The Outlook for Agriculture and Rural Development in the Americas:

A Perspective on Latin America and the Caribbean

2013







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Contents

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Index of Acronyms

AVA	Agricultural Value-Added
CAESPA	Centre of Strategic and Policy Analysis for Agriculture
CARICOM	Caribbean Community
CELADE	Latin American and Caribbean Demographic Centre
CIAT	International Centre for Tropical Agriculture
COFLAC	Forestry Commission for Latin America and the Caribbean
COMTRADE	United Nations Database
CPI	Consumer Price Index
ECLAC	Economic Commission for Latin America and the Caribbean
ERS	Economic Research Service
EU	European Union
FAO	The Food and Agriculture Organization of the United Nations
FDI	Foreign Direct Investment
FONTIERRAS	Guatemala Lands Fund
FUNDER	Foundation for Rural Business Development (Honduras)
GIZ	German Agency for International Cooperation
IDB	Inter-American Development Bank
IICA	Inter-American Institute for Cooperation on Agriculture
ILO	International Labour Organization
IMAS	Joint Social Welfare Institute (Costa Rica)
IMF	International Monetary Fund

INCRA	National Institute for Colonization and Agrarian Reform (Brazil)
INRA	National Institute for Agrarian Reform (Bolivia)
LAC	Latin America and the Caribbean
OAS	Organization of American States
OECD	Organisation for Economic Co-operation and Development
OIE	World Organization for Animal Health
PACTA	Land Access Programme (Honduras)
PTT	Land Transfer Programme (El Salvador)
R+D+I	Research, Development and Innovation
SITC	Standard International Trade Classification
UNDP	United Nations Development Programme
UNEP	United Nations Environment Programme
UNESCO	United Nations Educational, Scientific and Cultural Organization
UN-REDD	United Nations Programme for Reducing Emissions from Deforestation and Forest Degradation
US$	US Dollar
USDA	United States Department of Agriculture
WB	World Bank
WTI	West Texas Intermediate
WTO	World Trade Organization

Foreword

Ever since the increase in food prices in 2007-2008 raised the alarm about the sustainability of global food security, agriculture has been a major focus of public attention. The development of the agricultural sector during the last five years has been marked by the volatility of international prices of major commodities, caused by the uneven performance of the global economy and increased climate variability. The situation in 2012 was no exception, as the effects of natural phenomena such as droughts in North America were combined with the euro crisis and a slowdown in Asian countries.

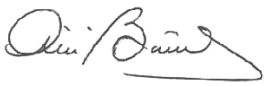
At the G20 Leaders' Summit, held in Mexico in June 2012, several international development agencies suggested that the issue of food and nutritional security should remain high on the agenda of the G20 over the coming years. At the Rio+20 Conference held this year, it was agreed that to eradicate hunger and poverty, as well as to achieve sustainable development, food security and the good management of natural resources must go hand in hand.

This report provides information and analysis, both of the current situation and context of the agri-food sector and the outlook for 2013. This is a joint effort developed for a fourth consecutive year by 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).

This year the special chapter is dedicated to the issue of land tenure in Latin America and the Caribbean. The chapter analyses recent trends in land policies, processes of structural change and challenges such as securitization, which remains precarious in many countries of the region.

The report recognizes that the global situation in recent years has complicated the process of policy formulation and decision-making, both for public officials and private entities. But it also provides an opportunity for the development of more sophisticated, comprehensive and long-term public policies, dealing with issues that transcend the purely agricultural. The current context is favourable for recovering the role of the state in the provision of public goods for agriculture, promoting the participation of stakeholders in the process of policy creation, and to encouraging greater public-private cooperation, especially in order to increase investment in research, development and innovation.

ECLAC, FAO and IICA reaffirm our commitment to the sustainable development of agriculture and rural areas of the region. We also continue to put our knowledge and experience at the service of countries to formulate policies that allow governments, and the region's most vulnerable populations, to cope with adversities caused by an environment of uncertainty.



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Executive Summary

Section I. Macroeconomic Context

This section analyses the macroeconomic and financial conditions of the current international context that influence the economic performance of countries in the region.

The uncertainty with regards to the recovery of the advanced economies and, more specifically, to the euro zone debt crisis, is affecting the growth forecast for the world economy. The uncertain scenario facing the European Monetary Union, combined with the strong increase in the rates of sovereign bonds of the countries hardest hit by the crisis, has affected even the more robust economies in the EU. For its part, the United States is facing an exceptionally slow recovery from the crisis, with persistently high rates of unemployment and growing inequality. Emerging countries, which hitherto had reported booming growth rates, such as Brazil, China and India, have also reported a slowdown in growth. In Latin America and the Caribbean, which experienced an economic rebound in 2010, there has been a significant slowdown in the rate of GDP growth in 2011, as well as in projections for 2012 growth.

However, even in a scenario of crisis escalation considered by international organizations and agencies to be a possibility in the coming years, the economies of Latin America and the Caribbean have, with some exceptions, the macroeconomic conditions to implement countercyclical fiscal policies and strengthen social welfare networks. In the coming months, regional economies will face a scenario of stagnation in some of their main export markets, including Europe and the United States, which goes beyond a downward trend in prices for their main commodities and the increased volatility in energy markets. The impact of these variables on growth rates of regional exports, combined with the decline in income due to a deterioration in the terms of trade, could lead to slower investment growth.

Although the majority of countries in the region have not yet taken measures to deal with a pronounced global slowdown, some (Brazil, Chile, Peru, Mexico, Colombia and Uruguay) have already approved specific measures or raised the alarm and announced their willingness to take further steps in the event of a severe cooling of the global economy (ECLAC, 2011a). The rest have yet to follow suit. One option for them is to monitor and learn from these experiences, as well as to foster, as far as possible, a coordinated response at the regional level.

Section II. Sectoral Analysis

Sectoral context. This section discusses the growth of agricultural activity in LAC in a volatile pricing environment. In 2009, LAC experienced a reduction in its real Agricultural Value-Added (AVA) of 3.89%, which more than doubled the slowdown in general economic growth (1.82%).

The Southern subregion suffered a drop of -7.21% in real AVA. On the other hand, real AVA growth in 2009 in the Caribbean region was exceptional (9.62%). However, real AVA in the Andean and Central regions grew only marginally (0.01% and 0.29%, respectively).

Agriculture performed better in the region in 2010 (6.37% growth), which compared favourably against other regions of the world. However, according to preliminary data for 2011, a slowdown in agriculture is forecast (2% approximately).

In the international market for agricultural goods, LAC has sustained strong growth in its competitiveness for more than a decade, which means that the region, which is highly specialized in the export of agricultural products, maintains good dynamism and is positioned better than other regions. Within the subregions of LAC, the positive trend in agricultural competitiveness is explained in large part by the countries of the Southern Cone, but the subregions of Central America and the Caribbean have also recovered significantly.

Moreover, the international demand for agricultural products will continue to grow, while the supply of food and agricultural raw materials will not be able to keep up.

This section concludes that, given the constraints on natural resources and environmental pressures, climate change, and the increased volatility in prices, the main challenge facing the agricultural sector in the region is

to increase productivity in an environmentally friendly manner.

Another conclusion is that extreme weather conditions, the risk of a collapse of the euro, the possible fiscal stagnation of the United States and the slowdown in emerging economies, among other threats, suggest an environment of greater uncertainty and volatility in international prices. This requires specific measures at the national and international level, which were clearly defined by the G20 ministerial meeting on food price volatility and agriculture in 2011.

Agriculture. This section highlights the slowdown of global economic growth and high climate variability as the main challenges facing regional agriculture in the short term. It also analyses the behaviour of the agricultural sector in response to crisis situations and market demands.

The participation of the agricultural sector in exports from the region has remained relatively stable over the last decade, amounting to 20% of total goods exported in 2010. Imports of agricultural products accounted for 8% of total imports.

It is expected that in 2013, due to a possible moderation in price volatility, the effects of climate events and international demand on agricultural production will acquire greater importance. In fact, the drought that occurred in the United States (mainly in the grain belt) and Eastern Europe during 2011 and 2012 caused low yields and high rates of loss in agricultural crops. In addition, in several countries of the region, numerous crops suffered climatic effects associated with the La Niña phenomenon, which affected the harvest in late 2011 and early 2012. The countries that have registered the greatest losses due to this phenomenon are Brazil (maize), Paraguay (maize), Bolivia, (cereals), Ecuador (cereals), Argentina (maize, wheat and coarse grains) and Mexico (maize, wheat and beans).

New trade agreements with countries in the Pacific basin are expected to gain greater prominence. In addition, competition for access to national and international agricultural markets is expected to increase substantially.

This section concludes that, despite the less-than-promising signs facing the euro zone economies and the damage caused by extreme climatic events, agricultural production in LAC has responded positively to high international prices, the incipient economic recovery of the United States, and growing demand in Southeast Asia (especially in China).

Livestock. The production of meat and milk has grown at double-digit rates in the last 10 years in LAC, far exceeding the rates of growth in the United States and Europe. Currently, LAC accounts for a higher percentage of world production of beef, lamb and poultry than the United States, and almost the same proportion of world milk production.

On the demand side, LAC consumers increasingly prefer alternative sources of animal protein such as poultry, pork, eggs and dairy products, above beef and lamb. The growth of the poultry and pork industries, as well as in associated consumption, has been notable and is a powerful source of change in Latin America's livestock industry. The per capita consumption of poultry increased at double-digit rates in many countries of the region, including Brazil, Argentina, Chile, Mexico and others, where the offer of alternative sources of protein available for consumption has been reduced on a per capita basis.

The future of animal production in Latin America depends mainly on regional and global demand for animal protein for human consumption, technological advances to improve efficiency in livestock production, improvements in the control of animal diseases, and the implementation of public policies aimed at protecting the environment and mitigating the effects of the rise in food prices. The strengthening of family livestock production systems will be key to reducing the impact of rising food prices and contributing to the fight against chronic child malnutrition in rural areas and vulnerable communities. Silvopastoral livestock production systems, which do not depend on grain-based feed, will have a great opportunity in relation to intensive systems with high use of concentrated feed.

The conflict between the growth of the industry and its environmental impact requires a more balanced approach including greater investments in research, infrastructure, technological innovation, education, training and other measures to improve productivity. Sustainable livestock development policies and incentives are also needed to help the industry move towards greater sustainability and lower environmental degradation in a process of adaptation to climate change.

Fishing and aquaculture. Regional aquaculture continued to grow moderately in 2010 (2.2% compared to 2009), reaching a record 1.92 million tonnes, valued at US$7.85 billion. For its part, extractive fishing decreased by 23.4% compared to 2009, falling to 11.71 million tonnes, the lowest volume since 1983, which means that LAC reduced its share of the year's total global catch to only 13.2%.

Regional fisheries and aquaculture continue to show high rates of concentration. The figures obtained for 2010 reaffirm the concentration of extractive fishing in a few countries and species. Three nations (Peru, Chile and Mexico) provided 72% of the total wild catch and, adding Argentina and Brazil, this rises to 86%. Meanwhile, the 10 most important species accounted for 70% of the total catch. In the case of aquaculture, Chile, Brazil, Ecuador and Mexico produced 81% of the total harvest in 2010, and the five most important farmed species comprised 67% of the harvest.

The global demand for fish products will continue to increase. Most developed countries will continue using more fish products than their fleets or fish farms can provide in their respective territories and, consequently, they will depend heavily on imports, which represents an important opportunity for the region.

Given the trend of decreasing extractive fishing and the systematic increase of aquaculture, countries in the region should continue exploring measures to improve governance in the sector and facilitate the full development of its potential to increase employment, contribute to food security, and improve the general well-being of the region. Small producers, who continue to face challenges they cannot solve alone, require long-term policies to help them overcome technological, organizational, business management and financial limitations.

Forests. This section highlights the importance of forest conservation and management for countries of the region, especially considering the role of forests in mitigating climate change and generating income and assets to enhance food and nutritional security. In this regard, many countries are involved in initiatives to reduce emissions from deforestation and forest degradation (REDD), and to foster and recognize the environmental services of forests.

The current contribution of the forestry sector to the Gross Domestic Product (GDP) of countries in the region varies between 2% and 3%, according to a FAO survey. Countries are seeking to increase the participation of the sector in their national economies through the generation of higher incomes for families. The aim is to achieve a higher valuation of environmental services provided by forests and to increase awareness of their importance in the region. Protecting forests is also important in the fight against hunger and poverty.

There are major socio-economic challenges in the region that hamper progress in forest conservation and management. The annual rate of deforestation in the region is approximately three times higher than the annual rate of loss of forest cover around the globe. However, some progress is evident. For example, the increase of the area of forests destined, as a primary function, for uses other than timber, and also a greater understanding of the importance of forests as providers of environmental goods and services. In this regard, the rate of deforestation has been reduced by about 20% in the last five years compared to the previous five-year period. However, there is still a long way to go.

Section III. Rural Well-Being and Institutional Framework

Rural well-being. This section discusses how rural life in Latin America has changed significantly over the last two decades, with significant changes in agricultural production, territorial dynamics, environmental visions and governance schemes.

This chapter analyses four significant trends in the rural labour market over the previous decade: a reduction in agricultural employment, an increase in the employment of women (especially in non-agricultural activities), an increase of salaried employment versus a drop in self-employment, and the increase in agricultural workers with urban residence.

The evidence given here shows that, in general, the increase of non-agricultural rural employment and the transformation of the rural economy are accompanied by an increase in salaried employment, both within and outside agriculture. In particular, wages are an important component of income, particularly for non-agricultural households and households above the poverty line.

This chapter highlights the need for a more integrated management of rural public policies. Some areas that require greater integration with rural development po-

licies include: a) social security policies; (b) policies for the mitigation and adaptation of agriculture to climate change; (c) food security policies; and (d) national policies related to digital agendas.

Institutional framework. Dealing with the negative effects of the food crisis has continued to set the agricultural agenda in the region. The reduction or elimination of the negative impacts of food price volatility on the population is a priority for governments in the region, which have implemented specific measures to tackle the problem. In some countries the implementation of programmes and policies of greater scope, in coordination with local organizations, has helped to strengthen state actions in the agricultural sector.

In the search for solutions to the current situation of economic uncertainty, countries are focusing more on family farming, both in terms of emergency programmes and the development of this sector's potential to mitigate the effects of the agri-food crisis. This is happening in various countries through the creation of family farming programmes with medium and long-term horizons. In some countries, this has been strengthened by the creation of institutions designed specifically to foster the growth of this sector.

The chapter concludes that the development of agriculture in the region depends on the implementation of integrated policies adapted to the reality of each country. Rather than designing policies specifically for the agricultural sector, countries should focus on sustainable rural development, using a results-based management approach. Although specific policies may differ from country to country, increasing the participation of all sectors in the formulation of policies and programmes requires a focus on innovation systems, improving the existing institutional framework and developing socially inclusive policies. This includes policies aimed at developing the potential of the family farming sector, which lags behind in the region in terms of social inclusion and equality.

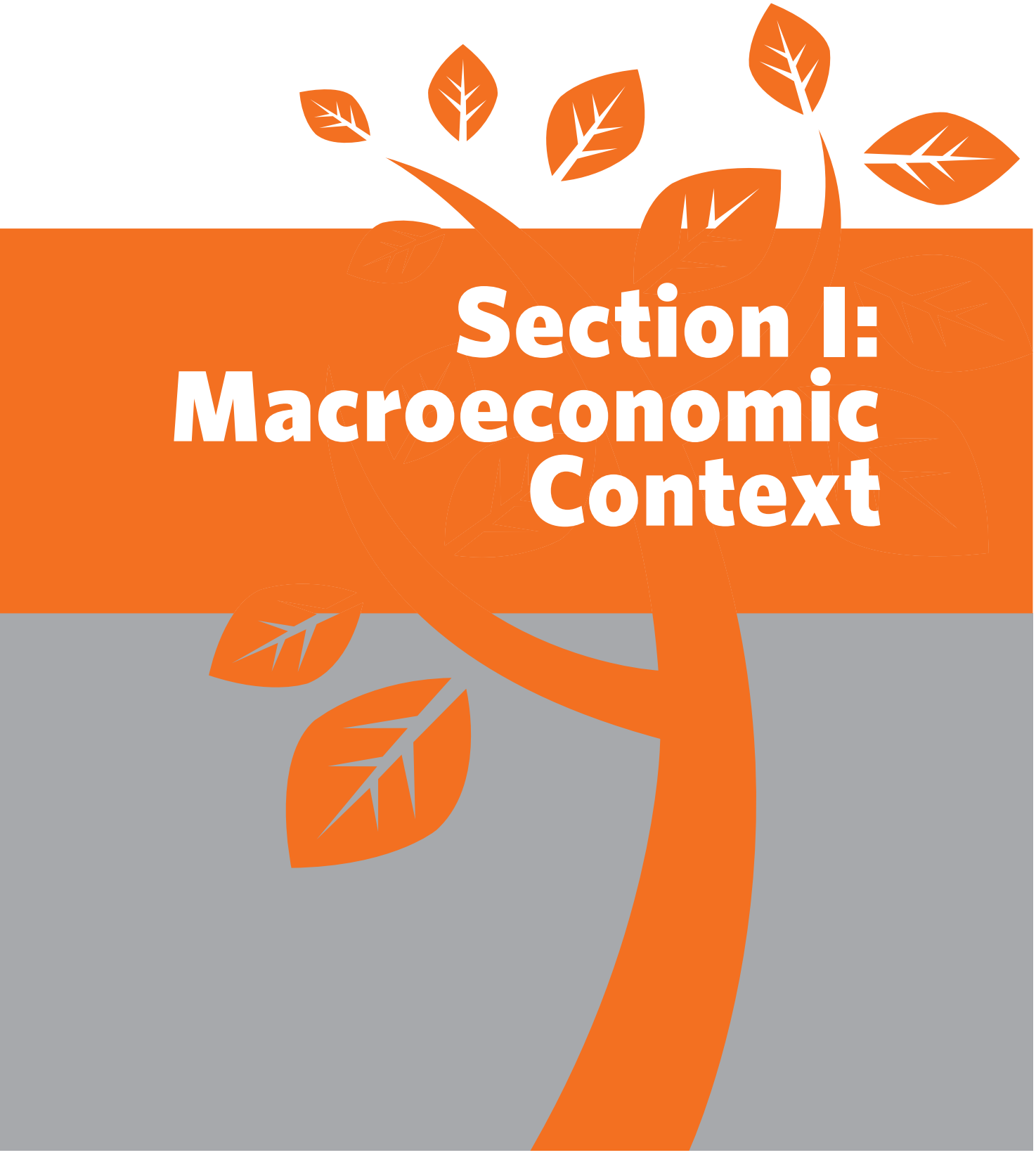
Section IV. Land Tenure in Latin America and the Caribbean

This year the special chapter is focused on analysing land tenure in Latin America and the Caribbean. The profound transformation of the world economy is changing the terms of the debate about the future of agriculture in the region. It seems there are different trends marking the transition to a new economy that include: the "financialization" of the economy and its effect on the volatility of prices for agricultural commodities; technological innovations (ICT, biotechnologies, nanotechnologies, cognitive science) that have generated radical changes in productive processes; the increasing importance of healthy diets; the new health risks generated by globalization; the impact of climate change on agriculture; and, the need to feed 9 billion people by 2050 with the impact this implies on natural resources.

The question of how to reconcile land ownership as a form of personal capital and as a legitimate way for rural populations to seek sustainable livelihoods is important in a constantly changing and increasingly complex environment. There is also the discussion of "land grabbing" in the region, which is a relatively new phenomenon that could have important consequences. Are the legal and institutional frameworks in the region able to deal with the current land dynamics?

Considering the current trends, governments should develop more sophisticated and integrated policies that facilitate a new approach to address the problem of land in the region. This implies, firstly, no longer treating natural resources as if they were inexhaustible, and integrating them into economic calculations through new parameters that consider the environmental impact of productive activities (resource extraction, waste accumulation, transformation of ecosystems, among others).

In addition, new regulations are needed at all levels - local, regional, national and international - that protect the environment and regulate land use. Access to the land should be maintained and deepened, identifying family farming as a sub-sector that should be the target of broader policies related to land distribution, technical assistance, irrigation, associativity, infrastructure and credit. These measures, along with others outlined in this section, form part of the new approach needed to give economic, social and environmental sustainability to the dynamic process of agricultural development in the region.



Section I: Macroeconomic Context

Macroeconomic Context

New challenges posed by the global economic crisis

The uncertain outlook for the advanced economies suggests that additional policy measures will be needed to maintain growth in Latin America and the Caribbean

The facts

* The debt overhang in the public, banking and external sectors in several European countries threatens the very survival of the euro zone.
* International financial markets interpret conditional assistance to various countries in the euro zone as an expectation of low growth due to measures such as tax increases, cuts in public spending and the introduction of extensive labour reforms.
* The debt crisis in the euro zone is not an isolated phenomenon: similar trends can be seen in other advanced economies and repercussions are being felt in the main emerging economies.
* Macroeconomic conditions in the Latin American and Caribbean economies, notwithstanding the differences that may exist between countries, are sufficiently sound to enable these economies to implement countercyclical fiscal policies and reinforce social protection networks.

Trends

Growth rates in the advanced economies have shown two distinct phases in recent years.

Following the recession of 2009, the performance of the world economy in 2010 seemed to point to an upturn in most countries with a rally in private consumption and international trade. At the same time, commodity prices, which had ceased to rise during the 2007-2008 crisis, resumed their upward trend in 2010.

Such trends, which lasted up to mid 2011, called for policy responses from the emerging economies to stem the rise in local price indices, foreign capital inflows and the appreciation of regional currencies (ECLAC/FAO/IICA, 2011; ECLAC, 2011).

From the second half of 2011, doubts as to whether a sustainable solution would be found for the euro zone debt crisis – and the risk that the slowdown in these economies might spill over onto other regions – prompted a downward adjustment in world economic growth forecasts.

The uncertain outlook for the European Monetary Union, together with the sharp rise in the rates of sovereign bonds in the European countries hardest hit by the crisis, has had an impact even on the most robust European Union economies. This impact has been felt in the financial sector, owing to the loss of investor confidence and rising risk premiums, as well as in the real sector, resulting in weaker economic activity and trade within the bloc.

In the second quarter of 2012, the GDP of the euro zone countries declined by 0.2% compared with flat growth in the preceding quarter. One third of the 17 countries of the euro zone are in this situation. In fact, Cyprus, Greece, Italy, Portugal and Spain have recorded two or more consecutive quarters of negative growth since the end of 2011. The recession in these countries has lowered overall GDP growth in the 27 European Union countries in the second

quarter of 2012 and is one of the main factors constraining world economic growth in 2012 and 2013.

Outside the European Union, other trends are also limiting global growth. Uncertainty in the United States as to whether a political agreement will be reached on the long-term financing of the public deficit, now at 8% of GDP, is compounded by the approach of the presidential elections. Moreover, real-sector recovery in the United States is painfully slow, with persistently high rates of unemployment and growing inequality.

The outlook for growth in Japan over the next few years is slightly better than for other advanced economies, although the budgetary deficit remains high. However, growth in Japan in the second quarter of 2012 stood at 1.4% (on an annualized basis), which represents a significant slowdown from the rate of 5.5% recorded in the previous quarter. This reduction reflects in part the impact of the euro crisis on the appreciation of the yen and the implications for the competitiveness of Japanese exports.

The emerging economies, such as Brazil, China and India, which had previously recorded robust growth, are now showing signs of a slowdown. The first reduction in interest rates in China since 2008 reveals the government's concern at the slower growth.

The impact of these trends on Latin America and the Caribbean is analysed in the following sections, along with the macroeconomic policy adjustments that have been adopted at the regional level to deal with the behaviour of fundamental variables in the world economy.

Most countries saw an upturn in economic growth in 2010, with variations, however, from one country to another.

In 2010, the developed economies were able to post positive growth; however, their rate of expansion was slower than in the emerging economies: 3.2% compared with 7.5% on average (figure 1).

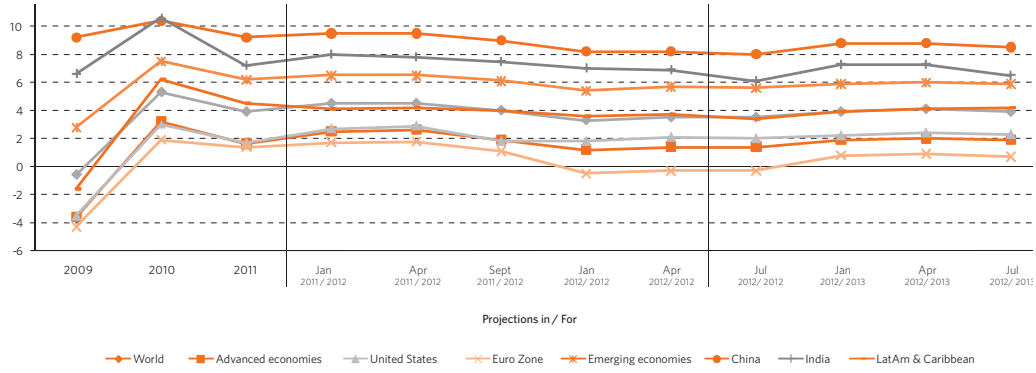
Significant differences were noted in the performance of the emerging economies, especially between exporters and importers of commodities, which rose sharply in price in international markets. Metals and hydrocarbons were particularly buoyant. In Latin America, this meant more intense growth in South America than in Central America and the Caribbean.

Apart from the rise in commodity prices and the robust external demand, which boosted the region's export volumes, regional growth in 2010 and early 2011 was also shored up by domestic demand. The latter was stimulated by the countercyclical policies applied in response to the crisis and by the abundant liquidity available in international financial markets.

Following a brief upturn, the world economy again started to slowdown, with repercussions in Latin America and the Caribbean

World GDP growth stood at 3.9% in 2011, down sharply from the 5.1% rise in 2010 (see figure 1). These rates reflect the uncertainty in international markets as to whether a sustainable solution to the debt crisis will be found for the euro zone and fiscal consolidation achieved in the United States.

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



Source: Prepared by author on the basis of data from World Economic Outlook, International Monetary Fund (IMF).

The fall in GDP growth was sharper in the advanced economies, especially the United States, than in the emerging and developing economies as a whole. Within this group, Latin America and the Caribbean recorded a significant slowdown in GDP growth in 2011, following a rally in 2010. Nevertheless, the region's performance surpassed the average of the central economies.

The slowdown observed towards the end of 2011 in Latin America was due not just to the unfavourable international context, but also to a restrictive monetary policy designed to rein in inflation and wind up fiscal programmes and policies adopted in response to the financial crisis of the preceding years.

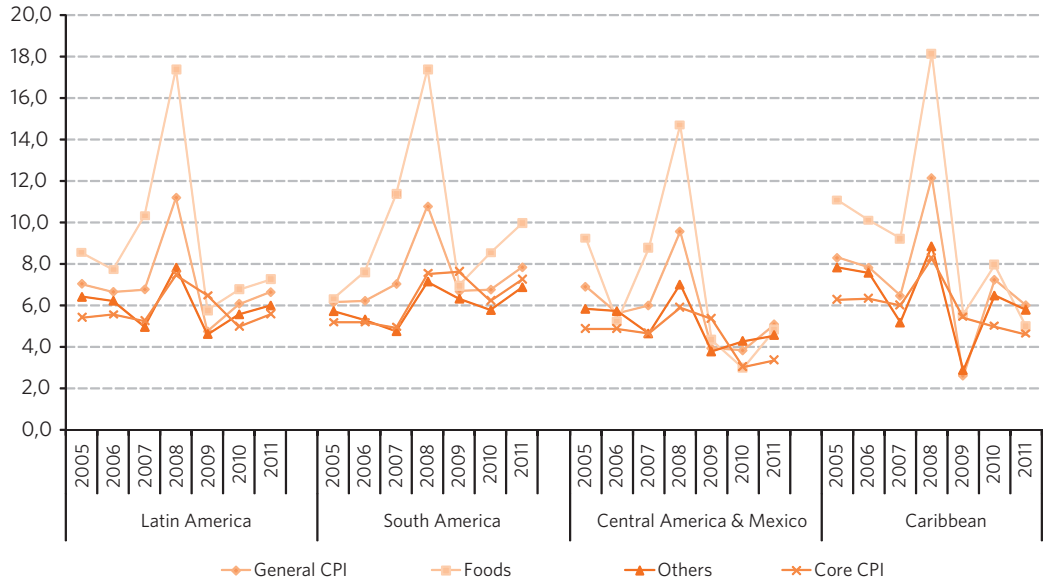
Between October 2010 and September 2011, the average consumer price index (CPI) in Latin America trended upward, reflecting rises in the international prices for food and other commodities (minerals, metals and hydrocarbons). Since these products are important as inputs in manufacturing and as benchmarks for price adjustments in the services sector, core inflation also tended to accelerate during the period, especially in the South American countries (see figure 2).

In response to movements in the CPI between mid-2010 and the third quarter of 2011, monetary policy rates were raised or, at least, the downward trend was halted (see figure 3). This adjustment was immediate and more intense in South America, especially in economies that work with inflation targets.

From mid-2009, relatively optimistic expectations concerning the economic performance and interest rate spreads in the Latin American economies – compared with those in global financial markets – stimulated capital inflows, which contributed to a real appreciation of the currencies in the region. This appreciation was much sharper and more sustainable in the South American countries than in Central America, Mexico and the Caribbean, partly because rising commodity prices resulted in higher export volumes and currency inflows in South America (see figure 4).

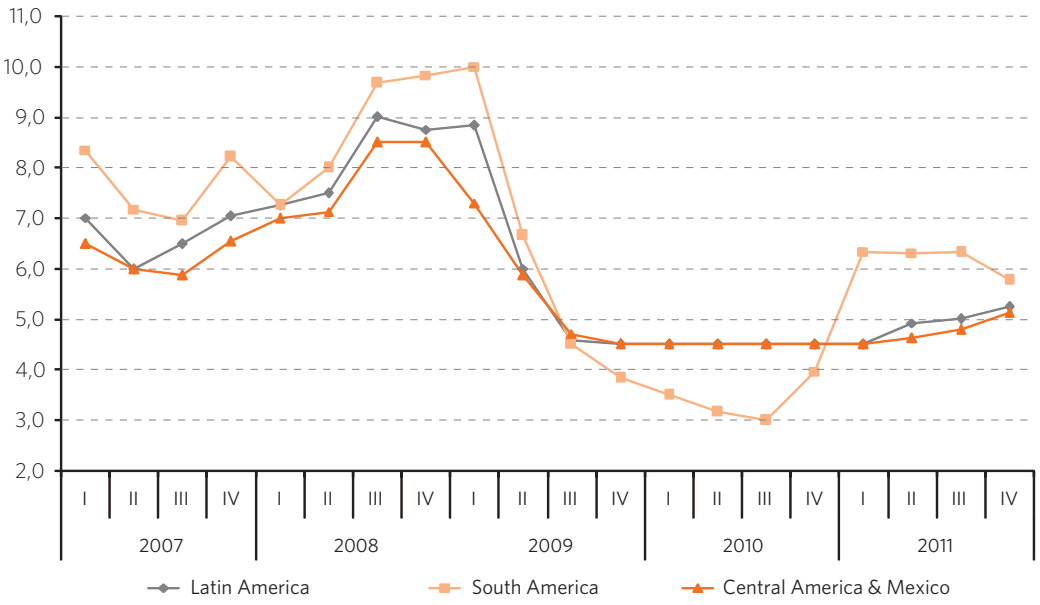
The currency appreciation resulted in a loss of competitiveness for regional exports that did not benefit from international price rises. In response, governments adopted policies to boost productivity and cut costs in the production sectors.

Figure 2. Consumer Price Index (CPI) by component, 12-month variation (%)



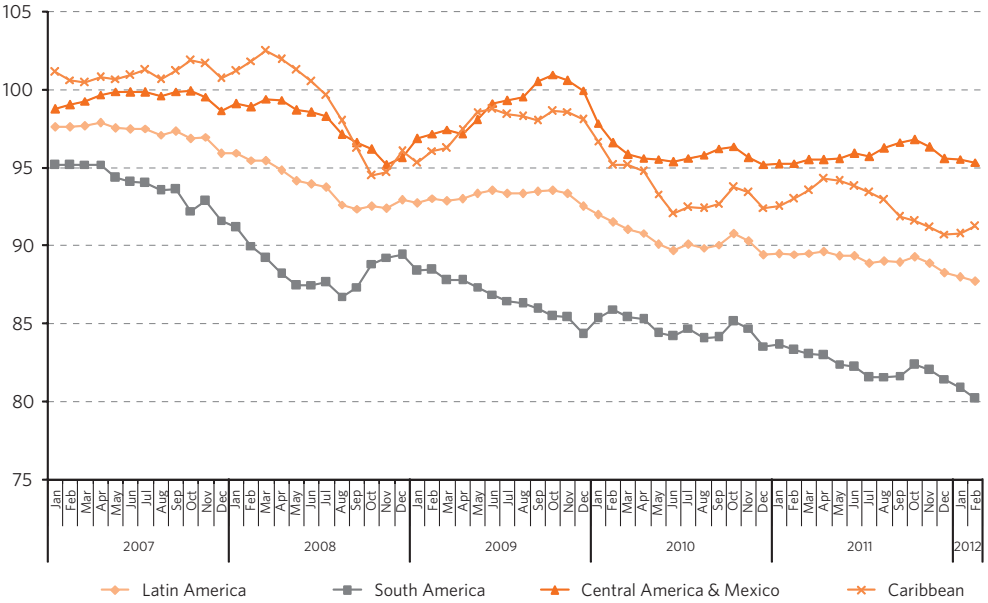
Source: Prepared by author on the basis of data from the Economic Commission for Latin America and the Caribbean (ECLAC).

Figure 3. Median of the Monetary Policy Rate, by Sub-Region (%)



Source: Prepared by author on the basis of data from the Economic Commission for Latin America and the Caribbean (ECLAC).

Figure 4. Real Effective Exchange Rate Index (%)
Base year 2005 = 100



Source: Prepared by author on the basis of data from the Economic Commission for Latin America and the Caribbean (ECLAC).

In terms of monetary policy, central banks in the countries of the region built up their international monetary reserves in order to curb the inflow of foreign exchange and limit the currency appreciation. Thanks to these two measures the region's economies were better able to withstand the turmoil that broke out in world markets in the second half of 2011 (ECLAC, 2011).

In the second half of 2011 and early 2012, the international situation worsened owing to higher risk ratings in the advanced economies. In Europe, negotiations for an agreement to provide financial rescue to economies in greater difficulties (Greece, Ireland, Italy, Portugal and Spain) have come up against a series of obstacles.

Given the size of some of these economies, a declaration of bankruptcy would probably launch a systemic crisis with repercussions within and far beyond the European Union. Thus, a collective solution was identified as the best option, albeit a politically difficult one to maintain in creditor countries. At the same time, since devaluation is not an option for addressing some of the competitiveness issues, the burden falls on fiscal adjustment, which will continue to cause the economies to contract over the coming years.

In the case of the United States, the current administration's difficulties in achieving a fiscal agreement that will enable it to continue to finance the public debt are compounded by structural problems in the real estate and banking sectors and persistently high unemployment, which is pushing up social insurance expenditure.

Uncertainty about growth prospects in the central economies over the coming years has led to a reassessment of global expectations and of the inevitable impacts on the real and financial sectors.

Changes in the international outlook have prompted new macroeconomic policy directions in Latin America and the Caribbean

Dwindling liquidity and uncertainty in financial markets have reduced capital inflows into emerging countries, with repercussions on exchange rates. The appreciation in the region's currencies eased somewhat in mid-2011 and the second quarter of 2012 (not included in any figure). Furthermore, with upward pressure on international commodity prices abating, inflation rates also started to fall, thus paving the way for cuts in real interest rates.

Despite the recent depreciation in real terms, the impact on inflation in the region has been very slight, owing to the lower expectations for the central economies and the dampening effect they will have on imports of industrial goods and investment as a whole.

As a result of the currency appreciations experienced recently, and following several years of exposure to competition from imports, some segments of industry in the region have become sufficiently competitive to absorb a portion of the price rise for imported inputs, instead of passing it all on to the end consumer.

The regional industry has gained in competitiveness thanks to policies on investment loans and subsidies applied in the region since the crisis. Indeed, as a result of these policies, gross fixed capital formation stood at 22.8% of GDP in 2011, a new record in recent decades (ECLAC, 2011).

In the labour market, employment and wages continued to rise in 2011 and the first few months of 2012 in most of the countries of the region and this trend is expected to continue. The unemployment rate dropped by 0.5 of a percentage point for the region as a whole to stand at 6.9%. Wage employment and jobs with social security coverage increased and formal-sector real average wages continued to trend upward (ECLAC, 2012).

The tax yield in Latin America also improved in 2011, moving from a primary deficit in previous years to a small surplus, equivalent to 0.3% of GDP. Thus, the countries of the region were able, albeit with significant differences, to rein in the public debt to a level below the record low of recent decades (ECLAC, 2011).

These improvements in the regional macroeconomic situation over the past two years enabled them to provide the region with (financial and institutional) resources and to reduce the vulnerability of the region's economies to possible external shocks, such as those being discussed by international agencies in their forecasts for the coming years.

Having to address the volatility in financial markets has been an important learning process for regional economies in the management of public accounts and anticyclical policies.

Outlook

The world economic outlook is progressively being revised downward

Projections for 2013 (see figure 1, left side) reflect a positive but cautious view of efforts being made by the European Union to reach agreement on assistance to the most seriously hit economies in the euro zone. The precaution is due to the fragility of the achievements to date and to the need to continue to apply policies for gradually reducing risk in the markets (IMF, 2012). The fiscal consolidation measures that will be applied by the most seriously affected economies are also expected to have a significant impact on growth in the European Union, especially in 2013.

There is no ruling out either an even gloomier scenario, with a deep crisis in the euro zone and adverse effects being transmitted to world markets through both real and financial channels, and economic implications reaching far beyond Europe.

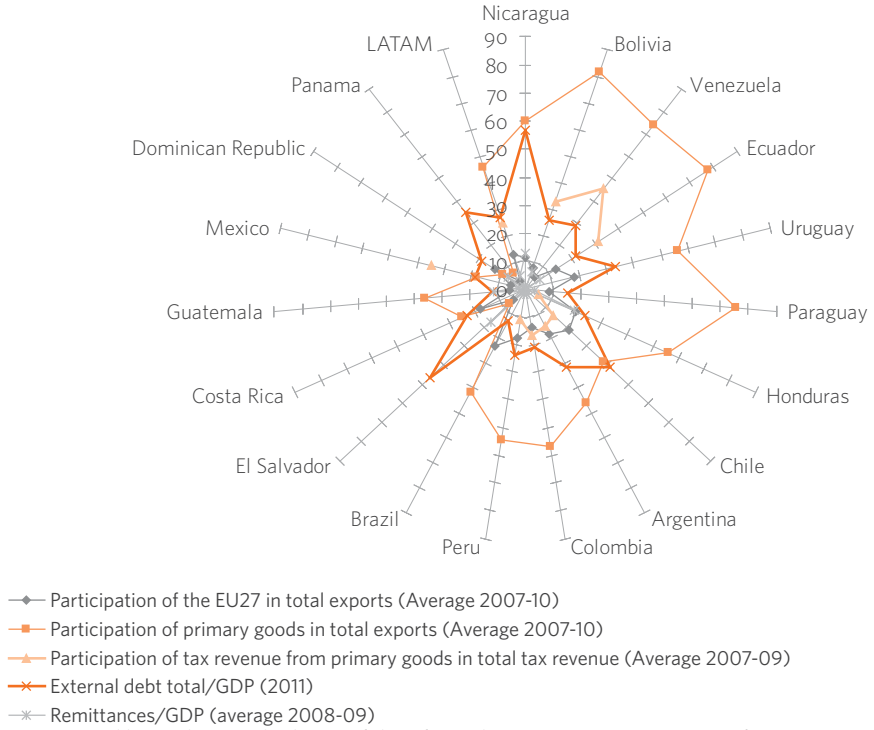
In any of these scenarios, with the decline in growth in the advanced economies, growth rates in Latin America and the Caribbean would remain moderate, albeit with major differences between countries.

The outlook for the countries of the region depends on the different levels of vulnerability to the deteriorating international context

As regards international trade, the vulnerability of regional economies stems from the importance of the European Union as a market for exports from Latin American and Caribbean countries and to the share of commodities – which are subject to greater price volatility in international markets – in total exports.

In terms of external accounts as well, consideration should be given to the role of migrants' remittances for some economies in the region and to the impact of limited economic growth in the advanced economies on the inflows of these resources.

Figure 5. Latin American Countries: Indicators of Vulnerability to the Euro Zone Crisis (%)



Source: Prepared by author on the basis of data from the Economic Commission for Latin America and the Caribbean (ECLAC) (2011).

Given the unfavourable international outlook, the fact that fiscal revenues from commodities account for a very significant share of total revenues is a source of instability and vulnerability. Furthermore, a high level of public debt, especially debt financed by external sources, is synonymous with high vulnerability to volatility in international financial markets.

Figure 5 presents the values of these indicators of vulnerability to the international situation for the countries of Latin America and the Caribbean for which information is available. The countries are listed by order of the average of the four indicators.

The significance of Europe as a destination for exports from Latin America and the Caribbean diminished progressively in the 1990s, stabilizing at around 13% in 2000. The decline was sharp for the Central American countries and more gradual for those of South America. Mexico is an exception in the region as its exports to Europe expanded over the past decade.

Overall, the share of the 27 European Union countries as a destination for subregional exports stood at 19% in the case of South America, 13% for the Caribbean, 10% for Central America and 5% for Mexico (average for 2000-2011). The countries that are the most heavily dependent on Europe as a market for their exports are Argentina, Brazil, Chile, Honduras and Uruguay. Although the nature of the products exported to Europe (and the likelihood of their being reshipped to other markets) should also be taken into account, generally speaking, exports from these countries will be hard hit if the European debt crisis drags on indefinitely.

The size of remittances reveals the differential impact of one of the ways in which the international crisis is transmitted to the economies of Latin America and the Caribbean, even if no breakdown is available by country of origin of these resources. The countries where remittances account for the highest percentages of GDP are Honduras, El Salvador, Nicaragua, Guatemala, Dominican Republic, the Plurinational State of Bolivia and Ecuador. Clearly, the final impact on these countries will depend on the performance of the migrants' countries of residence and the specific policies towards this population group.

Another source of vulnerability for the regional economies is the fact that in some cases, commodities account for a high share of the nation's total exports. The risk arises from the volatility in commodity prices, which depend not only on real variables (for example, growth in manufacturing) but also financial ones (risk in world markets, among others). In recent years, several Latin American countries have specialized more heavily in commodities trade, following the boom in world demand and prices for raw materials.

International prices for these products, especially hydrocarbons, are highly sensitive to the outlook for growth in the advanced economies and their impact on world demand. Prices for the main commodities soared throughout the first decade of the millennium in response to growing world demand (ECLAC/FAO/IICA, 2010). That growth was scarcely interrupted by the repercussions of the crisis on economic activity in the advanced countries and to a lesser extent in the emerging economies.

The resurgence of fears in recent months, concerning the negotiation of sovereign debt of the euro zone countries has once more pushed down commodity prices, including those for petroleum and petroleum derivatives.

The rise in petroleum prices in the first quarter of 2012 was due to the geopolitical upheaval in some Middle Eastern producing countries. In recent months, however, with growth prospects down in the central economies, prices have settled at below US$100 per barrel (West Texas Intermediate (WTI)), a situation not seen since February 2011.

According to the specialized agencies, a price slightly below US$100 per barrel would seem to represent a new equilibrium point and takes into account the expected slowdown in the main advanced economies. If the slowdown and the resulting risks for the world economy do not materialize fully, the rally in demand could push prices up to between US$100 and US$110 per barrel by the end of 2012 (Morse, 2012).

The predictions of sluggish growth in the advanced economies are expected to have an even greater impact on the prices of other commodities – including some minerals, metals and agricultural products – that account for a large share of regional exports. This is because the pressures that have already had a bearing on short-term supply predictions for crude, in particular the geopolitical turmoil in some of the main Middle-Eastern producers such as Iran and Iraq, have not yet filtered through to these products.

In 2011, commodity prices (not including those for petroleum) had already trended downward owing to the

uncertainty generated by the crisis in the advanced economies and signs of a slowdown in the emerging economies, including China.

Other variables, such as the appreciation of the dollar against the euro and escalating risks in international markets, also had a dampening effect on commodity prices, which had been buoyant in the preceding years.

The International Monetary Fund (IMF) forecasts an overall reduction of close to 10% in commodity prices (except for petroleum) compared with 2011, when they had soared by 18%. A further fall of 2% has been predicted for 2013. Petroleum prices, on the other hand, are expected to close the year (2012) 10% higher and to decline by 4% in 2013 (IMF, 2012).

These trends are taken into account by ECLAC (2012) in its forecasts for the countries of Latin America, which is expected to face a worsening of its terms of trade overall but especially in MERCOSUR and in hydrocarbon-exporting countries.

If the predictions for flat growth in the euro zone economies and tepid growth in the United States prove to be accurate, international commodity prices will be volatile, trending downward in 2012 and 2013. This volatility will be due to uncertainty over global supplies of crude oil and the outcome of the elections in the United States (above all its impact on fiscal consolidation) and to negotiations on rescue programmes and institutional reforms in the euro zone countries.

In those Latin American and Caribbean countries whose fiscal position depends largely on movements in commodity prices (Bolivarian Republic of Venezuela, Ecuador, Mexico and the Plurinational State of Bolivia), failure to adopt anticyclical mechanisms will make their public policies less effective and sustainable in the face of volatile international prices.

Further impacts of such volatility on domestic markets include a variation in price indices and in the real exchange rate, with repercussions on the competitiveness of other export sectors (ECLAC/FAO/IICA, 2011).

External debt levels as a percentage of GDP are another indicator of these countries' vulnerability to any worsening of the crisis. The overall external debt of the region fell steadily over the past decade, but with significant differences at the subregional level. Whereas the countries of South America, Mexico, Central America, along with the Dominican Republic and Haiti, cut their external debt from around 40% of GDP at the beginning of the century to close to 20% in 2011, average debt levels in the Caribbean subregion increased in the post-crisis period from 40% in 2008 to 50% in 2011 (ECLAC, 2011).

Figure 5 shows other major differences between the countries. In terms of South America, Argentina, the Bolivarian Republic of Venezuela, Chile and Uruguay continue to record external debt levels above the subregional average and the same is true of El Salvador, Nicaragua and Panama in Central America.

Some authors associate high public debt levels with a slowdown in economic growth. Reinhart and others (2012) show that high debt episodes since 1800 are linked to a growth rate more than one percentage point below the typical rate for periods marked by lower debt levels. This is because governments with high debt levels need to raise taxes and cut back on investment in order to keep up with interest payments.

Since long-term debt is normally financed with consecutive, short-maturity loans, the possibility that a rise in interest rates may rapidly push up costs is a real risk for countries whose debt burden is already high. The current uncertainties and the volatility in international markets are particularly risky for those countries that constantly need to reschedule their debt financing arrangements with external creditors.

External accounts have benefited from strong inflows of foreign direct investment (FDI), which were the leading source of external financing in the region in 2011, accounting for 2.4% of GDP (ECLAC, 2012). Nevertheless, these flows are also likely to be constrained by the slowdown in the main countries of origin, although the crisis in the central economies could, just as well, turn the region into a more attractive destination for investments.

Policy recommendations

With the cooling of the world economy, the region should turn its attention to strengthening domestic markets and boosting intraregional trade

In the next few months, the economies of Latin America and the Caribbean will have to contend with sluggish growth in some of their principal markets (Europe and

the United States), in addition to sliding prices for some of their major exports. The impact of these variables on growth of the region's exports, together with the decline in income due to the worsening terms of trade, could lead to slower growth in investment.

This slowdown could sharpen, depending on the behaviour of international financial markets. They could become more volatile, because of risks in the petroleum market and uncertainty surrounding fiscal consolidation in the advanced economies, which could also adversely affect the volume and stability of capital flows into the region. Under a more pessimistic scenario in which the crisis of the euro zone intensifies and other economies are weakened by contagion, capital flows into the region could contract significantly.

In any of these scenarios, the vibrancy of domestic markets and intraregional trade will be crucial for sustaining regional GDP growth, as has been the case since the second half of 2011 when the international situation started to deteriorate (ECLAC, 2012). Moreover, the micro- and macroprudential policies implemented in the region in recent years, especially those that regulate the operation of financial institutions, will need to be strengthened in order to deal with acute market volatility.

One of the repercussions of the international recession on regional economies may be a slowdown in currency appreciations and in the consumer price indices. This scenario would open up opportunities for a less restrictive monetary policy, with a reduction in real interest rates in order to stimulate domestic demand.

Having weathered the crisis of 2008, the region is in a reasonably sound macroeconomic position for facing the expected worsening in the international economic situation, although the situation varies from one country to another, as explained in the foregoing section. Nevertheless, with falling commodity prices and the likelihood of increasingly volatile capital flows, the anti-cyclical policies that enabled the region to pick up relatively quickly after the world financial crisis may no longer be feasible.

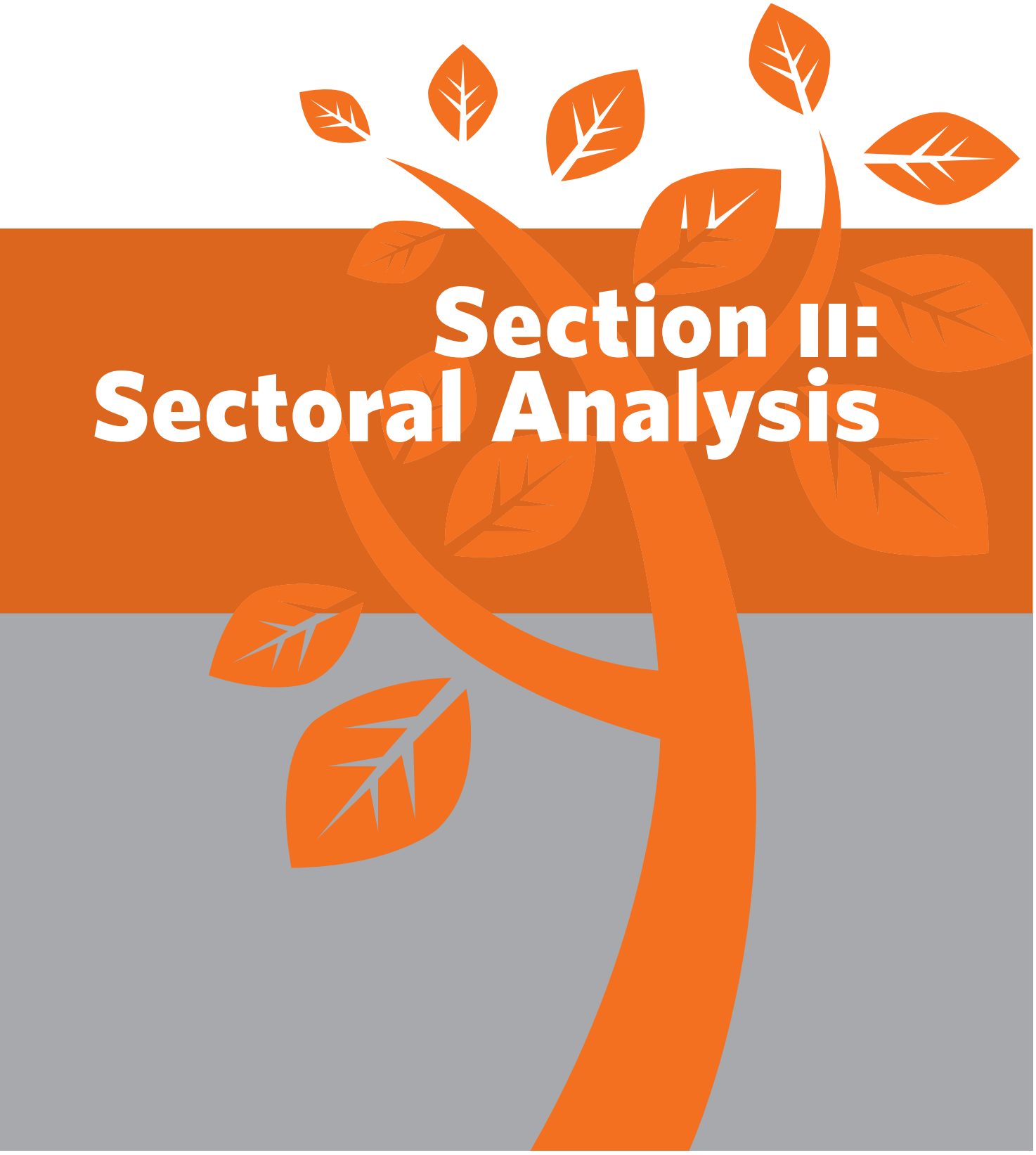
The region's main achievements in recent years were the build-up of international currency reserves and the low level of public and external debt. However, if the downtrend in commodity prices is prolonged, lower fiscal revenues in the commodity-dependent countries of Latin America and the Caribbean may lead to weaker public accounts and higher debt.

