The Outlook for Agriculture and Rural Development in the Americas:

A Perspective on Latin America and the Caribbean

2014

Executive Summary

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Acknowledgements

This document is the result of a joint effort by the Economic Commission for Latin America and the Caribbean (ECLAC), the United Nations Food and Agriculture Organization (FAO) and the Inter-American Institute for Cooperation on Agriculture (IICA). It was prepared by an inter-institutional team comprised of Adrián Rodríguez, Mônica Rodrigues and Octavio Sotomayor of ECLAC; Byron Jara and Salomón Salcedo of the FAO; and Joaquín Arias, Rafael Trejos, Ileana Ávalos and Hugo Chavarría of IICA.

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Foreword

The growth of agriculture in Latin America and the Caribbean (LAC) lost momentum in 2013, despite having rebounded in 2010 and performed well in 2011. On both occasions, the performance of agriculture in the region had been driven primarily by volatile prices for the major raw materials, but by 2012-2013, the sector had come under the influence of four essential factors:

- A slowdown in world economic activity, affecting both developed countries and emerging economies, especially China, India and Brazil.
- Loss of buoyancy as world trade in goods grew by only two percent in real terms in 2012 (the lowest growth in the past 30 years), combined with lower international prices for the chief agricultural commodities.
- An upswing in adverse climatic events (droughts and flooding) that affected the region's agriculture and lessened the output of grains, edible oilseeds, tropical products, livestock and fishing.
- Increased outbreaks of crop pests and diseases, intensified by greater variability in the climate.

Growth in LAC agriculture in 2013 declined more severely than in the overall economies, with the Agriculture Value Added (AVA) of rising by less than the region's overall Gross Domestic Product (GDP).

Despite the figures posted in 2012 and 2013, economic conditions in 2014 are expected to favor growth in the region's agricultural production and trade. These trends will need to be shored up by policies that seek not only to make commercial agriculture more productive and more competitive, but also to jump-start the production performance of family farming and its successful inclusion in value chains.

This is the central theme of the special chapter of this fifth edition of the document "Outlook for Agriculture and Rural Development in the Americas." The Economic Commission for Latin America and the Caribbean (ECLAC), the Regional Office for Latin America and the Caribbean of the Food and Agriculture Organization of the United Nations (FAO) and the Inter-American Institute for Cooperation on Agriculture (IICA) have not only analyzed trends and outlooks for agriculture and its overall environment (macroeconomic and sectoral), but this year also devoted a section to an in-depth examination of the characteristics, challenges and potential of family farming in LAC.

The report concludes that, despite the serious production, trade and socioeconomic constraints that family farming is experiencing in the region, this economic activity holds the greatest potential to boost the food supply in LAC, lower unemployment and pull out of poverty the most vulnerable population in rural areas.

In every chapter, ECLAC, FAO and IICA offer policy recommendations that they consider necessary to reinvigorate the region's agriculture. In the particular case of family farming, the report recommends a clear focus on the need to implement intersectoral policies that will retain new replacement generations and foster innovation and knowledge management. Moreover, instruments need to be developed by which these farms can successfully enter value chains.

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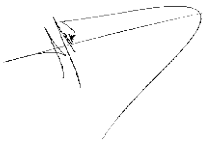

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The Outlook for Agriculture and Rural Development in the Americas 2014

Macroeconomic Context

The economy of Latin America and the Caribbean decelerated in 2012, and its Gross Domestic Product (GDP) is expected to stabilize at growth rates approaching 3% during 2013, rising to levels of 3.5% and 4% in 2014.

In 2012, the deceleration of GDP in Latin America and the Caribbean (LAC) was more pronounced than the global average, as was the case in the group of emerging economies. Growth estimates for LAC between the end of 2012 and mid 2013 continued to be higher than the levels observed in the advanced economies, while revised estimates for the emerging economies show that these will be lower than projected. China, for example, ended the year 2012 with a growth rate below 8%. In LAC, after the major deceleration of 2012 – which was even more intense than the slowdown seen in China – growth stabilized in 2013 and a timid recovery in growth is forecast for 2014, reflecting the difficulties facing the region's economies in their efforts to rebound in the current scenario (see Figure 1).

Significant subregional differences have been evident within the region: the decline in GDP has been more pronounced in South America than in Central America and Mexico, where the rates have remained relatively constant in recent years. The revised estimates of growth prospects in LAC prepared by international agencies indicate that in 2013 growth will be lower than projected, due to the weak performance of its leading economies, Mexico and Brazil, and of other economies that were previously showing a significant expansion of GDP and have experienced a deceleration in economic activity, among them Chile, Panama and Peru.

In recent years, international trade has been the main channel for transmitting the deteriorating global situation to the economies of LAC.

According to ECLAC (2013c), the value of the region's exports is expected to grow by around 4% in 2013, contrasting with the 23.9% increase recorded in 2011, while the value of imports is likely to show a greater increase, of 6%. This lack of dynamism is mainly explained by the recession in the Eurozone countries and by the deterioration in commodity prices, which account for a high proportion of regional exports, and which are mainly linked to the deceleration of growth in China. Indeed, during the first semester of 2013, the prices of minerals, metals, oil and some foodstuffs fell. The weakening of external demand partially erodes the region's terms of trade.

With the weakening of the world economy and of external demand, the region's growth has been driven by domestic consumption, given that the central and emerging

economies have been unable to jumpstart their growth, despite having avoided the most pressing threats that slowed the global economy at the end of 2012.

In any case, the main source of growth in 2013 continues to be domestic consumption, even though it is less dynamic than in recent years. This lower dynamism in consumption has not been compensated for by an increase in investment or by the expansion of net exports, which explains the deceleration in the region's growth rate.

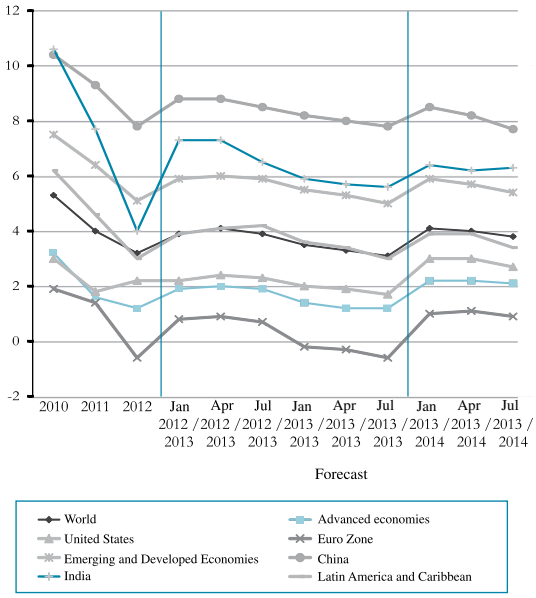
The policies implemented in recent years in LAC in response to the global financial and economic crisis, have led to the strengthening of the institutions and macroeconomic underpinnings in the majority of the countries of the region. As a reflection of this, in recent years many of those countries have achieved progressively positive results in terms of reducing the levels of risk perceived by the financial markets, controlling inflation, accessing external financing and achieving stability in the real exchange rates (see Figure 2).

Outside the region, the fiscal agreements reached in United States (USA) and those between the Central European Bank and the economies on the periphery of the Eurozone have rolled back the level of global financial risk in the last year. However, these advances in international financial stability are fragile and a number of risks persist, both in the regional and the global contexts; if these were to materialize, they would push economic growth downward in the coming years (see Box 1).

In a scenario in which global economic activity shows no signs of rallying, the opportunities for growth driven by the expansion of exports are beginning to shrink. Therefore, the region's economies must implement structural reforms to increase the competitiveness of their exports. Many economies have already taken steps in that direction by implementing a number of reforms in the areas of labor and taxation, with the multiple objectives of increasing revenue collection and reducing the public-sector deficit, while encouraging employment and investment. But other reforms are also needed, particularly to ensure that tax revenues and the influx of capital are directed toward the areas that represent the main structural limitations to the growth of the region's economies. In LAC, the main challenges are related to the poor quality of the education systems, the high levels of informality in employment, the inadequate and limited regulation of infrastructure systems and major barriers to competition and investment on the part of national and foreign companies (OECD, 2013b).

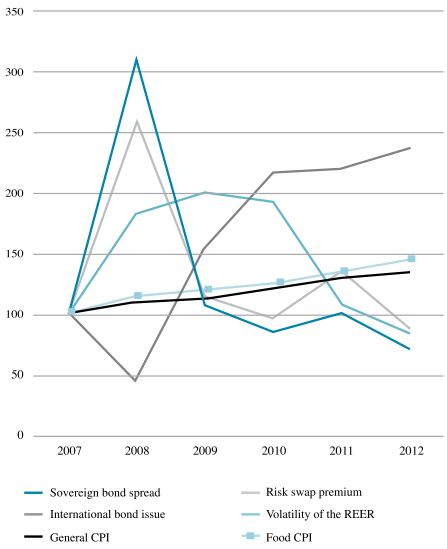
At the same time, in order to avoid such a high dependence on consumption – which also shows signs of waning– as the variable that leverages growth, the LAC countries must promote fiscal and financial policies that encourage investment and structural change; in other words, resources and labor must be reassigned from non-tradable sectors with low productivity toward tradable sectors with higher productivity. The measures outlined in Box 2 may encourage investment in tradable sectors with high productivity.

Figure 1. Growth rates and projections of Gross Domestic Product (%)



Source: Prepared by author based on data from the World Economic Outlook, IMF.

Figure 2. Evolution of the variables of financial risk, exchange rate volatility and inflation, LAC (2007=100)



Source: Prepared by author based on CEPALSTAT data.

Box 1. Main risks of declining global economic activity and their impact on the region

Global risks	Impact on the region
Economic deceleration in China.	Falling international prices of some commodities exported by the region, decline in exports (value and volume) particularly of the South American countries, downturn in regional growth.
Persistent weakness of growth in the Eurozone, due to fiscal adjustments and problems of competitiveness.	Falling international oil prices, decline in exports, especially of the South American countries, downturn in regional growth.
Difficulties in reaching an agreement that offers a more definitive solution to funding the US deficit.	Increased uncertainty in international markets, increase in risk premiums in the USA and transfer of capital assets from the region toward that country.
Change in the USA's expansionary monetary policy, with higher interest rates and reduced asset purchases by the Federal Reserve.	Transfer of capital from the region to the USA, rise in interest rates in the region, depreciation of real exchange rates in regional economies that are most strongly integrated into the international financial markets.
Inadequacy of Japan's expansionary monetary and fiscal policy in promoting the devaluation of the yen and increasing competitiveness	Increase of sovereign risk premiums in Japan due to doubts over the sustainability of its macroeconomic policies, transfer of capital assets from the region toward that country, higher interest rates in the region

Volatility and decline in the prices of main export products	Variability of revenue collection, which affects the sustainability of public spending and policies; deterioration in the terms of trade in countries that export metals, hydrocarbons and some foodstuffs, although the impact could be positive in the Caribbean and Central American countries.

Source: Prepared by author based on ECLAC (2013a), ECLAC (2013c) and IMF (2013a).

