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Inter-American Institute for Cooperation on Agriculture (IICA)

The food security situation in the Americas

(Document to facilitate the dialogue scheduled to take place at the 42nd General Assembly of the Organization of American States)

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Inter-American Institute for Cooperation on Agriculture (IICA)

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Foreword

The issue of food security had been low on the global and hemispheric agendas for at least two decades until the agrifood crisis in 2008, when it suddenly took center stage once again. That year, several factors combined to cause serious food supply problems, and soaring and volatile prices, including poor harvests in a number of countries that supply food, the diverting of large amounts of land to the production of crops for biofuels, the growing demand for food in the emerging economies, and declining stocks of certain agrifood commodities.

The impact of the crisis on people and countries varied, depending on whether the latter were net food exporters or importers, their level of economic development, and the degree to which their agrifood sectors are integrated into the global market. Thus, while the United States, Canada, and the Southern Cone countries in general saw an improvement in their agrifood trade balance, other countries in the Caribbean, Central, and Andean regions experienced supply problems and had to cope with the price spikes and volatility that affected cereals and vegetable oils. Moreover, in the countries affected, the crisis hit the most vulnerable population groups hardest.

In response to the situation, the countries held the Agrifood Summit in Rome in June 2008 to address various aspects of the problem of food security. The declaration adopted at the summit called upon the members of the international community "to increase their assistance for developing countries, in particular least developed countries and those that are most negatively affected by high food prices." The declaration also stated that, "there is an urgent need to help developing countries and countries in transition to expand agriculture and food production, and to increase investment in agriculture, agribusiness, and rural development, from both public and private sources."

The structural problems that affect food security in the Americas are still present. Therefore, it is hardly surprising that food security will be one of the key issues addressed at the 42nd General Assembly of the Organization of American States, scheduled to take place in Cochabamba, Bolivia, from June 3-5, 2012. Within that framework, the Inter-American Institute for Cooperation on Agriculture (IICA) was asked to contribute a document providing important, comprehensive information about the food security situation in the Americas and the critical factors that affect it, and how those factors impact the different regions, countries, and most vulnerable population groups.

As the inter-American agency specializing in agriculture and rural development, IICA is well versed in the issue of food security, which has always figured on its agendas and formed part of its medium-term plans, projects, and activities. For this reason, the Institute wishes to take advantage of this opportunity not only to provide an overview of the situation in the Americas and the hemisphere's potential for achieving food security, but also to underline the need for the countries and regions to develop, adopt and implement comprehensive strategies and investment plans designed to ensure that food security becomes a reality for all their inhabitants.

Executive summary

The Concept of Food Security

The concept of food security came into being following the adoption of the Universal Declaration of Human Rights in 1948, but it was not until 2001 that, thanks to FAO, the current, generally accepted definition was adopted, which reads: **"Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."**

Food security depends on the existence of four interrelated conditions or dimensions: a) the **"availability"** or existence of sufficient quantities of food of appropriate quality for all inhabitants; **"access"** to the rights and resources required to acquire foods that are nutritious and culturally appropriate; c) the conditions that must exist to ensure the biological **"use"** of food, in order to reach a state of nutritional well-being where all physiological needs are met; and d) **"stability"** in terms of both the availability of and access to food at all times.

Food Security and the Summit of the Americas Process

The issue of food security has long been a topic of discussion in meetings dealing with agriculture and food, including those of the Ministers of Agriculture and the Heads of State and Government of the Americas. In the **Declaration of Bavaro** (Dominican Republic, 2001), the ministers of agriculture stated that agriculture and food security should be considered strategic topics. Later, in the **2003-2015 Agro Plan** (Panama, 2003), the ministers agreed to adopt a number of measures for implementing the mandates issued at the Third Summit of the Americas (Quebec, 2001) that dealt with food security. Since then, the topic of food security had been addressed at all subsequent Summits of the Americas.

Food availability levels in the Americas are adequate

In general, **food production has grown in the Americas,** with major differences being reported between regions and between countries. The Andean, Southern and Central Regions reported high rates of growth in production

between 1990 and 2010, whereas in the Caribbean Region production grew more slowly due to a decline in vegetable production and the stagnation of grain production. Nonetheless, a food availability gap of close to two million tons still exists in LAC. In addition, the **volatility** of international prices has had a negative impact on production. As food production has grown, **so have food imports and reliance on international markets,** outpacing production by far. This situation can entail risks and varies from region to region. Thus, the Northern and Southern Regions are able to produce nearly enough food locally to ensure food availability for their populations, while the other regions, especially the Caribbean, are highly dependent on food imports, despite recent successes in lowering such dependence.

Regional production **could grow** faster and **make a bigger contribution to food security.** This will require greater investment in agriculture and the rural milieu and the provision of more incentives for research, extension and the transfer of appropriate technologies. More important than having access to more arable land is **to increase the productivity, efficiency and sustainability** of agriculture.