The social bias in public policies should be maintained as a tool for strengthening regional economies

Using the fiscal space created in previous years, some countries took advantage of the crisis to reorient their public policies towards strengthening their medium and long-term economic and social development, with the emphasis on reducing poverty and inequality (ECLAC, 2011). This fiscal space has been reduced in recent years, but still exists, except in the case of the Caribbean countries, whose debt burden and fiscal position are worse than in the rest of the region.

With the worsening crisis in the advanced economies exacerbating the fiscal situation in the region, pressure is mounting for cutbacks in the very expenditure and aid programmes that had underpinned the recovery in employment and consumption levels in the post-crisis period. Nevertheless, when defining their fiscal policy priorities over the coming years, governments should bear in mind that social programmes can act as a stimulus to domestic markets, which, as already mentioned, are vital at a time when the world economy is cooling.

A few countries in the region (Brazil, Chile, Colombia, Mexico, Peru and Uruguay) have already adopted specific measures for addressing the sharp global slowdown or sounded an alarm, declaring their willingness to take further steps in the event of a severe cooling of the world economy (ECLAC, 2011). The rest have yet to follow suit. One option for them would be to monitor and learn from such experiences, and foster, as far as possible, a coordinated response at the regional level.



Section II: Sectoral Analysis

Context of the Agricultural Sector

A growing sector with productivity gaps between countries

The growth dynamics in the volume of production, income, productivity and agricultural trade differs significantly between the countries of the Americas. This represents an opportunity and, at the same time, a challenge to close these gaps and respond adequately to the growing demands worldwide for agricultural raw materials in a difficult context of economic uncertainty and volatility of international prices.

Facts

* China has become the largest importer of almost all basic agricultural products; this has had, and will continue to have, a significant impact on international prices.
* Price volatility negatively affects access to food for the poor, as well as agricultural producers and decisions relating to investment and innovation in the agricultural sector.

Trends

Agricultural production is recovering following the crisis, with strong leadership from the Southern Region1.

In 2009, LAC experienced a reduction of 3.89% in real Agricultural Value-Added (AVA, see Table 1b), almost double the decrease of the economy in general (1.82%). This reduction was due almost exclusively to a drop of 7.1% in the real AVA of the Southern subregion (which accounts for a high percentage of agricultural production in the region), as a result of the drought that affected the countries of the Southern Cone during the 2008/2009 farming season (de Carbonnel, 2009; La Red 21, 2009). In addition to the climatic conditions, there was also great uncertainty in Argentina stemming from the government's proposal to impose sliding-scale taxes on agricultural exports, a move that discouraged cultivation during that cycle.

On the other hand, *real* AVA growth in 2009 in the Caribbean region was exceptional (9.6%), led by Guyana, Dominica and Jamaica, countries in which the possibility for turning staples into products with greater added value has increased. Nevertheless, the AVA of the Andean and Central regions grew only marginally (0.01% and 0.29%, respectively).

During 2010, the economy of LAC experienced significant recovery, growing at almost twice the aggregate GDP rate of the Americas. This is explained by a highly positive performance of the Southern subregion, which grew by 7.87%.

1 Two indicators are used to measure the performance of the agricultural sector. The first and most utilized is the real Agricultural Value-Added (AVA in Table 1b), which represents the evolution of an index of *volume* of production, where each one of its components is weighed by the value of the production over a base period (*Valdés et al*, 2008; Paz *et al*, 2009). The second indicator measures the movement of real *income* in the sector, taking into account fluctuations in agricultural prices and the purchasing power of the income received by the farmers. For this, the AVA is expressed in nominal terms (a measure of nominal income) and is divided by the implicit price deflator for GDP (as a measurement of the trend in prices of goods and services throughout the economy). We have referred to this indicator as deflated nominal AVA in Table 1c.

Table 1: Annual growth rates for GDP and AVA in the Americas (2006-2010)

Region	2006	2007	2008	2009	2010
	1a. GDP (Constant dollars of 2000)				
Americas	3,18%	2,61%	0,76%	-3,16%	3,58%
LAC	5,83%	5,91%	4,29%	-1,82%	6,17%
Andean Countries	7,93%	7,65%	5,68%	-0,50%	2,95%
Caribbean	8,94%	6,02%	3,36%	0,45%	3,71%
Central America	6,58%	7,18%	4,28%	-0,59%	3,55%
North America	2,81%	2,03%	0,09%	-3,59%	3,14%
South America	5,22%	6,71%	5,57%	-0,26%	7,87%
1b. AVA real	1b. VAA real				
Americas	-0,42%	-3,12%	5,58%	0,37%	3,65%
LAC	3,99%	4,50%	2,85%	-3,89%	6,37%
Andean Countries	3,72%	3,18%	3,12%	0,01%	0,29%
Caribbean	8,12%	-1,74%	-2,65%	9,62%	3,35%
Central America	4,55%	4,93%	1,67%	0,29%	2,07%
North America**	-3,39%	-8,61%	7,44%	3,95%	1,22%
South America	4,13%	5,63%	3,84%	-7,21%	10,81%
1c. AVA Deflected	1c. VAA corriente deflactado				
Americas	1,13%	17,43%	15,67%	-11,52%	20,96%
LAC	11,93%	20,65%	20,06%	-7,42%	24,53%
Andean Countries***	9,35%	19,38%	17,29%	-1,49%	20,10%
Caribbean*	5,49%	2,89%	11,38%	-0,22%	9,38%
Central America	6,41%	13,54%	10,94%	-1,81%	10,95%
North America**	-5,34%	12,60%	9,78%	-16,34%	15,90%
South America	14,26%	28,29%	26,92%	-7,59%	30,07%

Source: IICA (CAESPA), with data from the World Bank
Notes: *Caribbean includes only countries with a complete series of data (DOM, ATG, BLZ, DMA, GRD, GUY, HTI, JAM, KNA, LCA, TTO, VCT); ** does not include Canada due to missing data for 2010; ***Does not include Venezuela owing to a lack of data on local prices since 2008.

Agriculture also performed better worldwide during 2010 (6.37%), although with differences at the subregional level. Comparing the behaviour of the agricultural sector with growth throughout the economy, the recovery of *real AVA* in the Southern subregion was extraordinary, recording 10.8% growth with respect to 2009, almost three percentage points above the subregional GDP. This was due fundamentally to record production of wheat in Brazil and Argentina, and of maize in Argentina (ECLAC/FAO/IICA, 2011). On the other hand, AVA in the other subregions remained flat, with growth rates that were lower than in the rest of the economy.

The positive *real AVA* growth in LAC in 2010 (6.4%) far exceeded that of other regions around the world. It was significantly higher than the AVA growth in the European Union (0.46%), in North America (0.81%), in the Arab world (1.33%), in the countries of East Asia and the Pacific (2.9%), and in general, was far above the global aggregate AVA growth, which was only 2.7% (World Bank, 2012).

According to preliminary data from ECLAC, agriculture is expected to decelerate in 2011, a year in which *real AVA* in LAC grew by approximately 2%, which was three times less than it did in 2010. Nevertheless, there were significant disparities between the countries. Chile experienced extraordinary growth of 11.9%, supported by the dynamism of the fruit sector[2] (Central Bank of Chile, 2011), followed by Grenada, Ecuador and the Dominican Republic, where growth exceeded 5%. Peru and Uruguay experienced moderate growth of between 2 and 5%, while El Salvador, Trinidad and Tobago, Venezuela, Argentina and Mexico saw their production fall with respect to 2010.

Real income in the agricultural sector shows important annual variations

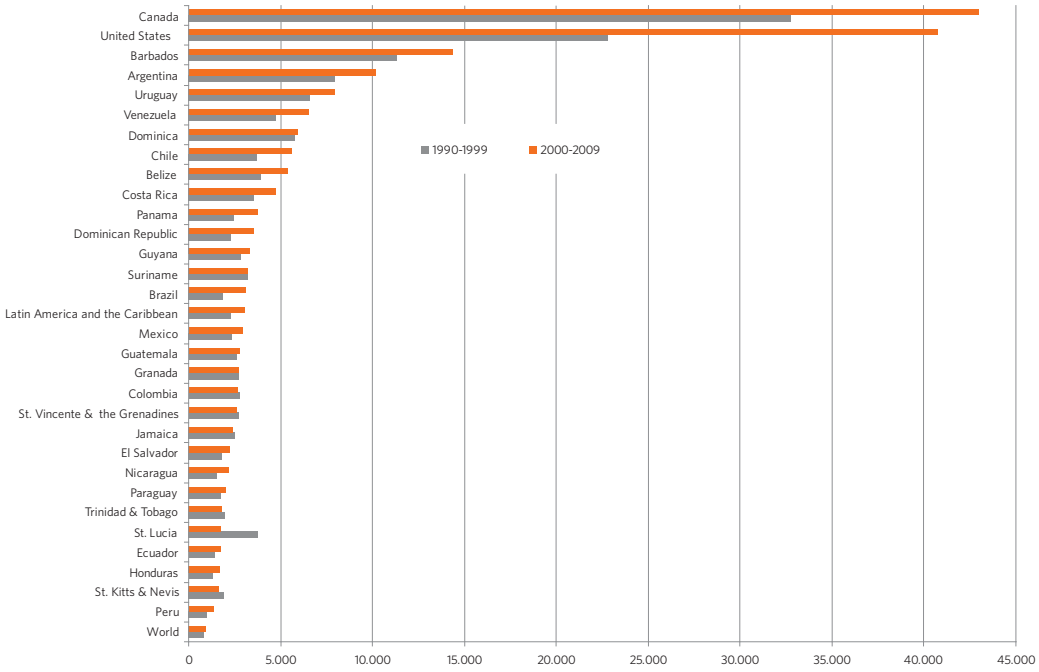
The indicator of *deflated nominal AVA* (Table 1c) demonstrates that the crisis severely affected the sector in 2009, reflecting a drop in real income in LAC of 7.4%, almost double the fall in production volumes (3.9%). Nevertheless, in 2010, with the recovery of agricultural commodity prices, real income in the sector grew by almost 25%, exceeding the growth that took place during the price peak of 2008. This oscillatory behaviour of real income in LAC is related to international prices. According to the FAO food index, prices fell by 21.4% in 2009 compared to 2008, and then recovered by 18.1% in 2010.

Increasing productivity gaps

Average agricultural productivity, measured as real AVA per agricultural worker, averaged US$3,070 during the period 2000-2009, far below Canada's average productivity of US$42,965 (Figure 6). The gap between countries in the Americas (calculated as the standard deviation) moved from US$6,626 in constant dollars during the period 1990-1999, to US$9,842 during the period 2000-2009, indicating that productivity in some countries grew faster than in others (for more details, see chapter on Agriculture).

2 Destined for export, especially blueberries, cherries and grapes.

Figure 6. Agricultural Productivity in the Americas, 1990-1999 and 2000-2009 (AVA per agricultural worker, in constant 2000 US$)

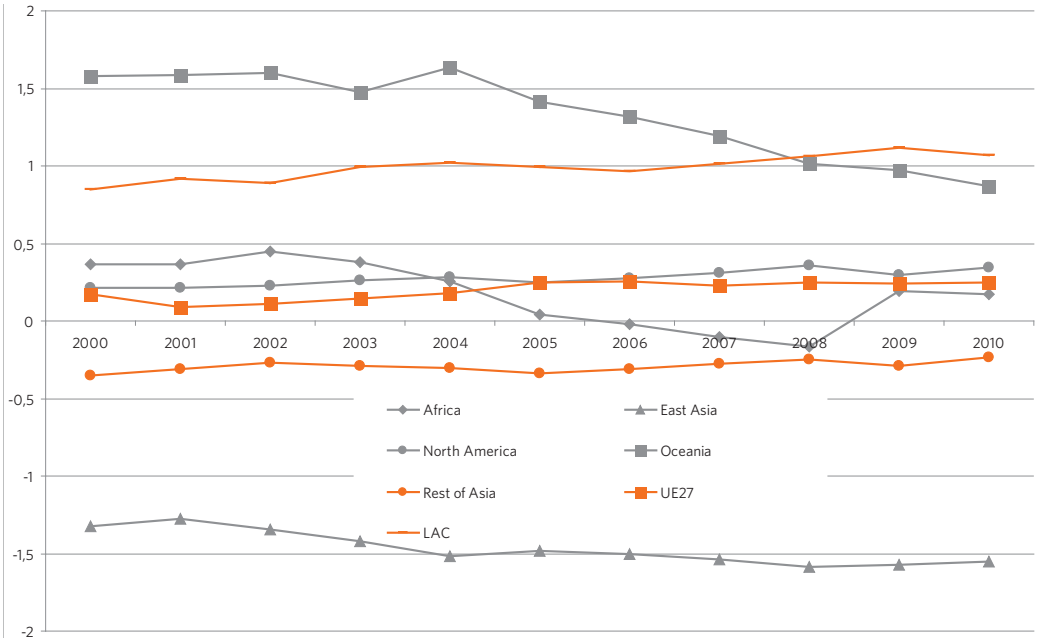


Source: IICA (CAESPA) with World Bank data (2012)

The convergence hypothesis indicates that countries that are lagging behind with respect to the leading countries in terms of agricultural productivity would have an advantage, since they would benefit more from the dissemination of technological knowledge and, therefore, would experience more rapid growth. In the Americas, the opposite process is more prevalent, one of economic divergence, resulting fundamentally from the differences between countries in terms of their natural resource base, level of technology (including fixed and working capital), human capital (in its broad definition to include education, skills, knowledge and training), and levels of investment in agricultural research and infrastructure (Hayami and Ruttan, 1970; Evenson and Kislev, 1975; Antle 1983; Eldon et al., 2002; World Bank, 2007).

In comparing relative growth in agricultural productivity over the last decade with respect to the previous decade, at least four groups of countries can be distinguished. The first group comprises countries that have maintained an average annual growth of more than 2% over the past 20 years. The countries in this group are, in descending order according to the productivity value of each agricultural worker: United States, Canada, Argentina, Dominican Republic, Brazil and Costa Rica. The second group of countries has made a quantitative leap in productivity, moving from annual growth rates of less than 2%, including negative growth during the decade of the 1990s, to growth rates of more than 2% in the last decade. This group comprises Venezuela, Chile, Mexico, El Salvador, Nicaragua, Honduras, Colombia and Ecuador, with the most significant recovery occurring in the past two years. In the third group of countries, growth rates have remained below 2% in the last 20 years, although the majority improved their performance in the past decade: Dominica, Grenada, Suriname, St. Vincent and the Grenadines, Belize and Jamaica. The fourth and final group is made up of Guatemala. This country went from performing very well during the last decade, to recording almost negative growth in recent years.

Figure 7. Revealed competitiveness of exports by region (2000-2010)



Source: IICA (CAESPA) with data from Comtrade.

LAC and Africa are improving their competitiveness in agricultural [3] markets worldwide

LAC has maintained sustained growth in its agricultural competitiveness[4] for more than a decade (Figure 7), which means that the region, which specializes in the export of agricultural products, has remained very dynamic and has positioned itself better than other regions in the international market for agricultural goods. With respect to the subregions of LAC, the countries of the Southern Cone largely account for the positive trend in competitiveness of agricultural products, although the subregions of the Caribbean and Central America are also showing good recovery. Africa, which had experienced deterioration in its competitiveness, has recovered considerably based on the high prices recorded in 2008. On the other hand, North America (excluding Mexico) and the European Union, which were showing a slight trend towards improvement in their competitiveness since 2002, have been in a stable position since 2008. The Asian countries (East Asia and the Rest of Asia) have kept their revealed comparative advantage stable, while Oceania has experienced a sharp drop in its levels of competitiveness since 2004, due mainly to agricultural exports from Australia[5]. This region was way ahead of the other regions around the world in terms of competitiveness, but LAC has begun to lead in this indicator, beginning precisely with the food crisis in 2008. Finally, the countries of East Asia, including China, show revealed comparative disadvantage in agricultural exports, making them more and more dependent on agricultural imports.

3 Refers to a broad definition of agriculture by the WTO, which includes sections 0, 1, 2 and 4 (minus sub-sections 27 and 28) of the Standard for International Trade Classification (SITC).

4 Measured by its "revealed" comparative advantage.

5 This does not mean that agricultural exports from Australia did not increase, but rather, that they grew at a rate that was much lower than that of the other regions. For example, agricultural exports from the Southern Cone of the Americas grew at an average rate of 14% annually, while exports from Australia grew at a rate of only 5% annually.

In 2010, all regions of the world declined in competitiveness, with the exception of North America and East Asia, possibly as a result of exchange rates that were more favourable to exports.

Increasing trade restrictions

Given the increase in international prices of agricultural products, as well as fiscal restrictions, the need and possibilities for financial support for agriculture are decreasing. However, in some countries, there is a move to protect national production, domestic consumer supply and even employment. This is due to the fact that governments are inclined to establish trade controls and promote protectionist policies whenever the world economy is weak and some countries are experiencing hard times. One example of this are the measures introduced in the United States Congress, aimed at granting a 20% tax credit to companies that re-locate jobs to the U.S. that are currently overseas, or recent Argentinian policies restricting foreign trade (FAO, 2012).

Following the easing of the 2008 crisis, there has been an accumulation of restrictive trade measures, which the Director General of the WTO has qualified as "alarming" (WTO, 2012). In effect, since mid-October 2011, there have been 124 new restrictive measures on trade, affecting roughly 1.1% of the merchandise imported by the G20 countries, or 0.9% of global imports. Most of the measures applied are corrective actions against imports that are perceived as damaging[6], increases in taxes, import licenses and customs controls.

Although restrictions on exports are being reduced, many of the measures are technical or administrative in nature, making them particularly difficult to monitor. These measures are in the form of financial and social assistance support, and for this reason they may distort market competitive conditions and affect trade. However, this is not always reported to the WTO (WTO 2002).

Food prices rising in the short term

The FAO global index of international food prices averaged 201.4 percentage points in June 2012, reflecting a drop of 1.8% compared to the previous month. This was 15.4% lower than the peak in February 2011 and 3.6% less than the maximum price point achieved in August 2008. By groups of products and in descending order, the price of vegetable oils fell by 5.6%, sugar by 1.6%, dairy products by 1.4%, meat 1.3% and cereals 0.3%.

Nevertheless, the downward trend in international agricultural commodity prices observed during the five months prior to June 2012 was reversed as a result of what is considered to be one of the worst droughts in the history of the United States, including those that occurred in 1934 and 1988. By the end of July, the drought had affected more than 50% of the country (ERS 2012).

However, sharp declines in production and increases in the price of grains are expected. To cite one example, the United States accounts for more than 40% of the world's production of maize, but this will fall in 2012 as a result of the drought. Even though it is difficult to provide exact figures, giving the timing of the drafting of this report, according to preliminary estimates through July 2012, corn yields in the main states of the so-called "corn belt" of the United States could fall by 56% in Kentucky, 53% in Missouri, 46% in Indiana, 38% in Iowa, 35% in Ohio, 37% in Illinois and 20% in Michigan. These percentages represent reductions in yield of between 2 and 5 tonnes per hectare. In addition to losses in yield, the drought will reduce the quality of the grains.

The drought conditions in the U.S. and in other parts of the world (Western India, Russia and Ukraine) had an immediate impact on future prices. For example, the price of maize for delivery in September rose by 58% between June and early August 2012, wheat increased by 44%, soybeans (delivery contracts for August 2012) 27% and rice 13%[7].

Futures prices reflect quickly on cash prices, and therefore the FAO sub-index for international cereal prices increased by 17.02% in July, in comparison to the previous month. The sub-index of sugar prices also increased significantly, (11.67%) due to the climatic events in Brazil (the largest exporter of sugar worldwide), in India and in Australia. The behaviour of cereal and sugar prices, together with the increase of 2.45% in oils, accounted for the 6.13% increase in July in the worldwide index of international food prices.

6 Referred to as "remedial", which includes anti-dumping actions, subsidies and application of safeguards.

7 Calculations based on data from barchart.com at August 2, 2012

Volatility of international food prices has fallen, but could climb again

Figure 8[8] shows how, during the crisis period, international food price volatility increased by up to 7%, three times the price volatility recorded in the years preceding the crisis of 2008. It is worthy of note that this price volatility fell to 3% during the period between June 2010 and June 2012.

It must be emphasized, however, that the factors that explained the extraordinary increase in price volatility in 2008 have not disappeared. Rather, these are now combined with the effects of the drought in the U.S. and other parts of the world. However, increases in volatility are expected in the short term, although perhaps not to 2008 levels. For example, as a result of climatic conditions, the indicator of volatility jumped from 1.83% to 2.77% in the last two months.

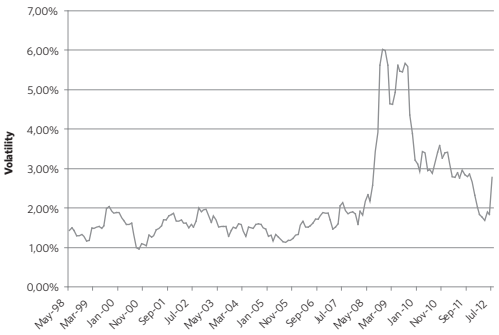
Outlook

In the long term, the price of agricultural commodities will continue to trend upwards, and this will be accompanied by fluctuations resulting from cycles, seasonality and volatility. For example, as this chapter is being written, prices are moving upwards as a result of the drought in the U.S. Nevertheless, in the short term, when producers respond to the current high prices, harvests will increase and prices will regain their long-term trend.

The demand for agricultural products will continue to grow, although food supply and agricultural raw materials are not growing at the same rate.

Within a context of reduced availability of natural resources per inhabitant, the demand for agricultural products for human and animal consumption, as well as for the production of biofuels is growing. This explains why, on average, prices are projected to be higher in the following decade than in the previous one. Let us consider, for example, that China is currently maintaining very low levels of consumption of food per capita, which are expected to grow significantly in the future with the increase in income.

Figure 8. Volatility of international food prices (June 1997-July 2012)



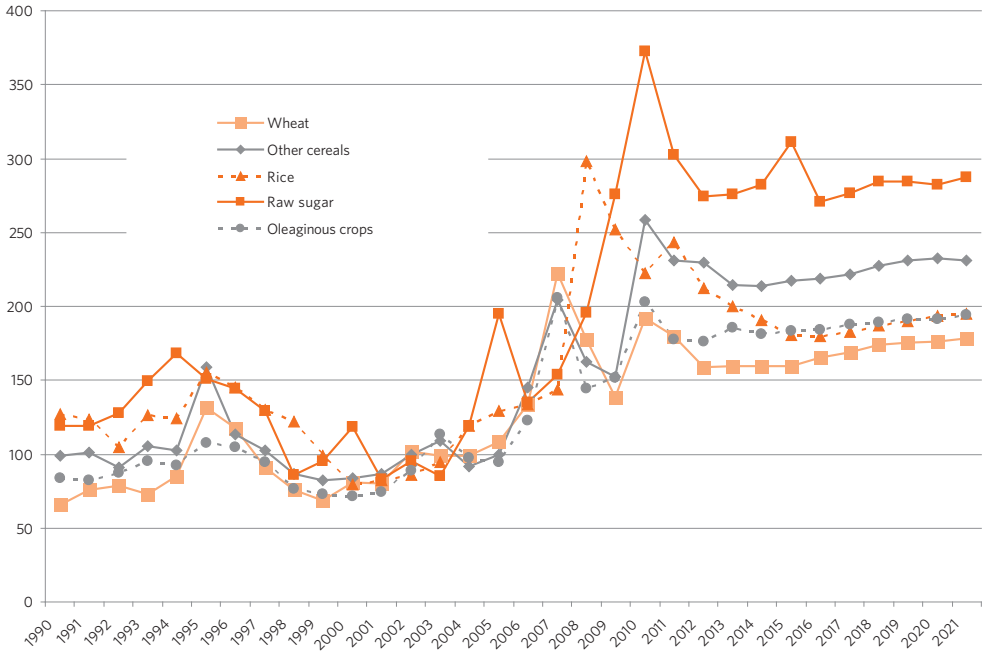
Additionally, the increase in the cost of energy affects the entire production chain of inputs for agriculture, transportation, processing and marketing of agricultural products, affecting the marginal costs of production along the food chain. The uncertainty with respect to the future of energy prices also affects investment decisions (Kilian 2008)

Moreover, it is expected that the dollar will depreciate rapidly (basically, as a result of a U.S. policy to finance its trade deficit), which will contribute somewhat to the increase in the international prices of agricultural commodities. A cheaper dollar stimulates world demand for agricultural products based on the fact that most of the trading is carried out in that currency (ECLAC/FAO/IICA, 2011).

In the face of growing demand for food and agricultural raw materials, structural factors remain in force which limit growth in the production of agricultural products at the required pace. The agricultural surface area will be more and more limited (especially when measured in terms of availability per inhabitant) and production areas will be expanded in zones with low agricultural productivity. As mentioned earlier, there are enormous gaps in agricultural productivity between countries, which means that there is great potential for increasing production. However, agricultural yields are growing at slower rates than in the past. Water is another scarce resource; when it needs to be pumped for use in

8 In this section, volatility is calculated as the standard 12-month mobile deviation of monthly logarithmic changes in the FAO international price index. However, it reflects the monthly price variations, upwards or downwards, around the median. It must be noted that volatility may be up to three times lower if the components of long-term trend, medium-term cycles, and seasonality were isolated (see ECLAC/FAO/IICA, 2011)

Figure 9. Projections for international prices of agricultural commodities in the OECD (2002-2004=100)



Source: IICA with OECD data available at http://goo.gl/VrqQf

agriculture, the cost of energy for doing so is on the rise. Finally, the price of inputs and services for production are increasing, which is a disincentive to production.

Price outlook for 2021

Market conditions and the forces behind the increase in prices in the long term respond to different factors, based on the product. The OECD-FAO (2012) report offers market projections for biofuels, cereals, oilseeds, sugar, meats, dairy products and milk for the period 2012-2021. The report also shows projections for the next decade in the prices of practically all agricultural commodities (Figure 9). Sugar will remain at very high levels, at almost 200% above the average prices of the base year 2002-2004, which is explained by the sustained increase in the demand for sugar for human consumption and for the production of ethanol. Brazil still occupies a dominant position in the international sugar market and therefore variations in the price of sugar cane will depend on the decisions taken by that country with respect to this crop (production of sugar or ethanol).

Prices of secondary cereals are projected to rise in nominal terms, up to US$246/MT in 2021, which exceeds the projected price of wheat. This is explained by tighter world supply and demand for these grains (especially maize), with respect to the global supply/demand for wheat. This is due to the fact that wheat is destined mainly for human consumption, while maize is used largely for animal feed and for the production of biofuels.

The price of rice will be greatly influenced by policies that might be implemented in Thailand and India. Although prices would rise by 2021 in nominal terms, they would fall somewhat in real terms as a result of a greater number of countries exporting grains in South-East Asia. This is added to a slowdown in world demand brought about by the application of self-sufficiency policies in several countries.

The price of oilseeds will remain high because these products represent inputs for the animal-feed industry. Also, the demand for meat is undergoing steady growth.

With respect to the market for meats, the more favourable relationship between the prices for production inputs and the final sale price of meat will improve profit margins in the livestock sector. This will provide a response to the growing demand for meat and fish, pushing prices upwards. The price of chicken will remain above the price of other meats. Higher meat prices are not only a response to higher production costs, but also to stricter health and safety regulations for food and to standards for protecting the welfare of animals.

Measures for supporting agriculture

A report appearing in Bridges Weekly (ICTSD, 2012) shows that the measures undertaken by the European Union in support of agriculture, which were detrimental to trade, have fallen to record levels. The amber box measures (including price support mechanisms) were reduced in the 2008/2009 period by more than half with respect to the 2006/2007 period. However, the less distorting measures, referred to as green box measures, remained stable. This trend will be consolidated as of 2013 with the new Common Agricultural Policy (CAP) of the European Union and as a result of fiscal restrictions. A similar trend towards reducing local support for agriculture has been observed in the EU.

The decrease in subsidies is expected to favour exports from LAC in the short term, especially from countries with significant levels of exports to Europe: Argentina, Uruguay, Chile, Paraguay and Nicaragua with respect to meat; Argentina, Chile, Mexico, Uruguay, Brazil, Belize, Paraguay, Guyana and Saint Vincent and the Grenadines for grains, and Nicaragua and Uruguay for dairy products (see ODI, 2011).

Policy Recommendations

The challenge to achieve sustainable growth in agricultural productivity in LAC, and to reach, in the future, levels that are similar to those of developed countries, will require a coherent and integrated framework of policies which include a broad range of topics (World Bank, 2007; G20, 2012, FAOb, 2011; OECD/FAO, 2011; IICA, 2011) such as rational use of national resources, conservation of biodiversity; promotion of technology; improvement in human capital; greater investment in agricultural research; easier access to assets and credit; improved access to water and irrigation as determining factors in the productivity of land and stability of crops; more transparency in the market for inputs – especially in the market for seeds and fertilizers – in order to reduce the high cost of transactions and risks and to generate economies of scale; and, finally, investment in infrastructure such as transportation and communication, although the latter is not directly related to the agricultural process.

In addition to long-term state policies, there is a need to encourage better agricultural practices and greater participation by the private sector, with special emphasis on public-private alliances in the areas of research and agricultural extension, which facilitate the sustainable and inclusive development of the sector.

It is imperative to follow-up on the action plan of the G20 Meeting of Ministers of Agriculture on the volatility of international prices and agriculture which was held in 2011 (G20, 2011). This includes topics such as information and transparency of markets, coordination and international coherence of agricultural policies, as well as risk management instruments, in order to minimize the vulnerability of producers and consumers to economic and climatic impacts, social security networks for the poorest in society and contra-cyclical measures for dealing with external shocks, such as sudden increases in international prices.

Conclusions

Given the limitations in terms of natural resources and environmental pressures, climate change and greater price volatility, the main challenge facing the agriculture sector is to increase agricultural productivity in an environmentally-friendly manner.

The gaps in productivity that have been noted between the countries of the Americas represent a significant potential for growth and income, if appropriate long-term policies are implemented and more investment is made in agriculture.

The drought conditions in various parts of the world, and especially in the United States, have pushed up the price of maize worldwide, and to a lesser extent, the price of soybeans and wheat. This provides an income opportunity for countries that produce and export these commodities, especially those in the Southern Cone; but at the same time, it is a hard blow to net importing countries, especially those in Central America and the Caribbean.

The extreme climatic conditions, the threat of a collapse of the euro, possible fiscal stagnation in the United States and the slowing-down of emerging economies (see Chapter 1), suggest that there is a greater environment of uncertainty and volatility of international prices, and that this requires appropriate measures at the local and international levels that are clearly defined as emerging from the 2011 G20 ministerial meeting on volatility and agriculture.

Agriculture

The deceleration in the growth of world trade and increased climatic variability are the main challenges facing regional agriculture in the short term

While continuing to produce staple foods, over the last 20 years countries in LAC have specialized in the production of agricultural goods best suited to their productive and market conditions. More recently, the performance of agriculture has been restricted mainly by gaps in productivity, a slowdown in the growth of main export markets, and the impact of climatic phenomena.

Facts

* Oleaginous crops have become increasingly important to LAC's agricultural production and exports
* Improving food security continues to be a key national and regional priority particularly for net food-importing countries.
* Positive expectations of record world harvests in 2012 have been thrown into doubt due to droughts in the United States and other regions of the world.
* The increased frequency of extreme climatic events is a key factor that adds uncertainty to the productivity and profitability of the region's agriculture.
* •The technology gap continues to grow, both among and within the countries of the region, especially in the most dynamic agricultural sectors and in family farming.

Trends

The performance of the agricultural sector has changed in response to crisis situations and market demand

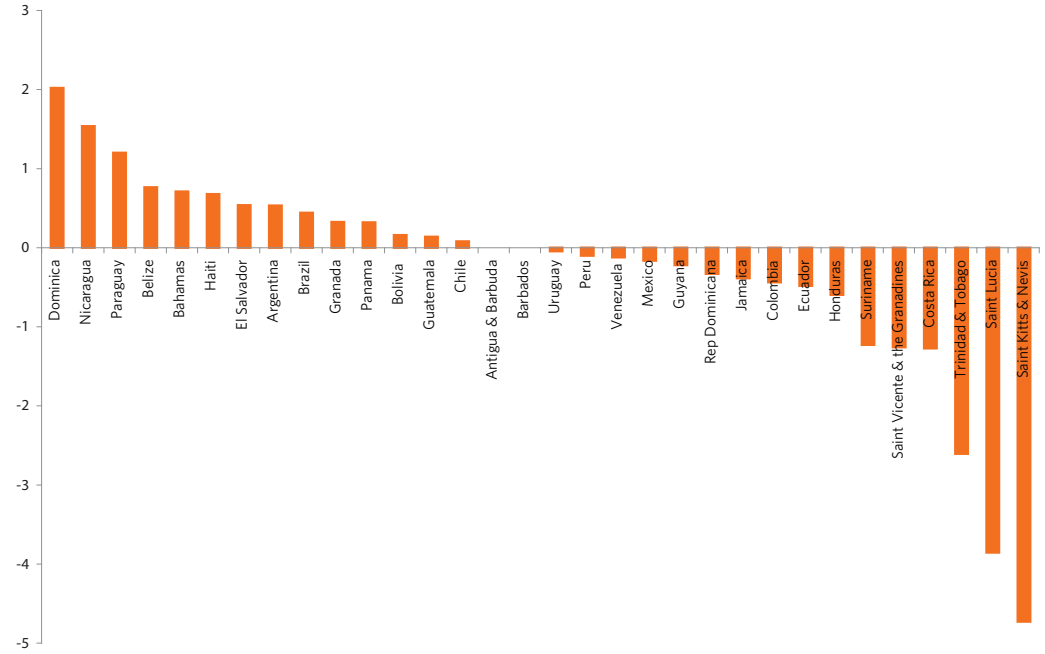
The growth of agricultural production was positive during 2010, after the decline experienced in 2009 (-3.89% in real terms). This was primarily due to the good results achieved by the countries of the Southern Cone Region.

If we analyse the performance of LAC´s agricultural sector during the 1999-2009 period, changes are evident in the productive structure, some of which have been reinforced in response to the crisis. These changes include the following:

Agricultural production has grown but the total area under cultivation is unchanged: During the period 1990-2009, the region boosted its agricultural production, but without significant changes in the area under cultivation. Analysis of a sample of 32 countries reveals that in the great majority there were only slight annual variations in the area of land used for farming. In fact, only three countries (Dominica, Nicaragua and Paraguay) show an average annual increase in the area of agricultural land between 1% and 2%, while six countries (all in the Caribbean plus Costa Rica) showed reductions of between 1% and 5% (See Figure 10).

Countries have modified their productive structure to take advantage of market opportunities: Growing demand for certain agricultural commodities between 1990 and 2009 led to major changes in the productive structure of sev-

Figure 10. Annual variation in the agricultural area 1990-2009 (%)



Source: IICA BASED ON DATA FROM FAO (FAOSTAT).

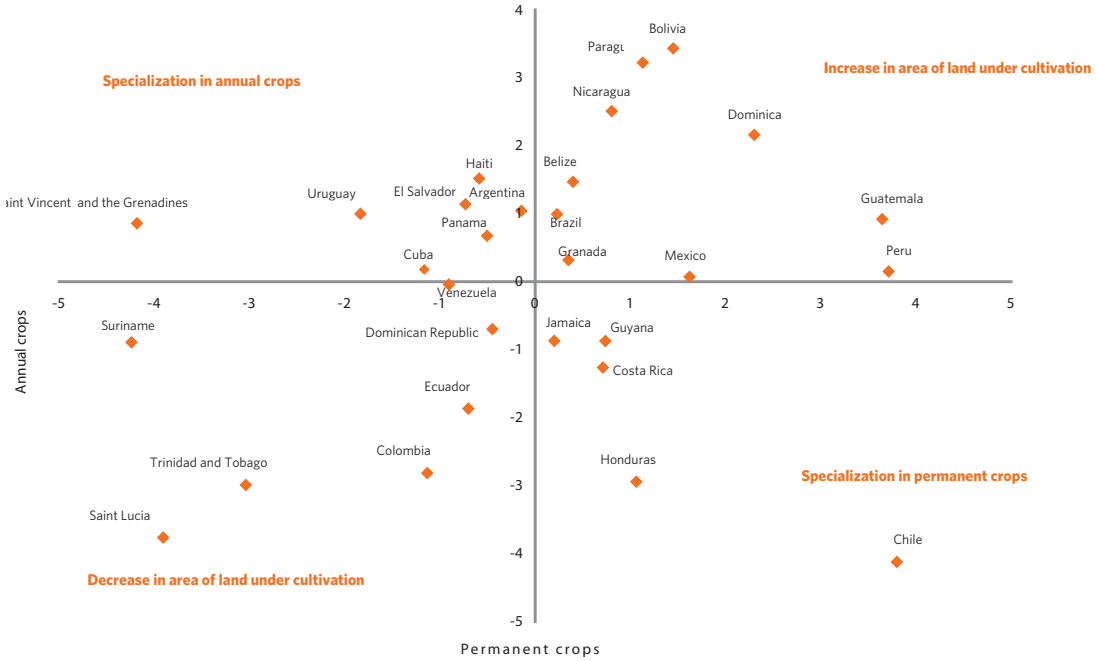
eral countries in the region. Some countries have given priority to perennial crops, while others have increased the share of annual crops. In Chile, for example, the area planted with annual crops was reduced by around 4% annually, while the area under perennial crops increased by almost the same percentage. The opposite occurred in Uruguay, where the area of perennial crops was reduced by 2% annually and the area of annual crops increased by 1% annually (see Figure 2). However, between 2005 and 2009, a period characterized by increased volatility in international prices, there was a deceleration of the trend in the variation and distribution of agricultural land that was evident up to 2005. Indeed, if we compare the variations in the agricultural area during 2005-2009 with those during the period 1990-2009, it is clear that there were considerably fewer variations in the last five years. The prevailing uncertainty in the markets probably made it difficult for farmers to make decisions, reducing specialization or varying the agricultural area.

The region shows limited capacity to respond to price variations for agricultural commodities

In some countries of the region, farmers reacted to price variations by increasing the hectares planted with those agricultural products that experienced greater price increases in international markets. For example, producers in Argentina, Brazil and Uruguay have specialized in the production of grains and oleaginous crops (annual crops), which allows them to take advantage of variations in the profitability of their crops. These countries have shown great capacity to react to market opportunities by substantially increasing the area planted with crops that have shown the highest profitability. Thus, between 1990 and 2000, Argentina and Brazil tripled the area planted with soybean, while Uruguay increased the area dedicated to annual crops by 10% during 2005-2009.

However, this process did not occur in all the countries, which may explain why the structure of agricultural production determines a country's capacity to respond to variations in international prices.

Figure 11. Annual variation in the area planted with annual and perennial crops, 1990-2009



Source: IICA (CAESPA) based on FAO data (FAOSTAT).

By contrast, countries in the Central and Andean regions have shown a more limited capacity to respond to price variations, since an increasing proportion of their agriculture is based on perennial crops (e.g. fruits, coffee, banana and palm), and the trend toward specialization in those crops has continued. The exceptions are El Salvador and Venezuela, which expanded the areas dedicated to annual crops, and Nicaragua, which reduced its total agricultural area during 2005-2009.

In the Caribbean the situation varies, though many more countries reduced the area planted with perennial crops in order to produce annual crops, presumably as a result of the import substitution policies implemented in some countries of this subregion.

Countries are addressing the crisis by promoting self-sufficiency

In response to the food crisis, several countries of the region have tried to improve their self-sufficiency in agricultural commodities by increasing the area used to grow basic foodstuffs that are essential to their populations' diet. In this context, some Caribbean and Central American countries, that are highly dependent on rice and corn imports, managed to significantly and rapidly increase production of those crops (see Figure 12). With the exception of Paraguay, the countries that substantially increased the area planted with corn were not the traditional maize producers (Canada, Argentina, Mexico, Brazil and USA), but rather those that were heavily dependent on grain imports.

The productivity gap continues to grow in the countries of the Americas

Despite the increased productivity of the agricultural sector, particularly in basic foodstuffs, measured in terms of Agricultural Value Added (AVA) per worker, the contribution by individual countries to this indicator varies greatly, highlighting major differences between them.

The gaps in agricultural output among the countries of the Americas increased by 20% between 2005 and 2009, indicating that productivity in some countries is growing at a faster rate than in others. This is confirmed

Figure 12. Variation in hectares planted with rice and maize, 2005-2009 (%)

Source: IICA (CAESPA) based on FAO data (FAOSTAT).

by the fact that value added per worker in LAC is, on average, 14 times lower than that of Canada and the United States, a difference that has continued to grow in recent decades.

The LAC countries with the highest indices of productivity were Argentina and Uruguay, with outputs of US$9,987 and US$9,064 respectively, in terms of value added per agricultural worker. These figures are significantly higher than in Bolivia (US$733) and Trinidad and Tobago (US$1,168) - the countries with the region's lowest agricultural output indicators – underscoring the enormous differences existing within the region.

The impetus to produce biofuels continues

In 2010, world production of biofuels reached a record 105 billion litres, an increase of 17% compared with 2009 (World Watch Institute, 2011). Factors such as the new laws and mandates introduced in Argentina, Brazil, Canada, China and the United States, the global economic recovery in 2010 and high oil prices contributed to this growth in production.

The United States and Brazil continue to lead ethanol production in America, accounting for 57% and 33% of world production, respectively. Corn is the principal raw material used to produce ethanol in the United States, while sugarcane is the main source of ethanol in Brazil.

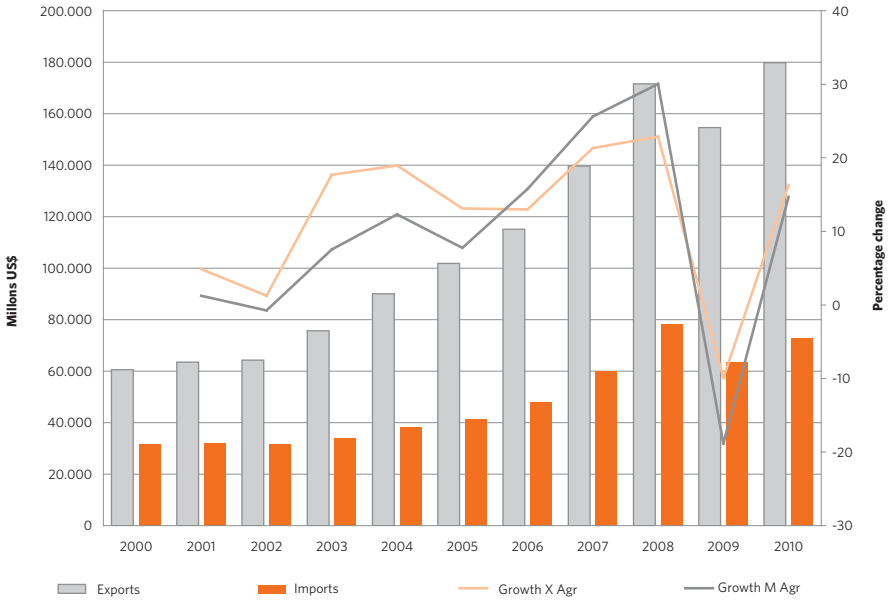
However, attractive sugar prices during 2011 prompted Brazil to give priority to sugar production for export, to the detriment of sugarcane used to produce ethanol. The ethanol deficit resulting from this measure was covered by imports from the United States, in an amount equivalent to 50% of this country's production (USDA, 2012).

With regard to biodiesel, the largest production increases in America were seen in Brazil and Argentina, reaching 2.3 and 2.1 million tonnes in 2010, respectively (Renewables, 2011).

Agrifood trade has resumed its historical growth trend

Agrifood trade in Latin America and the Caribbean was hit hard by the global financial crisis in 2009, when it suffered a significant contraction and a reversal of its

Figure 13. Annual variation in agricultural trade of LAC(2000-2010)



Source: IICA based on data from FAO (FAOSTAT) and WTO.

decade-long growth trend. Indeed, during 2009 the region saw a sharp decline in agricultural exports and imports, which fell by more than 9% and 19%, respectively, but subsequently recovered in 2010, achieving growth rates of 16% and 15%, respectively (see Figure 13).

The agricultural sector's share of total exports has remained relatively stable during the last decade accounting for 20% of total exports in 2010. Imports of agricultural commodities represented 8% of total imported goods. This reflects a positive trade balance, which reached a figure of approximately US$107.1 billion.

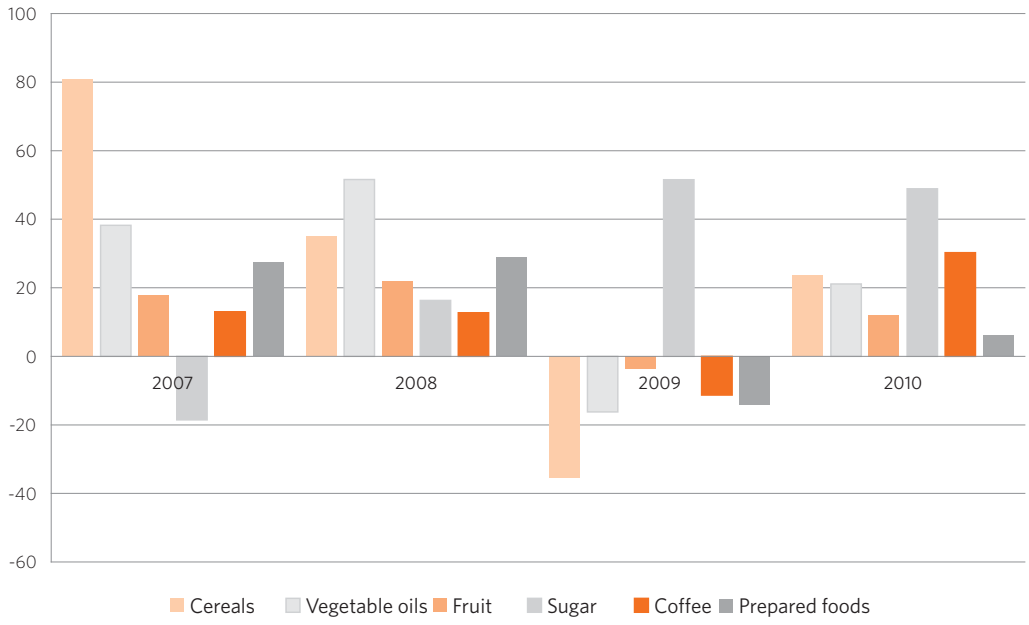
The products responsible for the decline in LAC's agricultural exports in 2009 were grains, oilseeds and prepared foods, which together account for over 80% of total agricultural exports. Indeed, that year, grain exports fell by more than 36% with respect to the previous year. However, the one exception was sugar, exports of which increased by more than 50% and continued their dynamic growth during the following year. In 2010 exports of the main commodity groups also increased, with the exception of tobacco, although most increased at significantly lower rates than the average for 2007-2008 (see Figure 5).

Over the last two decades, South America has significantly increased its share of the international food trade, thanks to the performance of Brazil and Argentina, two countries that managed to take full advantage of the huge increase in demand for soybean, essentially from China

Net food importing-countries have increased in the last decade

Despite the fact that LAC has increased its crop production and its share of the global agrifood trade, and that practically all the LAC subregions have reduced their dependence on imports for their domestic food supply, there has been a deterioration in the region's agricultural and agrifood trade balances. Comparing the period 1995-1999 with the period 2005-2009, we find that the number of countries that are net importers, both of agricultural commodities and of food, increased from 11 to 16. The countries that are simultaneously

Figure 14. Variation in agricultural exports of LAC (%, 2007-2010)



Source: IICA based on United Nations (COMTRADE) figures

net exporters of agricultural products and net food importers decreased from of 9 to 6 (Valdés and Foster, 2012) (see Table 2).

Table 2. LAC: Net exporters/importers of food and agricultural products

Classification	1995-1999	2005-2009
NMAG AND NMF	11	16
NXAG AND NMF	9	6
NMAG AND NXF	1	0
NXAG AND NXF	9	8
Total Countries	30	30

Acronym: NMAG: Net importer of agricultural products, NMF: net importer of food, NXF: Net exporter of food, NXAG: Net exporter of agricultural products.
Source: Valdés y Foster, 2012.

Outlook

The deceleration in the growth of world trade and climatic events will increasingly impact the performance of agricultural production

In 2013, with the possible moderation of price volatility, the effects of climate and international demand will become increasingly important for agricultural production. The drought in the U.S. (particularly in the grain belt) and in Eastern Europe during 2011 and 2012 has resulted in low yields and high losses in farm harvests. Furthermore, in several LAC countries, many crops have suffered the effects of the climate phenomenon of La Niña, which affected harvests at the end of 2011 and beginning of 2012. The countries that reported increased losses due to this phenomenon include Brazil (corn), Paraguay (corn), Bolivia, (cereals), Ecuador (cereals), Argentina (corn, wheat and secondary cereals) and Mexico (corn, wheat and beans).

The region's agricultural production will experience slight variations

The outlook for agricultural production in the region for the 2012-2014 period suggests that minor variations will occur in the production of the main commodities in the region. This situation contrasts with the marked fluctuations seen between 2009 and 2011, and the expansion of wheat production in 2011 or of oilseeds in 2009 (see Figures 15 a-d). Stocks of leading agricultural commodities, with the exception of corn, will remain high, providing stability and reducing the volatility of international prices. However, it should be emphasized that major climatic events, such as the severe drought of 2012 in the United States, and its subsequent impact on agriculture, could change that scenario.

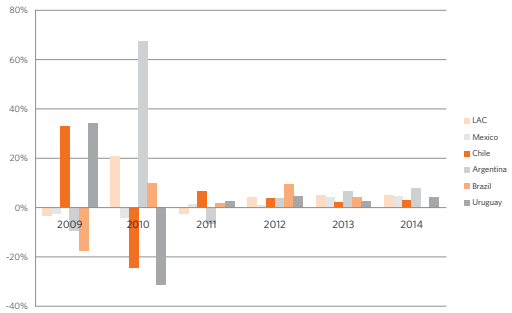
In most countries of the region the forecast for agricultural production is optimistic

After two difficult years (2009 and 2010), estimates of agricultural production in 2011 and the outlook for 2012 are optimistic. According to a survey of leading authorities on the region's agriculture, conducted by IICA [9], 72% believe that agricultural production in their countries will increase in 2012, a figure much higher than the 57% who expressed positive views during the previous year. Conversely, there were fewer negative forecasts, and of the 28% of respondents who considered that agricultural production had declined in 2011 in relation to 2010, only

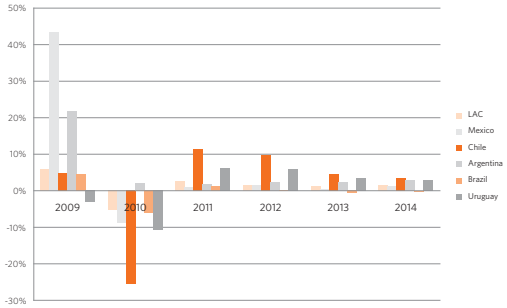
9 According to a survey of LAC agriculture conducted by IICA in may 2012, in which 25 countries of the region participated.

Figure 15. Annual variation in the production of main crops in LAC (2009-2011 and projections to 2014)

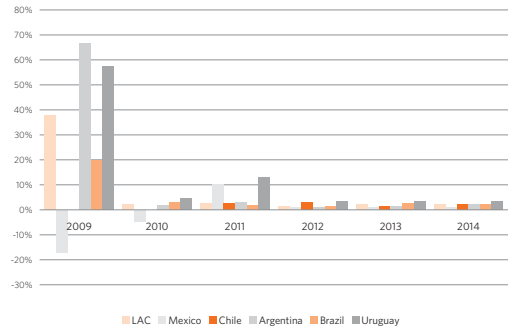
a) Annual variation in wheat production



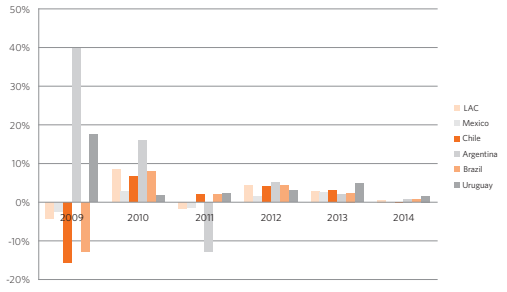
b) Annual variation in rice production



c) Annual variation in oilseed production



d) Annual variation in production of secondary cereals



Source: OECD-FAO (2012).