Box 2. Policy measures to promote investment and structural change in LAC

According to ECLAC (2013c), the following measures may encourage investment in highly productive tradable sectors:

- Promote realistic, high and stable exchange rates, with intervention measures to reduce exchange rate volatility when necessary (although such measures would be conditioned by the performance of capital flows, which are mostly outside the control of the countries)
- Create financial mechanisms to allow for hedging arrangements.
- Use fiscal and financial policies to promote investment in tradable sectors, through increased concentration of public investment in infrastructure and the transparent use of subsidies to reinforce complementarities between private investment projects and investments in tradable sectors with numerous linkages.
- Develop national professional training systems that focus on initial technical training for young people and continuous training for workers, especially those employed in low productivity sectors, placing emphasis on the use of information and communications technologies.
- Improve the public sector's capabilities to implement these measures and coordinate public and private investment
- Develop counter-cyclical (transitory) capacity in order to counteract or reduce the level of activity triggered by external and internal shocks. This implies using monetary and fiscal policies and public investment to accelerate economic activity in periods of crisis and, on the contrary, to prevent the overheating of the economy and reduce debt levels during boom periods.
- At the same time, macroeconomic policy must help prevent a national crisis leading to periods of recession, low growth and idle production capacity, by promoting internal and external balances that are sustainable in the long term: in this case, the tools should include greater flexibility in macroeconomic policies, medium and long-term fiscal objectives, exception and transition clauses and some room for maneuver to confront catastrophic events or persistent recessive situations.
- Develop institutional capabilities to improve sensitivity analysis and the construction of prospective scenarios in budget procedures, in order to strengthen the implementation of counter-cyclical macroeconomic policies.

Source: Prepared by author based on ECLAC data (2013c).

Sectoral Analysis

Context of the agricultural sector

During 2011, expanded agriculture in LAC was less dynamic than overall regional production, although performance was dissimilar among countries.

Agricultural Value Added (AVA) in LAC grew by 2.7% in 2011, well below the growth of the region's overall GDP of 4.3%. The countries that showed the best performance, with growth rates above 6%, were Chile (11.85%), Jamaica (9.8%), Bahamas (7.18%), Antigua and Barbuda (6.83%), St. Kitts and Nevis (6.71%), Ecuador (6.39%) and Dominica (6.02%), as shown in Figure 3 below.

Figure 3. Inter-annual growth of GDP and AVA in the Americas (in percentages, 2011; countries in descending order of growth of AVA -Volume)

Source: IICA (CAESPA) with data from World Bank, ECLAC (2013) and OECD.

AVA-Income (different to the previous analysis of production volume) reveals that in 2011 the inter-sectoral terms of trade were very favorable for agriculture in Argentina, Honduras, Nicaragua, Paraguay and Jamaica, improving the incomes and purchasing power of producers in those countries.

Preliminary growth estimates for the agricultural sector in 2012 show that the Americas were severely affected by extreme climatic conditions and by a revaluation of the exchange rate, which particularly affected non-dollarized, export-oriented countries. In other countries, such as Belize and Mexico, the situation in 2012 was more encouraging.

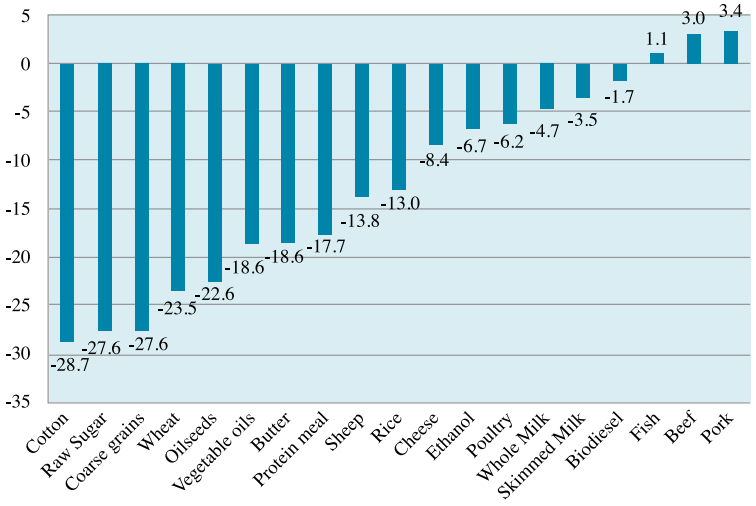
It will be necessary to adopt appropriate measures to give greater stability to agricultural prices and to make agriculture more resilient to climatic and economic risks, which have more prolonged effects on prices.

In the coming decade, agricultural prices will fall in real terms, making it essential to redouble efforts to improve investment, productivity and efficiency to ensure more sustainable sources of prosperity in rural areas. The prices of agricultural commodities, along with those of tropical products, are expected to decline, with the exception of beef, pork and fish (see Figure 4).

Global agricultural systems, and therefore the prices of agricultural products, are becoming increasingly unstable, which creates a very difficult environment for investment and decision-making. As noted in this chapter, the main components of price instability are the cycles or peaks caused by changes in world production which, although small, can trigger dramatic hikes in prices when world stocks are low, as they have been over the last five years.

Coffee prices deviated 36% from their long-term trend during the last analysis period

Figure 4. International prices of agricultural commodities in real terms (percentage changes 2013-2022, versus 2010-2012)



Source: OECD/FAO.

(2011-April 2013), a percentage never seen before. With regard to maize, the effects of one of the worst droughts in the history of the USA resulted in prices deviating 30.6% from their long-term trend during in the last period, a figure three times higher than in the period 2001-2005. For their part, sugar price cycles have responded to price stimuli applied in the past which significantly boosted the cane harvests of key producers such as Brazil, Thailand, Australia and Mexico.

LAC's agrifood exports were strongly affected by the reduction in the Southern Cone's exports of raw materials to China, but were also influenced by the weakness of the US dollar and non-tariff barriers.

LAC's agrifood exports fell by 0.5% in 2012. However, during the 2005-2012 period, exports grew at an average annual rate of 11. 4%, higher than the 9.9% average growth rate of global agrifood exports. The appreciation of local currencies *vis à vis* the dollar (the most prolonged since the 1970s decade) has reduced the competitiveness of the agricultural exports of most LAC countries, and has benefited the agricultural exports of the United States.

Non-tariff barriers and transaction costs prevent countries from taking advantage of the enormous growth potential of the intraregional agrifood trade. There is much rhetoric and little action on the issue of economic and trade integration and some evidence that the trade agreements have not been successful in reducing trade barriers among LAC countries. Intra-regional agrifood exports account for just 15.9% of LAC's total agrifood exports, compared with nearly 60% in the European Union and 50% in Asia. The region's limited commercial integration is probably due to the lack of trade complementarities between countries and the greater attraction of markets such as China. However, the main obstacles that prevent countries from maximizing the potential of intraregional trade are non-tariff barriers, the high cost of transport services, deficiencies in the structure of ports and warehousing facilities and, as a common denominator to all countries, logistical costs that are very difficult to quantify, in the form of delays, losses and corruption.

This chapter explains how agriculture, particularly family agriculture, will play a fundamental role in improving nutrition and food security in LAC, where several countries show alarming levels of malnutrition: more than 30% of the population in Haiti and Guatemala, and more than 20% in Paraguay, Bolivia and Antigua and Barbuda, where, in addition to malnutrition, the rapid increase in the prevalence of overweight and obesity emerges as the new threat. It will be necessary to promote the implementation of mixed and integrated agricultural systems (richer in nutrients and with more sustainable sources of employment and incomes for family agriculture), which requires greater knowledge than the traditional monoculture systems.

Agriculture

After a recovery in 2010 and a good performance in 2011, agricultural production in LAC lost its dynamism in 2013.

The deceleration seen in 2012 served to highlight the greater relative weight of the Southern Cone - the subregion that grew at a lower rate during that year – and where agricultural production in Brazil fell by -2.3%. Similar decreases in crop production were observed in the Central American and Caribbean subregions (with some exceptions, such as the Dominican Republic), while Mexico and the Andean subregion showed positive results.

In 2012, climate variability was once again the factor which had the greatest impact on crops in LAC. Floods and droughts throughout the continent strongly affected not only the production of grains and oilseeds, but also tropical products such as coffee, banana, citrus and sugar cane. In the case of coffee, a severe outbreak of coffee rust disease affected Central America, the Dominican Republic, Peru and Colombia; the negative impacts of this disease will be felt throughout 2013 and will continue during 2014, with major economic and social implications, given that the greater part of the coffee crop is produced by small-scale farmers.

Figure 5. Evolution of agricultural production in LAC

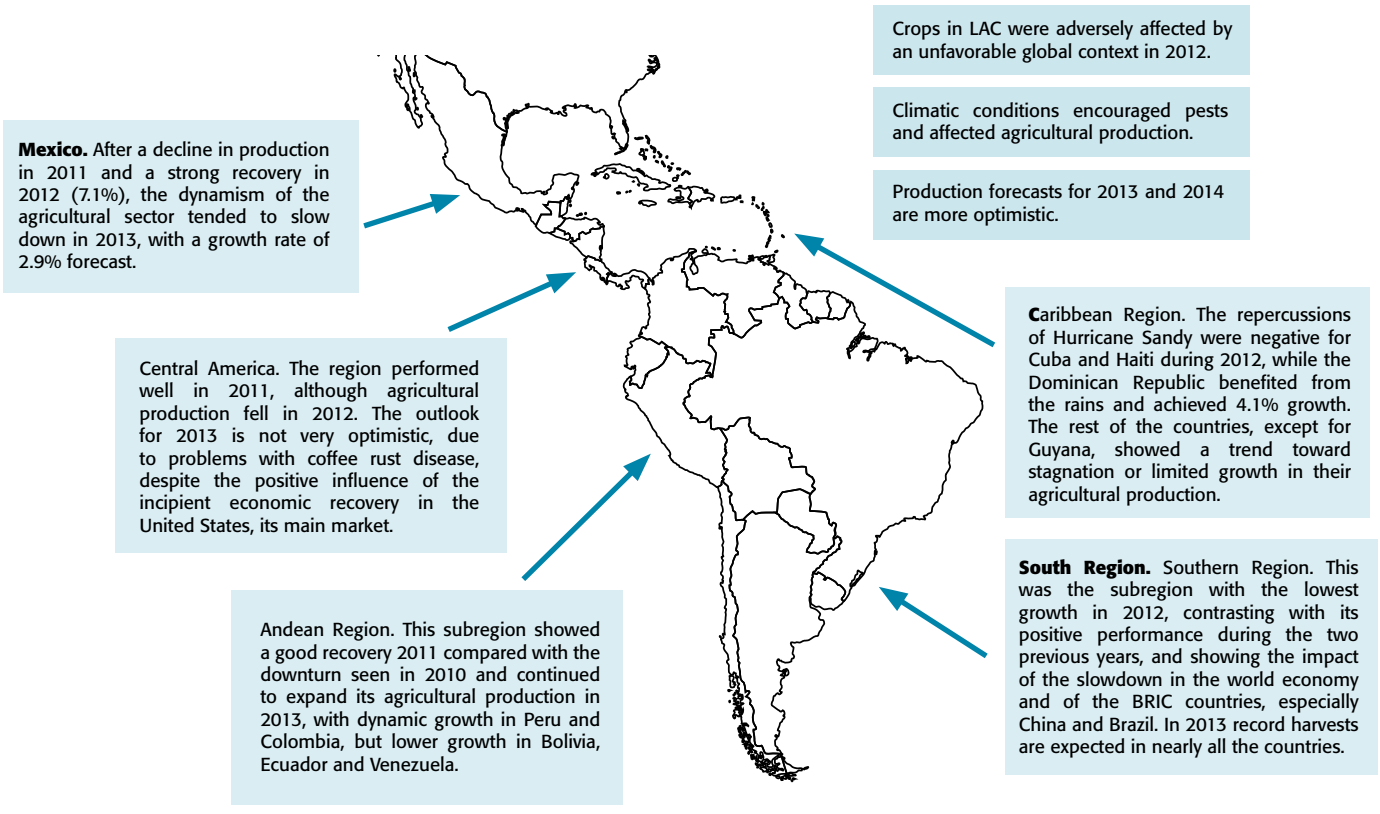
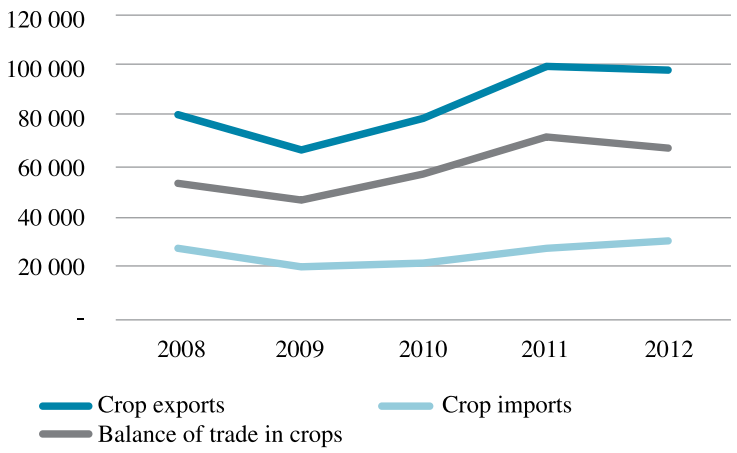