The countries of LAC have managed to reduce hunger and undernutrition

The Global Hunger Index (GHI, from IFPRI), in general, showed steady **improvement** between 1990 and 2010, and most of the countries in LAC fall into the category of **low** (index below 4.9) or **moderate** (between 5 and 9.9) food insecurity, but **the situation is critical in Haiti, where 58% of the population suffers from undernutrition,** while in Bolivia, Guatemala, Nicaragua, Dominican Republic, Ecuador and Panama, at least one in six inhabitants is affected. It should be noted that undernutrition is more prevalent among children than in the general population in Uruguay (2% and 6%, respectively) and Argentina (1% and 2.3%, respectively).

The problem is not the availability of food, but access to it

In today's globalized world, **"country access" acquires greater importance.** In order to finance food imports, countries use revenues originating from the export of goods and services as well as external loans and remittances sent by persons residing abroad. All these items form part of the countries' international monetary reserves (IMR). The indicator of IMR, expressed in terms of months of food imports, shows that net food importing regions are able to finance from 43 and 98 months of food imports. It is recommended that this indicator be no less than 12 months since this limits the ability of the countries to negotiate and prepare. Nations such as Haiti, and to a lesser extent St. Lucia, Dominican Republic and Nicaragua, have little liquidity with which to supply themselves with food from the international market in the event of domestic food shortages.

The Caribbean countries are more vulnerable in terms of access to international food supplies. International net food purchases, taken as a percentage of Gross Domestic Product (GDP), range from 2% to almost 10% in the Caribbean countries, a fact that makes them highly vulnerable to potential increases in international food prices.

Price volatility affected the purchasing power of exports. High international prices for food can severely limit access to food for net food importing countries, depending on the importance of imports in the domestic food supply and the composition of the baskets of agricultural exports and imports.

"Individual access" is the problem as well as the debt of many countries in LAC. Food consumption is directly linked to the population's income level, its growth and the way in which it is distributed. As a result, high indices of poverty and indigence and inequity in the distribution of income in the countries of the region, added to inflationary processes, limit access to food for vulnerable population groups and territories. Furthermore, there is a direct relationship between

per capita GDP and per capita food consumption (expressed in calories).

To achieve food security, it is necessary to improve the biological utilization of food

In addition to concerns about unhealthy diets and growing levels of obesity, there are also concerns related to problems of sanitation (86% of the urban population and 55% of the rural population had access to some type of sanitation system for wastewater in 2011), access to potable water (7% of the population of LAC did not have access in 2008), medical care and agricultural health and food safety services. The latter problems tend to increase as trade flows grow and, although in some countries (e.g. the United States) those issues are within the operational scope of the department of agriculture, in most of the countries of the region they are addressed by the ministries of health and education, with little or no involvement by the ministries of agriculture.

Small-scale agriculture and family agriculture must be integrated

In LAC, the family agriculture sector includes approximately 14 million farms, with an associated population of around 60 million people, providing between 27% and 67% of all foods, occupying between 12% and 67% of the agricultural land and generating between 57% and 77% of agricultural employment. Family agriculture plays an important role even in large countries such as Brazil and Colombia, but also in medium-size countries such as Ecuador. In Brazil, the sector produces 67% of beans, 84% of cassava, 49% of maize and 52% of milk; in Colombia, more than 30% of annual crops (especially maize and beans); and in Ecuador, 64% of potatoes, 85% of onions, 70% of maize and 83% of mutton. In Central America, this group accounts for 96% of all basic grain producers, whose harvests supply the domestic and regional markets. In addition to family agriculture, there is also small-scale agriculture, which involves some 15 million farmers.

To achieve food security in LAC, there must be **greater access to technologies** that will make it possible to improve and diversify production, as well as efforts to **improve conditions for the participation** of small-scale and family farmers, ethnic groups and marginalized rural populations, so that they can make a two-fold contribution to food security: on the one hand, by boosting their contribution to food supply (for which they must improve their productivity); and on the other, by promoting and ensuring access to local, regional, national and international markets (which would help to generate employment and incomes and would contribute to reducing rural poverty and improving access to food). To achieve all these goals, it is crucial to promote associative arrangements as a means of accessing services and increasing their negotiating power in the markets.

For food security to become a reality, climate change must be taken into consideration

To differing degrees, **agriculture in the Americas is not only threatened by climate change, but also contributes to it,** considering that, according to the University of Minnesota, agriculture worldwide generates 30% of all greenhouse gases. To this situation must be added soil and water contamination, as well as loss of plant cover attributed to agricultural activities that are not environmentally responsible or sustainable.

Food availability is threatened by climate variability in the short term and **climate change** in the medium and long terms. Changes in temperature and rainfall patterns will affect different regions and countries to differing degrees, and will lead to smaller yields, affect adversely the quality of food, influence the distribution of pests and the virulence of diseases that impact crops and livestock, affect the storage and distribution of food, the control of pests and diseases that cause post-harvest losses, and affect the incomes and living conditions of vulnerable segments of the population, especially in rural areas.

What is needed therefore is a change in sociopolitical attitudes, to be reflected in **strategies and policies aimed at adapting** agricultural

production and processing activities to climate change and mitigating its impacts.

