1970	1979
Cotton	78.5	78.5	68.3	40.9
Wool	6.5	5.4	3.6	1.3
Cellulosic fibres	14.9	14.1	11.4	4.6
Synthetic fibres	10.8	2.3	16.6	53.1

Source: ECLA, *The Mexican cotton industry...*, *op. cit.*

^a Including imports.

The share of synthetic fibres in total textile demand is much higher in Mexico than in any other developing country²⁵ or even in the developed countries, where this indicator was between 30% and 40% at the end of the 1970s. The only consumption pattern similar to that of Mexico appears to be that of the United States, where in the late 1970s the share of synthetic fibres in total textile consumption was very similar to that of Mexico, i.e., 50%.²⁶

²⁵In 1979, this figure was 55% for Mexico, while for other countries it was as follows: Argentina, 19%; Venezuela, 33%; Brazil, 32%; Egypt, 18%; Colombia, 22%, and Peru, 29%.

²⁶In absolute figures, of course, per capita consumption of synthetic fibres was higher in the industrialized countries (between 4.5 and 9 kg per year in 1979, with the exception of the United States, where the indicator reached 15.4 kg) than in Mexico (3.4 kg). In the other developing countries, however, this figure was only around 0.8-1.4 kg per year.

Returning to the Mexican cotton industry proper, we now only need to analyse the situation with respect to exports.

In the first place, there is a flat-rate export tax of 1.28 peso per kg (or 2 US cents per pound) on fibre exported.

Also, in special cases, such as during the price bonanza of the 1973/1974 season, the Government requires exporters to register and to obtain an export license before they are allowed to sell abroad. The purpose of this measure is to ensure an adequate domestic supply.

As regards the destination of exports, sales are now highly concentrated in the Far East, which accounted for 80% in 1977 and 1978. In this regard, it is interesting to note that sales to Japan are nothing new for Mexico; the fact that Japanese trading firms set up offices in Mexico in the early postwar years has enhanced sales to that country.

Finally, in addition to fibre, Mexico also exports cotton yarn and fabrics, which add about 20% on top of the value of cotton fibre exports.

The situation of the cotton industry in Mexico may be summarized as follows: i) as in the case of Argentina, cotton exports are secondary to sales to the domestic textile industry; ii) even in the domestic textile industry, cotton fibre has to a great extent given way to synthetic fibres; iii) consequently, there is a structural crisis in the sector, as a result of which the area sown with cotton is now no more than 40% of what it was during the 1950s; iv) moreover, Mexico is suffering a conjunctural profitability crisis which, however, may have been partly solved with the recent devaluations; v) because of the importance of cotton in the areas where it is grown, it nevertheless has a definite future in Mexico, and the Federal Government will undoubtedly make every effort to protect it.

4. Guatemala

With a production of 618 000 bales in 1979/1980, Guatemala ranks first among the Central American cotton producing countries.

Cotton was introduced into the country rather late, but it is now firmly established; it accounts for 13% of exports and generates 20% of all employment (table 11 shows the evolution of basic cotton indicators in Guatemala).

Table 11
 GUATEMALA: AREA SOWN, PRODUCTION, DOMESTIC CONSUMPTION AND
 EXPORTS OF COTTON, 1955-1980

Year (1 August- 31 July)	Area sown (thousands of hectares)	Production (thousands of bales)	Domestic consumption (thousands of bales)	Exports (thousands of bales)	Yield (kg/ha)
1954/1955	16.0	41	20	21	556
1959/1960	17.6	68	20	48	838
1964/1965	90.0	310	30	280	747
1969/1970	75.6	245	38	205	703
1974/1975	111.0	485	55	473	947
1975/1976	83.5	443	55	449	1 150
1976/1977	99.1	615	50	542	1 346
1977/1978	127.2	653	50	620	1 113
1978/1979	125.7	725	55	707	1 252
1979/1980	126.0	618	50	645	1 063
1980/1981	101.0	575	35	505	1 240

Source: Central Bank of Guatemala and International Cotton Advisory Committee.

Land tenure is very concentrated in Guatemala; cotton holdings average 638 ha and 50% of this land is in the hands of 40 owners.

Furthermore, yields per hectare are very high in Guatemala, coming second only to Israel. However, a closer look at this phenomenon considerably dampens any optimism one might feel from looking at this single indicator, for it has been clearly shown that there is excessive application of insecticides (up to 40 applications, as compared with 0 to 5 in the rest of Latin America) and this, together with the use of other chemical inputs, causes frequently irreversible damage to the environment, affecting food, water, the fauna and the flora. In this regard, the studies carried out by the Central American Institute for Industrial Research and Technology (ICAITI)²⁷ are very interesting; in addition to criticizing the current situation, they propose alternative methods (natural pest control) which could minimize damage to the environment.