Figure 6. Value of the trade balance for crops in LAC (millions of USD)



Source: IICA (CAESPA) with data from ITC.

Despite the downward trend seen in international commodity prices during 2013, forecasts for the production of grains (the most important food group in the human diet) point toward record harvests in the Americas, especially in the north and south of the continent.

Agricultural trade weakened and the favorable trade balance was reduced in 2012.

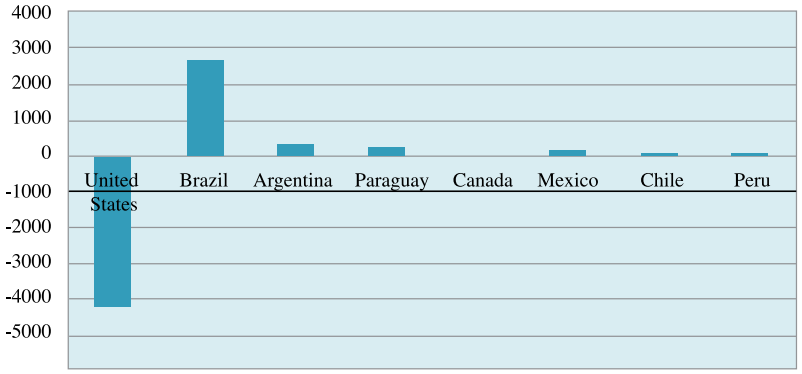
After growing for two consecutive years (2010 and 2011), the value of LAC's agricultural exports decreased by 1.8% in 2012, while imports maintained the growth trend shown since 2009 (they increased by 10%). This resulted in a slight reduction in the positive balance that LAC achieved in its trade balance for crops, which stood at USD 67,000 million (see Figure 6), with a particularly large growth in grain imports by Venezuela (almost 90%) and major increases in imports of oilseeds in Mexico and Brazil, as well as fruits in Venezuela and Mexico.

The fall in the value of crop exports during 2012 is explained by the 20% reduction in coffee exports (basically Brazil and Colombia) and of oilseeds (Argentina and Paraguay), which could not be compensated by the growth in exports of oilseeds, live plants and maize by Brazil, a country that took advantage of the window of opportunity created by the severe drought that affected the USA.

From 2014, the recovery of global demand, driven by growth in the developing world and the expansion of its middle classes, will drive the growth of LAC's agricultural production and exports, provided that it is not adversely affected by extreme climatic conditions and an even weaker US dollar.

The severe drought that affected the United States in 2012 resulted in a reduction of its maize exports (of 38%), an opportunity that was seized by other countries of the region (see Figure 7). Brazil exported nearly 20 million tons of maize that year, nearly doubling its exports compared with 2011, while Argentina exported a little over 16 million tons. This means that Brazil´s maize exports exceeded those of Argentina for the first time.

Figure 7. Variation in the value of maize exports of the countries of America (in millions of dollars) in 2012



Source: IICA (CAESPA) with data from ITC.

Policy recommendations

The recommendations focus on thee groups of policies: those related to agricultural production, which focus on issues of health and safety and those related to the operation of markets and trade. With respect to the first group, the LAC countries must try to take advantage of the opportunities afforded by the growth in world demand for food, promote strategies and actions to mitigate the impacts of climate variability on agricultural production and the populations of rural territories, establish and support policies and research aimed at adapting agriculture to climate change and promote a greater use of biomass to create a less oil-dependant and more sustainable agriculture. They must also reinforce strategies to ensure the inclusion of family agriculture, promoting both associativity and the restructuring of extension systems that focus on providing assistance to this group of producers, with the aim of converting extension workers into agents of innovation, trained in the new topics and new challenges.

The second group of policies is aimed at achieving greater control over pests and diseases that proliferate during periods of climate change. In this regard, the policies proposed include efforts to implement preventive health services, promote the training of human resources in animal health and food safety (AHFS) taking advantage of examples such as the creation of virtual (online) schools for health and safety inspectors, and continue with the modernization of AHFS systems in

order to improve services and facilitate the incorporation of any new regulatory standards that may be developed.

Finally, with regard to the group of policies related to agricultural markets and trade, emphasis is placed on efforts to promote coverage of and access to agricultural insurance as an important tool for managing risks, as well as the promotion of traditional family agriculture practices in LAC, which help to conserve the environment and the soil. In addition, given the stagnation of the Doha Round of the World Trade Organization (WTO) and the proliferation of bilateral and multilateral free trade agreements and other alternative exchange initiatives (such as the oil for food program), it is hoped that advances in trade liberalization will occur subject to common standards.

Box 3. Policy recommendations for production and trade in crops in LAC

- Take advantage of opportunities afforded by the growth in world demand for food.
- Support mitigation policies to address climate variability.
- Support policies and research aimed at adapting agriculture to climate change.
- Promote more actions to develop a less oil-dependant agriculture.
- Reintroduce agricultural zoning strategies.
- Restructure extension services with an emphasis on family agriculture.
- Adopt a preventive approach to agricultural health.
- Promote training of human resources in AHFS.
- Continue with the modernization of AHFS systems.
- Move forward with trade liberalization efforts, but with common standards.
- Promote coverage of and access to agricultural insurance as an important tool for managing risk.
- Promote the traditional production practices used in family agriculture in LAC.

Source: Prepared by author.

Livestock

The growth of the livestock industry is a welcome economic bonanza for LAC, with great potential for family agriculture; however, the undesirable costs of this activity (especially environmental) must be carefully considered along with the benefits of that growth.

Livestock plays an essential role in contributing to the economic well-being of poor families in the rural areas of developing countries, which are abundant in LAC. For many rural households in the region, livestock provides a source of food, income, draught animals to produce food and dung for use as fertilizer or fuel; it is also an activity that enables

rural families to improve their economic and social situation during the good years and cushion the effects of bad years. Therefore, a parameter for quantifying growth and progress in rural communities, and the improvement of the economic conditions of rural families in developing countries, is the level of production and consumption of livestock products.

LAC continues to achieve impressive figures in the growth of meat and milk production. Meat production and livestock inventories are concentrated in a few countries.

Over the last decade, meat and milk production have grown rapidly in LAC, with poultry production in the lead (see Table 1). In fact, the region's poultry production nearly doubled between 2001 and 2011, greatly surpassing the USA and the rest of the world. At the same time, although production of beef, pork and milk has not undergone such a rapid expansion, it has increased by more than one-third in the same period, greatly exceeding the figures of the USA and the world average. Moreover, LAC currently accounts for a larger percentage of the world's beef, lamb and poultry production compared with the USA, and almost the same proportion in terms of world milk production (see Table 1). The largest inventories and production of livestock and meat in LAC are concentrated in a few countries: the three leading countries boast the largest stocks in each category, including nearly 70% of beef cattle and pigs, 64% of dairy cattle stocks, 60% of poultry and nearly half of lamb.

The widespread adoption of new technologies and production methods in LAC, including improved breeds, has fostered a steady increase in meat and milk production per capita for all livestock species in the last ten years (FAO, 2013b). Consequently, LAC's productivity in pork and poultry is approaching the levels of USA and is well above the world average for both species.

Livestock products satisfy an important and growing portion of the daily nutritional needs of the region's consumers. In LAC, these products provide a larger proportion of the daily calorie intake per person in comparison with the overall group of developing countries and the world (FAO, 2013b). Per capita consumption of dairy and poultry products has shown a fairly rapid growth in many countries of the region, particularly in Mexico, Brazil and other smaller countries (see Table 2). Per capita consumption of lamb has also continued to increase, although at a slower pace than pork, poultry and dairy products. Indeed, those LAC countries that have experienced an increase in per capita consumption of beef, have also shown a higher growth rate in per capita consumption of chicken, which represents a reduction, in relative terms, in per capita consumption of beef. In LAC and in the rest of the world, chicken meat is becoming a better value source of protein compared with other meats.

LAC's beef exports have more than doubled, while pork and poultry exports have grown more than four times since 2000 (OECD-FAO, 2012), despite the increase in consumption of all the main animal products, except for lamb. Argentina's beef exports are a notable exception, given that its meat industry continues its struggle to recover from a severe drought in 2008 which led to the sale of large numbers of cattle at reduced prices and the subsequent shortage of beef in the domestic market. Brazil remains the leading exporter of poultry meat in LAC, accounting for nearly 89% of the region's poultry exports, and is expected to increase its dominion to almost 92% by 2021 (OECD-FAO, 2012). Brazil also leads the field in pork and beef exports (71.6% and 51.7%, respectively) in the region. Chile is increasing its share of pork exports with 16.5% in 2011, compared with just 10% in 2000.

The LAC countries have been essentially net importers of dairy products, accounting for around 10% of world imports of whole and skimmed powdered milk in 2011 (FAO, 2013b). The rapid increase in per capita incomes in the region has boosted demand for imports and dairy products; however, over the last decade, the increase in domestic production and in dairy exports has substantially reduced net imports of all dairy products.

Meat production will continue its rapid growth, although at a lower annual rate.

Meat production in LAC is expected to maintain its rapid growth during the next ten years, although at a slightly lower annual rate. In this process, LAC's contribution to the global livestock count, to the world meat supply and to global meat exports will probably continue to increase alongside per capita meat consumption. The key factors driving the expected performance of LAC's meat industry are the growing comparative advantage of the South American countries in extensive cattle ranching, the supposed relative increase in per capita incomes, a change in consumer preferences from beef to chicken and pork, and policies designed to stimulate production while minimizing the environmental impact.