Strategies, policies and investment plans for food security

IICA promotes the adoption of comprehensive food security policies, focused on achieving the following objectives:

1. To increase investment in agriculture in order to develop needed scientific, research, innovation and extension capabilities;
2. To develop efficient and transparent agricultural markets;
3. To adopt policies and institutional arrangements that promote the integration of small- and medium-scale agriculture into markets;
4. To promote free international trade in food;
5. To implement programs that provide access to food for vulnerable segments of the population;
6. To adapt agriculture to climate change and climate variability, and minimize the risks posed by those phenomena and the volatility of prices for agricultural products;
7. To reduce and mitigate the impact of agriculture on the environment, and promote a food and nutritional security educational programs.

Action Plan on Food Price Volatility and Agriculture of the Ministers of Agriculture of the G-20 (France, 2011)

The Action Plan, adopted at the meeting of ministers of agriculture of the G-20 (including five ministers from the Americas), attaches special attention to the formulation and application of macroeconomic and sectoral policies that will support small- and medium-scale agriculture, and focuses on the achievement of five objectives: 1) To improve agricultural production and productivity, both in the short and long term; 2) To increase market information and transparency; 3) To improve international policy coordination; 4) To mitigate the effects of price volatility, particularly in the poorest countries; and 5) To strive for transparent and properly regulated agricultural financial markets.

IICA and Food Security

The topic of food security has been a permanent feature of the Institute's mission and objectives, as reflected in its Medium-term Plans (MTP). For example, one of the strategic objectives defined in the 2010-2014 MTP is "to improve agriculture's contribution to food security." Accordingly, IICA provides the member states with support in developing strategies and national plans for making investments in agriculture that are aimed at improving the production and quality of food and increasing, over time, the participation of farmers in markets.

IICA's support focuses especially on improving the living conditions and possibilities for small- and medium-scale producers, so that they can improve their situation and contribute to food security in their countries and within the hemisphere. All of IICA's programs (Innovation for Productivity and Competitiveness; Agricultural Health and Food Safety; Agribusiness and Commercialization; Agriculture, Territories and Rural Well-being; Agriculture, Natural Resource Management and Climate Change; and Agriculture and Food Security) address topics related to food security.

1. INTRODUCTION

The concept of food security

The concept of *food security* began to be developed following the adoption of the Universal Declaration of Human Rights in 1948, but it was not until 1974, during the World Food Summit, that the countries arrived at a definition for the first time. The concept continued to evolve until 1996, when the FAO presented the best known and most widely accepted definition: *"Food security* … [is achieved] when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life." Other organizations have proposed their own definitions based on this one, and different indicators for measuring it.

Since 1996, and parallel to the development of the concept of food security, a number of organizations and countries have developed the concept of *food sovereignty.* Annex 1 contains a brief summary of the evolution of the two concepts thus far.

In 2001, the FAO incorporated the component of *social access to food* into its 1996 definition, while maintaining the multidimensional approach to food security: *availability, access, utilization, and stability.*

Food availability refers to the existence of sufficient quantities of food of appropriate quality, produced in the country or acquired via importation or food assistance.

Food access means that individuals have access to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic, and social arrangements of the community in which they live (including traditional rights such as access to common resources).

Biological utilization of food must be ensured, through adequate diet, clean water, sanitation, and health care, in order to reach a state of nutritional well-being where all physiological needs are met. This concept highlights the importance of non-food inputs in food security.

Finally, to be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity). The concept of stability can therefore refer to both the *availability* and access dimensions of food security.

This integrated approach to food security is consistent with the Millennium Development Goals of the United Nations, in particular with that of "halving, by the year 2015, the proportion of the world's people whose income is less than one dollar a day and the proportion of people who suffer from hunger and, by the same date, to halve the proportion of people who are unable to reach or to afford safe drinking water" (UN, 2000).

2. FOOD SECURITY AND THE SUMMIT OF THE AMERICAS PROCESS

The issue of food security has been addressed at the meetings of ministers of agriculture and those of the Summit of the Americas process, especially since the food crisis that affected a number of countries in the hemisphere in 2008.

During the Ministerial Meeting held in Bávaro, Dominican Republic, in November 2001,[1] the ministers of agriculture of the Americas considered it essential that significant progress be made with food security, and proposed the creation of an institutional framework that would facilitate the achievement of food security, the elimination of trade barriers, increased rural investment, the reduction of gaps, and the modernization of agriculture.

[1]Ministerial Declaration of Bávaro for the Improvement of Agriculture and Rural Life in the Americas. 2001. Dominican Republic.

Similarly, the 2003-2015 AGRO Plan,[2] drawn up to implement the mandates issued to the ministers of agriculture by the Heads of State and Government at the Third Summit of the Americas, held in Quebec in 2001, highlighted the promotion of food security as a key element that needed to be incorporated into programs designed to improve rural life, foster agroindustry, contribute to poverty alleviation, and promote integrated development.