10% had a negative view of the outlook for 2012 with respect to 2011.

Expectations for the performance of agriculture by subregions are promising, with an increase in production expected in 2012 from the previous year. The only exceptions are certain countries in the Andean and Southern subregions, where agricultural production is expected to fall in 2012 due to factors such as the decrease in the area under cultivation, commodity prices and changes in climatic conditions (see Table 3).

Table 3. Expectations for national agricultural production in 2012 vs. 2011 (%)

Subregion	Will increase	Will stagnate	Will decrease
Andean	75	6	19
Caribbean	82	18	0
Central	50	50	0
Northern	100	0	0
Southern	60	20	20

Source: IICA based on the 2012 Outlook for Agriculture survey.

Investment prospects in the agricultural sector are not encouraging

The positive expectation of an increase in agricultural output in the region contrasts with the limited prospects of investment in the sector. According to a survey conducted by IICA (2012), 56% of respondents believed that during 2012-2013 investment in the agricultural sector would remain unchanged (41%) or would even decrease (15%).

Although the region currently has many investment needs to ensure the development of its agricultural sector, there is consensus that investment in R&D is a priority. In fact, the region has major limitations in this regard and the large gap that exists with developed countries is growing year by year.

The LAC countries must also target investment toward other areas, particularly food security and adaptation to climate change. With regard to the latter, although most LAC countries have adopted policies for adaptation to and mitigation of the effects of climate change on agriculture, these efforts have been insufficient. Increased investment is required to achieve results (see Figure 16).

Agricultural commodity prices will remain high in the long term

After a temporary fall in international agricultural prices, these are expected to remain high and volatile given that the structural factors that drive prices upward remain in place (particularly the growth in demand, which is outstripping supply) and various short-term factors that introduce volatility into price movements (especially increased climatic variability and the growing frequency of extreme natural events). For example, the effects caused by the recent droughts in the United States, Russia, Ukraine and Australia could drive wheat prices higher and would therefore benefit the Latin American producers of that product (see Figure 17).

Production of biofuels will continue to grow, but with changes

Production of fossil fuel substitutes will continue to expand, although two important changes are envisaged. In the first place, there will be growing pressure to produce ethanol because some countries in the European Union, the world's leading biodiesel producer (53% of world production), could change from biodiesel to ethanol production. This is due to the fact that a recent European Commission report affirms that ethanol crops have a higher energy content than biodiesel crops, making them more efficient fuel sources. At the same time, the first generation of biofuels, which includes ethanol or oil production based on food crops, will gradually give way to advanced biofuels or second and third generation

Figure 16. Areas of the agricultural sector that should be considered as priorities for investment

Source: IICA based on the 2012 Outlook for Agriculture questionnaire.

biofuels. These include energy produced through direct combustion of biomass residues, using non-food sources in "marginal" lands, such as cellulosic alcohol and biodiesel based on algae. However, so far, these technologies have not been profitable.

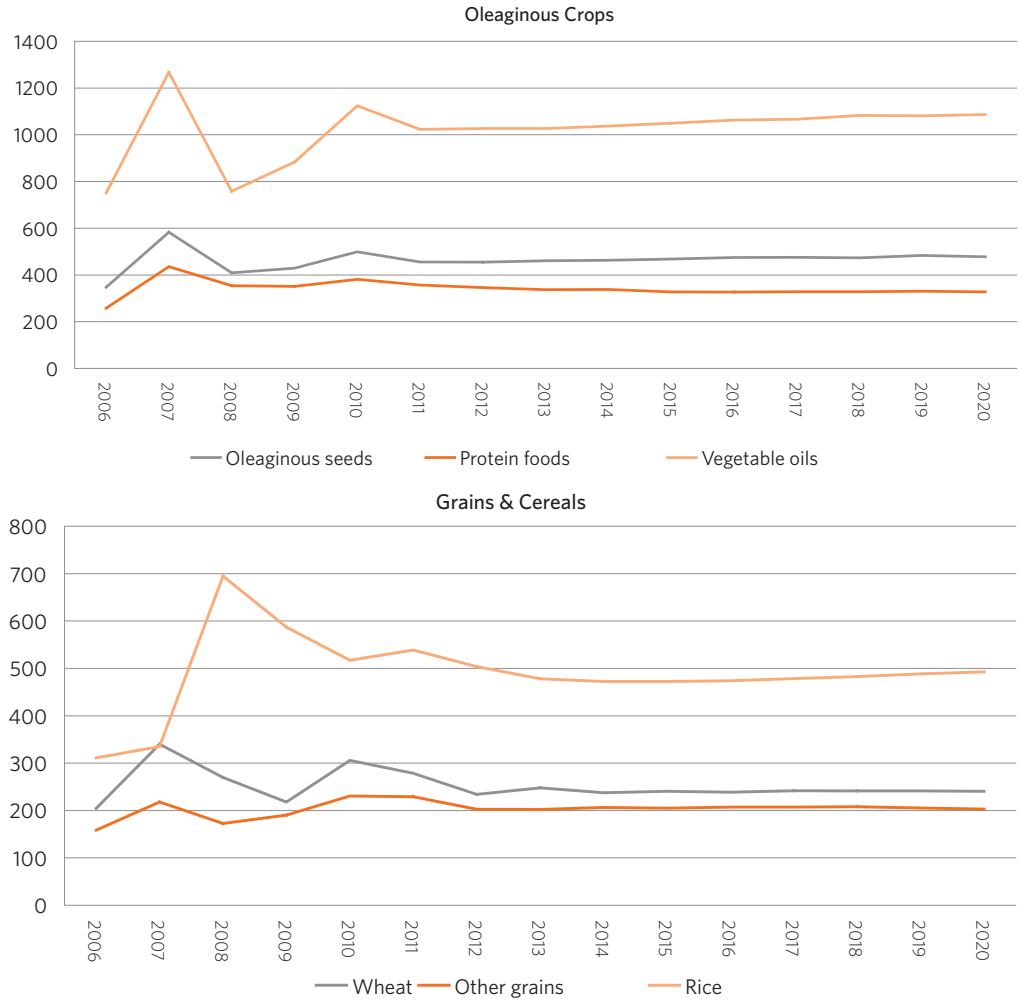
The new trade agreements with the Pacific basin countries will become increasingly important

In the short term, the prospects for reviving the Doha Round negotiations of the WTO are slim. For this reason, the LAC countries will continue to promote increased trade based on existing FTAs and there will be growing interest in signing agreements with emerging countries.

The countries of the region will try to substitute markets in recession, but will face greater competition. They will also be under growing pressure to increase their protectionism, as the crisis deepens in Europe and in the global economy, and until the job markets recover their dynamism.

In the Pacific basin, China will become increasingly important as a trading partner for the LAC countries, as its population's purchasing power continues to grow. During

Figure 17. Prices of oilseeds, grains and cereals – outlook to 2020



Source: OECD-FAO Agricultural Outlook (2012).

Box 1: Argentina and Brazil consolidate their position as agrifood powerhouses.

Together, Brazil and Argentina lead world exports of soy-based products (beans, oil and meat), accounting for 51% of the total. Both countries are also leading beef and poultry exporters. In addition, they rank second in the world for corn exports, a position that will be consolidated in the coming years.

Argentina and Brazil's growing share of international agricultural markets is explained by the enormous growth in soybean production and exports in both countries between 1995 and 2011. During that period, soybean production increased by 198% in Brazil and by 287% in Argentina, while soybean exports increased by 329% in Brazil and 980% in Argentina. Thanks to the use of hybrid technologies, conservation tillage, direct planting and fertilization, Argentina was able to double its agricultural yields in 10 years and boost production, even though the area under cultivation was reduced by 37%. Beginning in 2005, cereal production in the country doubled, reaching 100 million tonnes in 2011. In the case of Brazil, the importance and growth of its huge domestic market for agricultural products is noteworthy, though the country is trying to maintain its share of international trade.

the 2007–2011 period, China went from being the fifth market for US agricultural exports to being the leading market, displacing traditional trading partners such as Canada or Mexico (USDA, 2012). China's demand focuses mainly on agricultural raw materials, especially soybean and cotton, which account for 75% of US agricultural exports to China.

Competition to access national and international agricultural markets will increase substantially

The countries of the region will continue to promote the development of national and local markets, thereby contributing to create a more dynamic agricultural sector. They will also continue to promote the role of Family Farming as a supplier of foodstuffs, both for the markets and for national food programmes.

In the international sphere, trade liberalization processes will recover as the world economy revives, with an evident dichotomy between markets highly concentrated around commodities on the one hand, and pressure to expand trade in products with greater value added on the other, essentially as a result of the growth of the middle classes worldwide. Competition will become increasingly strong in the food markets, although the trends toward consolidation and concentration will continue throughout the production chains and in all segments of these. These processes will be driven by efforts to create economies of scale, or by the need to take advantage of the opportunities afforded by changes in national and international regulations.

Production of biotechnology products will increase, and alternative methods to GMO will gain ground

The region is expected to gradually incorporate conservation and environmental protection practices - such as precision agriculture and direct planting – and to implement efforts to rescue traditional crops in order to strengthen food security and nutrition. All this will be accompanied by a growing use of ICTs in agriculture.

Biotechnology will become increasingly important as an effective tool for adapting to climate change and for generating bio-inputs (bio-fertilizers and biocides). Similarly, the use of biodiversity for commercial purposes is expected to grow, in order to promote adaptation to climate change and food security.

The region will promote a more sustainable agriculture to mitigate the effects of climate change

Faced with mounting evidence of the negative effects of climate variability and anticipating greater impacts of climate change, the region has strengthened its concern for the two-way relationship between agriculture, natural resources and climate.

Several countries have taken steps to promote the use of cleaner technologies, rationalize the use of water, address the carbon footprint issue and introduce strategies of mitigation and adaptation of agriculture to climate change. This process has been largely influenced by a recognition of the negative impact that current agricultural production models have on natural resources, the amount of water used by agriculture and how it is used, the importance of biodiversity and how climate affects

production, impacts the rural milieu and, consequently, affects rural populations.

Trends toward a greener economy, the development of carbon markets and more recent strategies to promote the bio-economy, share a key element: the economic assessment of natural resources and the possibility of trading environmental services on the markets. This approach contrasts with other alternatives based on concepts such as "good living," the rights of Mother Earth and the climate debt, which the Government of Bolivia has promoted in the region. These trends were reflected in the work of the New Earth Summit and in the discussions on the draft declaration prepared by the United Nations, entitled "The Future We Want."

Policy Recommendations

On agricultural production

Implement public policies to attract investment and promote the participation of the private sector. It is essential to encourage greater private investment in agriculture and create conditions to ensure that investing in agriculture is "good business". Policies and institutions are required in order to give legal security to investors and to risk-taking by the private sector.

Improving productivity in agriculture: This task not only requires efforts to attract investment in agricultural R+D+i linked to the most important commercial crops, but also strategies to develop technologies that can be used by small-scale farmers. The States must also develop policy frameworks and tools as priorities for national development, including better information systems, efforts to strengthen public and private extension work and measures to improve coordination mechanisms and governance for optimum management of the different actors associated with national innovation systems.

Technology for adaptation to climate change cannot wait. The region must adopt a proactive and preventive attitude with regard to the development of technologies, in order to ensure that the main crops responsible for food security can withstand the effects of climate change.

On agricultural markets

Resume efforts to successfully conclude the Doha Round. The LAC countries, particularly the smaller ones, must understand that strengthening international disciplines is the best way to take advantage of the benefits of trade as a tool for development.

Improve linkages in agriculture. Countries must avoid the harmful effects of "re-primarizing" agriculture, and move forward with the consolidation of market niches with high value added, strengthening the linkages between different sectors, such as agriculture-tourism-mining-industry-health.

Support the modernization and transparency of domes-

Box 2: Tizimin, where corn is being grown in stony soil

Thanks to a unique technology implemented by the Enerall project in Mexico's Yucatan Peninsula, grains and other crops are being produced with high yields in the rocky and highly alkaline soils of Tizimin, an area where soil conditions make it virtually impossible to practice conventional and mechanized agriculture.

The technology package involves the use of machinery to grind the rocks on and near the surface and create a substratum, to which organic matter is added (mainly vegetation from undergrowth). Beneficial microorganisms are then introduced into the substratum and irrigation systems are set up. The resulting conditions make it possible to grow commercially competitive crops such as corn, sweet sorghum, sugarcane, soybeans, jatropha and castor beans.

The project has been in operation for four years and a surface area of approximately 800 hectares has been incorporated into production. So far, four corn crops have been produced, with very high yields. The process of improving soils is a gradual one and yields increase when post-harvest waste is added to the soil.

This experience offers great potential for improving soil and, faced with the challenges of ensuring food security and the sustainable management of agriculture, many Latin American and Caribbean countries that have areas with similar soils, perhaps used only for subsistence livestock activities, could find innovation of this kind attractive. (Villalobos, 2012).

tic markets. Implement policies that encourage competition in input markets (such as seeds, genetic material, fertilizers and herbicides), promote the development of risk management mechanisms and the reduction of post-harvest losses and waste (which, according to FAO, accounts for between 15% and 60% of production), and contribute to maintaining prices high.

On production services

Reduce production losses and guarantee food safety. In this regard, the modernization of Agricultural Health and Food Safety (AHFS) systems will be crucial to reduce losses due to pests, diseases and poor management. These systems also help countries to comply with the growing demands and standards of international markets, and to manage the risks associated with the proliferation of invasive species.

Promote the use of ICT's in agriculture. The agribusiness sector is being progressively transformed by the rapid growth of information and communications technologies, and by the emergence of social networks. These allow for the almost instantaneous exchange of knowledge and views and facilitate and increase commercial transactions.

On natural resources, climate and sustainable agriculture

Promote intelligent agriculture and adaptation to climate change. Countries must work together to develop policies, strategies and financing mechanisms to support the development of an agriculture sector that can flourish in adverse conditions of climate variability.

Devise strategies for the development of bio-economies and mechanisms to promote sustainable use of biodiversity in order to tackle climate change and guarantee food security. This requires the creation or consolidation of regional biosafety initiatives so as to develop the necessary technical capabilities and avoid trade barriers in biotechnology products.

Promote sustainable land use and the restoration of degraded soils. Countries must redouble their efforts to implement programmes for the restoration of degraded soils, with the aim of improving their production potential and agro-environmental sustainability, thereby contributing to improve their food security indices.

Conclusions

Production levels in the agriculture of LAC have responded favourably to the conditions created by high international prices, the incipient recovery in the United States economy and the new demand originating in Southeast Asia (especially China), despite the bleak prospects for the euro zone economies and the shocks of extreme climatic events.

World trade has weakened during 2012, but global demand for agricultural products from LAC is not yet showing a significant contraction. This is probably due to the United States' dependence on imports - particularly from countries of the tropical belt and Mexico – and the influence of China's demand for commodities from the Southern countries.

High international prices continue to provide an incentive for the expansion of annual crops in the main agricultural commodities. However, they also represent a challenge for countries with a tropical climate, which are increasingly dependent on imports of those basic products.

Efforts to improve the productivity of agriculture (to produce more with fewer natural resources), in order to provide sufficient food (to guarantee food security) and to produce in a more environment-friendly way (so that development is sustainable), will be a major focus of the agriculture agendas of the countries of the region.

Livestock

Continued expected growth and development of the industry will create additional pressure on Latin America's ecosystems, biodiversity, and natural resources.

The industry's potential to improve the economic welfare of the region could be seriously hindered by growing concerns over its environmental impact, as well as factors including: inadequate marketing and transportation infrastructure; lack of access to communication and information systems to support decision making; lack of investment in livestock research; persistent outbreaks of animal diseases; and the lack of adequate access to veterinary services.

Facts

* Livestock inventories in LAC countries have grown dramatically over the last decade. LAC accounts for nearly 14% of world inventories of all major livestock species (cattle, pigs, sheep and goats, poultry, and dairy cows).
* LAC poultry inventories have grown at the blistering pace of 5.3% annually to register a 35.6% increase over the last decade. LAC now accounts for 14% of world poultry numbers.
* Brazil accounts for the largest share of all Latin American livestock numbers, including half of all beef and dairy cattle and pigs and about 40% of poultry.
* Remarkable gains in LAC meat and milk production efficiency have contributed to the growth in production over the last decade with yield increases in milk, poultry, pork, and beef of 22%, 15%, 14%, and 7%, respectively, which substantially exceed those in the U.S. and the rest of the world.

Trends

Rapid meat and milk production gains[10]

LAC meat and milk production has grown at double digit rates over the last decade, much in excess of the United States and surpassing world growth rates in all but sheep meat production (table 1). LAC now accounts for a larger percentage of world beef, sheep meat, and poultry meat production than the U.S. and almost the same share of world milk production (table 1). LAC poultry meat production grew at an amazing 84.8% between 2000 and 2011 and now accounts for 23% of world production. Brazilian poultry meat production more than doubled over the last decade so that Brazil now accounts for about 56% of LAC production.

Milk production increased by nearly 30% in LAC between 2000 and 2011, boosting the region's production to 81.1 million tonnes, just under the level of production in the United States (table 1). With the largest number of dairy cows, Brazil is also the largest milk producing country in LAC. Brazilian milk production increased nearly 30% over the last decade. About 82% of Brazilian dairy farms

10 International data on livestock and products are notoriously questionable and highly inconsistent across data sources. For that reason, to the extent possible, this chapter relies on data from OECD-FAO 2011 as supplemented by data from the FAOSTAT (FAO 2012a and 2012b) database for consistency. Data from USDA (2012) are used when necessary because of lack of coverage or timeliness of the OECD-FAO or FAOSTAT data.

produce less than 50 liters/day but account for only 20% of Brazilian milk production while 3% of the dairy farms produce in excess of 200 liters/day and account for 60% of the production (IDF, 2010). The number of Argentinian dairy farms has been declining in recent years at an average rate of about 4.5% a year (IDF, 2010). Two foreign dairy companies, Schreiber Foods of the United States and Bom Gosto of Brazil have invested heavily in the Uruguay dairy industry and began operation at the end of 2011 (IDF, 2010).

Productivity advances boost production

The rapid growth in LAC production is the result of growth in both livestock inventories and production efficiency in many countries. Although still below those in the U.S. and about equal to the world average, the average meat yield per animal slaughtered annually in LAC has increased at rates much in excess of those in the U.S. and the world (table 2). At 1,544.1 kg/cow/year, milk productivity in LAC in 2010 was about 83% below the level in the U.S. but 56% above the world average. However, LAC milk productivity increased by more than 22% over the last decade compared to only about 15% in the U.S. and 5% globally.

Brazil continues to play leading role in the region

Inventories of most livestock in 2010 across LAC were quite unequally distributed with Brazil accounting for the largest share of all species, including half of all cattle (52%), dairy cattle (53%), and pigs (47%) and a lower share of poultry and sheep inventories (42% and 22%) (FAO 2012a). The trends for meat and milk production across LAC countries are similar to those of inventories except that Brazil does not dominate by such a wide margin in most cases (FAO, 2012a). Despite accounting for half of LAC dairy cattle, Brazil accounts for only 39% of LAC milk production. The reason is that milk production efficiency in Brazil (kg/head/year) lags much behind other LAC countries. Brazil ranks 24th in milk production efficiency in the region with an annual average milk yield that is about 75% below the yield currently achieved in Argentina, the top yielding country in LAC, and 22% below the average milk yield across the entire LAC (FAO, 2012a). Dairy Partners Americas (DPA), a joint venture between Nestlé, the world's largest food and beverage company and Fonterra, a New Zealand-based cooperative and the world's largest exporter of dairy products, in several Latin America countries has teamed up with Brazil Foods and Itambé, two leading Brazilian food producers, to share best practices and assist Brazilian farmers to accelerate milk production while improving milk quality, safety, and sustainability (Nestlé, 2011).

Brazil's meat production efficiency also lags other countries in LAC but is substantially higher than the average yield across all LAC countries. Nevertheless, except in the case of sheepmeat, Brazil's meat and milk production efficiency rate has been growing substantially faster than those in the top yielding countries. With large and growing livestock inventories and relatively rapid growth in production efficiency, Brazil will increasingly dominate livestock, meat, and milk production in LAC.

Table 4. Meat and milk production in LAC, the United States, and World in 2011, percentage change from 2000 to 2011, and share of world production

	Production 2011			% Change (2000-11)			Share of World Production	
	LAC	U.S.	World	LAC	U.S.	World	LAC	U.S.
	---------- Million tonnes ----------			---------- % ----------			---------- % ---------	
Beef	17,4	11,2	64,7	24,8	-4,4	9,0	26,6	17,2
Pork	6,9	10,0	111,4	37,3	19,8	21,6	6,3	9,2
Sheep meat	0,4	0,1	13,1	5,0	-31,0	15,3	2,9	0,6
Poultry	23,0	19,5	100,1	84,8	19,1	44,2	22,9	19,5
Milk	81,1	89,0	720,9[a]	28,0	17,1	24,5[a]	11,0	12,4

a = Data for 2010 from FAO (2012a).
Source: OECD-FAO (2011). .

Table 5. Efficiency of meat production in LAC: Meat yields (weighted average) 2010 and % change, 2000-2010

	LAC		U.S.		World	
	Meat Yield kg/head	Change %	Meat Yield kg/head	Change %	Meat Yield kg/head	Change %
Cattle	222,8	6,9	341,0	4,2	205,3	2,5
Swine	82,6	15,1	92,3	5,3	79,4	1,5
Sheep	13,8	1,8	29,9	-0,7	14,2	0,2
Poultry	2,0	14,1	2,2	14,9	1,7	4,7
Dairy	1.544,1	22,2	9.232,7	14,9	987,6	5,1

Source: Calculated using data from FAO (2012a).

LAC consumers shifting to poultry and pork from beef and sheepmeat

LAC consumers have increasingly moved away from the consumption of beef and sheepmeat towards the consumption of other protein sources, including poultry meat, pork, eggs, and dairy products (table 3). The growth of the commercial poultry and pork industries and the associated growth in consumption have been notable phenomena and powerful forces for change in the Latin American livestock industry. Per capita consumption of poultry has increased at double-digit percentage rates across many Latin America countries, including countries like Brazil, Argentina, Chile, Mexico, and other countries where supplies of other protein sources available for consumption have declined on a per capita basis (table 3).

The rapid adoption and spread of more efficient poultry and pork production technologies have made it possible for many countries to export more of traditional sources of dietary protein like beef and substitute growing supplies of poultry and pork in domestic consumption. The average per capita consumption of eggs in Latin America jumped nearly 17% between 2000 and 2007 to 9.4 kg/hab11 (FAO, 2012a). In 2009, Mexico led the world in per capita egg consumption at 354 eggs/year, much above the U.S. at 247.7 eggs/year, followed by Colombia (230 eggs/person/year) and Argentina (222 eggs/person/year) (Mendes, 2011).

11 The most recent FAO data for per capita egg consumption is 2007. Obviously some changes have occurred in the last few years but the data is indicative of egg consumption trends in the region.

Argentina slips to second in per capita beef consumption

Per capita beef consumption in Argentina, the world's top per capita beef consumer in 2000, experienced a 15% decline from 45.2 kg/person to 38.5 kg/person in 2011, slipping to second place in the world behind Uruguay at 51.7 kg/person (table 3). Meanwhile, Argentina's per capita consumption of poultry grew by 31%. Uruguay's per capita beef consumption also declined slightly over the last decade while its per capita consumption of poultry jumped by nearly 46%. Even Brazil, where per capita beef consumption grew by 6% over the last decade, experienced a dramatic 62% increase in per capita chicken consumption. The story has been much the same in other major beef consuming countries in Latin America. Strong production performances in Chile, Colombia, El Salvador, Panama, and Ecuador substantially boosted their per capita consumption of pork between 2000 and 2011 (USDA, 2012a). Chile now has the highest per capita consumption of pork in Latin America (table 3).

Dairy products have grown in popularity

Argentina consumes the highest amount of fluid milk per capita in Latin America at 283.8 kg/person in 2011, about the same as in the United States (USDA, 2012a). Uruguay exports the majority of its milk production and has slipped to second place in Latin American per capita milk consumption (GTS, 2011). Uruguay is the leading per capita consumer of all fresh dairy products at 158.5 kg/person (table 3).

LAC meat exports up, Argentina beef exports down

Across LAC countries, exports of beef have more than doubled, exports of pork have nearly tripled, and exports of poultry have increased nearly five times since 2000 (table 4). At the same time, the export shares of LAC domestic supplies of beef, pork, and poultry have also increased substantially to 19.7%, 11.6%, and 17.2%, respectively (table 4). A major exception has been the export performance of Argentina's beef sector with declines of nearly 12% since 2000 and 60% from the high in 2004 following its recovery from the foot and mouth disease crisis of 2001. Argentina has dropped to ninth place among world beef exporters, accounting for only 3% of world beef trade (USDA, 2012a). In contrast, Argentina has risen to sixth place among world chicken exporters (primarily breasts and legs) on the strength of an 86% increase in production over the last decade and a huge increase in exports from virtually nothing in the late 1990s (table 4). To hold down consumer prices, Argentina imposes an export tax on beef and a restrictive export quota on corn. The beef export tax severely limits beef exports while the corn export quota holds down production costs in the poultry industry and contributes to the rapid rise in Argentina's poultry production and exports (MercoPress, 2011).

While Argentina beef exports have lost steam, exports of beef by its neighbours have grown rapidly. Brazilian beef exports have more than tripled since 2000 and now account for over 20% of Brazil's domestic beef supplies (table 4). Likewise beef exports from Uruguay have more than doubled while those of Paraguay have increased 3.5 times and those from Nicaragua more than 4.5 times over the same period.

Brazil leads in poultry and pork exports

Brazil is now the world's leading exporter of poultry meat, accounting for nearly a third of world trade, just slightly ahead of the United States (OECD-FAO, 2011). Brazilian poultry exports have increased 3.5 times over the last decade and now account for 27% of its domestic poultry supplies. Brazil also leads the way in pork exports, accounting for 71% of all LAC pork exports and 8.5% of world pork trade in 2011 (OECD-FAO, 2011). Exports account for 17% of Brazilian pork supplies. A U.S. ban on pork imports from Brazil that was dropped in January of 2012 hampered growth of the Brazilian pork industry for about a year and a half while Brazil worked to guarantee its pork would comply with U.S. sanitary standards (Kiernan, 2012). Brazilian pork exports have also been hampered by disputes with Russia, its top export destination, over veterinary rules violations. With the lifting of the Russian ban and markets in China opening to Brazil, its pork exports are expected to recover over the next few years.

Table 6. Per capita consumption of meat and dairy products, 2011, and percentage change 2000-11, selected LAC countries

	Beef		Pork		Chicken		Sheepmeat		Dairy[a]	
	Kg/hd	change %	Kg/hd	change %	Kg/hd	change %	Kg/hd	change %	Kg/hd	change %
Uruguay	51,7	-5,6	8,0	2,7	22,2	45,9	1,6	-82,7	158,5	-41,7
Argentina	38,5	-14,8	6,2	2,8	30,0	31,0	1,2	-18,1	44,3	1,0
Brazil	28,,2	6,1	10,9	1,0	42,1	61,6	0,4	-6,8	61,8	-5,8
Chile	14,9	-3,6	17,4	38,8	30,7	29,9	0,6	-12,7	99,7	29,7
Mexico	11,8	32,4	14,9	-19,4	30,5	41,9	0,7	-0,5	46,6	29,3
Other LAC	16,4	-1,5	11,4	44,8	32,2	44,7	0,8	-0,8	111,5	29,3
LAC	17,6	2,0	8,9	15,2	30,7	51,6	0,6	-11,6	71,0	13,6
U.S.	25,8	-15,2	21,0	-8,5	45,0	6,4	0,4	-21,7	80,6	-8,5
World	6,5	-4,2	12,2	6,6	12,6	26,9	1,6	2,4	61,7	2,4

[a] Fresh dairy products as defined by OECD-FAO (2012).
Source: OECD-FAO (2012).

Chile is also becoming a force in the world pork and poultry markets, registering dramatic increases in exports of both since 2000 (table 4). Chile is now the second largest exporter of pork and the third largest exporter of chicken meat in Latin America and exports 28.3% of its domestic pork supplies and 16.1% of its domestic chicken meat supplies.

Latin American countries have been primarily net importers of dairy products accounting for nearly 15% of world whole and skim milk powder imports (OECD-FAO, 2012). Rapid population growth in the region has boosted demand for dairy products but economic crises in many Latin American countries have created erratic import growth patterns (Blaney et al., 2006). Mexico has been the largest importer of both fluid and non-fat dry milk in Latin America but its imports of both have been on the decline over the last decade (USDA, 2012a). Brazil was a net importer of dairy products until 2004 when exports surpassed imports (IDF, 2010).

Deforestation continuing at alarming rates

The progress of deforestation around the world is driven by multiple factors (Pacheco et al., 2011). In Latin America, commercial agricultural expansion, primarily crops like soybeans and cattle production, remains the main cause. In other areas of the world, deforestation is associated with subsistence agriculture. Deforestation threatens Latin America's vast biodiversity. Of the world's 10 most bio-diverse countries, five are in Latin America (Brazil, Colombia, Ecuador, Mexico, and Peru). Deforestation causes an estimated 62% of carbon emissions and other environmental damage in Latin America compared to 16% globally (Nash, 2012). The conversion of tropical forests to agricultural uses leads to emissions of other greenhouse gases, chiefly methane and nitrous oxide. Latin America's agricultural emissions of these two gases grew 35% between 1990 and 2005 (the last year data are available) compared to 16% worldwide (Nash, 2012). One positive note is that the rate of growth of emissions relative to the growth of the agricultural GDP in Latin America declined by 21% over that same period compared to 15% globally (Nash, 2012).

Growing and persistent disease outbreaks accompany livestock production growth

Increasingly frequent livestock disease outbreaks plague the development of Latin American livestock production

Table 7. Percentage change in meat and dairy product exports, 2000-11 and export share of domestic supply, 2011, selected LAC countries

	Argentina	Brazil	Chile	Costa Rica	Mexico	Nicaragua	Paraguay	Uruguay	LAC
	Change %								
Beef	-11,5	218,1	1/	*14,3*	-28,9	*359,4*	*256,9*	110,9	115,9
Export share	12,0	20,5	5,0	*23,1*	11,0	*90,2*	*49,1*	66,9	19,7
Pork	180,0	386,9	757,6	**220,7**	77,2	**-89,6**	**1/**	-47,6	358,3
Export share	2,7	17,0	28,3	**13,0**	4,9	**1,3**	**1,4**	0,1	11,6
Sheepmeat	498,2	40,3	-5,8	**1/**	123,7	**1/**	**1/**	**-4,5**	-14,2
Export share	9,9	0,0	23,4	**0,0**	0,2	**0,0**	**0,0**	**58,4**	6,3
Poultry	1/	256,9	256,7	**8,6**	18,2	**-61,1**	**0,0**	1/	282,8
Export share	19,7	26,7	16,1	**3,0**	0,0	**0,3**	**0,0**	13,7	17,2

Note: 1/ = Large percentage change from a small number.
Source: Calculated from data in OECD-FAO (2012) except the numbers in italic, which are calculated from data in USDA (2012), and those in bold calculated from data in FAO (2012a).

systems and often pose serious human health hazards. Latin America remains high on the list of regions where recurring foot-and-mouth disease outbreaks are complicating efforts to establish sustainable and profitable livestock systems. A recent outbreak of foot-and-mouth disease in Paraguay reportedly cost their livestock industry tens of millions of dollars in lost cattle and beef exports (UPI, 2012). The spread of foot-and-mouth disease also spreads economic hardship particularly among the poorest Latin American farmers when the few animals they raise as their chief source of income and protein are lost to the disease. FAO and the World Organization for Animal Health (OIE) announced recently that they are joining forces to combat foot-and-mouth disease (FMD) on a global scale (FAO, 2012c).

In the Latin American swine industry, circovirus (PCV2), teschovirus, paramyxovirus, Classical Swine Fever (CSF), and gastro-enteritis are among the most prevalent and persistent diseases. CSF has proved to be highly persistent with recent outbreaks in Brazil, Guatemala, and Nicaragua despite the FAO's Intercontinental Programme designed to eradicate the disease by 2020 (Martins, 2011). Avian influenza has not become pandemic in Latin America but concerns persist. A recent outbreak of the H7N3 bird flu virus in the western state of Jalisco in Mexico infected about 3.4 million chickens and forced the destruction and disposal of a reported 2.5 million head, reduced raised chicken and egg consumption, and raised their prices in the country (AFP, 2012).

Outlook

LAC comparative advantage in livestock production

The future of animal production in Latin America will depend on regional and global demand for animal protein for human consumption, technological progress in animal and meat production efficiency, success in abating the rise in animal diseases, and government policies aimed at protecting the environment and mitigating the effects of rising food prices.

Global agricultural production needs to increase by 60% over the next 40 years to meet the expected rising global demand for food (OECD-FAO, 2011). Global demand for meat is expected to grow at one of the highest rates among major agricultural commodities. Latin America will need to play a major role in meeting the growing world food demand. Of all the land worldwide potentially suitable for expansion of livestock and crop production, about 28% is in Latin America, more than in any other region except Africa (Nash, 2012). The availability of extensive grasslands and forests that can be converted to pasture gives Latin America a strong and growing comparative advantage in livestock production because of the relatively higher cost of livestock production in intensive systems.

Benefits of livestock production vs. costs of environmental impact

The potential for economic growth and enhancement of food security among Latin America's rural poor from continued expansion of livestock production must be balanced against the costs of continued environmental degradation. The factors driving deforestation in Latin America are a matter of growing debate with logging, cattle production, and soybean production as the leading suspects (see, for example, Barona et al., 2010). Whatever the causes, a recent study by the Brazilian National Space Institute (INPE) concluded that 82% of the area deforested in the Brazilian Amazon was occupied by cattle pasture in 2007 (May, Millikan y Gebara, 2011). About 0.3% to 0.4% of the forest land in Latin America is lost to pasture annually (FAO, 2009). Continued expansion of pasture in South America may prove increasingly untenable because the consequent soil erosion and compaction, weed intrusion, and declining soil fertility could reduce the productivity of pasture grass and the viability of raising livestock (Carr, Bilborrow, and Barbieri, 2003). Expansion of pasture for livestock within integrated crop-livestock systems (ICLS) in Latin America, however, offers potential economic benefits, including: (1) economies of scale that allows costs to be spread across multiple outputs, (2) risk-reduction from diversification, and (3) lower crop yield variability and overall higher yields (Matha, Alves, and Contini, 2011). Relative price changes will likely drive producer adoption of specialized or more diversified livestock-crop production systems.

Until land becomes a limiting factor in these areas, however, large-scale intensification and diversification, however desirable for the environment, are not likely to happen without the incentives or disincentives resulting from effective government or international agency intervention. One approach that shows promise is ecosystem service payments (ESP) to producers for carbon capture and biodiversity conservation by public agencies and private groups seeking to secure critical natural resources

or offset environmental impacts (Milder, Scherr and Bracer, 2010). While encouraging sustainable production behaviour, such payments may also have potential to alleviate rural poverty in areas of Latin America where continued deforestation is occurring.

Another possibility is programmes to certify animal products from livestock produced on farms and ranches that comply with environmental regulations and follow sustainable production techniques as environmentally-friendly to meet growing consumer concerns about the envrionment, health, animal welfare, and ethical issues (Ibrahim, Porro, and Mauricio, 2010). The higher prices that certified products might command in the market could foster sustainable production behavior.

Potential for improved grasses and production intensification

A recent study by CIAT concludes that the potential of high quality forages for sequestering atmospheric C02 is second only to native forests and maybe even higher in areas with high rainfall (Peters, 2012). Thus, with 80% of all agricultural land used for fodder production in Latin America, the study suggests that improved grasses could successfully help mitigate climate change while helping restore degraded pastures like those in the Brazilian Cerrado (Palmer, 2012).

A growing body of literature suggests that Brazil and other Latin American countries have the potential to increase cattle production significantly on existing pasture without clearing more forest (see, for example, Tollefson 2010). Nevertheless, cattle producers in Latin America are not adopting technological changes, such as the intensification of cattle production, on a scale that is likely to reduce pressure on forests in Latin America. One problem is that

in most years since early 2006, livestock feed prices have been rising at a more rapid pace than the price of meat so that feeding cattle has become increasing less profitable relative to pasture feeding (figure 1). The incentive to raise cattle on pasture rather than in confined systems has become particularly strong since late 2010. The relatively high cost of capital, particularly of feeder cattle for fattening, and increased financial risk are also considered to be major constraints to the widespread adoption of more intensive and mixed production systems (Pereira et al., 2012).

Kaimowitz and Angelson (2008) argue persuasively that the solution to the deforestation problem in Latin America does not lie in livestock intensification and other technologies that increase productivity. They find that as long as new land is abundant in Latin America, new technologies that make livestock production more profitable will simply attract additional investment and lead to further degradation of the environment. In the absence of effective government land-use policies that reduce the availability of tropical forests for the expansion of livestock production, the adoption of capital and labour-intensive techniques rather than land-abundant extensive systems in Latin American cattle production will not become economically viable until land becomes scarce and most of the forest is gone. Kaimowitz and Angelson conclude that the growth in world demand for beef and the export response of Latin American countries will likely intensify the risk that any new livestock and pasture technologies adopted will simply become part of a set of interacting forces leading to continuously high levels of deforestation in the Amazon.

Production intensification likely more cost effective in Central America

In Central America, livestock expansion will be increasingly limited by land availability, especially given the rate of population growth among the rural poor and the relative land-efficiency of grain production to meet growing food needs in that region (Carr, Bilborrow, and Barbieri, 2003). Intensification of livestock production will likely become more cost effective in the region leading to lower rates of deforestation and environmental impact of livestock production. At the same time, economic growth in Central America will likely lag that of the larger South American economies so that Central American meat demand growth will also likely lag behind that of South America.

Meat production will grow but at a slower rate

LAC meat production will continue growing rapidly over the next decade but at a slower rate than in the previous decade (table 5). With substantially lower growth in meat production forecast for the U.S., other developed countries, and many developing countries, LAC countries will likely continue to increase their shares of world livestock inventories and meat supplies, add to domestic meat consumption, and expand their shares of world meat exports. Key factors in the expected per-

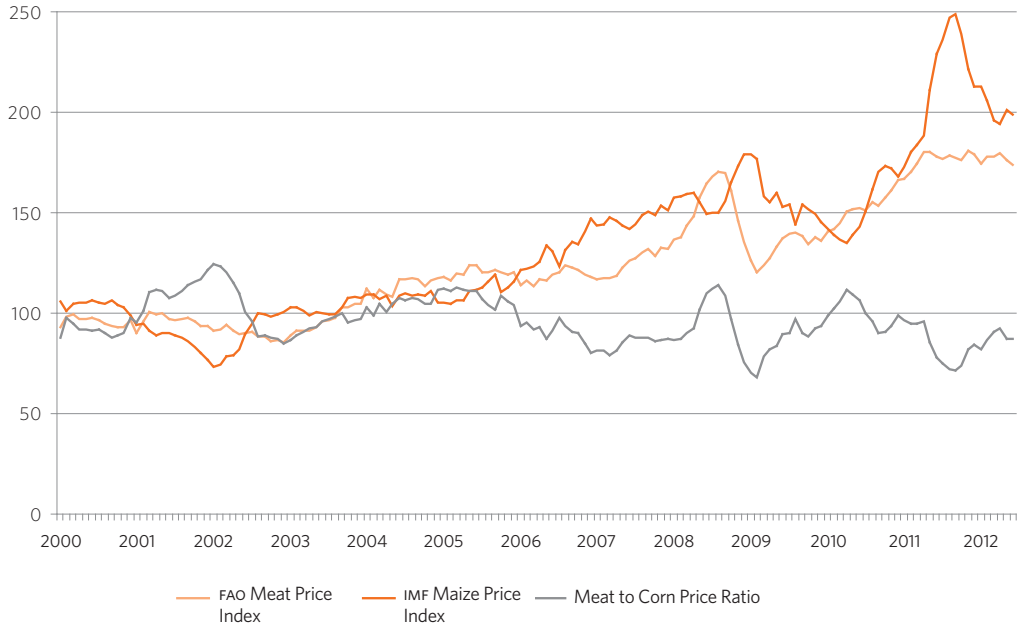
formance of the LAC meat industry include the growing comparative advantage of South American countries in extensive cattle production, expected relative growth in per capita incomes facilitating a growing shift in consumer diets to include more animal protein, policies designed to encourage production, the declining price of livestock relative to the cost of feed, and the growing rate of globalization. The less rapid pace expected for meat production will likely accompany a less rapid growth in per capita meat consumption as well across Latin America.

Southern Cone countries will continue advancing the region's livestock industry

Brazil accounts for over half all LAC beef production and is expected to see production increase by about 11% over the next decade compared to 38% over the last decade. The production increase is expected to allow a 6% gain in per capita consumption and achieve record exports as the country explores new export markets such as Indonesia and China (table 5). Brazil will also likely experience continued recovery in the EU beef market as more Brazilian cattle farms are enrolled in its traceability program. Several factors are combining to enhance productivity increases in Brazilian cattle production, including a subsidized credit program designed to promote investment in genetics, pasture, machinery, and cold storage capacity as well as improved genetics through cross breeding programmes in the Center-West region and other government programmes aimed at subsidizing investments in new technology and more efficient production processes. Lack of adequate infrastructure to support continued expansion of production in remote areas will continue to limit growth.

Argentina cattle inventories and beef production are expected to recover rapidly from the worst drought in 50 years that hit most of the cattle producing areas in that country. The consequence is an expected 12% in-

Figure 18. World meat and corn price indices , 2000-2012



Note: The meat-to-corn price ratio index was calculated as the meat price index divided by the corn price index multiplied by 100.

Source: FAO (2012d) and IMF (2012).

crease in per capita consumption and a 65% increase in beef exports over the next decade despite government efforts to control beef prices through export restrictions (AMI, 2010). Even so, the domestic market is expected to continue to absorb nearly 90% of Argentina's beef production over the next decade (OECD-FAO, 2011). Uruguay surpassed Argentina as the largest Latin American beef exporter in 2010 and is expected to continue its beef export push over the next decade. With Uruguay's beef production expected to increase by over 20% while the export share of production remains at about two-thirds, per capita beef consumption in Uruguay is expected to increase by about 14%.

Brazil also accounts for almost half of all pork production in LAC and is expected to register further growth of about 19% by 2020 as domestic and export demand strengthen (OECD-FAO, 2011). Brazil is expected to continue exporting about 16% of its pork production by focusing on new markets in China and other Asian countries. The U.S. may become a strong market for Brazilian pork exports following the 2010 decision by the U.S. Department of Agriculture's Animal and Plant Health Inspection Service (APHIS) to add the Brazilian State of Santa Catarina to the list of regions recognized as free of foot-and-mouth disease (FMD), rinderpest, swine vesicular disease (SVD), classical swine fever (CSF) and African swine fever (ASF) (U.S. Government 2010). Strong investments in production capacity and technologies to enhance productivity and a growing export orientation that doubled pork production in Chile over the last decade are expected to support continued growth in its pork production, consumption, and exports over the coming decade. The opening of the Chinese market to imports of Chilean pork in 2011 will likely continue to support growth in Chilean pork exports (Cubillos, 2012).

Chile's per capita consumption of chicken grew by nearly 30% over the last decade on the strength of a nearly 50% increase in production. Chicken is now clearly the most popular meat in the country, accounting for 45% of total meat consumption. Chile's per capita chicken consumption at 30.7 kg/person in 2011 was second only to Brazil's 42.1 kg/person in Latin America and is expected to grow by about 27% over the next decade to 38.9 kg/person (table 5). Chile only accounts for about 3% of Latin American poultry meat production but already accounts for 16% of the region's exports and is expected to achieve an additional 45% increase in exports over the next decade.

Growth of Brazilian poultry industry expected to slow considerably

Brazilian poultry production doubled over the last decade but is expected to expand by only about 16% by 2020 with much slower growth in both consumption and exports of 8% and 21%, respectively, compared to 62% and 257%, respectively, over the last decade. Growth of the Brazilian chicken industry faces several other major threats in years to come, including: (1) the continued overvaluation of the Brazilian currency, (2) depressed demand from Europe amid its growing financial crisis, (3) continuing problems with major import partners like Russia that have been slow to re-list Brazilian poultry plants and South Africa which has applied antidumping tariffs on Brazilian chicken imports, and (4) the growing cost of feed (Silva, 2012).

Continued growth in LAC dairy production

Milk production in Latin America is expected to continue increasing rapidly from 78.7 million tonnes in 2011 to 93.8 million tonnes in 2020, a 20% increase. With higher expected energy and feed prices, the pasture-based milk producing system of Latin America will likely strengthen its comparative advantage over grain-fed systems (OECD-FAO, 2011). Argentina's production of liquid milk and fresh dairy products are expected to pick up steam and grow by 30% and 13%, respectively, over the next decade compared to 10% and 12%, respectively, over the last decade (table 5). Investment and improved management efficiency are expected to drive Argentina's milk production gains. A major limiting factor will be high land prices and competition for land by the soybeans sector.

Not all countries in Latin America are expected to see rapid dairy production gains over the coming decade. In Mexico, after several years of strong growth, production has leveled off. By 2015, Mexican milk production is expected to be only 3% higher than in 2011 (OECD-FAO 2011). The slower current and expected growth is the result of several risk factors, including higher feed costs, infrastructure constraints, economic recession, lower consumer purchasing power, higher taxes and higher petroleum prices (San Juan 2010). Mexico is a major market for U.S. exports of non-fat dry milk (NFDM), butter, cheese, and fluid milk. The Mexican government, dairy producers, and the dairy industry are jointly investing to increase production and to promote dairy consumption. In Uruguay, widespread adoption of measures to

increase milk productivity, including feed supplements, improved pastures, investments in irrigation and other technologies, is expected to turn an erratic milk production pattern into slow but steady growth of almost 2% a year over the next decade and boost production of all fresh dairy products from the low levels of recent years (table 5).

Policy Recommendations

Promoting the continued development of the livestock sector is critical to supporting overall economic development and advancing food security and poverty reduction in Latin America. A large body of economic literature demonstrates that increased agricultural productivity in a developing country leads to lower food prices and generates a surplus of products and production inputs that stimulate economic growth and help alleviate poverty. Pica, Pica-Ciamarra, and Otte (2008) find that the livestock sector is particularly important in that process. They conclude that relieving the fundamental constraints to livestock sector development must be a key component of economic development programmes and policies in Latin America and other developing areas of the world. Promoting development of the livestock industry in Latin America, however, poses risks to an already fragile environment as well as potential hazards to human health. Thus, policies to encourage the sustainability of the livestock sector must accompany efforts to enhance the economic impact of the sector.

Promoting the overall development of the livestock sector in Latin America

Whether as a large-scale commercial venture or a small family concern, developing a livestock operation, like any other business, requires risky capital investments. Key investments are also required all along the supply chain from transportation infrastructure to marketing, distribution, warehousing, port, and other services to facilitate the transmission of consumer demand and market price signals upstream to investors. Much of Latin America is in critical need of a more focused supply chain approach to development of its livestock sector to identify and eliminate bottlenecks to growth and eliminate risks that undermine development efforts. Macroeconomic policies to stabilize markets, reduce distortions in prices and exchange rates, and boost per capita incomes must be key components of that process. Open markets and free trade agreements can allow Latin American countries to take advantage of their comparative advantage in livestock production and gain access to markets in Europe, Russia, China, the United States, Asia, and elsewhere where demand for meat is strong and growing. At the same time, market information services are critically needed to support decision-making at all levels of the supply chain. Lack of access to critical market information is a particular problem for small landholders in their efforts to access commercial markets and negotiate with buyers.

Research and innovation to boost productivity and reduce costs of production is a necessary component of efforts to promote the growth and maintain the global competitiveness of the Latin American livestock sector. Unfortunately, the rate of public funding for agricultural research and development has been on the decline in Latin America for decades from an annual growth rate of 8% in the late 1970s to less than 1% in the 1990s (Beintema and Stads, 2010). Public research funding to benefit livestock has been particularly neglected in Latin America over the years (Jarvis 1986 and Upton, 2004). There is some evidence of increased public spending on agricultural R&D in Latin America in recent years but crop production is the primary beneficiary. About 42% of public funding for agricultural research is now reportedly spent in Brazil and much of the remainder in Argentina and Mexico (Beintema and Stads, 2010). In many other Latin American countries, public funding of agricultural research has continued to decline.

Private firms account for a large share of the investments in improved animal genetics used by many LAC producers (Stads and Beintema, 2009). Some LAC countries provide tax incentives to private research and development (R&D) companies while others require involvement of the private sector in publicly funded research initiatives. Even so, a recent study by Fuglie et al. (2011) indicates that private sector investment in food industry R&D amounted to only 0.28% of Latin America's aggregate GDP compared to 1.64% globally and that animal agriculture accounted for only 16.1% of that research.

Clearly, Latin American countries must consider the opportunity costs to their livestock industries and their entire economies from continuing to neglect the growing research needs of their livestock industries. Some critical areas of urgently needed research to promote livestock production in Latin America include:

- animal health and disease control including preven-

Table 8. Projected percentage growth in meat and dairy product production, per capita consumption, and exports in LAC, (Selected LAC countries, the United States and World, 2011-2020)

	Uruguay	Argentina	Brazil	Chile	México	Otros LAC	LAC	U.S.	World
	----------	----------	----------	----------	----------	% Change	----------	----------	----------
Beef Production	20,1	25,9	11,3	19,2	18,2	22,5	16,5	11,3	13,6
Consumption/capita	13,9	12,2	-0,6	3,9	10,8	9,2	4,2	1,7	3,4
Exports	21,3	65,0	34,4	-1,1	2,7	12,8	30,0	31,6	16,6
Pork Production	10,0	30,1	18,7	25,7	11,1	26,1	20,1	9,6	16,3
Consumption/capita	13,4	13,3	12,8	16,3	4,5	13,0	10,1	-1,8	5,7
Exports	-3,1	207,2	13,5	25,6	25,6	4,0	18,4	27,1	13,4
Sheepmeat Production	-10,3	-16,4	4,6	-0,3	31,5	37,7	17,0	1,0	19,4
Consumption/capita	76,3	-25,7	-0,2	1,5	3,5	15,1	5,2	-2,9	8,7
Exportaciones	-67,6	4,9	-100,0	-32,1	-25,5	24,7	-33,4	0,8	8,6
Poultry Production	20,6	39,7	16,4	43,1	30,2	39,8	25,6	17,3	22,3
Consumption/capita	30,8	22,8	8,3	26,8	20,1	24,4	15,5	8,6	11,3
Exports	-70,8	66,8	20,7	45,5	11,1	11,8	24,8	16,4	18,1
Dairy Products[a] Production	11,1	12,8	14,7	11,5	24,4	25,4	20,9	1,0	23,0
Consumo/cápita	7,6	4,2	8,1	3,5	16,1	11,9	11,4	-6,4	11,9

[a] Fresh dairy products as defined by OECD-FAO (2011).
Source: Calculated from data in OECD-FAO (2011).

tive actions to minimize risks and impacts of diseases;

- efficient animal husbandry and management practices;
- animal genetics and breed improvement;
- development of better pastures, forages, and other feed sources such as crop by-products to enhance animal nutrition and reduce costs; and
- a broad range of economic research to identify barriers to the efficient functioning of markets all along the supply chain.

Promoting the livestock sector's contribution to food security and poverty alleviation in Latin America

Efforts to increase livestock production have little impact on the rural poor in Latin America who depend on livestock as a mainstay of their livelihood because they are necessarily focused on survival rather than profitability. An estimated 28% of the poor in Latin America depend on livestock as an important contribution to their livelihood (Thorton et al., 2002). Clearly, poor livestock producers are in need of most of what is required to promote the overall development of the livestock sector in Latin America. However, the potential benefits of a growing livestock sector are beyond the reach of

small livestock producers for many reasons as has been widely documented and discussed (see, for example, Pica-Cimarra, 2005). Some of the most important barriers to enhancing the contribution of livestock to food security and reducing poverty in Latin America relate to the lack of access to technology, credit, resources, markets, information, and training. Little progress in using livestock as a vehicle to improve the incomes and level of living of the rural poor is likely to be achieved until effective policies and programmes are put in place to deal with these more pervasive and intractable problems facing the rural poor.