The growth of the livestock sector in LAC has produced an economic boom in the region, creating jobs, generating economic prosperity, mitigating nutritional deficiencies and promoting food security. However, the extent to which this explosive growth may contribute to poverty alleviation and to the strengthening of small-scale and family agriculture in LAC will depend on several factors. Many small farmers whose livelihoods depend on livestock do not participate in commercial markets. Although the changes that are transforming the livestock industry in many countries of the region have little impact on these producers, for the large number of rural households that participate in some way in commercial markets, the growth of livestock production will provide an opportunity to earn money to complement their subsistence needs and to purchase agricultural inputs (Otte *et al.*, 2005).

The closer these families are to the main urban centers, the more opportunities they will have to benefit from the continuous growth in demand for livestock products. In the surrounding areas, small-scale farmers can obtain direct benefits through contract agriculture or by complementing the food supply of urban wholesalers and retailers. In the more remote areas, small investments in infrastructure, the provision of training and the distribution of new technologies, as well as improved genetic material, more efficient production management systems, modern animal health services and other inputs, would yield important social benefits by allowing small-scale livestock farmers to share in some of the benefits of the rapidly growing domestic markets for animal products.

However, the growth of the livestock industry in LAC will also bring complex and potentially harmful and unwanted consequences, and therefore the costs will need to be carefully weighed against the benefits. In the absence of appropriate policies, the economic benefits generated by the expansion of the livestock industry could flow toward a handful of large livestock producers or firms, leaving the poor cattle farmers more isolated and more dependent on subsistence systems than before. A constant and growing environmental degradation, as well as outbreaks of disease, are other adverse situations with possible repercussions at global level. The rapid growth in the production of non-ruminant animals is generating considerable pressure, not only because deforested pasturelands are being turned into croplands, but also because forests are being felled specifically to grow soybean as cattle feed (Herrero et al., 2009). Meanwhile,

it is likely that more outbreaks of diseases will occur in the measure that the industry grows and production of dairy and non-ruminant animals becomes more intensive.

It is necessary to adopt aggressive measures to minimize these risks, as the benefits of the growth of the region's livestock industry become apparent. Box 4 summarizes this scenario.

Table 1. Production of meat and milk in LAC, USA and the world in 2012, percentage change between 2000 and 2012 and proportion of world production

	Production in 2012			Change percentage (2000-2012)			Proportion of world production	
	LAC	USA	World	LAC	USA	World	LAC	USA
	------- million tons -------			---------- % ----------			--------- % ---------	
Beef	18.6	11.0	66.1	33.8	-6.2	11.8	28.2	16.7
Pork	6.9	10.3	111.7	37.5	22.3	24.1	6.2	9.2
Lamb	0.4	0.1	13.5	1.4	-34.8	18.9	2.7	0.5
Poultry	23.8	19.3	104.2	91.3	17.8	50.1	22.8	18.5
Dairy	84.8	89.8	737.4	37.0	18.2	28.1	11.5	12.2

Source: OECD-FAO (2012).

Table 2. Per capita consumption of meat and dairy products in 2012 and percentage change between 2000 and 2012, in a selection of LAC countries

	Beef		Pork		Chicken		Lamb		Dairy[a]	
	kg/ head	Change %	kg/ head	Change %	kg/ head	Change %	kg/ head	Change %	kg/ head	Cambio %
Uruguay	55.9	2.1	10.1	28.9	23.2	52.4	1.9	-79.6	156.9	-42.9
Argentina	38.6	-14.5	6.3	4.3	33.8	47.8	1.0	-29.8	46.0	4.9
Brazil	30.5	23.4	10.8	-0.6	42.5	63.5	0.4	-15.9	75.7	15.5
Chile	16.0	3.4	17.6	40.7	28.9	22.5	0.4	-38.9	55.0	-28.8
Mexico	10.6	5.3	11.0	20.7	26.7	47.5	0.7	-4.2	46.2	28.9
LAC Others	8.7	10.1	6.1	51.3	17.2	33.3	0.4	-9.2	63.3	61.6
LAC	18.8	7.7	8.9	16.0	30.7	51.6	0.6	-18.8	76.5	21.6
USA	25.2	-18.7	21.4	-8.5	44.2	2.6	0.4	-22.0	81.3	-9.5
World	6.5	-3.3	12.3	7.6	13.0	30.9	1.7	4.3	65.2	11.6

a. Fresh dairy products according to the OECD-FAO definition (2012).
Source: OECD-FAO (2012).

Box 4. Policy measures to manage risk and deliver to small-scale farmers the benefits of the growth of the livestock industry in LAC

Measures to minimize the risks facing small-scale farmers and to alleviate poverty	(1) Policies to improve access to production inputs: land, water, risk management tools, etc. (2) Policies aimed at promoting small-scale production and improving its efficiency: measures to increase access to credit and to better veterinary services in order to eradicate diseases that can cause economic problems; extension services, training and technical assistance in livestock breeding techniques, production, marketing, management and adoption of new technologies. (3) Policies to improve the quality of production and increase competitiveness: research and technical assistance financed with public funds to ensure that small-scale farmers comply with international food safety and quality standards. (4) Policies to strengthen market links between rural communities and consumers in urban areas and international markets: public investment in infrastructure and reliable transport and marketing systems between rural areas and commercial markets, access to essential information for decision-making, assistance in negotiating contracts, anti-monopoly laws to allow for competition in prices and purchases, legal assistance for settling contractual disputes and the establishment of associations to incorporate small-scale producers into commercial markets and supply chains.
Pro-production policies compared with pro-environment policies	(1) Policies to tackle the degradation of extensive tracts of land: soil conservation programs, silvopastoral systems and improved management of grazing systems, payments for ecosystem services (PES) and policies specifically designed to alleviate poverty. (2) Policies to reduce deforestation, loss of diversity and carbon dioxide emissions resulting from production: sustainable intensification of agricultural and livestock production, improved protection of wildland areas and incorporation of livestock systems into landscape management initiatives. (3) Policies to improve water quality: improved management of waste generated by livestock production in intensive systems. (4) Policies to encourage changes in behavior among livestock producers (or to penalize the lack of change in behavior): pricing policies and mechanisms to determine prices may be the most effective means of encouraging appropriate environmental practices in very forested areas in an economically viable way; environmental certification of farms would also generate higher prices and, consequently, would encourage behavior that fosters sustainable production. However, the efficacy of measures to change farmers' behavior will largely depend on the willingness of consumers to pay a premium for eco-certified products.

Measures to minimize outbreaks of animal diseases	Traceability systems have been a topic of growing interest in LAC as an effective method for detecting potential outbreaks of disease and facilitating a rapid response, in order to avoid propagation. The comprehensive traceability system implemented in Uruguay, as a result of the outbreaks of foot-and-mouth disease in 2000 and 2001, has become a model for other LAC countries, demonstrating that these types of systems can be an effective tool not only for combating animal diseases, but also for improving credibility in international markets, which in turn add value to livestock products (IICA, 2013). According to estimates, the return on the investment made in Uruguay's traceability system is USD 20 for each dollar invested in the system (IICA, 2013). Although the social and economic benefits of mitigating various livestock diseases are clear, the difficulty often lies in the prohibitive costs of implementing the necessary controls and eradication measures. A substantial change is required in the difficult and often highly politicized process of deciding how to distribute the limited budget available for animal health among the plethora of diseases that are a cause for concern.

Source: Prepared by author based on Pica-Ciamarra et al. (2007), Steinfeld et al. (2006), Steinfeld and Gerber (2010) and FAO (2006).

Forests

Forest degradation and the loss of forest cover continue to be substantial in LAC, depriving rural populations of development opportunities.

The region's policies for settlement and for extending the agricultural frontier favored the removal of forests as a mechanism to demonstrate "land productivity," a prerequisite for gaining land ownership or title. The region is losing nearly four million hectares of forests every year (see Table 3), revealing a lack of vision on the potential of forests for economic and social development and their importance to the environment. Nonetheless, recent decades have witnessed a positive change in society's perception of the role that forests play in mitigating climate change, regulating the water cycle and providing food security for forest dwellers or nearby populations.

Forests and the trees that often grow on farmland in rural areas are essential for the survival of farm families. Forests are the primary source of energy for rural communities in LAC: according to FAO (2011), 81.3% of the wood consumed in Central America goes for fuelwood, and the figure for South America is 50%. Plant formations in arid region and mountains also contribute to rural communities by providing animal feed as well as wood for fuel and construction. Forest management, extraction of non-timber products from the forest, and sustainable use of forest resources are all valuable production activities for small-scale producers and should be carefully fostered, including incentives and funding.

Table 3. Annual change in forest cover, 2005-2010

LAC	Area of natural and planted forests in 2005 (million ha)	Area of natural and planted forests in 2010 (million ha)	Annual change in forest cover (thousand ha/year)
Mexico	65.6	64.8	-155
Central America	20.7	19.5	-249
Caribbean	6.7	6.9	+41
South America	882.3	864.3	-3581
LAC Region	975.3	955.6	-3944
World	4060.9	4033	-5581

Source: FAO, 2010

Climate change primarily affects vulnerable populations and family farmers.

Forests are closely tied to climate change. For one thing, they play a key role in capturing and storing carbon, thus aiding mitigation; they can also become major sources of carbon emissions. Nearly 20% of greenhouse gas emissions are generated by deforestation and forest degradation (UN-REDD, 2013). Therefore, forest loss has a direct impact on family farmers. It deprives them of opportunities for development when they lose access to forest goods and services, and it accentuates changes in the climate, thus affecting their production activities. Natural forest ecosystems are more resilient to climate change than tree plantations, which in turn are more resilient than annual farm crops. This situation has triggered increasing development of new laws and programs to conserve natural forests, recover degraded areas by introducing tree plantations or managing natural forest regeneration, and find ways to adapt agriculture so that the most vulnerable farmers will be better equipped to contend with change.

Standing forests offer many benefits that, because they are considered public goods, have generally been assessed no monetary value. However, the 1990s saw new views about the potential of forest-based environmental services as a source of income for local communities and small-scale farmers, leading to a variety of new approaches for attaching value to forests. Since then, a number of countries, with Costa Rica at the fore, began to assess a value on environmental services and design legal mechanisms that would allow forest owners to benefit from their resource. TEEB (2010) reported estimates that forests and other ecosystems contribute from 47% to 89% of the livelihood of the rural population through ecosystem services and other direct benefits. This is why conservation is so important for poverty reduction.

Higher value is being attached to forest-based services due to their importance for local communities.

Carbon capture by natural forests and tree plantations is now emerging as a promising opportunity for small-scale farmers and forest-dwelling communities, especially indigenous groups. The REDD+ initiative, which arose in 2007 under the United Nations Framework Convention on Climate Change (UNFCCC), holds out interesting opportunities because

the reduction of emissions caused by deforestation and forest degradation brings global benefits for which many developed countries are willing to pay (see Table 5).

If deforestation and forest degradation are brought under control, this will have a major impact on the livelihoods of rural populations and on mitigating climate change worldwide. Such control needs to figure prominently in public policies in this region, which posts the world's highest rates of deforestation. Box 5 summarizes policy measures that could be adopted in the region to ensure that rural communities and small-scale farmers effectively reap the potential benefits of forests.

Box 5. Programs associated with REDD+ can bring major benefits for rural communities

Twenty-three countries of the region are developing programs to reduce emissions from deforestation and forest degradation (REDD+) through the United Nations UN-REDD program and the World Bank Forest Carbon Partnership Facility (FCPF) and Forest Investment Program (FIP). The tendency in the countries is to bolster national systems for measuring, reporting and verifying forest carbon stocks. Thus they are preparing themselves for the future when they can generate greenhouse gas emissions certificates or bonds to be marketed under mechanisms developed by the UNFCCC.