In the same spirit, the Heads of State and Government of the Americas have adopted commitments designed to improve food security in the region, which are reflected in the declarations of the various summits of the Americas:

In the **Declaration of Nuevo León** (Special Summit held in Monterrey, Mexico, in 2004), in the section on Social Development, the leaders recognized that *"overcoming poverty, hunger, and social inequality are major challenges facing many countries of the Hemisphere in the twenty-first century…"* They also pledged, *"to maintain a sustained effort to improve living conditions for inhabitants of rural areas, by promoting investment and creating a favorable environment to achieve sustainable improvements in agriculture that will contribute to social development, rural prosperity, and food security."*

In the **Declaration of Mar del Plata** (Fourth Summit of the Americas, Argentina, 2005), the signatories *pledged to "… promote social well-being, an equitable distribution of the benefits of economic growth, an increase in hemispheric standards of living, the elimination of hunger and the attainment of food security, the creation of new employment opportunities, and the promotion of entrepreneurship."*

The issue of food security figured prominently in the **Declaration of Commitment of Port of Spain** (Fifth Summit of the Americas, Trinidad and Tobago, 2009), as reflected in several of its articles:

"Providing our people with adequate and timely access to safe and nutritious food is among the most immediate challenges confronting our Hemisphere and the world. We recognise the negative impact on our people of food crises when they occur, and commit to taking urgent and coordinated action, working in partnership with the relevant international and regional organisations, as appropriate, to develop and implement comprehensive policies and programmes in order to confront the challenges of food security. We reaffirm our commitment to the objective of the Millennium Declaration to halve by 2015 the proportion of people who suffer from hunger; and we recognise United Nations General Assembly Resolution 63/235, which calls for addressing these challenges."

"We call on our Agriculture Ministers to develop activities aimed at addressing issues affecting access to and availability of food in order to combat chronic malnutrition and to promote adequate nutritional policies for our populations. We support the promotion of investment in agriculture, as well as the strengthening of our States' institutional capacity, with a view to increasing and intensifying productive activities, particularly in the countries most affected by hunger.

"We believe that a multidimensional and multisectoral approach to agriculture and rural life is a key factor for sustainable development and food security."

Food security is mentioned in the section entitled "Poverty, Inequality, and Equity" of the **Mandates Arising from the Sixth Summit of the Americas** (Colombia, April 2012:

"To promote greater investment in, and access to, research, technological innovation, and capacity-building in order to strengthen and ensure a sustainable, comprehensive, inclusive, and competitive agro-food sector that would contribute to food security and the reduction of poverty and inequity, particularly in marginalized rural and urban areas." (SIRG, 2012).

[2] Signed at the Second Ministerial Meeting on Agriculture and Rural Life, held November 11-12, 2003, in Panama City, Panama.

3. STATE OF FOOD SECURITY IN LATIN AMERICA AND THE CARIBBEAN

3.1 Food security is the result of many factors

This section contains an appraisal of the food security situation in the countries of the Americas. As has already been noted, the concept of food security has evolved over time and different institutions use a variety of approaches and indicators (hunger, undernutrition, food availability and food access, etc.) to estimate the scale of the problem.

This document provides an overview of the many factors that affect the food security of a given country or population. It then explains some of the ways in which food security is measured, and the most recent results of such exercises. IICA's estimates of food security are also presented. These involve calculations and interpretations based on quantitative indicators related to the dimensions of availability, access, utilization (or use of food), and stability included in the FAO's definition, which is the one applied in most countries in the world and which permits comparisons between countries and regions.

The FAO's current definition of food security and its multidimensional approach make it possible to identify the important factors that impact the four dimensions of the issue: availability, access, utilization, and stability.

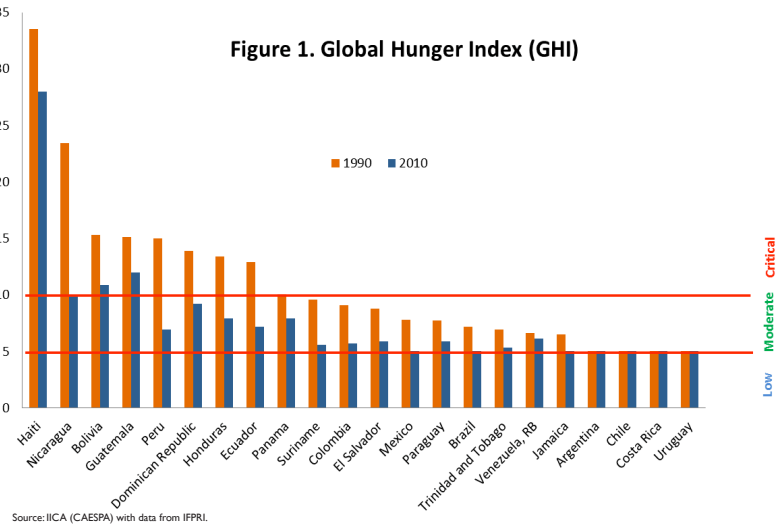
With regard to food availability, it is important to analyze domestic food production, yields, and the types of instability that affect its evolution, as well as the role of foreign agrifood trade, which makes it possible to complement the internal supply with imports. Exports also have to be considered, however, because, while they reduce the amount of food available for domestic consumption, they also generate foreign exchange that can be used to pay for imports. It is argued in some quarters that, in a context of trade liberalization, international trade ensures that more food is available than national production can supply. Other experts feel that it is risky to depend on imports to meet the domestic demand and overspecialize in export crops, as was the case during the episodes in which the prices of food and energy commodities soared, and given the marked volatility of the global agrifood market since 2007.[3]

