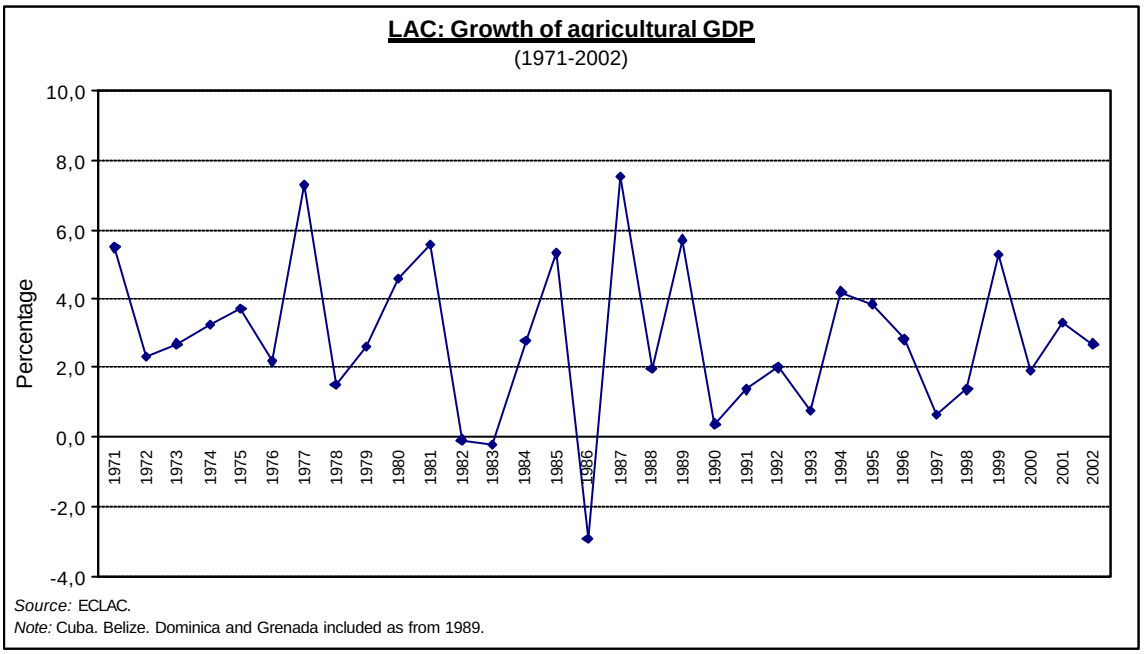
III. AGRICULTURE SECTOR DEVELOPMENT

A. TREND OF SECTORAL GDP

The 2.6% expansion in the region's agricultural output in Latin America and the Caribbean in 2002, following growth of 3.3% in 2001, confirmed the slow progress that has characterized sectoral development in the region over the last two decades. The average annual growth rate was similar in both decades (2.4% in the 1980s and 2.5% between 1990 and 2002); nonetheless, during the latter period, modest rates have not been accompanied by the wide fluctuations that occurred in the 1980s (see figure 73).

Figure 73



Source: ECLAC.
Note: Cuba. Belize. Dominica and Grenada included as from 1989.

More than the vagaries of weather or abrupt changes in markets, the slow pace of sectoral growth during his long period reflects the persistence of fundamental problems of competitiveness and profitability, and the inadequacy of agricultural development policies.

Meagre sectoral growth is partly explained by structural conditions, such as the existence of extensive isolated rural zones, lacking in services, without productive or transport infrastructure, and with a severely excluded population. Such conditions are hard to overcome in the short or medium term with specific policies; doing so, is more likely to be the result of cumulative national development than a condition for agricultural growth. Consideration of these problems is crucial in designing the development model; but capacity to affect the annual growth rate by improving these situations is limited.

Although the conditions outlined above tend to restrict the basis for agricultural development, the low growth rate of the last 22 years reflects problems of a different nature, related more to insufficient capacity to exploit opportunities for productive

progress from current development levels. In this regard, low profitability stemming from problematic access to financing, or the serious deterioration of research and technology transfer systems in many of the region's countries, are two of the supply-side factors that do most to undermine the pace of agricultural growth in the region.

Another major group of factors that influence agricultural output trends relate to conditions outside the sphere of primary production in Latin American and Caribbean countries. Although natural resources, labour supply and technology development are still very important, global changes and new conditions on agricultural markets have also increased the influence of factors that are exogenous to the agriculture and livestock sector, such as: the vertical integration of agriculture, the macroeconomic framework and conditions on national and international markets. These three groups of factors have a powerful effect on agricultural competitiveness and profitability.

Profitability depends not only on the competitiveness of primary production, but on the whole production-processing-consumption chain, and also on the prevailing economic "climate". To ensure that agriculture is a profitable activity requires more than efficient production on the farm; the competitiveness of the system as a whole needs to be strengthened. Nowadays this is not a question of ***discovering*** comparative advantages in natural resources, but of ***building*** systemic competitiveness. To make agriculture profitable in Latin American countries, technological progress in the sector needs to be supported by better management systems and the development of conditions that promote efficiency in the agrifood system, encompassing all production-processing-marketing chains. The weak links in these chains, resulting from deficient development of the necessary physical, institutional and human capital, are one of the reasons why primary production is inefficiently integrated with the agrifood system.

Exchange rates, interest rates and uncertainty surrounding external conditions have also curtailed productive investment in the agrifood system, and for primary production in particular. As well as being influenced by basic macroeconomic policy tools, productive investment in agriculture is also affected by major global factors, such as the efficiency of financial systems and services; international positioning, market information and marketing services; physical infrastructure, not only productive, but also commercial and processing; the availability, regularity and cost of energy supplies, communications and transport services; economic regulations and the organization of productive agents; the quality and honesty of public administration; education, labour skills and conditions of life among the population; etc.

Distortions in the international markets for agricultural products, mainly caused by agricultural subsidies in developed countries, force down prices among important exportable product groups, thereby undermining possibilities for sectoral growth. Moreover, various forms of non-tariff and para-tariff protectionist barriers have arisen in recent years, which further aggravate the problematic international context facing the region's agricultural exports, and are a major cause of the weak sectoral growth rate.

The failure of agricultural growth in the region to achieve rapid take-off, following the introduction of reforms as part of the construction of the new development model, is discouraging. Nonetheless, there are conditions in which the difficulties outlined above can be overcome to a greater or lesser extent, as is shown by the varying degrees of progress made by individual countries.

In general, the trend of agricultural output in Latin American and Caribbean countries over the last decade displays a direct correlation with their global economic growth; in other words, the economies that are growing fastest overall display the strongest agricultural expansion. This relation firstly reflects agriculture's own contribution to economic growth, which goes beyond its share of GDP, since in many of the region's countries crop and livestock production forms the basis for a large proportion of commercial and industrial activity and has a major effect on the overall competitiveness of the system. In turn, faster economic growth means stronger domestic demand, together with stimulus for vertical integration and greater support for agricultural productivity.

Between 1990 and 2002, the economy of Latin America and the Caribbean grew at an average annual rate of 2.8%, and agriculture expanded at 2.5% per year (see the axes in figure 74). The fastest agricultural growth in the region was the 6.1% recorded by Belize, which also achieved a relatively high overall economic growth rate of 4.2%. The Dominican Republic posted the strongest overall expansion (5.8%), with agricultural growth of 4.3%. At the other end of the spectrum, Haiti registered the lowest total economic growth and the smallest agricultural expansion; and it was the only country where both rates were negative (see figure 74 and table 26).

Table 26

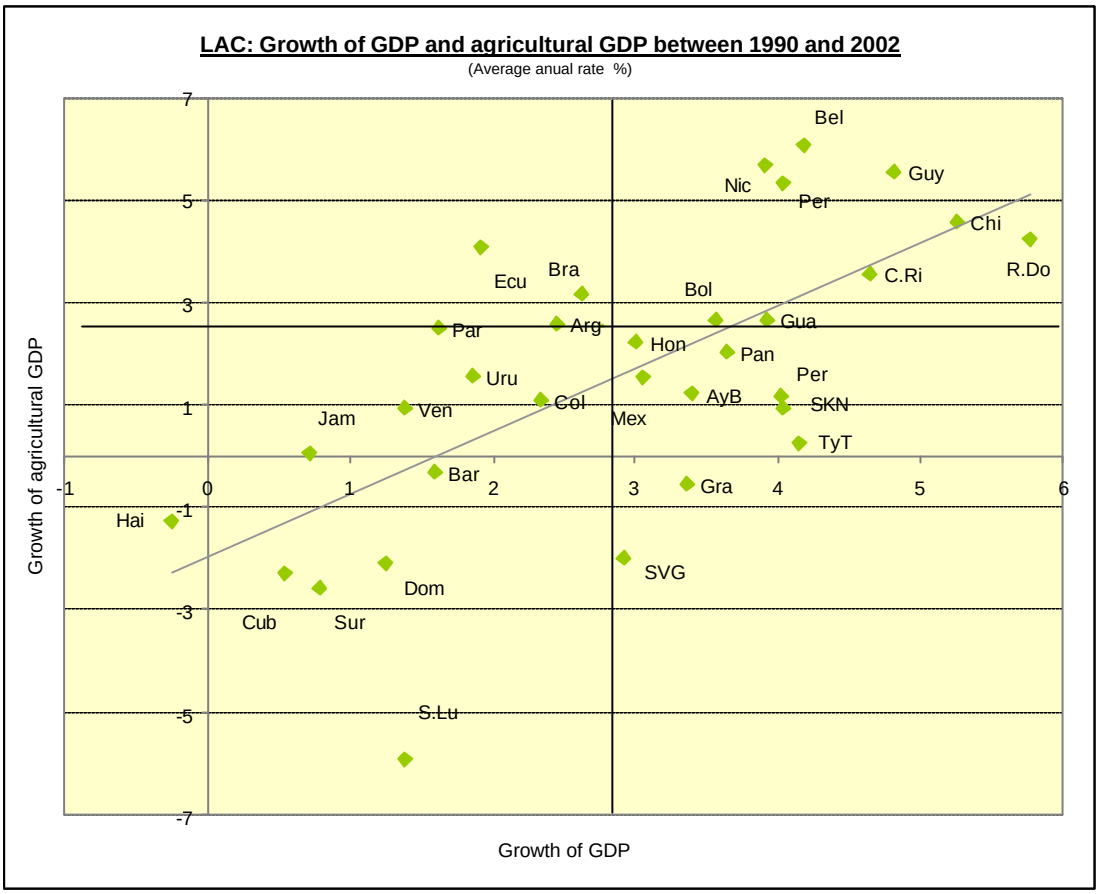
LAC: Growth of products

(Percentage)

Country	Agricultural GDP 1990-02	Agricultural GDP 1990-02
Latin America & Caribbean	2,77	2,54
Latin America	2,77	2,56
Brazil	2,62	3,18
Mexico	3,05	1,54
Southern Cone	3,01	2,93
Argentina	2,45	2,58
Chile	5,25	4,57
Paraguay	1,62	2,51
Uruguay	1,86	1,57
Andean countries	2,44	2,28
Bolivia	3,57	2,65
Colombia	2,34	1,10
Ecuador	1,92	4,07
Peru	4,04	5,34
Venezuela	1,39	0,93
Central America	4,00	2,72
Costa Rica	4,65	3,55
El Salvador	4,04	0,95
Guatemala	3,92	2,65
Honduras	3,01	2,23
Nicaragua	3,91	5,68
Panama	3,64	2,03
Latin Caribbean	1,59	-0,24
Cuba	0,54	-2,27
Haiti	-0,25	-1,28
Dominican Republic	5,76	4,25
CARICOM	2,54	0,26
Antigua and Barbuda	3,40	1,25
Bahamas	n.a.	n.a.
Barbados	1,59	-0,32
Belize	4,18	6,06
Dominica	1,25	-2,08
Grenada	3,36	-0,52
Guyana	4,81	5,56
Jamaica	0,72	0,07
Saint Kitts and Nevis	4,02	1,20
Saint Vincent and the Grenad	2,92	-1,97
Saint Lucia	1,39	-5,92
Suriname	0,79	-2,58
Trinidad and Tobago	4,14	0,27

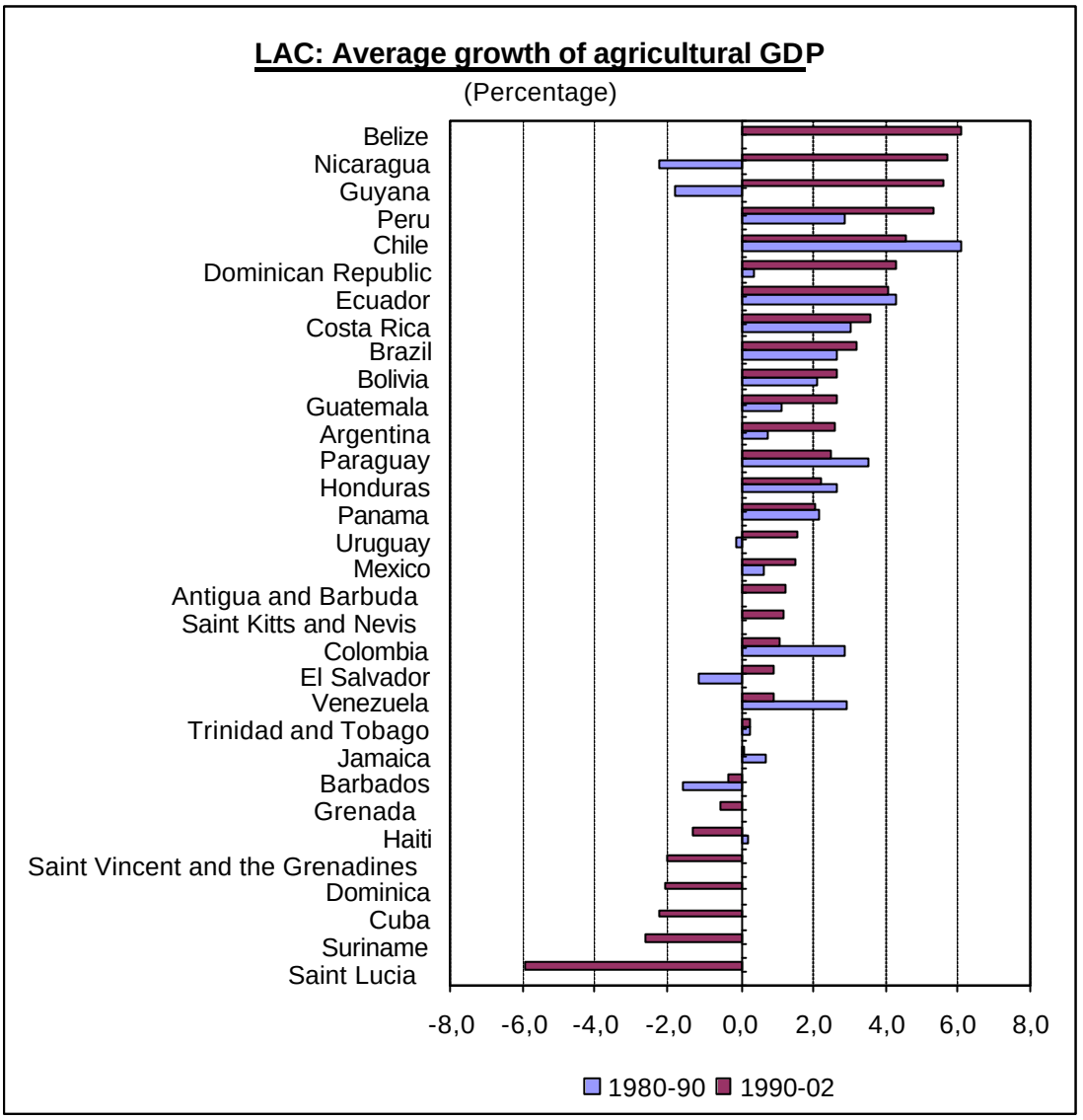
Source: Based on ECLAC figures.

Figure 74


LAC: Growth of GDP and agricultural GDP between 1990 and 2002
(Average anual rate %)
Growth of agricultural GDP
Growth of GDP
7
5
3
1
-1
-3
-5
-7
-1
0
1
2
3
4
5
6
Bel
Guy
Nic
Per
Chi
R.Do
C.Ri
Ecu
Bra
Bol
Gua
Par
Arg
Hon
Pan
Uru
Per
AyB
SKN
Jam
Ven
Col
Mex
TyT
Bar
Gra
Hai
SVG
Dom
Cub
Sur
S.Lu

During the period considered, most of the region's countries either maintained or improved on their agricultural growth rates of the previous decade. The main exceptions are Colombia, Haiti, Jamaica and Venezuela and, to a lesser degree, Chile and Paraguay. In general, the Caribbean countries posted very low or negative rates, except Belize and Guyana (see figure 75).

Figure 75



Agricultural output in Latin America and the Caribbean in 2002 was 34% greater than in 1990, and 73% larger than in 1980. At the same time, the cumulative growth differential since 1990 has resulted in major changes in the share of the various countries in regional agricultural output. Brazil's share grew most, from 39% to 44%, while Cuba and Mexico suffered the largest relative reductions (see figures 76 and 77).

Figure 76

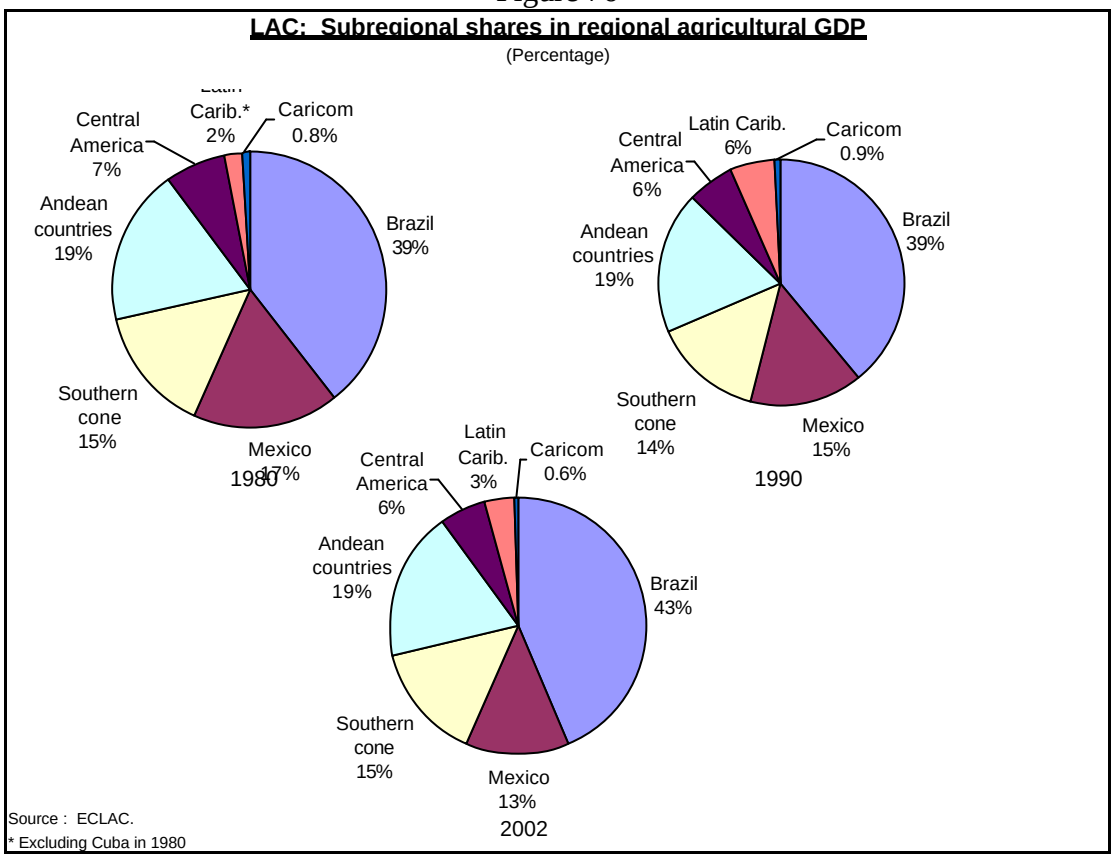
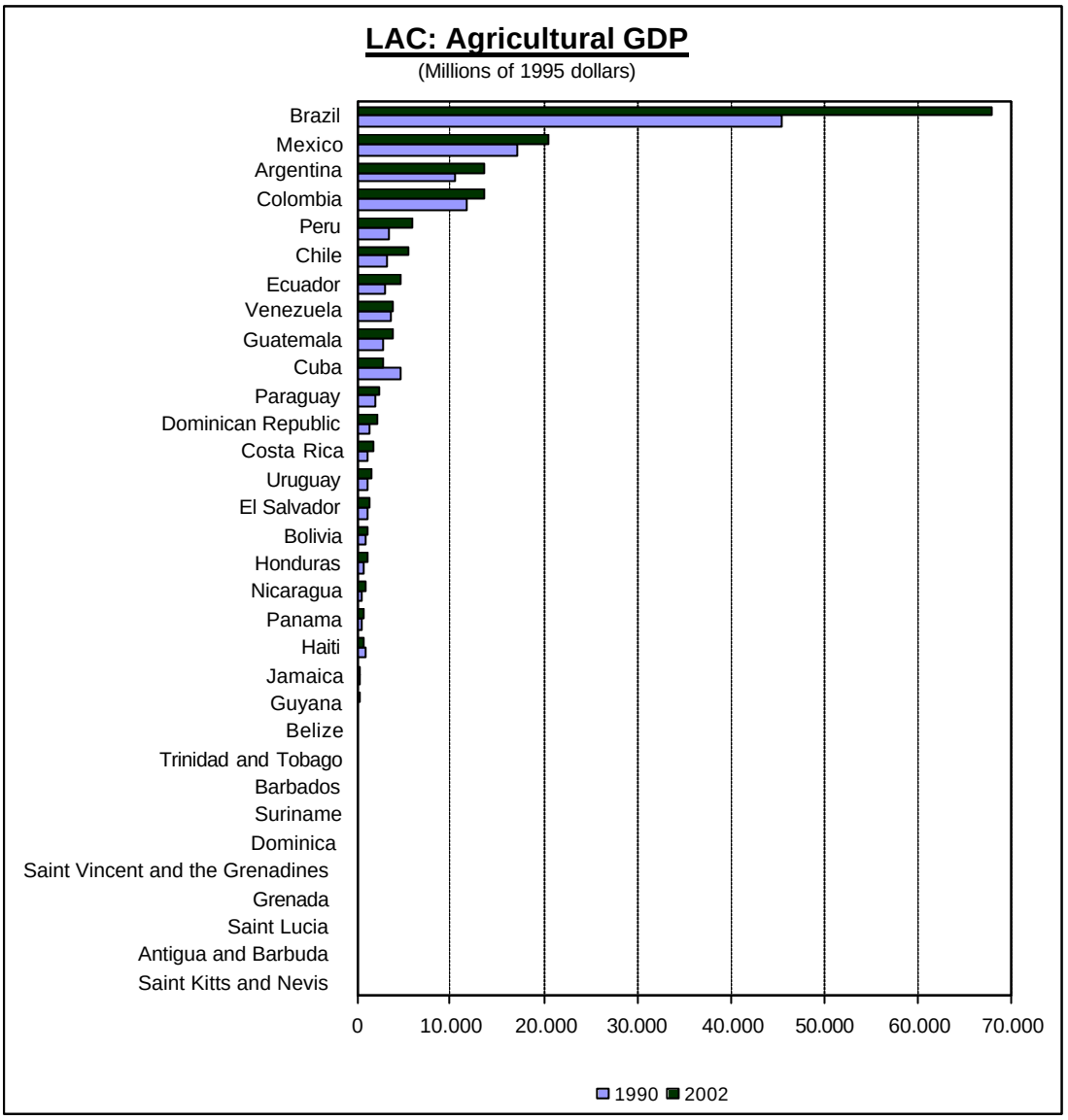


Figure 77



Source: ECLAC.

(i) Share of agriculture in global GDP

During the last two decades, the share of agriculture in the region's GDP has held steady at between 7% and 8%, thereby interrupting the sector's declining share in the economy which is a normal feature of the development process.

Two points need to be borne in mind when considering the percentage share of agricultural output in the overall economy. Firstly, this coefficient alone is inadequate to express agriculture's importance, or to measure its contribution to national development. Secondly, the significance of the trend needs to be considered from a development perspective.

Agriculture's strategic importance is much greater than its share of GDP. In many of the region's countries, agriculture and livestock production is the basis for a large fraction of their commercial and industrial activities, which means that sectoral trends have a major importance on the overall competitiveness of the system. The vertical

integration of agriculture and coordination with a complex agrifood system do not tend to diminish as development proceeds. On the contrary, in industrialized countries, aggregate output from the agrifood system tends to multiply the value of primary agricultural production eight- or tenfold, whereas in Latin American and Caribbean countries this coefficient currently varies between 3 and 6. The agrifood sector will tend to grow in importance relative to primary production. Moreover, given its participation in food consumption, agriculture has a major effect on incomes and real wages among the population at large. The sector also continues to be a major generator of foreign exchange, and is the main source of external purchasing power in several countries. Lastly, agricultural development also has a decisive role in key development problems, such as poverty relief, regional balances, land management or environmental sustainability (see figure 78).