Many of the resources produced by selling these certificates would presumably be available to benefit communities that live in association with forests and that work to promote forest conservation and consequent reduction of CO_2 emissions. Forest conservation should generate not only emission reduction certificates, but also other social and environmental advantages. These benefits will become a reality if the State or other organizations provide support for the process of marketing the certificates. Smallholders would find it very difficult to gain access to these benefits on their own.

Even though the UNFCCC has not yet completed discussions on REDD+, major financial resources are already being contributed by donor countries for developing these programs. The most significant in this region is the Amazon Fund in Brazil, supported by Norway and Germany for the purpose of reducing loss of Amazon forests by means of a variety of initiatives ranging from research to support for local communities interested in conserving their forests. Chile registered the first UNFCCC Nationally Appropriate Mitigation Action (NAMA) for forests in March, 2013. The project has received international support. Its objective is to generate additional income for small-scale owners of forest land by producing carbon bonds that can then be sold over the Platform for Generating and Marketing Carbon Bonds of the Chilean Forest Sector (PBCCh). This is a good example of ways in which forest-derived services, in this case carbon capture, can benefit rural landowners and indigenous communities.

Source: Prepared by author.

Box 6. Policy recommendations to derive benefits from forests for small-scale farming

(1) Public policies intended to promote the development of family farming should attach high priority to controlling deforestation, which deprives rural populations of opportunities for development by removing important sources of support.

(2) National REDD+ initiatives should primarily benefit local rural communities that depend on the forests or benefit directly from them. Initiatives are needed for reducing emissions from deforestation and forest degradation, alongside the development of policies to ensure that the benefits generated through these programs actually reach rural communities.

(3) Adaptation to climate change needs to be promoted in family farming, for which it is important to foster the development of forestry activities. Climate change can have a major impact on family farming. The States must therefore consider measures for adapting to climate change and including family farming. This type of agriculture will become more resilient if production is diversified to include forestry activities.

(4) Setting a value on environmental services associated with forests can introduce new sources of income for communities and encourage conservation and management. It is essential for the countries to move ahead toward placing a value on these services and developing legislation to promote and regulate payment for environmental services.

(5) Rectify land ownership to promote forest management and other forestry activities among family farmers. Legal ownership of the land is critical not only for developing forestry activities, which are generally of a long-term nature, but also for landowners to gain access to the benefits of development programs. The countries must continue with their efforts to normalize ownership of family farms.

Source: Prepared by author.

Fisheries and Aquaculture

Aquaculture production has grown gradually and steadily in LAC; it has now caught up with extractive fishing as a share of the overall catch.

Fish production has grown at a mean rate nearly double the world population growth rate and has become the world's fastest-growing food production activity due to higher output of fish and better distribution channels. Per-capita world consumption of

fish is now nearly 19 kilograms on the average. Distribution, however, is asymmetrical: China reports yearly consumption figures of 31.9 kilograms, Spain, 27.6 kilograms, and South America, an average of only nine (FAO 2012a and Cerdeño 2010).

Fishing and aquaculture hold great economic and social importance in LAC. Together, these two sectors directly employ over two million people, and their percent share of agri-food employment is expected to continue growing, having risen from 2.7% in 1990 to 4.2% in 2010 (FAO 2011b). Artisanal fishing alone provides economic sustenance and food for numerous rural communities. The problem is that 85% of wild resources caught worldwide comes from fishing grounds that have been depleted or overfished, and over 22% of this catch is used for producing fishmeal and fish oil to feed captive stocks. This percentage is considerably higher in LAC. Most industrial fishing in Chile and Peru (two fishing powerhouses) is used to produce fishmeal (FAO 2012a y 2012b).

Aquaculture production will supply the increased demand for fish, but should not be at the cost of wild fish caught and processed into fishmeal.

Even though the aquaculture sector has experienced major growth in the region, it accounts for barely 20% of total fish production. South America has held the lead with over 70% of the region's aquaculture production, or 1.9 million tons. Chile is the region's largest aquaculture producer, turning out 0.7 million tons annually. Most of this production is industrial, primarily of Atlantic salmon. This species, with its high trophic level, needs feed that contains a high percentage of fishmeal and fish oil. Brazil holds second place in LAC production, with 0.5 million tons. Most of this development comes from small-scale aquaculture, as is also true for other countries including Peru, Ecuador, Costa Rica and Paraguay (FAO 2012a and 2012b).

Over 100000 rural families in LAC currently have at least one fish tank where they produce protein, biofertilizer and additional income. Low-resource aquaculture is playing a significant role in self-employment and food security for the region's rural families, and fish farming by micro- and small-scale enterprises is becoming a major generator of income for small-scale producers in Latin America. These sectors mainly raise fresh-water, low-trophic-level fish such as tilapia and carp, which require no artificial feed or whose feed contains low levels of protein. This is an advantage for the development of these sectors (FAO 2011b).

It is estimated that, at the current rate of per-capita consumption, an additional 23 million tons of fish will be needed by the year 2020, although presumably this demand could be even greater as the population continues to be interested in adopting a more healthy and nutritious diet. As extractive fishing is expected to stagnate at 80 million tons because of the depletion or overfishing that currently affects most marine resources, the growing demand will need to be met with artificial fish farming. This type of production is expected to reach 79 million tons from 2014 to 2021.

The main protein component of artificial fish feed comes from fishmeal and fish oil processed from small pelagic fish such as Peruvian anchoveta, a species that is showing clear signs of overfishing. As consumers prefer carnivorous fish or species with a high trophic level (such as salmon, shrimp and tuna) over herbivores or fish with a low trophic level (such as tilapia and carp), the demand for fishmeal and fish oil is expected to grow, and prices, to rise. With greater demand for fish for

human consumption, though, the percentage of the fish catch used to produce fishmeal and fish oil is expected to decline from 22% to 17% by 2021, so that fishmeal production could become a brake on the development of aquaculture.

In order to prevent this from happening, major technology efforts are being made to reduce needs for fishmeal over the medium term. Studies are underway to reduce the mean amount of fishmeal in fish feed, improve the conversion rate of feed and lessen the amount of residues from this industry. The European Commission will also allow the use of pork and chicken protein to feed fish, which in turn will boost the supply of raw materials for feed and bring down prices.

Aquaculture could cause fish prices in general to become more volatile.

Cost and price trends for fish products and for alternative commodities such as meat and feed have a bearing on the sustainability and growth of the fish trade. Price fluctuations for aquaculture products may have a significant impact on price trends for the overall sector, which could lead to greater volatility. Environmental factors are also pushing volatility in the region. For example, the El Niño phenomenon will put a stop to all economic activities in fishing for one or two out of every 10 years. Any relationship between climate change and the El Niño phenomenon remains to be proven; for now, the effects of one on the other are mere suppositions. This is why further studies on the subject are needed, along with environmental and financial risk management plans.

The greater pressure for fish products may pose a threat to artisanal fishers and small-scale fish farmers. Developed countries are expected to become more dependent on fish imports from developing nations. This could be one of the explanations behind the low tariffs that developed countries levy on fish imports. The LAC region can be expected to continue holding a solid positive position as a net fish exporter, alongside Oceania and the developing countries of Asia. In a market that seems more and more attractive to large-scale investment, appropriate policies will be needed to protect artisanal fishing and low-resource aquaculture (see Box 7).

Box 7. Policy measures to protect artisanal fishing and promote the sustainability of fish production

(1) *Differentiate between products of extractive fishing and aquaculture-based products; consider the possibility of using ecolabelling and certification systems in artisanal fishing.* FAO addressed a new topic in 2005, publishing "Guidelines for the Ecolabelling of Fish and Fishery Products from Marine Capture Fisheries" (FAO 2005) and "Guidelines for the Ecolabelling of Fish and Fishery Products from Inland Capture." Following the FAO proposed guidelines, the Marine Stewardship Council (MSC) was set up as an international nongovernmental organization whose purpose is to promote fishing that is environmentally responsible, socially beneficial and economically viable for fisherfolk throughout the world. The seal sets minimum requirements that fisheries should meet in order to obtain the certificate of responsible fishery management. The certificate would allow products to enter more demanding, higher-priced markets. At present, seven percent of the fisheries in developing countries hold MSC certification. Some examples of certification in this region are Argentine anchovy and hake, Mexican sardine and lobster and Patagonian oyster. Studies are currently underway on Chilean hake and mussels and Mexican herring and tuna.

(2) *States should promote consumption of low-cost, high-nutrition forms of fish protein.* It is time to replace the old paradigm under which developing countries are the world's primary exporters of non-edible fish. Developing countries contribute approximately three-fourths of non-edible fish exports, and one-third of the volume of these exports consists of fishmeal. Sardine, anchovy and mackerel (mainly used as raw material for producing fishmeal in LAC, notably in Peru and Chile) are among the best and most abundant sources of healthy food in the world. Their meat offers the richest available combination of proteins and healthy fatty acids (omega-3, EPA and DHA), and consumption of these fish helps reduce cholesterol, triglycerides, blood pressure and insulin resistance. However, even though the countries of LAC are the largest producers of this type of fish, their consumption levels are far below the world average. The populations of Peru, Spain, Japan, China and many Asian countries have the potential to feed themselves with low-cost fish (such as sardines and anchovies) caught by their own fishing fleets. For example, Peru's "Let's eat fish!" program is designed to develop the domestic market by promoting consumption of low-cost fish such as anchoveta among low-income populations in the Peruvian highlands. Policies should be framed to encourage local consumption of low-cost, highly nutritious fish, especially among the most vulnerable populations.

(3) *Make aquaculture less dependent on the production and use of fishmeal from wild fish.* One way to support the steady growth of aquaculture is to help make it less dependent on fishmeal and fish oil, given the trend toward shortages and higher prices for these inputs. It is therefore necessary to develop policies that are consistent with the needs of the sector, taking into account environmental, social and economic factors. Proper selection of species may prove to be an effective way of reducing demand for such inputs. Fish with high trophic levels, such as salmon or shrimp, require a diet high in fishmeal and fish oil, unlike low-trophic-level species such as fresh-water fish that consume low amounts of fishmeal. Brazil has pushed hard in this direction, fostering the production and marketing of fresh-water fish, especially among small-scale producers. Some countries of LAC have found that raising fresh-water fish provides a relatively easy entryway into aquaculture, especially for developing low-resource aquaculture and micro- and small-scale aquaculture enterprises because of their low level of investment and low dependence on fishmeal-based diets.

Source: Prepared by author based on FAO, 2005.

Rural Well-Being and Institutional Framework

Rural Well-being

Most countries of LAC have observed rising rates of rural employment outside of agriculture and in wage labor; both trends reflect the changing structure of production in rural economies.

ECLAC (2012) defines structural change as a process of transformation characterized by four main factors: diversification in the structure of production, increased linkages among production sectors, an increase in the relative importance of knowledge-intensive activities and penetration of fast-growing international markets. If the concept of structural change were limited to the first factor alone, its main expression would be the transition from an economy dominated by agriculture, especially traditional low-productivity agriculture, to a more diversified economy consisting of activities with greater added value that may or may not be associated with agriculture. This process of diversification in the production structure helps create more productive, better-quality, better-paid jobs. This can be seen from the standpoint of labor market dynamics; structural change is reflected as a decline in the relative importance of agricultural employment, especially self-employment and unremunerated family employment, as opposed to increased non-agricultural employment, especially wage labor.