In the case of food access, IICA makes a distinction between the macro vision (known as country access) and the micro approach that considers individual access, since the two depend on different factors. Country access has to do with the capacity of a given country and the short-term difficulties it faces in financing its imports and ensuring that the internal demand for food can be met. Several factors are important in this regard: a) the availability of international monetary reserves to purchase imported foodstuffs; b) the level of vulnerability of international access to food to pay for food imports, since the situation of a net food-importing country is different from that of a net food exporter; and, c) in the case of a net importing country, whether it has other important sources of international foreign exchange revenues (mining, oil and gas, or tourism, for example). The volatility of the international prices of the principal commodities and the evolution of the terms of trade are important factors when determining the degree of food insecurity or vulnerability with regard to food security.

Individual access considers the purchasing power (income) of the population, i.e., whether it is sufficient to permit acceptable levels of food and nutrition. This indicator can be addressed from the perspective of vulnerable population groups, and that of small farmers. Poverty and extreme poverty levels, and the way in which income is distributed, are important factors that determine the relationships among the population's income and income growth and distribution, as well as the structures of consumption and per capita consumption levels. Another important factor is the way in which international prices are transmitted to domestic prices and affect the food inflation situation.

[3] See the joint IICA-FAO-ECLAC bulletin, "Price volatility in agricultural markets (2000-2010): implications for Latin America and policy options."

The *biological utilization* of food also depends on multiple factors, such as food quality (nutrients, health, and safety), food preparation, diets, and the health conditions of the population related to factors like access to drinking water, medical services, and education. Many of these are not strictly agricultural issues, so other organizations (such as the PAHO-WHO) are better placed to contribute to the analysis of this dimension.



The dimension of *stability* has two main aspects: the stability of food availability, and the stability of food access, both of which are dealt with in the respective sections of this document.

3.2 Measuring food security

As mentioned in the introduction to this chapter, there are different ways of measuring food security, depending on the definition of the concept and the indicators used. For example, the International Food Policy Research Institute (IFPRI) produces a Global Hunger Index (GHI) that uses related parameters to calculate the situation of the countries on a scale of 0 to 100.[4] The FAO focuses on nutritional aspects to calculate the state of food insecurity, while the Economic Research Service (ERS) of the United States Department of Agriculture (USDA) estimates gaps in food availability. For its part, IICA performs calculations and interprets quantitative indicators in relation to the dimensions of the availability of, and access to, food.

A summary of the main findings of recent research will be provided in the next section. First, we shall consider the role that agriculture plays in the region's food security.

The Latin American and Caribbean (LAC) countries managed to reduce hunger and undernutrition, but some made more progress than others

The hunger indexes show an improvement. According to the **Global Hunger Index (GHI)** calculated by IFPRI (2010),[5] most of the Latin American and Caribbean countries fall into the category of low food insecurity.[6] The exceptions are Bolivia, Guatemala, Haiti, Nicaragua, Peru, Dominican Republic, Honduras, Ecuador, and Panama. In Guatemala, Bolivia, and especially Haiti, the situation is classified as critical (see Figure 1).

The food insecurity situation has improved in most countries of the region over the last 20 years. The biggest reductions in hunger have been achieved in Nicaragua, Peru, Dominican Republic, Honduras and Ecuador, countries whose status went from critical (more than 10% of the population) to moderate (between 5% and 10%).

However, undernutrition remains critical in several countries and varies among them. Table 1 (based on the GHI) shows the great disparity that

[4] The GHI is multidimensional, since it considers three hunger-related indicators: 1) the proportion of people who are undernourished (insufficient calorie intake); 2) the proportion of children under five who are underweight; and 3) child mortality (partially reflecting the synergy between inadequate diet and unhealthy environments).
[5] Although the index was complied in 2009, the information available in the countries was incomplete. This index is based on information for 2007.
[6] The index divides the countries into five situations or categories: 1) those with a low level of hunger (with a score of less than 4.9 in the index); 2) those where the scale of the problem is moderate (values of between 5 and 9.9; 3) countries in which the situation is serious (scores of between 10 and 19.9; 4) those where the situation is alarming (between 20 and 29.9; and, 5) countries in which the situation is extremely alarming (a score of over 30).

Table 1. State of Food Insecurity in LAC

	% of undernutrition in total population (2004-06)	% of undernutrition in children under 5 years old (2003-08)
Haiti	58,00	18,90
Nicaragua	21,00	6,00
Bolivia	23,00	4,30
Guatemala	16,00	16,50
Peru	13,00	5,40
Dominican Republic	21,00	3,40
Honduras	12,00	8,60
Ecuador	13,00	6,20
Panama	17,00	4,30
Suriname	7,00	7,00
Colombia	10,00	5,10
El Salvador	10,00	5,80
Mexico	4,00	3,40
Paraguay	12,00	3,00
Brazil	6,00	2,20
Trinidad & Tobago	10,00	2,40
Venezuela	12,00	4,40
Jamaica	5,00	2,20
Argentina	1,00	2,30
Chile	2,00	0,50
Costa Rica	4,00	1,10
Uruguay	2,00	6,00

Source: IICA (CAESPA) with data from IFPRI

exists in the region in relation to the percentage of the population that is undernourished. While in Haiti more than half the population (58%) does not have access to sufficient food of adequate quality to meet its needs, in Argentina, Uruguay, Chile, Costa Rica, and Mexico the percentage is less than 5%.