From another point of view, i.e., the strictly

economic one, many questions have been raised as to how rational it is to maintain the current level of use of chemical inputs, both for microeconomic reasons, i.e., high production costs (40% of gross value goes to the purchase of these inputs), and for macroeconomic reasons, i.e., the negative implications of the phenomenon for the net foreign exchange balance, since a great majority of these inputs are imported.

According to official figures, summarized below, for each dollar's worth of cotton exported in 1980/1981, there was a foreign-exchange outflow (essentially for chemical inputs and fuels) of 55.6 cents (see table 12).

Another distinctive feature of cotton production in Guatemala is the shortage of domestic credit; according to figures released by the Bank of Guatemala, such credit only covers 10% of the gross value of production. Thus, comparatively speaking, financial resources obtained from abroad play a more important role (between 20% and 40% of the total value of production between 1976 and 1980) and are used mainly for importing inputs.

Because of the large average size of cotton holdings in the country, marketing and ginning operations are usually carried out by the producer, who, when he does not have his own plant, hires the services of a ginning contractor. The

²⁷See ICAITI: *An Environmental and Economic Study of the Consequences of Pesticide Use in Central American Cotton Production*, Final Report, Guatemala, 1977; and, more recently, Ronald Estrada Hurtate (Consultant to ICAITI), *El algodón en su etapa de desastre*, Guatemala, April 1981.

Table 12
GUATEMALA: ESTIMATED NET EFFECT OF
COTTON EXPORTS ON THE BALANCE OF
PAYMENTS

	1979/1980		1980/1981	
	Thousands of quetzales	%	Thousands of quetzales	%
Gross income from exports	202 980	100.0	223 384	100.0
Foreign exchange outflow for inputs	84 124.1	41.4	124 201.5	55.6
Net effect on the balance of payments	118 855.9	58.6	99 182.5	44.4

Source: Bank of Guatemala, official estimates.

latter, who is usually linked to the oil industry or the export trade, generally receives, as payment for the processing, the seed obtained from this operation. Cottonseed meets 100% of the domestic demand for edible oils and its exportation is strictly prohibited.

Cotton producers and others involved in the cotton business deal with 14 "traders", almost all foreigners, who are able to intervene in the market because of the marketing lines they have abroad. These traders earn profits which are reported to be between 4% and 6% of the FOB price.

There are also several taxes,²⁸ which at the beginning of 1982 represented 2.5% of the FOB export price.

Guatemalan cotton exports go mainly to the Far East, although European countries still account for an appreciable percentage of sales, i.e., between 25% and 40% in recent years.

As in the case of most cotton-exporting countries, Guatemala is faced with serious problems relating to the profitability of the crop. This situation is aggravated, as has been noted above, by the high cost of imported inputs.

It is estimated that at the beginning of 1982, after the relevant deductions were made (1.25

cents for taxes, 2.5 cents for traders' profits, 2 cents for financial costs and around 5.25 cents for freight, insurance and other costs), a CIF price of 63 cents/pound left the producer-marketer a gross income of around 52 cents per pound.

At 1982 cost levels, which were around 60 cents per pound,²⁹ the crop would clearly be unprofitable. Only a devaluation, or freedom to dispose of foreign exchange on the parallel market, could solve the immediate problems of the cotton sector; even so, the longer-term structural problems mentioned above would still remain.

5. Nicaragua

After the sharp drop in both area sown and production which it had suffered in 1979, when it was torn by civil war, Nicaragua was able, in 1980-1981, to reach a production level of 345 000 bales and a slightly lower volume of exports. Even so, the recovery was not complete (see table 13).

The radical political change which took place in July 1979 had, of course, profound implications for the Nicaraguan economy as a whole, and the cotton sector was no exception. The full implications of these changes cannot yet be measured, since a debate is still going on in the country as to what the medium- and long-term characteristics of the sector should be.

For the time being, however, it should be noted that two measures have been taken which are of fundamental importance to the cotton sector: firstly, the nationalization of 15% of the current production area (which had belonged to persons prominent in the former régime and which is now part of the "Area of Public Ownership" (*Area de Propiedad del Pueblo - APP*)); and secondly the creation of a State enterprise (the National Cotton Enterprise, *Empresa Nacional de Algodón - ENAL*) which has a monopoly on the domestic and external marketing of cotton.