Information collected from household surveys in LAC points to transformation in patterns of sectoral employment, associated with the process of structural change described above. These patterns can be examined in light of indicators for certain demographic trends (age of producers, gender of head of household) and development in the countries (educational levels of producers, poverty rates). The resulting typology identifies the following classes of households, representative of different production orientations: a) *agricultural wage-earning households*, b) *non-agricultural wage-earning households*, c) *diversified wage-earning households*, d) *employer households*, e) *self-employed non-agricultural households*, f) *100% family-farming households*, g) *diversified family-farming households* and h) *inactive households*. The categories are mutually exclusive and are drawn from combined information on the employment of heads of household and other working family members.

The following socio-demographic trends emerge:

- Poverty rates have declined among all categories, but continue to be higher among 100% family-farming households (see Figure 8).
- Relatively fewer rural households are associated with family farming, although this continues to be the largest group in many of the countries.

- The rates of women as heads of family-farming households continue to be low, although they have risen over the past decade and are more frequent in urban areas.
- Heads of household are oldest, on average, in the family-farming group, and this poses a generational challenge.
- Heads of family-farming households also have the lowest levels of education, which poses a skills challenge.

In particular, the combination of low educational attainment and more advanced age among heads of household does not bode well for family farming. Heads of family-farming households, in most cases, are over 53 years of age on average and have less than six years of schooling, while at the other extreme, the heads of non-agricultural wage-earning households are under 45 years old and have completed more than six years of school on average.

The most common pattern of change in labor-market dynamics, identified in eight of the 12 countries in the study (Bolivia, Brazil, Chile, Costa Rica, Honduras, Mexico, Panama and Paraguay), was a combination of declining shares of 100% family-farming households, rising rates of non-agricultural wage-earning households and diversified wage-earning households, and declining or stable percentages of agricultural wage-earning households.

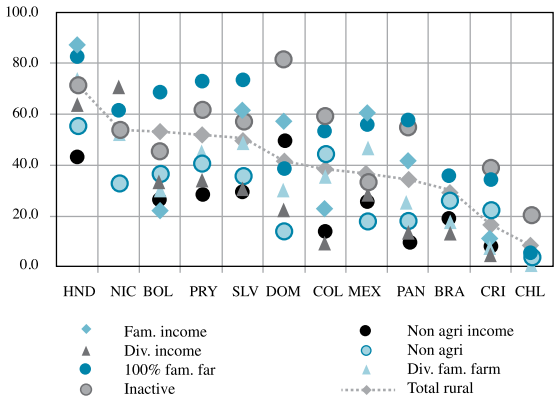
The analysis identified three groups of countries based on the depth of structural change observed in rural labor markets around the year 2010. The first group consists of countries where the processes are more consolidated, including Chile, Costa Rica and Mexico; in these three countries, non-agricultural wage-earning households account for over 20% of cases, while 100% family-farming households have declined to fewer than 15%. The second group consists of countries with less structural change: Bolivia, Nicaragua and Honduras, where in 2010 fewer than 15% were non-agricultural wage-earning households, while over 30% were family-farming households. Countries in the third group are at an intermediate stage: Brazil, Colombia, El Salvador, Panama, Paraguay and the Dominican Republic.

The results of the analysis (see Figure 9) show a correspondence between structural change and poverty rates. Countries with less structural change have higher poverty rates (over 60%) among 100% family-farming households, where heads of household are less educated (four years or fewer) and younger on average (52 years old or less). These countries also have higher percentages of women as inactive heads of household (over 60%) and higher percentages of women as heads of diversified family-farming households. By contrast, countries with greater structural change reveal higher percentages of wage-earning households (over 50%) and lower percentages of family-farming households (under 15%). The greatest consistency was found in Chile and Costa Rica, the countries with the lowest poverty rates. Both countries were found to have lower percentages of women-headed inactive households (under 50%), higher levels of schooling among family-farming heads of household and the highest average age among heads of 100% family-farming households.

The situation in countries at intermediate stages of structural change is more uneven, with features of both the other groups. Paraguay and El Salvador, with minor exceptions, present specificities similar to those of countries that have less structural change. Panama and Brazil, like these countries, report their highest poverty rates among 100% family-farming households, while more poverty was found among inactive

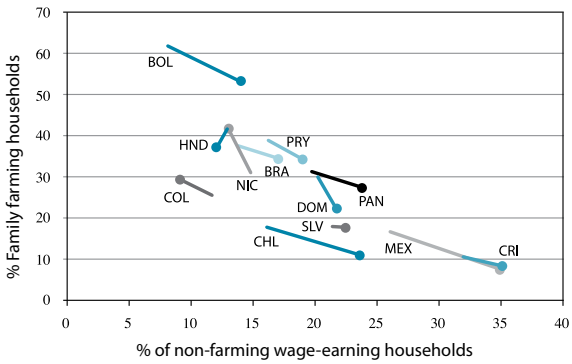
households in the Dominican Republic and Colombia, as in countries with greater structural change. Educational attainment and ages of heads of household stand in between the levels reported in groups with greater and lesser structural change. Three main challenges to family farming can be surmised from this analysis and point to a number of policy recommendations for the development of this segment of producers (see Box 8).

Figure 8: Latin America (12 countries): Poverty rates among rural households, around 2010 (percentages of total households in each category)



Note: Countries are listed in descending order by poverty rates in total rural households.
Source: Unit on Agricultural Development, ECLAC.

Figure 9: Latin America (12 countries): structural change in rural areas between 2000 and 2010



Note: The unmarked end corresponds to "around 2000," while the end marked with a circle is "around 2010."
Source: Unit on Agricultural Development, ECLAC.

Box 8. Policy challenges and recommendations for developing family farming in LAC

The analysis of household employment patterns points to three major challenges for family farming: a) *a viability challenge* associated with structural change in rural areas; b) *a skills challenge* associated with low educational levels among the heads of family-farming households; and c) *a generational challenge* associated with the higher age of heads of family-farming households by comparison with the heads of other groups of households.

The viability challenge underscores the importance of policies for production diversification, skills-building and production development. However, the analysis of structural change and its implications

for the viability of family farming must not overlook the fact that *rural* is not equivalent to *agriculture*, that *farmer* is not the same thing as *immobile unskilled labor* and that *family farming* is not the same as *unproductive sector*. Therefore, public policies need to be oriented toward generating suitable conditions for:

- The development of new production activities, whether non-agricultural or in agricultural sectors with greater added value, to make up for the possible loss of employment in segments of family farming that lose viability in a setting of structural change.
- Skills-building among the rural population to enter these new production activities.
- Building up segments of family farming that have higher productivity and greater viability and potential in economic, social and environmental terms, including households associated with subsistence agriculture.

Finally, special emphasis needs to be placed on policies for training and skills development, as well as policies on gender and rural youth, to face the challenges of skills-building and the generational transition in family farming. As heads of family-farming households grow older and women become more active as heads of these households, it becomes increasingly important to tackle issues of gender and youth in policies for development and for skills-building in family farming.

Source: Prepared by author based on an analysis of survey information from households in 12 countries of LAC.

Policies and institutional framework

Countries look to family farming as the key to food security and rural well-being.

This section is based on an analysis of democratic governance to define the current state of decision-making in the region. Clearly, the countries of LAC have undertaken efforts uphold family farming. They have reconfigured the institutional framework to make it more inclusive. Their public policies have accentuated certain issues including risk management, fighting pests and diseases, climate change, fostering research and technology transfer, and management of water resources.

Over the past year, several countries in the region have developed a decision-making agenda that attaches high priority to the adoption of policies and instruments to come alongside family farming. Bolivia, Argentina, Costa Rica, Chile and Mexico have all undertaken efforts to develop innovative institutional frameworks and allocate budgetary resources for strengthening this type of agriculture.

The institutional framework has been reconfigured and adapted to new challenges.

Institutions have also been reconfigured to make public management more efficient. Nicaragua, Peru, Guatemala, Chile, Mexico and Bolivia are some of the countries that restructured their institutions, changing their spheres of action and creating new ministry portfolios.

Box 9. Examples of renovated institutional structures

Mexico's Special Concurrent Program for Sustainable Rural Development seeks cross-cutting public policies that target the rural milieu. The Secretariat of Agriculture, Livestock, Rural Development, Fisheries and Food (SAGARPA) created an Under-secretariat for Food and Competitiveness.	**Nicaragua** introduced a combined Ministry of Family, Community, Cooperative and Associative Economies, merging the portfolios and spheres of action of the former ministries of the economy, agriculture and social development.
Ecuador created "coordination ministries" above the traditional ministries.	**Peru** set up the Ministry of Inclusion and Social Development with the idea of creating harmony among the policies of various sectors (including agriculture) and levels of government (using the territorial development approach). It also added irrigation to the portfolio of the Ministry of Agriculture
The program "Territories in Progress," originally from **Brazil** and replicated in **El Salvador**, was designed to coordinate the poverty reduction efforts of different ministerial portfolios.	**Guatemala** installed the Ministry of Social Development with an emphasis on poverty reduction in rural areas by means of mechanisms for coordination and cooperation with other central government offices.
Costa Rica created the position of Deputy Minister of Water and Seas and the Rural Development Bureau (INDER).	**Chile** expanded the coverage of the Ministry of Agriculture by giving it authority over foods (quality and safety) and fisheries.

Source: Prepared by author based on analysis of the literature and media sources.

The new policy issues were given high priority for decision-making. Public decision-makers in the region devoted particular attention to fighting pests and diseases and to climate change, with an emphasis on droughts and flooding.

The countries of the region are expected in the near future to further strengthen innovation alongside research and technology transfer, all of which are understood as key to increasing economic growth and social well-being. Public-private cooperation will also be stepped up, especially in such matters as agricultural risk, with an accent on processes of transparency and accountability in public institutions of agriculture, based on the use of open information and other materials.

Management of water resources will take on particular importance as one of the high-priority topics for decision-making. Similarly, factors that were already on the decision-making agenda, such as land tenure, will continue to hold high priority for public decision-makers.

Box 10: Innovations with a beneficial impact on family farming: the importance of working together

A recent study by the Regional Fund for Agricultural Technology (FONTAGRO) documented high-impact innovations in LAC that have benefited small-scale producers by making their labor more productive and competitive, thus allowing them to build more value into their native products, raise prices and improve income and standards of living. The success of these experiences has depended greatly on interaction and combined effort among the various stakeholders.

Public-private coordination. One of the experiences described in the study was Ecuador's "fine-aroma cocoa" production. In this example, collective innovations were adopted through coordination of the work of scientists, agricultural technicians and small-scale farmers, thus meeting different technology needs on family farms, moving small-scale producers into value chains and making their products more competitive. Another case study, production of native potatoes in Ecuador, expanded these partnerships over the longer term by means of contractual relationships.

Participatory work. Inclusive, competitive, sustainable, associative models have been adopted in several ways, such as the organization of small-scale bee producers in Argentina and the Dominican Republic, or the participatory approach to production chains for Andean potatoes in Peru. These cases showcase participatory work by research-plus-development teams (R+D) and territorial networks of technical specialists, which facilitates the identification of new business opportunities, development of rules and standards, sustainable uses of biodiversity and the development of production clusters to benefit family farming.