While not faced with the critical conditions that exist in Haiti, some LAC countries find themselves in a situation in which least one out of every six citizens is undernourished. Bolivia, Nicaragua, Dominican Republic, Panama, and Guatemala are cases in point.

Furthermore, in Uruguay, Argentina, and Guatemala undernutrition is more prevalent among children than the general population, which is a cause for concern. Countries such as Bolivia, Dominican Republic, Panama, and Paraguay are at the other end of the spectrum, with moderate rates of undernutrition at the national level, but low rates of child undernutrition (below 4%).

The USDA (2010) estimates that the LAC region is home to an estimated 58 million food-insecure people. As a percentage of the national population, the figure ranges from 80% in Haiti to 61% in Dominican Republic, 60% in Bolivia, 41% in Peru and Guatemala, and a little over 16% in El Salvador and Nicaragua.

The level of food availability in LAC is good but the strategies aimed at improving the supply need to be improved

Food production is growing in LAC, but with major differences from region to region. An analysis carried out to determine whether the supply of food in the LAC countries is sufficient to meet the population's food requirements, and whether the food is of sufficient quality to guarantee a healthy diet, suggests that food availability levels in LAC are adequate. The analysis also indicates that food production is growing at a faster rate than the population (see Table 2).

The rate of growth of food production varies considerably from region to region and among the different food groups (see Annex 2). The Central Region is notable for the high rates of growth of

Table 2. Food production, imports and availability, and the population in Latin America and the Caribbean (2009)

	Production of grains	Production of roots	Imports of grains	Food aid	Food available	Population
	(in thousands of tons)					
2001	12.656	3.253	11.125	1.067	38.222	528
2002	13.315	3.355	11.680	1.127	39.653	535
2003	14.043	3.457	11.774	491	40.469	542
2004	13.841	3.395	12.055	568	40.432	549
2005	14.326	3.437	13.412	687	40.785	556
2006	14.410	3.587	14.832	671	42.049	563
2007	15.453	3.842	15.383	392	46.193	569
2008	15.726	3.688	14.932	362	47.457	576
2009	15.612	3.822	14.603	485	44.001	582
Growth	2,62%	1,99%	4,28%	-11,41%	2,34%	1,23%

Source: USDA. Food Security Assessment 2010-20

the production of milk, vegetables, root crops, and vegetable oils. Food production grew the least in the Caribbean Region, due to major falls in the production of vegetables and the stagnation of grain production. During the period 1990-2010, the growth of the production of both cereals and oilseed crops was strongest in the Andean and Southern regions.

Despite rising food production, it is estimated that the food distribution gap, which is the additional amount of food needed for the population's access to food to meet generally accepted nutrition standards and requirements, remains at close to two million tons in LAC[7] (USDA, 2010).

Food production is growing, but so too are imports and reliance on international markets. Imports are rising much faster than production, while food assistance in the region is falling significantly (see Table 2).

The Americas are becoming more reliant on the international markets to boost the domestic food supply, with imports rising more quickly than the growth of domestic food production. The high dependence on imports to provide the minimum daily calorie intake is regarded as risky in some quarters, but the situation varies widely from region to region.

Imports made an important contribution to total calorie intake during the crisis of 2007-2008. They accounted for up to 60% of calorie intake in the Caribbean Region, and 43% in the Central Region. During the same period, the Northern and Southern regions were able to produce nearly enough food locally to ensure food availability (see Table 3).

Although the Caribbean Region is the one most reliant on the international markets to ensure food availability, it should be stressed that it has managed to reduce its dependence on them considerably in recent years, with the figure down from 60% in 2007 to 44% in 2009.

Until 2007, the amount of food imports as a percentage of the domestic supply was on the rise in the Caribbean, Central, and Andean regions. However, due to the food crisis that occurred at the end of that year, the countries in those regions stepped up local food production, reducing their dependence on the international markets and demonstrating a great capacity to cope with the new high prices.

Thanks to the big contribution made by the Northern and Southern regions to food production in the hemisphere, less than 10% of the domestic demand in the Americas is met with imports.

Dependence on imports can undermine food security, especially if domestic production of the foods that make the biggest contribution to total calorie intake is insufficient. In terms of food groups, the Caribbean, Central, and Andean regions rely on imports to meet a large percentage of their cereal and vegetable oil needs. These two food groups account for more than 75% of the calorie intake in those regions (see Table 4).