For example, in Central America, where decades of rapid population growth and demands for increasing food supplies have encouraged widespread and unchecked deforestation and degradation of productive soils, the adoption of silvopastoral systems has been promoted as a means of improving the profitability of small livestock production while augmenting nutrient cycling, enhancing soil processes, supplying forage for livestock, and enhancing biodiversity. However, despite extensive promotion of such systems as a means of buffering deforestation and improving pasture productivity, silvopastoral systems and technologies are not being adopted on a wide scale in Central America (Dagang and Nair, 2003). Dagang and Nair (2003) suggest that the problem is likely poorly understood barriers to farmer adoption, including the perceived risks of adoption and the potential impact on food security. Other suggested barriers to adoption by small livestock producers include a lack of knowledge about unfamiliar plants and their nutrient and water requirements and the need for a substantial initial investment (FAO, 2006).

Promoting and strengthening the development of associations of small and medium-sized producers could be an effective means of integrating small and medium-sized producers into commercial markets and supply chains. Working together through such associations and other cooperative arrangements, producers could effectively consolidate livestock numbers available for sale, manage market information for decision making, increase profit margins, reduce the cost of purchased inputs, exploit niche markets, adapt technology and livestock management techniques for local conditions, and otherwise develop their productive capacity and market power (Dinjkman and Steinfeld, 2010; Ibrahim, Porro and Mauricio, 2010).

Various measures are needed for small producers in Latin America to more fully benefit from opportunities available from the continuing growth of livestock markets in the region, many of which could be facilitated through cooperative producer arrangements, including:

- improvements in the infrastructure and the development of reliable transport and marketing systems between rural areas and commercial markets;
- better access to communication and information systems to support decision-making;
- enhanced access to credit, new technologies, and new production inputs and other resources;
- expanded agricultural extension services to provide critically needed training and technical assistance in livestock breeding, production, marketing, management, and new technology adoption; and
- better access to improved veterinary services to eradicate diseases that can create economic hardship.

Promoting sustainability and mitigating the environmental impact of livestock production

A frequently debated policy question is whether the benefits of a growing Latin American livestock industry in terms of its contribution to economic development and prosperity in the region outweigh its environmental costs. Without a greater emphasis on sustainability and additional and more effective pro-environment measures, continued growth and expansion of livestock production in Latin America no doubt will enlarge its already substantial environmental footprint across the region. Public and private actions to reduce the environmental costs of livestock expansion will not only help protect the region's ecosystems, biodiversity, and natural resources, they will also enhance the returns to public and private investments in the future growth of the industry.

One set of policies cannot address the environmental challenges of livestock production in all areas of Latin America. In areas of extensive deforestation, one study found that conversion of forestlands to pasture is driven predominantly by price incentives (FAO, 2006). In these areas, particular attention to designing appropriate price mechanisms is needed to encourage environmentally

appropriate behaviour. The same study, however, found that in areas with medium deforestation, poverty drives the continued conversion of forests for livestock production. Smallholders often expand into marginal forest lands to make up for the declining fertility and productivity of their existing lands. In these areas, ecosystem services payments and policies designed specifically to alleviate poverty may play key roles in stemming the impact of livestock production on the environment.

Taking into account regional differences in the livestock-environment interface, other needed measures in Latin America include the following[12]:

- identify and transform policies that encourage behaviours within the livestock industry that lead to environmental degradation, such as subsidies that promote overgrazing and the practice of giving land titles to those who clear forests (see FAO, 2006 for a more lengthy list of such policies);
- design and implement policies that incentivize appropriate resource stewardship such as ecosystem service payments (ESP) that have been shown to be effective in some areas of Latin America;
- explore opportunities to encourage the livestock industry to internalize its environmental impact costs such as taxes or grazing fees on public lands;
- develop an integrated strategy to prioritize the use of land in areas at greatest environmental risk through land use planning, zoning, and restrictions combined with measures to encourage a shift of livestock production to suitable lands and to enhance the profitability of the intensification of production;
- combine the development of new technologies and sustainable management techniques like silvopastoral systems to enhance livestock productivity and reduce the environmental impact of livestock production with research to identify barriers to their adoption and design of policies to remove them;
- design innovative financing mechanisms to promote large-scale adoption of integrated crop-livestock system technology;
- establish "environmentally-friendly" meat certification programmes to enhance the profitability of sustainable livestock production systems; and
- enhance enforcement of already existing laws affecting the livestock-environment interface such as Brazil's Forestry Code.

Conclusions

The remarkable growth of the LAC livestock and products industry over the last decade is expected to continue in the coming decade albeit at a slower pace. Livestock will continue to contribute importantly to food security, poverty alleviation, and overall economic growth in the region. Brazil will continue to dominate the industry and productivity advances will become increasingly important in the industry's growth. Disease issues will continue to plague the growth and development of the industry.

The conflict between the development of the industry and its environmental impact will require a more aggressive but balanced approach, including investments in a broad range of research and infrastructure, disease abatement, education and training and other measures to enhance productivity and profitability along with policies, education, and various incentives to transition the industry to greater sustainability and lower environmental degradation. Any approach adopted will need to be adapted to the wide differences in the economic and environmental diversity across countries in the region.

12 A more detailed and specific set of suggestions can be found in FAO (2006) and Steinfeld, Gerber, and Opio (2010).

Fishing and Aquaculture

The growing importance of aquaculture in LAC

Although aquaculture in Latin America and the Caribbean still faces obstacles including a low level of state support, it is becoming an important alternative to lend greater stability to regional fisheries production. In many countries of the region, however, the fisheries sector is still heavily dependent on traditional fishing, which is showing signs of collapse or decline while undermining the sector's potential to provide job stability, food, and export revenues.

Facts

* Although aquaculture accounted for only 14.1% of the total commercial catch in the region in 2010, farmed fish represented 40.3% of the total landings worldwide. It is projected that in 2012 world aquaculture will account for 50% of the landings destined for human consumption.
* In 2010, wild fish landings in the region experienced a severe drop, ending a decade of significant reductions in captures of the main species as well as in those targeted by artisanal fishermen.
* Despite the growing influence of aquaculture in the region, small-scale fishing is still an irreplaceable source of employment in LAC. Overall, the sector generates between 1.3 and 1.4 million jobs, the vast majority of which are in coastal artisanal fisheries.
* In 2008-2010, South America maintained its leadership as the leading contributor to LAC's traditional fish landings (85.1%) and in its total aquaculture production (83.9%).
* The high level of dependence of developed countries on fish imports, combined with the moderate growth of domestic markets in the region, ensures strong future demand for fisheries production, and especially aquaculture, in LAC.

Trends

Fish landings from capture fisheries have decreased significantly in LAC while aquaculture production has grown moderately

Regional aquaculture continued growing at a moderate pace in 2010 (2.2% compared to 2009), reaching a record 1.92 million tonnes, valued at US$7.85 billion (FAO, 2012a). Meanwhile, extractive fishing decreased by 23.4% compared to 2009, reaching 11.71 million tonnes, the lowest volume since 1983. As a result, LAC's share of the world wild catch in 2010 reached only 13.2%. Thus, between 2000 and 2010, regional extractive fishing and the region's total landings decreased by an average 5.1% and 4.1% per year, respectively, while aquaculture grew at an average 8.6% annually. The average annual variation in extractive fishing and the total catch was negative in the period 2000-2005 and deteriorated further between 2005 and 2010. The same pattern was observed in aquaculture production, where growth rates decreased from 12.5% per year in 2000-2005 to only 4.9% in the period 2005-2010.

Fisheries and aquaculture continue to lose dynamism

The reduction in fisheries landings in LAC is worrying and reflects problems in the availability of some species that are important for regional fisheries (especially an-

chovy, Chilean herring, and Chilean jack mackerel). This has occurred in a context of climate change and lack of financial resources for scientific studies. The trend also reveals structural problems in aquaculture in many countries (regulatory issues; the lack of a long-term vision and effective development strategies; lack of availability of new technologies; slow progress in research; few incentives for small producers, etc.). At the same time, although global seafood markets are expanding, worldwide wild fishing produced only 88.6 million tonnes in 2010 (between 2000 and 2010 global extractive fishing declined by 0.5% annually, as the result of a drop of 0.8% in countries excluding China, partially offset by a 0.5% annual increase in China) and aquaculture production reached 55.9 million tonnes in 2010, growing by 6.3% annually in the previous decade (5.5% in China; 7.8% in the rest of the world).

The catch of pelagic species has fallen at a faster rate than other species

Extractive fishing in LAC is concentrated in four pelagic species (Anchovy, Chilean herring, Chilean jack mackerel and South American pilchard), which together accounted for more than 50% of the total catch in 2001-2010. In this period, the catch of these species decreased by an average 414,000 tonnes per year, which meant that their catch in 2010 was only 57% of the volume landed in 2001. Meanwhile, the catch of other species, an important part of which are produced by artisanal fishermen, showed an average decline of 18,000 tonnes annually in the same period. Considering the six most important species, the catch in LAC decreased by 367,000 tonnes per year and the catch of other species fell by 66,000 tonnes annually, reflecting a strong pressure on fisheries resources which sustain the livelihoods of many artisanal fishermen in the region. These facts should be highly considered by public authorities responsible for the sustainability of artisanal fisheries, which remain an important and irreplaceable source of employment and food production in much of the region.

In 2010, extractive fishing in LAC was concentrated in South America (82%) and Central America (16%), with only 2% of the catch coming from the Caribbean.

Aquaculture has reached record levels of production

Aquaculture production increased 129% in the last decade, from 839,000 tonnes in 2000 to 1.92 million tonnes in 2010. The 2010 figures included a record 602,000 tonnes of freshwater fish (an average annual increase of 9.1% in the period), 503,000 tonnes of crustaceans (12.5% annual growth), and 314,000 tonnes of molluscs (16.3% annual growth). Despite a decrease in production of diadromous fish (salmon and other species) in 2010 compared to 2009, production of these species grew moderately over the decade (an average 3.3% annually). Meanwhile, production volumes of marine fish were of little significance (3,100 tonnes in 2010; an average 1.7% annual increase in the period) due to the lack of new technologies and difficulties in obtaining permits for fish farms.

Marine aquaculture accounted for 56.6% of the sector's total regional production in 2010, with the remainder comprised of fish farmed in freshwater. The 34 countries and territories in the region that had aquaculture production in 2010 (46 countries landed wild species) cultivated 86 species, while wild fishing is based on the exploitation of 464 species. Central America and South America each cultivate 62 species of fish while the Caribbean cultivates 18 species.

The greater dynamism of regional aquaculture, as compared to extractive fishing meant that in 2010 this activity accounted for 14.1% of total landings compared to 4.1% in 2000 and 1.2% in 1990. Almost 86% of aquaculture production in LAC (2010) comes from South America, 12% from Central America and 2% from the Caribbean.

Wild fisheries and aquaculture continue to show high degrees of concentration in the region

Figures from 2010 reaffirm the concentration of fishing in only a few countries and species in the region. Three nations (Peru, Chile and Mexico) contributed 72% of wild landings. Adding Argentina and Brazil, the contribution rises to 86%. Meanwhile, the 10 most important species represent 70% in capture fisheries.

In the case of aquaculture, Chile, Brazil, Ecuador and Mexico accounted for 81% of total production in 2010, and the five most important species contributed 67% to totals farmed. To date, aquaculture in LAC relies mainly on non-native species due to market factors and the availability of technologies, among other reasons.

International fish markets continue to be very dynamic

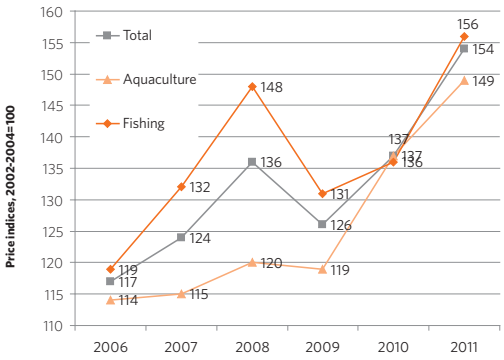
World fish trade has continued its upward trend, with total exports of about 32.6 million tonnes worth US$97.12 billion in 2009. Preliminary estimates for 2010 and 2011 show strong increases, with exports expected to have reached some US$126.1 billion in 2011, and with forecasts of around US$138 billion for 2012. In 2009, LAC accounted for about 12% of world export values (US$11.47 billion) and 17% in volume terms (about 5.5 million tonnes). The region is a major net exporter of fish products, with a surplus of some US$8.51 billion in 2009, a figure representing an important contribution to the balance of payment in many countries. This surplus increased by an average of US$257 million annually (in 2010 constant currency) between 1984 and 2009. However, only Central and South America show positive trade balances. Since 2001, the Caribbean has become a net importer of fishery products, importing US$237 million (2010 constant currency) in 2009. LAC as a whole imported about US$3.15 billion worth of fish products in 2009, with imports rising progressively since 1984 at a rate of US$85 million per year.

In 2009, LAC exported mainly fresh and frozen fish and shellfish (64.3% of the total value), as well as fishmeal and fish oil (22.7%). By volume, however, exports of fish and shellfish represented only 38.8% of the total, while fishmeal and fish oil accounted for 51.4%. Meanwhile, imports to LAC in 2009 were mainly comprised of fresh and frozen fish (46.9% of the total value), canned fish (24.9%), dry, salted and smoked fish (12.5%), and shellfish in various preparations (9.8%).

The average value of the region's fisheries exports has increased moderately in the past 20 years, reaching US$2.2 per kilo in 2009. The opposite occurred at a global level, with average exports decreasing slightly to US$3.2 per kilo (2010 constant currency). However, since 2001 a moderate but steady rise in average prices for world and regional exports has been observed. LAC export prices are lower than the world average, due to the high proportion of fishmeal and fish oil. In contrast, the "ex-farm" value of regional aquaculture products (US$4.1 per kilo) widely exceeded the world average (US$2.0 per kilo) in 2010. In this case, the region is surpassed only by Oceania, with an average value of US$5.5 per kilo during this period.

In general, fish markets continue to be dynamic and have absorbed increasing global fish production at prices

Figure 19
Fisheries and aquaculture products price index, 2006-2011



Source: FAO, Food Outlook, May 2011

which, as in the case of other foods, increased substantially in 2010 and 2011, especially for products of extractive fishing (Figure 19). There is also a growing demand for fishmeal and fish oil, produced mainly from extractive fisheries, products that fail to meet global needs. Thus, these raw materials, which are a basic component in animal diets, currently face competition from substitutes, some of which, such as derivatives of soy and various vegetable oils, have been the focus of intense research and development efforts in recent years.

Governments and small-scale producers face both old and new challenges

Climate change affects the availability and distribution of fish stocks in ways still not well understood. At the same time, it also modifies environmental conditions for aquaculture. Dealing with these changes, as well as the increasing acidification of the oceans which is endangering biodiversity, and implementing new systemic approaches to reduce losses in traditional fisheries, requires greater investment by governments and producers alike. Investment is also needed to implement, enforce and monitor new biosafety and management standards aimed at ensuring the sustainability of fisheries and aquaculture. Clearly, these problems are beyond the ability of small and medium-size producers to solve on their own. The same applies in the case of larger-scale operators, facts that compel governments to devise public policies and participatory strategies, while ensuring biological, environmental, economic and labour sustainability.

New types of productive activities should receive greater attention

Sport fishing, the cultivation of ornamental fish and restocking of coastal waters are highly promising activities in many countries and deserve greater attention, both from the public and private sector, in order to create employment opportunities and/or promote sustainability. In this context, there are important programmes in the continental waters of Argentina, Cuba, Brazil, and Mexico. The case of sport fishing is especially interesting because of its association with tourism, while the production of ornamental fish on a small scale can become a potential source of income for small rural communities or urban workers who can grow them in their own homes with limited investment and existing technology.

Perspectives

Countries of the region must improve sectoral governance to make the best use of their fisheries and aquaculture potential

Preliminary figures from the FAO show that the total world catch of 148.5 million tonnes in 2010 could rise to approximately 154 million tonnes in 2011 (90.4 million tonnes of wild fish, and significant 63.6 million tonnes of farmed fish). Thus, the average global availability of fish per person in 2011 might have been some 18.8 kg/year (51% contributed by extractive fishing and 49% by aquaculture). If the total catch reaches the projected 157.3 million tonnes in 2012 (2.1% increase with respect to 2011, FAO, 2012b), the availability of fish per person should reach 19.2 kg/year, with almost 50% provided by aquaculture. This level of contribution by aquaculture should continue to grow in the coming decades as fish farming becomes established as the dominant source in total landings and of fish used for human consumption.

Global demand for fish products will continue to rise. Most developed countries will continue demanding more fish products than their fleets or fish farms can provide, and consequently they will depend more heavily on imports. LAC can contribute significantly to the future global supply based mainly on aquaculture production, since no significant regional developments are expected in extractive fishing. Adding the growing demand in domestic markets, there is a promising picture that justifies significant increases in LAC's aquaculture production, which should translate into more jobs, food and income.

Once more, governments must decide if they will face these challenges and opportunities, generating the conditions to support small and medium-scale aquaculture and fisheries, as well as large companies. As noted above (ECLAC/FAO/IICA, 2011), governance in the sector must improve substantially, both to create new production and employment opportunities, and to support producers with limited resources. Thus, for example, new approaches to training small producers are required, because progress to date in this area, with a strong paternalistic bias, has not yielded the expected results. Without clear government leadership and intervention, fishing and, in particular, regional aquaculture will not be able to approach its production potential, ensure job stability, or strengthen food security.

Small producers lack incentives to adapt to new circumstances created by globalization and consumer demand

Technological progress has historically been the driving force behind fisheries and aquaculture development. Currently, however, and for the foreseeable future, 'the market' and consumer demands are and will remain the most relevant factors affecting production changes and forcing fishermen and fish farmers to meet new requirements or risk losing sales opportunities. In addition, the globalization of markets will force small and medium-sized producers to improve productivity and efficiency, even though they specialize in 'fresh fish' supplies for domestic consumers, as fresh products increasingly compete with alternatives such as frozen or canned fish, whether locally produced or imported. Therefore, it is essential to incorporate more and better technologies at all stages of the fisheries chain and promote improvements in management and export standards to meet new demands.

However, these goals are difficult to meet in practice due to existing problems that hamper the incorporation of new techniques and equipment. For example, small and medium-size producers usually receive only a small fraction of the price paid by the final consumer (perhaps 20-35%), a fact that discourages producers from modernizing their production processes. Moreover, quality improvements in products, resulting from the incorporation of new technologies, are not usually rewarded with higher prices. Meanwhile, traders and intermediaries capture the most significant part of sales income, mostly due to limited transparency in local markets. They take advantage of market asymmetries, information gaps and the physical isolation of many fishing villages and fish

farms to impose their terms and conditions, generating a vicious cycle that condemns small-scale production to 'technological stagnation' and the loss of competitiveness. This situation, combined with the increasing scarcity of fishing stocks and the internationalization of markets, severely jeopardizes job stability among artisanal fishermen and fish farmers with limited resources.

These realities and increasing demands for food safety certifications, product uniformity, portioning, packaging, labelling, traceability and other attributes, challenge the capabilities of small producers, forcing them to reconsider their organizational and productive strategies. As a result, there is an urgent and broad need for government help to overcome these obstacles.

New production alternatives are advancing in the region, but state support is needed to increase interaction with small producers

The breeding of fingerlings and the production of mollusc seeds require facilities, investments and techniques that are not usually within the reach of the small producer. As a result, small-scale production requires reliable and competitive sources of these products from third parties. Fingerlings and seeds are also needed in restocking programmes to supplement the availability of natural resources, sustain levels of extractive fishing and give greater sustainability to fishing communities that have seen their resources decline. Although there might exist private suppliers of juveniles and seed, their capacity can limit the development of new initiatives, which is why governments should adopt proactive policies to provide these inputs. The restocking of coastal waters, a technique widely used in Asia and on the rise in some countries (flounder in Chile, sea bass in Brazil, etc.), should be implemented throughout LAC because of its high potential impact. Currently, it is also possible to catch certain species a few months before achieving their 'market' weights/sizes and raise them in captivity until they are ready to be sold, thus combining fishing and aquaculture in an effort to obtain better quality products, higher prices and/or a more stable supply. In the case of sea urchins, for example, by taking specimens from the wild and raising them in a controlled environment for only a few months, their edible weight can be almost doubled; their flavour and colouring improved, and their freshness at point of sale ensured.

In the future, restocking programmes and farmed production of wild caught species will be favoured by the availability of lower-price fish feeds which will replace fishmeal and fish oil either partially or totally with substitutes of plant origin and/or synthetic products.

In addition, technological developments in the medium-term should improve the efficiency of 'aquaponics' closed systems that integrate fish farming and hydroponics by using metabolic waste from the fish to feed the plants, improving in parallel water quality, which is maintained in suitable conditions for animal life. Also, the increasing demand for biofuels, pigments and medicinal products has created new opportunities for the use of seaweed and microalgae grown and/or extracted from the natural environment. In some cases, seaweed is already used for bioethanol production, while various types of microalgae are grown in open pools or closed systems to produce astaxanthin, other pigments and antioxidants, ethanol or biodiesel. All these techniques are still developing and, along with integrated multi-trophic systems where the waste from one species is recycled to become fertilizer or food for another, should create opportunities for employment and investment in small communities. Finally, as has already been mentioned, there are interesting possibilities of producing ornamental fish for export and domestic markets in LAC countries, which could give rise to new small-scale employment opportunities.

Is there a lack of conditions for aquaculture in the region or are new strategies needed?

There are countries in the region that have good prospects for the development of aquaculture, but either ignore this opportunity or have not made it a national priority. This is the case of Argentina and Brazil, both of which have important fishing and marine activities but lack a well-developed marine aquaculture industry. The same is true in most of the Caribbean where, despite a reduction in extractive fishing activities and the potential of aquaculture to contribute to economic and social development and food security, fish farming has not yet acquired greater importance. In Argentina it is desirable that local governments allocate higher priority to aquaculture in general, while in Brazil, further aquaculture development could help to reverse a massive deficit of seafood in the domestic market that currently exceeds US$1 billion annually. In the Caribbean, countries should increase their cooperation and specialization in products or services to generate economies of scale for large, efficient companies that meet at least part or all of the regional demand. There are many common problems and challenges in the region, but there are also many

opportunities, which is why this approach is realistic. For example, companies could produce products or services under commonly accepted standards in one or more Caribbean territories/countries to meet the total demand of the region (or part thereof) for mollusc seed; juvenile fish; disease-free specimens for reproduction; fish feed, vaccines, etc.; technical/professional schools; undergraduate degrees; specialized laboratories; institutions for research and development; export consortiums, etc. Under this scheme, each territory could import and/or export the inputs and/or services that are most in demand or that it can produce most efficiently, thereby benefitting all nations through higher levels of competitiveness, an increase in employment and food production, and a reduction of imports from third parties. This strategy should receive further attention, especially considering that 13 of 18 Caribbean nations were net importers of seafood products in 2009 (producing a net trade deficit of US$222 million and 101,000 tonnes by volume). In Central America all nations are net exporters, while in South America five of 13 countries (including Brazil and Venezuela) are net importers, producing a net trade deficit of US$877 million in 2009.

Countries should make the best use of their wild species and diversify aquaculture production

The limitations of extractive fishing of traditional species in the region suggest that their future exploitation should be based on three main ideas: (1) Better levels of management of resources to ensure their sustainability, (2) Reduced discards of by-catches, and (3) Improved utilization and less post-harvest losses. In the first case, the implementation of good practices and better management by the state is essential. In the other two areas, the initiative is mainly in the hands of producers that require guidance and training. In aquaculture, the current trend in LAC is towards more diversified production, incorporating more native species for cultivation. Although it is expected that 'exotic' (non-native) species will continue to dominate total harvests for at least another decade or more, the cultivation of native species should increase, especially from the next decade onwards. For this to happen, interested parties (states, universities, centers of development, etc.) should coordinate their efforts, concentrating studies and tests on a limited number of species. Only in this way will they be able to answer the many unknowns that are delaying the expansion and diversification of the aquaculture sector.

Policy recommendations

Develop ad hoc norms and policies aimed at small and medium-size producers

Governments should design norms, regulations and policies aimed at small-scale aquaculture and fisheries producers with limited resources. Such producers are numerous in LAC but are clearly at a disadvantage compared to larger operators, and cannot grow easily under current conditions in almost all countries and territories. Not only is it difficult for them to initiate aquaculture or fisheries activities, dealing with bureaucracies, paperwork and requirements that can drag on for several years, but even once these activities are incorporated, it can be equally challenging to be a legal operator. An ad hoc policy would help to give sustainability, and even increase employment opportunities. Without such norms, small-scale fisherman and aquaculture producers will continue to operate in a legal void that for decades has condemned many to a life of economic, educational, legal and social marginalization with poor development prospects. Improvements in sectoral governance are a prerequisite for enhancing the development of fisheries and aquaculture in LAC, and to give sustainability to small-scale fishermen and aquaculture producers.

Improve sector governance and long-term planning

Most government actions in the sector are generally aimed at meeting the immediate needs of fishermen and aquaculture producers who face a variety of pressing daily problems, while public institutions lack clear long-term goals and objectives (10-15 years). Thus, normally, regional institutions lack clear guidelines and information about new opportunities, and progress is subject to ups and downs while the waste of precious and scarce resources becomes unavoidable. Given this situation, it is essential to generate long-term plans and strategies, in particular as regards the most vulnerable producers. On the basis of these strategies, governments should develop annual plans while simultaneously implementing evaluation mechanisms, if possible overseen by external entities, to ensure the best use of resources and the effectiveness of public programmes. This planning process should include the frequent and rigorous evaluation of results. Such methods should also be applied to training programmes, research and development initiatives, and the collection of sector information.

Promote best practices in all steps of the production chain

The need to ensure resource and environmental sustainability in the medium and long-term, while meeting new consumer demands, makes it important to apply best production and management practices at all stages of the production cycle. Governments should ensure the widespread application of such practices and, if necessary, should support and empower small producers to implement them. The FAO has already developed a number of valuable proposals in this regard, which should be given greater emphasis (FAO 1995, 1997, 2009), along with the FAO's ecosystem approach to fishing and aquaculture. Regional bodies such as the Aquaculture Network of the Americas (RAA) and the Latin America Continental Fisheries Commission (COPESCAL), among others, can help to support these important efforts.

Markets should be formalized and more transparent

For years now, small-scale fishermen and fish farmers, along with consumers, have been severely affected by market problems throughout the LAC region. As a result of the lack of information, of public markets to sell their products and marketing failures, producers fetch low prices while the consumer receives poor quality products at high prices. For this reason, it is necessary to fix commercial asymmetries that favor intermediaries and provide incentives to modernize production operations. More and better information to guide producers in their endeavours to meet demand at reasonable prices is also needed. To achieve this end, the creation of formal markets, with timely information on prices and volumes sold, should be encouraged. This would improve the negotiating capacity of the producer and will help him to gradually capture a greater proportion of the price paid by the consumer. In the longer term, the process will also help drive the introduction of technological and competitiveness improvements.

Finally, quality standards should also be established for different products sold in fish markets. Each product category ('premium', 'fresh', 'industrial quality', etc.) should have clearly established and well-known attributes, so that producers and consumers alike know what to offer and demand for various uses. This process of categorization should generate remuneration differences related to quality, which reward the best product with higher prices, thus encouraging productive modernization and the pursuit of excellence.

More formalized commercial transactions, quality standards for regulating marketing and production, and transparency should also help to control prices and increase sales. LAC governments should take responsibility in solving these important problems affecting small-scale producers, or continue to waste efforts and resources on measures to support production that have only limited impact because of these unsolved issues.

Prioritize the continuous evaluation of fishery resources

The reduction in catches and employment of artisanal fishermen is a clear motivation for governments to improve knowledge and management systems relating to fishery resources, including the strengthening of the statistical systems currently in use.

Improve training methodologies and widen their scope

The 'new' approach to fishing, the diversification of aquaculture, and the emerging productive alternatives already mentioned, in addition to the growing demands of consumers and markets, require small and medium-size producers to be better trained and organized. For this reason, and to guarantee environmental sustainability, governments should design and implement more effective policies and training programmes. In the case of small scale fisheries and aquaculture producers, aside from matters related to production, there are major organizational, managerial, commercial and financial shortcomings which must be emphasized in new training programmes. In particular, it is important to generate 'business awareness' in small-scale producers, educating them in trade and financial matters in order to promote their capacity for economic independence in the medium and long-term, once training is completed. To achieve this, different models have already been used in the agricultural sector in various countries of the region (FUNDER Honduras and in Peru, for example).

The importance of good governance and the failures detected in the region make it necessary to develop training programmes for public officials and representatives of regional organizations involved in the sector's management and development. This will help to improve the performance and sustainability of fisheries and aquacul-

ture in the region. The similarity of the problems faced by many countries allows for the creation of regional training courses of a more or less general nature that can thereafter be adapted to local needs. A group of instructors can offer the same course in various countries, or the courses can be adapted to local realities and taught by experts from individual nations. The important thing is to train officials responsible for public policies so that they have an adequate understanding of global and local realities, as well as the technical problems at all stages of value chains.

Training must be understood as an on-going process and is, therefore, a long-term issue. Moreover, to ensure the effectiveness of training programmes, it is necessary to assess their results in order to measure their contribution to the sector's development. In this regard, these evaluations should be carried out by independent, external agents and the results made available in the public domain.

Finally, the creation and/or strengthening of trade union organizations and producer associations should be encouraged, to facilitate the training of their representatives, so that they become efficient mobilizing agents to generate new policies and implement them with the support of their membership.

Training activities can be encouraged, making them prerequisites for access to loans and/or other financial benefits for producers. Government employees may also be encouraged to undergo training if this is made a requirement for job promotion.

Conclusions

In light of the decrease in extractive fishing and the systematic increase in aquaculture, states should continue to explore measures that improve governance and facilitate the realization of the sector's potential to increase employment, contribute to food security and improve the general well-being of the region.

Producers of limited resources require educational and financial assistance plans as well as norms specifically designed for their operation and survival, as otherwise they will not be able to meet the new market requirements including good production practices and sustainability. In this regard, governments are also urged to solve market and marketing problems that negatively affect the income of small producers and the final consumer. Measures to address these problems include establishing formal markets, developing quality standards recognised by all stakeholders and providing timely information on prices, quality and quantities.

Given the magnitude of the current shortcomings in the Caribbean region, combined with the small size of many countries and the fact that several of them are net seafood importers, cooperation could help to address problems that these countries are unable to solve individually. It is also necessary to raise awareness about the potential of marine aquaculture in countries such as Brazil and Argentina that have so far largely neglected the development of this important productive alternative

Forests

Forests play a key role in food security and climate change mitigation

The answers to two of humanity's greatest global challenges – hunger and climate change - are found in our forests. Forests are a source of nutritious food and permanent income that allow rural populations to purchase other types of foods. In addition, forests play an important role in climate change mitigation.

Facts

* The countries of the region have been actively involved in the development and implementation of national programmes that strengthen forest management practices associated with climate change mitigation. In some countries, reducing emissions from deforestation and forest degradation has become one of the most important priorities of national forest management.

* The final document of the United Nations Conference on Sustainable Development, titled "The Future We Want" (June 2012), highlighted the social, economic and environmental benefits of forests, and emphasized that the range of products and services provided by forests help to create opportunities that address many of the most pressing problems of sustainable development.

* During the recent meeting of the Latin American and Caribbean Forestry Commission (March 2012), the national delegations analysed the importance of forest management in regard to two main issues: climate change and food security. In this context, family and community agriculture are expected to play a key role in forestry development in the region.

* Some countries in the region have developed successful models of forest financing. For example, Chile's system of "securitization" has created a favourable environment for private investment and started the process of reversing the decline in the rate of forestation. However, in general, the forestry sector has still not attracted enough attention of the financial system and private investors for activities such as the management of natural forests or reforestation on a small and medium-scale.

Trends

Countries of the region are starting to develop and implement programmes to reduce emissions from deforestation and forest degradation (REDD)

The Fourth Assessment Report of the United Nations Intergovernmental Panel on Climate Change (IPCC) stated that the forestry sector is responsible for about 17% of the global emissions of greenhouse gases and is the second largest source of emissions after the energy sector. The main cause of emissions in the forestry sector is deforestation associated with land use changes. At the 13th session of the Conference of the Parties of the United Nations Framework Convention on Climate Change held in 2007, countries were requested to explore actions, identify options and develop efforts to avoid the causes of deforestation.

In 2008, the United Nations established the collaborative initiative on Reducing Emissions from Deforestation and Forest Degradation (UN-REDD), which included three Latin American pilot countries (Panama, Bolivia and Paraguay). Later, in 2010, Ecuador was incorporated as a beneficiary country, bringing the total direct contribution to the four countries to around US$18 million. The UN-REDD programme is a joint effort between FAO, UNDP and UNEP.

Another ten countries in the region have since joined the initiative: Argentina, Chile, Colombia, Costa Rica, Guatemala, Guyana, Honduras, Mexico, Peru, and Suriname.

The FAO is also working on REDD in Mexico, Peru and Ecuador with resources from the Finnish government.

In addition to the UN-REDD initiative, the Central American Commission on Environment and Development (CCAD), with the support of the GIZ, is implementing the REDD Regional Programme in eight Central American countries and the Dominican Republic, with total investment of around 12 million euros.

Norway has signed a cooperation agreement worth US$15 million to promote REDD in Mexico. Guyana also has an agreement with Norway with the same objective. Peru has created a REDD group comprised of members from civil society and the state and it has ratified the goal of voluntarily reducing the rate of net deforestation to zero by 2021. Uruguay has a national strategy for climate change developed with the participation of the forestry sector and Dominica has initiated activities to participate in the global mechanism REDD+. In 2010, Honduras' National Institute of Conservation and Development of Forests, Protected Areas and Wildlife created the Department of Forests and Climate Change. Suriname is participating in a REDD+ programme of capacity building in the framework of the Forest Carbon Partnership Facility (FCPF).

In Colombia, the Inter-American Development Bank is supporting the implementation of a mechanism to encourage measures and effective actions to mitigate carbon emissions by companies and public institutions, as well as to generate access to financing for conservation and carbon sequestration projects (IDB, 2011).

In summary, the countries of the region have become strongly involved in the implementation of international agreements relating to climate change mitigation through the reduction of emissions associated with land use changes and forest degradation.

Countries are continuing to promote sustainable forest management and the development of forestry activities in association with family farming

There are several examples of sustainable forest management in Latin America and the Caribbean. FAO has documented some of these cases in Brazil, Chile, Guatemala, Peru, Bolivia, Honduras, Mexico, the Dominican Republic, Nicaragua and Colombia (FAO and Junta de Castilla y León, 2011). Most of these cases correspond to forest management processes developed by rural and native or indigenous communities that receive economic benefits from the implementation of sustainable projects. Examples of forest management by private companies in Peru and Chile were also discussed. While these private sector initiatives are clearly seeking economic profitability, they show efficient forest management at an organizational and operational level. They have also helped to develop local social-environmental awareness.

There are different approaches to the management and governance of forest resources in the region, which is evident in the different policies, laws and national forest programmes. However, the region is characterized by the pursuit of greater appropriation of the benefits and uses of forest resources for local communities.

In this regard, an important topic discussed at the last meeting of the Latin American and Caribbean Forestry Commission (LACFC), held in March 2012 in Paraguay, was the importance of promoting a more effective integration of forest management, forestry and agroforestry systems in the productive activities of family agriculture. Only a few indigenous and rural communities are exclusively forest-based communities, while in the majority of cases farmers and settlers develop forestry, timber and agricultural activities simultaneously.

The trend towards greater integration of productive activities including forest management, agriculture, livestock, aquaculture and fisheries, is seen in the design of public policies and operational guidelines for forest management. This has created an important opportunity for the development of agro-silvo-pastoral systems.

Forest cover is lost or degraded, in part, due to the economic and social dynamics of the region that foster the intensive use of forestry products and changes in land use

Currently, some forests are used only for obtaining non-timber forest products (NTFPs) and providing environmental services. However, a large part of the forests in Latin America and the Caribbean continue to be used primarily as a source of wood. In other cases, wood is a by-product in processes of land use change given that forest exploitation does not compete economically with other forms of land use that are financially more attractive.

The surface area covered by forests in Latin America and the Caribbean is declining. It is estimated that the loss of forest cover in the region is 3.95 million hectares per year (0.40%). The loss of forest cover worldwide is 0.13% per year (see Table 9).

Of the 3.95 million hectares that are lost annually, 3 million ha corresponds to native forests, which represents 75% of the annual loss of native forests worldwide.

Population growth, urbanization and poverty are some of the main socio-economic dynamics that affect the region's forests.

The population of Latin America and the Caribbean grew from 286 million in 1970 to 588 million in 2010. Meanwhile, the net consumption[13] of roundwood in the same period rose from 228 million cubic metres in 1970, to 476 million cubic meters in 2010 (0.81 m3 per person per year). The region's population is projected to reach 729 million by 2050, with demand for roundwood reaching some 590 million cubic meters, implying an increase of annual net consumption of about 24% compared to 2010 (LACFC, 2012a).

This is a region with a relatively high level of urbanization. It is estimated that in 2010, about 80% of the population was already living in cities. The increase in consumption of roundwood in the region is also related to population growth. Migration to urban centres reduces the pressure on forests in rural areas, but it may increase the demand for wood for civil construction and furniture in the cities, thereby increasing demand for the extraction of wood from the forests. Since 1995 (when 70% of the total population of Latin America and the Caribbean lived in cities), a clear correlation between the growth of the urban population and the net consumption of wood boards, which are important raw materials for civil construction, has been noted in the region.

Urbanization, as a result of internal migration, can also accelerate processes of land ownership concentration in rural areas because people who migrate to the cities abandon their lands or sell them. Indirectly, this contributes to the development of extensive farming, which in turn increases pressure on woodland areas.

Table 9. Rate of annual change in forest area (2005-2010)

	Forest area (1,000 ha)		Rate of annual change	
	2005	2010	1,000 ha/year	%
Caribbean	6 .728	6.933	41	0,61
Central America	86. 233	84.301	-404	-0,47
South America	882 258	864 351	-3.581	-0,41
Total	975.309	955.585	-3.945	-0,40

Source: FRA, 2010

Note: Central America includes Mexico.

One of the main problems facing Latin America and the Caribbean is the high concentration of wealth and the persistence of poverty. Although the level of poverty and destitution has gradually been reduced in recent years, this reduction has stagnated since the 2008 global financial crisis. In 2010, it was estimated that one third of the population of the region was living in poverty and about 13% of the population was destitute.

In rural areas poverty levels are substantially higher. It is estimated that more than 50% of the rural population is poor and about 30% is destitute.

Although not all deforestation can be attributed to poverty and indigence, there is evidence that deforestation is correlated, directly or indirectly, with the level of poverty in the rural population.

This means efforts to reduce deforestation in the region face an important social and economic challenge in rural areas.

13 Sum of the volume produced and the volume imported minus the volume exported.

The integration of the region in global markets of goods and services reduces opportunities for conservation and sustainable management of forests due to the state's limited capacity for intervention

There is a tendency towards an increase in the participation of the region in the value chains of global exports. This can be explained by the increase in the price of raw materials, but also by the tendency of Latin America and the Caribbean towards specialization in the export of these materials, serving a growing global demand. In 2010, around 35.6% of the total value of exports from the region was generated by exports of primary commodities.

This trend is also seen in the forestry sector, where exports of roundwood, wood boards and even charcoal, have increased substantially in recent years, although with strong annual variations.

Also, in 2010, developing and emerging economies received half of the total foreign direct investment worldwide. In the region, net foreign direct investment (NFDI) has been increasing gradually, but with large annual variations. Between 1980 and 2010, net foreign direct investment varied from US$ 500 million to US$100 billion a year.

There is no consolidated data for the region on foreign direct investment in the forestry sector. However, the available data implies a substantial increase in NFDI in natural resource-based economic activities. From 2005 to 2009, investment in economic activities related to natural resources increased in percentage terms by more than double, representing around 37% of the total NFDI in the region.

Both the increase in exports of raw materials and greater direct investment in productive activities related to natural resources, provide an opportunity to strengthen the regional economy based on the use of its natural resources. Making this opportunity into a competitive advantage requires strengthening the capacity of the state to regulate and control land use changes and forest exploitation, promoting sustainable forest development.

Perspectives

Paying local populations for environmental services provided by forests will promote the conservation and proper management of forest resources

Payment for environmental services (PES) provided by forests is a way to increase their value and improve the profitability of forestry activities, as well as to promote sustainable management and thus avoid continued forest deterioration.

Currently, there are a significant number of PES experiences in the region, the majority of which are related to water supplies. The experiences show a great diversity of methodologies in the implementation of payment, but in the majority of cases the amount paid corresponds to a set value which has no relation to the cost of the service provided.

The FAO has documented 27 experiences of compensation for hydrological services provided by forests in countries of Central America and Caribbean (FAO-FACILITY, 2010). These initiatives are aimed mainly at small properties and show strong involvement by local communities, which has facilitated their implementation.

While Costa Rica is the country in the region with the broadest experience in PES, Colombia has also developed an institutional framework. In Mexico, which has implemented various programmes using public funds, 1,056 requests for compensation for forest protection were approved between 2007 and 2011 for an amount totalling US$15.6 million (70,851 beneficiaries) in an area covering 51,859 hectares (Lara et al. 2011).

Ecuador has a government programme called Forest Partner (Socio Bosque), which involves payment for environmental services from protected forests. Brazil, El Salvador and Peru also show institutional development or have developed policies aimed at encouraging PES. Paraguay has a specific law for the payment of environmental services.

Most of the legal mechanisms that govern PES schemes have been approved in the past four years (with the exception of Costa Rica), which shows greater social awareness about the importance of forest resources that goes beyond the products they provide (FAO/OAPN, 2009).

An important aspect that must be worked out to allow the implementation of PES mechanisms in the region is

the clear definition of property rights for environmental services.

In general terms, based on the experiences in the region, the payment for environmental services of forests has generated a positive behavioural change in those who pay and receive payment about the importance of the conservation of forest resources and the sustainability of their environmental services. However, the coverage of PES programmes is still very limited.

The forestry sector will acquire greater participation in national economies and constitute an important source of income in the household economy

The contribution of the forestry sector to the GDP in the region varies between 2% and 3%, according to a FAO survey of countries prior to the meeting of LACFC. For example, in Ecuador the forest sector contributes 2.3% of GDP. In Guatemala the contribution is about 2.6% and in Chile it is approximately 3% of GDP. Honduras informed LACFC that the contribution of the forest sector to its GDP varies between 6% and 10%, making it an exception in the region (LACFC, 2012b).

However, these percentages do not represent the real magnitude of the contribution of the forestry sector to national economies. That is because these percentages refer, in most countries, only to silvicultural activities including the extraction and sale of wood from the forest. They do not include, for example, the secondary processing of wood products or the generation of employment in activities related to the transport of raw materials and value-added products.

They also do not include the environmental services of forests, which are important for the general well being of the population and the development of productive activities.

The percentages do not reflect the use of wood products (for building and firewood) and non-timber products (for food, medicine, fibres, etc.). Nor do they consider the small-scale sale of wood and non-wood products from the forest, which constitute an important source of income for some farmers.

The countries of the region generally recognize the importance of non-timber forest products, which contribute to the incomes of farmers and local communities. Trade in these products is usually informal, so it is difficult to estimate the volume in quantitative or monetary terms or the quality of the production. Peru, for example, estimated that of the total exports of forest products (which reached US$ 400 million in 2010), 38% corresponds to non-timber forest products, such as colouring matter of animal origin, seeds, fruits, rubber, resins and palm hearts, among other products. Given the importance of these products in Peru, the government granted forest concessions in public forests for the exclusive production of NTFPs.

In Chile, it is estimated that the export of NTFPs reached nearly US$53 million in 2010. While this value represents only 1% of annual exports of the forestry sector, over the past few years NTFP exports have increased steadily. It is also estimated that they generate employment for 200,000 people in the rural sector (LACFC, 2012b).

The sustainable management of forests for timber and non-timber products, and the payment for environmental services, should increase the contribution of the forestry sector to GDP, increasing its economic importance and, also, generating higher income for farmers in rural areas.

Awareness about the importance of forests for climate change mitigation and national socio-economic development will promote their proper management and conservation

The countries of the region are taking measures to improve the conservation and management of forests due to greater appreciation for the environmental services of forests and an increase in the participation of the forest sector in national and family economies.

Many countries have initiated the implementation of national REDD programmes, designated forest areas for the conservation of biodiversity and other environmental services, and promoted sustainable forest management, including forest certification.

In the period 2005-2010, the area of forests in the region aimed at the conservation of biodiversity increased at a rate of 3.1 million hectares a year (FAO, 2010f). This represents 50% of the biodiversity conservation areas declared annually at the global level, totalling 6.3 million hectares.

Currently, there are around 133 million hectares desig-

Table 10. Area of forest by primary use in LAC (2010)

Forestry plantations	Area (million ha)
Production	110
Protection of soil and water	60
Multiple use	151
Unknown or none	357
Subtotal	678
Biodiversity conservation	133
Social services	120
Others	6
Forestry plantations	18
Total	955

Source: FRA, 2010

nated for biodiversity conservation in the region, 60 million hectares for the conservation of soil and water, and 120 million hectares for the provision of social services; that means about one third of the total area of forests in the region are, in one form or another, being protected to be used for purposes other than the exploitation of timber.

Nearly 13 million hectares of forest in the region has already been certified, of which more than 6 million hectares are located in Brazil. This includes areas with natural forest and plantations.

The recognition of the importance of forests for climate change mitigation and for socio-economic development is shown in the reduction of the rate of deforestation in Latin America and the Caribbean. The rate of annual deforestation between 1990 and 2000 was estimated at 4.89 million hectares. Between 2000 and 2005, this fell to 4.84 million hectares and by 2010 it had shrunk to 3.95 million hectares. In the Caribbean, the surface area with forest cover grew at 0.61% a year between 2005 and 2010. This trend in the reduction of the rate of deforestation is expected to hold in the coming years, thus demonstrating the importance of forests in Latin America and the Caribbean.

Policy recommendations

Generate greater awareness at the national level about the importance of forests for socio-economic development

A large segment of the population in the region does not value the importance of the conservation of forests or their proper management. For example, the urban population does not fully understand the link between the conservation of forests in rural areas and the quality of life in cities. In addition, not all farmers understand the importance of forests for agricultural production systems.

This lack of understanding about the importance of forest resources translates into conflicting public policies. For example, some policies may promote the change of land use in forested areas while others encourage the sustainable management of forests and forest conservation. Meanwhile, some policies promote agricultural and livestock development in areas that are protected or where sustainable forest management is encouraged.

In order to make the population understand and value forests, governments should focus their efforts on informing, training and educating people about the role and functions of forests and their importance in providing timber and non-timber goods, as well as in providing environmental services.

For example, an important issue is the need to reduce emissions due to deforestation and forest degradation, which is important in efforts to mitigate the effects of climate change.

A better-informed population will make better use of natural resources and promote, through authorities and institutions, the implementation of more consistent social, economic and environmental public policies.

Develop a national land management strategy that includes the forestry sector

The urgent need to increase food production in certain countries, and the increasingly limited availability of natural resources, primarily soil, must be addressed to avoid unsustainable situations and social conflicts.

The debate about these issues should occur within the framework of a process of national land management involving the forestry sector.

Specifically, it is necessary to define more precisely and through broad national agreement those forest areas that should be protected and managed for the production of timber and non-timber products, the generation of environmental services, the recovery of forest cover according to the suitability of land use, and the development of forest plantations.

This system should be supported by national guidelines, programmes, incentives, disincentives and mechanisms to ensure its proper implementation.

Promote the integration of forestry and agricultural activities at the family and community level

National promotion and incentive mechanisms should also be reflected at the level of agricultural production units in rural areas. The sustainable and integrated use of natural resources should be promoted at the level of family and community agriculture, including agriculture, livestock, aquaculture, forestry and natural forest management.

To achieve this, agricultural policies should promote the development of forestry activities, and policies should aim to promote the integrated and diversified management of farms and other agricultural activities. Agricultural extension programmes should include the option of technical assistance regarding forestry issues.

Public policies that promote the integration of family agriculture and forestry production systems will improve incomes and bring benefits for farmers, while at the same time promoting better use of the forests.

Establish national systems of payment for environmental services that benefit local populations

The payment for environmental services of forests is an important mechanism to promote the proper management of forest resources, their conservation, and the recovery of degraded areas as well as the development of forest plantations and other forestry activities. From a macroeconomic perspective, the payment for environmental services generates the redistribution of national income and the transfer of resources to the rural environment, promoting more equitable social and economic development.

For this reason, environmental services should belong to the owners of the forests and must be tradable in the market. This requires legislation and institutions based on the understanding that payments constitute recognition of the market value of a service, which is effectively provided by the owner of a forest that is protected or properly managed.

The income received by forest owners from the environmental services produced by their forests will increase their incomes, improve the profitability of forestry and could change social behaviour in favour of proper forest management.

Generate flows of resources and investments towards family agriculture for the development of productive forestry activities

While the payment for environmental services increases the flow of resources to the farmer who owns the forest and carries out forestry activities, the development of such activities in the first place requires investment.

One of the most pressing problems of forestry activity is the lack of funding, including resources from the state or the private sector, which is especially true for family agriculture (FAO, 2012). Currently, private banking systems and national development banks do not contribute significantly to the expansion of small-scale forestry activities. While there are some experiences that have yielded positive results, such as mechanisms of credit, special funds, credit guarantees, trusts and other funds, these are not widely applied for the development of forest activities in family agriculture.

It is important to generate funding mechanisms adapted to the characteristics and scale of family agriculture and, at the same time, the characteristics of certain forestry activities.

Continue to strengthen the capacity of the state for forest management and administration

The forest sector cannot develop only through the availability of greater resources for financing and investment, through the implementation of land use planning processes, or through society's recognition of the strategic importance of forests for socio-economic development.

It requires stronger forest governance. This means there should be an organization responsible for public forest

management at the highest possible level, with organizational structures and decentralized functions to enable the involvement of local levels of government. There should also be formal spaces for civil society to participate in dialogue and agreements to influence the design and implementation of forest policies.

An important aspect of strengthening forest governance is the creation of inter-sectoral and inter-institutional spaces for dialogue, in which forest administrators can participate to promote the sustainable management of forest resources and their inclusion in public policies in other sectors that also have an impact on forests.

In order to strengthen forest governance, forestry, agriculture and environmental regulations should be reviewed and updated so that they contribute to the conservation and protection of forests.

Instruments for monitoring forest resources are extremely important. Institutions responsible for forest management should be able to know, if possible in real time, the impact caused by deforestation and forest degradation. Monitoring systems and instruments could help guide actions and programmes that provide incentives for the proper management of forests. In addition, such systems could form part of global forest monitoring efforts and the information collected used in the development of initiatives for the conservation of forest resources. In this regard, systems should consider the possibility of periodic evaluations and, above all, the measurement of the qualitative and quantitative changes of forest resources. International reporting on the state of forest resources is also important so that the data collected at the national level may be verified.

All of the above should be part of a coherent national forestry strategy, which combines the management of the forestry sector with aspects of governance in other sectors which have an influence on forest management.

Promote regional systems based on national strengths to face common challenges

Joint action by countries to face common threats to forest resources should be strengthened. The use of systems that allow proper communication, early warning and coordinated responses may reduce risks from pests and disease, fire, extreme weather events and traffic of genetic resources, among others.

In this regard, South-South cooperation could be promoted by identifying the strengths of one country that could benefit other countries in the region. In Latin America and the Caribbean there have already been some excellent experiences that have developed to share new practices and knowledge.

With respect to genetic resources from forests, it is important to continue efforts to properly study resources in order to improve the national and international strategies aimed at their protection and access, under appropriate conditions and with shared benefits.

There is also space for joint action in the development of forest inventories by countries in subregions, simultaneously generating forest information and optimizing the use of resources and information.