Participatory research. The examples of improved forage and a better environment in the understorey of the Chaco forests in Salta, Argentina, and native potatoes in Cundinamarca, Colombia, show opportunities being created for researchers and family farmers to share modern knowledge and traditional wisdom. Both groups were able to enrich their knowledge. Family farmers were equipped with effective technology to meet their needs and to strengthen family organization on the farm.

Skills building. The case of native potato crops in Cundinamarca also shows that when small-scale producers build their skills (such as adopting new technologies for crops, organizational development and business acumen), the process is even more successful.

Source: Prepared by the IICA Innovation Program and based on IICA, IDB and FONTAGRO 2013.

Much progress has already been made in the area of institutions, mainly to strengthen good governance in the region. Nonetheless, it is critical not to lose sight of certain important measures that the countries of the hemisphere will need to adopt. The following especially stand out: a) strengthening the effective implementation of policies, b) exchange of experiences among countries that have created opportunities for citizen participation, c) inclusion of cross-cutting themes such as youth, indigenous populations and gender in national policies to foster family farming, d) skills-building among government officers and e) encouraging public institutions to begin practicing strategic thinking and forward-looking analysis.

Many challenges lie ahead for the countries of LAC in coming years, such as eliminating social

inequality, achieving food security and making government structures more efficient. Each nation needs to find its own original formula for proposing solutions to high-priority public problems. It needs to distill successful experiences and lessons learned from other regions, emerge from the political culture that frames actions at the national level, and incorporate mechanisms of sustainability and implementation that will make all this a reality.

Box 11. Policy recommendations for improving the institutional framework

- Implement policies (along with instruments and budgets) effectively and with citizen participation.
- Encourage an exchange of experiences on how to facilitate citizen participation.
- Frame national public policies that address cross-cutting themes such as youth, gender and indigenous populations.
- Move toward strategic thinking and forward-looking analysis for responding quickly to new challenges.

Source: Prepared by author.

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State of and Outlook for Family Agriculture in Latin America and the Caribbean

Without a doubt, family agriculture (FA), more than any other economic activity, has the greatest potential not only for increasing the availability of food in Latin America and the Caribbean (LAC), but also for reducing unemployment and lifting the most vulnerable population in rural areas out of poverty. In addition to producing a large percentage of the food consumed in the region, FA provides jobs for workers who are at risk of slipping into poverty and suffering from malnutrition, and who have very few options for finding work in other production sectors.

Even though its potential is unquestionable, FA faces more productive, business-related and socioeconomic limitations than almost any other sector in LAC. The aging of the population in rural areas, the increased interest of the younger generations in activities other than agriculture, limited access to technology, and the potential effects of free trade agreements and climate change are some of the variables that add up to a discouraging outlook for FA if urgent actions are not taken.

Characterization

Dimension of the sector

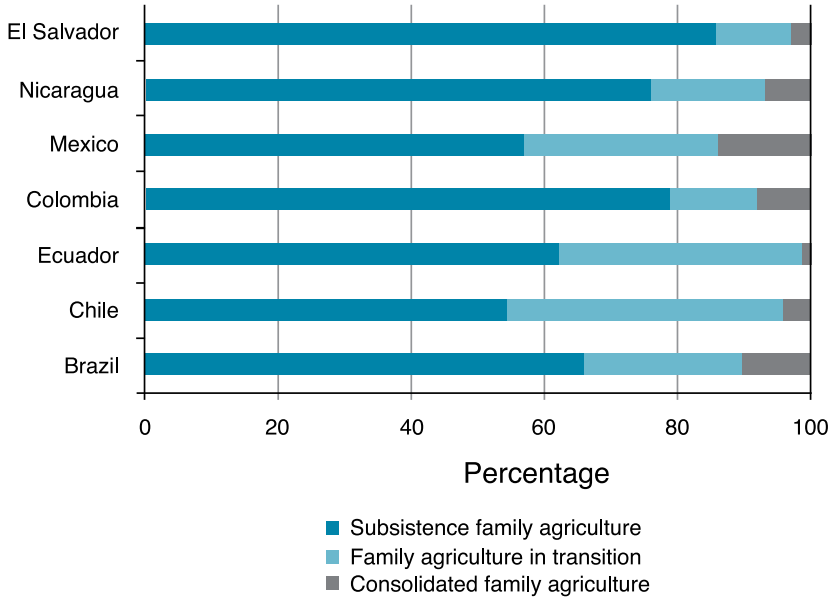
It is estimated that there are some 17 million farms in the FA sector in Latin America, with a population of some 60 million; that 57% of them are in South America; and that such farms account for more than 75% of the total number of production units in almost all the countries of Latin America, and more than 90% in many.

Heterogeneity of family agriculture

All studies that have been conducted on FA underscore its heterogeneous nature in terms of both scale and access to resources. Differences with respect to the availability of capital, land and natural resources, together with differentiated access to public goods and services, add to this heterogeneity, in terms of capacity for innovation, different production and consumption structures, and different strategies for diversifying sources of income. In this regard, some studies identify three types of FA (FAO-IDB, 2007): subsistence family agriculture, family agriculture in transition and consolidated family agriculture. According to the same study, it is estimated that more than 60% of family farms belong to the subsistence category, 28% are in transition and only 12% are consolidated. These percentages vary from country to country; however, the largest number of farms is found in the subsistence agriculture category in all of them (See figure 10.).

In contrast with commercial-scale agriculture, the only goal of which is to maximize profits, FA farmers seek to reduce risk by diversifying production. As a result, most FA farmers in LAC do not specialize in the production of a single good. In Central America, for example, FA farmers combine the production of staple grains (mostly maize and beans), vegetables, small animals (poultry, pigs and bees), fruit, coffee and beef cattle (mostly for breeding and milk production). In the Caribbean, most small-scale farmers use traditional agricultural systems, such as crop rotation and intercropping, to produce a wide range of food crops, especially vegetables, fruit (mango, pineapple, plantain, oranges) and sweet potatoes.

Figure 10. Distribution of the three major types of family agriculture, by country



Source: Prepared by author, based on Maletta,2011; and IDB, FAO, 2007

Dynamics of Structural Change

Family agriculture in Latin America is undergoing a structural change which is not the same in all the countries of the region. Whereas in some the land is being broken up into ever smaller plots and the number of dwarf holdings is on the rise, in others the ownership of land is being concentrated in fewer hands, which means a reduction in the number of farms, especially the smallest ones.

Even though data is not available for most of the countries of the region, a trend toward the concentration of land has been observed in Argentina, Brazil, Chile and Uruguay. In Argentina, the number of farms fell by 20.8% between 1988 and 2002 (INDEC, 2009). In Brazil, the total number of farms dropped by 10.7% between 1985 and 2006 (IBGE). In Chile, there was a 6.4% drop in the total number of farms registered in the last ten years (INE, 2007). In Uruguay, the data from the 2011 agricultural census are not available; however, studies show that there has been a

decline from a high of 86,928 farms in 1961 to 57,131 in 2000 (Piñeiro, 2011), with the heaviest losses concentrated in farms smaller than 99 hectares (96% if the decline). Given the current high level of activity in the land market, this trend is expected to increase.

Mexico stands out among the countries in which the agrarian structure has been fragmented, leading to an increase in the number of dwarf holdings. Some experts state that this could be happening also in some Central American and Andean countries (this hypothesis cannot be proven due to a lack of data). In Mexico, between 1991 and 2007, there was an increase of 7.8% in the number of production units, with the number of such units recorded in the census climbing from 3.8 to 4.1 million (INEGI, 2007).

These two trends are at the heart of the structural change underway in agriculture in Latin America, and will determine the impact of agricultural policy on FA. On the one hand, the potential impact of strictly agricultural sector policies is limited, especially in subsistence FA. This creates the need for intersectoral public policies. On the other, given the increasing share of FA incomes derived from non-agricultural activities, it is not enough for the agricultural sector to perform well; there must also be overall economic growth.

Limitations of Family Agriculture

Family agriculture in Latin America operates in less favorable social, economic and productive conditions than commercial-scale agriculture. Not only is FA affected by higher levels of illiteracy, an aging population and poverty, but FA farmers have less access to public goods, technology and services for production (compared with commercial-scale agriculture). In addition, FA is usually restricted to lands of lower quality and more vulnerable to the impact of climate change (this is of particular importance in Mexico, Central America and the Caribbean). These social and productive limitations have resulted in a significant gap between the yields in FA and those in commercial-scale agriculture. In Central America, for example, in the case of coffee or maize (of great importance in FA), the yields of commercial agriculture can double and even triple those of FA (SICTA, FAOSTAT, ENA and IHCAFE).

In the Caribbean, FA probably faces more limitations than in other parts of the region. In addition to those limitations mentioned above, FA here is impacted by growing dependence on international markets (importing between 60% and 80% of their food), the volatility of domestic agricultural prices and the effects of natural disasters (such as hurricanes and the earthquake that hit Haiti in 2010), which have affected the existing infrastructure and agricultural yields.

Potential of Family Agriculture

Potential to Reduce Poverty

The main reason why a high percentage of those engaged in FA are poor or malnourished is their lack of access to public goods (infrastructure, telecommunications, basic services, education, health services and others), to factors of production (innovation, technology, credit and land) and to markets. The formulation and adoption of comprehensive strategies for FA developed in accordance with a territorial approach, would make it possible not only to increase food production, but also reduce unemployment and poverty while making agriculture more sustainable.

Despite these limitations, FA is an economic activity that effectively combines its production resources, and does so in a sustainable and equitable manner. In addition, because it is labor rather than technology intensive, it plays an important role in the redistribution of wealth and the reduction of poverty. According to the World Bank (2008), the growth of the agricultural sector does more to reduce poverty than that of any other sector. Indeed, according to estimates made by the Bank, growth in the agricultural GDP is at least twice as effective in reducing poverty as growth in the GDP in other sectors. In Latin America specifically, the Bank estimated that growth in the agricultural sector is 2.7 times more effective in reducing poverty.

According to this study, an increase of 1% in the agricultural GDP would generate increases of more than 6.1% and 3.9% in the spending of the two poorest deciles of the population, an impact four times greater than that caused by a 1% increase in the non-agricultural GDP. Even though these data refer to the agricultural sector as a whole, the social impact of growth in FA could be greater due to the fact that this activity is more labor intensive and has higher levels of poverty than the national agricultural average.

Potential to Increase Food Production and Generate Employment

Despite the existence of restrictions that make it difficult to increase the productivity of the factors of production (mostly land, labor and knowledge) and to access markets directly, FA produces a large percentage of all the food consumed in the region.[1] In addition, it accounts for almost 50% and 20% of total agricultural production in Central America and South America, respectively.

In Central America, with the exception of Costa Rica and El Salvador, FA (family-run farms and those employing a few workers) accounts

1 According to data from FAO (2012), in Central America, FA produces70% of all food.

for 50% of total agricultural production. While in Costa Rica and El Salvador the figure is 43% and 40%, respectively, in Honduras and Panama it is more than 50%. In South America, FA plays a vital role in total agricultural production, in particular in Brazil, Colombia and Ecuador, where its share of agricultural value added exceeds more than 40%. In the Caribbean, information on FA is scarce and does not exist in all countries, which makes it difficult to determine its real contribution to the development of the economies there.

As for its contribution to employment, FA generates many new sources of employment. The expansion of the sector can be attributed to the hiring of additional labor and to the incorporation of family members who have lost their jobs in non-agricultural activities.