Figure 78

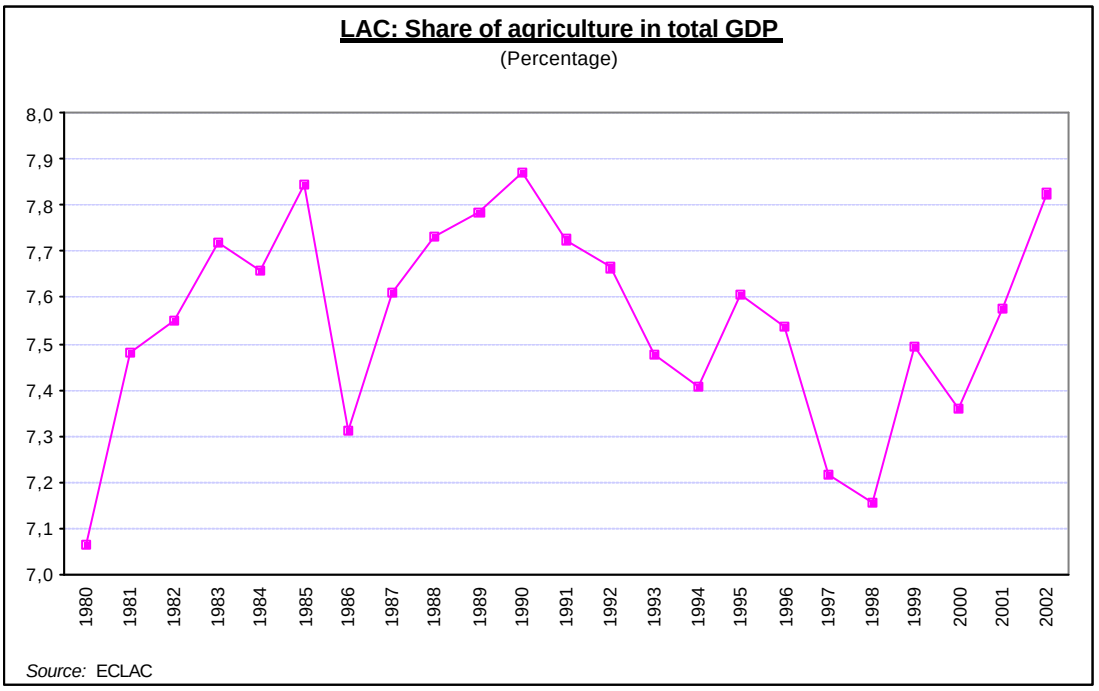


Table 27

Share in agricultural GDP

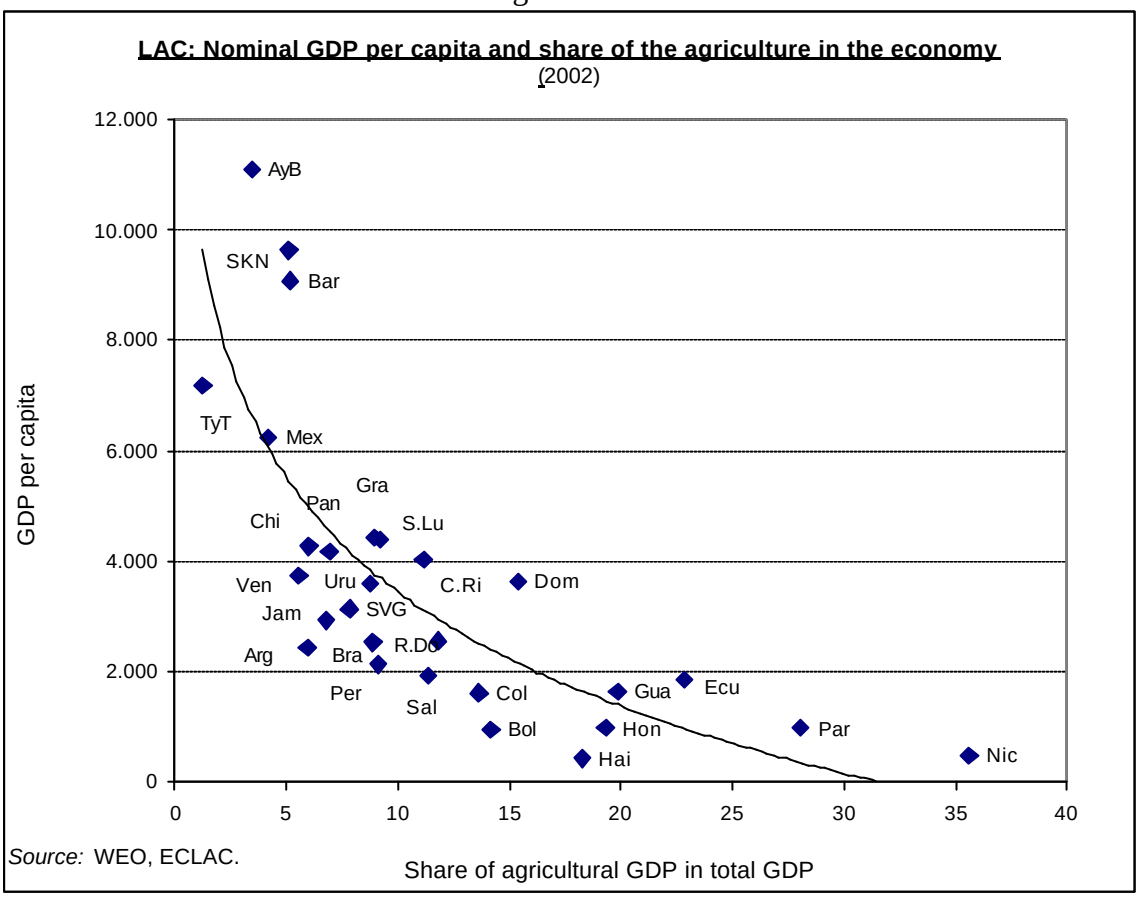
(Percentage)

Country	1980	1990	2000	2001	2002
Latin America and the Caribbean	100	100	100	100	100
Latin America	99	99	99	99	99
Brazil	39,5	39,1	41,2	42,2	43,5
Mexico	17,1	14,7	13,4	13,4	13,0
Southern Cone	14,8	14,4	15,3	15,2	14,8
Argentina	10,2	9,0	9,4	9,2	8,8
Chile	2,0	2,7	3,4	3,5	3,6
Paraguay	1,4	1,6	1,5	1,6	1,5
Uruguay	1,4	1,0	1,0	0,9	0,9
Andean countries	18,7	19,1	19,2	18,7	18,6
Bolivia	0,8	0,7	0,8	0,8	0,7
Colombia	9,7	10,1	9,1	8,9	8,7
Ecuador	2,1	2,4	2,9	2,8	2,9
Peru	3,0	2,9	3,8	3,6	3,8
Venezuela	3,2	3,0	2,6	2,6	2,5
Central America	6,8	5,9	6,2	6,0	5,9
Costa Rica	0,9	1,0	1,2	1,1	1,1
El Salvador	1,5	1,0	0,9	0,9	0,8
Guatemala	2,7	2,3	2,4	2,4	2,4
Honduras	0,6	0,6	0,6	0,6	0,6
Nicaragua	0,6	0,5	0,6	0,6	0,6
Panama	0,5	0,5	0,5	0,4	0,4
Latin Caribbean	2,3	5,9	3,9	3,7	3,5
Cuba	n.a.	4,1	2,1	1,9	1,7
Haiti	0,9	0,7	0,5	0,4	0,4
Dominican Republic	1,4	1,1	1,3	1,4	1,4
CARICOM	0,8	0,9	0,8	0,8	1
Antigua and Barbuda	n.a.	0,01	0,01	0,01	0,01
Bahamas	n.a.	n.a.	n.a.	n.a.	n.a.
Barbados	0,16	0,10	0,07	0,06	0,06
Belize	n.a.	0,07	0,10	0,10	0,10
Dominica	n.a.	0,04	0,03	0,02	0,02
Grenada	n.a.	0,02	0,02	0,01	0,02
Guyana	0,19	0,11	0,17	0,17	0,18
Jamaica	0,36	0,30	0,26	0,26	0,23
Saint Kitts and Nevis	n.a.	0,01	0,01	0,01	0,01
Saint Vincent and the Grenadines	n.a.	0,03	0,02	0,02	0,02
Saint Lucia	n.a.	0,05	0,02	0,02	0,02
Suriname	n.a.	0,07	0,05	0,05	0,05
Trinidad and Tobago	0,10	0,08	0,07	0,06	0,06

Source: ECLAC.

Moreover, a smaller agricultural share in gross domestic product is a characteristic of more developed countries. For Latin America and the Caribbean, figure 79 eloquently illustrates how the share of agriculture in national product is higher among poor countries, and tends to decline among more developed ones, including those where agriculture is more efficient, to approach the levels of 1% - 4% prevailing in industrialized countries.

Figure 79



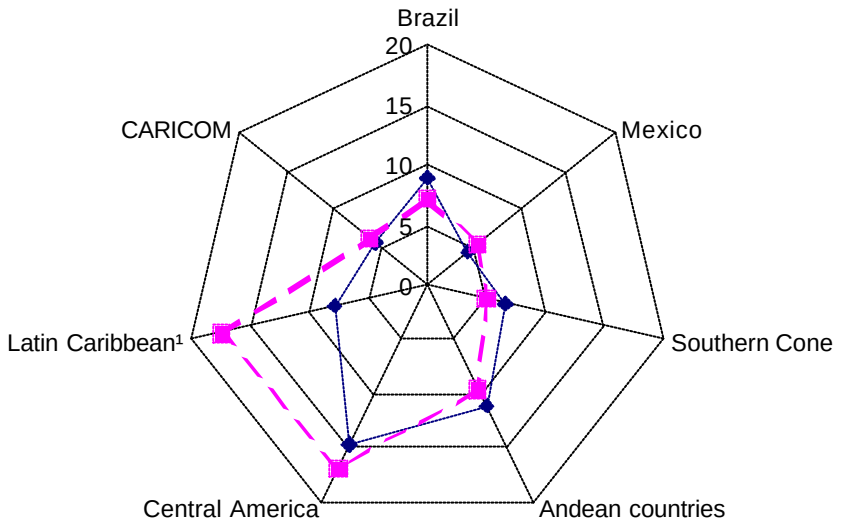
From a development perspective, agriculture's share in the economy as a whole should tend to decline in the wake of faster growth by other sectors that have a higher income elasticity of demand. Nonetheless, in the recent evolution of Latin America and the Caribbean, stability (rather than a reduction) in the agricultural share of the region's GDP is more the result of sluggish overall economic growth than a rapid expansion in agriculture. This can be clearly seen in the increased share of agriculture during the "lost decade" of the 1980s, and also during the recession of the late 1990s and first few years of the new century (see again figure 78).

The relative importance of economic stagnation or agricultural growth in the stability of the sector's GDP share varies significantly between the different countries of the region. In general, agriculture's share of GDP is growing in the South American countries, while declining in Central America, Mexico and the Caribbean (see figure 80).

Figure 80

Share of agricultural GDP in total GDP by subregion

(Percentage)

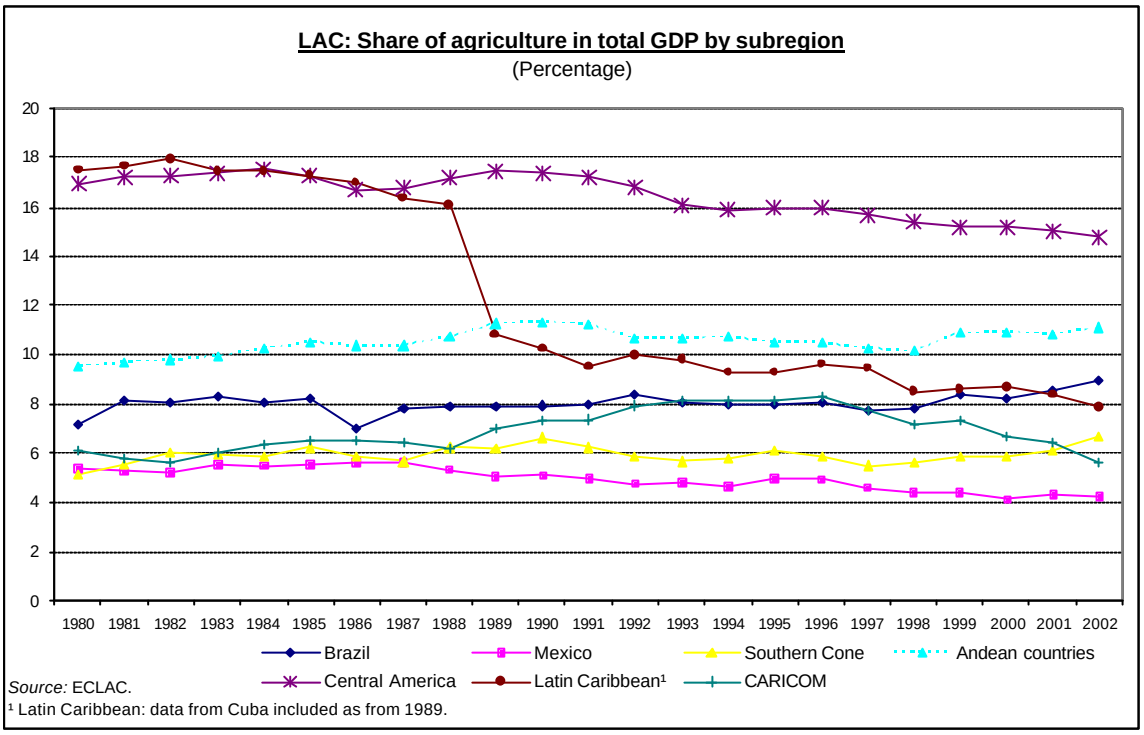


Source: FAO/RLC based on ECLAC data.

1980 Caricom figure corresponds to 1989 data.

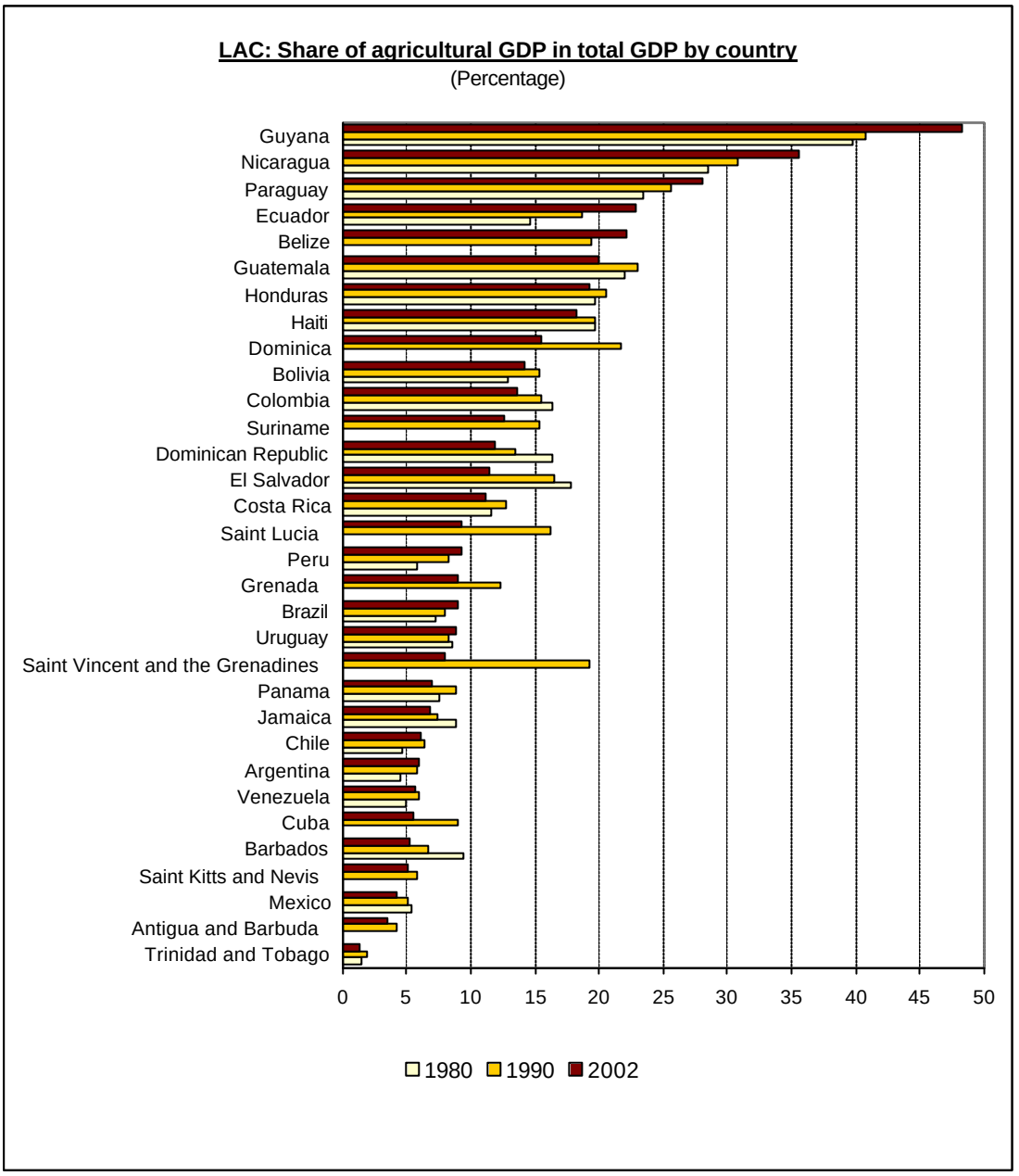
The share of agriculture in gross domestic product varies sharply between subregions; Central America displays the largest sectoral share (about 15%), while Mexico has the smallest at just 4% (see figure 81).

Figure 81



Agricultural shares of GDP also differ widely when countries are considered individually. In 2002, the largest shares were recorded by Guyana (48.3%), followed by Nicaragua (35.6%), Paraguay (28.1%), Ecuador (22.9%) and Belize (22.2%). In these countries, the share of agriculture in GDP has also grown over the last few decades. The smallest agricultural GDP shares corresponded to Trinidad and Tobago (1.3%), Antigua and Barbuda (3.5%), Mexico (4.3%), Saint Kitts and Nevis (5.1%), Barbados (5.2%), Cuba (5.5%), Venezuela (5.6%), Argentina (6%) and Chile (6%). Apart from Argentina, the sectoral share of GDP has declined in these countries over the last decade (see figure 82).

Figure 82

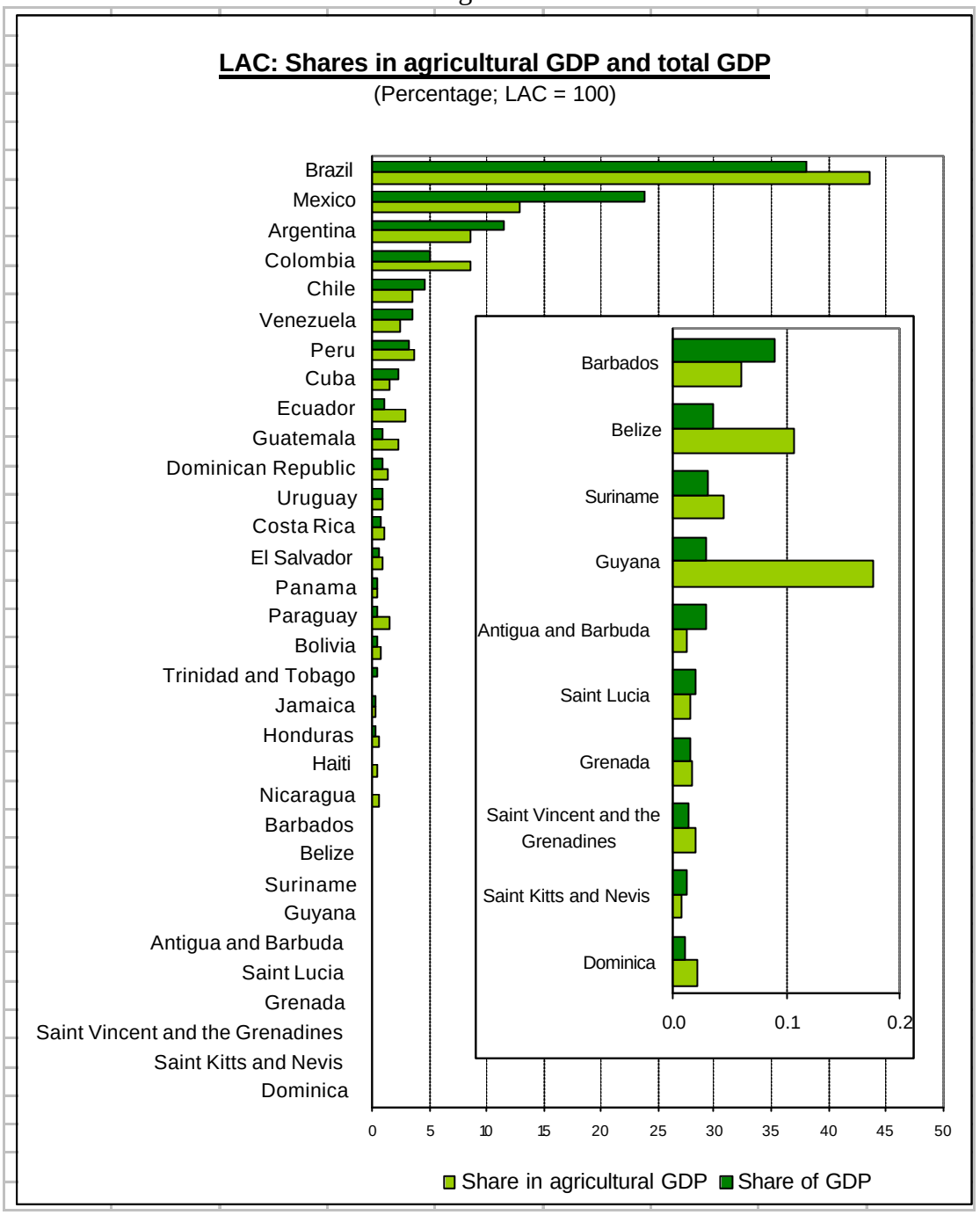


Source: ECLAC.

1980 data not available for Dominica, Saint Lucia, Grenada, Saint Vincent and the Grenadines, Cuba, Saint Kitts and Nevis, and Antigua and Barbuda. No data available for Bahamas throughout the series.

Each country's share of regional GDP (agricultural and total) are shown in figure 83.

Figure 83



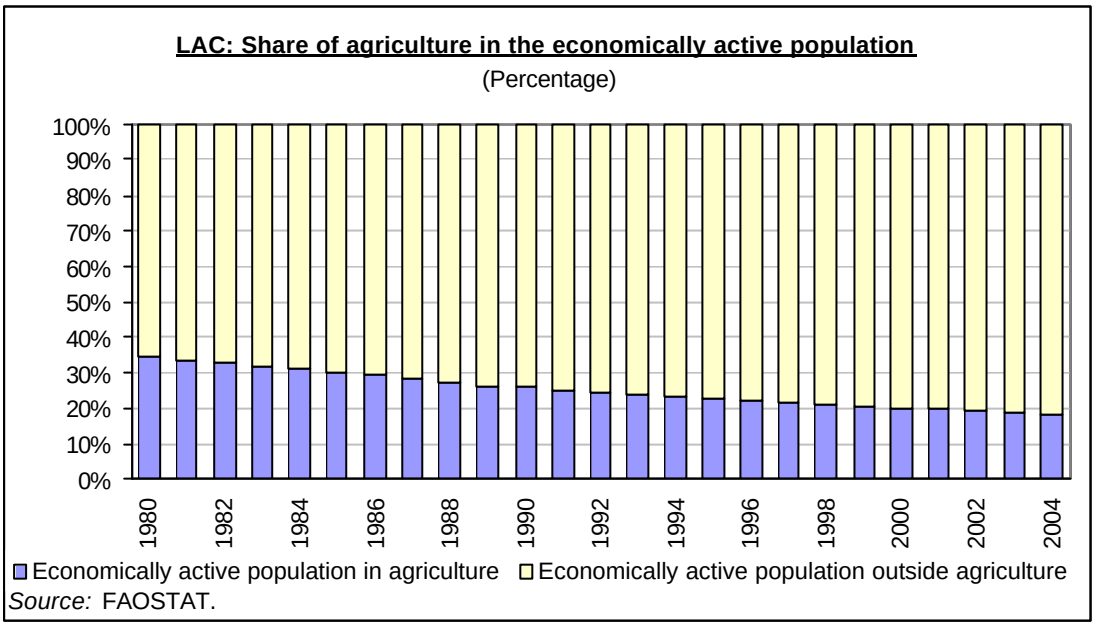
Source: ECLAC.

(ii) Economically active population dependent on agriculture

Alongside the changes in agricultural GDP shares, changes have also been taking place in the proportion of the economically active population engaged in agricultural activities. These two variables combine to cause variations in the average productivity of agricultural employment. In many countries of the region, agricultural productivity growth reflects progress in reducing rural underemployment.

The economically active population of Latin America and the Caribbean engaged in agriculture peaked at 45 million people in the mid-1980s, since when it has been slowly declining and is estimated at 43.5 million in 2003. During this period (from 1985 to 2003) the region's total economically active population (EAP) has grown from 150 million to 234 million people. In other words, the expansion of the labour force has been entirely absorbed by other sectors. Agriculture therefore accounts for a declining share of the EAP: from 30% of all workers in 1985, it had shrunk to 25% in 1990 and currently stands at 19% (see figure 84).

Figure 84



The percentage of the EAP that depends on agriculture needs to keep falling in the future, to close the gap that still exists between its 7% or 8% contribution to GDP and its 19% share of the economically active population.

Table 28

LAC: Share of agriculture in GDP and population

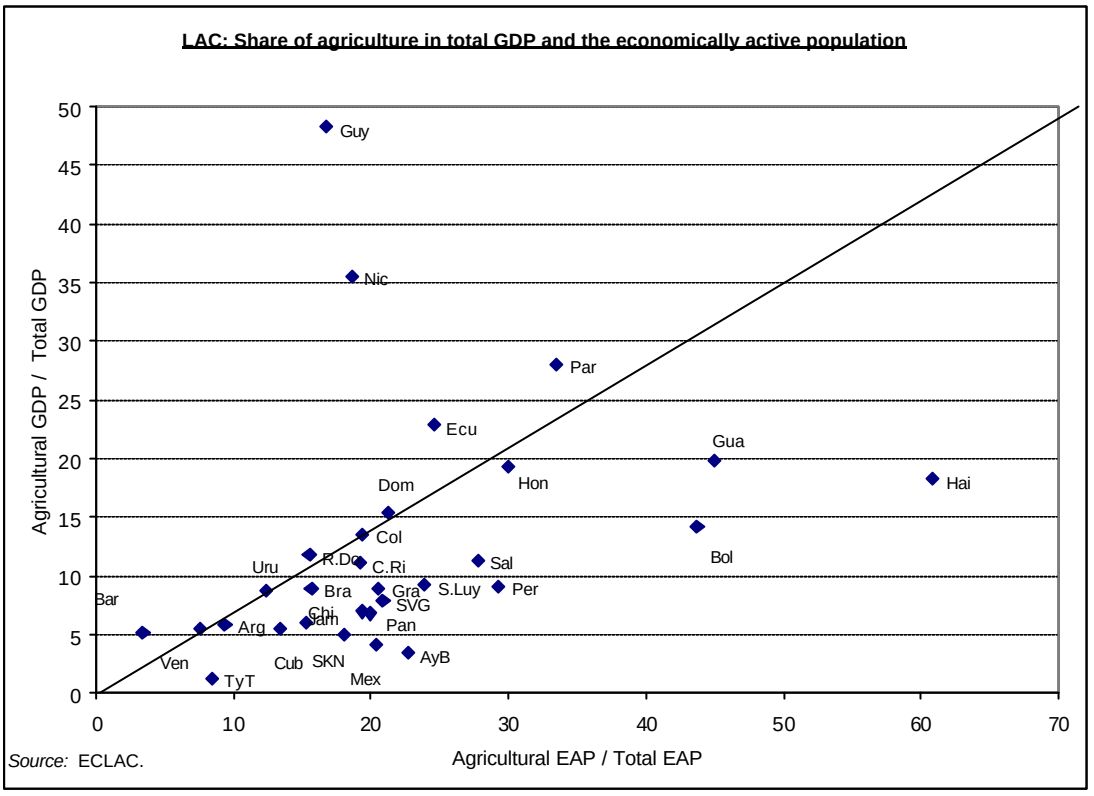
Percentage

Variable	1980	1990	2000	2001	2002	2003	2004
EAP (Agr)/EAP(Tot)	34.5	25.6	20.0	19.5	19.0	18.6	18.1
Agricultural GDP as a percentage of total GDP	7.1	7.9	7.4	7.6	7.8	n.a.	n.a.

Source : ECLAC.

The extent of this imbalance varies from country to country. Guyana and Nicaragua are the only countries in which the sector's contribution to GDP greater than the fraction of the population economically dependent on it; in other words, agricultural productivity is greater than average productivity in the economy as a whole. The most extreme cases at the opposite end of the scale are Haiti, Guatemala and Bolivia, which have among the largest proportions of the population whose main economic activity is agriculture (61%, 48% and 43%, respectively), yet the sector's contribution to GDP is very small (18%, 20% and 14%, respectively; see figure 85).

Figure 85



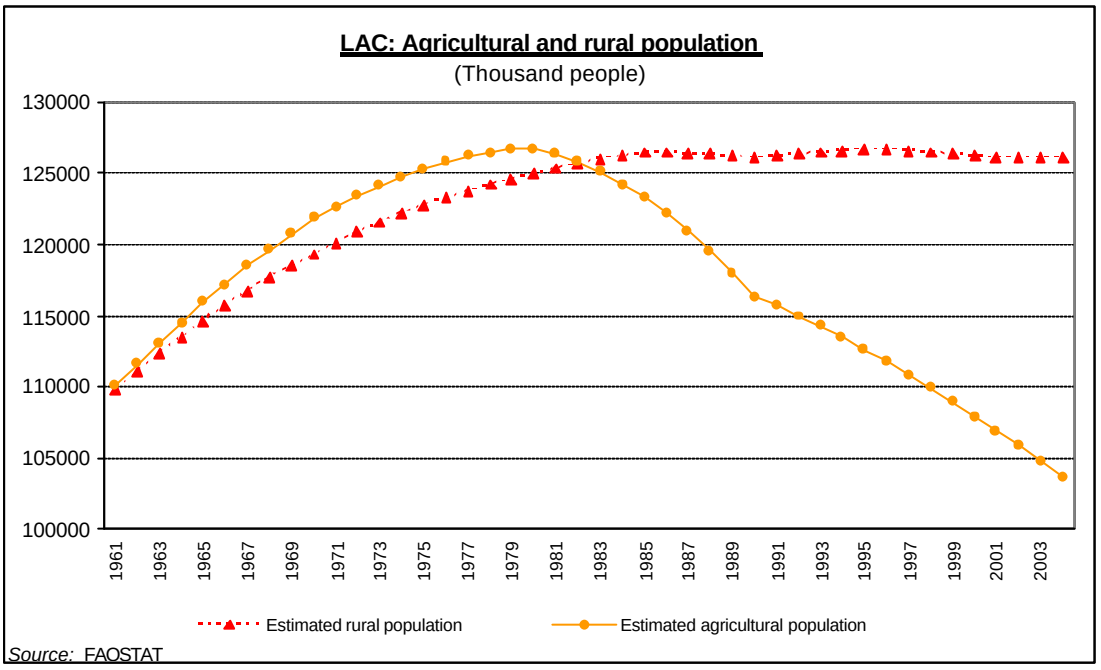
A smaller population economically dependent on agriculture should not mean abandonment of the countryside, but an upgrading of the rural domain involving coordination between agriculture and other productive rural activities, and greater linkage between rural development and small urban centres. A very wide range of possible economic activities can be envisaged in this situation, largely relating to commercial and service activities, in addition to construction materials, handicraft, agribusiness and various combinations of wage-earning employment for some members of the rural family in urban centres.

The share of non-farm activities in rural employment is growing rapidly. As this type of work tends to be more productive and better paid, the proportion of rural income obtained from non-farm activities is growing even faster. In the coming years these activities are bound to grow in importance, and linkages between the rural economy and urban centres will also increase.