Traditionally, the ownership of cotton land was in the hands of small and medium-sized farmers. In 1979, the average area of a cotton holding was 39 hectares, but the strata who owned between 70 and 350 hectares accounted

²⁸A progressive import duty, a municipal tax, a tax for the National Cotton Council (a public entity which advises the Government on matters pertaining to cotton) and a stamp tax.

²⁹Even higher estimates are given in Guatemala, but they have been disregarded here because they originate from interested circles within the trade.

Table 13
NICARAGUA: AREA SOWN, PRODUCTION, YIELD, DOMESTIC
CONSUMPTION AND EXPORTS OF COTTON FIBRE, 1960-1982

Year	Area sown (thousands of hectares)	Production (thousands of bales)	Yield (kg/per hectare)	Domestic consumption (thousands of bales)	Exports (thousands of bales)
1960/1961	57	155	577	5	115
1964/1965	135	570	920	12	571
1969/1970	109	313	625	19	253
1974/1975	179	560	678	22	608
1975/1976	144	505	760	23	522
1976/1977	199	545	598	26	539
1977/1978	219	560	555	15	525
1978/1979	173	515	647	5	535
1979/1980	38	100	574	13	100
1980/1981	94	345	794	20	300
1981/1982	97 ^a	340 ^a	759 ^a	...	...

Source: International Cotton Advisory Committee and Central Bank of Nicaragua.

^a Preliminary figures.

for a large proportion of the land (half the total area). The 1979 revolution did not change this situation, except for the fact that 15% of the cotton land has been turned over to the APP.

In Nicaragua, as in Guatemala, the increase in costs poses a very serious problem. This is particularly true with regard to the costs of imported inputs (from 15 to 20 applications of insecticides per year in some cases), which have reached the disturbing level of 43% of the FOB price.³⁰

As regards marketing, before the Revolution the system in Nicaragua was similar to that which exists in Paraguay. In other words, there was a large number of producers, State intervention was minimal, and commercial and financial intermediaries obtained large margins of profit.

Half the production of cotton was marketed without ginning, thus obliging producers to go through yet another intermediary. Purchasing agents of export companies, mostly foreign, often operated as an oligopoly, and producers had not alternative but to deal with them.

³⁰These figures were supplied by the Ministry of Planning, which breaks costs down as follows: 30% for wages, 18% for other components and 9% for freight, ginning and packing.

At present, with the nationalization of domestic and foreign trade, prices are set in a centralized manner. ENAL has also followed a policy of encouraging producers to carry out ginning operations on their own account, and prefers, except in exceptional cases (only 3% in 1981/1982) to buy cotton which has already been ginned and classified.

There are 26 ginning plants in the country and nine of these are in the hands of the State (not of ENAL, however), while the remainder belong to the major producers or to the oil industry.

Cottonseed had traditionally supplied 100% of the country's edible oil. In recent years, however, as a result of the drop in cotton production, it became necessary to import soya bean oil. The plan now is to develop national production of soya beans and African palm, thus substantially diversifying the sources of oilseeds.

During the 1981/1982 season, producers received a price of 840 córdobas per 100 pounds FOB Corinto (the country's port of export); this is equivalent to 84 US cents per pound at the official exchange rate of 10 córdobas per dollar. Discounts are made according to the grade of cotton and for domestic freight to the port, but there are no export taxes, although there is a

possibility that if international prices improve, some type of retention mechanism might be introduced for the purpose of building up a stabilization fund.

According to the Nicaraguan authorities, the price of 840 córdobas per 100 pounds represents a subsidy, inasmuch as, at the official exchange rate, cotton did not even reach a price of 70 US cents per pound CIF (i.e., 700 córdobas per 100 pounds), in 1982. In practice, the same authorities are very much aware that the official exchange rate does not at all reflect the current ratio between domestic and foreign prices. Moreover, there is a parallel exchange market which is tolerated by the Government and in which the price of the dollar is almost triple the official rate.

Given these circumstances, it is not surprising that producers complain that the current price is not profitable. According to estimates made in early 1982 by the Ministry of Foreign Trade, the 1981/1982 season will bring net losses to producers, even with costs at a very favourable level.

It would be too complicated to discuss in depth a subject which has political implications (the role of cotton growers in the previous and in the current régimes, and possible long-standing prejudices against cotton growing) which obviously go beyond the scope of this study.