The inability of the countries of the Caribbean, Central, and Andean regions to produce enough

Table 3. Percentage of calorie intake provided by imports in the Americas (2000-2009)

Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Americas	10,2	10,4	10,8	14,8	18,0	9,0	10,9	10,1	10,9	9,6
Andean	28,5	28,0	27,4	27,4	28,0	28,1	30,1	30,1	30,6	29,9
Caribbean	42,8	46,1	51,7	46,6	42,4	53,6	48,6	60,0	51,8	43,7
Central	35,7	37,7	42,1	40,9	40,0	41,8	41,1	42,9	36,7	38,1
Northern	7,4	8,5	8,2	16,4	26,5	6,8	8,2	7,4	8,9	7,2
Southern	11,0	7,5	9,2	6,6	5,7	6,2	8,6	8,4	7,1	7,3

Source: IICA (CAESPA) with data from FAO (FAOSTAT) and United Nations (COMTRADE).

[7] Amount of food required to raise consumption in each income group to the minimum daily calorie intake required. The study does not include all the LAC countries.

Table 4. Imports as % of domestic food supply in the Americas (2000-2009)

	Andean	Caribbean	Central	Northern	Southern
Veg Oils	51,52	69,09	46,69	29,10	6,12
Meat	2,36	9,17	8,84	3,71	0,31
Cereals	38,99	42,60	45,05	4,93	10,57
Fruits	2,85	1,44	6,78	20,33	2,17
Vegetables	3,08	11,81	17,80	13,79	2,58
Milk	0,16	1,41	0,98	0,21	0,05
Tubers	0,31	4,64	6,41	3,51	0,13

Source: IICA (CAESPA) with data from FAO & COMTRADE

cereals and oilseed products to meet the domestic demand is even more serious considering the soaring prices and price volatility of those products in the international markets over the last four years.

Even in regions that rely heavily on grain imports to feed livestock, local meat production is sufficient to meet more than 90% of local demand (Central and Caribbean regions). Moreover, nearly all the regions are self-sufficient in milk and tuber crops, food groups that account for less than 7% of all calories consumed.

Regional production could grow faster and make a bigger contribution to food security. Yields play a critical role in the growth of agricultural production. With little new arable land available, yields are beginning to play an increasingly important role in the efforts to increase production, especially in the case of cereals (see Table 5).

The Caribbean was the only region in which the growth of cereal production during the period 1990-2010 owed more to an increase in the area under cultivation than higher yields. In the other regions, the contribution that higher yields made to increased production remained virtually unchanged.

The increase in the area under cultivation was a bigger factor in the case of oilseed products than cereals. In fact, in every region of the Americas except the Caribbean (where the oilseed crop acreage decreased) the increase in the harvested area made at least the same contribution to higher production as yields.

The instability of food production also varies from region to region. When food production levels vary, they can cause periods of shortages, which undermine the food security of the population, or periods of surpluses, which result in losses and discourage production in subsequent periods.

To estimate this variable, a production instability index was created, with foodstuffs divided into different groups (see Annex 2). According to this index, the Andean Region is the most stable (with instability put at 1%), while production varies the most in the Northern Region (4.19%), Southern Region (3.27%), Caribbean Region (2.74%), and Central Region (2.63%). Milk production in the Caribbean is the most unstable subsector in all of LAC (instability is put at 9.6%), followed by cereals in the Southern Region (7.59%) and the Northern Region (6.62%).

Table 5. Contribution made by harvested area and yields to increase in cereal and oilseed production (1990-2010)

Region	Annual growth of production 1990-2010 (%)	Contribution made by harvested	Contribution made by yield
	Cereals		
Andean	3,58	0,90	2,65
Caribbean	1,69	1,02	0,66
Central	1,01	0,02	0,99
Northern	1,32	(0,82)	2,15
Southern	3,44	0,30	3,13
	Oilseeds		
Andean	4,35	3,20	1,12
Caribbean	(0,14)	(1,34)	1,22
Central	2,93	1,46	1,45
Northern	2,51	1,22	1,28
Southern	7,46	4,80	2,55

Source: IICA (CAESPA) with data from FAO, FAOSTAT.

Specializing in the production of export crops can be a good thing, but is always risky. Although the size of net food exports may be an indicator of food self-sufficiency, specializing in just a few export products may mean that a country that produces large amounts of food has to import most of its essential foodstuffs (grains, cereals, and oilseed products). This is risky for two reasons: because these agricultural commodities make the biggest contribution to calorie intake, and given the soaring prices and price volatility witnessed over the last four years. Countries that specialize in a few agricultural crops use the revenues generated by exports to purchase foods that are not produced locally and needed to meet the domestic demand.

The importance of additional arable land being available for food production. The biggest net food-exporting countries are able to use a large percentage of their arable land to grow primary products, which allows them to achieve high levels of per capita food production. For example, in countries such as Argentina, Canada, the United States, and Paraguay, the high levels of net food exports per capita are linked to high levels of per capita food production, which in turn are due to the large areas of farmland available. At the other end of the spectrum are the countries that import the largest net amounts of food, which have the smallest amount of arable land available for food production.

Countries that have a limited amount of land available for food production will come to depend increasingly on the production of third countries to meet their nutrition needs, a situation that is exacerbated by rapid population growth.