In recent years, the trend towards a diversification of economic activities in rural areas has begun to be reflected in the region's population statistics. Prior to 1980,

agricultural and rural population trends were very similar; in the early 1980s, the rural population was roughly 126 million people and virtually equivalent to the "agricultural population".[31] Since then, while the rural population has stabilized in absolute terms (although declining relatively, as a result of urban demographic growth) the population dependent on agriculture has been shrinking and currently amounts to about 104 million. Thus, the population living in the countryside is expanding, but it is engaging increasingly in non-farm activities (see figure 86).

Figure 86



Nonetheless, one should not lose sight of the dynamic of the various economic activities carried out in rural areas linked to specifically agricultural development. Non-farm employment in rural areas is growing faster and more equitably in places where agriculture is also growing strongly; i.e. where there is agricultural production to process and distribute, inputs to sell and equipment to repair, and where cash incomes are spent on local goods and services. This multiplier effect of higher farm incomes – through production linkages, spending or investment – is of the utmost importance when designing the rural development strategy, and essential in overcoming exclusion at the national level.[32]

Although rural development implies a diversification of job sources and greater vertical integration among economic activities in rural areas, there is a direct relation – a positive dynamic – between agricultural and non-farm rural incomes. Moreover, in many cases the starting point that enables today's rural population to participate actively in development based on the land depends largely on its capacity to generate incomes from farming activities. There can be little doubt that an expansion of small-scale agricultural production would improve possibilities for the families of small-scale producers to participate in an intersectoral and land-based rural development

[31] Defined as the population in which agriculture is the main economic activity of the head of the family.
[32] FAO, *The State of Food and Agriculture, 1998.*

strategy. On the other hand, in circumstances where crop and livestock activity is deteriorating, the difficulties of rural development tend to multiply, significantly increasing exclusion and the risk of countryside abandonment. Agricultural development alone does not suffice to achieve rural development; but in the current circumstances, it is impossible to establish the rural development process in the absence of vibrant agricultural growth.

From this standpoint – while recognizing that it is normal for the share of agriculture in GDP to decline in the long run – faster agricultural growth is essential to combat poverty and bring excluded regions into the development process. Agriculture needs to keep pace with growth in the national economy driven by other sectors, so as to mitigate the social costs arising from slow productive restructuring among the rural population toward more diversified activities.

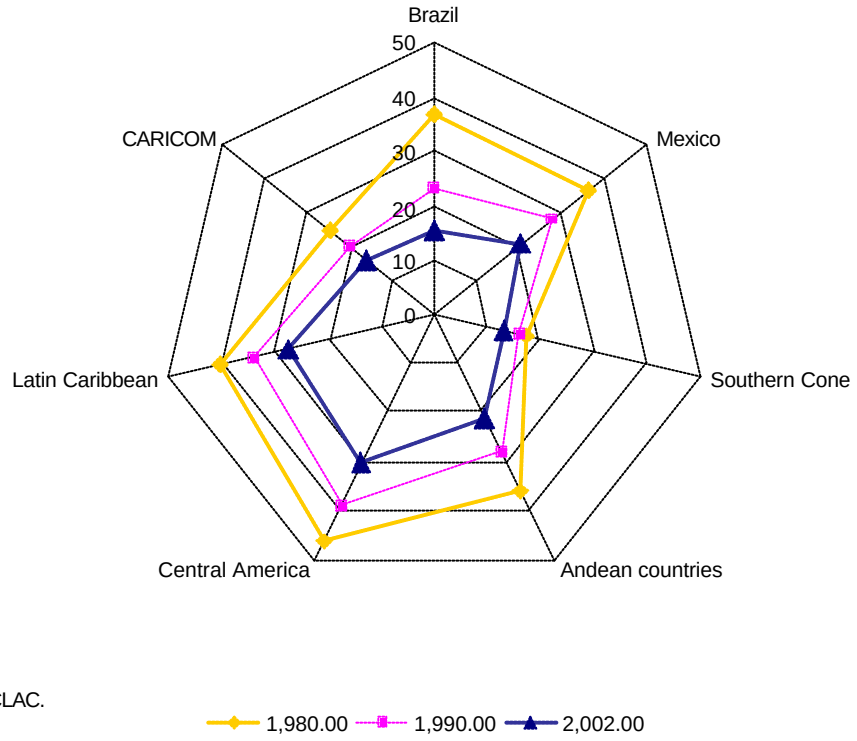
In current conditions, the possibilities for economic activity are far from profitable and competitive across broad swathes of the Latin American and Caribbean countryside. The existence of large populations of rural poor, with no training or education and minimal conditions of subsistence, compounded by a lack of policy committed to ensuring the environmental sustainability of development, has generated a negative dynamic where poverty and the loss of productive potential are becoming increasingly serious in extensive areas, thereby disintegrating the national development base. It is essential to reverse this long-term process of decline. Enabling many of those regions, in the medium and long-term, to participate efficiently in crop growing, livestock, forestry, fishery or agribusiness, in coordination with commercial, service and other productive activities, requires a major effort and a lasting commitment. But a failure to do so would be extremely costly in terms of the territorial integration of the economic system, loss of productive potential and exclusion of a very large fraction of the population from the benefits of development. If the new development model is to contribute to overcoming problems of mass poverty and exclusion, it must make progress in incorporating the rural population into the economic growth process.

The economically active population engaged in agriculture has shrunk in all subregions. This process has been particularly acute in Brazil, where the fraction of the EAP engaged in agriculture declined from 37% in 1980 to 15% in 2003. The smallest change has occurred in the southern cone countries, where the proportion of the population engaged in agriculture was already relatively small in 1980 (17%) and currently stands at 13% (see figure 87).

Figure 87

LAC: Share of agriculture in the economically active population by subregion

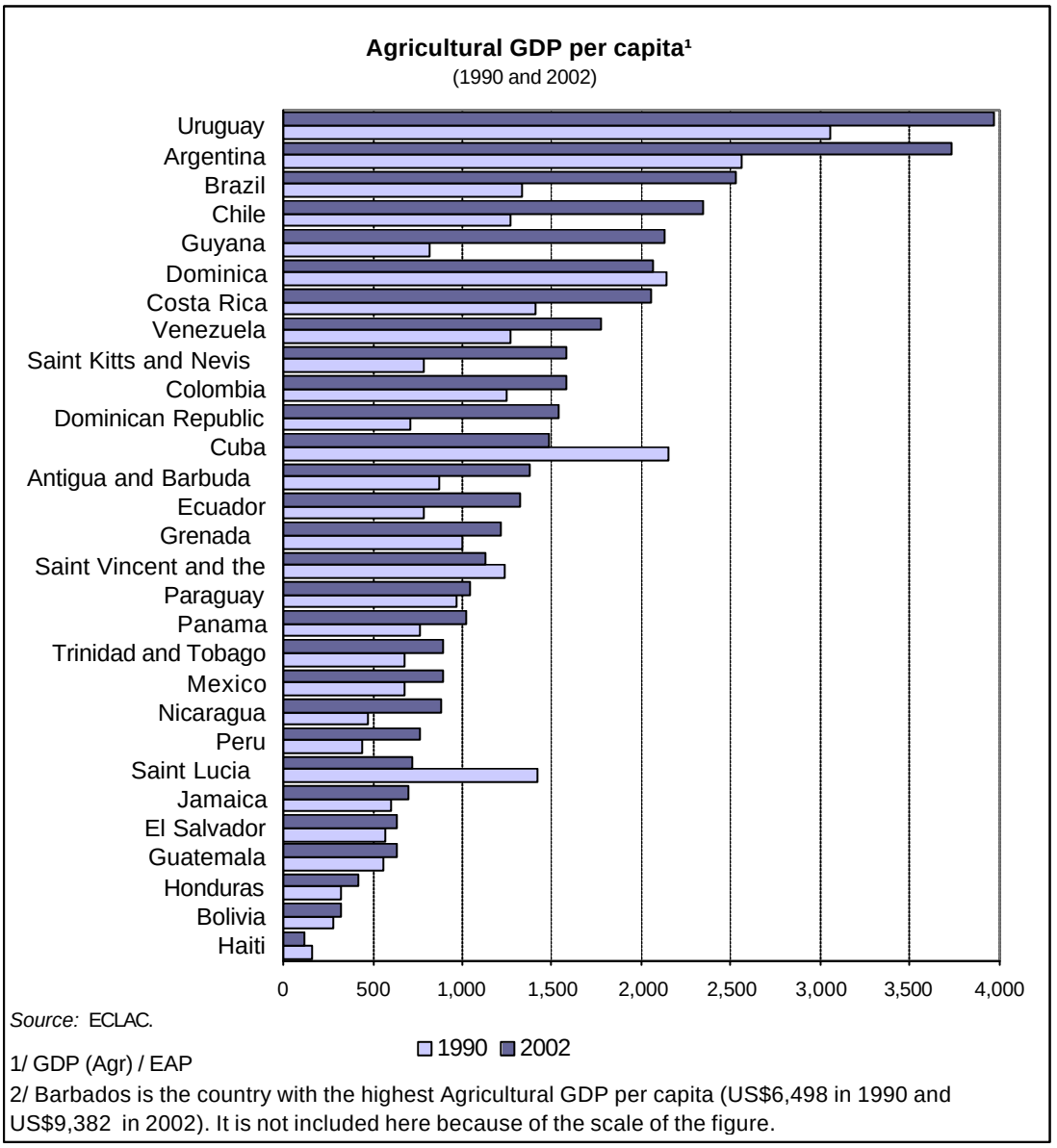
(Percentage)



Source: ECLAC.

Inter-country differences in agricultural productivity, and in demographic pressure on the sector, produce wide dispersion in average sectoral incomes among the region's agricultural populations. Brazil and several southern cone countries display the highest income levels; whereas the lowest are generally in countries with the lowest global per capita incomes, or those with agriculture sectors that are lagging behind in terms of development (see figures 88 and 89).

Figure 88

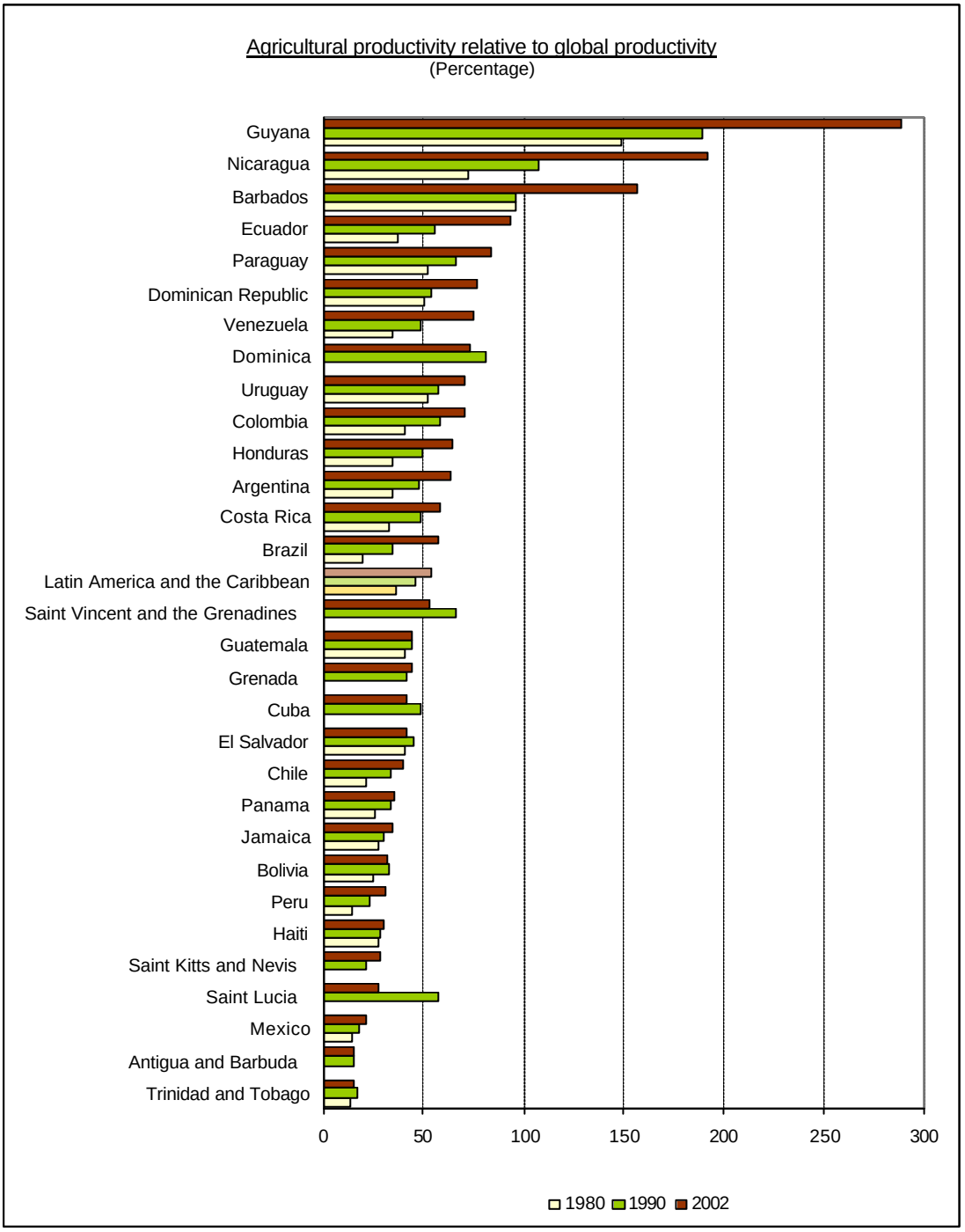


Source: ECLAC.

1/ GDP (Agr) / EAP

2/ Barbados is the country with the highest Agricultural GDP per capita (US$6,498 in 1990 and US$9,382 in 2002). It is not included here because of the scale of the figure.

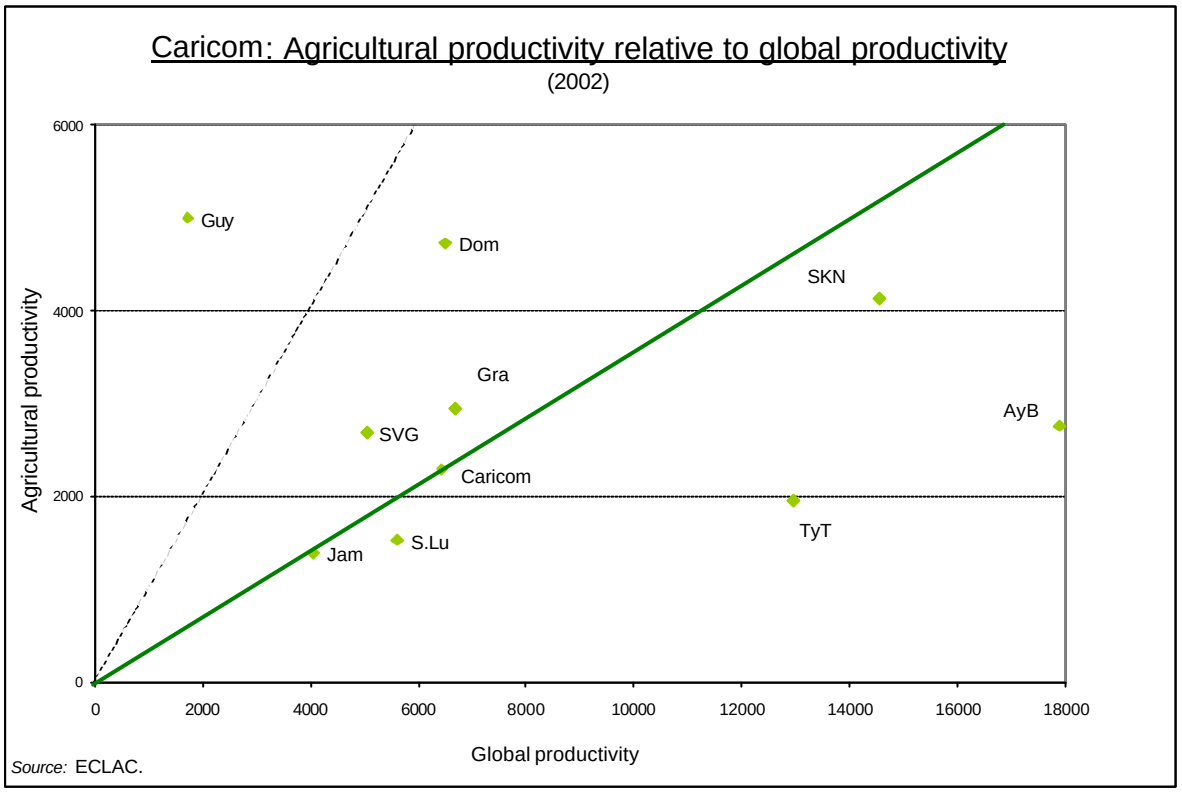
Figure 89



Source: ECLAC.

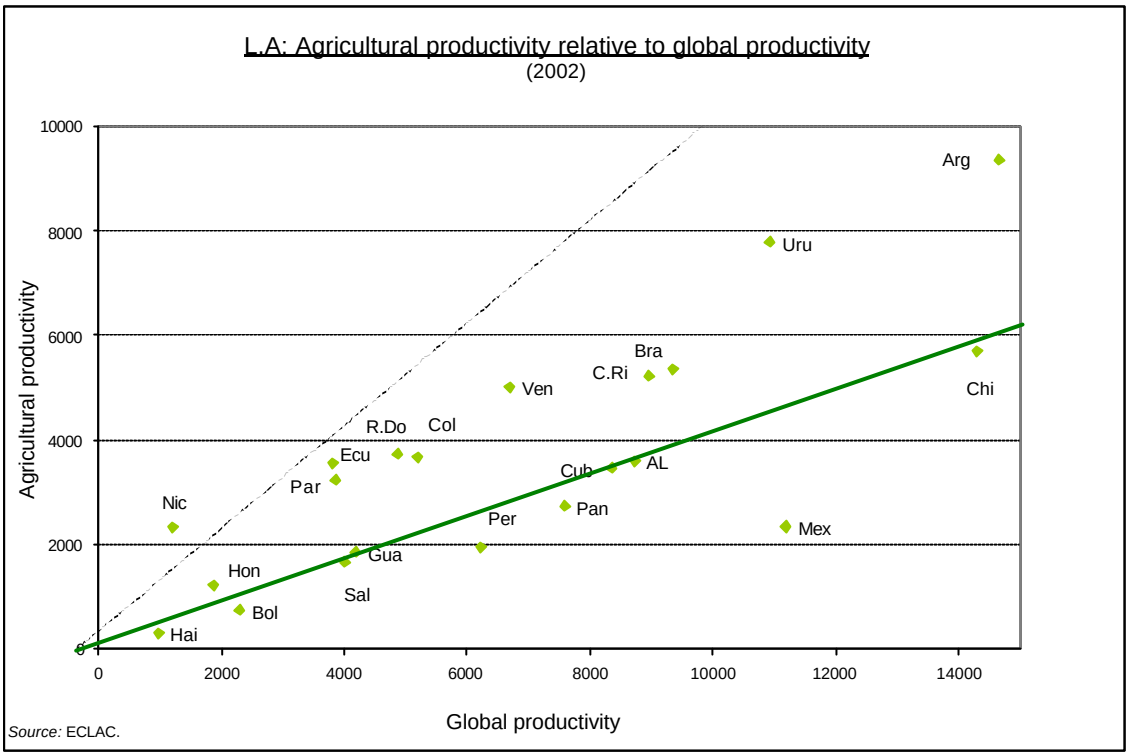
Productivity in agriculture is normally lower than in other sectors. In the English-speaking Caribbean, only Guyana has a higher agricultural productivity than the average productivity of the economy as a whole. In Dominica, Saint Vincent and the Grenadines and Grenada, the gap between agricultural and overall productivity is smaller than the average for CARICOM countries, while the largest gap between the two productivity measures is recorded by Antigua and Barbuda, and Trinidad and Tobago (see figure 90).

Figure 90



Nicaragua is the only Latin American country where agriculture attains a higher productivity/asset coefficient than the country's average productivity; while Mexico displays the largest gap between the two productivity measures (see figure 91).

Figure 91



B. CROP AND LIVESTOCK PRODUCTION[33]

The value of crop and livestock production during the last two decades (1980 to 2002) has grown at annual rate of 2.6%, broadly similar to that of the wider sectoral output. Nonetheless, the details reveal a number of significant variations.

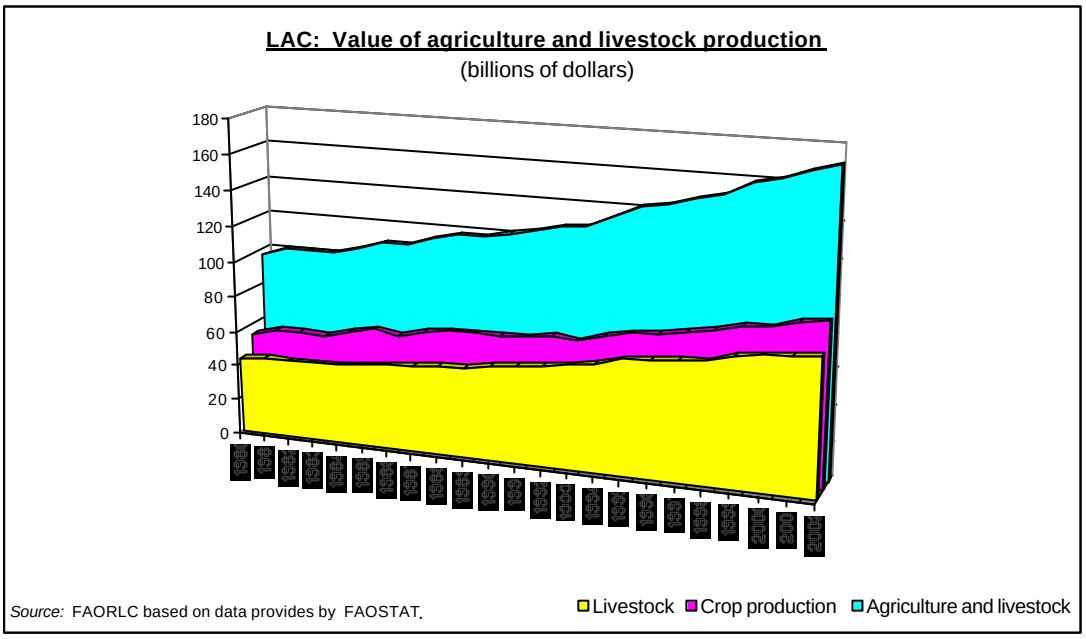
The growth of gross crop and livestock production in Latin America and the Caribbean has accelerated since 1994. Whereas the average growth rate was 2.2% per year from 1980 to 1993, since then until 2002 the annual rate has averaged 3.1%.[34] This change is not reflected in the trend of sectoral GDP. The fact that the variation is smaller in crop production (value-added) would suggest that increases in the value of output have been achieved through relatively greater use of inputs (intermediate consumption).[35] The same explanation may account for the rapid growth in the consumption of several of the most important industrial inputs for agricultural production. Between 1993 and 2001 (the latest year for which data is available) the

[33] This section only covers crop growing and livestock production, because the information needed to include forestry and fis hery production was not available.
[34] The acceleration from 1994 onwards partly reflects the decrease in Cuban production of earlier years.
[35] The difference between the trend of sectoral GDP and crop and livestock production may also partly be due to the effect of other activities included in sectoral GDP, as well as to statistical aspects or temporary mismatches.

consumption of fertilizers in the region grew at an average annual rate of 5%, while pesticide consumption grew even more rapidly, at 21% per year. Input use appears to be expanding considerably faster than output.

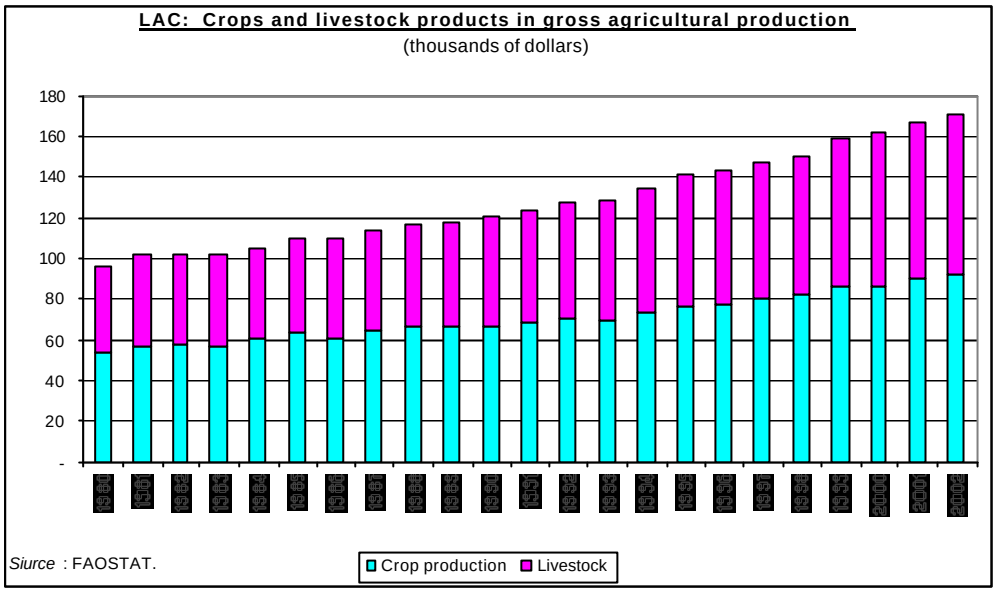
The acceleration in the growth rate during the last decade is seen in the crop growing and livestock subsectors alike, but the change since 1993 is more notable in crop production (see figure 92).

Figure 92



The crop-producing subsector displays wider annual variations than livestock production; nonetheless, in the medium term the relative shares of crop and livestock products in the value of agricultural output in Latin America and the Caribbean change very slowly. In the mid-1980s the livestock component had begun to claim a larger proportion of the agricultural total, expanding from 42% in 1985 to 46% in 1993. But since then, the two subsectors have grown at virtually equal rates, so the relative share of each within overall agricultural production has tended to stabilize: 54% crops and 46% livestock products (see figure 93).

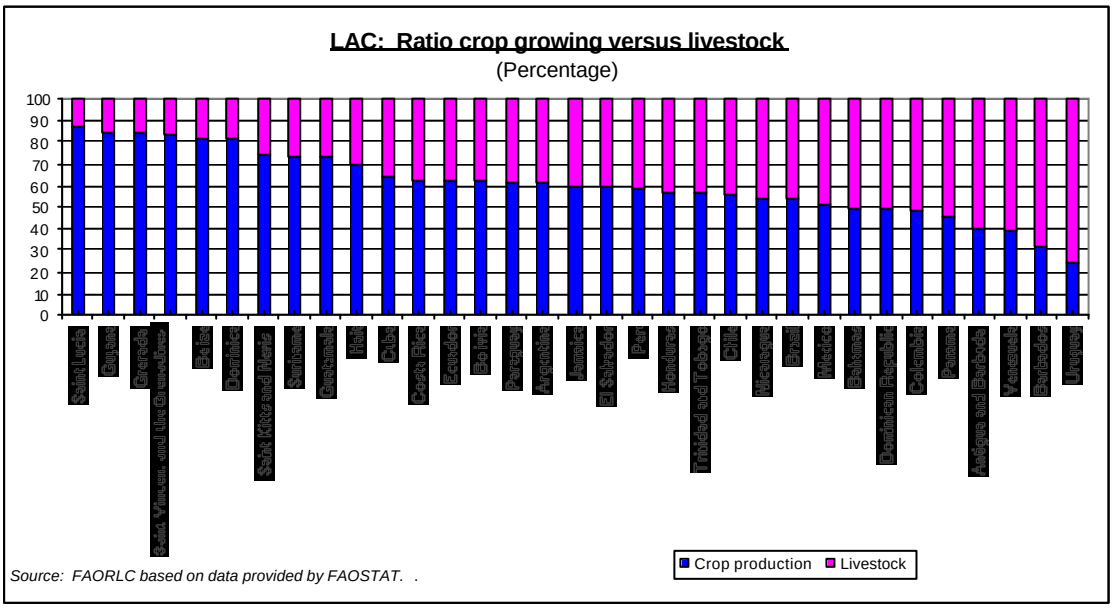
Figure 93



Siurce : FAOSTAT.

The crop-growing component generally accounts for a majority of agricultural production; but in eight of the region's countries the livestock segment contributes over half. In Mexico and Brazil the livestock subsector represents nearly half of total agricultural output (49.5% and 46.8%, respectively); but in six CARICOM countries crop production accounts for over 80% (see figure 94).

Figure 94



Source: FAORLC based on data provided by FAOSTAT. .

The increase in the pace of expansion over the last decade (1983-2002), compared to the weak growth displayed in the 1980s, is very widely distributed across the different subregions. Although the largest acceleration between the two periods occurred in the countries of the southern cone and the Latin Caribbean, the fastest growth during the last decade was achieved by Brazil (3.8%), while only the CARICOM countries registered a slower expansion than in the previous decade (see table 29 and figure 95).