Conclusions

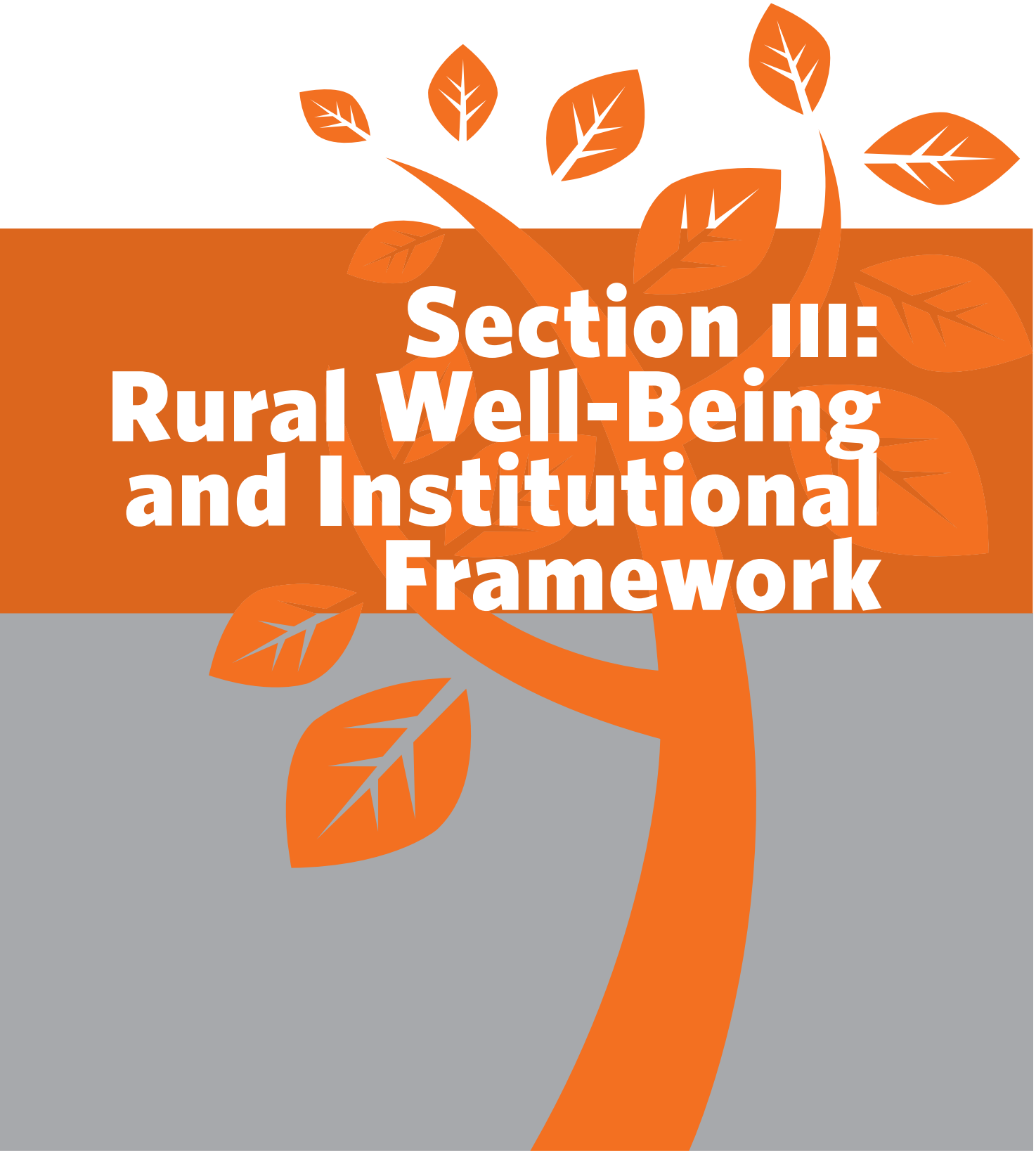
The annual rate of deforestation in the region is approximately three times higher than the annual rate of forest cover loss worldwide. However, the rate has been reduced by around 20% in the last five years compared to the previous five-year period.

This reduction is due to different reasons. Among them, the increase in the area of forests designated primarily for uses other than timber exploitation, and a greater understanding of the importance of forests as providers of goods and environmental services. This last is evident, for example, in the efforts made by countries to reduce emissions from deforestation and forest degradation, and to assess and pay for the environmental services of forests.

It is still pending to promote the greater integration of forestry with agricultural activities and the sustainable use of natural resources at the level of family agriculture.

Other areas that need to be further developed include land use planning, strengthening forest governance, information campaigns, and the monitoring of forest resources, among others.

In this context, South-South cooperation is important for strengthening forest governance systems and meeting common threats to forest development.



Section III: Rural Well-Being and Institutional Framework

Rural Well-being

Rural Areas in Transition

Latin American rural areas have changed significantly during the last two decades, with important transformations in agricultural production, territorial dynamics and governance structures, as well as increasing awareness about environmental issues.

Facts

* The rural population in LAC has decreased since reaching a peak of 130 million in 1990. It was estimated at 120 million in 2010 and is expected to fall to 115 million in 2015.
* During the last two decades, rural–urban migration has slowed; although net migration persists, but at decreasing average rates. Net rural migration causes a reduction in the absolute size of the rural population.
* The main factor driving rural migration is persistent rural-urban inequality; moreover, rural migration is selective, since the larger migration is found among women and youths with more education.
* The increasing rural-urban linkages facilitate regular, seasonal or occasional commuting of urban residents to work in rural areas.
* The boom in primary activities in rural areas creates income and employment, but in most cases those are captured by residents in urban areas.

Introduction

The objective of this year's chapter on rural well-being is to review the main structural changes and development gaps observed in Latin American rural areas in recent decades, with a focus on demographic and labour market changes, in order to identify trends and policy challenges.

Trends

Changes in the rural labour market

Four significant transformations have been observed during the last decade in the Latin American rural labour market: a decreases in the importance of agricultural employment, an increase in employment of women (especially in non-agricultural activities), an increase of waged labour vis-à-vis lower self-employment, and more agricultural workers living in cities.

Increase of rural non-agricultural employment. The reduction in the importance of rural agricultural employment in Latin America started to attract attention during the middle of the 1990s (e.g. Klein 1992; Reardon et al., 2001; ECLAC, IDB, FAO, & RIMISP 2004; Dirven 2004 and Kobrick & Dirven 2007). A pioneer study was that of Klein (1992), who demonstrated — using data from the 1990 population census — that the main sector of employment for 24% of the rural labour force was not agriculture and that the diversification towards non-agricultural activities was a growing trend.

The trend has deepened since then, but at different speeds. During the last decade, the proportion of the rural labour force employed in agriculture decreased

in 11 of the 14 countries for which information is available (Table 3), with the most significant reductions in Chile, Costa Rica[14], Mexico and the Dominican Republic. However, agricultural employment remains high in many countries; for example, it is above 60% in Bolivia (77%), Brazil (68%), Colombia (66%), Ecuador (69%), Honduras (63%) and Peru (73%). In the other extreme we find Costa Rica, Mexico and the Dominican Republic, with less that 40% of rural employment in agriculture and primary sectors (Table 3). Those figures are evidence of structural change in the rural labour market, but at different speeds between countries.

Increase in rural employment of women, but participation still low. The participation of women in the rural labour market has increased, but in many cases only slowly, and overall participation is still low. During the last decade the share of women in total rural employment increased in 11 countries, with the most important gains in Chile, Costa Rica, the Dominican Republic and Panama. In the rest of the countries it did not change significantly (Brazil, Ecuador and Mexico) or decreased slightly (Colombia and Peru). In most cases the share of women in rural employment is below 40% (except in Bolivia and Peru) and in many cases it is below 30% (Chile, Colombia, the Dominican Republic, Ecuador, Guatemala, Honduras and Panama).

In most countries more than half of women employed in rural areas are working in non-agricultural activities; in some cases the proportion is above 70% (Costa Rica, El Salvador, the Dominican Republic, Guatemala, Honduras, Mexico and Panama). The share of women employed in agriculture is only higher in Bolivia (81%), Brazil (61%), Ecuador (62%) and Peru (70%).

There are noticeable differences in the insertion of women in rural labour markets between the Andean Region (mainly in agriculture) and Mesoamerican countries (mostly outside of agriculture). In the first case (Bolivia, Ecuador and Peru), the dominance of agricultural employment among women could be explained by the prevalence of traditional agrarian systems in which the roles of women are central. In the Mesoamerican case, the dominance of non-agricultural employment could be explained partially by the increase in non-traditional agricultural activities, in many cases export-oriented, which create employment in processing activities that are not counted as agricultural; for example, processing of tropical fruits and vegetables.

Increase in salaried employment. There have also been changes in the types of insertion in the rural labour market. In the agricultural sector a common change is the increase in the proportion of salaried employment along with a reduction in the share of self-employment and non-remunerated family labour (Bolivia, Chile, Costa Rica, El Salvador and Mexico). In some countries there is an increase in the importance of self-employment, but mainly as a result of the reduction in non-remunerated family labour (Brazil, Guatemala, Panama and Peru). Finally, in another group of countries there is a reduction in the importance of salaried labour along with an increase in self-employment (Colombia, Honduras, Panama and Paraguay). This trend deserves more attention since it is not in line with expected structural changes.

As expected, a reduction of non-remunerated family agricultural employment is observed in all countries, but the reductions are small in some countries (Bolivia, Colombia, the Dominican Republic, Honduras, Paraguay and Peru).

In spite of these changes, the dominant type of rural agricultural employment continues to be self-employment; this is the case in Brazil (51%), Colombia (47%), the Dominican Republic (79%), Ecuador (37%); Honduras (50%), Panama (71%), Paraguay (57%) and Peru (43%). Salaried rural employment dominates only in Chile (67%), Costa Rica (65%), El Salvador (40%), Mexico (45%) and Uruguay (47%).

In non-agricultural rural sectors the most frequent change is the increase in the importance of salaried labour and the reduction of self-employment (Bolivia, Brazil, Chile, Costa Rica, Ecuador, Mexico, Paraguay and Peru). As in agriculture, however, in some countries there is a reduction in salaried labour with an increase in self-employment (Colombia, Honduras and Panama). The dominant employment condition in non-agricultural sectors is salaried labour, with the proportion of salaried workers above 70% in Brazil, Chile, Costa Rica, Mexico and Uruguay. Only in Colombia and Honduras is the dominant employment condition self-employed.

Increase in agricultural employees with urban residence. Another on-going structural transformation in

14 The last year of data available in Costa Rica to maintain comparability with 2001 is 2009 since the household survey changed in 2010.

some countries is the increase in the urban residence among agricultural workers. In 2000 this proportion was already high in Brazil and Chile (above 20%) and in Uruguay (above 40%), and during the last decade it has increased in 10 out of the 12 countries for which comparable information is available. The most important increases took place in Chile, Guatemala and the Dominican Republic.

The increase in urban residence among agricultural workers is facilitated by the closer rural-urban integration that results from good transportation infrastructure. However, two caveats remain. First, in many cases a significant proportion of "agricultural" employment among urban residents takes place in the fishing sub-sector, as is the case in Chile, Ecuador and Panama (Rodriguez & Meneses, 2010). And, second, in many countries the urban population is calculated considering residence in human settlements defined as urban according to official definitions, but located in territories that are essentially rural (Dirven et al. 2011).

Demographic transition

In all countries of the region the age structure of the rural population has changed in line with changes observed at the national level. The most noticeable changes are the fall in the proportion of the population below 15 and the increase in the share over 65 (Table 2)

The information available helps to identify three groups of countries. The first group includes those countries with **high demographic transition**. This group is led by Uruguay and Chile and could also include Mexico, Brazil, Costa Rica and the Dominican Republic. Between 1970 and 2010 countries in this group had reductions of over 14 percentage points in the proportion of population below 15 and in some cases almost doubled the proportion in the age group 15-65. In 2010, Uruguay and Chile had a lower share of their population below 15 (around 22%) and a higher proportion aged 15-65 (around 66%) and over 65 (more than 10%).

The group of countries with **low demographic transition** is headed by Guatemala and Honduras, along with Bolivia, Nicaragua and Paraguay. In 2010 Guatemala and Honduras had a higher proportion of the population below 15 and a lower proportion in the other two groups. Nicaragua and Paraguay showed a similar situation in the three age groups and Bolivia in the first two groups. Countries in this group have a longer rural demographic bonus than countries with higher demographic transition.

The rest of the countries (Ecuador, El Salvador, Panama, Peru and Venezuela) have an **intermediate demographic transition**, especially regarding the proportion of the population in the first two age groups. The higher degree of variation occurs in the percentage of the population in the group over 65, with Panama and Ecuador around 7% and Peru and El Salvador around 5%.

There are also regional differences in the age structure of the rural population, especially between South American and northern Central American countries. For example, in 1970 the share of the rural population over 65 was above 5% only in Chile and Uruguay and by 2010 the share was over 10% in both countries. On the other hand, in El Salvador, Guatemala, Honduras and Nicaragua the share was still below 5% in 2010. Similarly, in 1970 all countries with more than 50% of the population in the group aged 15-65 were South American (Bolivia, Brazil, Chile, Ecuador, Peru and Uruguay). On the contrary, in all Central American countries, plus Mexico, Colombia, the Dominican Republic and Paraguay, the larger share corresponded to the group below 15. The transition to the groups 15-65 and over 65 was completed in 2000, except in Guatemala and Honduras (Table 2).

Mixed results in the reduction of rural-urban gaps in poverty and the indigence rate

It is estimated[15] (ECLAC, 2011) that in 2011 174 million people in the region were poor (30.4%) and 73 million were indigent (12.3%). Relative to 2010 there was an absolute reduction of 3 million in the number of poor, but the number of indigent increased by the same amount. The net result was a reduction in the poverty rate, from 31.4% to 30.4%, and an increase in the indigence rate from 12.3% to 12.8%. The main factor behind the increase in indigence was the increase in food prices (ECLAC, 2011).

A closer look shows that during the last two decades there was a downward trend of rural poverty and indigence, both in absolute and relative terms (Figure 20). The most significant reduction took place between 2002 and 2007 in line with an expansive cycle of the economy (ECLAC, 2009, 2010 & 2011). During that period the

15 At the time of finishing this chapter no data was available in urban and rural categories.

number of poor decreased by 14 million and the number of indigent by 11.3 million, which translated into reductions of 9.8 and 8.4 percentage points in the poverty and indigence rates, respectively.

Progress in the reduction of rural poverty stopped between 2007 and 2009, due to the economic crisis (ECLAC/FAO/IICA, 2011), with increases both in the number of poor and indigent, as well as in the rates relative to the rural population.

By 2010 the poverty levels had returned to their 2007 rates, but not in the case of indigence. Moreover, it is likely that the increase in indigence (in absolute and relative terms) that occurred at the regional level during 2011 also impacted rural areas.

Improvement in rural poverty and indigence indicators, however, did not translate into a significant reduction of the gaps relative to urban rates. In fact, since 2007 - coinciding with the end of the expansive regional cycle brought about by the crisis — the regional gaps increased, with the most adverse evolution in indigence (Figure 20, right side). In 2010 the gaps between rural and urban indicators were higher than in 2007, the year when these gaps reached their lowest historical levels.

The evolution of rural-urban gaps in rates of poverty and indigence reveals several important trends. For example, in Chile and Costa Rica, which already had low rural poverty and indigence rates at the beginning of the last decade, the reduction in these gaps meant that rural rates reached levels similar to urban rates. Uruguay is another special case, since both rural poverty and indigence rates are lower than urban rates; therefore, the evolution between 2007 and 2010 (there is no data on rural poverty before 2007) would indicate that the gap narrowed in favour of urban areas.

The opposite situation to that of Costa Rica and Chile took place in Honduras and Paraguay. In both countries, the incidence of rural poverty and indigence is high and the gaps with urban rates did not change significantly.

A third situation is that of Brazil, El Salvador, Mexico and Peru, which all achieved important reductions in rates of rural poverty and indigence, thereby narrowing the gap with urban areas. The most noticeable cases are Brazil and Peru. In the latter case, the poverty rate in 2010 fell to 26.7% from 53.3% in 2001 (detailed data on poverty and indigence rates by country can be found in the Statistical Appendix).

The poverty rate is higher among the indigenous population

Data presented in the last section shows a relatively positive evolution of rural poverty during the last decade. However, a more detailed analysis reveals differences in the rate of poverty, depending on the ethnicity of household heads (this section of the chapter) and the insertion of household members in the labour market (the following section).

Household surveys from five countries (Bolivia, Chile, Ecuador, Guatemala, Mexico and Panama) confirm that the poverty rate is higher among the rural indigenous population. The difference between indigenous and non-indigenous populations is higher in Guatemala, Ecuador and Panama and over the last decade it decreased only in Ecuador and Chile.

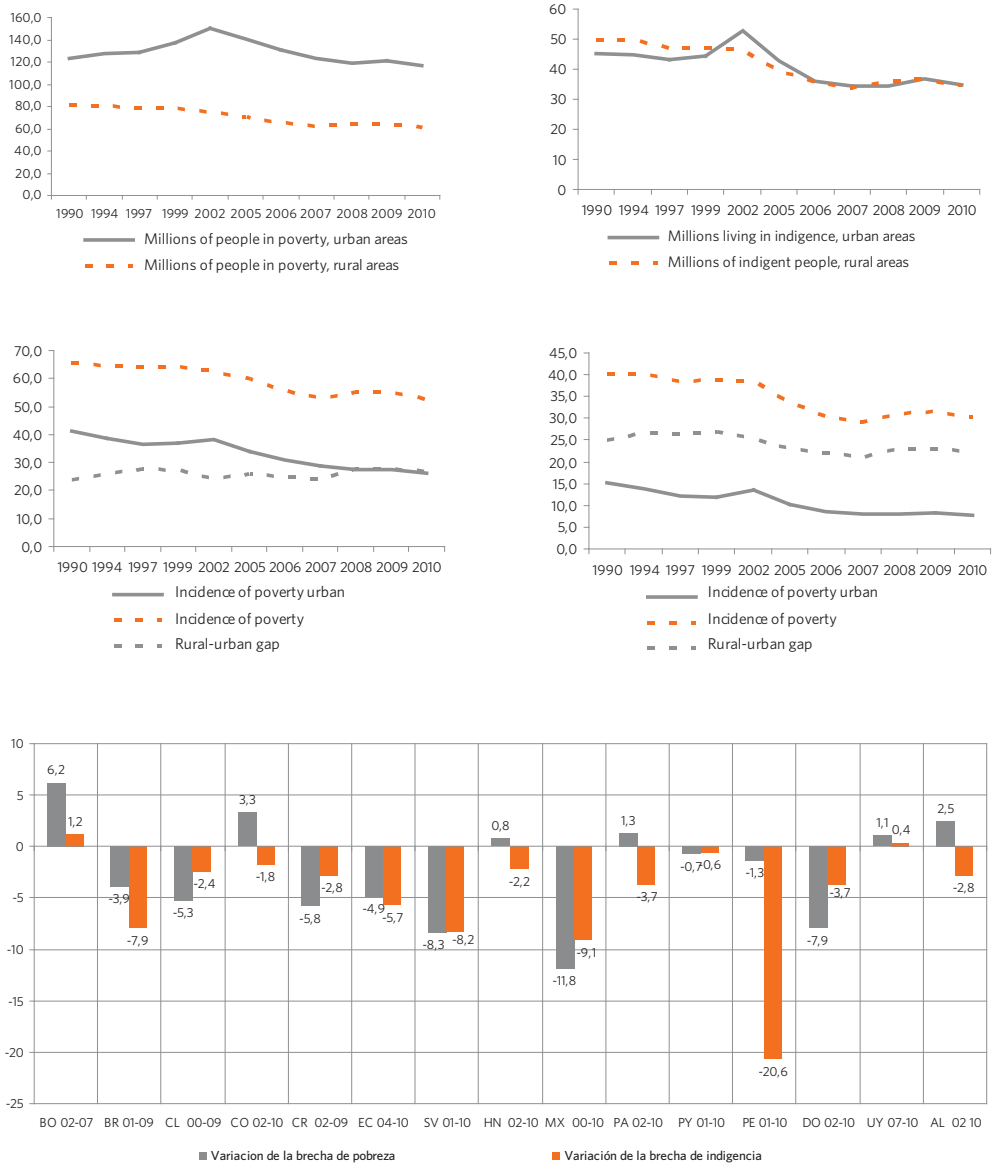
In fact, Chile's rural indigenous population has a lower poverty rate, and this is also the only country where this rate was below 20% at the end of the last decade. However, the higher rates persisted in Bolivia and Panama (over 70%) and Guatemala (over 80%).

The gap between indigenous and non-indigenous poverty rates decreased during the last decade only in Bolivia and Chile. In the former case the gap fell considerably between 2001 and 2007 (13.2 percentage points), because of a combination of a reduction of poverty among the indigenous population and an increase in non-indigenous poverty. In Chile both rates fell, but to a higher degree among the indigenous population. At the same time, in the other three counties the gap increased. In Guatemala the increase (6.1 percentage points between 2000 and 2006) was the result of a reduction in poverty among the rural non-indigenous population; poverty among the indigenous population remained around 80%. In Ecuador and Panama poverty fell in both groups, but the gap widened because it fell more in the non-indigenous population.

The poverty rate is higher among households which depend on agricultural income or transfers

Following the approach developed in previous reports (ECLAC/FAO/IICA, 2010, 2011), households are classified

Figure 20. Latin America and the Caribbean: indicators of rural poverty and indigence (Number of people and % of the rural population)



Source: ECLAC

Notes: BO (Bolivia, PS), BR (Brazil), CL (Chile), CO (Colombia), CR (Costa Rica), EC (Ecuador), SV (El Salvador), HN (Honduras), MX (Mexico), PA (Panama), PY (Paraguay), PE (Peru), DO (Dominican Republic), UY (Uruguay), LA (Latin America). Z

into four categories: *a) agricultural households,* those whose employed members get 100% of their labour income from agriculture; *b) non-agricultural households,* those whose employed members get 100% of their labour income from non-agricultural activities; *c) pluri-active households,* those whose employed members earn income both from agricultural and non-agricultural activities; and *d) transfer-dependent households,* those whose income comes entirely from transfers (i.e. they do not have labour income).

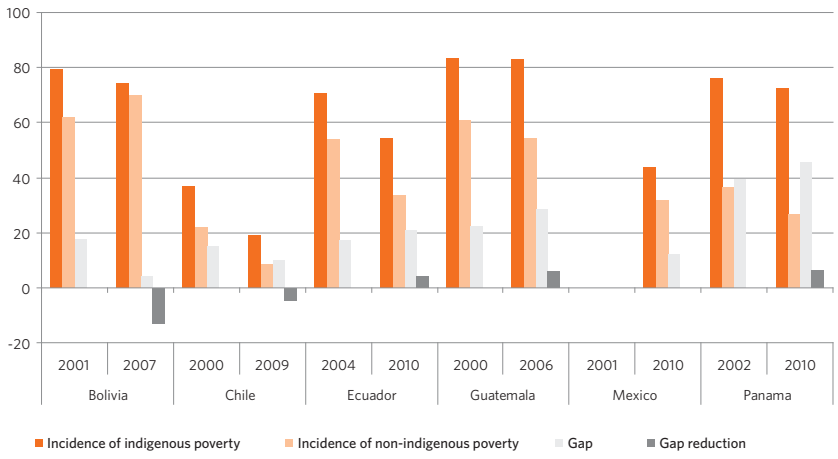
In eight of the 13 countries studied the poverty rate is higher among household that depend entirely on income from agricultural labour. This is the case especially in countries with a higher rate of poverty among rural households. On the other hand, in countries with a lower rate of poverty among rural households, poverty rates are higher among transfer-dependent households and lower among households that combine agricultural and non-agricultural labour incomes.

The most homogeneous group is that of countries with a high poverty rate among rural households (Paraguay, Guatemala, Bolivia and Honduras). These countries share a high proportion of agricultural households (over 40%) and high poverty rates among that group (over 70%); in three of those countries (Paraguay, Guatemala and Honduras) the lower poverty rate occurs among non-agricultural households (rates close to or higher than 40%)

In countries with a lower overall poverty rate among rural households (Uruguay, Chile and Costa Rica) the lower rate is found among pluri-active households, which are households that combine income from agricultural and non-agricultural sources. In Uruguay poverty rates do not differ significantly among household groups; however, in Costa Rica and Chile the higher poverty rates correspond to transfer-dependent households (37% y 18%, respectively).

The group of counties with rural household poverty rates between 20% and 50% is the most heterogeneous group. The highest poverty rates are found among agricultural households in Brazil, Panama, Peru and Mexico; and among transfer-dependent households in Ecuador and the Dominican Republic. Among pluri-active households, the lowest poverty rates are found in Brazil, Ecuador and the Dominican Republic; and among agricultural households in Panama, Peru and Mexico.

Figure 21. Incidence of poverty among rural households, according to ethnic condition of household heads (% of total households in each group)



Source: Agricultural Development Unit, ECLAC, based on data from household surveys by ECLAC´s Statistical Division.

Perspectives

Structural change will continue to occur at different speeds[16]

Four groups of countries can be identified by combining information about rural employment in agriculture and the poverty rates among rural households (Figure 23). This classification provides an approximation that allows us to draw some conclusions about structural change in rural economies of the region. In interpreting the results it should be noted, however, that they are derived from aggregate data and therefore do not allow a more detailed analysis of the rural economies in each country.

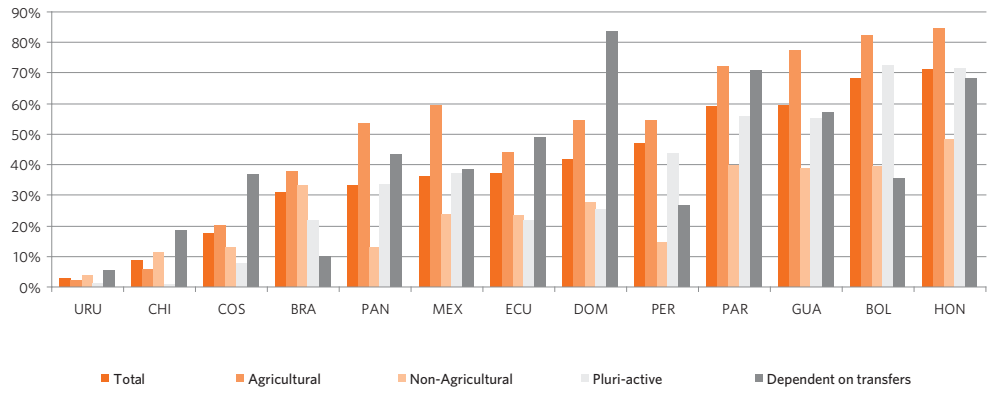
The first group includes countries where more than 50% of the labour force is employed in agriculture and more that 50% of rural households are poor. This group could be characterized as *traditional agrarian rural economies*, and it includes Paraguay, Guatemala, Bolivia and Honduras. All these countries have low demographic transition (see above) and self-employment is the dominant form of employment in the agricultural sector.

The second group includes Chile and Uruguay, where more than 50% of the labour force is employed in agriculture but less that 20% of rural households are poor; they are countries with *rural economies dominated by non-traditional agricultural activities*. The third group can be defined as having a *diversified rural economy*; it differs from the former group in the lower percentage of rural employment in agriculture, less than 30%, and shares the lower rate of rural poverty. The diversification of the rural economy results from the development of non-traditional agricultural activities, which create linkages with non-agricultural sectors, as well as from non-agricultural activities (e.g. rural tourism). The only country in this group is Costa Rica. All three countries have high demographic transition and salaried work is the main form of employment in agriculture.

Finally, the fourth group includes countries with intermediate rates of rural household poverty (between 20% and 50%) and a high variation in the percentage of rural employment in agriculture. They are countries that could be characterized as having *rural economies in transition,* and include Brazil, Panama, Mexico, Ecuador, the Dominican Republic and Peru. These countries show different levels of demographic transition and it is not possible to discern among them a dominant form of employment in agriculture.

16 This section is based on results from Rodríguez & Meneses (2010).

Figure 22. Incidence of poverty among rural households, according to household type (% of households in each group)



Source: Agricultural Development Unit, ECLAC, based on data from household surveys by ECLAC's Statistical Division.
Note: The figures above the bars are the poverty rates among the total of rural households.

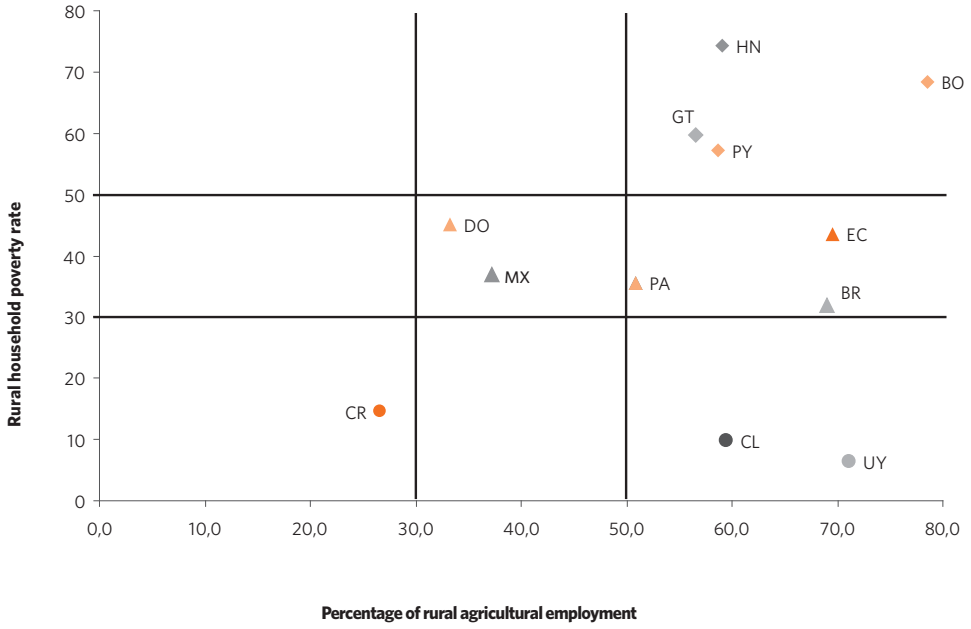
The group characterized as *traditional agrarian rural economies* includes countries with a high proportion of agricultural households (more than 40%) and the highest combined proportion of self-employed and non-remunerated workers in agriculture. The main income source is self-employment in agriculture among poor households (except in Guatemala) and non-agricultural salaried employment among non-poor households (except in Paraguay). This group includes the highest proportion of women heads among transfer-dependent households (around or above 60%) and transfer income comes mostly from remittances. The percentage of agricultural employment with urban residence is low (under 10%) and the weight of agriculture in GDP is the highest (over 10%) among the countries included in the study (around 13% in Bolivia, Guatemala and Honduras and around 20% in Paraguay) (see Table 11).

In countries characterized by having *rural economies dominated by non-traditional agricultural activities*, agricultural wages are a more important income source than self-employment, both among poor and non-poor households. Transfers are also an important income source, especially for poor households. In Chile the main sources of transfer income are pensions and "other transfers", which include income from social protection programmes (for example, family subsidies, pensions and unemployment insurance); that is, more formal sources of transfer income than in *traditional agrarian rural economies*.

Education of household heads in *rural economies dominated by non-traditional agricultural activities* is the highest among all countries, both among poor and non-poor households. The weight of agriculture in GDP is around 5% and the proportion of agricultural workers with urban residence is also the highest among the countries studied (above 40%). Moreover, urban residence of rural landowners seems important, since almost a third of income of urban agricultural households comes from employers' income (see Table 11).

The case of Costa Rica (*diversified rural economy*) differs from the former group in the percentage of employment in agriculture, which is low, and hence in the importance of agricultural labour in the composition of rural house-

Figure 23. Types of rural economies



Source: Rodríguez & Meneses (2011)
Notes: BR (Brazil), CL (Chile), CR (Costa Rica), DO (Dominican Republic), EC (Ecuador), GT (Guatemala), HN (Honduras), PA (Panama), PY (Paraguay), UY (Uruguay).

hold income, which is dominated by non-agricultural salaried employment, both among poor and non-poor households. The participation of women in the rural labour market is low (as in Chile and Uruguay), but it is mainly in non-agricultural activities. Transfer income is also important for the poor - as in Chile — and comes mainly from institutional sources (for example, pensions and other social programmes). Education of household heads is also high among all types of households. In addition, the percentage of agricultural workers with urban residence is lower than in *rural economies dominated by non-traditional agricultural activities* and the main income source of agricultural urban households is self-employment (see Table 11).

Finally, among countries characterized by having *rural economies in transition* there is a high degree of heterogeneity. In the Dominican Republic and Mexico the share of the labour force employed in agriculture is similar to that of a diversified rural economy. In Brazil and Ecuador the share is similar to that of a rural economy with predominance of non-traditional agriculture. And in Panama it is in an intermediate position (51% of rural employment in agriculture). The weights of agriculture in GDP vary, from 4% in Mexico to 10% in Ecuador. Small-scale family agriculture is also important in these countries. The combined percentage of self-employment and non-remunerated family workers is over 50% in Ecuador and Mexico and higher than 70% in Brazil, the Dominican Republic and Panama.

The results summarized in Figure 22 illustrate two factors that are relevant from the perspective of structural change in rural areas. The first is the lack of a direct association between a high share of rural employment in agriculture and rural poverty. This situation is illustrated by the cases of Uruguay and Chile. The transformations inside the agricultural sector through the development of non-traditional agricultural activities that generate higher value added - for example, in the case of Chile, to take advantage of natural comparative advantages and opportunities in international markets — is a type of structural change that can contribute to reducing rural poverty. In these cases the higher formality in the labour market is also important, allowing for gains in productivity and income from good international agricultural prices (for example, in the case of Uruguay) to be translated into higher incomes and lower poverty among the rural population.

The second factor refers to structural change through diversification of the rural economy which is illustrated by the case of Costa Rica, and to a certain extent by the Dominican Republic and Mexico. All these countries

Table 11. Main characteristics of the types of rural economies

Main household attributes	Types of rural economies			
	Agrarian traditional	Non-traditional agriculture	Diversified	In transition
Poor households		Agricultural	Transfer-dependent	Variable
Group of households with lower poverty	Non-agricultural	Diversified	Diversified	Variable
Main income source of poor households	Agricultural self-employment	Agricultural salaries	Agricultural salaries	Variable
Main income source of non-poor households	Agricultural salaries	Agricultural salaries	Non-agricultural salaries	Variable
Education of household heads	High	High	High	Variable
Dominant condition of employment in agriculture	Self-employment	Salaried	Salaried	Variable
Agricultural self-employment	High	Low	Low	Variable
Agricultural salaried employment	High	High	Low	Variable
Non-agricultural salaried employment	Low	High	High	Variable
Percentage of women in rural labour force	Major	Minor	Minor	Intermediate
Agricultural employment with urban residence	High	Low	Intermediate	Variable
Demographic transition	High	High	High	Variable

Source: FAO/ECLAC/IICA based on Rodriguez & Meneses (2010, 2011).

have relatively diversified rural economies, judging by the distribution of employment between agricultural and non-agricultural activities. And poverty is considerably lower compared with the group of countries characterized by having traditional agrarian rural economies. The most illustrative case is Costa Rica (higher non-agricultural employment and lower rural poverty), where service-related tourism activities (e.g. rural tourism and eco-tourism) developed considerably over the last two decades, and where, as in Chile, there has been a significant development of export-oriented non-traditional agricultural activities.

Also relevant is the fact that lower household poverty rates are found both in countries with high and low rural agricultural employment, which is evidence of different paths of rural structural change.

Given the high heterogeneity that characterizes rural Latin America (shown by the four proposed categories for rural economies), it is highly possible that a more detailed analysis of the countries will reveal a combination of these categories; for example, regions with characteristics similar to those of rural economies in transition or non-traditional agriculture in countries like Paraguay and Bolivia; and also regions with characteristics of traditional agrarian or rural economies in transition in Costa Rica, Chile and Uruguay. Therefore, aggregate data from several countries provides a preliminary idea about the situations that can be found within countries.

Rural non-agricultural employment will keep growing and urbanization will continue

The trend of increasing non-agricultural rural employment will continue because of the diversification of production within the agricultural sector and in rural economies. The changes in the productive structure of rural economies can result from the development of national economies or be induced by productive development policies. The first case can happen when a dynamic national economy creates employment opportunities for the rural labour force (creating incentives for the increase of rural salaries) or creates demand for new goods and services (e.g. rural amenities).

An example of the second type of transformation took place in the region as part of structural adjustment processes; for example, when countries modified their agricultural development strategies seeking more trade openness and specialization in non-traditional export oriented products with higher value added. This is the case of Costa Rica, Chile and Mexico, for example, where the type of agricultural activities promoted under such policies (for example, counter-seasonal fruit production in Chile; tropical fruits and ornamental plants in Costa Rica; horticulture and vegetables in Mexico) have an important component of primary production, but also create employment in secondary sectors (e.g. processing, packing and transportation) and services (e.g. agricultural production-support services).

The reduction of the rural population will also continue, not only because of net migration (see above), but also because of the reduction in rural fertility rates - which are still lower vis-à-vis urban areas — and because improvements in rural-urban connectivity will make it easier to live in urban settlements and commute to work in rural areas. This phenomenon is already observed in some countries of the region (e.g. Chile and Uruguay) and is expected to continue.

Selective net migration of the rural population (women and educated youths) creates important challenges for the future of rural economies, especially for those that still have a demographic bonus. The situation can worsen in the absence of structural changes that promote the diversification of their rural economies and create more and better employment opportunities. This fact is relevant for countries with traditional rural agrarian economies, which are precisely the ones that have a larger demographic bonus, as they are in an early stage of demographic transition.

The reduction of rural poverty remains linked to the overall performance of the economy and to proactive public policies

Last year´s report highlighted that during the economic crisis of 2007-2008 poverty among rural households evolved in line with the performance of the economy and of the agricultural sector. In general, rural poverty rates increased in countries where the agricultural sector performed poorly and GDP growth was weak. On the other hand, the poverty rate decreased in countries with growth both in the agricultural sector and real GDP. Good performance of the economy and of agriculture is therefore important to avoid an increase in rural poverty (ECLAC/FAO/IICA, 2011). The increase in the rate of extreme poverty at the regional level during 2011 and the perspectives for weak economic growth could lead to an increase in rural poverty and indigence in 2012.

On the other hand, ECLAC (2011) stressed the importance of the increase of labour income for the reduction of poverty, both between 2002 and 2007, which was the period previous to the crisis, as well as in 2008-2010 during the recovery period. In both cases the reduction of poverty came mostly from the increase of labour income. Other income sources also contributed, especially transfers, but to a lower degree, and had a more relevant role in the post-crisis period. On the other hand, transfer income and salaries made important contributions to the variation in average rural household income in the post-crisis period (ECLAC/FAO/IICA, 2011).

From a longer-term perspective, strategies for agricultural development and for the transformation of rural economies contribute to the reduction of rural poverty. Echeverri and Sotomayor (2010) stress that a distinctive feature of successful cases in the reduction of rural poverty is that countries "have a coherent macroeconomic policy framework, implemented through sectoral policies (and in some cases multi-sectoral and territorial), which work in a relatively coherent fashion, and are subject to a continuous process of improvement." They highlight the "green" export-oriented agricultural development strategy of Costa Rica; export-oriented *agribusiness* strategies coupled with programmes targeted towards family agriculture in Mexico and Brazil; and export-oriented strategies for small agriculture in Chile, combined with important targeted transfer programmes.

Echeverri and Sotomayor stress that all these cases involve a mix of factors: "an agriculture sector that works as a driving factor and that contributes effectively to poverty reduction, along with other economic and social activities which allow self-employment (e.g. tourism, handicrafts, and services), and which add to the effect of migrations, remittances, rural employment (agricultural and non-agricultural) and social transfers, in the reduction of rural poverty."

ECLAC (2009) also has emphasized that the countries which have progressed more in the reduction of extreme poverty at the national level are those that have prioritized progress in rural areas. The report highlights the cases of Brazil, Chile and Costa Rica as the countries with the most noticeable advances in accomplishing the Millennium Development Goals (MDGs) regarding extreme poverty. The document identifies three main trends in rural poverty: a) countries with slow progress in rural areas also have slow progress at the national level; b) countries with higher progress in reducing extreme poverty nationally have prioritized the development of rural areas; and c) countries that have achieved this goal, or are close to achieving it, show similar advances in urban and rural areas.

New challenges for rural areas

Climate change and the pressure to develop sources of renewable energy are two factors that will play an increasingly relevant role in rural areas. In the first case, bioenergy, especially the production of bio-fuels, is causing important changes in rural social and economic structures through processes that have already started, but whose real impacts will be known only in the medium-term. In the region the most notable cases are the production of sugarcane bioethanol in Brazil and soybean biodiesel in Argentina, as well as Colombia, with development (and potential) both in sugarcane bioethanol and palm oil biodiesel. The potential in other countries is low (Dufey & Stange, 2011).

Climate change will also bring significant consequences for rural areas, both as a result of factors that contribute to it (e.g. deforestation, degradation or exhaustion of resources), as well as the effects caused by changing climatic conditions (e.g. higher frequency and intensity of droughts, more episodes of torrential rains in short periods of time, late or early snowfalls).

It is estimated that Latin American emissions of GHG account for 12% of the global total, and that two thirds of those emissions come from agriculture and land use changes. On the other hand, the consequences of climate change in the region, in terms of the increase in climate variability, have already had an important impact on agriculture and rural society. There is no doubt that climate change will force countries to adopt measures of adaptation, both technological and cultural.

Implications for public policies

The transformation processes and trends outlined in the previous sections have important implications for rural development policies in at least three different areas: a) productive development policies; b) labour market and social protection policies; and c) policy implementation.

Productive development policies

The development of countries is, in essence, a process of structural change. At its last meeting (San Salvador, August

26 – 31, 2012), ECLAC emphasized that structural change is also key to reducing development gaps and advancing towards higher equality and that productive development policies are crucial to accomplish those objectives (ECLAC, 2012b).

Structural change can be beneficial when it combines two inter-related areas: i) a higher relative participation, both in production and consumption, of knowledge intensive sectors; and ii) the diversification towards sectors with high growth in internal and external demand, so that this demand can be met with internal production and that exports and imports grow in a balanced way, without generating unsustainable balance of payment pressures (ECLAC, 2012b). We consider that productive development policies should play a central role in the promotion of structural changes that contribute to reducing structural lags in rural areas in terms of poverty and development in general.

In the previous section we identified two types of structural changes in rural areas that have contributed to reducing poverty. The first type takes place through changes within the agricultural sector, when non-traditional agricultural activities are developed that generate higher value added, taking advantage of natural comparative advantages (e.g. climate) and opportunities in international markets. The second type takes place through the diversification of the rural economy, either with the development of forward and backward linkages with other productive sectors, or through the development of new primary, secondary and service activities.

The challenges for productive development policies vary according to the degree of structural change identified in rural economies. Thus, those countries with traditional agrarian rural economies face the double challenge of reducing poverty and diversifying their rural economies. And given the importance of self-employment and non-remunerated labour in agriculture, policies to support small-scale family agriculture should also have high priority; in fact, those policies should be the main axis of policies to diversify the rural economy. Examples of such policies are those promoted by Brazil to favour family agriculture through public purchase programmes of food destined for school programmes.

In rural economies dominated by non-traditional agriculture a key challenge is to intensify the diversification of the rural economic base in order to achieve higher value added in agricultural production and more productive linkages through agro-food chains; for example, by strengthening the governance of agro-food chains and supporting the development of non-agricultural activities linked to agriculture, such as rural tourism. These types of policies should allow the creation of more employment opportunities outside of agriculture, especially for women and young people, who usually show little interest in agricultural employment, in particular as the level of education increases (Dirven, 2002). The more diversified rural economies face similar challenges in terms of deepening the diversification of the rural economic base and the promotion of linkages, especially to increase the participation of women in the rural labour market.

In countries with rural economies in transition the range of policy options is wider, depending on initial conditions. For example, policies to reduce poverty and increase the diversification of the rural economy, including the strengthening of current agricultural activities, could have priority in countries with a higher proportion of employment outside agriculture. On the other hand, the development and strengthening of linkages between agriculture and other economic sectors could have priority in countries with a higher proportion of agricultural employment. Moreover, since small scale family agriculture continues to be important in all countries in this group, it should continue being a priority sector for agricultural and rural development policies. But, in contrast to traditional agrarian rural economies, policies to support small scale family agriculture should be linked to the objective of diversifying the rural economy; for example, they should be territorial rural development policies more than sectoral agricultural development policies.

Rural structural change could also be promoted through the introduction of new technologies; for example, to motivate entrepreneurship, especially among the younger and more qualified members of the population (ECLAC/FAO/IICA, 2011). One important characteristic of new technologies —especially new information and communication technologies — is that they can allow stages to be skipped in terms of technological development, opening "windows of opportunity" for rural economies. This is the case, for example, of the fast penetration of mobile phones in rural areas that were not previously connected to traditional landline networks. The access, appropriation and use of these information and communication technologies are part of a system in which complementarities are very important (ECLAC, 2012b). However, taking full advantage of these technologies requires policies to break adoption barriers related to low income and educational levels, as

well as to the low participation of farmers in networks and value chains.

Labour market and social protection policies

The evidence presented in this chapter indicates that the increase of rural non-agricultural employment and the transformation or the rural economy generally go hand-in-hand with the increase of salaried employment. In particular, salaries are an important component of household income, especially for non-agricultural and non-poor households.

The growing importance of salaried employment highlights the increasing relevance of labour market policies in the rural sector (these policies usually have had an urban bias), including both policies that have a direct impact in the quality of employment, as well as those related to the enforcement of labour legislation. It is also important to stress the impact of the worsening labour market conditions on rural labour incomes, and therefore on rural poverty, an issue that was addressed in the previous report (ECLAC/FAO/IICA, 2011).

A study conducted by FAO/RLC, with support from ECLAC and ILO, on rural labour market and poverty policies in Latin America (Soto & Klein, 2011, 2012), points out that the characteristics of labour market institutions and labour market processes explain, in part, the poverty conditions of the population that lives and works in rural areas; for example, weaknesses in the design and application of labour market institutions, minimum wage legislation, social protection, labour unionization, and labour contracting arrangements, among others. The study also underlines labour market processes that contribute to poverty among rural workers, such as child labour and discrimination against women.

Labour market policies are part of a larger set of social policies that complement productive development policies in the quest for equality, especially regarding employment with full benefits (ECLAC, 2012b). These policies also are important to guarantee that the reduction of productivity gaps, the diversification of productive structures and the aggregated increase of value added contribute to reducing salary gaps and widening social protection. Moreover, structural changes which contribute to formalizing rural employment and increasing productivity of salaried labour also facilitate dialogue among actors in the rural labour market, a process that helps to strengthen institutional arrangements that enhance social rights.

Finally, two factors highlighted in the previous section point to the importance of rural social protection policies: the increase in the proportion of the population over 65 and the high poverty rate among transfer-dependent households (i.e. without labour income).

Chile, Costa Rica and Uruguay illustrate those two situations. All three countries are in advanced stages of rural demographic transition and have low rural household poverty rates, but show the highest poverty rates among transfer-dependent households. The intensification of demographic transition processes and the increase in life-expectancy will place growing challenges on social protection, especially regarding income and health, which can be aggravated by the low levels of affiliation to social security that prevail among the rural population (ECLAC, 2010).

Concluding remarks on policy integration and new approaches to rural development

In conclusion we stress the importance of greater integration among public policies in the rural area, including policies not covered in this chapter. Some policy areas that should be more integrated with agricultural productive development policies include: a) social protection policies; b) policies for mitigation and adaptation of agriculture to climate change; c) food security policies; and d) national digital agenda policies.

Integration requires going beyond sectoral approaches that treat agricultural, productive and social issues as separated policy domains. These new approaches have been emerging in the region as an answer to changes in rural areas and persistent development gaps — some of which were reviewed in this chapter — and also as a response to the criticism about the convenience of defining urban and rural areas based on exclusive criteria (i.e. rural is whatever is not defined as urban) (Dirven et al. 2011).

The new approaches usually highlight the convenience of considering rural development as a spatial category, and because of that they are identified generically as territorial approaches to rural development. Two differentiating features of such approaches are *multi-dimensionality* and a *polycentric view of institutional arrangements*. In general, these new visions strive to give more transparency and legitimacy to policymaking, promote decentralization in decision making and recognize the heterogeneity that characterizes rural areas (Echeverry & Sotomayor, 2010).

Cuadro 12. Latin america (15 countries): indicators of the rural labor market, by country and year
(Thousands and percentages)

Indicators	Bolivia (PS)		Brasil		Chile		Colombia		Costa Rica		Dominican Republic		Ecuador	
	2001	2007	2001	2009	2000	2009	2002	2010	2000	2009	2002	2010	2003	2010
Total rural employment (Thousands)	1,832.8	2,119.0	14,419.8	16,133.1	673.1	743.6	4,518.1	4,344.9	554.4	742.9	1,032.8	1,195.2	2,015.7	2,131.7
Agriculture (%)	85.7	78.6	76.6	68.2	64.9	52.3	59.6	65.6	38.4	25.7	41.7	34.1	70.8	68.7
Non-agriculture (%)	14.3	21.4	23.4	31.8	35.1	47.7	40.4	34.4	61.6	74.3	58.3	65.9	29.2	31.3
Men (Thousands)	1,024.0	1,120.4	9,074.0	10,122.7	531.5	531.6	3,204.4	3,172.5	415.3	514.4	798.4	867.7	1,301.9	1,400.0
Relative to total (%)	55.9	52.9	62.9	62.7	79.0	71.5	70.9	73.0	74.9	69.2	77.3	72.6	64.6	65.7
Agriculture (%)	86.9	76.7	80.1	72.7	72.4	59.7	72.1	76.7	46.8	33.1	51.6	44.1	73.1	72.1
Non Agriculture (%)	13.1	23.3	19.9	27.3	27.6	40.3	27.9	23.3	53.2	66.9	48.4	55.9	26.9	27.9
Women (Thousands)	808.8	998.6	5,345.9	6,010.4	141.6	212.0	1,313.6	1,172.4	139.2	228.5	234.4	327.3	713.8	731.6
Relative to total (%)	44.1	47.1	37.1	37.3	21.0	28.5	29.1	27.0	25.1	30.8	22.7	27.4	35.4	34.3
Agriculture (%)	84.3	80.7	70.8	60.6	36.7	33.7	29.0	35.5	13.1	9.1	8.2	7.9	66.6	62.2
Non Agriculture (%)	15.7	19.3	29.2	39.4	63.3	66.3	71.0	64.5	86.9	90.9	91.8	92.1	33.4	37.8
Agriculture (Thousands)	1,571.6	1,651.2	11,048.1	10,997.6	436.9	388.6	2,691.1	2,849.0	212.8	191.1	431.1	408.0	1,426.4	1,463.7
Salaried (%)	5.3	4.2	22.7	24.7	62.4	67.0	39.3	34.3	59.1	64.5	13.9	14.8	31.6	33.1
Employers (%)	1.0	3.0	2.5	2.1	2.4	3.3	5.3	6.8	6.6	7.5	2.1	1.6	4.4	2.0
Self-employed (%)	35.7	33.3	44.8	51.2	30.4	28.3	42.0	46.7	26.5	23.8	79.3	79.3	33.1	37.3
Non-remunerated (%)	57.9	59.6	29.9	22.0	4.8	1.5	13.4	12.2	7.9	4.2	4.7	4.3	30.8	27.6
Non agriculture (Thousands)	261.2	451.1	3,371.8	5,135.4	236.2	355.1	1,827.0	1,495.8	341.6	551.9	601.7	787.1	589.3	667.9
Salaried (%)	42.8	47.2	69.5	72.5	74.8	75.6	43.1	36.3	70.9	71.5	52.8	51.0	61.1	64.2
Employers (%)	1.2	3.8	2.2	2.4	2.3	2.4	3.7	3.4	5.4	6.3	1.3	2.9	2.6	2.0
Self-employed (%)	41.4	35.1	23.1	21.6	21.5	21.3	44.1	52.7	21.8	20.2	44.4	43.8	30.2	27.8
Non-remunerated (%)	14.7	13.9	5.2	3.5	1.4	0.7	9.0	7.6	1.9	2.0	1.4	2.2	6.2	6.0

Indicadores	El Salvador		Guatemala		Honduras		Mexico		Panama		Paraguay		Peru		Uruguay
	2000	2010		2010	2001	2010	2000	2010	2000	2010	2000	2010	2000	2010	2010
Total rural employment (Thousands)	**858.1**	**854.6**	2,690.2	2,442.8	1,183.1	1,761.0	14,688.7	16,328.1	**337.3**	**500.1**	1,100.2	1,231.1	4,324.1	5,846.7	72.4
Agriculture (%)	48.2	50.3	59.1	55.5	64.0	62.8	45.6	35.3	43.5	49.4	64.6	58.8	74.9	72.9	68.8
Non-agriculture (%)	51.8	49.7	40.9	44.5	36.0	37.2	54.4	64.7	56.5	50.6	35.4	41.2	25.1	27.1	31.2
Men (Thousands)	**601.3**	**594.7**	1,890.3	1,771.0	**907.6**	1,105.1	10,081.6	11,029.2	**265.5**	**350.2**	**760.1**	**828.2**	2,427.0	3,200.2	**47.8**
Relative to total (%)	70.1	69.6	70.3	72.5	76.7	72.3	68.6	67.5	78.7	70.0	69.1	67.3	56.1	54.7	66.0
Agriculture (%)	63.9	64.6	70.3	67.3	78.4	76.2	54.5	44.7	53.5	58.0	71.0	64.0	79.4	75.3	77.7
Non Agriculture (%)	36.1	35.4	29.7	32.7	21.6	23.8	45.5	55.3	46.5	42.0	29.0	36.0	20.6	24.7	22.3
Women (Thousands)	**256.8**	**259.9**	**799.9**	**672.0**	**275.5**	**655.9**	4.607.1	5,298.9	**71.8**	**149.9**	**340.1**	**402.9**	1,897.1	2,646.5	**24.6**
Relative to total (%)	29.9	30.4	29.7	27.5	23.3	27.7	31.4	32.5	21.3	30.0	30.9	32.7	43.9	45.3	34.0
Agriculture (%)	11.3	17.4	32.6	24.6	16.6	27.5	26.1	15.8	6.5	29.3	50.3	48.2	69.2	70.0	51.6
Non Agriculture (%)	88.7	82.6	67.4	75.4	83.4	72.5	73.9	84.2	93.5	70.7	49.7	51.8	30.8	30.0	48.4
Agriculture (Thousands)	**413.2**	**429.4**	1,588.6	1,356.0	**757.3**	1,105.1	6,693.1	5,769.2	**146.6**	**247.1**	**710.5**	**724.0**	3,239.2	4,260.9	**49.9**
Salaried (%)	37.4	39.9	31.8	37.9	31.2	26.8	39.9	45.1	29.2	26.4	13.6	11.3	14.7	14.0	47.1
Employers (%)	7.1	4.1	2.0	0.6	1.4	1.0	5.0	21.9	3.4	2.5	3.3	2.7	6.1	5.9	11.5
Self-employed(%)	35.1	31.6	29.7	37.0	45.2	50.1	34.6	17.9	54.1	71.1	54.4	57.5	40.2	43.0	35.0
Non-remunerated (%)	20.3	24.4	36.5	24.4	22.2	22.1	20.5	15.1	13.2	0.0	28.7	28.5	39.0	37.1	6.4
Non agriculture (Thousands)	**444.9**	**425.1**	1,101.6	1,086.9	**425.8**	**655.9**	7,995.6	10,558.9	**190.7**	**253.1**	**389.7**	**507.1**	1,084.8	1,585.8	**22.6**
Salaried (%)	57.1	57.8	49.1	56.0	46.4	41.5	60.4	70.8	64.4	62.5	51.5	58.5	38.8	49.5	70.7
Employers (%)	2.3	2.1	4.6	2.0	2.4	1.9	4.9	9.6	1.9	2.7	4.3	4.9	3.6	2.9	5.0
Self-employed (%)	34.6	32.8	30.7	33.0	40.7	44.7	27.1	14.0	32.2	34.7	38.2	30.8	50.9	41.5	23.3
Non-remunerated (%)	6.0	7.3	15.6	9.0	10.4	11.9	7.6	5.7	1.6	0.0	6.0	5.8	6.8	6.2	1.0

Source: Agricultural Development Unit, ECLAC, based on special tabulations of household surveys facilitated by ECLAC´s Statistical Division.