We can only remark, as do some of the major sectors participating in the debate on economic policy that is currently going on in Nicaragua, that unless cotton production is made profitable,

it will simply tend to disappear from the country. Moreover, if cotton exports disappear or if they are greatly reduced, adequate substitutes must be found to make up for the negative effect which such a development might have on the balance of payments and consequently, on specific prospects for the economic development of the country.

Finally, reference should be made to the operation of the new export system. It would appear, at least as far as the destination of exports is concerned (a heavy concentration in the Asian countries), that the political change of 1979 has not greatly modified the previous situation.

Marketing practices, however, have undergone significant changes, as ENAL has encouraged the practice of selling directly to users. This has occurred in the cases of the Chinese State company "Chinatex" and the textile industry co-operatives of Taiwan, but this objective has not been achieved in the case of Japan, to which ENAL still sells its product through trading companies.

In short, it should be noted that: i) the recent political change has had implications for the cotton sector whose extent cannot yet be fully evaluated; ii) the level of production has fallen, although it is not very clear whether past levels will be recovered or not; iii) there is an immediate problem of profitability which is not very different from that of other Latin American countries and with regard to which the Government must take decisions in line with the role it wishes to assign to the cotton sector in future.

VII

Conclusions

In this article we have tried to analyse various aspects of the international trade in cotton, both globally and from the viewpoint of a more thorough analysis of the five major cotton fibre exporters of Latin America. Despite the demand and price problems being faced by cotton-producing countries, there is still no real international institutional machinery to protect the producer countries.

As is well known, there are two international organizations, namely, the International Cotton Advisory Committee (ICAC) and the International Institute for Cotton (IIC),³¹ but the scope of

³¹The ICAC, with headquarters in Washington, is a centre which evaluates and centralizes information on various aspects of cotton growing and the cotton trade. The IIC, on the other hand, with headquarters in Brussels, has a

their activities is limited to gathering information and promoting the use of cotton. Some time ago, a proposal was put forth for the creation of a new organization, the International Cotton Development Association (ICDA), under the auspices of the United Nations and the World Bank.³² This effort, however, did not bring any appreciable results.

Efforts aimed at the signing of an International Cotton Agreement within the scope of the UNCTAD Integrated Programme for Commodities have also been unsuccessful. Six preparatory meetings were held between 1977 and 1983,³³ but disagreements among participants (not only between consumers and producers, but also within the latter group) made it impossible to agree on any kind of practical measures. As a result of this, some of the producer countries decided to set up a Producers' Association, known as the Izmir Group. So far, its activities have been limited to the discussion of possible options for joint action.

With respect to the future, it is difficult to imagine that, if better times should come, this can be considered as being the fruit of international negotiations, at least as long as the United States remains reluctant to participate in any price protection mechanism.

Instead, any positive signs should be attributed to the attenuation of the recessive phase through which the world economy is going; to a subsequent improvement in the competitiveness

of cotton with respect to synthetic fibres; to the possible success of programmes for promoting the use of cotton at the world level and, as far as textiles and made-up articles are concerned, to the disappearance or substantial reduction of protectionist measures applied by importing countries.

Because of the lack of specialized international structures, the cotton-exporting developing countries must still cope, as in the past, with a situation which is fraught with difficulties. In many cases this had led to extreme situations where many have doubts about the future viability of cotton fibre as an export commodity capable of making a significant contribution to the external financing of the countries concerned.

In conclusion, the following approaches were perceived in the different countries of Latin America:

- i) to move out of the fibre market and direct the export potential of the country towards the production of yarn and made-up articles (Brazil and, to a lesser extent, Colombia);
- ii) to continue in the fibre market, but exercise pressure at the government level for the establishment of some international regulatory mechanism (Mexico and, to a lesser extent, Argentina);
- iii) to maintain the historical approach in the hope that an improvement in prices might make it possible to recover a satisfactory level of profitability for the crop (Guatemala and Paraguay).

It would seem that some type of subregional consultation mechanism where these different positions could be discussed would be helpful in the search for a solution to the problems which, as we have tried to point out, are to some extent shared by all the cotton-growing countries of Latin America.

limited membership (11) and devotes itself exclusively to promoting the use of cotton fibre in Western Europe and Japan.

³²See the proposal for the establishment of the ICDA prepared jointly by UNDP, the World Bank and the Rockefeller Foundation (New York, 1977).

³³See the entire series of documents (over 20) published by UNCTAD under the symbol TD/B/IPC/Cotton.