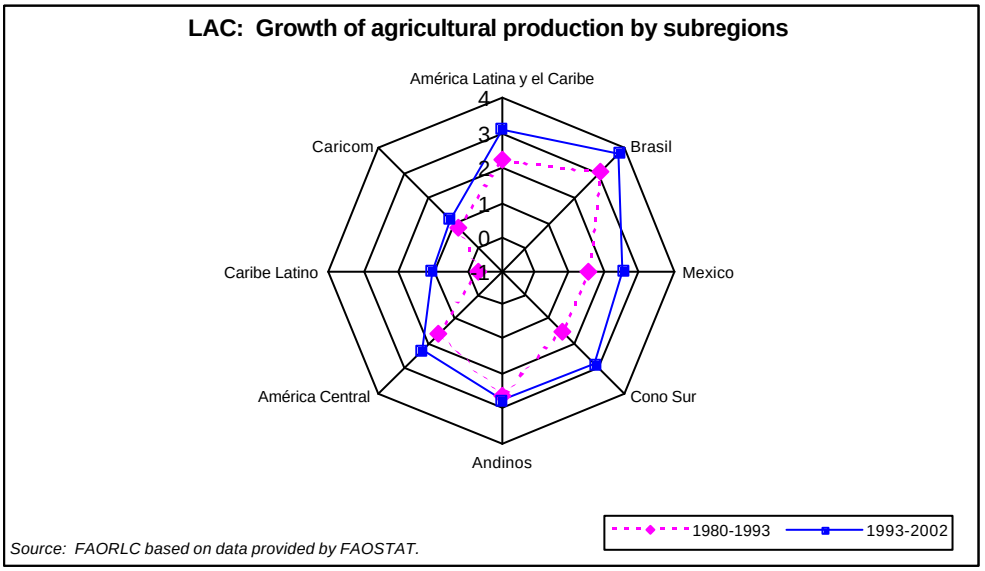
Table 29

LAC: Growth of agricultural production by subregions

	1980-1993	1993-2002	Difference
Latin America and the Caribbea	2,20	3,08	0,89
Brazil	3,07	3,77	0,70
Mexico	1,52	2,52	1,00
Southern Cone	1,54	2,81	1,28
Andean countries	2,59	2,73	0,14
Central America	1,59	2,26	0,68
Latin Caribbean	-0,31	1,02	1,33
CARICOM	0,79	1,10	0,32

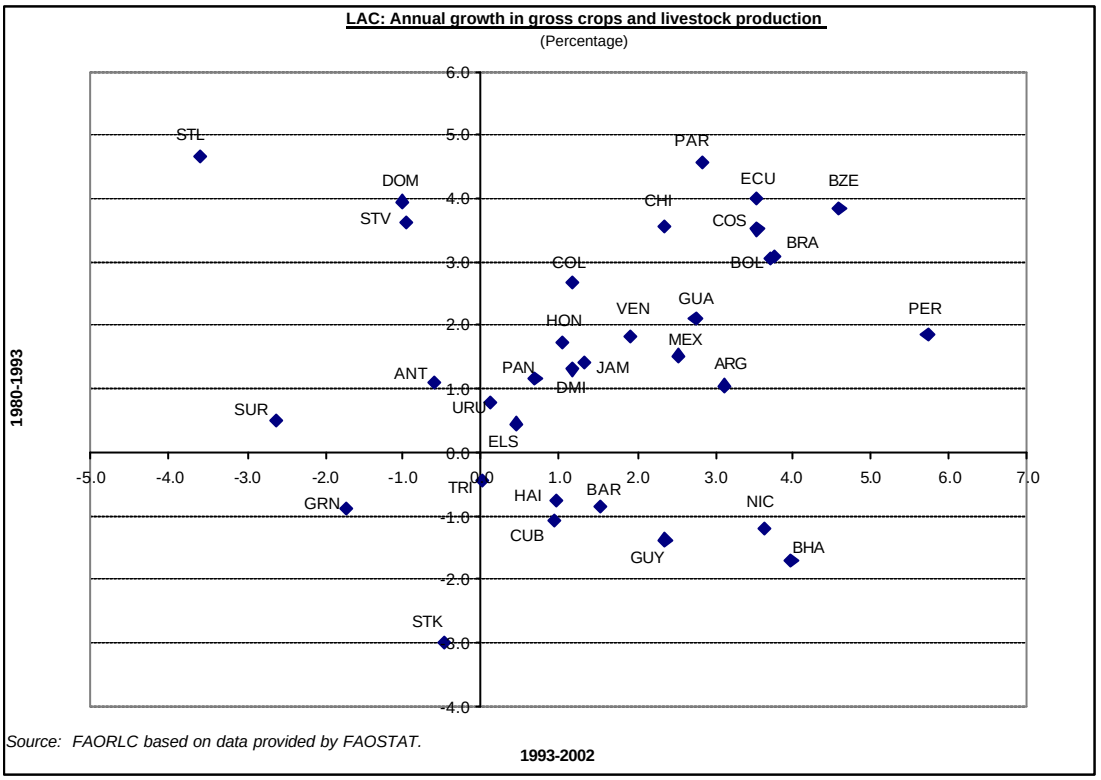
Source : FAORLC based on data provided by FAOSTAT.

Figure 95



Some of the region's countries have maintained relatively high growth rates in both periods (1980-93) and (1993-2002), mainly Peru, Belize, Brazil, Ecuador, Paraguay and Costa Rica. Over half of the CARICOM countries recorded negative growth rates during the 1990-2002 period; Grenada and Saint Kitts and Nevis posted negative average growth rates in both decades, whereas Belize maintained high positive rates in both periods (see figure 96).

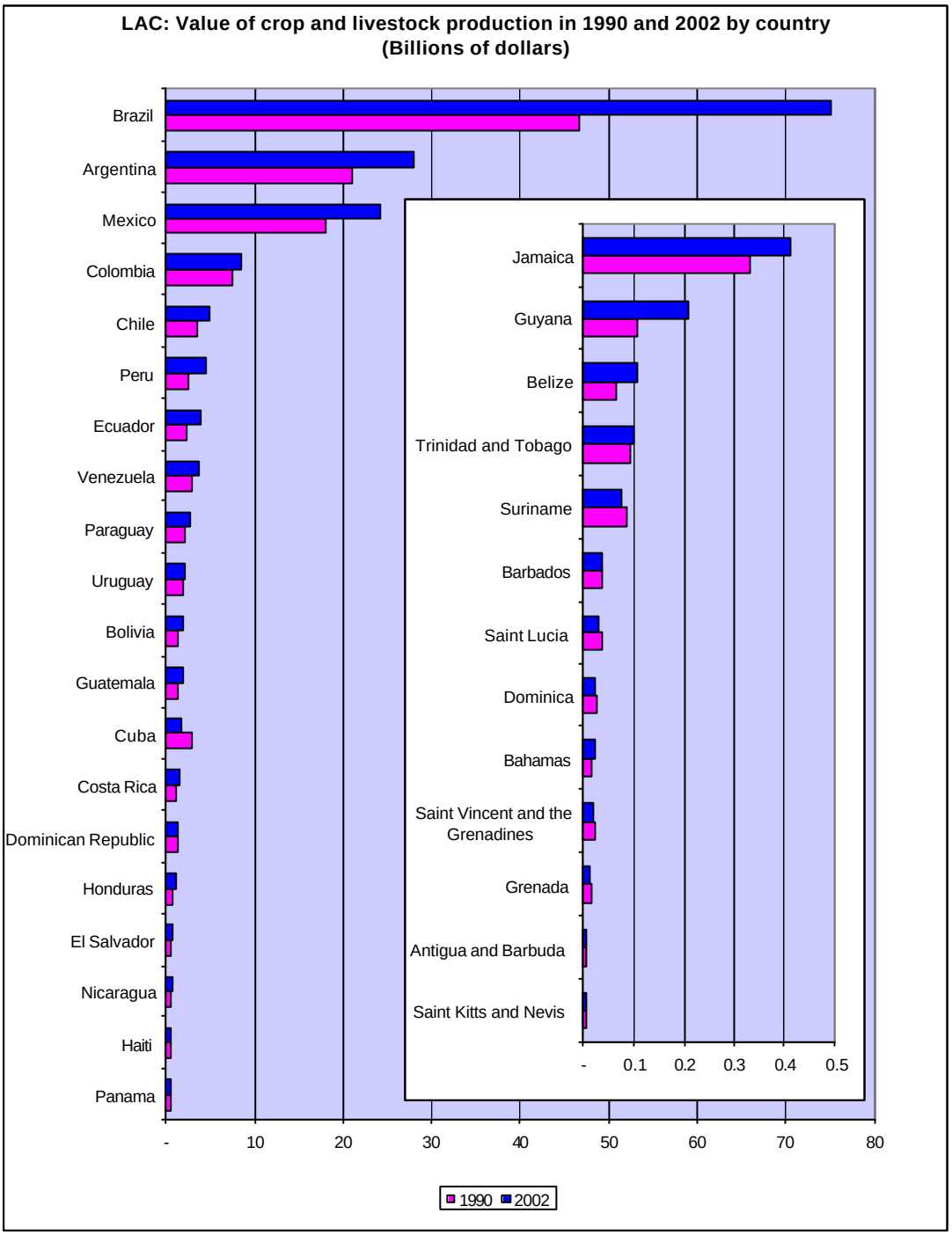
Figure 96



Source: FAORLC based on data provided by FAOSTAT.

In Brazil, high percentage growth rates in agriculture and livestock production, maintained over a 22-year period and based on a broad initial volume, have meant a rapid increase in its share of the region's total agricultural output (see figure 97).

Figure 97



Source: FAORLC based on FOASTAT data.

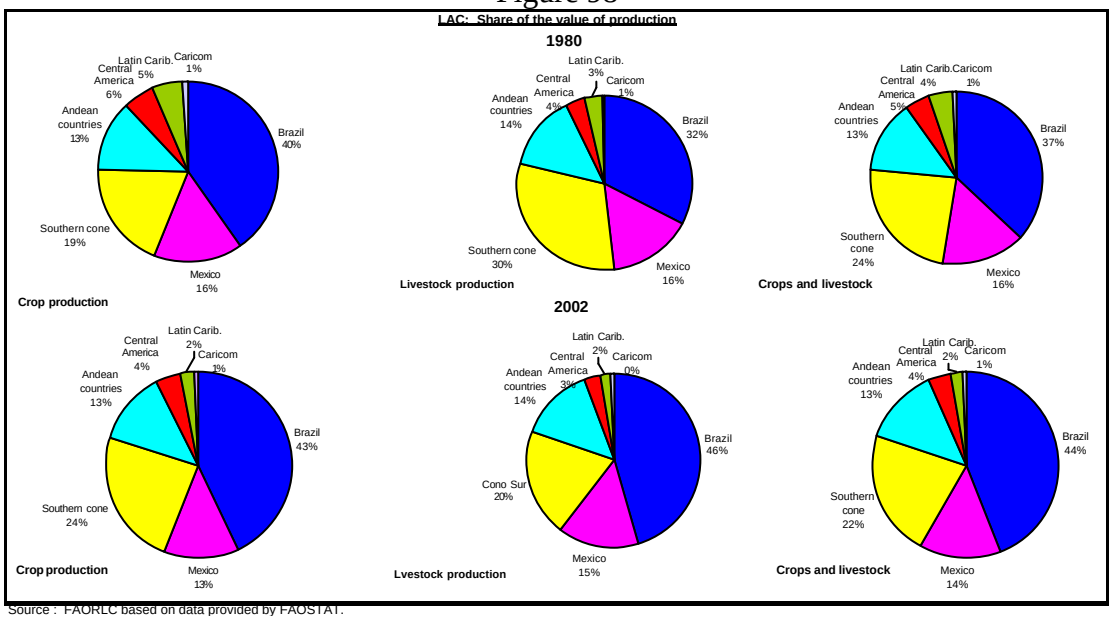
Changes in the shares of the various subregions and countries in regional crop and livestock production between 1980 and 2002, naturally reflects changes in their shares of sectoral product. As in the case of the latter, the seven percentage point growth in

Brazil's share (from 37% to 44%) is outstanding. Nonetheless, its shares of the crop growing and livestock components have behaved differently.

In crop production, Brazil's share has increased significantly, although relatively less, from 40% to 43%. In this subsector, the southern cone countries achieved the largest increase, from 19% to 24%. The steepest fall occurred in Mexico, whose share of regional agriculture shrank from 16% in 1980 to 13% in 2002, while Cuba and the Central American countries also saw their shares diminish.

In livestock production, the expansion in Brazil has been much faster than the regional average. In 1980, the country generated less than one third of the total (32%), but in 2002 it was already producing nearly half of total livestock production in the region (46%). The relative share of all other subregions is declining, without exception. The sharpest fall has been recorded in the southern cone countries, which in 1980 contributed 30% of livestock production, but currently account for 20% (see figure 98).

Figure 98



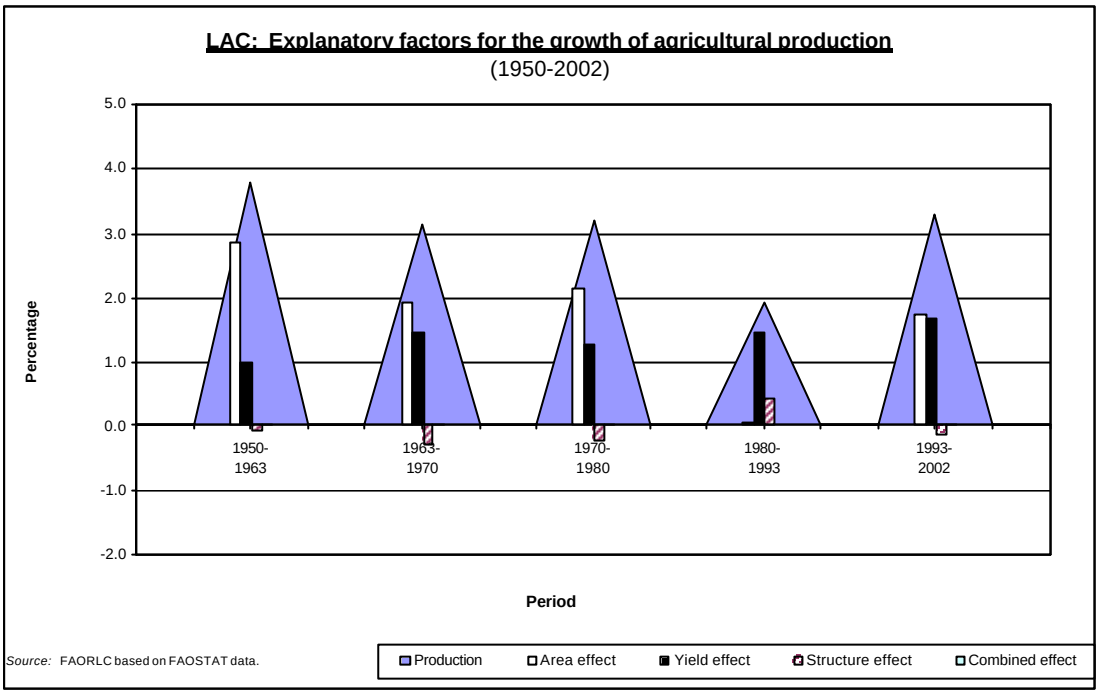
Source : FAORLC based on data provided by FAOSTAT.

C. CROP-PRODUCING SUBSECTOR

A historical analysis of crop production in Latin America and the Caribbean shows that the growth rates recorded in the last two decades are significantly lower than those achieved earlier. Between 1980 and 2002, regional crop production grew at an average annual rate of just 2.3%, compared to an expansion of between 3% and 4% per year in previous decades. A more detailed analysis reveals a break in that trend in 1993, however. From 1980 to 1993, the region's crop production expanded by less than 2% per year (1.96%), whereas from 1993 to 2002, the annual average growth rate was 3.35%.

The main factor explaining the general growth slowdown during the last two decades, and also the relative recovery within this trend as from 1993, is the behaviour of cultivated areas (see figure 99).

Figure 99



In the 1950s and early 1960s, the total harvested area grew by 2.9% per year, which, combined with modest annual growth of 1% in the yield index, allowed crop production to expand at an annual rate of 3.8%.

In the 1960s and 1970s, cultivated areas expanded more slowly (by about 2.0% per year), but yields per hectare were improving by roughly 1.4% annually. Accordingly, the rate of growth of crop production remained relatively high at around 3.2% per year. The increase in crop production was slightly less than the sum of the area and yield effects, because economically less intensive crops expanded relatively more, thereby producing a lower monetary yield per hectare. In other words, the effect of changes in the crop structure had a negative effect of about -0.2% per year.

From 1980 to 1993, expansion of the total cultivated area stalled almost entirely (growth was just 0.05% per year). Consequently, although hectare yields improved at least as fast as in the previous periods (by 1.45% per year), this was not enough to generate a rapid expansion of crop production. The deepest stagnation in cultivated areas occurred in basic crops, so the share of several more intensive crops grew relatively, and the effect of the change in the composition of output was slightly positive (0.44%). Nonetheless, the stagnation in area cultivated seriously limited overall output growth and, as mentioned above, the resultant annual rate of expansion was just 2.0%.

Starting in 1993, cultivated areas began to expand again at an average annual rate of 1.73%. The positive effect of this factor was boosted by further improvement in average yields, which rose to 1.65% per year, i.e. a higher rate of productivity growth

than in any of the preceding periods. Changes in the structure of production had a slightly negative effect because the expansion of areas cultivated was concentrated in basic products, which are less income-intensive per hectare. This factor slightly reduced the rate of output growth (-0.12% per year). As a result of these changes, regional crop production grew at an annual rate of 3.35% in the 1993-2002 period (see table 30).

Table 30

LAC: Explanatory factors for the growth of agricultural production

(Percentage)

	1950-1963	1963-1970	1970-1980	1980-1993	1993-2002
	3,8	3,1	3,2	2,0	3,4
Rate of growth of production					
Area effect	2,9	1,9	2,1	0,0	1,7
Yield effect	1,0	1,5	1,3	1,4	1,7
Crop structure effect	-0,1	-0,3	-0,2	0,4	-0,1
Combined effect	0,0	0,0	0,0	0,0	0,0

Source: FAORLC based on FAOSTAT data.

The slowdown in the expansion of cultivated areas between 1980 and 1993 affected practically all subregions; only the Andean countries registered a relatively favourable growth rate of 1.14% per year, whereas the other subregions expanded by a few tenths of a percentage point annually, and in Brazil the figure was negative. This degree of generalization clearly points to the existence of common factors, transcending problems arising from weather phenomena or specific constraints in the different countries.

Moreover, Brazil, and especially the southern cone countries, achieved a sharp increase in productivity per hectare during this period, which enabled them to grow slightly faster by just over 2% per year. The Andean countries recorded a slightly lower rate, thanks to the larger area cultivated, as mentioned above.

In Mexico, Central America and the CARICOM countries, the stagnation in output was very profound, with annual growth of no more than 1.0%; and in the Latin Caribbean the figure was negative (see table 31 and figure 100).

Table 31

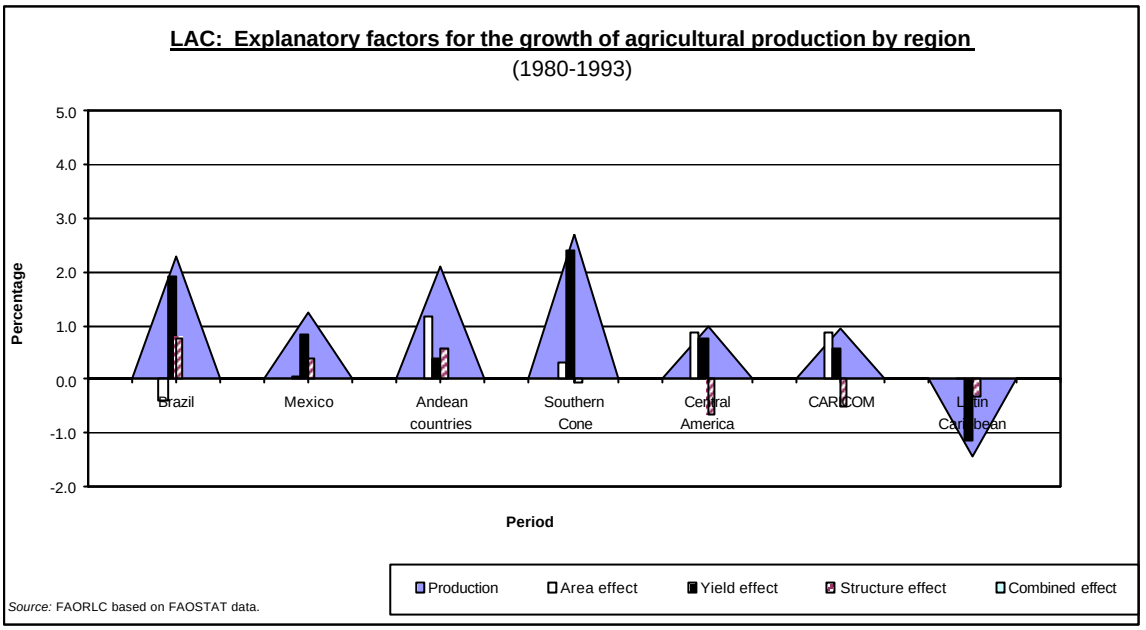
LAC: Explanatory factors for agricultural growth between 1980 and 1993, by regions

(Percentage)

	Brazil	Mexico	Andean countries	Southern Cone	Central America	Latin Caribbean	CARICOM
Rate of growth of production	2.28	1.25	2.11	2.68	0.99	-1.42	0.94
Area effect	-0.41	0.04	1.14	0.30	0.88	0.02	0.87
Yield effect	1.93	0.83	0.38	2.42	0.78	-1.14	0.59
Crop structure effect	0.77	0.37	0.58	-0.05	-0.66	-0.31	-0.52
Combined effect	-0.01	0.00	0.01	0.01	0.00	0.00	0.00

Source: FAORLC based on FAOSTAT data.

Figure 100



The change that occurred from 1993 onward was also widespread throughout the region. With the single exception of the Latin Caribbean, in all other subregions the area cultivated grew during the period. In the southern cone countries, the area harvested expanded by 3.65% per year, reflecting above all a larger cultivated area in Argentina – and also in Paraguay, albeit on a smaller scale. In addition, yield growth per hectare has been positive in all subregions without exception. In Brazil, the rate of growth of physical productivity per hectare reached 2.06% per year; while in the southern cone and the Andean countries the figures were only slightly lower, but still high at 1.56% and 1.67%, respectively. Productivity growth per hectare is considerably weaker in Mexico, Central America, the Latin Caribbean and CARICOM (see table 32 and figure 101).

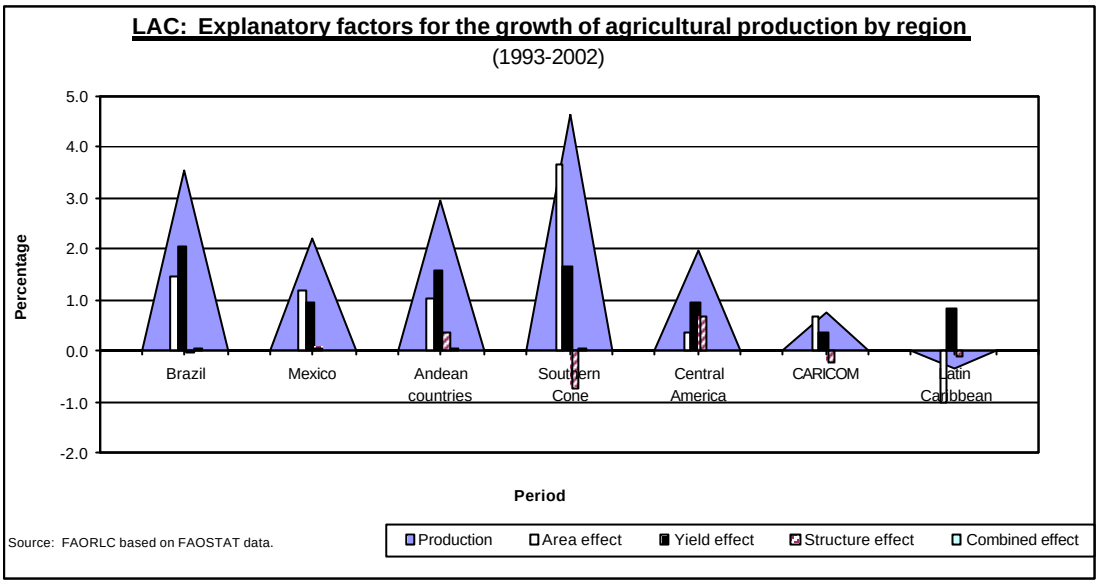
Table 32

LAC: Explanatory factors for agricultural growth between 1993 and 2002, by regions
(Percentage)

	Brazil	Mexico	Andean countries	Southern Cone	Central America	Latin Caribbean	CARICOM
Rate of growth of production	3.5	2.2	2.9	4.6	2.0	-0.3	0.8
Area effect	1.5	1.2	1.0	3.6	0.4	-1.0	0.7
Yield effect	2.1	1.0	1.6	1.7	1.0	0.8	0.3
Crop structure effect	0.0	0.0	0.3	-0.7	0.7	-0.1	-0.3
Combined effect	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Source: FAORLC based on data provided by FAOSTAT.

Figure 101

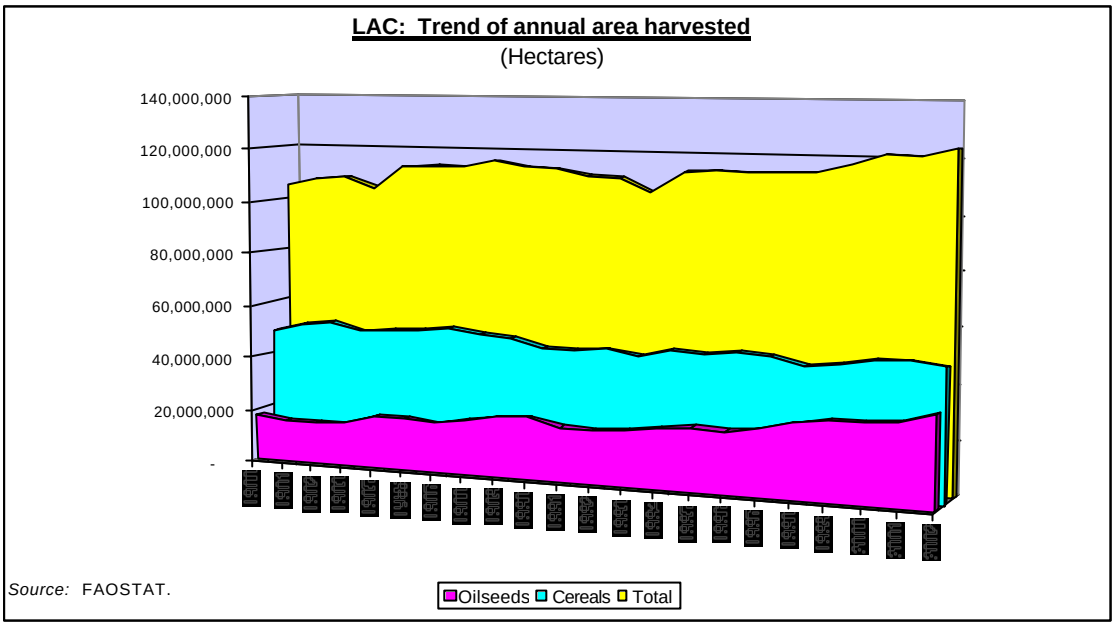


The trend in area harvested has had a decisive impact on the expansion of crop production in Latin America and the Caribbean over recent decades. Numerous factors have contributed to this, including the availability of natural resources, the pace of development of infrastructure works, access to financing, productive technologies or natural disasters, etc. These and other factors – along with the underlying causes in each case – are important factors in explaining the trend of cultivated areas in the region's different countries. Without denying the importance that these factors may have in various cases, the broad and sustained increase in the growth rate throughout the region reflects changes in agriculture's competitiveness and the profitability. Price changes and higher productivity are important direct factors in explaining the faster pace of growth.

(i) Area harvested

At the start of the 1980s, the area annually harvested in Latin America and the Caribbean amounted to 105.3 million hectares. The sluggishness of this variable is shown by the fact that in 1993 the total harvested area was still just 105.9 million hectares. The renewed expansion of harvested areas since that year raised the total to 123.6 million hectares by 2002 (see figure 102).

Figure 102



The stagnation of the area cultivated during the 1980s particularly reflected weak performance in areas sown with cereal crops, which even shrank in absolute terms by roughly 6%. The cotton growing area also shrank dramatically by nearly two thirds, and the area harvested also failed to grow strongly in the other product groups, as mentioned above. These three elements reiterate the need to seek explanations for the stagnation of cultivated areas, in problems stemming from low profitability.