Cuadro 13.
América Latina y el Caribe: distribución de la Poblacion rural por grupos de edad *(Porcentajes)*
Período 1970-2010

Countries	Age groups	1970	1980	1990	2000	2010
Bolivia (PS)	0-14	44.8	44.3	43.6	42.6	38.9
	15-64	51.5	51.5	51.7	52.0	55.1
	Over 65	3.7	4.2	4.7	5.4	6.0
Brazil	0-14	46.2	42.9	40.7	35.4	32.7
	15-64	50.6	52.7	54.5	59.2	60.8
	Over 65	3.3	4.4	4.8	5.3	6.5
Chile	0-14	43.5	36.4	31.7	28.5	22.7
	15-64	51.3	57.6	61.6	63.2	66.8
	Over 65	5.2	6.0	6.7	8.3	10.5
Colombia	0-14	49.1	45.1	41.1	37.6	32.4
	15-64	47.6	51.1	54.6	57.7	61.9
	Over 65	3.3	3.8	4.2	4.7	5.7
Costa Rica	0-14	48.6	41.0	39.0	35.3	29.4
	15-64	47.5	55.0	56.7	60.1	65.1
	Over 65	3.9	4.1	4.2	4.6	5.5
Ecuador	0-14	45.9	46.0	42.7	38.5	34.3
	15-64	49.8	49.7	52.7	56.1	58.8
	Over 65	4.3	4.3	4.6	5.4	6.9
El Salvador	0-14	49.7	48.8	45.3	40.4	37.0
	15-64	47.9	48.4	51.0	55.2	58.1
	Over 65	2.4	2.8	3.7	4.4	4.9
Guatemala	0-14	46.5	47.4	47.9	48.5	47.5
	15-64	51.0	50.0	49.2	48.2	49.2
	Over 65	2.5	2.6	2.9	3.3	3.3
Honduras	0-14	49.5	49.5	48.8	46.3	41.0
	15-64	47.5	47.4	47.9	49.8	54.7
	Over 65	3.0	3.1	3.3	3.9	4.3
Mexico	0-14	48.9	48.6	43.2	38.3	32.8
	15-64	47.4	47.5	52.2	56.0	59.7
	Over 65	3.7	3.9	4.6	5.8	7.4
Nicaragua	0-14	49.8	50.2	49.6	44.7	38.3
	15-64	48.1	47.5	47.5	52.1	57.8
	Over 65	2.1	2.3	2.9	3.2	3.9
Panama	0-14	48.1	44.8	39.7	37.5	35.0
	15-64	47.9	51.0	55.5	56.8	58.1
	Over 65	4.0	4.3	4.7	5.7	6.9
Paraguay	0-14	49.7	46.9	45.9	42.5	38.1
	15-64	47.1	49.7	50.3	53.3	56.9
	Over 65	3.1	3.4	3.7	4.2	5.0
Peru	0-14	46.8	46.4	45.1	42.6	36.0
	15-64	49.4	49.6	50.8	52.9	58.9
	Over 65	3.8	4.0	4.1	4.6	5.1
Dominican Republic	0-14	49.8	44.5	39.8	36.7	34.3
	15-64	47.5	52.5	56.2	58.0	59.3
	Over 65	2.7	3.0	4.0	5.3	6.4
Uruguay	0-14	29.3	27.6	25.6	24.3	22.3
	15-64	63.9	64.4	65.3	64.8	66.4
	Over 65	6.7	8.0	9.1	10.9	11.3
Venezuela (BR)	0-14	49.8	46.7	43.6	39.7	35.9
	15-64	46.9	49.5	52.3	55.3	57.7
	Over 65	3.4	3.8	4.2	5.0	6.4

Source: CELADE.

Public Policies and Institutional Framework

Measures taken by countries to face the economic crisis have enhanced the role of Family Farming in the region

The fight against the negative effects of the food crisis has continued to dictate agricultural priorities in the region. The implementation of programmes and policies of wider scope, in some cases with the participation of local organizations, has helped to strengthen state actions in the agricultural sector. In the search for solutions to the current situation of economic uncertainty, countries are focusing on Family Farming, both in the targeting of emergency programmes and the development of this sector's potential to mitigate the impact of the agri-food crisis.

Facts

* In some countries of LAC, the modernization of the state has included the restructuring of the Ministries of Agriculture and dependent organizations. This has resulted in Ministries of Agriculture with more limited responsibilities and the transfer of functions to other ministries.

* In response to the demands for greater participation of civil society organizations, some spaces for dialogue in the agricultural sector have been strengthened in terms of the development of Family Farming policies, such as the Specialized Meeting on Family Farming (REAF) in the MERCOSUR countries, and the Regional Rural Dialogue Programme in Central America, which have helped to create an environment for farmers to exercise their rights.

* An opportunity generated by the food crisis is the role of Family Farming as a provider of food and raw materials for agro-industry, as well as a source of employment. As a result, rural areas are being recognized for their important contribution to the sustainable development of societies in the region.

* Countries in Latin America and the Caribbean have strengthened commercial ties, thus encouraging regional integration. This could be the starting point for the creation of a regional trade bloc.

Trends

Governments continue seeking solutions and implementing measures to mitigate the volatility of food prices

The reduction or mitigation of the negative impacts of the volatility of food prices on the population has become a priority for governments in the region that have implemented various measures to deal with the problem (ECLAC/FAO/IICA, 2011). In the past year, these have included the following:

- *Promoting the production of staple foods in small-scale agriculture:* through subsidies for raw materials, technical assistance and marketing support. The majority

of countries in the region have implemented some of these measures, especially Central America and Mexico.

- *Support for investment,* mainly in Bolivia and Peru, which have established programmes for the acquisition of agricultural machinery. Also, the countries of the Caribbean have built roads and infrastructure for irrigation and drainage that are necessary for the development of agricultural activity.

- *Improvement in the functioning of agri-food markets:* Brazil, Ecuador, Nicaragua, Venezuela and Guatemala have implemented measures to enhance the capacity of public sector intervention in markets, such as direct purchases and the search for new sources of imported foods, among others.

In some countries of the region, these short-term measures have been accompanied by longer-term actions to increase investment in agriculture and strengthen rural development, although these are still incipient. Advancing with such broader measures makes sense, since currently most of the region's most vulnerable population lives in rural areas.

National trade policies are starting to promote intraregional trade

Countries have faced the scenario of economic uncertainty by establishing measures to mitigate the negative impact on their territories and increasing intraregional trade.

In domestic markets, trade policies have been geared to mitigate the effects of the volatility of food prices. Some countries have taken temporary measures, such as those aimed at restricting the export of certain agricultural products; however, the trend is towards the introduction of medium and long-term measures to insert local agricultural products in markets, especially in the most vulnerable sectors. In this context, some countries have established programmes to promote the consumption of local products, produced mostly by small-scale farmers, in order to decrease their dependence on food imports. In addition, some countries in the region are using Family Farming to supply food for basic nutrition programmes.

In terms of extra-regional trade, the region has responded to the growing demand from North America, Europe, and Asia, by signing bilateral and multilateral trade agreements of differing scope, including Costa Rica-China; Peru-European Union; United States-Colombia; and Colombia-Liechtenstein-Switzerland. There have also been significant advances towards the signing of an agreement between Central America and the European Union, and in the negotiations related to the Transpacific Partnership, in which Chile and Peru are taking part along with the United States, Australia and Singapore, among other countries.

The gradual increase of trade agreements with LAC countries was made possible by the reduction of barriers to agricultural trade, which have resulted in better conditions of access to markets for these countries. This trend is also observed in domestic markets with the reduction in tariffs paid by importers of agricultural products (Sotomayor *et al.*, 2011).

Intraregional trade has continued to expand through the signing of free trade agreements between Peru and Costa Rica, Mexico and Peru, and Mexico and Central America. In addition, there has been progress in negotiations between Peru and Venezuela, Guatemala and Peru, and Panama and Trinidad & Tobago.

The increase in intraregional trade is especially important with regard to food products since it has helped to improve food security, as well as to mitigate the effects of the economic crisis on the region's population.

Agricultural innovation: Falling behind

The region allocates 0.6% of its GDP to finance research and development (R&D), representing less than one third of the United States' expenditure on R&D (2.8% of GDP). R&D investment is clearly not a priority in the region, even though the need of countries for new technologies to transform their agricultural production matrix and increase the development of the sector is evident.

In recent years, agricultural innovation actions in the region have been oriented towards the pursuit of profitability in business activities, which explains why innovation is concentrated in the private sector with successful farmers receiving most of the support while small-scale agriculture has been marginalized. This means that LAC countries have not been able to establish an approach to innovation that ensures the inclusion of all stakeholders in the region.

Even though the current situation in innovation is not encouraging in the region, there are exceptions such as Argentina, which has a research centre aimed specifically at family farming (CIPAF). Other countries, such as Brazil and Uruguay have designed research programmes for family farming in coordination with local agricultural research centres (EMPRAPA and INIA, respectively).

The need to improve innovation in the region was highlighted in the Meeting of Ministers of Agriculture of the Americas (2011), in which the ministers committed to promoting technological innovation to better integrate the food sector, including family farmers, in value chains, as well as strengthening extension systems and incorporating innovative knowledge transfer methodologies adapted to producers' realities.

Countries have strengthened institutional support for Family Farming

In recent years, countries of the region have gradually recognized the importance of Family Farming in the provision of basic foods and the mitigation of economic crises, as well as in the use of sustainable agricultural practices. To improve the effectiveness of the support for this sector, some countries have created programmes targeted at providing specialized support to family farmers, including El Salvador's Family Agriculture Plan, Paraguay's Family Agriculture Food Production Programme, Mexico's MASAGRO programme (which promotes the production of corn and beans in small-scale agriculture), Guatemala's Programme for the Strengthening of the Rural Economy through Family Agriculture and Peru's Agrarian Rural Development Programme (AGRORURAL).

Other countries have created and/or restructured their regulatory and institutional frameworks. Argentina created the Ministry of Rural Development and Family Farming, and Uruguay created the General Directorate of Rural Development, which are institutions designed to meet the demands of Family Farming. In the same way, Costa Rica's Ministry of Agriculture developed the Family Farming Strategy, declaring the need of an institutional framework for the sector. In Brazil, amendments to the existing regulatory framework were introduced, including law No. 12.188/2010 which established the National Policy of Technical Assistance and Rural Extension for Family Farming and Agrarian Reform (PNATER) and the National Technical Assistance and Rural Extension Programme (PRONATER).

In some countries, the creation or redesign of institutions and programmes has included the participation of local organizations, which has generated greater links between governments and these organizations. An example of this is Brazil's National Federation of Agricultural Workers (CONTAG), which represents 20 million rural workers and has been involved in discussions with the government of Brazil with respect to the coordination of public policies and their impact on agriculture. In Argentina, the Family Farming Organizations Forum (FONAF) and the Agrarian Federation of Argentina (AFA) bring together small and medium-sized producers that have participated in joint issues to support Family Farming and farming cooperatives.

In addition to the above initiatives, some countries that have signed free trade agreements have implemented programmes to strengthen links between the state and Family Farming organizations, establishing innovative policy mechanisms aimed at small-scale agriculture. Examples of this include the Specialized Meeting of Family Farming (REAF) of MERCOSUR, which is comprised of representatives of 10 countries in the region, and Central America's Regional Rural Dialogue Programme, involving organizations from Central America and the Dominican Republic within the framework of the Central America Agricultural Policy. These initiatives have identified the main variables that facilitate the integration of Family Farming with modernization processes.

Social inclusion is a priority in many countries

Some countries in the region have created regulatory frameworks for social development and inclusion with the aim of improving the impacts of public programmes designed to reduce poverty and inequality. Such is the case of the Central American Strategy of Rural Development (2010), drafted by the Central American Agricultural Council, which aims to promote the management of inclusive rural development policies. Meanwhile, other countries have created institutions specifically to implement social inclusion policies, notably two countries of the Andean Community: Ecuador, which in 2008 created the Ministry of Economy and Social Inclusion (MIES), and Peru, which created the Ministry of Development and Social Inclusion (MIDIS) in 2011.

Through such initiatives, which are being copied throughout the region, these countries aim to move from temporary programmes of poverty alleviation towards multisectoral actions to improve the access of the population

to economic opportunities and services. However, it is important to consider that this requires adequate rural coordination mechanisms that in many countries of the region present serious weaknesses.

Outlook

The region will strengthen results-based public management and measure the effects of policies

The modernization processes of public management are moving increasingly towards agreements that allow measures to be reviewed. It is becoming more common to link state modernization with "Management Results". But public officials in LAC, focused on processes that fix objectives in compliance with regulations determined by their institutional structures, seem to be lagging behind; even though much remains to be done in this area.

Results-based management was implemented several years ago in Chile, where indicators showing the effect of public policies on society have been improving. The Dominican Republic uses the term "programme agreement" that is subject to budgetary review by parliament. Mexico (Box 3), Trinidad & Tobago, Uruguay, Ecuador, Bolivia, Venezuela and Colombia have implemented similar management models.

Results-based management is emerging as a response to the need to unlock the processes of economic and social development. The aim is the design and/or development of mechanisms to optimize the resource allocation process, creating greater public value.

Other areas in which the modernization of public management needs to be strengthened include cooperation and partnership with the private sector, especially with regard to the elaboration and implementation of national development strategies in which the involvement of the private sector is key.

Improving the measurement of results is a challenge for governments of the region. The results of sector interventions not only demand assessment and follow-up; it is necessary to know about the degree of impact on the quality of life of the population, particularly in those programmes that aim to increase incomes for farmers and promote their inclusion in economic activity. Although measuring impacts can be complex and costly, it is a good way of determining if scarce resources are having the desired effect on the improvement of opportunities for the poorest families. In this regard, project guidelines are needed that allow institutions to understand the process of improving the quality of life for different sectors of the population.

Countries of the region will recognize the importance of Family Farming in solving the food crisis

As a result of the numerous studies by countries of the region to solve or mitigate the effects of the food crisis, it is clear that Family Farming plays a fundamental role in providing food and raw materials, generating income, promoting the sustainability of resources, as well as in mitigating the impact of the volatility of food prices. Aid agencies recognize this situation, which is why they have incorporated Family Farming as one of their main themes. FAO and IICA have also made this sector one of the priority areas that will guide their medium-term agendas in the region.

In order to take advantage of the potential of Family Farming, public support for this sector is needed to increase food production and thus reduce the impact of higher and more volatile food prices, as well as to increase the role of Family Farming in climate change mitigation and adaptation. To achieve this in the near future, countries face the following challenges:

- *Institutional development:* This is a trend already observed in the region, as outlined in this chapter, but which has still not been expressed with sufficient force in some countries. The region as a whole requires an institutional and regulatory framework suitable to the needs of development of small-scale agriculture.

- *Characterization of Family Farming:* The optimal design of public policies requires knowledge and awareness about the situation of the participants, which is why LAC countries need to improve the existing systems of information about the sector in the short term. This task is even more important considering that Family Agriculture is a widely heterogeneous sector in terms of human and productive resources.

- *Strengthening associativity and cooperation:* The associativity of family farmers in the region is still incipient. States are continuing to engage in dialogue

with producer organizations to improve policies and interventions, and help to optimize the management of small-scale farms.

- *Promote access to markets and integration into value chains:* In order to strengthen the role played by Family Agriculture as a provider of raw materials, the countries of the region must take actions aimed at establishing linkages between small farmers and agri-business. There have been some successful experiences in the region, such as the Productive Alliances Programme in Chile and Colombia and the implementation of Inclusive Businesses in Ecuador.

- *Facilitate innovation and access to technologies adapted to the reality of the sector:* Countries need to allocate more resources for research in Family Farming production systems, as well as for the design of innovative extension methodologies.

Finally, the implementation of the actions described above will make the contribution of Family Farming to the economy increasingly visible in society. The UN has declared 2014 to be the International Year of Family Farming, which will help to position this sector amongst the priorities of LAC governments.

The state will continue to strengthen public procurement of food supplies, thereby generating opportunities for Family Farming

Public procurement systems have been implemented in some countries in the region to ensure the availability of food for the population. Countries have achieved this by creating public agencies to buy the production of family farmers. This is the case of Nicaragua through the Nicaraguan Basic Foods Company (ENABAS). Brazil has also developed the Public Acquisition of Food from Family Farming Programme (PAA). In addition, Brazil has incorporated Family Farming in its School Nutrition Programme through a law (Law No 11.947/2009)

Box 3: Results-based public management in Mexico

Mexico is a pioneer in the region in terms of results-based public management. On January 20, 2004, the General Social Development Act was promulgated, paving the way for this new management model. The Act created the National Council for the Evaluation of Social Development Policy (CONEVAL), as a decentralized public entity with its own assets and technical autonomy. CONEVAL, with the participation of prominent academics, has become the institution responsible for issuing guidelines to monitor the entities responsible for implementing social programmes. The Federal Budget and Fiscal Responsibility Law of March 30, 2006, makes it compulsory for all state entities to "evaluate the results of their programmes according to the norms of national or international experts, academic institutions and research agencies that have experience in related areas."

Since 2008, the country has passed reforms aimed at improving the efficiency of public spending through a results-based approach. The Performance Evaluation System (SED) was created to track and evaluate systematically the policies and programmes of federal agencies, thus contributing to the achievement of the objectives set out in the National Development Plan.

In addition, CONEVAL in partnership with the Ministry of Finance and the Ministry of Public Administration publishes an Annual Evaluation of Federal Programmes, which includes the participation of private offices, universities, and international organizations. A Matrix of Results Indicators has also been developed for all government programmes. In the case of the Ministry of Agriculture, Livestock, Rural Development, Fishing and Food (SAGARPA), FAO has participated in these evaluations (http://www.fao-evaluacion.org.mx/pagina/index.php) as well as in the evaluation and training of federal and state officials. The result of this collaboration between FAO, SAGARPA, and CONEVAL has led to SAGARPA being recognized for good practices in: 1) The baseline survey of SAGARPA's 2008 programmes, 2) Systematization of the baseline survey for the measurement of results and impacts, and 3) Implementation of the matrix of results indicators of SAGARPA's programmes with federal resourcescia de recursos en las entidades federativas.

guaranteeing that a minimum of 30% of the state's total purchase of food for this programme comes from family farmers.

Other countries are also adopting the strategy of establishing Family Farming as a supplier for public food and nutrition programmes. During a meeting of the region's Ministers of Agriculture in 2011, they highlighted the role that the state plays in strengthening small-scale farming through public procurement, which stimulates the inclusion of this sector in markets and enables farmers to obtain fair prices.

The development of such public purchase schemes could eventually cross national boundaries, such as the agreement signed recently between Argentina, Brazil, Paraguay and Uruguay, under which Brazil's Public Acquisition of Food from Family Farming Programme is open to all these countries with the aim of creating a network for countries to support each other in a food emergency. This initiative could be replicated elsewhere in the region.

The development of public procurement programmes for Family Farming can generate solutions to common challenges through the exchange of experiences. Some challenges including food safety, associativity of producers, diversification of production, etc., can be overcome through the implementation of joint actions.

Countries will create innovation systems that are relevant to the needs of the agriculture sector

The promotion of agricultural innovation in LAC requires a more integrated vision since the sector involves many stakeholders, such as research centres, suppliers of raw materials, universities and farmers, among others. As a result, countries are adapting their institutional frameworks to support the creation of new innovation systems in which agricultural extension programmes play an important role.

The creation of innovation systems will help improve the competitiveness of the sector, through coordinated actions adapted to the reality of each subsector. These actions can help to match supply and demand for innovation, thereby improving resource efficiency. In short, more systems of innovation in the region will contribute to an effective integration between research, extension programmes and agricultural production.

The need to reduce the existing innovation gap with developed countries and between sectors within countries is a priority for the region. To achieve this goal, Family Farming should be explicitly included in national innovation agendas. This is a great challenge because systems must be capable of responding to the needs of a large and heterogeneous sector with very different needs. Given the magnitude of this challenge, countries need to focus efforts to reform and modernize extension programmes that are suited to different types of farming activities. In this regard, lessons could be learned from the experience of Argentina's National Institute of Agricultural Technology (INTA), which runs programmes for innovation and technology transfer in Family Farming.

The participation of the private sector in innovation systems will increase. This will complement public sector efforts, increase the coverage of innovation systems, and improve conditions of equality by prioritizing the use of public resources in the most vulnerable sectors.

States will implement measures that allow equitable access to the land

Worldwide there is increasing pressure on land use, mainly due to population growth and the level of consumption, as well as the demand for biofuels and the effects of climate change. This pressure has resulted in an increase in demand and, in some countries, in a trend towards the concentration of land ownership. In this new scenario, the countries of the region are adapting legal frameworks regarding land ownership and creating or reforming land policies.

The region is addressing structural imbalances in access to land. This situation has become so important that, in May 2012, FAO member countries adopted the new Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests. These guidelines constitute a guiding instrument at a global level, establishing principles and standards that provide practical guidance to governments, civil society and the private sector, including topics such as access and the use of resources, markets and investment. This document will be useful for the reformulation of strategies, policies and laws relating to concentration and competition for control of natural resources.

Extra-sectoral factors are likely to assume greater importance in the development of agriculture

The food crisis in the region has increased the visibility of agriculture and its effects on countries' economies. The Ministries of Finance and Central Banks of the region show a growing concern for inflation, exchange-rate effects and public deficits generated by the behaviour of the food market. In addition, governments have focused efforts on studying the possible effects of trade restrictions on agricultural products that are identified as using non-sustainable practices.

Countries are expected to develop agricultural policies in the near future with the participation of other government agencies in addition to the Ministries of Agriculture. The implementation of such policies could translate into substantive improvements in the quality of life of farmers in the region.

The region will take effective and timely action in terms of climate change mitigation and adaptation

Many countries of the region are developing an institutional framework necessary to address climate change. Central America, the Caribbean and the Andean Community have regional strategies for dealing with climate change. In addition, some countries are currently developing national sectoral climate change strategies (Nicaragua, Chile, Uruguay and Peru). Both instruments are valuable since they establish the basis to develop new policies, as well as to coordinate and prioritize actions aimed at climate change mitigation and adaptation.

Preventative measures will continue to be prioritized over emergency measures. In this regard, actions aimed at disaster risk management (such as the recent law enacted in Colombia) will set the regional climate change agenda.

Countries are making progress in eliminating subsidies that negatively affect the environment, and creating measures and technologies to reduce greenhouse gas emissions. These efforts are still in an early stage in most countries. In fact, Mexico is the only country in the region that has a law aimed at the gradual reduction of carbon dioxide emissions. Brazil has also made some advances in this area through the Low-Carbon Agriculture Programme (ABC Plan, 2010) aimed at establishing voluntary greenhouse gas reduction targets for farmers.

Countries must increase their exchange of information and take joint measures to address the impacts of climate change and reduce its negative effects. This requires policies, programmes, monitoring systems and bilateral or subregional phytosanitary alerts.

Family Farming requires special measures to adapt to climate change, owing to the conditions of climate vulnerability in which part of the population lives. In this sector, actions are needed to promote the sustainable management of productive systems.

At the national level, greater public-private integration is needed to define priority actions in climate change agendas.

Finally, and as part of their adaptation strategy, countries are making efforts to bring about a cultural change in citizens with regard to climate change and its effects on agriculture.

Countries will accelerate the process of decentralization in the agricultural sector and strengthen local institutions

In the last decade, modernization processes in most countries of the region have made decentralization a key priority to improve public management. However, in many countries this process has been problematic, with high levels of centralism still prevailing and weak coordination of policies between the various ministries. In addition, in many cases local governments do not have the resources or capabilities to perform the functions attributed to them, thus preventing them from proper vertical coordination of policies.

To improve decentralization processes in the agricultural sector countries need to overcome the following challenges in the near future:

- *Strengthen local institutions:* This will allow the improvement of physical and professional capacities as well as budget increases for the fulfilment of their functions.
- *Definition of institutional functions*: This will allow governments to define the fields of action of each institution, including their technical and political powers, as well as identifying inter-agency synergies.

- *Creation of new "flexible" institutions:* These can adapt their structures in order to respond better to the diversities of the territories.

- *Definition of the territorial planning unit:* This will result in the establishment of territorial agendas and "management agreements" of various kinds that will form an integral part of government agendas and will help to identify the territory's potential.

- *Development of mechanisms for coordination and control between all levels of government:* This will allow a more efficient use of public resources while contributing to transparency in the management and coherence of public interventions.

- *Creating spaces for citizen participation at all levels of government:* This will validate public management at all levels and help to build a shared vision of the sector in the future.

Meeting these challenges will help countries to build a stronger institutional foundation that is coordinated with the different levels of government. This will improve governance and promote processes of economic development, thereby reducing poverty levels.

Finally, it is important to consider that decentralization processes will require a cultural change from the historically centralist approach at different levels of government, to an approach characterized by programmes designed and operated at the local level.

Policy recommendations

Improve the process of democratic governance by increasing civil society participation in policy decisions

The region is witnessing a major change in the development paradigm. In the past, the region sought to limit the regressive effects of economic models; today there is an interest in transforming the economic system in which social issues are not just another element, but rather the driving factor. In this context, civil society plays a central role.

However, good governance is difficult to achieve, even more so in developing countries. In analysing countries that boast the best governance indices, a common factor is that they have incorporated various stakeholders in the decision-making process including actors from civil society, the private sector and the state. The public and private sectors are cooperating more in the formulation and implementation of policies. It is clear, then, the need for the region to increase the participation of all sectors of society in decision-making, especially the sectors that have, until now, been marginalized. This takes on greater meaning in Family Farming, which in most of the countries of the region has been excluded from the process of policy formulation. The strengthening of this sector's participation is a key factor for strengthening agriculture policies and programmes.

The adoption of the Voluntary Guidelines for the Responsible Governance of the Tenure of Land, Fisheries and Forests is important in the context of the food crisis to strengthen aspects of governance in the sector; this can also directly (and indirectly) impact indices of good governance in Family Farming.

There has already been some progress in increasing the participation of the agricultural sector, such as the Specialized Meeting on Family Farming (REAF) and the Regional Rural Dialogue Program, already mentioned in this chapter, in which governments and family farmers' representatives from different countries of the region discuss and propose public policies aimed at the rural sector. At the national level, examples include Costa Rica's Agriculture and Rural Development Policy 2010-2021, Argentina's Agri-food and Agro-industrial Strategic Plan 2010–2016, and Panama's Strategic Action Plan for the Agricultural Sector 2010-2014, which are all based on a public-private consensus and a long-term vision. Another example is Brazil's National Extension Policy, drawn up with the participation of relevant actors from civil society. Certainly, there is room for more spaces of public participation in the region in order to improve levels of equality and strengthen policies.

Promote the development of agriculture policies with a long-term vision

The development of agriculture in the region is a complex challenge that requires overcoming problems of various kinds, many of which exceed the scope of action of agricultural institutions. Therefore, countries must address this challenge with a more integral and solid vision, concentrating efforts towards the design and coordination of long-term policies and strategies that are consistent in all areas relating to the development of agriculture. To achieve this goal, governments must

strengthen strategic planning and develop clear definitions of the functions of the institutions involved.

In this new environment it is increasingly important that governments promote cross-sectoral work, aimed at the design of "policies for the development of agriculture", including those created by related sectors that affect agricultural performance and not just "agricultural policies".

Results-based public management: a long-term challenge for the region

The implementation of a results-based management model requires a number of changes within the state, as well as the development of capabilities to implement this methodology in an optimal way. The adoption of results-based management is not easy since it requires a cultural change in the institutions.

In this regard, ministries must motivate their staff and senior management on the advantages of this new form of governance, as well as training them in the new methodology. Qualified staff can be valuable agents of change within institutions, contributing to the effective implementation of this system.

Design agricultural policies adapted to the reality of each sector

In order to achieve the equitable and sustainable development of agriculture, it is increasingly important that the countries of the region recognize the sector's social and economic heterogeneity and the need to develop policies and programmes relevant to different realities. In the case of Family Farming, it is particularly important to realize the potential of this sector in the production of goods and services. It should be noted that there are still few countries of the region that have policies and/or programmes designed especially for Family Farming.

The design of specific and effective agriculture policies requires a thorough knowledge of each sector. Most countries lack sector-specific studies, especially in the Family Agriculture sector. For this reason, it is recommended that countries perform studies to quantify the contribution of Family Farming to the economy, as well as of different types of producers and their main demands and competitiveness gaps.

Promote the use of ICTs that strengthen the response capacity of public institutions

The advantages resulting from the adoption of Information and Communication Technologies (ICTs) in state modernization are well-known, especially their contribution to transparency in public management. However, progress in the region is varied and in general there is still a long way to go, especially in Central America and the Caribbean.

Some countries have implemented policies to promote these technologies, such as the national e-government strategies of Colombia, Chile, Uruguay and Argentina (ECLAC/FAO/IICA, 2011). However, the adoption of these strategies in agricultural institutions has been slower than in other state entities. Countries that have not yet adopted these technologies must develop regulations to promote their use in all public institutions.

It is recommended that countries improve the orientation of these technologies towards end users. To achieve this, institutional websites must be made user-friendly and kept up to date. Governments must also make more public services available online, which is an area where there is a large gap compared to developed countries. In addition, governments must move quickly in the implementation of the electronic signature to increase the provision of public services online. In this regard, countries should review the experiences of Colombia, Chile, Uruguay, Mexico and El Salvador, which show a level of public services available online that is higher than the average for developed countries (ECLAC/FAO/IICA, 2011).

Another area in which countries can use ICTs to benefit the final user is offering texting services via mobile phone, such as the Agro Messages System in Costa Rica, or Mexico's Meteorological Risk Alert System. In addition, electronic food safety certification programmes should be established to facilitate the commercialization of agricultural products.

Finally, digital literacy programmes must be established and rural areas provided with adequate infrastructure for the use of ICTs. In the majority of LAC countries these programmes are still in early stages.

Support innovation to consolidate regional development

The development of agriculture is conditional on the reduction in the innovation gap in LAC with respect to developed countries. To meet this challenge, innovation should be targeted in the following areas: increased agricultural productivity, value-added exportable products, research in Family Farming to improve production systems, specialization of human resources for innovation and job creation to absorb qualified professionals and prevent their migration, among others.

Policies to promote innovation will result in higher production indices and incomes, the creation of new technologies adapted to the reality of each country's agricultural sector, production systems that are environmentally and socially sustainable, and decreased rates of poverty and inequality.

Strengthen intraregional trade to develop the agriculture sector in the region

In the current scenario of economic vulnerability and food insecurity in many countries in the region, the promotion of intraregional trade is one alternative to overcome this situation. Greater trade between countries will enable them to have a more fluid and stable food supply.

Trade is even more important considering the products of Family Farming. To achieve an effective inclusion of this sector in regional integration, Family Farming organizations should be involved in trade negotiations, ensuring that the interests of small producers are duly considered.

It is also necessary to remove legal barriers that may affect trade flows between countries. In this context, it is crucial that countries concentrate efforts on the elaboration of common agricultural policies, resulting in greater regional integration. This will pave the way for all countries to promote more equitable development models.

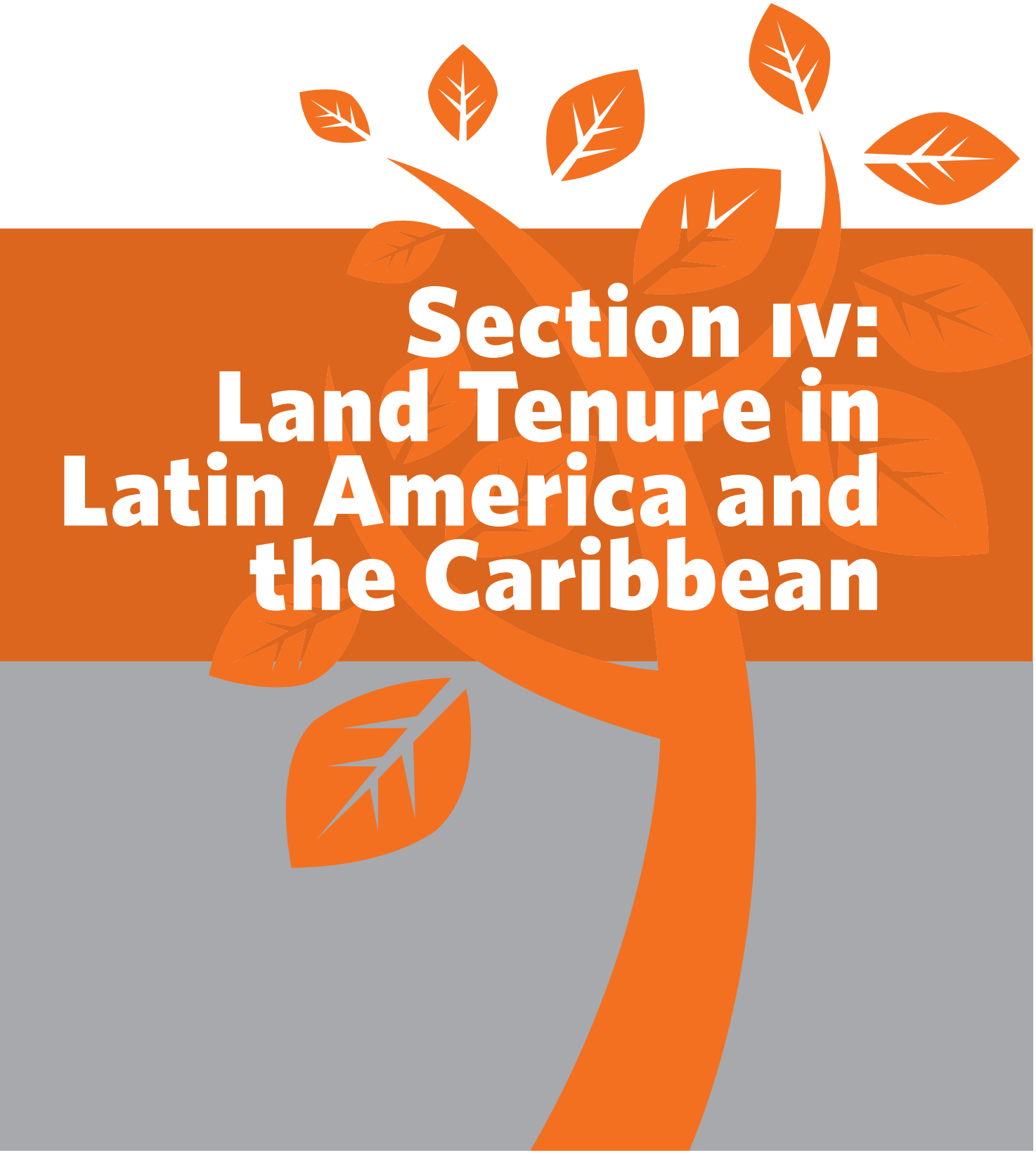
Conclusions

The food crisis has made it clear that the region is at a turning point. Countries must deal with the negative impacts of the current scenario and, at the same time, progress in achieving the inclusive and sustainable development of agriculture and food security. In practice, this translates into the implementation of short-term measures, which should gradually be replaced by policies and long-term programmes.

Agricultural development depends on the implementation of integrated sectoral and extra-sectoral policies adapted to the reality of each country. Although policies may differ from one country to another, those aimed at increasing participation in the development of policies and programmes should focus on creating innovation systems, improving existing institutions and developing socially inclusive policies, including those aimed at Family Farming.

Special attention should be paid to strengthening joint programmes between countries, mainly in regards to trade integration and the establishment of strategies and coordinated policies for phytosanitary protection and climate change mitigation and adaptation.

Each country must travel the road ahead according to the reality of its own agriculture sector. Therefore, it is up to each country to focus efforts on improving public management and pooling efforts in pursuit of the inclusive and sustainable development of agriculture in the region



Section IV: Land Tenure in Latin America and the Caribbean

Land Tenure in Latin America and the Caribbean

In search of new approaches to a complex structural dynamic

How to reconcile ownership of land used as a personal asset with land tenure as a legitimate factor for inhabitants of rural areas seeking a sustainable livelihood in a constantly changing and increasingly complex environment remains an unresolved issue. It is compounded by the conceptual discussion concerning the land grabbing that is taking place under a variety of ownership regimes and acquisition processes (buying, leasing and contract farming). Are the existing legal and institutional frameworks adequate for addressing these land tenure dynamics?

The Facts

* Changes in agrarian structure: The on-going process of structural change in agriculture in Latin America and the Caribbean includes both land concentration and an increase in smallholdings. The old system of large estates based on semi-feudal production relationships has given way to large capitalist corporations that are part of international trade circuits while smallholdings are being broken up as they are sold or inherited. In some countries, tensions between peasants (landed and landless) and large landowners are still running high. This phenomenon has been linked to new issues, such as armed conflict and drug trafficking, which make governance of rural society even more complex.

* Irregular tenure: In most of the countries, many farms lack title to the land. This is particularly the case in the countries of the Caribbean and along the agricultural frontier in the countries of Central America and South America. The situation is discouraging investment, triggering social conflicts and making it impossible to devise appropriate land management plans, among other constraints.

* Land grabbing: The global shortage of land has sparked the interest of foreign countries and major international corporations in buying land in Latin America and the Caribbean in order to ensure their future food supply. This process has displaced the local population and given rise to a new kind of large estate as well as territorial sovereignty issues.

* Cross-border movement of companies and agricultural producers: Trade integration at the country level has prompted the spontaneous movement of agricultural firms and producers of all sizes as they set up operations in neighbouring countries to complement production processes in their countries of origin (companies) or seek new opportunities (farmers).

* New indigenous identity: In many countries of the region, indigenous groups are pursuing land claims as they use the political and legal process to forge an indigenous identity. This has, among other things, put indigenous peoples on a different footing in society as they turn to ancestral rights to claim land and resources.

* Pressure of cities and industrial activities on farmland: The advance of cities and land requirements for other activities (industry, commerce, tourism, infrastructure) is causing a rapid loss of land resources.

* Generational change and the urbanization of society: The new opportunities offered by cities have spurred rural youth migration at a time when household heads are ageing. This trend poses new challenges for revitalizing rural territories and encouraging young farmers who choose to live in the countryside.

* New role for rural space: Perceptions of rural space and the role of agriculture have been changing since the 1990s. A "post-productivist" vision has emerged, grounded in the concept of multi-functionality and seeking to provide goods and services that go beyond the production of food and fibres to encompass tourism, landscape stewardship, recreation, crafts, commerce and conservation of biodiversity, among others

Introduction

The profound transformation of the global economy is changing the terms of the discussion concerning the future of agriculture in Latin America and the Caribbean. There are many factors that are rapidly ushering in a new phase: the financialization of the economy and its impact on commodity price volatility; technological innovation (information and communication technologies, nanotechnologies, cognitive sciences) that is radically changing production processes; the growing importance of diet for human health; the new health risks caused by globalization; the impact of climate change on agriculture; the need to feed 9 billion people by 2050; and the impact that all of this will have on natural resources are but some of the trends marking the transition to a new economy.

This new phase is closely linked to serious environmental degradation in the region's agricultural areas. Pressure on land resources has greatly pushed back the agricultural frontier in countries that still have vast extensions of forest and given rise to severe deforestation and biodiversity loss.[17] Pressure on land in consolidated agricultural areas has intensified crop rotation, causing erosion, salinization and fertility loss and the degradation of associated natural resources, notably water and biodiversity.

Against this backdrop, the issue of land ownership and use is also being redefined. The old classifications of smallholding versus large estate, domestic market versus external market, and lag versus modernization that characterized the discussion about land in Latin America and the Caribbean have been replaced by another paradigm that, of course, includes historical issues of land access but goes further and is even more complex. While this paradigm mirrors reality in each country and subregion of Latin America and the Caribbean, there are common traits that are found over and over again. For the sake of analysis, the situation in the countries of Latin America will be discussed separately from that in the countries of the Caribbean because each of these subregions has its own specific agrarian history and other geographical and cultural particularities.

Trends

The changing agrarian structure

Latin America has millions of small farms that coexist with medium-sized and large operations. Together, they form a highly heterogeneous agrarian structure that, by reproducing asset distribution inequality, perpetuates and exacerbates productivity gaps. This fact has been at the core of the agrarian debate throughout the 20th century and will surely continue to be central to the public policy agenda and to the way that the discussion on development in the region is framed.

Is structural transformation under way in Latin America? It is hard to answer this question as it applies to agrarian structure because many countries have not conducted

17 Concerning this trend, see the chapter on forests in this report.

censuses of agriculture since the 1990s[18] and the information that is available (such as agricultural and household surveys and population censuses) does not yield conclusive findings, either because surveys are partial or because population censuses do not gauge trends in production. It is likely that some countries with a highly fragmented agrarian structure dominated by smallholdings are seeing an incipient restructuring that tends towards land concentration in search of greater profitability (economies of scale) along with economic growth that can absorb the rural population that is migrating to cities.

That is what can be deduced from Chile's recent Census of Agriculture and Forestry, which shows that over the past 10 years there was a 9% decrease in the total number of farms in the census and declines of 20% in some regions where modern, export-oriented agriculture prevails (INE, 2007). Argentina has seen the same trend, with the number of farms dropping by 20.8% between 1988 and 2002 (INDEC, 2009). In Brazil, the number of farms fell by 10.7% between 1985 and 2006 (IBGE, 2006). On the other hand, Mexico's recent Census of Agriculture, Livestock and Forestry shows that between 1991 and 2007 the number of production units rose by 7.8% as the number of farms in the census increased from 3.8 million to 4.1 million. These data show that farms in Mexico continue to be subdivided as they are sold or inherited, reducing the average area per production unit from 8 hectares to 7.3 hectares (INEGI, 2007; De la Madrid, 2009). Uruguay has gone from a high of 86,928 farms in 1961 to 57,131 in 2000, with most of the loss (96% of the decrease) concentrated in operations with less than 99 hectares (Piñeiro, 2011). This trend has been accompanied by a sharp spike in the price of land, from an average of US$448 per hectare in 2000 to US$2,633 per hectare in 2010 (MGAP, 2011). The booming land market makes it likely that figures from the 2011 Census of Agriculture, when they become available, will show that this trend is sharpening.

Data from Argentina, Brazil, Chile and Uruguay suggest that a turning point may be approaching and will lead to a different phase with new synergies between agriculture and urban economic activities like manufacturing and services. The figures for Mexico show that the division of land into increasingly smaller holdings is deepening. These two trends provide a snapshot of the structural dynamic of the market for land in Latin American agriculture.

Land access

What new factors should figure into land and natural resource tenure policy in the current context of Latin America? After the agrarian reforms that took place in Mexico (1910-28), Plurinational State of Bolivia (the 1950s), Cuba (1960s), Chile (1964-73), Peru (1970s), Nicaragua (1980s) and El Salvador (1980s), the issue has resurfaced in the region, especially in Brazil and, to a lesser extent, in the Plurinational State of Bolivia, the Bolivarian Republic of Venezuela and Paraguay (Baranyi and others, 2004).

Since its return to democracy in 1985, Brazil has embarked on an active agrarian reform including expropriations, direct purchases, set-aside of public lands and legal recognition of occupied lands. The rationale for reform has been the existence of a vast agricultural frontier, numerous unproductive large estates and active social movements fighting for land. The idea of agrarian reform has solid political backing and support from the urban middle classes, who see the process as a way to bring about social reforms aimed at decreasing poverty and growing the domestic market. As a result, 21.1 million hectares were added to the land area covered by agrarian reform between 1995 and 2002; 48.3 million hectares were added between 2003 and 2010. During the latter period the process benefited 614,093 families in 3,551 settlements. Brazil currently has 85.8 million hectares covered by its agrarian reform programme, with 924,263 families in 8,763 settlements managed by INCRA (MDA-INCRA, 2010). Agrarian reform policy is in line with broader measures aimed at regulating the market for land, which is one of the main agrarian issues in Brazil because of the historical problems that the Brazilian State has faced in addressing the high concentration of land ownership (Gini index of 0.85), growing environmental degradation, rural and urban poverty, speculation and illegal appropriation of public lands (Reydon and Cornélio, 2006).

In the Plurinational State of Bolivia, the ongoing agrarian reform that began in the 1950s is regulated by the new Law No. 3,545 on the community reorganization

18 The United Nations recommends conducting a census of agriculture every 10 years, but parts of the region are lagging well behind. The most recent census of agriculture was in 1970 in Colombia, 1984 in Costa Rica and the Plurinational State of Bolivia and 1994 in Peru, to give a few examples. Part of the lag is due to domestic conflict (armed conflict in Peru during the 1990s and still ongoing in Colombia), as well as to the lack of economic resources and technical capacities.

of land reform improving the INRA law passed in 1996, which required that land tenure be demonstrated by the social and economic function of the land (INRA, 2010). The new law seeks to correct the distribution of land by the state during 1953-1993, which distorted the original sense of the reform. During this period, the Bolivian State granted nearly 57 million hectares to new owners; 70% went to business interests and medium-sized owners, and the remaining 30% (17 million hectares) was granted to peasants and indigenous communities. When the INRA Act of 1996 was coming into force, over the space of a decade the government invested almost US$85 million but only managed to transfer 9.3 million hectares. In a three-year period under the new Law No. 3,545, at a cost of US$35 million, the state titled an additional 31 million hectares, of which 13.6 million hectares have been classed as public lands and 16.7 million hectares have been transferred to small owners, rural workers and indigenous peoples (INRA, 2010). Title to 40 million hectares of land has been regularized since 1996, allowing for the transfer of more than 100,000 titles to the benefit of 174,249 persons living in rural areas.

The domestic conflict in Colombia that has dragged on for more than 40 years has created conditions for one of the highest rates of human displacement in the world and unquestionably the highest in the Americas (ABColombia, 2011). The conflict impacts indigenous communities, peasants of African descent, peasants in general and a large rural population that is trapped between far-right paramilitary groups, guerrillas and the Colombian army. Because the conflict is still unresolved, displacement has become permanent and its magnitude very hard to gauge. Figures from a number of sources put the loss of land due to displacement at between 4 million hectares and 10 million hectares involving vast expanses of land that the actors in the conflict regard as strategic. Economic interests tied to these lands mobilize other actors that, while not direct parties to the conflict, are drawn by the business opportunities they see and claim the land for themselves. As a result, on land owned by displaced persons the state has granted concessions for mining (or other operations), or local and transnational groups are using that land for their agribusiness investment projects. Recently, there has been a surge in oil palm projects for producing biofuel.

In an effort to provide reparation to the victims of displacement, the Colombian government passed Law No. 1,448 (the Victims and Land Restitution Law) in June 2011. This law, which will be applicable for 10 years, seeks to restore 2.2 million hectares of land to the victims of displacement occurring after 1985, at an approximate cost of US$ 25 billion. It is expected to benefit one million families. The agency charged with restitution is the Colombian Institute of Rural Development (INCODER), whose Strategic Plan 2010-2014 reads as follows concerning land restitution: *"the policy seeks comprehensive management of the restitution of rights to land and territories by means of comprehensive, free assistance for the victims of dispossession and is thus part of broad-based reparations. The objectives of this policy contribute to the social and economic re-establishment of the population of victims of forced displacement by violence* (PVDFV). *As property is restored or families compensated, the other policies will be coordinated in search of lasting solutions that ensure all rights. In addition, preferential access to land for the population of victims of forced displacement by violence will continue to be promoted by means of subsidies"* (INCODER, 2012).

In 2001, the Bolivarian Republic of Venezuela passed the Land and Agricultural Development Law aimed at modernizing the old agrarian reform law dating back to the 1960s. The main purpose of the law is to regularize idle land held by the state or private parties who are occupying it illegally—especially large landholders—and redistribute it among landless peasants committed to its productive use. The law also aims to regularize land occupied and worked by peasants without clear title.[19] In addition, the law seeks to ensure diversity, enforce environmental and agro-food protection rights and ensure food security (Official Gazette of the Bolivarian Republic of Venezuela, 2001). The new law created three institutions: the National Land Institute (INTI), the Venezuelan Agrarian Corporation and the National Institute of Rural Development. The first of the three is charged with regulating and granting title to land. Some conceptual imprecisions of this first body of law necessitated a new reform in 2010, the Law for Partial Reform of the Land and Agrarian Development Law. It broadened the role of the state, which can take on production functions directly. Moreover, Article 145 notes that the executive branch can directly assume primary production, industrialization, distribution, exchange

19 The land use evaluation and adjudication system is the core of the new agrarian regime. It is based on three basic levels of productivity: idle or uncultivated land; improvable land; and productive land. Idle or uncultivated land may be subject to intervention or agrarian expropriation, and it is taxed. The idea behind these measures is to return idle land to production (Official Gazette No. 37,323, Decree No. 1,546, 2001)

and commercialization functions in order to consolidate and ensure food sovereignty. According to Article 1, the objective is to eliminate tertiarization and large estates[20] as *"systems that are contrary to justice, equality, the general interest and social peace in the countryside, ensuring biodiversity, food security and the enforcement of food and agro-food protection rights for present and future generations"* (Bolivarian Republic of Venezuela, 2010). In the space of a decade, according to data provided by INTI, 7,782,045 hectares have been regularized to date, directly benefiting 224,700 families.