In South America, the share of FA in agricultural sector employment statistics is particularly significant, ranging in the countries analyzed from 53% (Argentina) to 77% (Brazil). In Central America, FA accounts for more than 50% of sector employment in all the countries (except for Costa Rica, where it is 36%), and more than 70% in Panama and Honduras (71% and 77%, respectively).

In the Caribbean, 89.6% of all farms equal to or smaller than 10 hectares are small-scale farms, with some measuring as little as 2 hectares, which account for 55.2% of the total agricultural surface area.

Table 4. Contribution of family agriculture in some countries of the region

	Argentina	Brazil	Chile	Colombia	Ecuador	Paraguay	Uruguay
	(d)	(c)	(b)		(c)	(a)	(a)
IMPORTANCE OF SECTOR							
Share of FA in value of sector production (%)	19.2	38.0	22.0	41.0	45.0		
Share of FA in sector employment (%)	53.0	77.0	61.0	57.0			
FARMS	(a)	(a)					
No. of FA farms (thousands)	251.1	4 367.9	254.9	737.9	739.9	264.8	32.6
Share of FA farms in total farms (%)	75.3	84.4	95.0	87.0	88.0	91.4	57.2
SURFACE AREA	(a)	(a)					
Medium FA surface area (ha)	142.0	18.4	17.0	3.0	7.0	7.4	77.2
Total medium surface area(ha)	593.0	64.0	38.0	4.6	14.7	107.0	287.0
Share of FA in total surface area (%)	20.3	24.3	44.0	57.0	41.0	6.3	15.4

	Costa Rica	El Salvador	Guatemala	Honduras	Nicaragua	Panama
IMPORTANCE OF SECTOR	(e)	(e)	(e)	(e)	(e)	(e)
Share of FA in value of sector production (%)	40.6	42.7	49.0	56.5	49.3	58.3
Share of FA in sector employment (%)	36.0	51.0	63.0	76.0	65.0	70.0
FARMS	(f)	(f)	(f)	(f)	(f)	(f)
No. of FA farms (thousands)	79.0	230.0	1 062.0	484.0	334.0	164.0
Share of FA farms in total farms (%)						
SURFACE						
Medium FA surface area (ha)		2.2	1.0		6.7	4.1
Total medium surface area (ha)						
Share of FA in total surface area (%)						

Source: NAMDAR-IRANI, M., 2013, based on:

(a) Agricultural censuses: Argentina (2002), Brazil (2006), Paraguay (2008) and Uruguay (2000), cited in REAF (2010), p.12.

(b) INDAP-Qualitas AC (2009). Estudio de caracterización de la pequeña agricultura a partir del VII Censo Nacional Agropecuario y Forestal. (Study to describe small-scale agriculture on the basis of the Seventh National Agriculture and Forestry Census)

(c) FAO-IDB technical cooperation project (2007). Políticas para la agricultura familiar en América Latina y el Caribe. (Policies for family agriculture in Latin America and the Caribbean)

(d) DDA-PROINDER (2007). Los pequeños productores en la República Argentina, importancia en la producción agropecuaria y en el empleo en base al Censo Nacional Agropecuario 2002. (Small-scale farmers in the Republic of Argentina, their importance in agricultural production and employment, based on the 2002 National Agricultural Census. Authors: Scheinkerman E., *et al.*)

(e) Household surveys in Guatemala (2006), El Salvador (2006), Honduras (2006), Nicaragua (2005), Costa Rica (2007) and Panama (2003).

(f) Agricultural censuses in Guatemala (2004), El Salvador (2007), Honduras (1993), Nicaragua (2001) and Panama (2000).

Outlook

It is expected that FA in LAC in the coming years will be characterized by high prices for staple foods, a growing demand for food and a slowdown in production worldwide. In addition, the sector will be affected by the following:

Impossibility of growing by incorporating more land: Any additional food production will come more from increases in productivity than from opening up more land to agriculture. The impossibility of expanding the agricultural frontier will force the countries to tap the potential of FA.

More direct connection to markets: With a view to satisfying the tastes of their consumers, supermarket chains, hotels, restaurants, etc. will pay closer attention to the good practices (seed quality, soil use, yields and crop rotation) and the quality, safety and the manufacturing standards of their suppliers. As a result, FA farmers will have to bring their production methods into line with the new demands of the market.

ITC in rural areas: The increase in the coverage of telecommunications in rural areas of LAC will enable FA farmers to access more and better information on production and markets (mainly via cell phones), thus increasing their capacity to produce, manage their farms and negotiate.

Multidimensional strategies for family agriculture: Given the peculiarities of this sector and the restrictions that affect it, the region must ensure the sustainable growth of FA by implementing a multidimensional strategy that takes into account the different needs of this sector and proposes comprehensive and relevant solutions. If such a strategy is to be developed, the countries must focus first on determining the true needs and contributions of FA, and then on developing an institutional framework for family agriculture, one which must take into consideration the design of policies differentiated by segments of producer, and the creation of specific institutions for FA. In addition, they must strengthen the regional innovation systems, as a means of making FA more productive and competitive, incorporate the sustainable approach of FA into markets, encourage the formation of associations among FA farmers and promote the access of FA to production resources, working capital and investments, among others.

Response from Governments

In recent years, a number of regional policies have emerged that are aimed at addressing the problems and boosting the contribution of FA in the region. In the case of the Caribbean, there is the Jagdeo Initiative (2007), the Common Agricultural Policy (2010), the OECD Agriculture Action Plan (2011) and the Food and Nutrition Security Policy and Regional Action Plan (2011).

In South America, the governments have implemented specific institutional programs aimed at FA, such as the Project to Develop Small-scale Agricultural Producers (PROINDES), created in 1998 in Argentina; AGRO RURAL, created in 2008 in Peru; the Program to Strengthen Family Agriculture (PRONAF), created in 1995 in Brazil; and the Agricultural Development Institute, created in 1962 in Chile. Other countries of the subregion have specific lines of action aimed at this sector, including Bolivia, Colombia, Ecuador and Uruguay. In Central America, there are also different public programs aimed at the FA sector (See Box 12.).

Box 12. Public policy instruments currently being executed in Central America

As determined in a review of existing regulatory and institutional frameworks, the region is currently implementing a number of policy instruments. Below are the most important, by country:

- **El Salvador:** (i) Provision of Agricultural Incentives to Centers for the Development of the Staple Grain and Dairy Chains. Special Program for Food Security). (iii) Purchase for Progress (P4P). (iv) Management of agricultural and energy risk: a comprehensive strategy for responding to drought and food insecurity.
- **Panama:** (i) Project: Agroecological Gardens Close-knit Families. (ii) Project: Promotion of School Savings and Food Production in Elementary Schools of Marginalized Communities in Panama. (iii) Savings Bank. (iv) Project: Transfer of Opportunities. (v) Project: Development of Crops in Rural and Indigenous Communities. (vi) Project: Promotion of Goat Farming as an Alternative Food Source. (viii) PARTICIPA Project. (ix) PRORURAL.
- **Guatemala:** (i) Strengthening local dynamics, with emphasis on intensive agricultural production and artisanal production. (ii) Purchase for Progress. (iii) Special Program for Food Security. (iv) Seeds for Development.
- **Honduras:** (i) Extension progam on food and nutritional security. (ii) Project: Reducing post-harvest losses in grains. (iii) Creation of Jobs in Rural Areas. (iv) Rural Incentives Program (PRONEGOCIOS). (v) Purchase for Progress. (vi) Special Program for Food Security. (vii) Seeds for Development.

- **Nicaragua:** (i) Saving and managing native and domesticated seeds: a contribution to national food sovereignty and local biodiversity. (ii) Agricultural Production Bonus from the Food Production Program. (iii) Purchase for Progress. (iv) Special Program for Food Security. (v) Seeds for Development.

- **Costa Rica:** (i) Integrated Teaching Farms. (ii) Showcases for Technology; (iii) Sustainable Agricutural Systems; (iv) Organizing and Strengthening Family Agriculture Networks; (v) Creation of Social Responsibility Seal and Bar Codes for Family Agriculture; (vi) Creation of a System to Register and Monitor Family Agriculture Farms; (vi) Initiative to Strengthen the Organization of Family Agriculture Farmers, to promote marketing and their participation in local and regional markets;

Source: Central American Agricultural Council

Policy Recommendations

The countries of the region have taken important steps in creating conditions that will favor FA, realizing the great potential the sector has for eradicating poverty and hunger. The challenges that these countries must face in the near future could be eased to some extent with the implementation of the following policy recommendations, intended to correct the weaknesses that currently exist.

Intersectoral rather than sectoral policies: Many of the challenges facing FA in the region cannot be overcome with policies focused solely on agriculture. Ministries must work with other areas of competence to promote policies that are comprehensive and coherent, thus avoiding the duplication of functions and making the use of public resources more efficient.

The territorial approach as a key element in the implementation of policies: For it to have a greater impact and be more sustainable, it is essential that FA be understood and promoted as part of territorial development processes. Only by adopting a territorial approach in which the actions of each of the sectoral policies come together will it be possible to solve the socioeconomic, productive and business-related restrictions FA faces in the region.

The next generation: Given an aging and declining rural population, the migration of the younger members of agricultural families to cities and the rapid growth of non-agricultural activities in rural areas, if immediate actions are not taken, the next generation of FA farmers will have little incentive to continue with the activity. Improvement in public goods in rural areas, including education, health, housing and basic services, could make the difference between their remaining in or leaving the rural areas. Furthermore, it is necessary to adopt

specific policies aimed at rural youths intended not only to keep them engaged in FA, but also, and above all, to strengthen the performance of the sector.

Innovation and knowledge management: Family agriculture will not benefit from institutional processes that foster innovation and technology in keeping with its needs as long as the member institutions of the national innovation system hold on to the "supply-chain technology" approach. It is imperative that the top-down generation of technology for small-scale agriculture cease, and that innovation systems be developed in which public and private actors innovate together in response to real, clear and concrete needs (market opportunities, impact of climate change, interest in preserving local varieties, reduction of the impact of pests and diseases, etc.). In particular, the innovation systems for agriculture must recognize the importance of the market in facilitating agricultural innovation and as a criterion for success in the evaluation of its impact.

Climate change as a key variable: Climate change is expected to have a considerable impact on FA, which will differ through the hemisphere. Therefore, more must be invested in research and development to develop innovations the will make it possible to adapt small- and medium-scale agriculture to environmental degradation and climate change.

Participation in value chains: The more active participation of FA farmers in value chains will lead to greater recognition of the importance of the market, given the value it adds, and will raise the prices that families receive for their products. To achieve this objective, it is necessary to promote the creation of associations and design novel policy instruments, with public and private participation, which will make it possible to strengthen the organizational and marketing capabilities of FA farmers.

Conclusions

Family agriculture is the predominant type of agriculture in all the countries of the region. The importance of this type of economic activity suggests that the continued existence of FA, as a unique type of economic activity that co-exists with medium- and large-scale commercial scale operations, is a universal feature. The reality of the different countries of the region indicates that to ensure the continued viability of FA is a top priority issue. FA is one of the economic activities with the greatest potential for increasing production, generating employment, providing food security and reducing poverty. However, for this to happen, innovation and the generation of technology must be promoted, and participation of the sector in value chains must be encouraged. This effort must be made within the framework of intersectoral strategies, since in order to have an impact on FA, what is needed are more than sectoral agricultural development strategies.

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