The recovery that began in 1993, while extending to most product lines (except cotton, tobacco and other products of relatively minor importance), was highly concentrated in the expansion of areas dedicated to oilseeds and, in particular, the exponential growth of roughly 3 million hectares of soybean cultivation. Zero tillage technology, complemented by the use of herbicide-resistant transgenic soya varieties, have made it possible to generalize a low-cost high-yield technology, which substantially increased profitability and made it possible to give a new, profitable response to the extremely vibrant demand for protein sources in the preparation of feed for poultry and pigs. The spectacular success of this production highlights the existence of possibilities for restoring agricultural growth. Of course, there are many technical and institutional requirements that have to be satisfied on this particular road to progress, as on any other.

Although cereal crops continue to account for the largest share of the total area cultivated, their relative share is tending to decline, from 47% in 1980 to 39% in 2002. In contrast, during the same period, the area sown with oilseed crops expanded from 16% to 28%. The other notable aspect is the minimal share cotton of growing areas, which used to be very important (see figure 103 and table 33).

Table 33

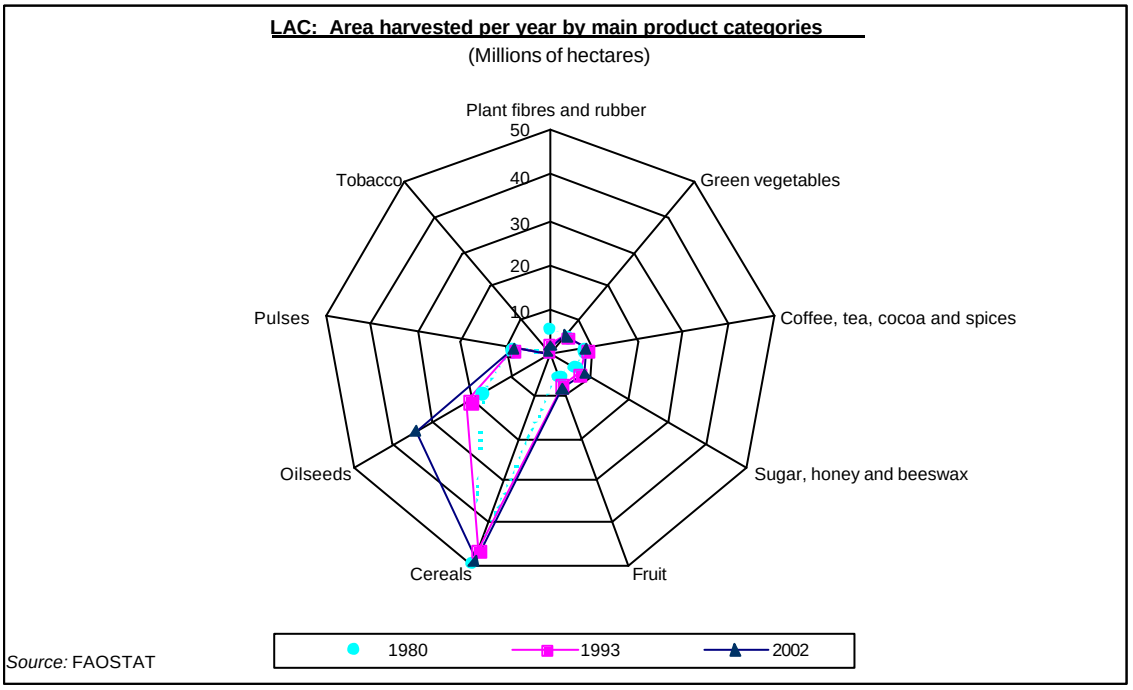
LAC: Area harvested by main products

(Millions of hectares and percentages)

	1980		1993		2002	
	Area	*%*	*Area*	*%*	*Area*	*%*
Total	105.3	100.0	105.9	100.0	123.6	100.0
Cereals	49.0	46.6	46.2	43.6	48.6	39.4
Oilseeds	17.1	16.3	20.7	19.5	34.1	27.6
Fruit	4.8	4.6	7.4	7.0	8.1	6.6
Green vegetables	5.6	5.4	5.7	5.4	5.9	4.8
Pulses	8.2	7.8	7.6	7.2	7.9	6.4
Coffee, tea, cacao and spic	7.2	6.9	7.8	7.4	7.8	6.3
Sugar	6.3	6.0	7.5	7.0	8.7	7.1
Plant fibres and rubber	6.3	6.0	2.4	2.3	1.9	1.5
Tobacco	0.6	0.6	0.6	0.6	0.5	0.4
Animal feed	0.0	0.0	0.0	0.0	0.0	0.0

Source : FAORLC based on data provided by FAOSTAT.

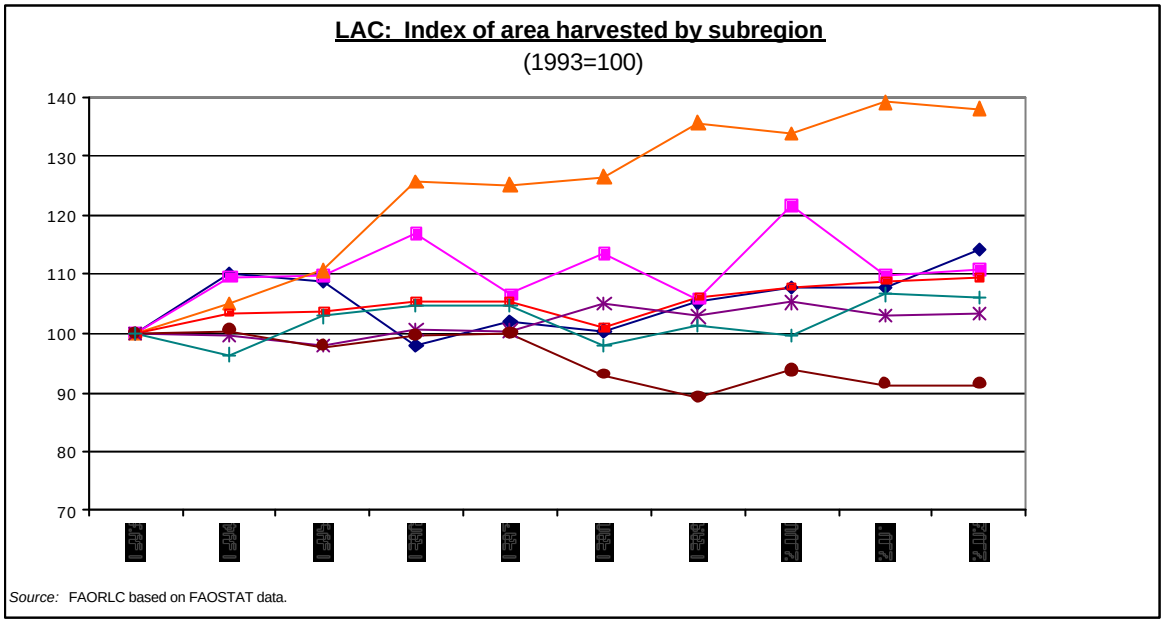
Figure 103



The fact that the largest expansions in harvested area occurred among countries that already had the largest areas under cultivation, especially the growth of soybean areas in Argentina and Brazil, also increased the concentration of crop production in those countries. The expansion in Paraguay is also significant in percentage terms, but based on a smaller area.

As a regional average, the area harvested grew by 17% between 1993 and 2002, but this was the result of a sharp increase in southern cone countries, especially Argentina. In that subregion, the index of harvested areas based on 1993 had climbed to 138 by 2002, i.e. the total area harvested was 38% larger than in 1993. In all other subregions, the expansion of areas is relatively modest (between 3% and 14%), except in the Latin Caribbean where the area cultivated continues to shrink, and the harvested area in 2002 was 9% smaller than in 1993 (see figure 104).

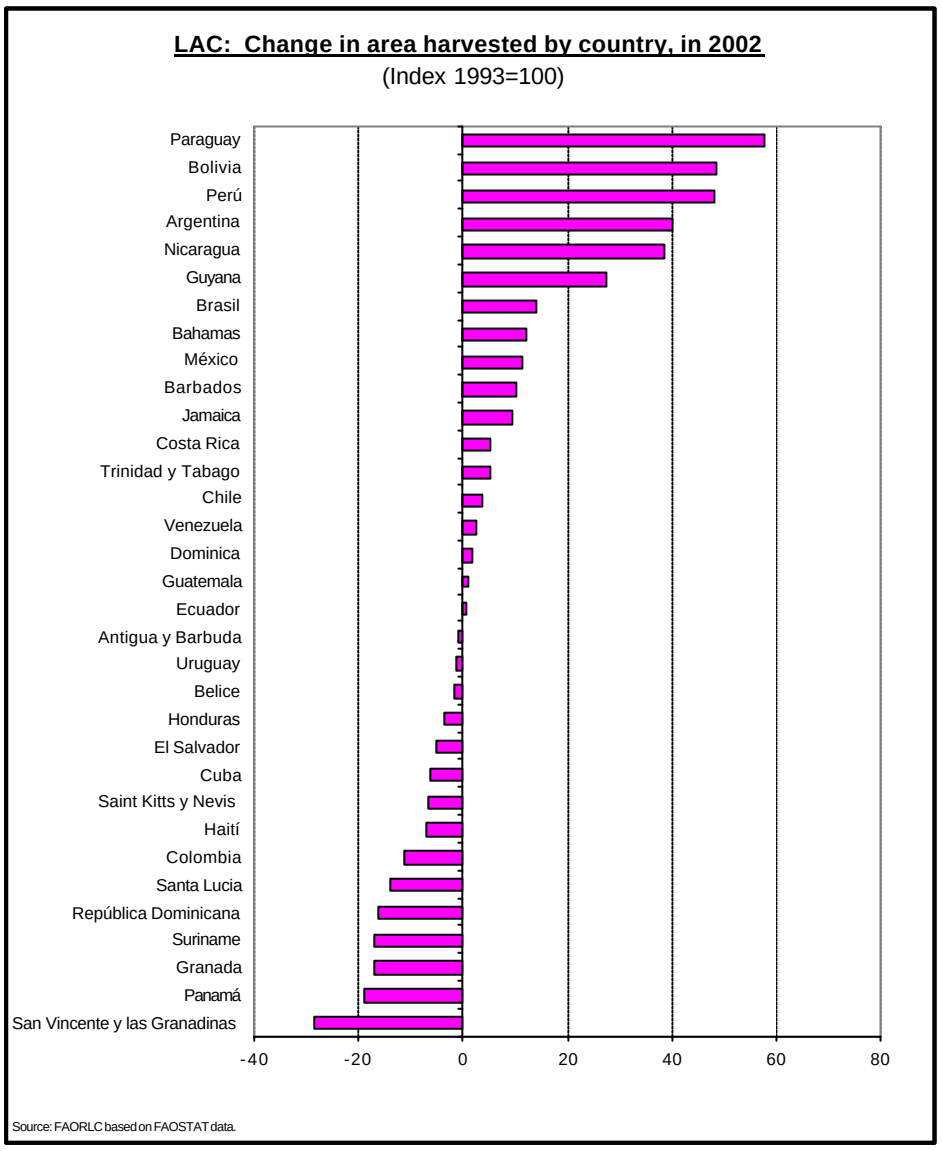
Figure 104



Source: FAORLC based on FAOSTAT data.

Despite the positive trend since 1993 in harvested area at the regional level, the area annually harvested is still shrinking in 15 countries, especially in the Caribbean, and in Panama, Colombia, and to a lesser extent in El Salvador and Honduras. In contrast, the greatest relative increases occurred in southern cone countries (Argentina and Paraguay), followed by Bolivia, Peru, Nicaragua and Guyana (see figure 105).

Figure 105



In relative terms harvested areas expanded most in regions and countries where the cultivated area was already relatively large, such that their share in the region's crop production will tend to concentrate still further (see figures 106 and 107).

Figure 106

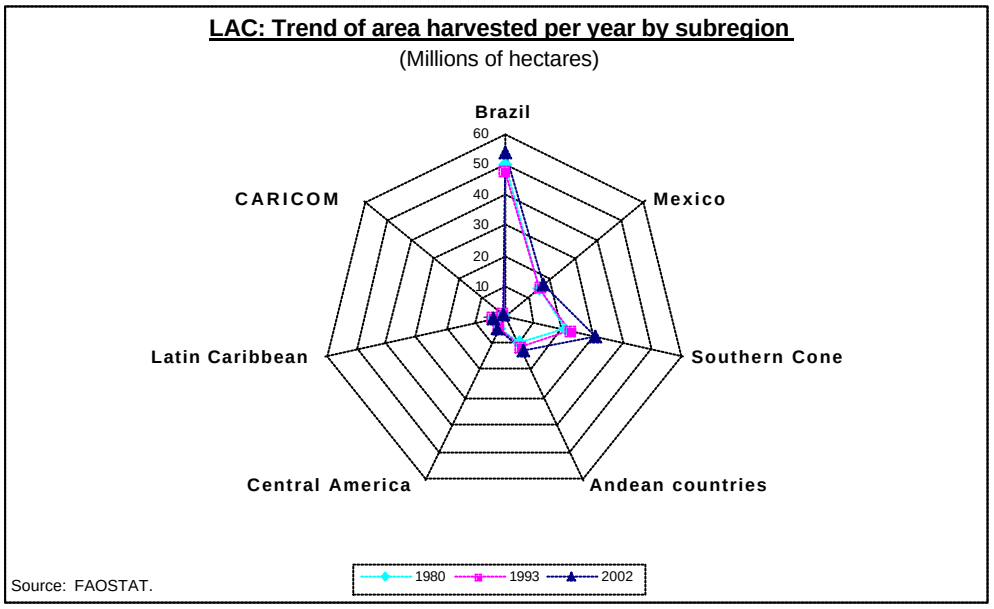
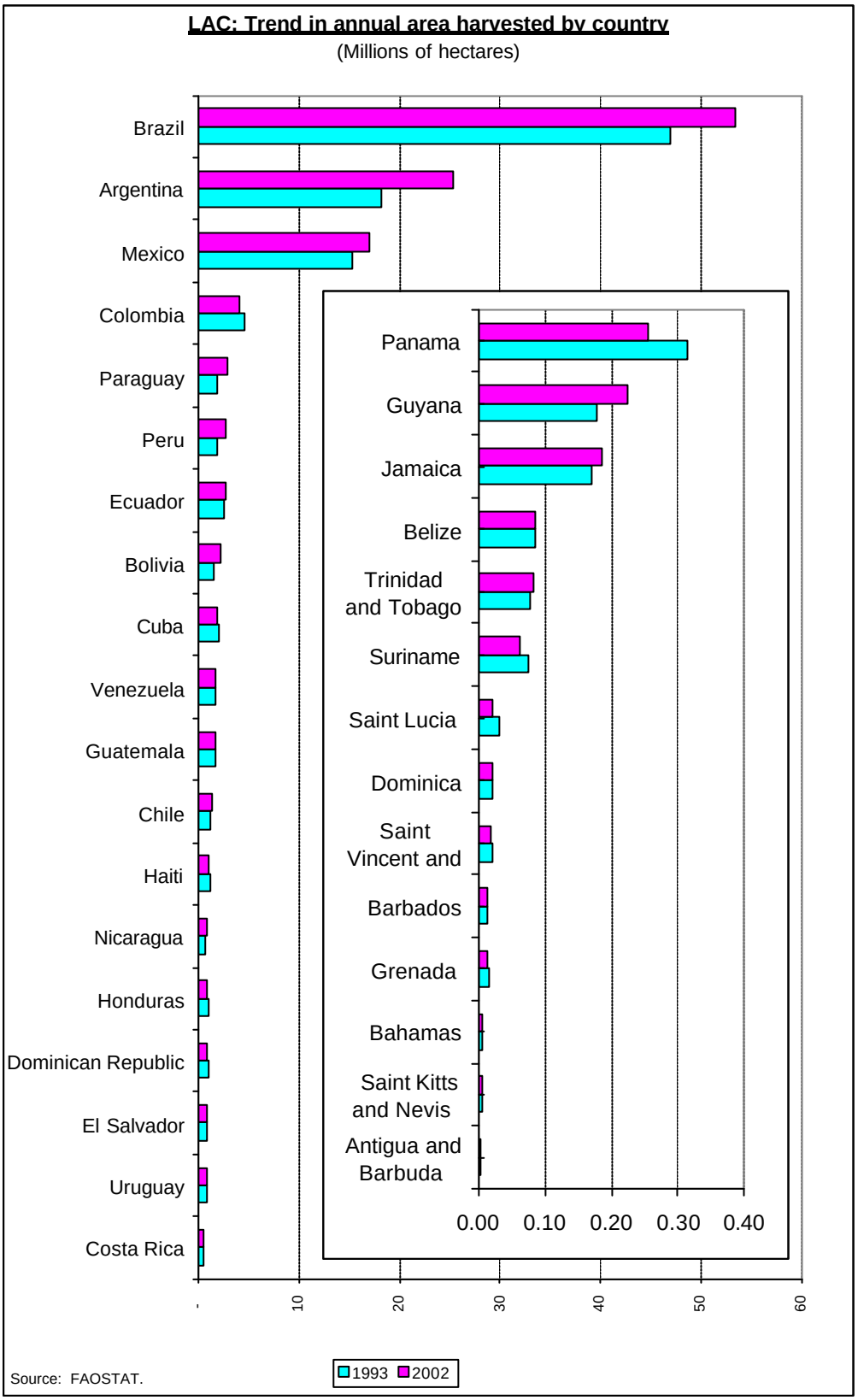


Figure 107


LAC: Trend in annual area harvested by country
(Millions of hectares)
Brazil
Argentina
Mexico
Colombia
Paraguay
Peru
Ecuador
Bolivia
Cuba
Venezuela
Guatemala
Chile
Haiti
Nicaragua
Honduras
Dominican Republic
El Salvador
Uruguay
Costa Rica
Panama
Guyana
Jamaica
Belize
Trinidad and Tobago
Suriname
Saint Lucia
Dominica
Saint Vincent and
Barbados
Grenada
Bahamas
Saint Kitts and Nevis
Antigua and Barbuda
0.00
0.10
0.20
0.30
0.40
-
10
20
30
40
50
60
1993
2002
Source: FAOSTAT.

(ii) Crop production trends

The acceleration of crop production after 1993, which raised the growth rate from 2.0% to 3.1%,[36] was relatively widespread among the different crop groups, but concentrated particularly in oilseeds. Since the previous decade (1980-1993) the rate of growth of oilseed production (3.9% per year) was highest of the different crop categories and practically double the average for all agricultural crops (2.0%). Between 1993 and 2002, however, oilseed production grew exceptionally fast at 7.2% per year. The most important explanatory factor was a 5.2% expansion of the area harvested in these crops, plus a 2% contribution from productivity per hectare.

Expansion of the area dedicated to oil seeds, especially soya, is the main explanation for the increase in total harvested area in Latin America and the Caribbean. In all other products or product groups, the area harvested continues to display weak or negative growth. This situation demonstrates the capacity of market-related technical responses to restore growth, as exemplified by soybean cultivation in Argentina and Brazil; but it also sounds a note of caution, because the growth of soybean production accounts for an extremely large proportion of the recovery being achieved by the region's agriculture. This represents a problem of concentration, aggravates vulnerability somewhat, and highlights the fact that the rest of agriculture continues to suffer from lack of competitiveness and low profitability (see table 34).

Table 34

LAC: Growth of crop production by main product categories
(Annual average percentage rate[1])

	Area		Yield		Production[2]	
	1980-1993	1993-2002	1980-1993	1993-2002	1980-1993	1993-2002
Total crops	0.3	1.3	1.7	1.8	2.0	3.1
Cereals	-0.8	0.3	1.7	2.1	1.0	2.4
Oilseeds	2.7	5.2	1.2	2.0	3.9	7.2
Fruit	4.1	1.0	-1.3	1.2	2.7	2.2
Green vegetables	0.1	0.5	1.6	2.3	1.7	2.8
Coffee, tea, cocoa and spices	1.2	0.2	0.2	2.7	1.3	2.9
Pulses	-0.3	-1.2	1.3	1.2	1.0	0.1
Sugar	1.9	1.2	0.3	0.9	2.2	2.1
Plant fibres and rubber	-5.4	-4.0	4.2	4.5	-1.2	0.5
Tobacco	-0.8	-0.2	2.0	1.3	1.3	1.1
Animal feed	2.0	-0.2	-2.5	-1.5	-0.5	-1.7

(1) Calculated by linear regression.
(2) Calculated at constant average 1989-1991 prices; The variation depends on the physical yields of the different crops and changes in the composition of crops within the same group.

Source: FAORLC based on FAOSTAT data.

[36] These rates may differ slightly from those estimated in connection with the explanatory factors (area, yield and crop structure effects), because in that case the method uses data specifically from the start and end of the period, whereas in the rest of this chapter growth rates are calculated by linear regression over the whole series.

Between 1993 and 2002 the growth of cereal production (2.4% per year) improved on the 1980s' meagre rate of expansion of just 1.0%. A halt to area shrinkage (areas had been declining by 0.8% per year and now grew at a positive rate of 0.3%) was the main factor in restoring growth in this product category compared to the previous period. The higher prices of 1995 and 1996 played a major role in stimulating an expansion in areas harvested during the period, and this was complemented by progress in monetary productivity per hectare among cereal crops.

Fruit production continued to expand (2.2% per year), although at a slightly slower rate than in the 1980s (2.7%). There was also a change in causal factors: in the 1980s, production was basically driven by an area expansion of 4.1% per year, while monetary yields per hectare declined; in contrast, during 1993-2002, areas expanded by less, but monetary yields per hectare dedicated to fruit growing intensified.

In the cases of coffee, vegetables and cotton, output growth strengthened compared to the previous decade.

The recovery of crop production over the last 10 years is based on a renewed expansion of harvested areas and faster productivity growth per hectare than in any other period of the last two decades. Nonetheless, productivity improvements are based on an intensification of production and increased input use, which raises costs without solving the problems of low profitability prevalent in the region's agriculture. This seems to be confirmed by a number of indicators on input use. Pesticide consumption multiplied eightfold over the last decade; and the annual increase in fertilizer use (5%) far outstrips output growth, albeit to a lesser extent.

A large proportion of the expansion of cultivated areas and progress in crop production throughout the region has resulted from the exceptional increase in soybean cultivation in Argentina, Brazil and a few other countries; in contrast, the general development of crop production as a whole remains weak.

(iii) Composition of crop production

The composition of crop production in Latin America and the Caribbean has altered greatly over the last two decades. During the 1980s, the expansion of fruit production had made this group the most important in terms of output value, displacing cereals which had traditionally been the leading category. The exponential growth of soybean cultivation in recent years, however, has now given oilseeds the largest share of the total value of the region's crop production, alongside fruit, while cereals have slipped to third place. In 2002, fruit and oilseed crops each represented about 22% of the value of crop production in the region, with cereals accounting for just over 20%.

During the period, the value of vegetable, sugar and coffee production also continued to grow, while that of cotton and tobacco has stalled (see figure 108).

Figure 108

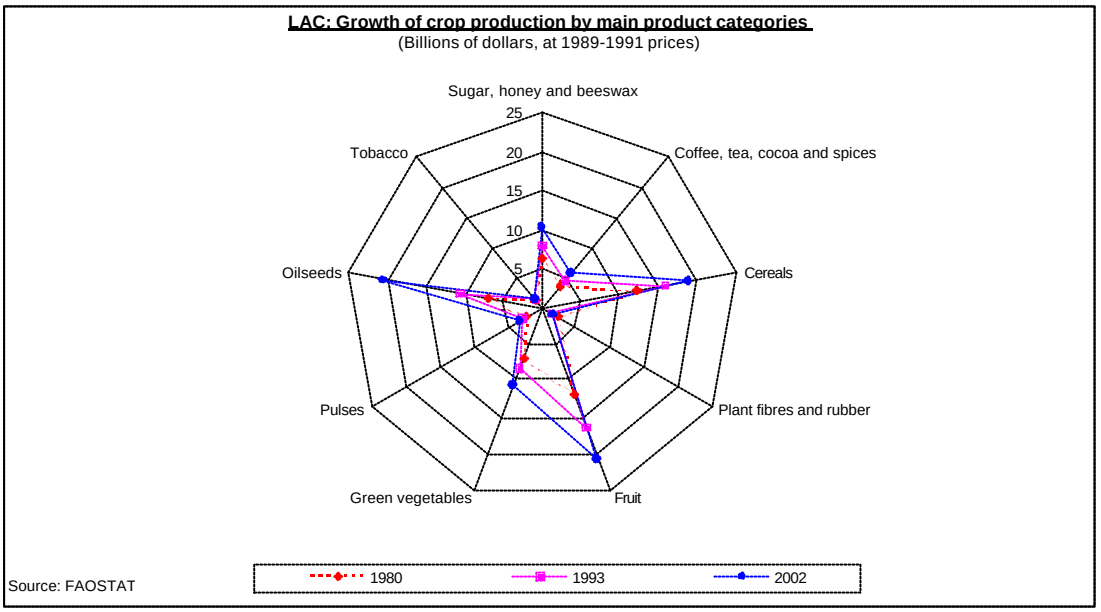
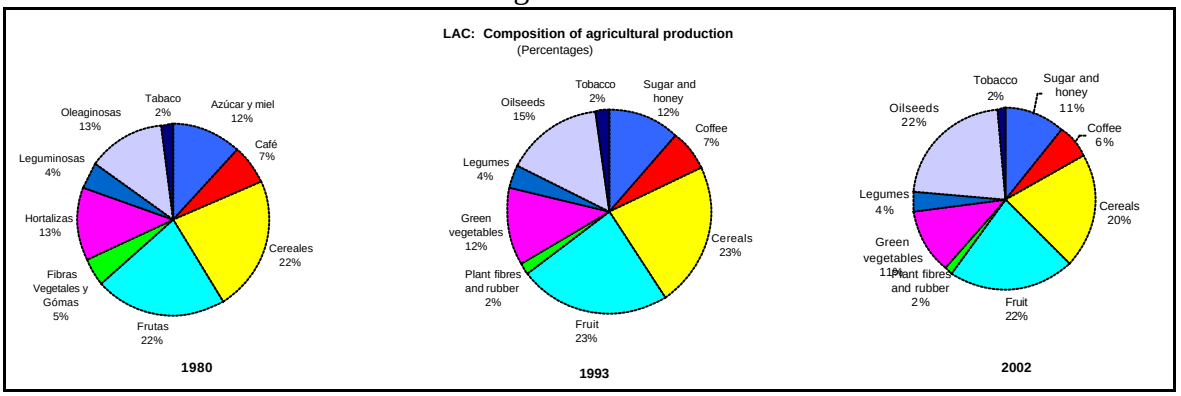


Figure 109



Source : FAORLC based on FAOSTAT data.
(The animal feed category is omitted here, given its minor importance).

Recovery of growth in cereal production as from 1993 was concentrated particularly in the southern cone and Andean countries, although output also grew in the Latin Caribbean (significantly in relative terms but on a smaller base). In all three cases the fundamental factor driving the recovery was the achievement of higher yields combined with a halt to the shrinking of harvested areas. Growth was slower in the CARICOM countries, and in Brazil and Mexico; while in Central America output shrank in absolute terms (see table 35).

Table 35

LAC: Growth of cereal production, 1993-2002
(Percentages)

	Surface area	Yield	Production
Total LAC	0.29	2.07	2.36
Brazil	-0.97	2.45	1.48
Mexico	0.96	0.38	1.34
Southern Cone	1.89	2.16	4.05
Andean countries	0.14	3.43	3.57
Central America	-0.91	0.8	-0.11
Latin Caribbean	1.38	3.29	4.67
CARICOM	1.39	0.66	2.05

Source : FAORLC based on data provided by FAOSTAT.

Most of the increase in oilseed production between 1993 and 2002 was heavily concentrated in the southern cone (mainly Argentina) and in Brazil. In the southern cone, annual growth in this category climbed to 8.7%, and in Brazil it reached a level of 6.5%. Oilseed production also expanded in Andean countries, although at a slightly slower rate of 5.0%. In the other regions, output of this crop category either stalled (Central America and the Latin Caribbean) or declined (Mexico and CARICOM). In all cases of stronger growth, the key factor has been an increase in the area harvested, while productivity per hectare has only grown significantly in Brazil (see table 36).

Table 36

LAC: Growth of oilseed production 1993-2002
(Percentages)

	Surface area	Yield	Production
Total LAC	5.2	1.99	7.19
Brazil	4.13	2.39	6.52
Mexico	-1.26	-0.37	-1.63
Southern Cone	6.64	1.92	8.56
Andean countries	6.65	-1.68	4.97
Central America	1.04	0.41	1.45
Latin Caribbean	0.12	0.29	0.41
CARICOM	-2.86	2.78	-0.08

Source : FAORLC based on data provided by FAOSTAT.