Another strategy for addressing the issue of land access involves land funds, promoted primarily by the World Bank. Their objective is to provide credit for purchasing land to small buyers who would not normally be able to tap the capital markets. Land funds promote voluntary land transactions where governments mediate between buyers and sellers in an effort to keep the price of land from increasing artificially. To do so, they support the subdivision of large extensions and disseminate price information among market agents in order to make these transactions more transparent. There have been experiences of this kind in Brazil, Chile, Colombia, Guatemala, El Salvador, Honduras and Mexico. Such funds, which have also been referred to as market-assisted land reforms or community-based land reforms, have been criticized for their high cost and the fact that they address the situation for just a very small number of beneficiaries. In addition, in El Salvador these instruments have been used to locate ex-combatants who participated in the civil war in the 1980s. All of this indicates that these experiences are not replicable on a large scale. Indeed, the land granted in Guatemala (FONTIERRA), El Salvador (PTT), Honduras (PACTA) and Chile (CONADI-FTA) combined adds up to 193,600 hectares, with 46,969 grantee families (Sotomayor, 2008).

CONADI in Chile provides a good example of the limitations of such a strategy. Following restoration of the democratic process, October 1993 brought passage of Law No. 19,253 that, among other measures, put an end to the transfer of indigenous lands to non-indigenous persons, created a Land and Water Fund (FTA) and the National Corporation for Indigenous Development (CONADI), charged with implementing development policies and programmes for indigenous peoples. From 1994 to date, CONADI has purchased and transferred 121,289 hectares to 9,287 indigenous families through the land fund, at a cost of US$293 million, paying an average of US$2,416 per hectare. CONADI has regularized, cleared title to or transferred another 56,678 hectares of public lands and granted subsidies to individuals (or indigenous communities) enabling them to purchase another 28,738 hectares during the period (estimate based on data from FTA and CONADI). Under the three transfer mechanisms, then, a total of 206,705 hectares has been recovered over a 17-year period (CONADI, 2012).

Insecure tenure

According to some estimates, approximately 50% of the region's farmers lack secure title to their land (López and Valdés, 1997). In Brazil, just 50.9% of the country's total land area has been covered by cadastral surveys (MDA-INCRA, 2006). That is why experts agree that secure land tenure is important for agrarian development in Latin America. A proper description of land resources (cadastres) provides information on their amount, location, quality and value. Besides reducing information asymmetries in the land market and contributing to land tenure regularization programmes, cadastres generate positive externalities (taxes, competitiveness and land management, for example) that warrant their being a government priority. Secure tenure depends on legal systems that are capable of ensuring property rights expeditiously and impartially. Legal security of land tenure is indispensable for obtaining credit, ensuring investment stability, managing natural resources properly and developing a healthy market for selling, leasing and conducting other land transactions.

Secure tenure is a more manageable challenge for governments than the issue of land access is. This can be seen in the many land titling projects in recent decades promoted by the IDB and the World Bank in most of the countries of the region. Operational improvements to such projects over the past few years include the use of modern, efficient and equitable methodologies in titling, particularly the sweep campaigns that enable field missions to benefit from economies of scale in a comprehensive cadastral mapping, titling and legal re-

20 Tertiarization is defined as any agriculture-oriented use of land whereby a third party is granted the right to use the land or mandated to work the land, or any form or legal business, paid or otherwise, whereby the party claiming ownership of the land uses it through a third party or transfers it in usufruct to a third party. Large estates are therefore defined as any extension of land exceeding the average for the region or failing to reach 80% of ideal yield (Article 7, Law for Partial Reform of the Land and Agrarian Development Law).

cordation process. The new approaches also call for requiring, without exception, recording titles in the public registry, and they seek the modernization of public registry and cadastral institutions. Even so, much remains to be done in this sphere because these processes are costly and because land ownership conflicts make it difficult to identify owners.

Land grabbing

Another concern involving land in Latin America and elsewhere in the world is land purchasing by individuals, major foreign corporations and some countries interested in expanding their natural resource base. A recent FAO study for Latin America and the Caribbean concluded that this is a new phenomenon and that it is still small in scope because it is limited to the larger countries of the region (Brazil and Argentina). However, land concentration and growing foreign tenure have soared since the 1960s (FAO, 2012).

The extent of land grabbing varies across the countries of the region. Distinguishing features include: (i) the large amount of private land involved; (ii) the key role of national elites as the main investors; (iii) extensive involvement of intraregional Latin American firms (the trans-Latins) and conventional transnational companies; (iv) the minimal impact that the Persian Gulf countries, China, Republic of Korea and India are having on the region's public and private land market despite their being among the main investors elsewhere in the world; and (v) the presence of land grabbing in countries that would not be considered as fragile or weak from an institutional viewpoint (characteristics that are regarded as generally favourable to land grabbing by some observers) (Borras and others, 2012).

Land grabbing can take place under a variety of land ownership regimes (private, State-owned or communal), agro-ecological conditions and locations (ranging from prime working farmland, peri-urban areas and remote rural land to land in frontier areas) and acquisition mechanisms (purchasing, leasing, contract farming and value-chain capture). For international comparison purposes, this is not an exclusive matter (that is, the land involved in transactions can be either privately- or State-owned). Rather, there tend to be differences of degree within each category. In this context, transactions involving privately-owned land are probably more common in Latin America and the Caribbean than in other regions of the world, where there is a higher concentration in the general category of State-owned (public) lands.

The formal nationality of land grabbers varies and can occasionally be unclear or hard to determine. In this regard, there are four kinds of land grabbers: international; (trans) Latin American; national; and undetermined. This latter category includes companies with investors whose nationality is, for the most part, difficult to determine. Many of them are headquartered in the region's tax havens. The transnational dimension of land deals is a substantial one, although foreign governments are not usually directly involved (some negotiations are carried out at the request of the government, but, aside from deals in Brazil and Argentina, these are specific, incipient cases). Intraregional (transnational) land transactions involving (trans) Latin firms perhaps account for the bulk of land deals in the region or are, at least, the most obvious trend to date. Last, the role and involvement of national elites (many of whom have links, to varying degrees, to international capital) are significant — and even predominant — in many of the countries of the region. Compared with other parts of the world, the region differs from the processes seen in Africa, where transnational (transregional) deals predominate and are commonplace. Circumstances in Latin America and the Caribbean are more like those in South-East Asia.

Land grabbing not only aims to increase food output, especially beef. It is taking place in the incipient food, forage and fuel triad (flex crops in the 3-in-1 complex) and in non-food sectors (specifically, industrial forestry production and large-scale conservation projects). This conclusion is a far cry from the predominant general opinion that ties the global land rush mainly, albeit not exclusively, to the food price spike of 2007 and 2008. Land purchases are also for environmental services, tourism and conservation projects (especially, Patagonia in Argentina and Chile) and for opening potential access to mining and energy resources. As noted above, land grabbing in the region is taking place in countries that do not match the standard profile of an institutionally fragile or weak State. Political conditions in Brazil and Argentina (the two countries with the most land grabbing in the region) are strikingly different, but both countries have a well-organized State. The same can be said of other countries, like Chile and Uruguay.

The change in land use has been multidirectional. In the food sector, for example, there is land that is no

longer used for growing food and is now used for forage or fuels. Land that was not being used for farming or forestry had begun to be used for growing food, forage and fuel for export. Natural forests have been turned into industrial forestry operations. It is not always the case that land formerly used for growing food or producing wood for national or domestic consumption is switched to growing food and non-food products for the external market. This type of land use sparks the most objections. Such a wide range of land use is seen in other regions, as well, such as Africa, Asia and the Eurasian States of the former Soviet Union.

One noteworthy feature of land concentration and growing foreign ownership are the channels that reveal a certain porosity of expanding land tenure among the countries of the region.

There are three channels for intraregional expansion, depending on the resources mobilized. In all cases the capacity to deal with the issues involved depends on the capabilities accumulated in the country, which in many cases are limited.

Through trans-Latin companies, which mobilize capital and technology and just a few executives. The specific advantages in the case at hand (Chilean forestry companies) are tax exemptions, the possibility of acquiring significant extensions of land, and a guaranteed lack of social conflicts (indigenous populations in southern Chile).

Through a combination of land ownership and leasing (planting pools in Argentina), which mobilizes organization and management models and complex software, as well as funding and technology, and seeks alliances with local groups. The specific advantages have to do with protecting producers from government-imposed quotas and with providing a kind of crop insurance that diversifies weather risk by buying or leasing land in several different countries.

Through migration (Brazil, Plurinational State of Bolivia and Paraguay), which mobilizes resources for buying land, operating capital and entrepreneurship. The specific advantages lie in the fact that the selling price of land in the country of origin can make it possible to double the area purchased, and ties to the country of origin can be maintained, even through technology networks.

Cross-border movement of agricultural companies and producers

Offshoring agriculture is a long-standing trend that is, however, gathering momentum (FAO, 2012; Dirven, 2012). The main migration flow is associated with the massive movement of Brazilian farmers towards Paraguay, Uruguay, Argentina and the Plurinational State of Bolivia. Land settlement in Brazil has gone through stages once the population was established in coastal areas. After the central and north-eastern parts of the country were settled, the process gradually shifted to southern Brazil, which is much narrower. Settlers thus quickly reached the border areas with Uruguay, Paraguay and Argentina. Because these areas were only sparsely settled in the 1970s, it was natural for large Brazilian growers to set up operations there. They were followed by a vast contingent of rural workers. The process intensified in the 1980s until it reached the levels seen today. It is in Paraguay where local farmers make up the largest group, as they are substantially involved in cattle-raising and the soybean boom in MERCOSUR. "*Paraguay received the largest number of small and medium-sized farmers, drawn by the abundant availability of land. They also arrived in Argentina and Uruguay, in smaller proportions because not much land was available and it was not very cheap. The triple interaction of agro-industrial modernization, the gradual closing of the agricultural frontier and relatively flexible control of the movement of persons led to the emergence of large contingents of itinerant workers who floated from one country to another across broad border strips"* (Galeano, 1997). By deforesting new land, settling the territory and developing a battery of services, the Brazilians have consolidated a large-scale, highly mechanized and poorly diversified model that has changed the country's production landscape and economy.

Despite Argentina's laws banning foreigners from settling in border areas, many small Brazilian farmers have illegally set up operations there. But they have not radically changed the local economy. This is not the case in Uruguay, which is exposed to double pressure from Brazil and Argentina.

In the Plurinational State of Bolivia, one of the most recent cross-border movements started in the region of Santa Cruz and surged towards the end of the 20th century. The region of Santa Cruz is one of the richest in the Plurinational State of Bolivia; over the past two decades it has grown faster than the country as a whole. Much of this growth is due to a boom in farming, which

accounts for 56% of the province's foreign trade. Its main products are oilseeds, sugar, leather, wood, cotton and oils and alcohol products (Urioste, 2011). Modern agro-industrial operations in the low-lying areas of the region have replaced traditional peasant farming concentrated in the valleys and the Andean altiplano, expanding the agricultural frontier from 413,320 hectares in 1990 to 1,821,631 hectares in 2007. Of this total, it is estimated that approximately 1 million hectares correspond to the soybean complex[21] and the rest to other crops. As a result, 66% of the 2.7 million hectares under cultivation in the country are concentrated in the region of Santa Cruz (Urioste, 2011).

As noted above, much of the agriculture boom is directly related to the expansion of soybean growing, where owners from Brazil have been among the main actors. They arrived in the Plurinational State of Bolivia in three waves. The smallest was in the late 1980s; the largest was in 1993-1999, when the government of the Plurinational State of Bolivia was promoting the Eastern Lowlands Project for developing highly productive land and infrastructure, which expanded the supply of fertile land at a low price (Urioste, 2011). Another wave of Brazilian immigration started in 2005; this time it was not so much limited to the soybean business but rather to the search for land for cattle-raising (Urioste, 2011). In addition to Brazilians, there are reports of an equally large influx of Argentinean nationals in recent years. However, it is not known whether they are flows from businesses with operations in Argentina or Brazil, individuals, or a combination of the two (Urioste, 2011).

Albeit to a lesser degree, the selective installation of Chilean companies in Peru and Argentina is another significant trend. Unlike emigration from Brazil and Argentina, this movement is more limited in scope because it involves medium-to-large export-oriented companies. In the case of Peru, these companies are exporters of fresh fruit seeking to capitalize on the competitive advantages of the Peruvian coast in terms of the cost of land and labour and, especially, the potential for expanding their range of off-season products to complement their production cycle. Investments in the agriculture sector are still small, however; according to official data they total approximately US$82 million from 1990 to date and account for just 0.7% of the total foreign direct investment (FDI) capital flow from Chile to Peru (DIRECON, 2012). Even so, this trend, while incipient, is likely to deepen. For example, the Chilean firm Verfrut recently acquired 1,200 hectares in the Papayo area of the Piura region and plans to invest nearly US$20 million in the new facilities (Diario la República, 2012). Argentina is the primary recipient of FDI from Chile; the US$1,025 million invested from 1990 to date in the agricultural sector represents 6.3% of the country's total FDI inflows. That investment has come mainly from grape-growing and wine-producing companies seeking to expand their range of appellation wines by incorporating new production areas, especially in Mendoza province. Viña Concha y Toro is Chile's largest wine exporter; in 2011 its Argentinean subsidiaries Trivento Bodegas y Viñedos S.A, Finca Lunlunta S.A. and Finca Austral S.A. posted US$55 million in sales (Viña Concha y Toro, 2011).

Another emerging trend is the acquisition of land for forestry in Argentina, Uruguay and Brazil. Chile's largest forestry group, Empresas Arauco,[22] has 127,290 hectares of tree plantations in Argentina's Misiones Province, 73,561 hectares in the Arapoti region of Paraná State in Brazil, and 67,897 hectares in Uruguay (owned 50-50 with the Stora Enso group). These holdings account for 12.6%, 7.3% and 6.7%, respectively, of Arauco's total forestry plantations. The firm owns another 373,573 hectares of native forest set aside for conservation, 30% in Argentina, 16% in Brazil and 1.9% in Uruguay. Of the company's total forest assets (native forests and forestry plantations), 257,705 hectares (15.7%) are in Argentina, 155,455 hectares (9.5%) are in Brazil and 127,234 hectares (7.7%) are in Uruguay. Globally, its forest assets overseas amount to 33% of the total, highlighting how important these investments are for the company's strategic plans. Just to cite an example, 14.6% of its operating income is from its subsidiaries Forestal Alto Paraná, Nuestra Señora de Carmen and Leasing Forestal in Argentina (Empresas Arauco, 2010).

Chile's second largest forestry group, in terms of forest assets, is Compañía Manufacturera de Papeles y Cartones (CMPC).[23] This company manages its forest assets

21 Soybean output grew seven-fold between 1990 and 2009; investment between 1989 and 1999 is estimated to have reached US$2 billion (Montenegro, cited by Urioste).

22 Celulosa Arauco, founded in 1970, is controlled by Empresas Copec S.A. Its sales for fiscal 2010 totalled US$ 3.788 billion, of which US$227 million was generated by its subsidiary Industrias Forestales S.A., located in Argentina. In addition to pulp, the company produces lumber and wood panels.

23 This firm, founded in 1920, recorded US$4.797 billion in sales in

through its subsidiary Forestal Mininco and currently has foreign holdings in Brazil and Argentina. Its forest assets in these two countries combined total 307,387 hectares, of which 94,283 hectares are in Corrientes Province in Argentina and 213,104 hectares are in the state of Rio Grande do Sul in Brazil (CMPC, 2011).

These companies are setting up operations abroad because they need to expand their domestic market and are seeking to become relevant players in the global market. To meet the growing demand caused by this opening (especially in the form of new inputs for the markets of Asia), these firms have had to expand their tree plantations into neighbouring countries because of the limited room for expansion in their home countries. In addition, building plants abroad helps maintain a structure of proximity between sources of raw materials, plants and the main export ports.

New indigenous identity

Historical claims of indigenous peoples to their territories, occupied since the Spanish conquest and colonization, are a relatively new and especially complex issue. Part of the complexity lies in the fact that these territories no longer exist as such because they are part of new states, regions, provinces and the many other subdivisions that make up the Americas, where indigenous peoples coexist with a non-indigenous population led there by the twists and turns of history. Adding to this complex picture are ethnic groups who live as hunter-gatherers roaming the Amazon jungle,[24] where borders are ill-defined, sparking conflicts with non-indigenous population groups that are interested in working the area for economic reasons.

Is it possible to settle the historical debt with indigenous peoples and protect their rights to territories that used to be theirs? Is it possible to tap the natural resources of territories where indigenous peoples are living? International Labour Organization Convention No. 169, adopted in 1989, deals with the rights of indigenous and tribal peoples in independent countries and establishes the following for the ratifying governments (Article14.1):

"*The rights of ownership and possession of the peoples concerned over the lands which they traditionally occupy shall be recognised. In addition, measures shall be taken in appropriate cases to safeguard the right of the peoples concerned to use lands not exclusively occupied by them, but to which they have traditionally had access for their subsistence and traditional activities. Particular attention shall be paid to the situation of nomadic peoples and shifting cultivators in this respect.*"

Article 14 specifically recognizes the rights of ownership to land being used by indigenous communities or to which they have traditionally had access. On a practical level, however, this has not been easy to implement. There are still clashes and points of great conflict with the non-indigenous population, businesses and States.

The agrarian reforms launched in Latin America in the 20th century have brought partial reparation for indigenous peoples who were dispossessed of their lands. Although these reforms were not aimed at resolving the issue of indigenous peoples' access to land but rather at solving the problem of landless peasants in general,[25] they had a positive impact for indigenous groups because many of them were landless (Aylwin, 2002). But the issue of access to land and preservation of indigenous territory is far from being resolved. The discourse on "*territoriality*" that runs through the claims made by indigenous movements essentially appeals to their political nature and is grounded in an alternative political project with legal, economic and cultural repercussions. In this context, then, the issue of territory goes well beyond the matter of land access to become a triad combining territory, identity and autonomy.

Another new dimension further complicates the issue. Part of the discourse of environmentalist groups grants indigenous peoples the authority to preserve and manage natural resources, which makes the matter of territory a more global issue and brings into question the current model of development and private working of natural resources. Territorial claims by indigenous populations

2011. Its main products are pulp, paper and cardboard, lumber and wood panels.

24 The Amazon region has an estimated 33 million inhabitants, of which an indigenous population estimated at 1.6 million belongs to 370 different peoples.

25 Brazil would be an exception because since 1910 the National Indian Foundation (FUNAI) has been legally mandated to protect indigenous land. The service established legal grounds for recognizing Indians in order to bring them into the institutional framework of the new republic that was being built. However, because the land was regarded as unclaimed (vacant), much of the indigenous land was appropriated by non-indigenous populations, especially after the advent of the military dictatorship in 1964 (Aylwin, 2002).

therefore have a different meaning than those arising from landed or landless rural communities concerning access to and better distribution of land.

Agricultural use versus urban or industrial use

This is a key issue because it has several connotations. On the one hand, agricultural land is being lost as it is put to use for urban or service purposes. On the other hand, urban expansion often affects agribusinesses and livestock herds[26] in areas that were historically rural but have become peri-urban. This sparks conflict between agricultural businesses and their new neighbours over odours, vectors and other issues. Indeed, the very concept of peri-urban dating from the 1970s has had to be redefined to take into account the impact of globalization on urban dispersion, which is, in Latin America, based on a spatial model with megacities and regional cities (Sánchez, 2009), where new and diverse economic activities (especially services) develop, a new urban and transport infrastructure is built and functions are decentralized as they come under the purview of medium-sized and smaller cities. The geographic limits of the periphery (dominated by the influence of the big city) are not well defined, and agricultural areas undergo a profound transformation towards patterns of discontinuous use of urban and rural land (Sánchez, 2009).

In this context, the spread of the urban[27] into rural spaces can trigger conflicts that vary in level and scale and involve families, neighbourhoods and communities, where the core issue tends to be competition over the use of land for residential or agricultural purposes. One of the burning issues in the region involving peri-urban areas (especially those that are being used for agriculture) is land market speculation driven by pressure from the real estate sector, among other factors.

A landmark case in this regard is the property development currently taking place in the green belt of the city of Buenos Aires, particularly in the Pilar district. Urban sprawl has brought with it enclosed urban spaces, condominiums, office compounds, smart buildings, shopping malls, private universities, gastronomic poles, hotels, convention centres, boutique clinics, private cemeteries and automobile dealerships that have completely transformed the territorial space (Barsky and Vio, 2007). This has put enormous pressure on the use of land, especially agricultural land where many small vegetable and flower farms are run by Bolivians who began to settle in the peri-urban belt in the early 1970s. Pressure on land ownership sparked market speculation leading to price differences of as much as 1000% in a radius of just a few kilometres and adding to the already tenuous position of the vegetable farms, especially those run by Bolivians (39% of all of the registered farms in the province). According to the 2001 census of horticulture in the province of Buenos Aires, Bolivians lease 88% of the farms they run and own just 12%.

Changes in land use also encourage business sectors to turn to the environmental impact assessment system to resolve conflicts between economic agents and/or the local population over a territory or production area even if the area is not zoned for that purpose. A number of regulations for preventing the loss of land resources are currently under discussion in Latin America. Among the many issues being debated in Chile are the role of government agencies in authorizing changes in land use (binding local participation required), the spatial planning regime (master plans as a factor in defining the objective image of a given territory), minimum subdivision lot size (0.5 hectares at present versus 2 hectares) and building authorizations (limits on construction density), the role of government agencies, and other factors. While some countries have a planning mechanism, public and private actors in the region need to more carefully think through the land use planning policies in place in order to arrive at technical criteria that will go beyond reactive approaches and thus make it possible to address increasingly complex situations as the pressure on land resources grows.

26 The opposite is also often the case. Agro-industrial firms operating in peri-urban areas or close to cities can seriously harm the well-being of people if the environmental impact of their activities is not appropriately regulated. One current case involves the firm Agrosuper, which put the world's largest swine herd (more than 400,000 pigs) in the locality of Freirina, in Huasco Province in Chile's Atacama Region. There were problems with controlling foul odour from pig manure. The wind carried the nauseating odour over a 50-kilometre radius and drove the local population into heated confrontations with the company and with the regional authorities, forcing the central government to temporarily shut down the company's slaughtering operations (*Diario Financiero*, 2012).

27 Studies of peri-urban spaces have focused on the following issues: (a) changes in land use and the consumption of space; (b) social change; (c) land ownership regimes; (d) specificity and conversion of peri-urban agriculture; and (e) peri-urban space as a territorial heritage, and preservation of identity (Sánchez, 2009).

Generational change and the urbanization of society

The rural population of Latin America has declined steadily over the past few decades. In the 1970s it accounted for 43% of the total population. According to estimated projections from CELADE, by 2010 it had fallen to less than half of that figure (20%); the rural population is expected to stabilize in the area of 11% towards 2050. However, the situation varies widely from one country to another. In 2010, Uruguay had the smallest rural population percentage (8%) and Honduras the largest, at 42% (CEPALSTAT, 2012). A large part of this contingent has migrated to the main urban centres in search of better job opportunities and living conditions in general; this trend is very likely to continue. According to a recent study (Rodríguez and Meneses, 2011), even though the indicators of rural population access to basic social services have improved in regard to literacy, universal education and access to utilities, this has not narrowed the gaps between the rural world and the urban one. This is especially the case in areas where indigenous populations live, where the changes have been less marked.

Changes in the sphere of production have also had a strong impact. The modernization of agriculture has led agribusinesses to locate operations along the urban frontier, boosting the growth of agricultural employment among residents of urban areas. Climbing agricultural productivity has spurred the growth of non-agricultural activities in rural areas; one example is rural tourism. All of these changes have blurred the frontier between urban and rural, a trend that is most clearly seen in densely populated rural areas and calls for new policy approaches for adapting to this new reality.

A new role for rural space

The concept of multifunctional rural spaces is not as well established in Latin America as it is in the countries of the European Union (and other developed countries), but there is in the region a clear trend towards a broader view of what is traditionally seen as rural. At a conceptual level, this takes the form of the rural territorial development policies that have been promoted since the early 1990s (Sepúlveda and others, 2003; Schejtman and Berdegué, 2007) and given rise to countless experiences in territorial and local development. This approach has stressed social participation and the development of new economic activities that go beyond the limits of traditional agriculture to encourage tourism, commerce, crafts, small-scale industry, environmental services and peri-urban agriculture, among others, in order to address the land constraints faced by many rural population segments. The result has been multisectoral intervention programmes aimed at improving the management of invested resources in order to fight poverty and foster economic development. Examples include the Central-American Strategy for Territorial Rural Development (ECADERT, 2009) and the Territories of Citizenship programme created in Brazil in 2008 (Federal Government, 2009).

Outlook

Land and resource concentration and foreign ownership have increased markedly since the 1960s, when the need for agrarian reforms was widely justified. This trend is likely to deepen further over the coming years, enhancing the dual nature of the agrarian structure of Latin America and the Caribbean that has made the region the most socially unequal in the world.

The market for land will continue to see structural change along two main trends. The first, more general one is the fragmentation of the agrarian structure in some countries (Mexico and, probably, some Andean and Central American countries) and concentration of the structure (declining number of farms) in others (Brazil, Chile, Argentina and Uruguay). The other trend is that, beyond the general dynamic (at the country level), fragmentation of rural ownership will continue, as ownership grows more concentrated in medium-sized and large holdings. In some countries (such as the Plurinational State of Bolivia, the Bolivarian Republic of Venezuela and Brazil) the agrarian reform processes under way will probably give landless peasants and smallholders access to land. In other countries with a high degree of concentration and recurrent land conflicts (such as Paraguay), there seems to be no medium-term prospect for access to land by landless peasants, meaning that land ownership concentration will persist.

The historical debt of Latin American societies with their indigenous peoples has brought back the issue of access to land for indigenous groups while casting it in a different light. Indigenous groups are self-identifying as peoples and claiming their former territories, the right to the resources found there, and full autonomy and governance. This new discourse, which is increasingly embraced by ethnic groups in the region, will be a source of constant tension for national States, especially those with a large indigenous population.

Concentration is likely to come with further degradation of the rural environment, bringing into question the viability of the region's agro-export model and, on a deeper level, jeopardizing the very foundations of the economic system and contemporary society. This poses an enormous challenge for the region's agricultural producers, agribusinesses and governments, which need to take preventive measures.

This record suggests that multiple forces will bring about a paradigm shift. The problem of land is far more complex today than in the past and calls for new approaches to address it. This new paradigm will not eliminate the problem of access to and distribution of land, but it will redefine, reframe and reorganize the issue within a new system. In other words, it will link this issue to other emerging ones and, in so doing, make new approaches possible.

To face this issue it will be necessary to tie this trend with other, more general ones in society. For one, the spread of interdependence and feedback in all domains (economy, ecology, social equilibriums and political stability) will turn land conflicts and local environmental problems into global challenges. Meanwhile, the dematerialization of the economy associated with the development of information and communications technologies and other technologies will turn symbol manipulation and data into new forces of production.

Policy recommendations

These trends and prospects call for more sophisticated and integrated public policies that allow for a new approach to the issue of land in the region.

First of all, natural resources must no longer be regarded as inexhaustible, and they must be factored into the economic equation by means of new parameters that take account of the physical dimension of production activities (extraction of resources, accumulation of waste and transformation of ecosystems, among others). There is also a need to intervene at multiple levels of organization (local, regional, national and international) with regulations to protect the environment. Of particular note on the international level is the recent endorsement, by the FAO Committee on World Food Security, of the Voluntary Guidelines on the Responsible Governance of Tenure of Land, Fisheries and Forests in the Context of National Food Security (FAO, 2012). The guidelines establish universal criteria for appropriate management of this problem and are the first global instrument to address land tenure and governance.

Access to land needs to be maintained and deepened; small-scale agriculture should be identified as a special case and targeted by differential, broad-based public policies encompassing land distribution, technical assistance, irrigation, associativity, infrastructure and credit, among others. There is also a pressing need for more far-reaching policy measures aimed at the regularization of land titles. This will require generating information from land cadastres, designing legal systems that guarantee property rights and implementing land titling projects to regularize ownership for thousands of small farmers who are living on their land on a *de facto* basis.

Family agriculture has strategic importance in the economy, as do small and medium-sized enterprises in general. In a plural economy, consolidating these two segments requires building a solidary, associative sector of the economy that is, as an important factor for global economic and social stability, in the general interest.

Such policies should also operate on a symbolic level: the magnitude of the task is such that the market forces have to be harnessed in order to achieve more equality, social inclusion and environmental sustainability. This will require differentiating between small-scale rural production and sustainable production, using seals of quality. Heightened ethical, social and ecological concerns are a recent development, as consumers grow increasingly aware of how businesses behave and how the products they buy in the market are made. For those who are part of this trend, price loses its substance and is no longer the only parameter for differentiating a good product from a bad one. Managing this awareness in line with ecological and social goals is a space for action that holds great potential for the new agricultural policies.

In the immaterial economy, history, geography, ethnic identity, territories and cultural and landscape heritage offer new spaces for creating economic value. To attain these objectives, that heritage must be assigned a value by means of public and private policies for maintaining and improving it using seals and cultural brands enabling consumers and citizens in general to identify them.

The same is true for land and resource claims by indigenous peoples. Although there are some similarities between the challenges faced by small farmers and indigenous peoples involving agriculture and the economy,

land access issues have a meaning of their own that is associated with the recovery of indigenous territories and autonomy. Handling these claims appropriately requires spaces for dialogue and agreement with central governments and, above all, compliance with international agreements on the protection of indigenous peoples such as ILO Convention No. 169. But this dialogue should not be limited to the sphere of government. It should be expanded to the rest of civil society so that it is society as a whole that converges on solutions for claims by indigenous peoples, so that they are ensured of support over the long run. This dialogue should yield a broad array of policy measures validated by all stakeholders and aimed at imbuing the reform and development process with lasting legitimacy and sustainability.

All of these initiatives involve strengthening institutions and developing new regulatory frameworks for preserving the environment, planning land use and regulating the purchase of land by States and foreign companies as well as cross-border movements. To this end, it is essential to have up-do-date information on what is really happening in rural areas by conducting regular censuses of agriculture, both for understanding the dynamics of structural change and for identifying agricultural producers — a requisite for implementing appropriate public policies.

As for land grabbing per se, there is a need to build follow-up and monitoring capacities in each country and at the regional level, and to design national and international regulations to prevent the acquisition of large tracts of land for purely private purposes through deals that are neither transparent nor involve the participation of all stakeholders. Such measures are essential for avoiding the political criticism and social conflicts that will just generate legal uncertainty for these investments.

To address the issue of urbanization of rural spaces, the concepts of urban, rural and peri-urban must first be redefined to take account of recent developments concerning the new economic functions of rural spaces (infrastructure, services, scenic beauty and environmental functions, among others) and the role of medium-sized cities in enhancing rural life. The region's rural municipalities need to implement land-use plans reflecting a more mature policy approach that will be crucial for avoiding the problems that are certain to arise without adequate planning.

Last, more robust programmes are needed to encourage young people to settle in rural areas so that in 20 or 30 years their decision to continue living in a rural setting will be the result of a lifestyle choice instead of something imposed by inherited circumstances like it is now. The challenge lies in renewing the human resources that work the farms so that the region's farmers can gradually professionalize. To this end, the state should develop infrastructure programmes (for information and communications technologies, roads and education, among others) geared towards improving the quality of life of the rural population and thereby enhancing the options for future rural inhabitants.

Land Tenure in the Caribbean

Introduction

Caribbean land tenure relationships were formed in a 17th Century "experiment" that involved the rural encampment of an imported labour force (slavery) into a conquered land space (Columbus' West Indies). This history is shared, not only by all 25 Island States and dependencies within the Caribbean Sea, but also by three continental countries, Belize in Central America and Guyana and Suriname in South America. Thus, all references to land issues in the Caribbean as a region are inclusive of these three continental-based countries.

Unfortunately the institutional legacy of land tenure in the Caribbean is not as indisputable as is its historical origin. The standard framework for analysing land tenure relationships in Latin America and the Caribbean is that of "Dualism" as evidenced by the co-existence of large estates (latifundia) juxtaposed with small plots (minifundia) seeking to share the same land space. This, however, portrays a passivity far removed from the continuous conflict that accompanies land occupation and land ownership in the Caribbean. The distinguished Caribbean Anthropologist, Jean Besson [2003], notes that *"... Throughout the period of colonial plantation slavery in African-America, enslaved Africans and Creoles resisted and opposed European land law and official land tenure regimes through rebellion, marronage and proto-ruralisation which sought to re-establish autonomy, kinship and community by consolidating customary rights to land".*

This view more accurately equates Caribbean land tenure struggles to that of a "**social/economic duel**", with its roots in that 17th Century experiment. It sees Caribbean Land Tenure as a repeating battle between "legality" versus "legitimacy". The legality is expressed in the legal institutional framework based on an imposition of European land law. The legitimacy, on the other hand, is expressed through the unofficial land-tenures of "family land", "generational land", "commonage" and even "squatting" which are sometimes erroneously regarded as anachronistic survivals from colonial or ancestral cultures. To the contrary, these alternative land tenure forms reflect dynamic attempts by the poorer sectors of Caribbean society to maximise their kinship lines and their limited access to land, in order to ensure their own food security and inter-generational survival. Anthropologists refer to this activity as "Caribbean culture-building". In Haiti it is generally referred to as a struggle to move from precariousness to legitimacy (de précarité vers légitimité).

It is not surprising, therefore, to find Caribbean land tenure relationships proving to be as rigid in structure as the economy they support. Economist Andrew Pienkos *[Pienkos, 2006]* has observed that "despite decades of development strategies and industrial polices, Caribbean economies continue to show a pervasive economic dualism, as evident in the co-existence of two distinct and largely independent spheres of activities". This is a conclusion that can be readily applied to the numerous efforts in the past to reform Caribbean land tenure. But to understand this rigidity, we have to recognize that in the Caribbean, it is the economy (plantation system) that created the society (slave society) and not the other way around. Thus to conceive of a full dismantlement of this land tenure relationship is essentially to seek to dismantle Caribbean society as we have known it.

There have been only two attempts in Caribbean history to dismantle these structures. The first was the Haitian Revolution (1791-1803) which, under the Presidencies of Alexandre Petion (1806-1818) and Jean-Pierre Boyer (1818-1843), completely obliterated the plantation system by 1842 and produced a widespread peasantry, owning and claiming small parcels of land. The second was the Cuban revolution (1959) in which the revolutionary state appropriated all large privately owned land holdings and produced a state-controlled tenure structure. All other efforts, in history and present, are usually designed to make tenure relations more accommodating to the current reality.

Trends

Pre-eminence of state land ownership

The important characteristic of land tenure in the Caribbean is the dominance of state ownership in the land profile of most countries. In most Caribbean countries,

the state either inherited the land resources of the former colonial rulers or purchased such resources as part of its own land reform activities. This pre-eminent position in land ownership and control makes the state the trend-setter in land matters.

In the Independence Era (1960 -2010), post-colonial Caribbean States sought to increase medium and small-scale private holdings by re-distributing land to the rural population either through the acquisition of large estates or dispensation from their own state lands. These programmes have largely been abandoned in spite of the fact that the rural poor continue to agitate for their delivery. For instance, the National Farmers' Union of the Dominican Republic is reported to have delivered petitions to the governor of the province of Puerto Plata, Mrs. Eridania Gibre on April 12, 2011, demanding that she make good on the government's pledge to distribute land to poor farmers. Such actions serve as a testimony to the recognition, by many citizens of the Caribbean, of a presumed capacity of government to make things happen in terms of land tenure.

Caribbean governments, however, have stepped away from direct intervention in the land market, accepting instead to strengthen the Land Administration Infrastructure and improve the security of land rights. Based on the belief that secure land rights are the cornerstone needed to break the cycle of poverty in rural communities and financed by international agencies, Caribbean governments have instituted programmes with such themes as land registration, tenure security, privatization and individualization of land rights. The most recent programmes in this trend include the following;

i. Belize (IDB 2006) Cadastral and Property rights Registration;

ii. St. Kitts (OAS 2006) Land Registry, Cadastre and Real Estate Property Management;

Table 14. Profile of Caribbean Land Use in Action

	Country	State Ownership	Forestry	Agriculture	Terrestrial Protected Area
1	St. Kitts/Nevis	82%	42%	19%	3,8%
2	Guyana	78%	77%	9%	5,0%
3	Dominica	66%	60%	32%	21,7%
4	Bahamas[1]	51%	51%	1%	13,7%
5	Trinidad & Tobago	51%	44%	11%	31,2%
6	St. Vincent & the Grenadines	47%	69%	26%	10,9%
7	Belize	45%	61%	7%	27,9%
8	Antigua & Barbuda	41%	23%	30%	7,0%
9	St. Lucia	38%	77%	18%	14,3%
10	Suriname[2]	33%	95%	1%	11,6%
11	Jamaica	22%	31%	41%	18,9%
12	Grenada	10%	50%	35%	1,7%
13	Barbados	1%	19%	44%	0,1%
14	Dominican Republic [3]		41%	51%	22,2%
15	Cuba[4]	80%	27%	63%	6,4%
16	Haití[5]		4%	67%	0,3%

Notes:

1. Bahamas: Forestry is used as a good indicator of the extent of Crown Lands ownership
2. Suriname: The laws vest full ownership of untitled lands and all natural resources in the state (domain land)
3. Dominican Republic: Law 6106 of 1962 confiscated all the property of the former Dictator Trujillo and converted it into property of the state via Consejo Estatal del Azúcar, (1966)
4. The Cuban State assumes all land ownership in principle while sharing "Usufruct" rights with cooperatives.
5. In Haiti the state either purchases land for its social obligation or acquires it by fiat.

Source: World Bank World Development Indicators 2009, Caricom Secretariat, 2000.

iii. Guyana (IDB 2010) Mapping the reasons why the Property Rights System is ineffective using the Reality Check Analysis (RCA) Methodology;

iv. Haiti (OAS 2010) Modernization of Cadastre and Land Rights Infrastructure

v. Haiti (IDB 2012) Parcel Demarcation and Land Tenure Clarification

The main focus of these programmes is to improve the institutional structures for administering land matters in the respective states and to contribute to the emergence of a more vibrant land market. The logic of using the land market is that it can best reallocate land into its most productive alternative uses. Rural communities are expected to benefit from the monetization of land rights.

The concentration and de-concentration of land holdings

The second most important trend has been the changes in agricultural holdings brought about by the recent collapse of traditional agricultural export markets. These international economic events have not produced a process of concentration of large land parcels or the aggressive appropriation of rural lands in the Caribbean. Rather a mixed picture has emerged. In countries that have continued to benefit from primary commodity exports, the land ownership pattern has remained concentrated in a few hands. In most of the Caribbean, however, the collapse of the preferential trade regime for bananas and sugar has resulted in a distinct decline in the total area utilized for agricultural production and, in one case, an actual decline in large land holdings.

The Dominican Republic is the second largest sugar producer in the Caribbean (next to Cuba). It is also a country in which the model of a skewed land tenure structure persists. Data from the 1981 census displayed a land tenure structure that was essentially the same as that reflected in the 1971 census. According to the 1981 agricultural census, 2% of the nation's farms occupied 55% of total farmland. By contrast, landholdings representing 82% of all farms (314,665 units), covered only 12% of the land under cultivation [*Haggerty 1989*]. Even the 1998 Agricultural Census conducted by the state Sugar Council (Consejo Estatal del Azúcar) confirmed the persistence of this skewed distribution. According to that census, 40% of households with access to land (titled occupation) owned less than 1.2 hectares each. The next category of land holdings, with less than 3.1 hectares each, covered 75% of households with titles to land.

In countries where the rural economic base of export agriculture had collapsed, the response in terms of land holdings has been varied. The common reaction to this collapse has been a decline in the total area under agricultural holdings. In St. Lucia, where the banana regime collapsed, the total area in agricultural holdings fell from 51,328 acres recorded in the 1996 Agricultural Census, to 30,204 acres in 2007. This represents a decrease of 41.1%. St. Lucia's 2007 Census actually reported that the greatest loss in number of holdings and in area was observed in largest farms; more than 70% of the large farms (in excess of 100 acres) operating in 1996 had disappeared by 2007.

In Jamaica, where the impact was felt from both the sugar and banana regimes, the approximately 326,000 hectares of land in farms recorded in the 2007 Census of Agriculture reflected a decline of 81,624 hectares or just over 20% since 1996. In Trinidad & Tobago, with its significant energy sector and less reliance on export agriculture, total land in agriculture also declined from 131,572 hectares in 1982 to 84,990 hectares in 2004; a decline of 35% with a similar decline (37%) in the number of farms.

However the inter-censual changes did have two surprises. In Trinidad, large land holdings (in excess of 500 hectares) actually rose from 2.97% of the total agricultural land (93.576 ha) in 1982 to an astounding 34.15% of total agricultural land (84,989 ha) in 2004. This is attributed to an aggressive approach by the state to support large-scale production of food in response to the ever-increasing food import bill.

In St. Lucia on the other hand, not only did the large holdings decline, but the proportion of land held under customary tenure, i.e., Family Land, increased significantly. According to the 2007 Census, the share of owned land (i.e. land with legal title) in total land holdings decreased during the last 20 years from 60% to 40%, while family land increased from 24% in 1986 to 42% in 2007. As the economic fortunes from agricultural land declines, families in St. Lucia appear to be seeking security and inter-generational survival through customary tenure.

Response to external/internal crises

Trade opportunities have traditionally played a key role in the development of both the national and the rural economy in the Caribbean. These trade opportunities have been predominantly in commodity exports to European markets under special preferential agreements. This has been the legacy of two centuries of a land tenure structure created in support of large monoculture plantations, producing a single export crop. Historically sugar and banana have been the two major Caribbean export crops; raw sugar exported from Cuba, Dominican Republic, Guyana, Jamaica and St. Kitts/Nevis and banana exported from Dominica, Dominican Republic, Belize, Jamaica, Guadeloupe, Martinique, Saint Lucia, Saint Vincent and the Grenadines and Grenada. The flip side of this legacy is that domestic food supplies have been left in the hands of small non-plantation producers or replaced ever-increasing food imports.

An external/internal crisis arises when changing conditions in the commodity export markets (primarily Europe because of historical reasons) trigger an economic crisis of major proportions in the domestic economy. The main factors or events that precipitate such crises are changes in the capacity of the country to produce at traditional export levels or the loss of market share and attractive export prices. This has occurred in recent times in both sugar and banana exports from the Caribbean.

Sugar exports have defined Caribbean economies in an historical and complex manner. Around 75% of the world's sugar is produced from sugar cane the historical crop of the plantation system. However, although a significant proportion – around one-third - of global sugar production enters world trade, only a small share is produced and traded at world prices. The bulk of international trade takes place under long-term arrangements (preferential trade agreements and contracts). For instance, sugar export earnings for the Caribbean region averaged US$406 million during 1999-2001 with 60% of these earnings being due to preferential access to the EU and U.S. sugar markets.

The erosion of preferential treatment of Caribbean sugar exports to the European Union (EU) began with the collapse of sugar prices worldwide in the 1990s. Recognizing the significant role that sugar exports play in the economies of most Caribbean countries and other traditional exporters, the European Union entered in a series of joint *agreements* with African, Caribbean and Pacific (ACP) countries to assist them in readjusting their domestic economies. Thus emerged the "Sugar Protocol", comprising a combination of specific tariffs, safeguards, country-specific tariff quotas, rules of origin and country-specific suspensions from tariff.

The Sugar Protocol also included a EU commitment to support the economic adjustment process in exporting countries with income transfers. But this is essentially a policy instrument that can be unilaterally changed by the European Union. In fact, ACP exporting countries faced a reduction in their guaranteed export price of 36% as a result of a 2005 reform in the Sugar Protocol.

The importance of income transfers under the Sugar Protocol, have turned out to be a very weak response to the trade crisis precipitated by a loss of export income. Both in absolute and relative terms (as a proportion of national income and total export earnings), these transfers were significant to Guyana and St. Kitts/Nevis and, at the most, modest to Belize, Barbados and Jamaica.

More importantly, however was the response from Caribbean governments themselves. In most instances, governments pursued aggressively the development of the tourism sector, even to the extent of offering land access to foreigners as an incentive. Thus the "Alien Land Registration" requirements, instituted in the 1980s and 1990s as a means of limiting land ownership by foreigners, were relaxed and in some cases the traditional

Table 15. Estimates of Income Transfers under the Sugar Protocol

	Transfer US$M	% of GDP	% of total exports
Guyana	61.3	10.1%	11.4%
St. Kitts	7.3	2.4%	5.4%
Belize	17.1	2.5%	4.9%
Barbados	24.7	1.1%	2.3%
Jamaica	53.2	0.8%	1.8%
Trinidad & Tobago	20.1	0.3%	0.5%
Total Sugar Protocol	***584,2***		

Source: "Forthcoming Changes in the EU Banana/ Sugar Markets: A Menu of Options for an Effective EU Transitional Package", ODI Report by Ian Gillson, Adrian Hewitt & Sheila, Table 26, p.52

access of citizens to beach facilities (recreational and small artisan fisheries) was severely restricted.

The rise of tourism earnings has succeeded to a great degree in replacing the loss in income at the national level, from declining banana and sugar export opportunities. However, in most cases, this replacement provided very few of the backward economic linkages that the structure of commodity exports had entrenched in the rural communities. A recent World Bank Study [de Ferranti 2005] measured the impact of rural economic activities and their high contribution to agricultural exports and found that while rural natural resource activities only accounted for 12% of Caribbean regional GDP, their effect on national growth and poverty reduction was nearly twice as large. This was due to the forward and backward linkages associated with export agriculture that have now been lost to tourism development.

Remittances as a significant response

The third response to the internal crisis is the rise in remittances as a significant income flow from Caribbean migrants in the metropolitan countries. In 2010, remittances from 13 Caribbean countries were estimated at US$7 billion [IDB 2011], or 7% of total GDP. Although 2010 remittance flows may have been exceptionally large (increasing by 8.3%), in response to the devastating earthquake in Haiti early that year, the trend in remittances continued to be significant, increasing by 5.9%, in 2011.

As Table 16 indicates, these remittances exceed 5% of GDP in more than 50% of the countries and are more significant than the income transfers from the Sugar Protocol. While they may be considered as consumption support, their potential to stabilize rural incomes from insecure land tenures and to be converted into land investments is still to be explored. There is enough evidence to suggest that growth in the national economy can have positive effects on poverty reduction. The question is the extent to which growth in the rural natural resource sector (i.e., land, agriculture and rural employment) can be associated with additional increments in the size of the rest of the economy. The World Bank study *[de Ferranti 2005]* also suggests that in spite of the low GDP share of Rural Natural Resource (RNR) sector, for each 1.0% growth of the RNR sector, there is an average increase in the incomes of the poor of almost 0.08%. In other words, the percentage of the national population earning less than US$1 per day would tend to decline with improvements in both agricultural value added and land yields. The potential remains for remittances to become attracted into rural natural resource investment activities with a significant impact on the future of Caribbean land tenure.

Outlook

The economics of Caribbean land reform

The standard economic model seeks to position land tenure within a land policy that promotes sustainable and equitable economic growth by enabling land to play its role optimally as a factor in the production of

Table 16: Caribbean Remittances as % of GDP 2007 - 2010

	2007	2008	2009	2010
Haiti	20 .47%	21 .38%	21 .23%	22 .34%
Jamaica	16 .62%	15 .31%	15 .20%	14 .11%
Guyana	16 .25%	14 .48%	13 .74%	13 .85%
Dominican Republic	8 .29%	8 .01%	7 .41%	6 .51%
Grenada	7 .22%	6 .67%	7 .02%	7 .05%
St. Kitts/Nevis	6 .23%	6 .34%	6 .46%	12 .47%
Dominica	6 .11%	5 .63%	5 .45%	5 .62%
Belize	5 .86%	5 .75%	5 .95%	5 .66%
St. Vincent & The Grenadines	4 .83%	4 .43%	4 .31%	4 .34%
Barbados	4 .15%	2 .76%	3 .15%	2 .99%
St. Lucia	2 .93%	2 .79%	2 .76%	2 .62%
Antigua & Barbuda	1 .86%	1 .85%	1 .95%	2 .05%
Trinidad & Tobago	0 .50%	0 .35%	0 .55%	0 .58%
Total US$M	***US$7,750***	***US$7,986***	***US$7,548***	***US$7,725***

Source: Compiled from World Development Indicators; The World Bank

Box 4. A revolution bends to its land legacy

Cuba has also faced a similar external/internal crisis in its commodity trade relations. In 1990 a collapse in Cuba's major trading partner, the Council for Mutual Economic Assistance (CMEA), primarily Soviet Bloc countries, precipitated a crisis in its domestic economy and forced the Revolutionary Government to deal with the legacy of its colonial land tenure. This legacy is not different from other Caribbean states, namely a huge monoculture agricultural sector, now state-owned in Cuba producing a single export crop, sugar; a corresponding food import bill of about US$1.5 billion annually, accounting for close to 80% of Cuba's basic food supplies; and a significant decline in its rural population from 56% in 1956 to 28% in 1989 to less than 20% in the mid-90s. As Dr. Fernando Funes-Monzote a senior researcher at the Experimental Station "Indio Hatuey" of the University of Matanzas, Cuba, has observed, "*the elimination of the latifundio in 1959 in Cuba by itself did not eradicate the historical problems intrinsic to the national agricultural system*".

The Cuban model to achieve more efficient agricultural production has moved away from the collectivisation approach of organized state farms of 1963, in a similar manner as other Caribbean states have moved away from a reliance on state lands to reverse the declining fortunes in the agricultural sector. Cuba's experience has included, (1977) Cooperativas de Producción Agropecuaria (CPAS) which used state land to produce non-export crops; (1993): Unidades Básicas de Producción Cooperativa (UBPCS) which allowed collectives of workers to lease state farmlands rent free, in perpetuity; and (1996/7) Parceleros where land was being distributed directly to family farmers organized in three categories:

- CCS: Most of those who have private ownership of their farms are members of Credit and Service Cooperatives (CCS). By 1997 there were 2,709 CCSS, with a membership consisting of 159,223 individual farmers working 11.8% of total agricultural land (Oficina Nacional de Estadísticas 1997).

- Usufructuarios: These are the individual farmers who have received lands in usufruct (with rights to use, not dispense) originating from the state. In 1996 the number of these so-called "usufructuarios" had grown from zero to 43,015 farmers.

- Individual Farmers, who are not co-op members

One thread that connects these land/production reorganization schemes is to be found in a now defunct programme begun before "the Special Period", called "Vinculando el Hombre con la Tierra", [*Funes et al.*, 2002] which sought to more closely link the producer (at that time state farm workers) to particular parcels of land. In this new drive to boost local food security, the Cuban government, according to the official media, has handed out 689,697 hectares or 41% of the total plan and that 25% is already being farmed.

This land distribution process initiated in 2008 is, however, of a different genre. First it seems to be coming from a recognition that in spite of previous policy initiatives to re-orient some of the state farms into the production of domestic food supplies, it is a small non-state, private food producing section of the population that continues to out-produce the state-organized sector in such crops as tomato by 17.5%; onion by 38%; peppers by 116%; and all vegetables combined by 56% [*Alvarez* 2004]. Secondly, it seems to have attracted a section of the population with very little agricultural experience. According to the head of the National Land Control Center, Pedro Olivera, 26% of the new Cuban farmers were people under 25 years with little work experience and more than 70% of the total recipients had no experience in agriculture. Thirdly the state is seeking to provide "*continuity and sustainability*" to this measure. Plots are limited to 13 hectares and can be worked for 10 years by individuals and the state is also considering giving authorization to recipients to build houses on the plots. These aspects of this initiative tend to suggest that the challenge to the Cuban government will not come from achieving production levels but from new forms of culture building in rural communities.

The distribution of state lands to private individuals does not in itself constitute a change in the structure of land tenure in Cuba, which recognises income from the use of land (usufruct) but not income from the possession of land (market value). The official expectation is that this situation would evolve towards new forms of management and the establishment of more productive relationships among production units and between them and state enterprises. However, it is left to be seen whether new forms of culture building and informal land exchanges will be allowed to emerge as citizens seek to impose their own interpretation of "sustainability and viability" on the allocated land parcels.

goods and services. The land-related outcomes that are associated with this model are:

- Efficiency via increased tenure security, investment and dynamic land markets;
- Equity via access to resources by disadvantaged groups; and,
- Sustainability via efforts at land protection.

The principal indicators of effective land markets are:

- Increased volume of transactions to transfer land to people who are likely to use it better;
- Increased value of land, to reward owners for the most remunerative uses of land;
- Reduced transactions costs (in both money and time) facilitated by an efficient administration of land matters;
- Improved access to credit to increase the economic productivity of the land and the income recovery of the owners.

While theoretically sound, this model becomes very weak as a guide for effective land tenure policy in most of the Caribbean. Its weakness stems from the fact that it views land solely as a wealth-creating asset while a significant segment of Caribbean society views land as a source of "Culture and Patrimony". This context is to be distinguished from the Cuban Maxim, "La vivienda es para vivir en ella, no para vivir de ella" (The home is to live in, not to live from), which totally denies the opportunity for property income. Within the culture and patrimony context, the outlook for land tenure reform is likely to be dominated by cultural issues that transcend identifiable marketable rights and economic income from tenure.