The production of fruit and vegetables has continued to expand, but at relatively modest rates (2.2% in the case of fruit, and 2.8% among vegetables). Mexico recorded the fastest growth, as a positive outcome of its free trade agreement with the United States and Canada. In the Andean countries, fruit and vegetable production also grew significantly, linked to the expansion of exports. In these two cases, the increase in the value of output resulted from a combination of larger areas and higher productivity per hectare, with both elements playing a significant part. Central America also displayed relatively high growth rates in these product groups, particularly in the case of vegetables (see table 37).

Table 37

LAC: growth of fruit production, 1993-2002
(Percentages)

	Surface area	Yield	Production
Total LAC	1	1.2	2.2
Brazil	0.36	0.68	1.04
Mexico	2.03	1.32	3.35
Southern Cone	1.27	1.26	2.53
Andean countries	2.05	1.4	3.45
Central America	1.38	0.62	2
Latin Caribbean	-2.07	2.02	-0.05
CARICOM	0.72	0.64	1.36

LAC: Growth of vegetable production, 1993-2002
(Percentages)

	Surface area	Yield	Production
Total LAC	0.5	2.3	2.8
Brazil	-0.98	2.04	1.06
Mexico	1.95	3.38	5.33
Southern Cone	1.01	0.11	1.12
Andean countries	2.28	2.37	4.65
Central America	1.68	2.22	3.9
Latin Caribbean	0.5	2.98	3.48
CARICOM	-1.19	-0.45	-1.64

Source: FAORLC based on data provided by FAOSTAT.

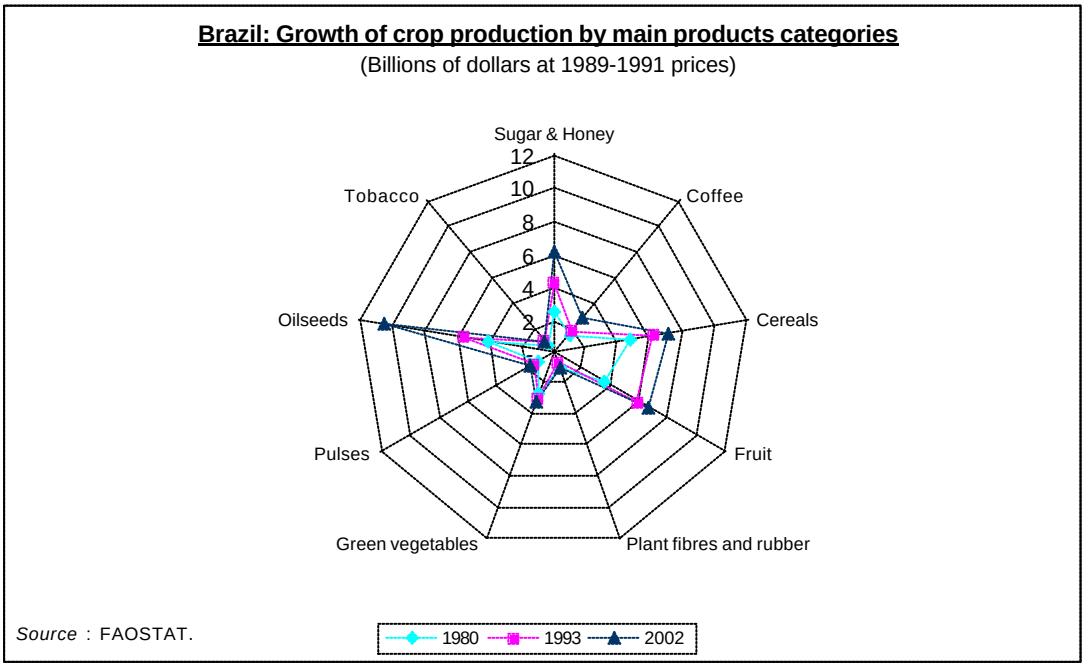
(iv) Regional distribution of production

The developments described above have also caused a significant change in the composition of crop production in the different regions. In general terms, changes in the structure of output tend toward greater specialization, with growth concentrated in a small number of product lines. This seems consistent with the higher degree of integration among agricultural markets and the role of exports in driving agricultural production in the region.

Brazil differs from this trend, however, and maintains extensive diversification in its crop production, thanks partly to its great natural resource wealth and the size of its domestic market. Nonetheless, the exponential growth of oilseed production between 1993 and 2002 almost doubled the value of production in this category, representing a clear departure from the pattern displayed by other product groups.

Until 1993, oilseed production had been at roughly the same level as fruit and cereals. Over the last decade, however, the two latter groups have also grown, but considerably less than oilseeds, and also less than sugar cane and coffee. Output in the other groups (vegetables, fibres, pulses and tobacco) hardly expanded at all. Consequently, in 2002, oilseeds represented 25% of total crop production in Brazil, with the other categories maintaining significantly smaller shares: cereals 18%; fruit 17%; sugar cane 15% (see figure 110).

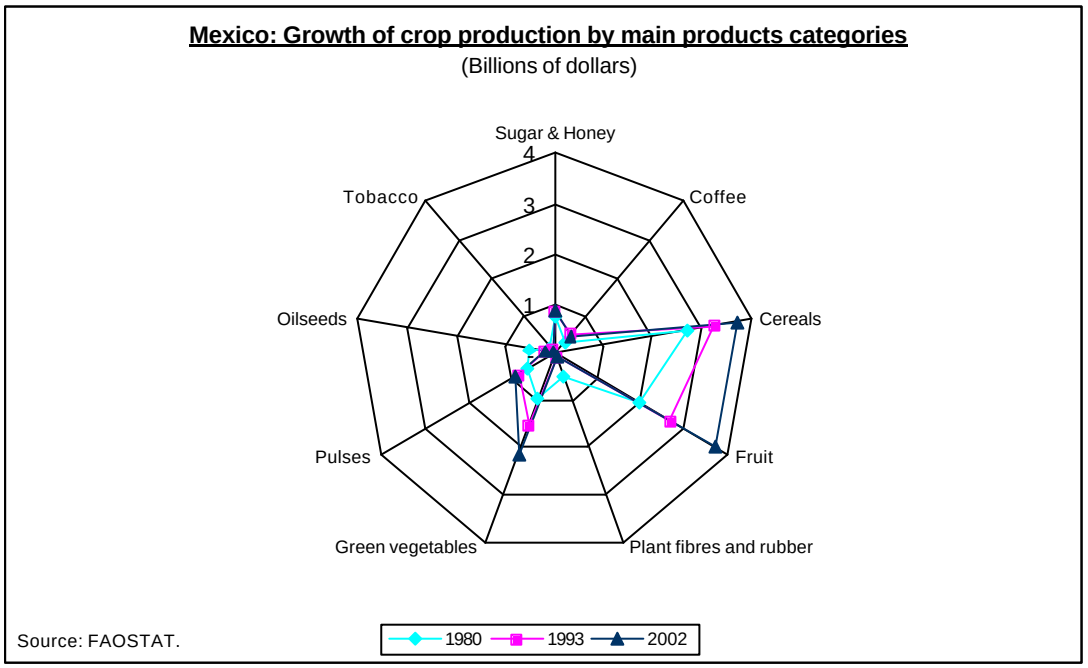
Figure 110



(The animal feed category is omitted here, given its minor importance.)

The fastest growing crop categories in Mexico are fruit and vegetables. This was already the case in the 1980s, but the pattern has accentuated as a result of the free trade agreement with the United States and Canada. Cereal production also continues to expand, and it remains very important within the country's overall crop production, albeit less so than before. In 2002, fruit and cereal production each accounted for 30% of the country's total crop production, with vegetables accounting for another 18%. The production of pulses was also significant (8%), which only occurs in Mexico and in Central America, as a result of bean production. Both oilseeds and cotton have declined in importance since the 1980s (see figure 111).

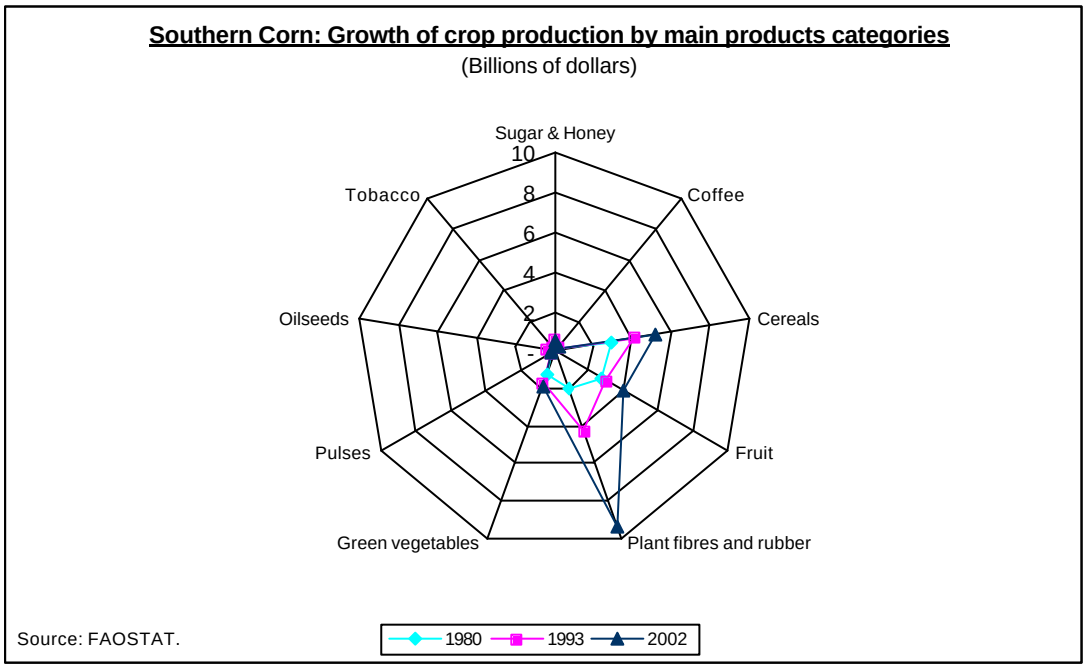
Figure 111



(The animal feed category is omitted here, given its minor importance.)

Production in southern cone countries became considerably more concentrated in oilseeds, reflecting the expansion in soybean cultivation in Argentina, and to a lesser extent in Paraguay. The previous polygon formed by cereals, fruit, vegetables and oilseeds has been greatly stretched, as growth of the oilseed group has intensified. In 2002, oilseed cultivation accounted for 43% of total crop production in the subregion, far surpassing the shares of cereals (26%), fruit (18%) and vegetables (9%) (see figure 112).

Figure 112



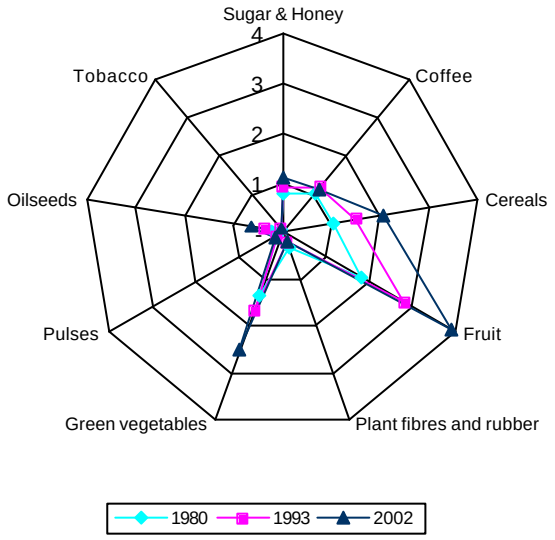
(The animal feed category is omitted here, given its minor importance.)

The three most important groups within crop production in the Andean countries are fruit, vegetables and cereals. As these were also the fastest growing groups, specialization clearly intensified. Fruit and vegetables represented over half (55%) of the value of crop production in the subregion in 2002, while cereals accounted for 18% (see figure 113).

Figure 113

Andean countries: Growth of crop production by main products categories

(Billions of dollars)



Source: FAOSTAT.

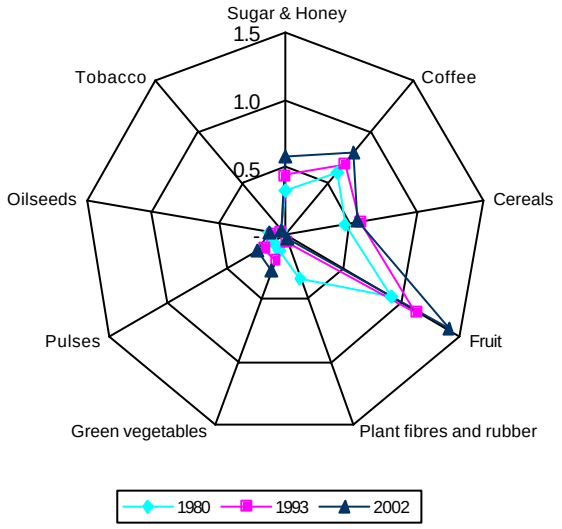
(The animal feed category is omitted here, given its minor importance.)

In Central America, fruit is the most important category in the value of crop production; and it also grew fastest, thereby again increasing specialization. The two other vibrant categories are coffee and sugar. Following the disappearance of cotton, the decline in the share of cereals is also helping to intensify specialization (see figure 114).

Figure 114

Central America: Growth of crop production by main products categories

(Billions of dollars)

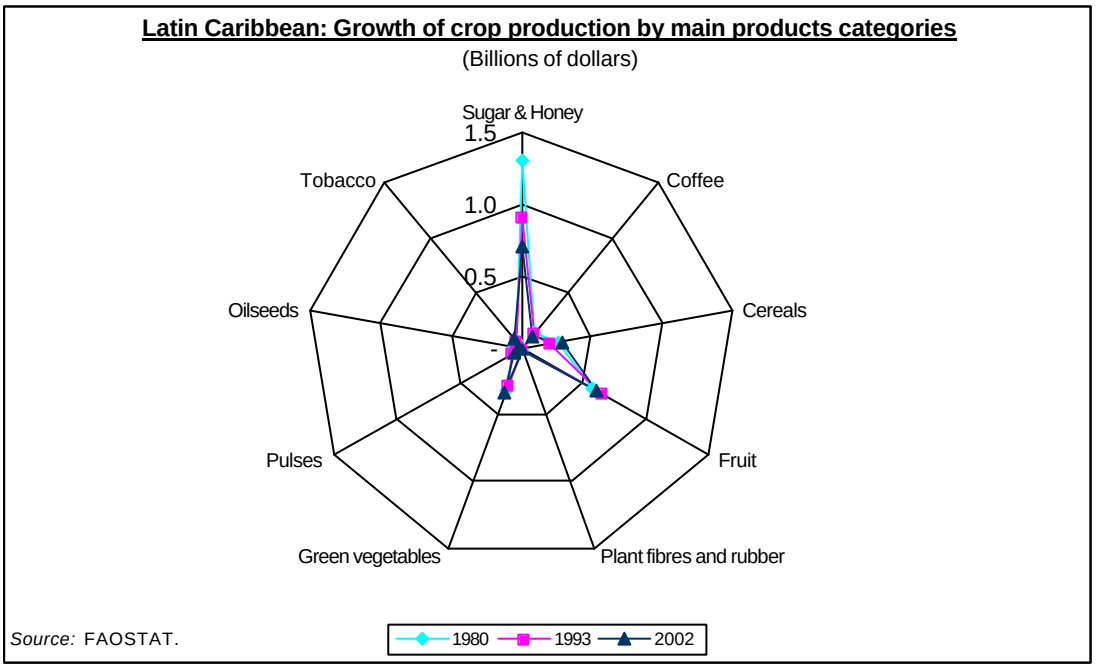


Source: FAOSTAT.

(The animal feed category is omitted here, given its minor importance.)

The trend of output in the Latin Caribbean shows a steep fall in sugar cane cultivation; but no other categories have emerged with the dynamism needed to establish a new production alternative. Although there is renewed specialization in fruit and vegetables, growth of these product categories is very weak, reflecting the deep stagnation of agriculture in this subregion (see figure 115).

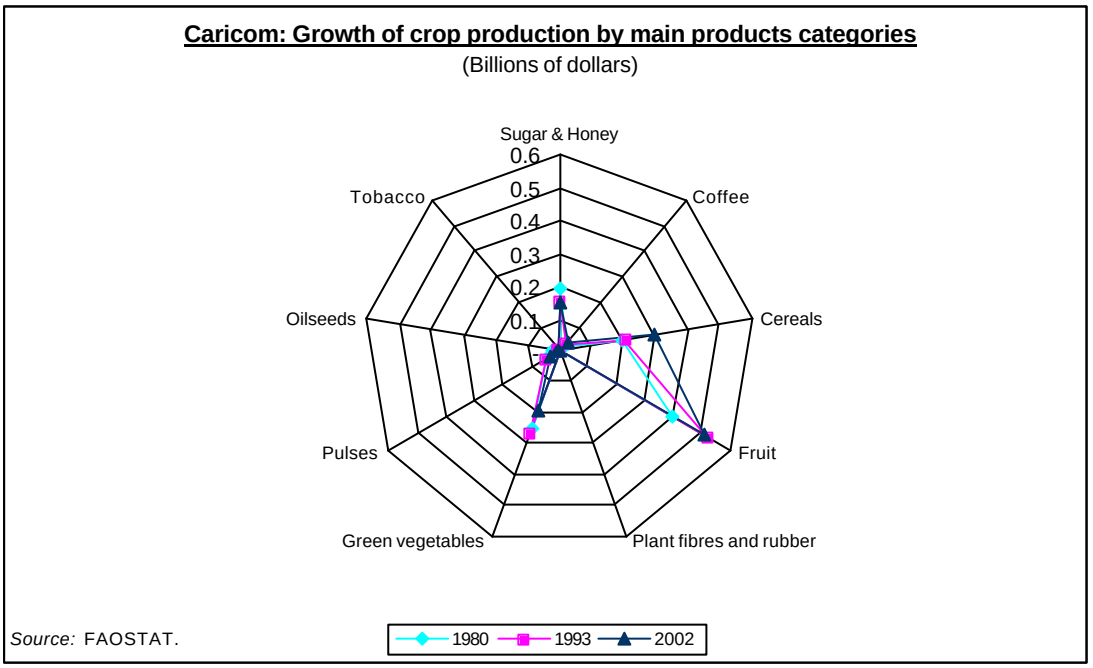
Figure 115



(The animal feed category is omitted here, given its minor importance.)

In the CARICOM countries fruit and vegetables were the largest crop categories in 1993. Both groups have experienced negative growth rates, particularly vegetables. As sugar production has also declined, cereals were the only product group to have expanded.

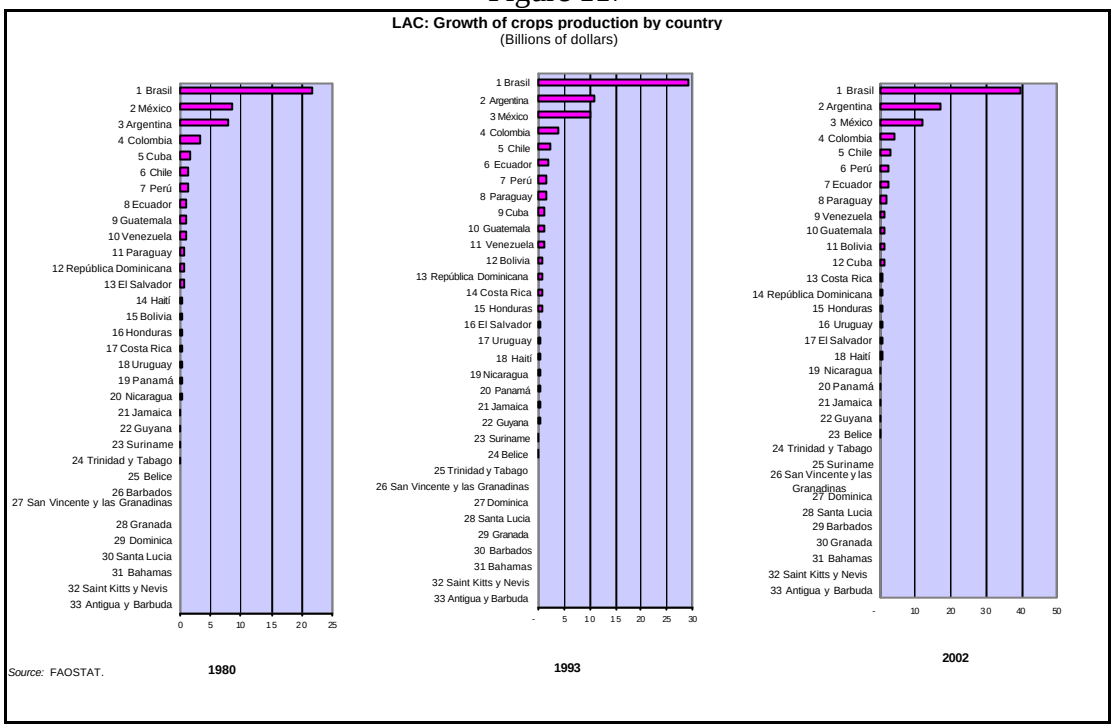
Figure 116



(The animal feed category is omitted here, given its minor importance.)

Recent changes in the geographic distribution of the region's crop production have intensified its spatial concentration. In 1980, production in Brazil accounted for 40% of the regional total, and together with that of Mexico and Argentina, contributed 69%. By 1993, concentration had intensified further, with Brazilian production accounting for 42% and the three countries together, 72%. But the expansion of soybean cultivation and other products in Brazil and Argentina over the last decade, has meant that in 2002 Brazilian production accounted for 42% of the regional total, while the three countries between them contributed 73% (see figure 117).

Figure 117



To a lesser extent, this pattern of concentration is also visible at the product category level, especially in oilseed production (see figures 118, 119, 120, 121, 122, 123, 124, 125 and 126).

Figure 118

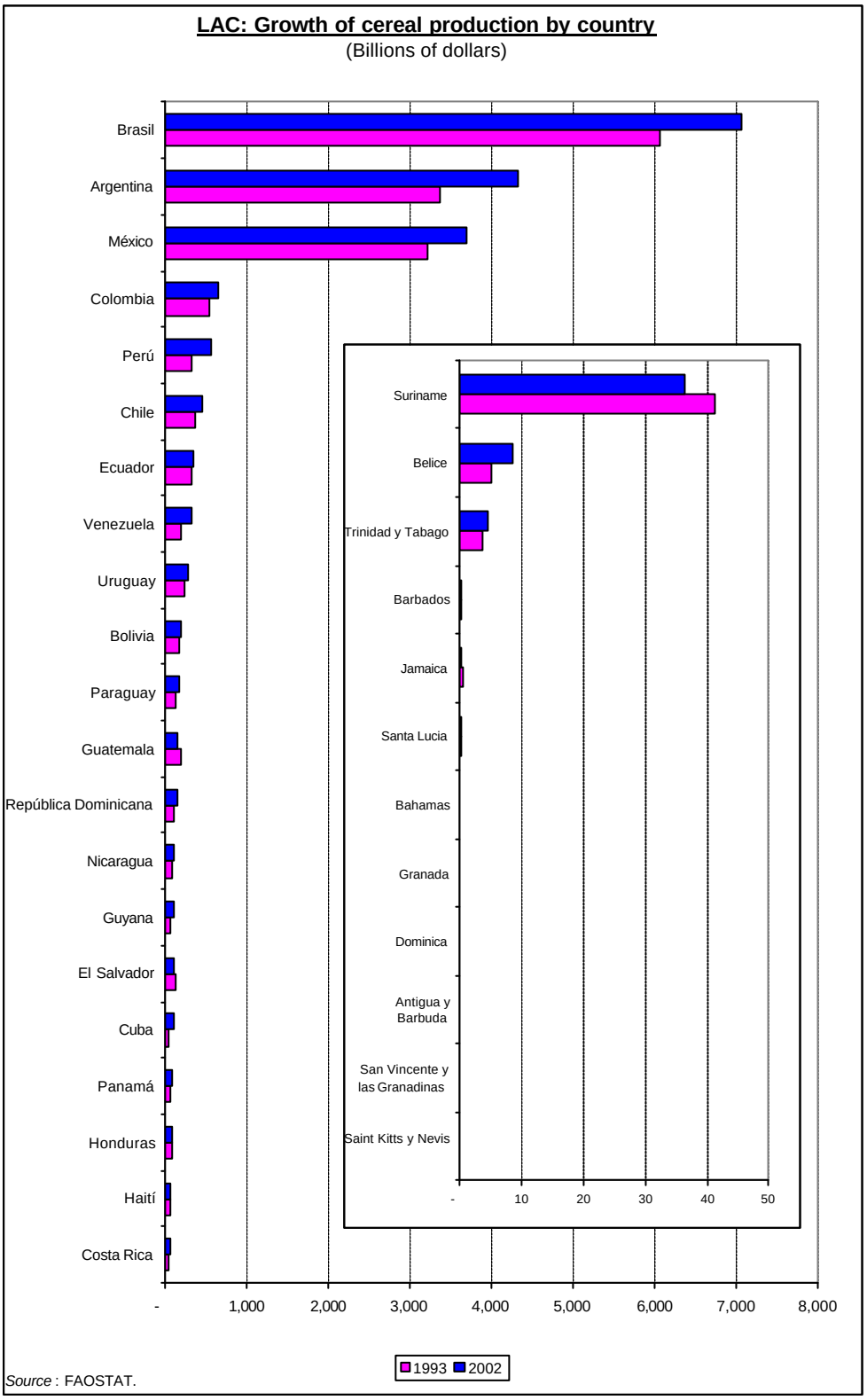

LAC: Growth of cereal production by country
(Billions of dollars)
Brasil
Argentina
México
Colombia
Perú
Chile
Ecuador
Venezuela
Uruguay
Bolivia
Paraguay
Guatemala
República Dominicana
Nicaragua
Guyana
El Salvador
Cuba
Panamá
Honduras
Haití
Costa Rica
Suriname
Belice
Trinidad y Tabago
Barbados
Jamaica
Santa Lucia
Bahamas
Granada
Dominica
Antigua y Barbuda
San Vincente y las Granadinas
Saint Kitts y Nevis
-
10
20
30
40
50
-
1,000
2,000
3,000
4,000
5,000
6,000
7,000
8,000
1993
2002
Source : FAOSTAT.

Figure 119

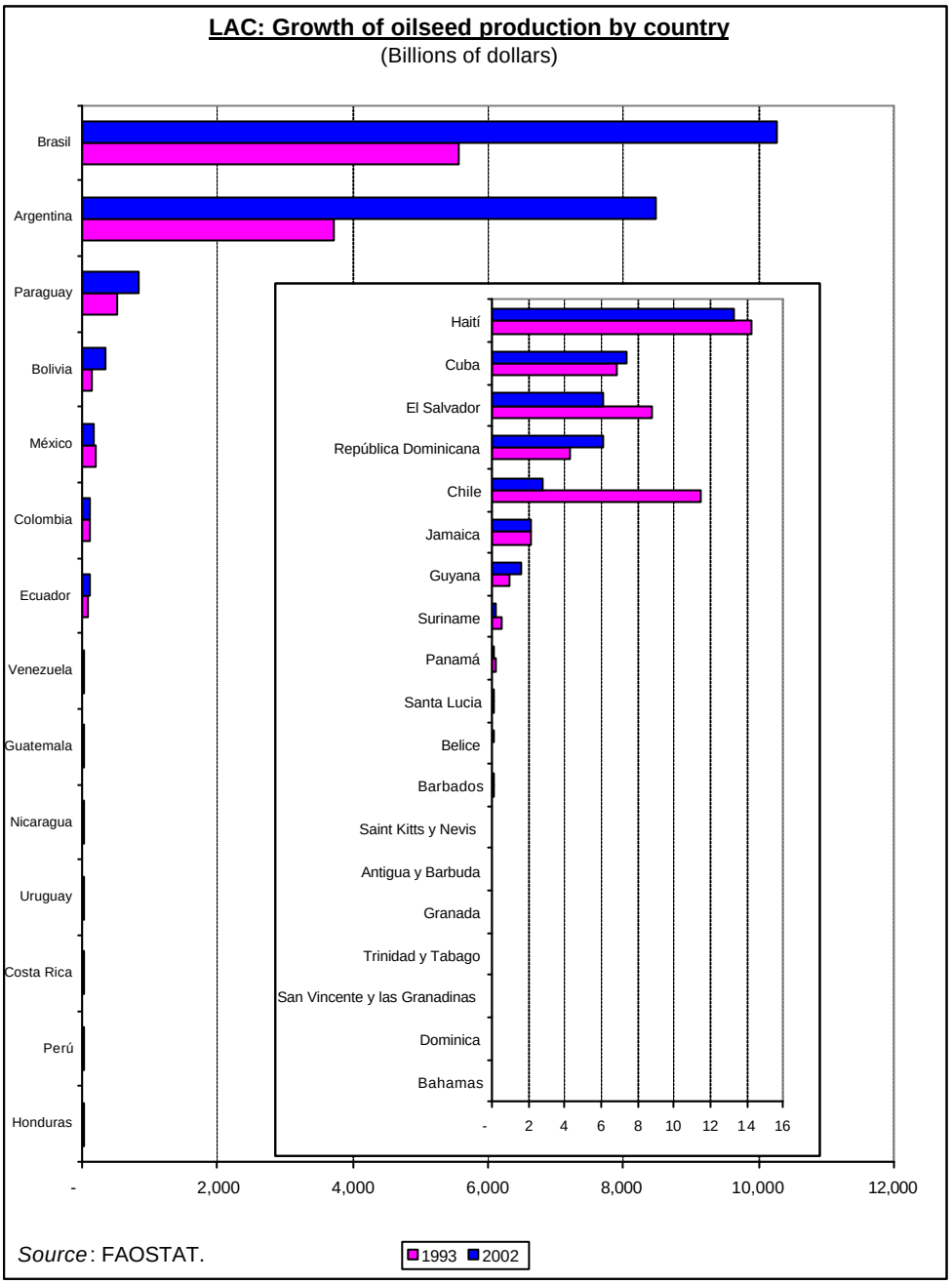

LAC: Growth of oilseed production by country
(Billions of dollars)
Brasil
Argentina
Paraguay
Bolivia
México
Colombia
Ecuador
Venezuela
Guatemala
Nicaragua
Uruguay
Costa Rica
Perú
Honduras
Haití
Cuba
El Salvador
República Dominicana
Chile
Jamaica
Guyana
Suriname
Panamá
Santa Lucia
Belice
Barbados
Saint Kitts y Nevis
Antigua y Barbuda
Granada
Trinidad y Tabago
San Vincente y las Granadinas
Dominica
Bahamas
- 2 4 6 8 10 12 14 16
- 2,000 4,000 6,000 8,000 10,000 12,000
Source: FAOSTAT.
1993 2002

Figure 120

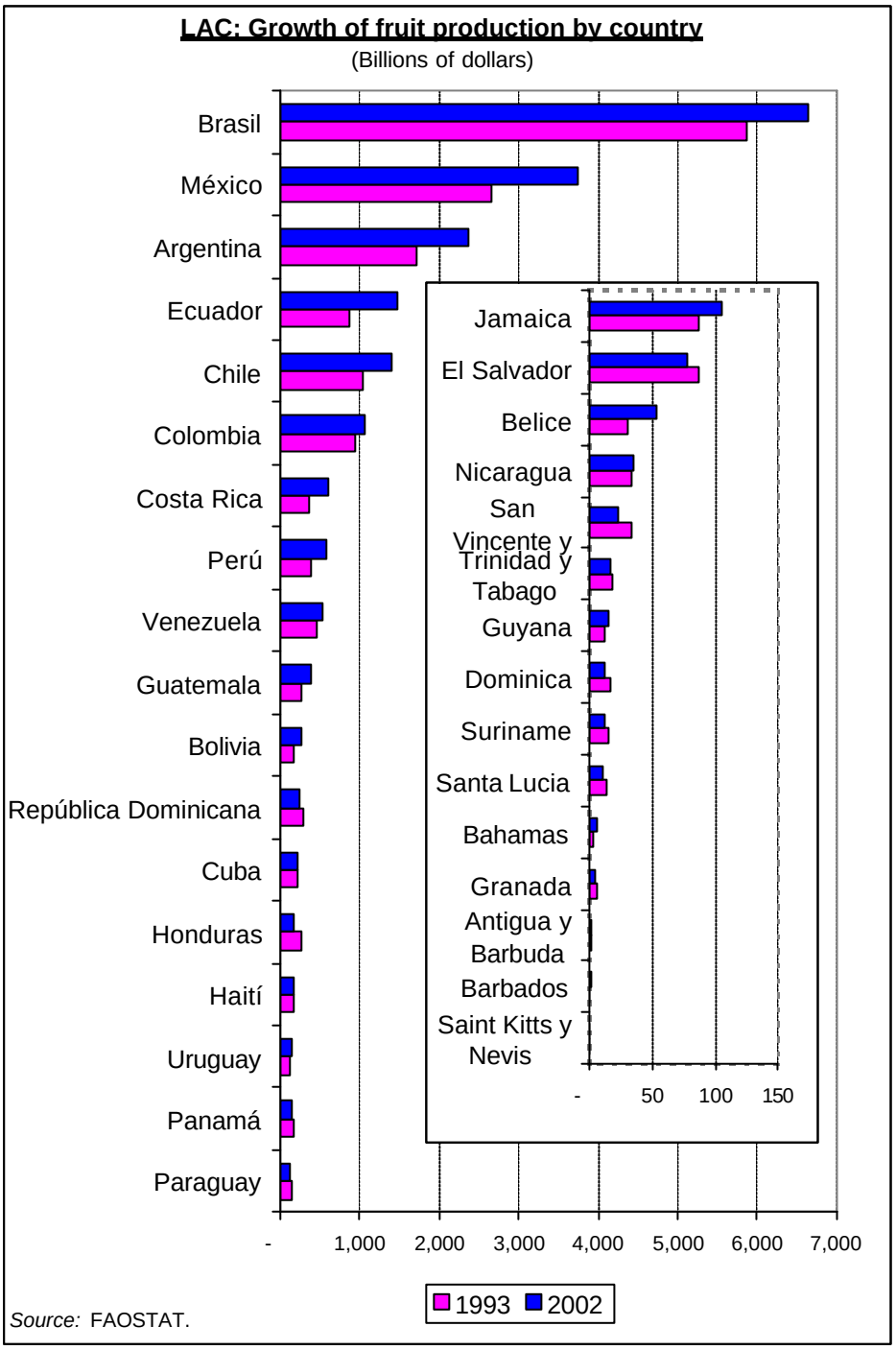
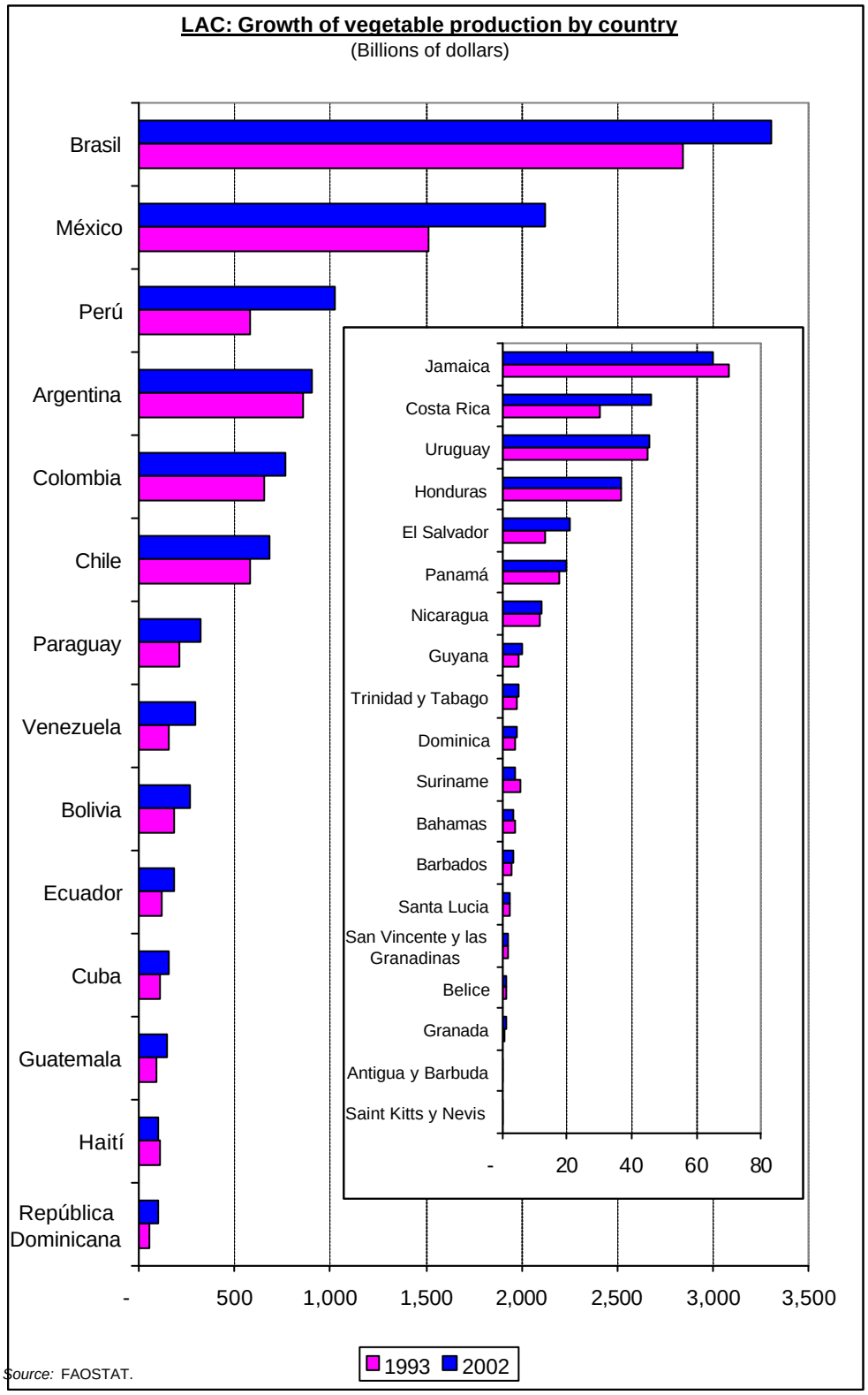

LAC: Growth of fruit production by country
(Billions of dollars)
Brasil
México
Argentina
Ecuador
Chile
Colombia
Costa Rica
Perú
Venezuela
Guatemala
Bolivia
República Dominicana
Cuba
Honduras
Haití
Uruguay
Panamá
Paraguay
Jamaica
El Salvador
Belice
Nicaragua
San Vincente y
Trinidad y Tabago
Guyana
Dominica
Suriname
Santa Lucia
Bahamas
Granada
Antigua y Barbuda
Barbados
Saint Kitts y Nevis
- 50 100 150
- 1,000 2,000 3,000 4,000 5,000 6,000 7,000
1993 2002
Source: FAOSTAT.

Figure 121



Source: FAOSTAT.

Figure 122

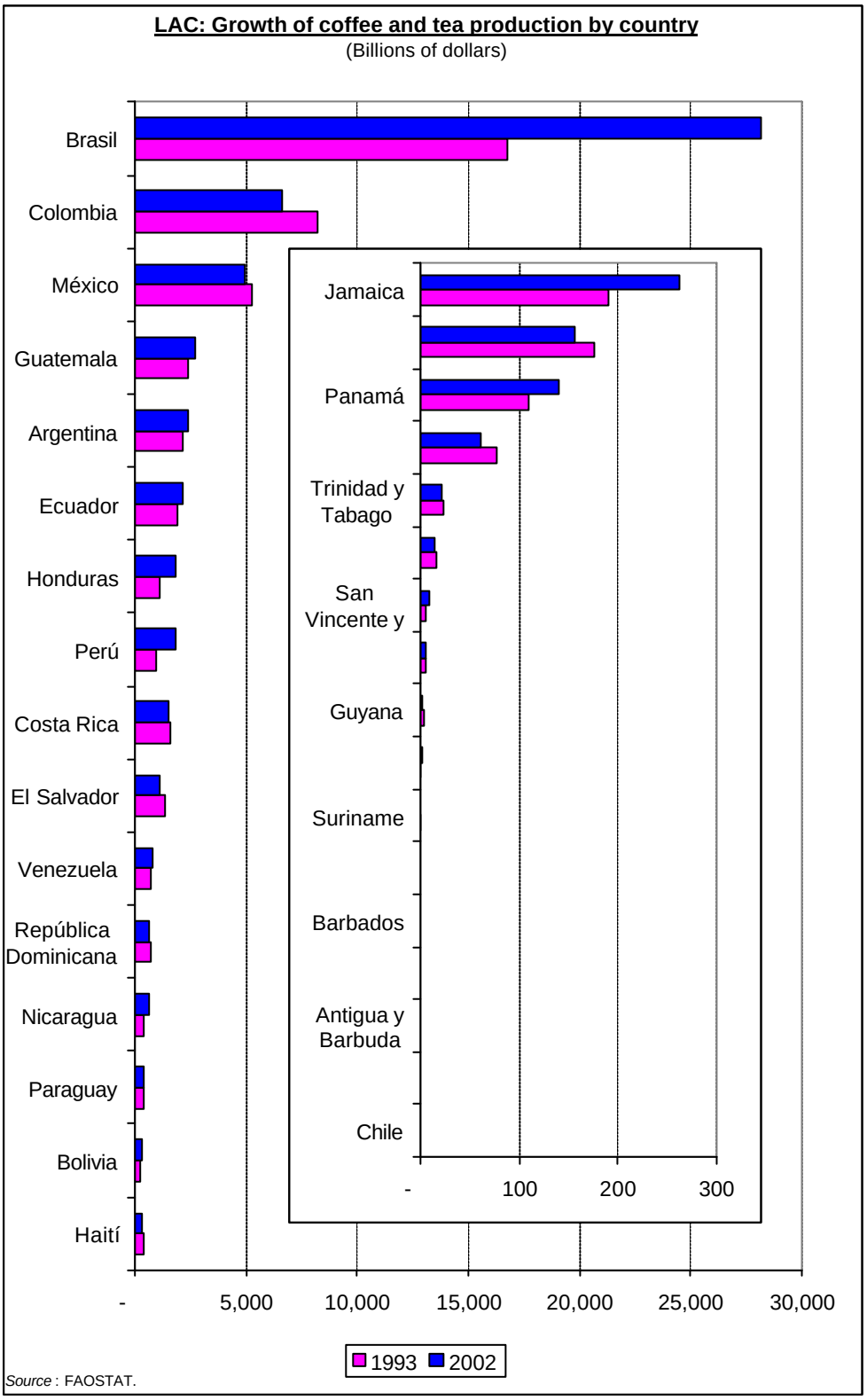

LAC: Growth of coffee and tea production by country
(Billions of dollars)
Brasil
Colombia
México
Guatemala
Argentina
Ecuador
Honduras
Perú
Costa Rica
El Salvador
Venezuela
República Dominicana
Nicaragua
Paraguay
Bolivia
Haití
Jamaica
Panamá
Trinidad y Tabago
San Vincente y
Guyana
Suriname
Barbados
Antigua y Barbuda
Chile
- 100 200 300
- 5,000 10,000 15,000 20,000 25,000 30,000
1993 2002
Source : FAOSTAT.

Figure 123

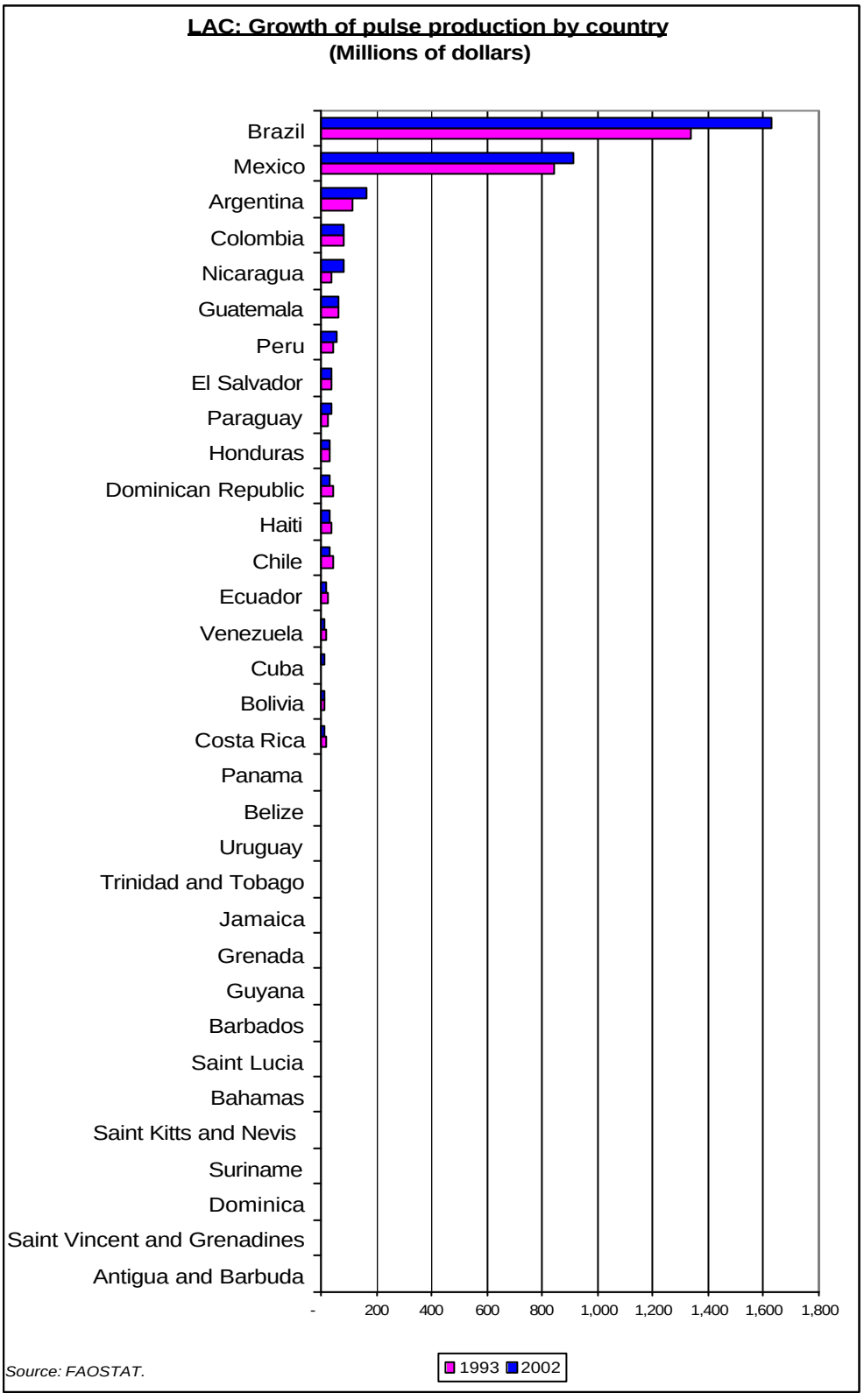
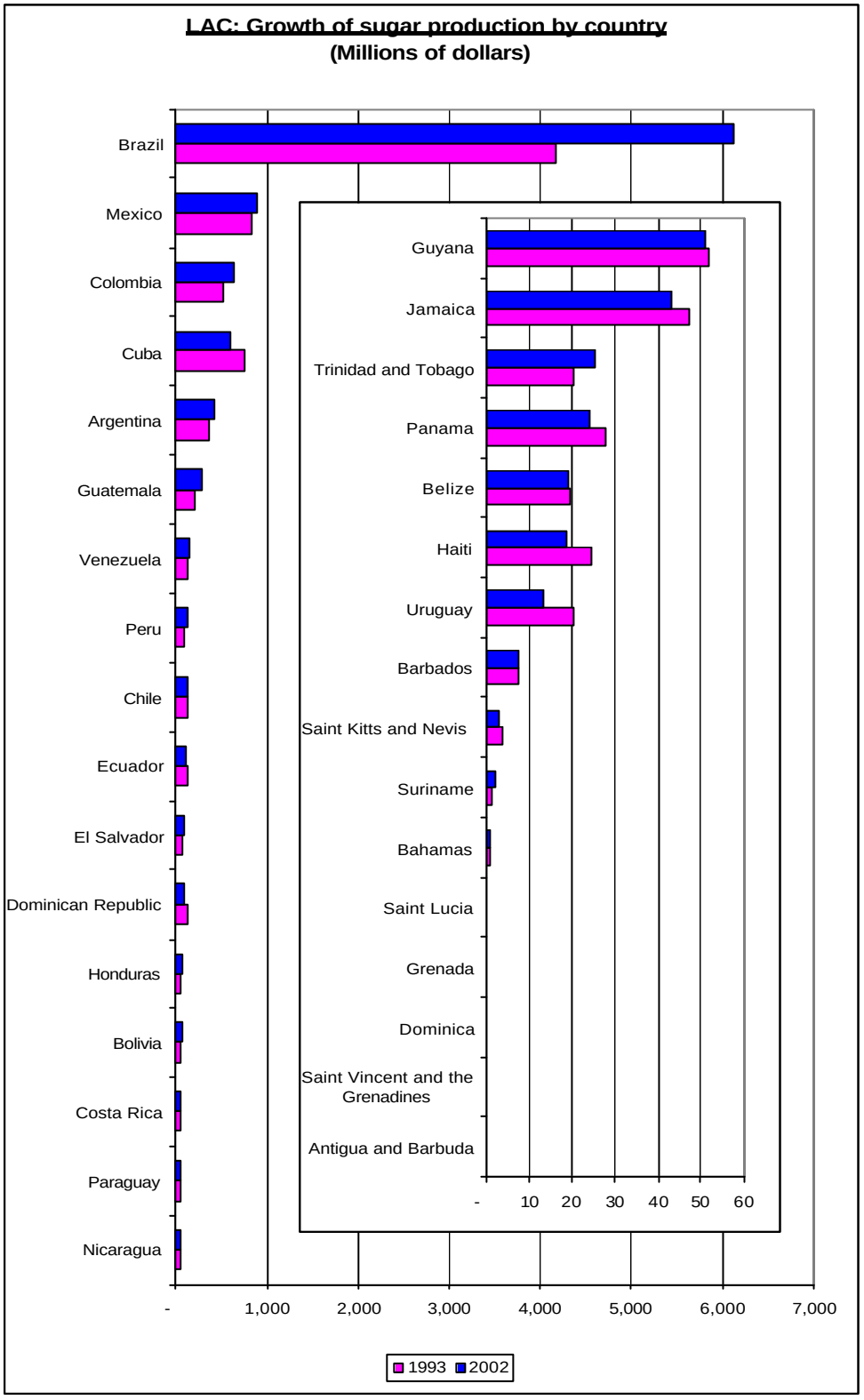
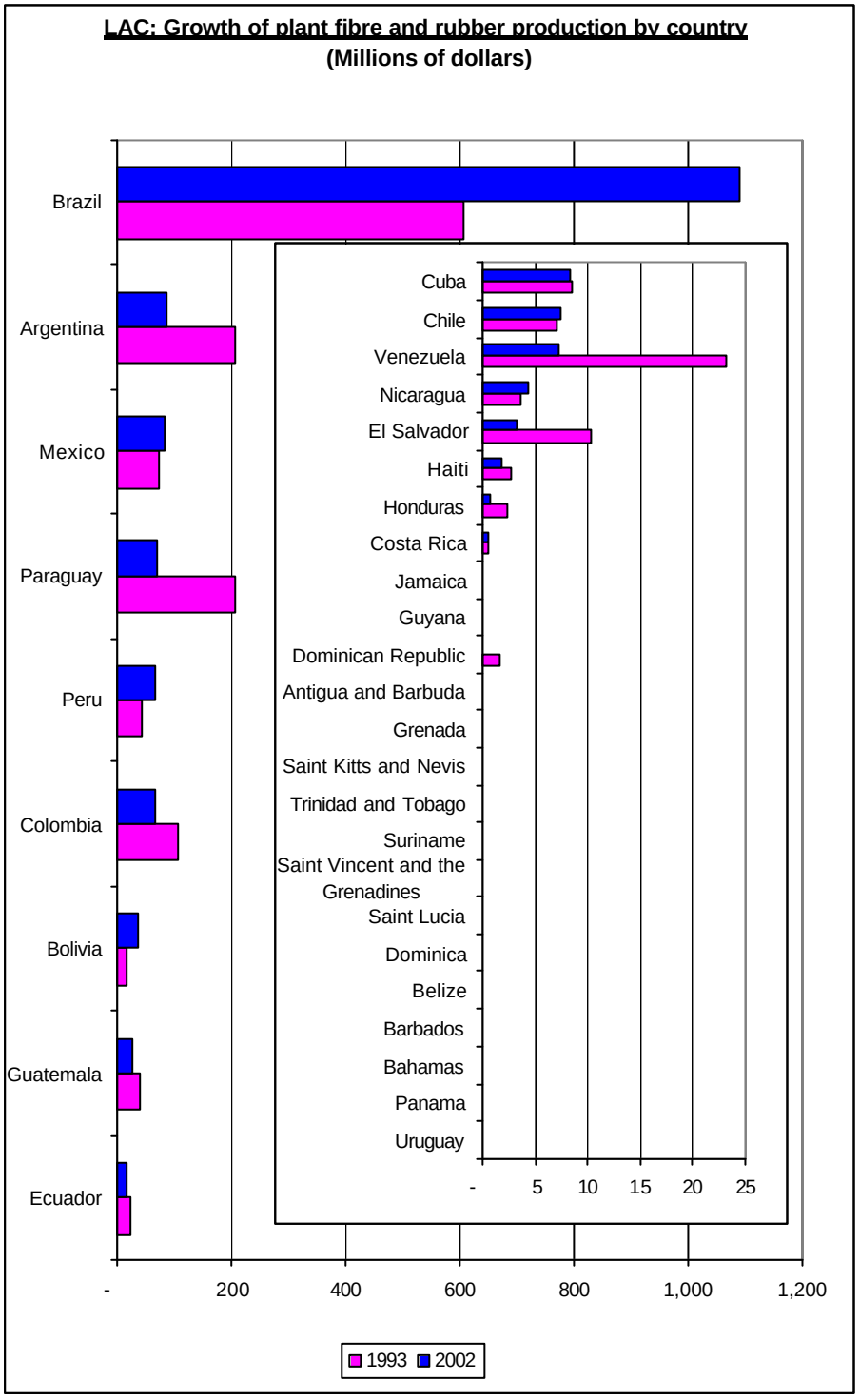

LAC: Growth of pulse production by country
(Millions of dollars)
Brazil
Mexico
Argentina
Colombia
Nicaragua
Guatemala
Peru
El Salvador
Paraguay
Honduras
Dominican Republic
Haiti
Chile
Ecuador
Venezuela
Cuba
Bolivia
Costa Rica
Panama
Belize
Uruguay
Trinidad and Tobago
Jamaica
Grenada
Guyana
Barbados
Saint Lucia
Bahamas
Saint Kitts and Nevis
Suriname
Dominica
Saint Vincent and Grenadines
Antigua and Barbuda
- 200 400 600 800 1,000 1,200 1,400 1,600 1,800
1993 2002
Source: FAOSTAT.

Figure 124



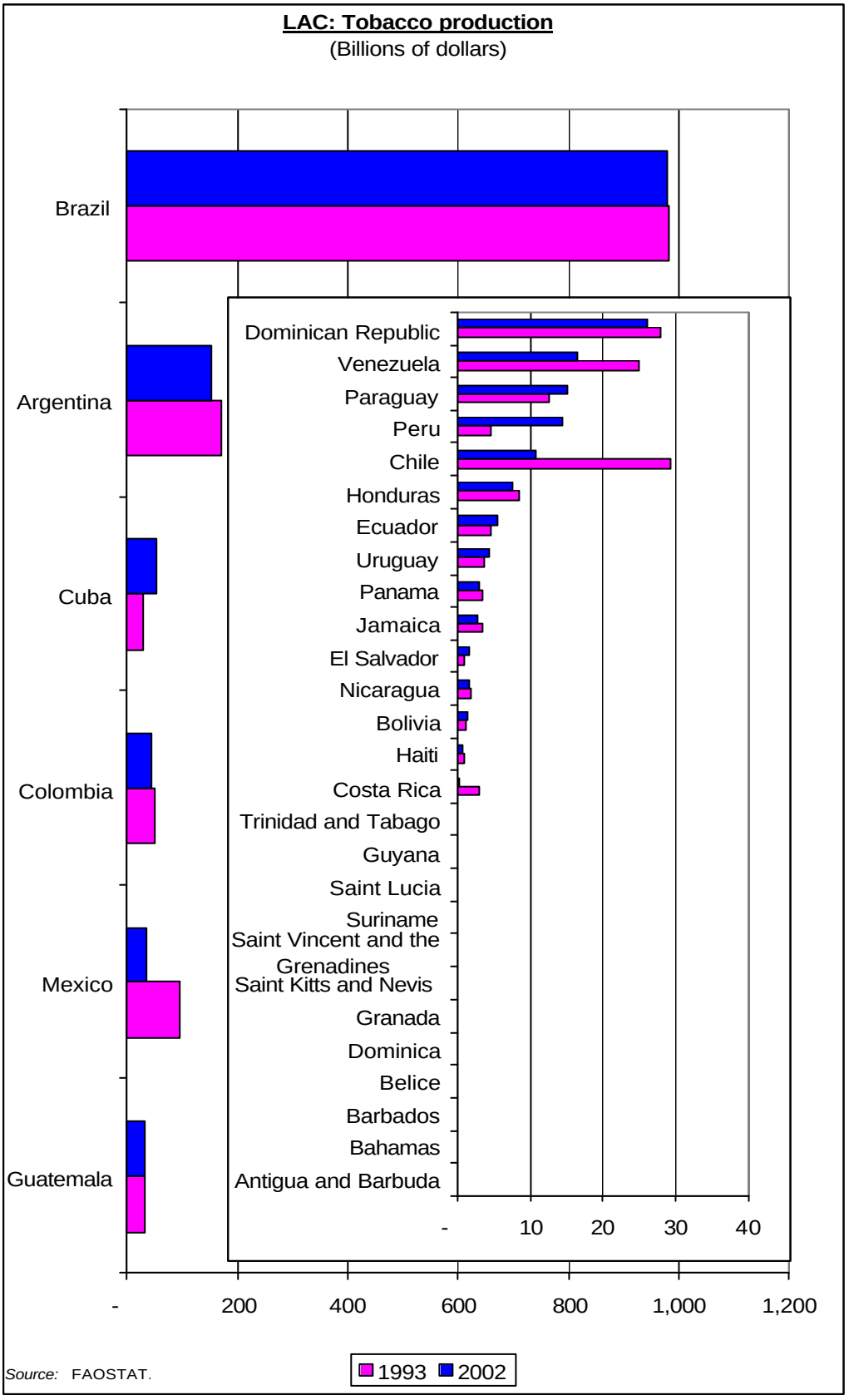
Source: FAOSTAT.