Table 4 provides a profile of current land tenure issues in the Caribbean. The three important issues continue to be the low level of parcel identification (tenure security issue); the persistence of alternate forms of land tenure (legitimacy issue); and issues relating to land occupation as distinct from land ownership (culture building efforts). But these three categories together tend to exhibit more "cultural characteristics" than administrative or purely economic ones.

The issue of land parcel identification will surely continue to be significant as witnessed by the amount of international resources already committed to this activity. Land registries in the Caribbean are struggling to fully identify ownership of all parcels of land, but whether parcel identification will provide security of tenure to the majority of the rural poor is questionable.

There are three major factors that work against the simplicity of the legal solutions that have been implemented to date. These are:

a. Cost of registering titles is considered high in terms of both money and time and has become a major disincentive for land transactions to remain within the confines of the law;
b. Non-market transfers of land parcels which not only introduce a multiplicity of non-legal arrangements but also cause legally titled land parcels to "slip back into non-legal customary tenure";

Table 17. Profile of Caribbean Land Issues

Country	Land Parcels (est.)	Other Significant Ownership Patterns	Land Occupation Issues
Guyana	40,000+	Historic state land leases; collective holdings of Amerindian lands.	Preponderance of informal land transactions, either only minimally documented or entirely undocumented.
Suriname	n.a	Customary land tenure; communal leasehold titles to indigenous communities.	Indigenous communities challenging the rights of the state to "Domain Lands".
Cuba	n.a	Leasing of state-owned lands; usufructs rights to cooperatives and individuals.	Experiments with private land distribution in food production and in housing (Law 288).
Dominican Republic	2,250,000		Haitian immigration and the integration of Dominicans of Haitian descent are major issues
Haiti	1,260,000	Rentals and share cropping;	Less than 5% of land is cadastred.
Belize	n.a	Historic communal occupation (Maya, Garifuna); leasing of national estate lands	Legitimate claims to lands utilized in the shifting cultivation of Milpa Farmers.
Jamaica	676,584	Family lands, un-documented transfers	Concern over squatting on both private and public lands.
Bahamas	140,000	Generational titles; commonage; crown land grants,	Remote islands being occupied by migrants mainly from Haiti.
Trinidad & Tobago	440,000	Family lands (Tobago)	25,000 housing squatters on state lands;
Dominica	n.a	Communal ownership: 3,700 acres vested in the Caribbean Council	Conflict over Private ownership
St. Lucia	33,281	Family lands - 45% of total lands	Un-documented land transfers
Antigua	41,000	Communal lands in Barbuda; 23% of land with un-established ownership	Recent claims of immigrant community approx. 3,000; on outskirts of St. John's
Barbados	98,098	Land leases;	Policy of public access to beaches
St. Vincent & Grenadines	n.a	Owner-like possessions rental lands about 23% agricultural lands.	Reported 16,000 unauthorized land occupants; Forest reserves threatened
Grenada	52,229	Family lands estimated 15% of all lands.	Incidence considered low; 1,250 plots regularized
St. Kitts/Nevis	n.a	Family lands; rental holdings: 12% in St. Kitts, 18% in Nevis	403 acres in St. Kitts and 128 acres in Nevis under "illegal" possession

Source: Extracted from studies in "**Land in the Caribbean**", Allan N. Williams, ed., 2003

c. Customary ownership, which identifies the land rights of a collective group of persons rather than an individual.

The latter two are legitimacy and culture building issues and are likely to fashion the responses in Caribbean land tenure reform, particularly as they relate to:

- The preponderance of informal land transactions, which continually invalidate the accuracy of registered titles;
- The rights of indigenous peoples and Caribbean immigrants to security on land they occupy and do not necessarily own.

We are already seeing evidence of the difficulties inherent in applying legal solutions to culturally based land issues:

- In Suriname the indigenous peoples, the Kaliña Indigenous Community of Maho, and the Association of Indigenous Village Leaders submitted a petition to the Inter-American Commission of the Human Rights Organization of American States in 2009. The petition challenges the laws that vest full ownership of untitled lands and all natural resources in the state and the provisions that negate or make illusory the land privileges accorded to their communities.
- In Belize small farmers can be divided into milpa producers, who practice shifting cultivation, and permanent cultivators. This shifting cultivation practice, prevalent among the Maya of the southern districts, reflects a cultural accommodation to insecure tenure situations, which cannot be reversed by simply providing these farmers with legal land titles.
- In the Bahamas and Turks & Caicos Islands, efforts have been made to codify and give special advantages to "belongers" versus "non-belongers" [Williams 2005]. These cultural definitions of land ownership failed essentially because international capital, which is needed for such structural development in the tourism sector, does not need to reveal the nationality of its owners.
- The government of Trinidad and Tobago had invited Alcoa to build a $US1.5 billion aluminium smelter on 1,340 hectares, in Chatham/Cap-de-Ville, an area previously zoned for agriculture. This attempt was seen as a state facilitated internal "land grab" and provoked uproar amongst farmers and fishermen who anticipated health-related problems in addition to the loss of income and source of livelihood. The project was finally withdrawn by the succeeding government.

Conflict resolution through land use changes

The coastal zone is an important asset in the life of Caribbean citizens from a source of livelihoods (fishing, shrimping) to recreational facilities (beach occasions), trade with neighbouring islands and disaster survival (accessibility of external emergency support). So when conflicts arise from alternative land uses of coastal zones like in tourism establishments (hotels), legal issues, social responsibilities and economic rights all complicate the situation.

However, there are examples of successful resolution through "voluntary" agreements among the various stakeholders in which the focus becomes compliance actions to reduce the areas of conflict, rather than non-resolution in a never ending name and blame process. The feasibility of such a mechanism has been demonstrated in the Soufriere Marine Management Area (SMMA) (www.smla.org.lc) in the West Coast of St. Lucia. The SMMA comprises 11 km of coastline which has been voluntarily zoned for five different types of usage: marine reserves, fishing priority areas, yacht mooring areas, recreational areas and multiple use areas. These zones were designed to cater to the myriad uses in the area, reducing conflict among users and protecting critical marine resources.

High Nature Value (HNV) environments

There are also critical land spaces in the Caribbean that have not been declared "Protected Areas" because the legislation (where it exists) is too restrictive and politically explosive. The absence of a legal designation does not reduce the "High Nature Value" of these environments. These include watershed areas, wetlands and coral reefs all of which provide life-supporting eco-system services.

One instrument that has emerged is the "High Nature Value Index" (HNVI) *[Williams 2011]*, which assesses the impact and improves the contribution of farming practices to ecological stability in this environment. The HNVI can play a vital role in finding common ground between the needs of rural communities to increase agricultural productivity and farm-incomes and the desire to reduce

the negative environmental impact of economic activity in such sensitive areas. The current challenge is to institutionalize the HNVI as an application tool available to a wider spectrum of stakeholders and contributing to broadening the base of responsible actors in these environments.

The challenge of rural poverty

The challenges of poverty in the Caribbean will also have to be addressed by policies in which land will be the central instrument for implementation. This is the concept of "resource poverty" which measures things like access to housing, health, education and land. For instance, Grenada is one of the smallest Caribbean States with 84,000 acres (33,994 ha), where the state owns less than 10% of the land and where the level of poverty is reported to be as high as 32% of the population. Focusing on the housing need, the Public Sector Housing Policy and Strategy for Grenada, *[Grenada 2002]*, offers the following land-related factors as influencing the solution to the housing problem:

- Grenadians have a culture of family land holding that complicates land title and discourages sub-division and sale;
- The nature of the economy has been changing from rural agricultural to urban service-based, putting a premium on land in areas close to economic development;
- Land prices have risen sharply in the past two decades, due mainly to the relative scarcity of housing plots, population and economic growth and expatriate Grenadians and non-Grenadians investing for retirement;
- The lack of published land-use plans probably restricts private and public initiatives that would otherwise bring new land onto the housing market.

However, the issue of resource poverty is no less daunting in one of the richest economies in the Caribbean. The available census data for Trinidad & Tobago indicate that 47.1% of households do not have adequate documentation of rights to the land on which their houses are built. This represents 141,468 households with a total population of approximately 576,959 people. It is assumed, theoretically, that improved security of tenure would enable those households to have easier access to credit for house improvements and would help assure that investments made in homes would be legally protected.

A study of housing finance in Trinidad & Tobago *[Auguste et al., 2011]* revealed the complexities of land tenure and affordable housing. The study indicated that during the period of strong economic growth, while housing prices skyrocketed the demand for mortgage loans remained low. The study implied that housing prices increased more rapidly than wages resulting in affordability problems characterizing the dynamics of the housing deficit.

It is clear that the economics of the housing market would serve to attract buyers and suppliers to the upper scale of housing needs. A secondary issue then arises around the measures undertaken by the state to make lands available for "affordable" housing. The conflict emerges when government seeks to make former agricultural lands available for public housing. While the opposition to the loss of agricultural lands is understandable, the fact remains that housing and settlements cannot be implemented in remote areas far from social infrastructure (roads, schools, hospitals, police offices, etc.).

Caribbean "Dutch Disease"

The Caribbean region has been identified as a major transhipment venue for illicit drugs into the United States and Europe. This is an activity that is not only contributing to the rise in violence but also to the accumulation of significant amounts of wealth in the hands of traffickers. A study of Drug Trafficking in the Caribbean by the Council on Hemispheric Affairs (COHA) in 2011 *[Beale 2011]* concluded that the Caribbean's natural landscapes and diffuse geographical locations make it appealing to drug traffickers. The islands offer the advantages of weak administrations with little control over long coastlines and inaccessible mountainous interiors that may be ideal for the growth and transportation of narcotics. Money laundering of such illicit gains into real estate is also becoming a source of concern both from a position of economic stability and rising land prices in the Caribbean [DominicaToday.com 2011] Thus, rising land values in the Caribbean do not necessarily signify an efficient market allocation of land resources into alternative land uses.

The Housing Policy study referred to above, suggested that rising land prices in Trinidad & Tobago were the

result of "Dutch Disease" pressure arising from significant export earnings of the energy sector. But that does not explain the rise in land prices for housing in other Caribbean islands with no significant energy sectors. We may be witnessing a variant of "Dutch Disease" in which a "**non-productive wealth generating**" sector (drug trafficking) distorts through its lavish consumption, accumulation and investment actions:

- Property Values and real estate ownership patterns;
- Economic opportunities and market driven resource allocation;
- Turf battles in wealth protection among lower income groups (gangs and guns)

Determining the correct response is as difficult as discerning the nature and source of the problem. The Caribbean economies are free-market economies with strong influences flowing from the economic to the political sphere of activities. Managing the inevitable structural changes in the economy and the political system so as to ensure social and economic stability will continue to be challenged by such short-term distortions produced by such a disproportionate accumulation of wealth.

Capacity for disaster response

One of the unspoken lessons of the Haitian crisis emerging from the devastating earthquake of 2010 is the extent to which a poor land administrative structure is restricting the pace of recovery. The earthquake destroyed the civil structures including records of land tenure in the capital and its environs. Not only were these structures difficult to negotiate during normal times, they became totally impossible to reproduce during an emergency.

The "loss-to-output" ratio argues theoretically that a natural disaster will have a strong impact on a country's economic performance if the size of damages is high compared with the size of the economy [*Charvériat 2000]*. The author's observations appear to corroborate the theory that the depressionary effect of the disaster can be outweighed by the sharp increase in GDP in the years following the disaster if the "lost-to-output ratio" is low. The experience of recovery in Haiti reduces any hope that such statistical history applies in the Caribbean. In the small-sized Caribbean economies, resilience to natural disasters will continue to depend on the skills and motivation of the remaining population, the availability of and access to land and improved security of tenure; the complications of emergency land use and environmental issues; the restructuring of the delivery of basic services, including water, sanitation, health services and transportation, all of which can function best within the framework of a viable land administration system.

Policy Recommendations

The guiding principles of best practices

There is an urgent need to acknowledge the inequalities and diversities of the land situation in the Caribbean as a guide to what can wisely be done under the prevailing circumstances. The "best practice" idea as promoted by UNESCO's Environment and Development in Coastal Regions and in Small Islands (CSI) platform, calls for strategies that address the following issues:

- Effectiveness: a minimum or absence of disputes, with limited effort needed to ensure compliance;
- Stability: an adaptive capacity to cope with progressive changes, such as the arrival of new users or techniques;
- Resilience: a capacity to accommodate surprise or sudden shocks;
- Equitability: a shared perception of fairness among the members with respect to the winners and losers.

Broadening the base of responsible actors

Government revenues in the Caribbean are not robust enough to singularly resolve cultural land issues. As such, the more achievable policy goal would be to **broaden the base of responsible actors in society** by giving decision making power to lower levels of governance and seeking to support their action plans in a cost effective way that makes everyone a winner. There are five operating strategies that will serve this purpose well. These are:

- **Cooperation** among stakeholders to become as inclusive as possible;
- **Alliance** for action as a response to complexity at the sectoral level;

- **Co-management** of the ecosystem through negotiation with those who have entitlements but need to exercise more responsibility at the landscape level;

- **Consensus** building for respect and equity at the national organizational level.

- **Technical Training** for effectiveness and efficiency at the implementation level. Developing a cadre of technicians capable of making land degradation assessments; training farmers in compatible eco-system techniques; GPS positioning and designing systems of HNV Index Mapping.

The Caribbean region needs to see the creation of new or reconfigured institutions that would effectively administer both private and public interests in land in a market economy. This is needed to ensure that initiatives such as environmental zoning, promoting eco-tourism, managing urban expansion, protecting coastal zones and controlling deforestation are not seriously challenged by the trend towards marketization of individual land rights.

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Statistical Appendix

Table A1. Global growth projections
Annual rate of GDP growth, in real terms, by country group

Countries	IMF				
	2009	2010	2011	2012	2013
World	-0,6	5,3	3,9	3,5	3,9
Advanced economies	-3,6	3,2	1,6	1,4	1,9
United States	-3,5	3,0	1,7	2,0	2,3
Euro Zone	-4,3	1,9	1,4	-0,3	0,7
Emerging economies	2,8	7,5	6,2	5,6	5,9
China	9,2	10,4	9,2	8,0	8,5
Latin America & the Caribbean	-1,6	6,2	4,5	3,4	4,2
Countries	**World Bank**				
	2009	2010	2011	2012	2013
World (1)	-2,3	4,1	2,7	2,5	3,0
World (2)	-0,9	5,1	3,7	3,3	3,9
High-income countries	-3,7	3,0	1,6	1,4	1,9
United States	-3,5	3,0	1,7	2,1	2,4
Euro Zone	-4,2	1,8	1,6	-0,3	0,7
Developing countries	2,0	7,4	6,1	5,3	5,9
China	9,2	10,4	9,2	8,2	8,6
Latin America & the Caribbean	-2,0	6,1	4,3	3,5	4,1
Countries	**DAES - United Nations**				
	2009	2010	2011	2012	2013
World	-2	4,1	2,7	2,5	3,1
Developed economies	-3,5	2,7	1,4	1,2	1,8
United States	-2,6	3,0	1,7	2,1	2,3
Euro Zone	-4,1	1,9	1,5	-0,3	0,9
Developing economies	2,4	7,5	5,9	5,3	5,8
China	9,1	10,4	9,2	8,3	8,5
Latin America & the Caribbean	-2,1	6,0	4,3	3,7	4,2

Source: IMF, World Economic Outlook Abril 2012 and Update July 2012
World Bank, Global Economic Prospects January and June 2012
UN-DESA, World Economic Situation and Prospects 2011 and Update mid-2012

Table A2. Growth Projections in the Americas
Annual rate of GDP growth, in real terms, by country

Countries	ECLAC			IMF				
	2009	2010	2011a	2009	2010	2011a	2012b	2013b
Antigua & Barbuda	-11,9	-7,9	-2,1	-10,3	-8,9	-0,5	1,0	2,5
Argentina	0,9	9,2	8,9	0,9	9,2	8,9	4,2	4,0
Bahamas	-5,4	0,9	2,0	-5,4	1,0	2,0	2,5	2,7
Barbados	-3,7	0,2	1,0	-4,2	0,2	0,5	0,9	1,5
Belize	-0,0	2,9	2,5	-0,0	2,7	2,5	2,8	2,5
Bolivia (Plurinational State of)	3,4	4,1	5,1	3,4	4,1	5,1	5,0	5,0
Brazil	-0,3	7,5	2,7	-0,3	7,5	2,7	3,0	4,2
Chile	-1,0	6,1	6,0	-0,9	6,1	5,9	4,3	4,5
Colombia	1,7	4,0	5,9	1,7	4,0	5,9	4,7	4,4
Costa Rica	-1,0	4,7	4,2	-1,0	4,7	4,2	4,0	4,2
Cuba	1,4	2,4	2,5	na	na	na	na	na
Dominica	-0,7	0,9	0,9	-0,7	0,3	0,5	1,5	1,8
Ecuador	0,4	3,6	8,0	0,4	3,6	7,8	4,5	3,9
El Salvador	-3,1	1,4	1,5	-3,1	1,4	1,4	2,0	2,5
Granada	-6,6	-0,0	2,1	-5,7	-1,3	1,1	1,5	2,0
Guatemala	0,5	2,9	3,9	0,5	2,8	3,8	3,1	3,2
Guyana	3,3	4,4	4,8	3,3	4,4	4,2	3,9	6,3
Haiti	2,9	-5,4	5,6	2,9	-5,4	5,6	7,8	6,9
Honduras	-2,1	2,8	3,2	-2,1	2,8	3,6	3,5	3,5
Jamaica	-3,0	-1,3	1,3	-3,1	-1,4	1,5	1,0	1,0
Mexico	-6,3	5,6	3,9	-6,3	5,5	4,0	3,6	3,7
Nicaragua	-1,5	4,5	4,7	-1,5	4,5	4,7	3,7	4,0
Panama	3,9	7,6	10,6	3,9	7,6	10,6	7,5	6,6
Paraguay	-3,8	15,0	4,0	-3,8	15,0	3,8	-1,5	8,5
Peru	0,9	8,8	6,9	0,9	8,8	6,9	5,5	6,0
Dominican Republic	3,5	7,8	4,5	3,5	7,8	4,5	4,5	4,5
Saint Kitts & Nevis	-6,9	-2,4	4,5	-5,6	-2,7	-2,0	1,0	1,8
San Vicente & the Grenadines	-2,2	-2,8	2,6	-2,3	-1,8	-0,4	2,0	2,0
Saint Lucia	-1,1	3,2	2,5	-1,3	3,4	0,2	1,9	2,4
Suriname	7,7	7,3	4,5	3,5	4,5	4,5	4,9	5,4
Trinidad & Tobago	-3,0	-0,0	-1,4	-3,3	-0,0	-1,3	1,7	2,4
Uruguay	2,4	8,9	5,7	2,4	8,9	5,7	3,5	4,0
Venezuela (Bolivarian Republic of)	-3,2	-1,5	4,2	-3,2	-1,5	4,2	4,7	3,2
Canada	na	na	na	-2,8	3,2	2,5	2,1	2,2
United States	na	na	na	-3,5	3,0	1,7	2,1	2,4
Latin America & the Caribbean	-2,0	6,0	4,3	-1,6	6,2	4,5	3,7	4,1

a Estimations

b Projection

Sources: ECLAC: Economic Commission for Latin America & the Caribbean: Own estimations based on official sources, information updated May 2012
International Monetary Fund, World Economic Outlook Database, April 2012

Table A3. Inflation, purchasing power of exports & remittances

Countries	Consumer price indices (average rates of annual variation)								Purchasing power of exports of goods & services (indice 2005=100)			Income from remittances by migrant workers (millions of US$)		
	General				Food products									
	2005-08	2009	2010	2011	2005-08	2009	2010	2011	2005-08	2009	2010	2010	2011	2012a
Argentina	9,5	6,3	10,5	9,0	10,3	2,8	14,4	7,9	121,9	132,7	153,6			
Bahamas	2,7	2,1	1,8	1,0	4,5	4,8	-0,8	1,4	na	na	na			
Barbados	6,5	3,6	5,8	7,9	8,9	6,7	3,7	5,8	na	na	na			
Bolivia (Plurinational State of)	8,1	3,3	2,5	9,5	12,4	3,9	3,4	13,6	131,4	140,1	164,0			
Brazil	5,1	4,9	5,0	6,2	5,7	5,8	6,1	8,2	115,0	112,9	140,4			
Chile	4,9	1,5	1,5	3,0	7,7	4,1	2,8	6,0	125,0	123,0	148,7			
Colombia	5,5	4,2	2,3	3,2	7,8	4,4	1,4	4,6	121,0	139,3	154,7	4.024	4.168	960
Costa Rica	12,0	7,8	5,7	4,7	15,9	9,5	5,2	5,3	115,9	126,5	137,0	505	488	na
Cuba	4,2	-1,2	1,3	1,3	na	na	na	na	108,3	na	na			
Ecuador	4,0	5,2	3,6	4,0	7,2	6,1	4,9	6,1	119,5	120,5	137,7	2.592	2.672	na
El Salvador	5,1	0,5	0,9	4,9	6,8	-3,6	0,3	6,9	105,7	98,9	107,1	3.431	3.648	946
Guatemala	8,5	1,9	3,9	5,8	11,3	2,0	3,8	10,3	107,7	118,9	128,5	4.127	4.378	1.058
Haiti	13,1	-1,8	5,7	7,9	14,8	-2,6	5,0	9,8	105,8	122,6	104,7			
Honduras	8,2	5,5	4,7	6,6	10,2	3,6	1,8	6,0	97,5	87,2	93,3	2.524	2.750	414
Jamaica	13,9	3,1	13,1	6,9	16,3	9,0	12,8	-2,9	na	na	na	1.907	2.026	317
Mexico	4,2	5,3	4,2	3,0	5,8	8,7	3,9	4,6	110,0	94,9	116,4	21.270	22.730	5.372
Nicaragua	12,4	3,0	5,9	7,7	16,4	3,5	4,4	8,3	112,7	135,3	158,7	824	912	250
Panama	4,1	2,4	3,5	5,4	6,8	5,8	2,9	-4,3	117,4	147,6	149,6			
Paraguay	8,7	2,6	4,8	8,1	13,3	1,5	8,4	13,5	140,7	168,4	219,1			
Peru	2,8	2,9	1,5	3,3	3,8	4,2	2,5	4,6	123,1	122,2	144,0			
Dominican Republic	7,1	1,4	6,3	8,0	5,8	3,9	4,3	8,2	102,7	97,4	103,4	2.998	3.201	na
Saint Lucia	4,7	1,5	1,9	-0,3	na	na	na	na	na	na	na			
Suriname	10,5	-0,1	5,1	16,8	na	na	na	na	na	na	na			
Trinidad & Tobago	8,8	7,0	10,5	4,1	22,4	11,6	22,8	7,7	na	na	na			
Uruguay	6,8	7,1	6,7	7,5	9,8	6,1	6,9	9,1	113,0	144,0	163,4			
Venezuela (Bolivarian Republic of)	19,9	28,6	29,1	24,5	28,7	30,5	34,6	26,1	119,3	96,8	103,3			

a Refers to the first quarter. January and February only in the case of Honduras & Jamaica

Sources:ECLAC: Economic Commission for Latin America & the Caribbean: Own estimations based on official sources, information revised as of August 2012

Table A4. Gross domestic product & agriculture value added

Countries	Gross Domestic Product per capita (constant 2005 dollars per capita)				Agriculture, livestock, hunting, forestry & fishing as a proportion of total Value Added (%)				Annual variation of value added in the agriculture, livestock, hunting, forestry & fishing sector (%)		
	2005-08	2009	2010	2011	2005-08	2009	2010	2011	2009	2010	2011
Antigua & Barbuda	13.539	12.496	11.378	11.015	2,0	1,5	2,1	2,3	-25,2	26,7	6,8
Argentina	5.259	5.762	6.229	6.716	9,0	7,1	8,3	7,6	-15,7	28,0	-2,2
Bahamas	24.144	22.140	22.024	22.206	2,0	2,1	2,1	2,3	4,6	4,2	7,2
Barbados	15.183	14.868	14.895	14.989	1,6	1,7	1,6	na	3,0	-6,3	na
Belize	4.040	4.017	4.041	4.063	12,5	9,9	9,7	na	-2,2	0,6	na
Bolivia (Plurinational State of)	1.089	1.164	1.192	1.232	13,9	13,2	12,6	12,4	3,7	-1,2	3,2
Brazil	5.014	5.262	5.609	5.715	6,8	6,8	6,7	6,8	-3,1	6,3	3,9
Chile	8.028	8.228	8.646	9.078	4,5	4,3	4,2	4,4	-5,6	2,3	11,8
Colombia	3.649	3.854	3.953	4.131	8,0	7,5	7,3	7,0	-0,7	1,0	2,2
Costa Rica	5.036	5.208	5.379	5.527	9,1	8,5	8,6	8,4	-2,8	6,4	0,5
Cuba	4.355	4.833	4.948	5.071	4,0	3,8	3,5	na	-0,2	-6,0	na
Dominica	5.733	6.293	6.353	6.410	13,1	13,0	11,6	12,0	1,5	-10,6	6,0
Ecuador	2.965	3.119	3.196	3.414	7,2	7,6	7,4	7,4	1,5	-0,2	6,4
El Salvador	2.952	2.936	2.962	2.989	11,1	11,5	11,7	11,1	-2,9	3,1	-3,8
Granada	6.799	6.472	6.469	6.544	4,4	5,7	5,4	5,6	12,1	-6,0	4,2
Guatemala	2.231	2.256	2.266	2.297	12,8	12,8	12,4	12,4	3,8	-0,3	3,6
Guyana	1.898	2.071	2.158	2.256	22,8	21,0	20,6	20,0	1,3	2,3	2,7
Haiti	452	459	427	444	na	na	na	na	na	na	na
Honduras	1.500	1.507	1.519	1.537	13,5	13,2	13,1	13,4	-1,4	1,8	5,6
Jamaica	4.268	4.135	4.068	4.106	6,2	6,9	7,1	na	12,1	2,2	na
Mexico	8.391	7.953	8.313	8.558	3,4	3,5	3,4	3,2	-4,4	4,0	-3,0
Nicaragua	926	926	956	988	18,8	19,2	19,6	19,2	-0,2	6,5	2,5
Panama	5.404	6.230	6.601	7.190	6,4	5,3	4,2	4,0	-7,8	-14,6	-2,9
Paraguay	1.333	1.334	1.509	1.543	24,2	21,8	25,6	25,7	-17,3	34,2	4,2
Peru	3.175	3.535	3.801	4.016	7,0	6,7	6,4	6,3	1,7	3,2	4,9
Dominican Republic	4.057	4.488	4.773	4.924	7,1	7,2	7,1	7,2	12,5	5,5	5,5
Saint Kitts & Nevis	11.390	10.815	10.554	10.821	1,4	1,2	1,2	1,3	-10,6	-1,9	6,7
San Vicente & the Grenadines	5.462	5.584	5.430	5.571	6,4	7,5	6,2	5,3	15,2	-18,6	-14,4
Saint Lucia	5.658	5.824	5.940	6.020	3,8	4,2	3,4	2,5	-5,4	-15,7	-28,0
Suriname	3.026	3.402	3.614	3.749	6,3	6,6	7,2	7,2	12,1	15,8	3,6
Trinidad & Tobago	13.784	14.208	14.152	13.906	0,5	0,3	0,5	0,5	-32,4	60,2	-4,1
Uruguay	5.644	6.289	6.826	7.192	9,4	8,4	7,8	7,7	1,6	0,5	4,4
Venezuela (Bolivarian Republic of)	6.030	6.199	6.010	6.164	3,7	3,8	3,9	3,6	1,0	0,9	-2,4
Latin America & the Caribbean	5.214	5.322	5.578	5.756	5,7	5,6	5,7	5,6	-3,8	6,6	1,6
América Latina	5.187	5.297	5.557	5.736	5,8	5,7	5,7	5,6	-3,9	6,6	1,6
El Caribe	7.443	7.409	7.382	7.391	3,4	3,5	3,6	2,6	4,2	3,9	1,4

Source: ECLAC: Economic Commission for Latin America & the Caribbean : Own estimations based on official sources, information updated as of May 2012

Table A5. Agricultural & rural employment

Countries	Proportion occupied in agriculture 1		Labour insertion of the economically active rural occupied population 2, 3 percentages									
	Percenatge of the population occupied 4		Employers		Agriculture salaried		Non-agriculture salaried		Self--employed agriculture		Self-employed non-agriculture	
	2000	2009/2010	1999/00	2009/2010	1999/00	2009/2010	1999/00	2009/2010	1999/00	2009/2010	1999/00	2009/2010
Bolivia (99-07)	36,8	33,7	1,2	3,1	2,7	3,3	6,5	10,2	82,1	73,0	7,5	10,4
Brazil (99-09)	22,8	17,0	2,0	2,2	15,6	16,8	18,6	23,0	56,4	49,9	7,3	8,0
Chile (00- 09)	13	11,4	2,4	2,8	40,2	34,4	23,0	36,7	22,8	15,5	8,1	10,5
Colombia (99-10)	22	18,5	3,7	5,6	25,9	22,5	21,3	12,5	27,9	38,6	21,2	20,8
Costa Rica (99-10)	16,9	15,0	8,2	3,4	21,3	23,8	47,9	48,0	9,5	11,0	13,1	13,8
Ecuador (00-10)	28,5	28,2		2,0		22,8		20,2		44,6		10,5
El Salvador (99-10)	20,7	22,2	4,1	3,1	20,2	20,0	30,5	28,6	26,3	28,1	18,8	20,2
Guatemala (98-10)	36,5	33,8	2,0	1,9	26,6	16,0	16,3	21,6	34,8	40,0	20,2	20,6
Honduras (99-10)	34	37,5	3,1	1,3	16,4	16,8	17,1	15,5	41,3	45,3	22,1	21,1
Mexico (02-10)	17,5	13,5	3,3	13,9	15,7	15,8	36,7	45,9	25,4	11,6	18,9	12,7
Nicaragua (98-05)	32,4		3,3		23,7		20,0		39,7		13,3	
Panama (02-10)	17	18,1	2,0	2,6	14,2	13,0	25,8	31,6	39,3	35,2	18,7	17,5
Paraguay (99-10)	30,8	25,8	3,4	3,6	7,2	6,8	19,8	23,2	54,0	51,8	15,6	14,6
Peru c/ (03-10)	32	31,6	5,0	5,1	8,2	10,2	6,3	13,5	69,5	58,4	11,0	12,9
Dominican Republic (02-10)	15,9	14,5	1,7	2,5	5,5	4,8	31,1	33,9	35,0	28,6	26,7	30,3
Uruguay (10)		9,8		9,5		32,4		22,0		28,5		7,5
Venazuela	10,6											

Sources:

1/ ECLAC, Annual Statistics 2011

2/ ECLAC, Panorama Social 2011 (based on data from household surveys in the respective countries.)

3/ Reference age of 15 years for the PEA

4/ Year closest to the head of the column.

Table A6. Poverty, extreme poverty & median incomes

Countries	Poverty, extreme poverty & median incomes											
	Incidence of poverty and extreme poverty (18 Countries),percentages								Average monthly household income (17 Countries) (multiples of the poverty line)			
	Total Poverty 2		Poverty in Rural Areas		Total Extreme Poverty 2		Extreme Poverty in Rural Areas		Urban Areas		Rural Areas	
	2003/05	2009/10	2003/05	2009/10	2003/05	2009/10	2003/05	2009/10	2003/05	2009/10	2004/05	2009/10
Argentina (04-06)	29,4	8,6			11,1	2,8			8,8	18,8		
Bolivia (04-07)	63,9	54,0	80,6	75,8	34,7	31,2	58,8	59,0	6,8		2,9	3,5
Brasil (05-09)	36,3	24,9	53,2	39,3	10,6	7,0	22,1	15,2	10,8	12,5	6,3	7,8
Chile (03-09)	18,7	11,5	20,0	10,4	4,7	3,6	6,2	4,4	13,9	14,8	11,1	12,5
Colombia (05-00)	46,8	44,3	50,5	62,7	20,2	14,8	25,6	26,7	8,3	8,1	6,2	4,4
Costa Rica (05-00)	21,1	18,5	22,7	20,8	7,0	6,8	9,0	9,9	10,7	11,3	9,8	10,7
Ecuador (05-00)	48,3	39,2	54,5	43,2	21,2	16,4	29,2	20,8	7,4	7,7	5,8	6,3
El Salvador (04-00)	47,5	46,6	56,8	55,8	19,0	16,7	26,6	23,5	6,7	6,0	5,2	4,9
Honduras (03-00)	74,8	67,4	84,8	76,5	59,3	42,8	69,4	56,8	5,6	5,8	3,1	4,4
México (04-00)	37,0	36,3	44,1	42,9	11,7	13,3	19,3	21,3	8,9	7,8	7,1	6,7
Nicaragua (05)	61,9		71,5		31,9		46,1		7,3		5,3	
Panamá (05-00)	31,0	25,8	47,2	44,8	14,1	12,6	27,5	26,6	11,4	11,6	6,8	7,3
Paraguay (05-00)	60,5	54,8	68,1	66,6	32,1	30,7	44,2	46,8	5,5	6,2	4,8	5,2
Perú (05-00)	48,7	31,3	70,9	54,2	17,4	9,8	37,9	23,3	7,7	9,5	3,4	5,1
República Dominicana (05-00)	47,5	41,4	51,4	45,2	24,6	20,9	28,8	26,5	7,9	8,6	6,2	6,6
Uruguay (05-00)	18,8	8,4		4,2	4,1	1,4		1,1		10,1		10,7
Venezuela (05-00)	37,1	27,8	15,9			10,7						
América Latina [3] (05-00)	39,8	31,4	58,8	52,6	15,4	12,3	32,5	30,0				

Source: ECLAC, Panorama Social 2011 (based on data from household surveys in the respective countries)

1/ Includes people below the indigence line or in a situation of indigence (extreme poverty)

2/ Data from Argentina & Uruguay before 2007 corresponds to Total Urban Areas

3/ Estimation for 18 countries of the region and Haiti.

Table A7. Annual growth in trade by sector

Countries	Crops				Livestock				Fishing				Forestry			
	Exports (%)		Imports (%)		Exports (%)		Imports (%)		Exports (%)		Imports (%)		Exports (%)		Imports (%)	
	2000/05	2005/11	2000/05	2005/11	2000/05	2005/11	2000/05	2005/11	2000/05	2005/11	2000/05	2005/11	2000/05	2005/11	2000/05	2005/11
Antigua & Barbuda													0,0	0,0	0,0	0,0
Argentina	10,7	13,5	-4,1	13,0	18,6	6,0	-14,5	16,7	-1,2	7,1	-6,7	13,0	16,4	3,4	-2,6	6,3
Bahamas		-31,5		3,8		-30,8		3,3		-2,8		3,9	55,2	5,5	2,9	-1,0
Barbados	4,5	4,1	5,6	4,4	7,1	-11,7	6,5	3,3	-0,9	-19,4	8,8	-0,1	33,3	82,9	-5,4	1,6
Belize	11,5	0,0	1,2	13,3	29,6	-60,2	0,5	3,5	24,0	-8,0	-3,6	-12,7	-7,2	30,5	-10,8	7,8
Bolivia (Plurinational State of)	10,1	13,2	-1,1	13,5	2,5	8,8	-4,2	8,9			-19,6	29,4	9,7	9,1	3,5	11,5
Brazil	17,4	17,4	-3,3	20,0	31,8	11,5	-13,0	23,4	11,1	-8,5	-1,1	24,3	13,4	6,5	0,8	10,7
Canada	7,2	12,7	9,2	9,5	4,7	2,7	2,5	9,4	5,7	1,5	3,8	6,8	2,6	-6,3	4,3	-0,9
Chile	8,8	15,0	6,6	14,7	35,3	6,1	14,5	14,8	10,2	2,4	16,0	14,1	10,3	8,3	13,5	9,7
Colombia	7,1	7,4	6,1	16,6	28,7	-17,0	-11,3	17,9	-1,7	1,4	10,5	15,7	13,5	7,8	6,5	7,9
Costa Rica	5,6	6,3	7,4	14,3	10,3	9,9	1,5	16,9	-0,8	1,4	9,5	12,9	8,7	12,3	4,0	1,9
Cuba	-10,1		14,5		6,2		14,7		-1,7		6,1		6,5	86,0	3,6	-11,5
Dominica	-7,2	-6,5	0,1	9,2		37,3	1,8	12,0	50,7	-59,6	2,2	4,9	12,5	-1,1	-15,9	13,2
Ecuador	10,1	14,0	16,4	14,7	-18,8	27,4	16,0	16,4	9,5	13,2	20,1	77,3	24,0	6,9	7,4	8,6
El Salvador	0,3	9,9	8,7	8,9	-0,6	14,2	6,0	12,8	26,8	3,3	39,0	6,3	10,9	22,8	3,1	6,5
United States	4,6	13,0	8,4	7,7	-1,8	13,3	5,3	0,1	6,1	3,7	4,5	4,0	1,5	5,9	5,6	-9,9
Granada	-9,8	1,8	3,4	12,4	-17,5	57,1	4,3	11,4	-2,3	-4,1	4,2	16,3			0,0	0,0
Guatemala	2,7	16,7	13,6	12,7	4,3	14,4	10,0	8,5	-3,8	35,3	29,9	16,6	18,4	1,8	7,9	7,6
Guyana	6,3	9,4	6,0	16,4	9,6	7,7	6,0	4,9	2,9	-4,8	-10,9	2,1	2,2	-0,9	16,2	2,0
Haiti														35,6	0,7	29,5
Honduras	-1,6	20,5	-0,6	20,2	20,9	-0,1	7,6	22,3	32,0	77,2	21,5	14,0	-19,5	0,3	11,6	2,6
Jamaica	0,0	6,5	6,9	14,0	-1,7	7,2	4,5	2,4	-3,5	-3,5	5,9	3,4	98,1	58,4	-7,1	3,6
Mexico	7,9	8,9	8,7	8,6	6,6	4,4	6,2	4,5	-2,0	4,3	21,2	4,7	8,1	4,9	8,8	4,6
Nicaragua	5,8	17,1	4,1	17,4	13,8	25,9	-4,4	13,5	3,4	6,2	-12,1	8,3	-3,3	-3,8	9,3	8,6
Panama	3,5	10,9		25,5	1,2	-9,5		15,2	11,0	-10,4		12,9	30,0	12,3	5,5	3,5
Paraguay	16,6	23,9	-3,8	19,6	23,3	20,8	-1,8	19,9	27,3	-34,8	-2,3	31,0	-3,6	16,4	14,7	16,9
Peru	16,3	19,8	10,5	17,3	45,2	16,6	3,3	14,8	7,0	10,5	18,7	30,6	9,7	-4,4	12,7	14,3
Dominican Republic		5,6		0,3		-5,5		1,0		26,7		8,5	46,3	30,3	0,4	8,0
Saint Kitts & Nevis	-24,5	54,2	-0,2	15,6	-12,4	20,0	4,2	8,1	-4,5	59,7	1,1	15,7	0,0	0,0	0,0	0,0
San Vicente & the Grenadines	-6,1	-0,4	1,9	14,2	16,4	9,9	7,0	5,5	-14,6	7,7	9,4	0,6	58,5	55,9	-24,4	5,1
Saint Lucia	-0,8		4,8		140,2		6,5		-60,5		8,4				0,0	5,0
Suriname													0,5	13,9	19,6	18,6
Trinindad & Tobago	3,5	-4,6	13,0	7,0	-8,5	5,8	5,4	11,9	-6,6	1,7	22,2	7,4	-8,4	41,6	10,7	-1,3
Uruguay	11,0	31,4	-5,4	24,1	17,0	11,5	15,0	9,8	5,8	8,1	8,2	27,8	17,9	41,8	-4,8	7,7
Venezuela (Bolivian Rep. of)	-9,2	-22,0	1,8	8,8	-30,0		14,8	8,1	-14,8		-3,6	-6,5	0,3	-16,2	0,7	10,6

Source:: Inter-American Institute for Cooperation in Agriculture (IICA) based on information from the United Nations (COMTRADE) & FAO (FAOSTAT).

Note: ARG, BRB, BLZ, CHL, DMA, SLV, GTM, GUY, JAM, MEX, NIC, PAN, DOM, VCT, TTO, URY, the last period is 2005/10

For GRD, KNA the last period is 2005/08.

For HND, the last period is 2005/2007.

Table A8. Participation of sector exports in total exports of goods
(Annual cumulative growth, percentages)

Countries	Crops		Livestock		Fishing		Forestry	
	2000/05	2005/11	2000/05	2005/11	2000/05	2005/11	2000/05	2005/11
Antigua & Barbuda								
Argentina	1,5	3,0	8,8	-3,9	-9,4	-2,9	6,71	-6,57
Bahamas		-39,0		-38,3		-13,4		-5,94
Barbados	2,5	7,9	5,0	-8,5	-2,9	-16,4		105,21
Belize	8,9	-3,7	26,6	-61,7	21,1	-11,5	-9,37	39,08
Bolivia (Plurinational State of)	-4,5	-4,0	-11,1	-7,8		-26,3	-4,86	-7,46
Brazil	0,5	5,5	12,8	0,2	-4,9	-17,7	-2,95	-4,29
Canada	1,3	11,2	-1,1	1,3	-0,1	0,2	-2,98	-7,57
Chile	-6,8	5,8	16,0	-2,4	-5,5	-5,8	-5,49	0,17
Colombia	-2,9	-7,0	16,8	-28,2	-10,8	-12,2	2,98	-6,67
Costa Rica	-0,8	0,8	3,6	4,2	-6,8	-3,9	2,14	6,43
Cuba	-17,0		-1,9		-9,2		-1,65	
Dominica	-3,2	-2,3		43,6	57,2	-57,7	17,27	4,19
Ecuador	-5,2	2,1	-30,1	14,0	-5,7	1,4	6,77	-4,26
El Salvador	-4,3	-14,2	-5,2	-10,8	20,9	-19,4	5,81	-2,36
United States	1,4	5,9	-4,9	6,2	2,7	-2,7	-1,69	-0,66
Granada	9,9	-3,9	0,5	48,3	19,0	-9,5		
Guatemala	-9,2	1,7	-7,7	-0,3	-14,9	17,9	4,79	-11,35
Guyana	4,5	-1,9	7,8	-3,4	1,2	-14,6	0,48	-11,12
Haiti								
Honduras	-3,3	-11,4	18,7	-26,5	29,6	30,4	-20,90	15,13
Jamaica	-3,5	12,2	-5,1	12,9	-6,9	1,6	91,19	71,05
Mexico	2,5	4,4	1,3	0,1	-7,0	-0,0	2,64	1,82
Nicaragua	-1,4	-2,4	6,0	5,0	-3,7	-11,5	-9,95	-22,69
Panama	-0,0	-39,5	-2,3	-50,7	7,2	-51,1	25,53	-38,48
Paraguay	0,9	2,1	6,7	-0,4	10,2	-46,2	-16,59	-4,06
Peru	-3,5	5,0	20,5	2,2	-11,2	-3,1	-8,94	-16,16
Dominican Republic		14,6		2,6		37,6		36,32
Saint Kitts & Nevis	-27,2	38,9	-15,5	8,1	-7,9	43,8	-3,54	-9,94
San Vicente & the Grenadines	-1,1	-3,3	22,6	6,6	-10,1	4,5	66,92	57,61
Saint Lucia	-11,9		113,4		-64,9			
Suriname								
Trinidad & Tobago	-10,5	-3,8	-20,9	6,6	-19,3	2,6	-20,77	48,64
Uruguay	1,4	15,1	6,9	-2,3	-3,4	-5,3	7,67	35,31
Venezuela (Bolivarian Republic of)	-19,2	43,9	-37,7	180,1	-24,2	67,4	-10,75	

Source: Inter-American Institute for Cooperation in Agriculture (IICA) based on information from the United Nations (COMTRADE) & FAO (FAOSTAT).

Note: ARG, BRB, BLZ, CHL, DMA, SLV, GTM, GUY, JAM, MEX, NIC, PAN, DOM, VCT, TTO, URY, the last period is 2005/10
For GRD, KNA the last period is 2005/08.
For HND, the last period is 2005/2007.

Table A9. Annual cumulative rate of production growth by sector, percentages

Countries	Crops		Livestock		Fishing[1]		Forestry[2]	
	2000/05	2005/10	2000/05	2005/10	2000/05	2005/10	2000/05	2005/10
Antigua & Barbuda	-2,01	2,04	-3,55	4,62	11,30	-5,18		
Argentina	3,94	1,26	-0,38	1,12	0,16	-4,43	10,75	0,52
Bahamas	-1,75	2,23	2,16	2,26	1,71	-0,35	0,00	16,86
Barbados	-4,42	-5,04	2,07	1,79	-6,80	12,77	11,92	0,00
Belize	-0,20	-2,54	9,85	0,30	-12,19	14,46	0,00	-1,05
Bolivia (Plurinational State of)	5,26	4,13	5,19	3,03	2,55	3,60	3,17	1,08
Brazil	5,35	9,14	4,86	2,99	3,32	5,02	1,66	1,02
Canada	3,27	0,79	0,42	0,47	2,36	-2,71	0,87	-9,87
Chile	2,36	-2,67	2,78	1,45	3,25	-6,26	4,22	1,37
Colombia	2,82	-4,45	2,58	3,03	-2,54	-1,58	-2,69	-0,10
Costa Rica	1,93	-1,67	1,53	3,91	0,36	1,62	-2,47	-0,29
Cuba	-12,16	0,20	-6,46	10,01	-10,73	2,50	8,55	-5,46
Dominica	-4,82	3,97	-3,50	7,02	-14,60	5,14		0,00
Ecuador	2,96	3,99	16,02	3,81	-4,06	3,61	3,28	2,01
El Salvador	-0,78	3,35	2,30	2,80	32,84	-4,35	-1,69	0,12
United States	1,59	1,55	0,99	1,45	0,94	-3,00	0,27	-7,28
Granada	-1,84	0,10	0,45	4,40	2,29	4,20		
Guatemala	5,82	0,19	2,70	1,67	-12,97	8,28	2,11	2,10
Guyana	1,60	-1,30	6,98	2,42	2,39	-4,44	3,31	-0,88
Haiti	1,26	1,76	1,71	2,85	6,33	0,44	0,33	0,36
Honduras	9,33	4,53	4,38	0,99	16,33	-13,09	0,22	-1,24
Jamaica	-4,07	4,03	1,13	-0,13	10,28	-1,48	-0,90	-2,71
Mexico	2,07	0,52	1,99	1,80	-0,38	3,39	-0,38	0,45
Nicaragua	4,30	3,05	2,92	4,84	4,48	8,67	0,31	0,34
Panama	1,20	0,01	1,52	3,66	-0,87	-6,75	0,05	-3,25
Paraguay	8,73	4,25	2,09	3,75	-13,97	-21,12	1,01	1,03
Peru	0,81	5,33	3,80	5,73	-1,21	-10,46	-0,04	-1,30
Dominican Republic	2,53	1,96	1,53	5,14	-1,00	4,59	0,15	7,40
Saint Kitts & Nevis	-6,24	-35,72	-0,63	-3,67	-1,41	71,72		
San Vicente & the Grenadines	2,25	3,84	-2,52	3,61	-45,63	63,73		-1,89
Saint Lucia	-5,16	2,57	8,75	2,69	-6,38	6,52		0,00
Suriname	-3,65	6,74	1,70	3,84	5,78	1,04	0,42	4,61
Trinidad & Tobago	-17,96	-34,67	7,43	-2,04	1,66	-3,03	-2,74	-5,33
Uruguay	9,87	10,40	2,40	1,32	3,07	-11,13	15,36	14,58
Venezuela (Bolivarian Republic of)	1,14	1,23	-1,33	5,84	5,03	-6,39	2,72	4,09

Source: Inter-American Institute for Cooperation in Agriculture (IICA) based on official FAO information (FAOSTAT).
1/Comprende toda la producción (acuacultura & captura) tanto de aguas oceanicas como aguas continentales.
Source: FISGSTAT FAO. Available at: http://www.fao.org/fishery/topic/16140/en
2/ Comprises all wood obtained from extraction operations in forests and in other areas during the current period year or forestry period)

Table A10. Land use in the Americas by category (1,000 ha)

Country	Total land area *	Total Agriculture Area (TAA) *	Arable Land & Permanent Crops (ALPC)*	% ALPC/TAA	Grazing Land and Grasslands (GLG) *	%GLG/TAA	Forest area *	Protected areas **
Antigua & Barbuda	44,0	13,0	9,0	0,7	4,0	0,3	9,8	
Argentina	273.669,0	140.500,0	32.000,0	0,2	108.500,0	0,8	29.879,6	
Bahamas	1.001,0	14,0	12,0	0,9	2,0	0,1	515,0	
Barbados	43,0	19,0	17,0	0,9	2,0	0,1	8,4	21515***
Belize	2.281,0	152,0	102,0	0,7	50,0	0,3	1.412,2	
Bolivia (Plurinational State of)	108.330,0	36.954,0	3.954,0	0,1	33.000,0	0,9	57.811,2	
Brazil	845.942,0	264.500,0	68.500,0	0,3	196.000,0	0,7	523.910,8	
Canada	909.351,0	67.600,0	52.150,0	0,8	15.450,0	0,2	310.134,0	800,6
Chile	74.353,2	15.742,0	1.727,0	0,1	14.015,0	0,9	16.155,8	
Colombia	110.950,0	42.540,0	3.354,0	0,1	39.186,0	0,9	60.701,0	17.066,90
Costa Rica	5.106,0	1.800,0	500,0	0,3	1.300,0	0,7	2.559,4	70.530,00
Cuba	10.644,0	6.655,0	4.025,0	0,6	2.630,0	0,4	2.800,8	
Dominica	75,0	24,5	22,5	0,9	2,0	0,1	45,2	
Ecuador	24.836,0	7.534,0	2.548,0	0,3	4.986,0	0,7	10.260,2	14.334,90
El Salvador	2.072,0	1.544,0	907,0	0,6	637,0	0,4	295,8	14.508,80
United States	914.742,0	403.451,0	165.451,0	0,4	238.000,0	0,6	303.256,4	1.355,80
Granada	34,0	12,5	11,5	0,9	1,0	0,1	17,0	330,9
Guatemala	10.716,0	4.395,0	2.445,0	0,6	1.950,0	0,4	3.769,4	
Guyana	19.685,0	1.675,0	445,0	0,3	1.230,0	0,7	15.205,0	
Haiti	2.756,0	1.840,0	1.350,0	0,7	490,0	0,3	102,6	41,6
Honduras	11.189,0	3.190,0	1.430,0	0,4	1.760,0	0,6	5.432,0	
Jamaica	1.083,0	449,0	220,0	0,5	229,0	0,5	337,9	
Mexico	194.395,0	102.833,0	27.833,0	0,3	75.000,0	0,7	65.112,4	
Nicaragua	12.034,0	5.146,0	2.130,0	0,4	3.016,0	0,6	3.254,0	3.089,00
Panama	7.434,0	2.230,0	695,0	0,3	1.535,0	0,7	3.274,6	
Paraguay	39.730,0	20.900,0	3.900,0	0,2	17.000,0	0,8	17.939,2	
Peru	128.000,0	21.440,0	4.440,0	0,2	17.000,0	0,8	68.292,0	
Dominican Republic	4.832,0	2.467,0	1.270,0	0,5	1.197,0	0,5	1.972,0	3163,6***
Saint Kitts & Nevis	26,0	5,5	4,2	0,8	1,3	0,2	11,0	
San Vicente & the Grenadines	39,0	10,0	8,0	0,8	2,0	0,2	26,5	
Saint Lucia	61,0	11,0	10,0	0,9	1,0	0,1	47,0	
Suriname	15.600,0	81,4	64,0	0,8	17,4	0,2	14.765,2	18.700,40
Trinidad & Tobago	513,0	54,0	47,0	0,9	7,0	0,1	227,8	
Uruguay	17.502,0	14.807,0	1.912,0	0,1	12.895,0	0,9	1.654,4	
Venezuela (Bolivarian Republic of)	88.205,0	21.400,0	3.400,0	0,2	18.000,0	0,8	46.850,2	
Americas	3.837.273,2	1.191.988,9	386.893,2	0,3	805.095,7	0,7	1.568.045,9	
ALC + Mexico	2.013.180,2	720.937,9	169.292,2	0,2	551.645,7	0,8	954.655,5	255.839,40

*** Source:** FAO, FAOSTAT (2009).

**** Source:** ECLAC, ECLACSTAT (2007; *** 2006).

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