Figure 125



Source: FAOSTAT.

Figure 126


LAC: Tobacco production
(Billions of dollars)
Brazil
Argentina
Cuba
Colombia
Mexico
Guatemala
Dominican Republic
Venezuela
Paraguay
Peru
Chile
Honduras
Ecuador
Uruguay
Panama
Jamaica
El Salvador
Nicaragua
Bolivia
Haiti
Costa Rica
Trinidad and Tabago
Guyana
Saint Lucia
Suriname
Saint Vincent and the Grenadines
Saint Kitts and Nevis
Granada
Dominica
Belice
Barbados
Bahamas
Antigua and Barbuda
-
10
20
30
40
-
200
400
600
800
1,000
1,200
1993
2002
Source: FAOSTAT.

D. LIVESTOCK SUBSECTOR

Livestock production in Latin America and the Caribbean grew by just 2.4% in 2002, making a second consecutive year of slow growth, following a 1.2% expansion in 2001. Over the last seven years, the regions' livestock production has grown at an average of about 2% per year; with higher rates recorded only in 1999 and 2000 (6.3% and 2.9%). Consequently, average growth in 1995-2002 was relatively weak at just 2.7% per year. The factors impeding stronger progress include difficulties in livestock production in the southern cone, mainly in Argentina and Uruguay, arising from market conditions, and compounded by health problems and the effects of drought.

In contrast, average annual growth had been a relatively satisfactory 3.8% during the first half of the 1990s. Despite this irregularity, during the last decade (1990-2002) livestock production has grown at an average of 3.2% per year – a significant improvement on the 1980s when it expanded at an annual rate of just 2.2% (see table 38).

Table 38

LAC: Growth of livestock production, annual rate

(Percentage)

	80-90	90-02	90-95	95-02
Latin American & Caribean	2.23	3.24	3.80	2.70
Brazil	3.65	4.78	5.50	3.97
Mexico	1.75	3.26	4.90	3.16
Southern cone	0.53	1.19	2.02	0.45
Andean countries	2.78	2.64	2.76	1.97
Central America	1.98	2.96	3.39	2.32
Latin Caribbean	1.71	0.85	-4.21	2.89
CARICOM	0.96	1.41	-1.06	2.21

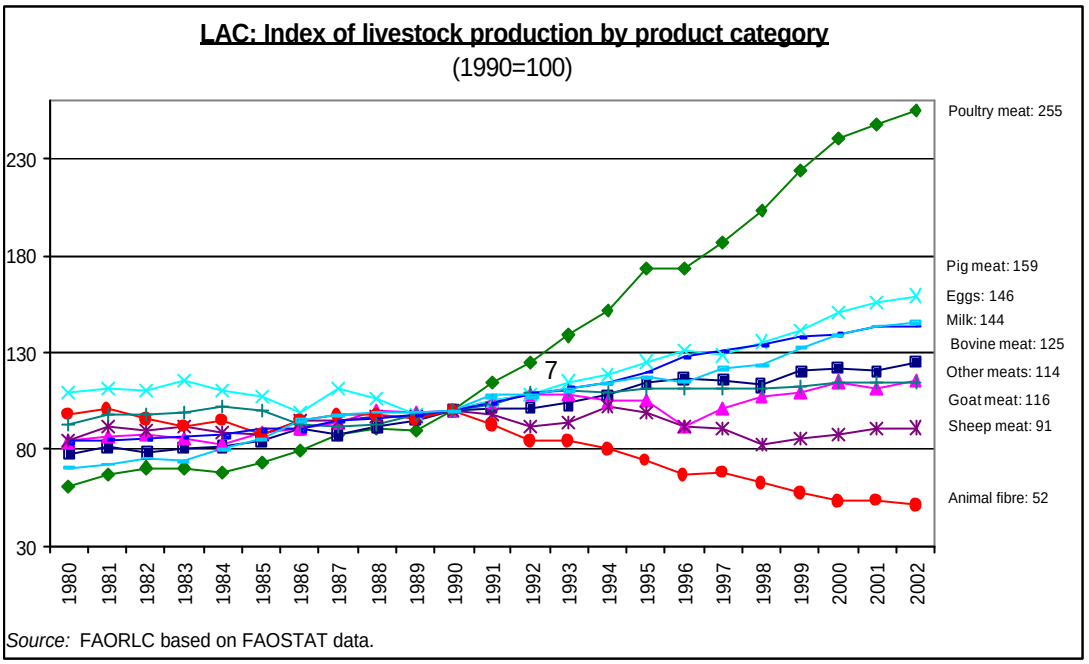
Source: FAORLC based on FAOSTAT data.

In an eloquent illustration of the intensification of competition on livestock product markets, the growth rates of the different production categories are tending to accelerate, and also to differentiate increasngly sharply one from another. During the 1980s, the most buoyant category, chicken meat, grew by 40%, while the slowest growth category was pig meat production, which declined by 10%. The divergence in the trends of these two products amounted to 50 percentage points, while the other product categories achieved results between these two extremes.

Between 1990 and 2002, the indices varied much more widely. Chicken production expanded by two and a half times (an increase of 155%), while wool production decreased by 48%. Other products that experienced rapid growth and posted significant increases compared to their 1990 production levels included pig meat (up by 59%), eggs (46%) and milk (44%). The production of bovine and goat meat grew more moderately (25% and 15%, respectively), while sheep meat and wool

production declined in absolute terms (9%). The changes in this latter period have been much more rapid and the divergence between production categories has widened significantly (see figure 127).

Figure 127



(i) Composition of livestock production

The bovine segment as a whole (meat and milk) accounts for a clear majority of the total value of livestock production in Latin America and the Caribbean; consequently, relatively lower growth rates in this product category still mean substantial increases in absolute terms, within the total value. For this reason, despite the wide differences in rates of growth in the different livestock categories, the composition of output remains quite stable. Between 1990 and 2002, the most significant change was the increase in the share of chicken meat, stemming from the successful development of production in Brazil. This caused the share of this product in the total value of the region's livestock production to expand from 12% to 20%, slightly surpassing the value of milk output, which also accounted for 20% of the total. As a counterpart, the share of bovine meat shrank from 50% to 42%. With small variations, output in the other categories maintained roughly the same proportions as in 1990.

Bovine meat remained the region's leading livestock product, but with a downward trend. Chicken meat has moved into second place, with a value similar to that of milk, which is now in third place. Apart from these three products, pig meat (7%) and eggs (6%) also attain significant levels in the total value of livestock production (see table 39 and figure 128).

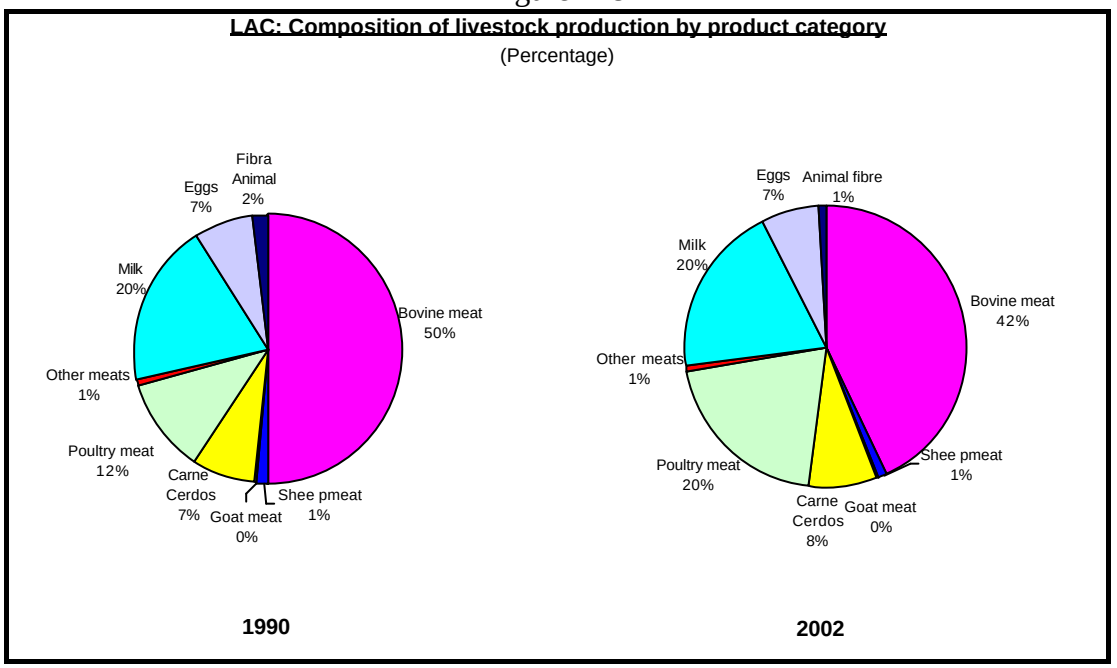
Table 39

LAC: Value of livestock production by product category
(Thousands of dollars and percentage)

	1980		1990		2002	
	MUS$	%	MUS$	%	MUS$	%
Total livestock	42	100	53	100	78	100
Poultry meat	4	9	6	12	16	20
Bovine meat	21	49	27	50	33	43
Goatmeat	0	0	0	0	0	0
Pig meat	4	10	4	7	6	8
Sheepmeat	1	1	1	1	1	1
Animal fibre	1	3	1	2	1	1
other meats	0	1	0	1	0	1
Milk	9	21	11	20	15	20
Eggs	3	6	4	7	5	7

Source : FAORLC based on FAOSTAT data.

Figure 128



Source : FAORLC based on FAOSTAT data.

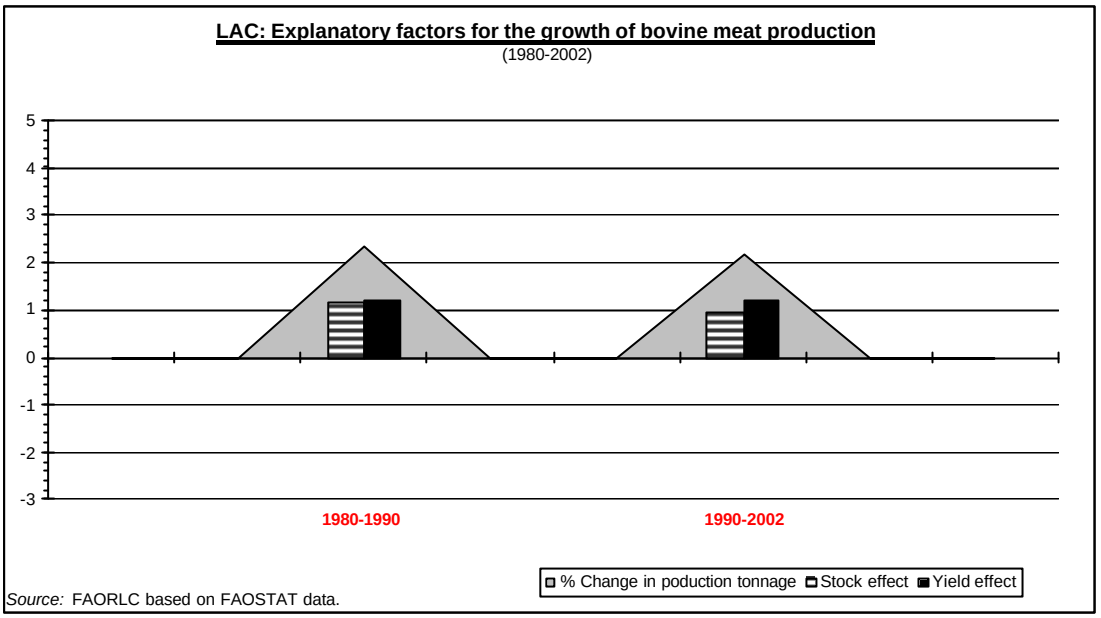
(ii) Production trends by category

Bovine meat

Over the last decade (including the first few years of the new century, i.e. 1990-2002) bovine meat production grew slowly at an annual rate of 2.2%. As this followed an expansion averaging 2.3% per year during the 1980s, there have now been 22 years of weak growth.

The livestock herd grew by just 1.1% in the 1980s, and even more slowly (0.9%) during the second period (1990-2003). The yields index, calculated from the trend of the extraction rate and changes in average weight per animal, have maintained the same rate of progress over the two decades, namely 1.2% per year (see figure 129).

Figure 129



Source: FAORLC based on FAOSTAT data.

This average growth is the result of sharply differing situations between countries and subregions. During the last decade (1990-2002), production in Brazil grew vigorously (4.6% per year), mainly reflecting an increase in the extraction rate that allowed for a 3.1% annual increase in yields. This higher productivity was complemented by a 1.5% expansion in the livestock herd (see figure 130).

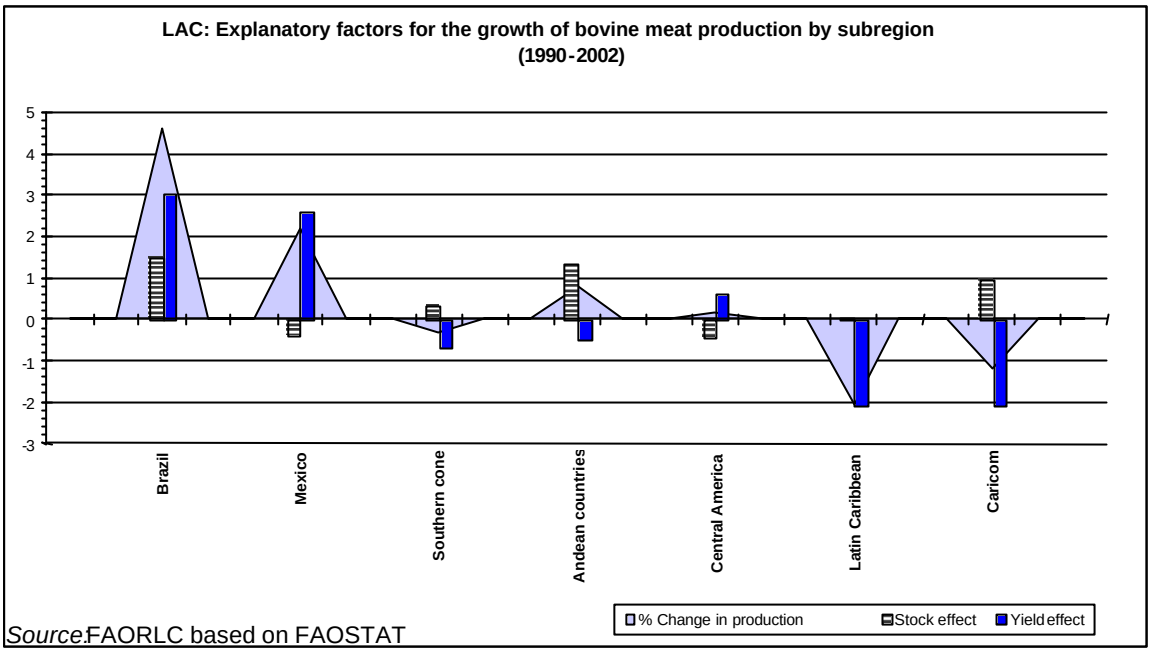
Table 40

Bovine production
(Millions of dollars and percentage)

	1980		1990		2002		1980-1990	1990-2002
LAC	20,767,046	100	26,714,288	100.0	33,403,696	100.0	2.4	2.0
Brazil	6,670,177	32	9,618,914	36.0	16,542,090	49.5	3.9	4.2
Mexico	1,816,034	9	3,243,539	12.1	3,464,231	10.4	6.4	0.6
Southern Cone	8,092,309	39	8,864,142	33.2	8,245,054	24.7	0.1	-0.4
Andean countries	2,848,023	14	3,538,245	13.2	3,817,175	11.4	1.5	1.5
Central America	774,631	4	821,622	3.1	845,510	2.5	0.7	0.9
Latin Caribbean	517,236	2	568,793	2.1	434,204	1.3	1.2	-1.0
Caricom	48,636	0	59,033	0.2	55,432	0.2	1.6	-1.5

Source: FAORLC based on FAOSTAT data.

Figure 130



Source: FAORLC based on FAOSTAT

Although at lower rates than those of Brazil, bovine meat production in Mexico also grew during that period. Annual growth averaged 2.2% and was based exclusively on a higher extraction rate, as the number of head of cattle declined by 0.4% per year.

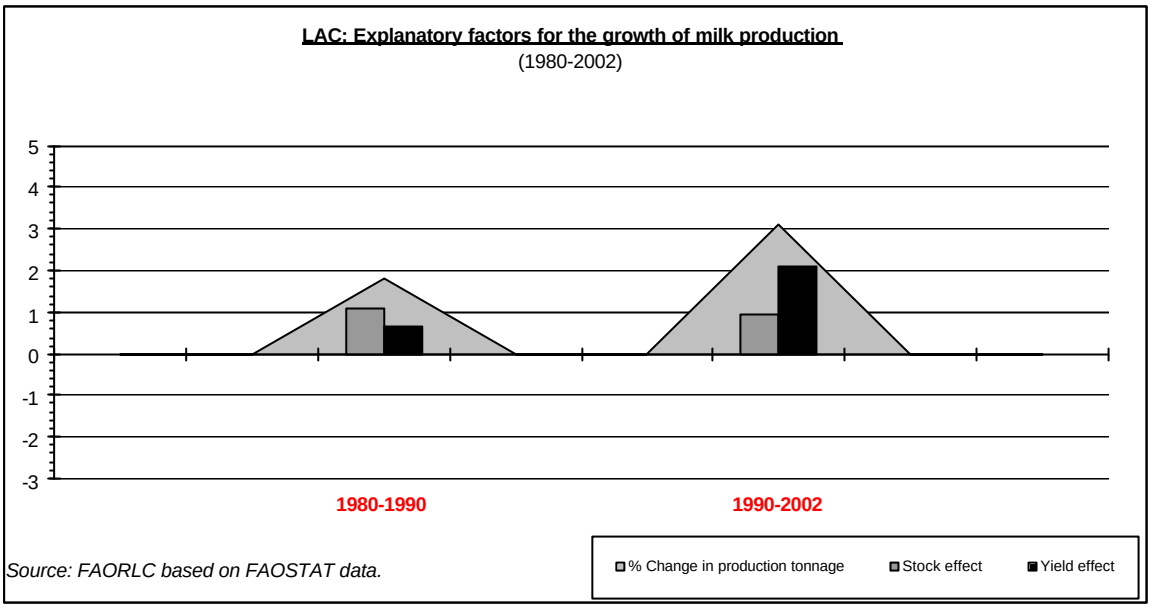
In the southern cone, livestock activity stalled, and even declined somewhat (-0.3% per year). Both the livestock herd and yields maintained their levels. The number of animals increased by 0.3% per year, but this was offset by a reduction (-0.6%) in the extraction rate.

The production of bovine meat in the other subregions also either stalled or declined. In the Andean countries, the effect of 1.3% annual growth in livestock herds was offset by a 0.5% reduction in the extraction rate. In Central America, slow growth in yields (0.6% per year) was offset by a 0.5% reduction in the number of animals. Output declined as result of lower yields in the Latin Caribbean and CARICOM countries.

Milk

Milk production increased substantially between 1990 and 2002, and annual growth was faster than in the 1980s (3.1% per year compared to 1.8%). The livestock herd grew at similar rates in both periods, 1.1% in the 1980s and 1.0% in the 1990s; but in the latter period yields increased faster (2.1% per year) than in the 1980s (0.7%) (see figure 131).

Figure 131



Milk production expanded in most of the subregions, with the strongest growth being recorded in Brazil, Central America and Mexico (3.8%, 3.7% and 3.5% respectively). In the latter two cases, the expansion was based on stronger yields, 4.2% in Central America and 3.9% in Mexico. Although progress in yields was slower in Brazil, production grew by more, thanks to an increase in the number of animals.

In the southern cone and Andean countries, production expanded more slowly, 2.7% and 2.5% per year, respectively. In the first subregion, growth was mainly due to stronger yields; while in the second, the positive effect of better yields was boosted by an increase in the number of animals.

The trend of milk production among Caribbean countries diverged from the pattern in the rest of the region. In the Latin Caribbean and in CARICOM countries output diminished between 1990 and 2002, mainly as a result of lower average yields (see figure 132).

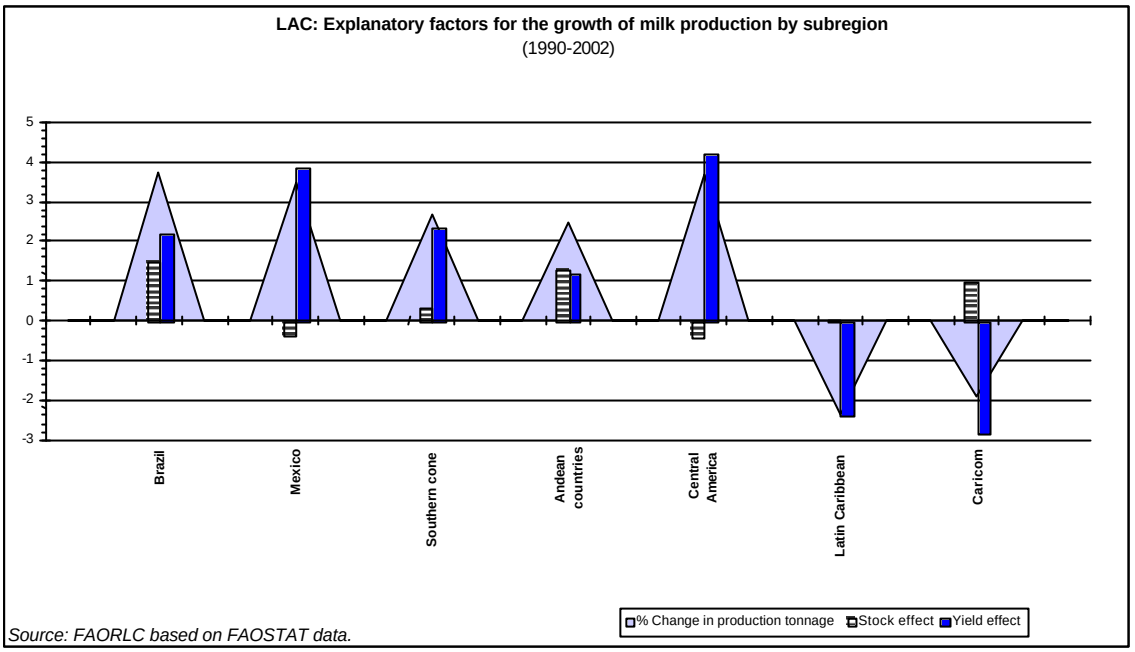
Table 41

Milk production
(Thousands of dollars and percentage)

	1980		1990		2002		1980-1990	1990-2002
LAC	8,867,316	100.0	10,607,137	100.0	15,231,481	100.0	1.8	3.2
Brazil	3,075,835	34.7	3,841,894	36.2	5,823,261	38.2	2.5	3.3
Mexico	1,786,415	20.1	1,629,002	15.4	2,469,144	16.2	-1.7	3.2
Southern Cone	1,904,476	21.5	2,277,777	21.5	3,136,612	20.6	2.1	3.9
Andean countries	1,360,891	15.3	2,048,682	19.3	2,834,456	18.6	4.1	2.7
Central America	342,870	3.9	410,855	3.9	636,547	4.2	2.3	3.6
Latin Caribbean	373,116	4.2	365,705	3.4	303,805	2.0	-0.7	-0.7
Caricom	23,713	0.3	33,222	0.3	27,656	0.2	3.7	-1.5

Source: FAORLC based on FAOSTAT data.

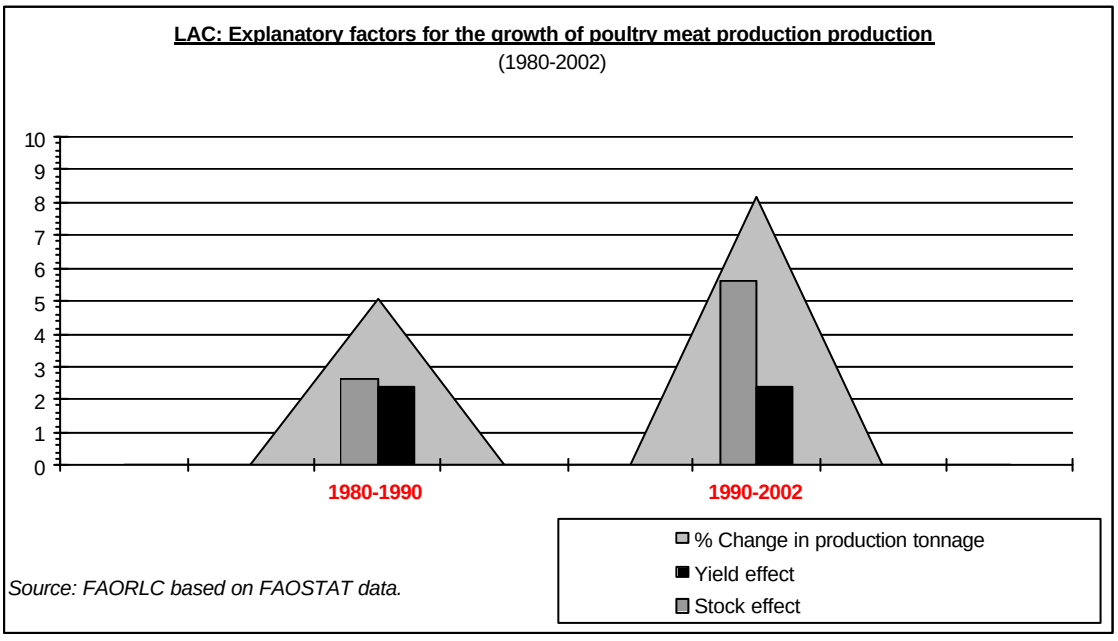
Figure 132



Poultry meat

Production of chicken meat has displayed an exceptionally rapid expansion over the last few decades. In the 1980s it was already growing vigorously (5.1%), but in the last decade the rate has accelerated further (8.2% per year). The number of birds increased by 5.6% per year, and faster turnover has also meant higher yields (2.4% per year) (see figure 133).

Figure 133



The growth in chicken production was widespread throughout the region, albeit slower in the Caribbean. The fastest growth was recorded in the southern cone (9.3% per year), followed by Brazil (9.1%), Mexico (8.1%), Central America (7.7%) and the Andean countries (6.6%). The high percentage growth rates achieved by Brazilian production during the decade, based on a large initial volume, meant a substantial increase in absolute quantities. In all cases, increases in the number of birds had a greater effect on output than variations in yields. Nonetheless, the ratio between the two factors differed in each subregion. In the southern cone, better yields generated nearly half of the production growth; in Brazil, yields explained nearly one third; in Mexico and Central America, yields only accounted for 20% of output growth; and in the Andean countries, nearly all the increase in production was the result of a larger number of birds, with yields virtually flat (see figure 134).

Table 42

Poultry meat production
(Thousands of dollars and percentage)

	1980		1990		2002		1980-1990	1990-2002
LAC	3,763,903	100	6,187,052	100.0	15,785,155	100.0	4.58	7.82
Brazil	1,681,678	45	2,891,710	46.7	8,174,200	51.8	4.62	8.77
Mexico	489,590	13	918,524	14.8	2,343,827	14.8	6.04	8.16
Southern Cone	517,551	14	610,040	9.9	1,765,141	11.2	1.57	8.55
Andean countries	678,811	18	1,122,167	18.1	2,387,234	15.1	5.06	5.85
Central America	116,876	3	250,758	4.1	585,919	3.7	7.37	6.78
Latin Caribbean	175,104	5	254,206	4.1	332,786	2.1	4.43	3.57
Caricom	104,293	3	139,647	2.3	196,048	1.2	1.87	3.39

Source: FAORLC based on FAOSTAT data.

Figure 134