Although the amount of land used to grow primary products is one of the most important variables in determining food production levels, other issues also come into play, such as the productivity of the factors of production.

The importance of productivity. The countries that produce most food per capita are not necessarily the ones that have the most arable land per capita. For example, the United States uses only 68% of the amount of arable land that Paraguay does for agricultural production, but its produces more. Another interesting case is that of Costa Rica, which uses the same amount of land per capita to produce twice the amount of primary crops per capita as countries such as Saint Vincent, Peru, Panama, El Salvador, and Guatemala.

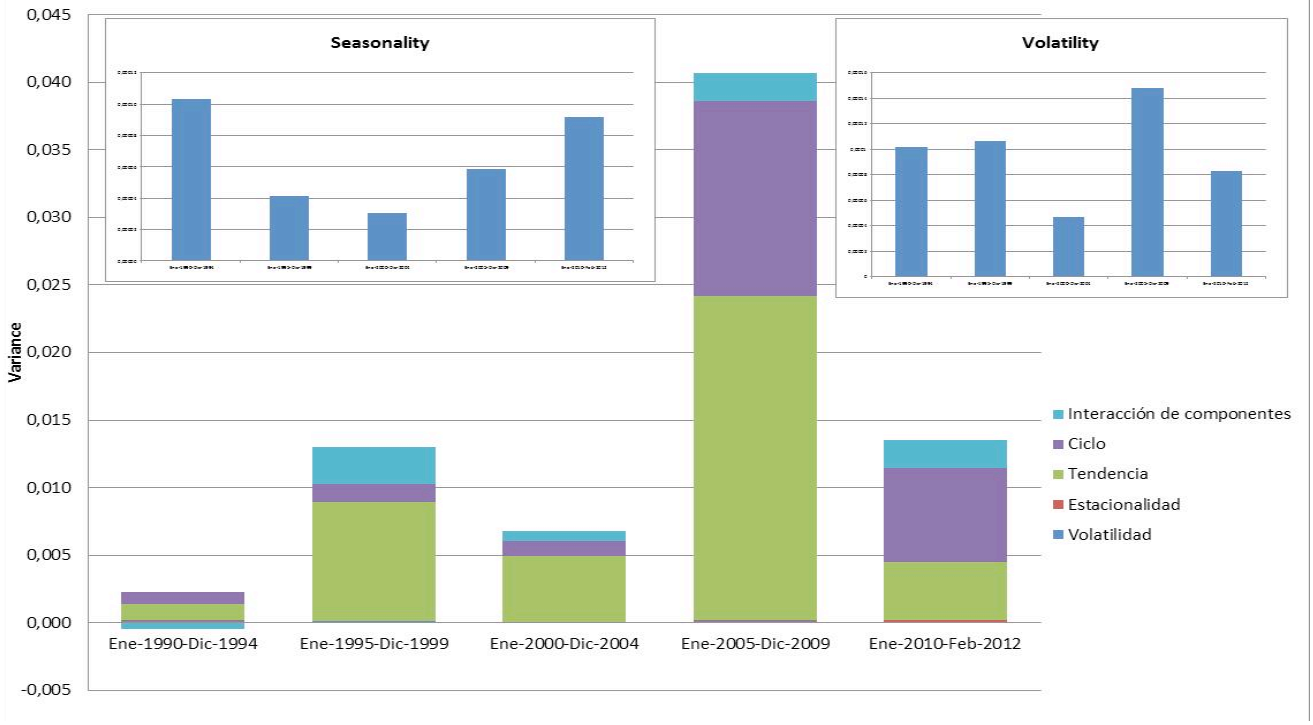
The differences in the per capita production of primary crops among countries that use the same amount of land per capita are due to the productivity of the factors of production. For example, the productivity of land in ALC used for primary crops (excluding sugarcane) ranges, in very aggregate terms, from 13.8 kilos per square meter in Costa Rica, to 1.73 kilos per square meter in Nicaragua[8] (calculated using data from FAO 2006a).

The volatility of international prices is a major factor. The risk of price variations (volatility) influences production and investment decisions in the agricultural sector and, as a result, the availability of food. During the 2008 crisis, the volatility of international food prices (which eventually is transmitted to domestic markets) increased by 21%, almost three times the volatility experienced in the years prior to the crisis. Fortunately, international volatility fell to 13% between January 2010 and February 2012, which suggests an international environment with lower relative risk. All the components of variability in international prices decreased (cycle and trend, random-irregular), except for seasonality, which rose due to an increase in the frequency and intensity of adverse weather events in the last months of the period in question (Figure 2).

The negative effects of weather variability are reflected in smaller harvests and the uncertainty of production forecasts, and the impact of bad weather was more important in 2011 than in 2008. The situation was compounded by the weakness or instability of the principal international currencies,

[8] It should be borne in mind that this indicator is based on all primary crop production measured by weight, which favors countries that produce heavier crops. For that reason, sugarcane was excluded from the total weight in kilograms of all the primary crops produced.

Figure 2. Volatility and components of variation in international food prices (Jan 1990 - Feb 2012)



Note: The periods considered are the same for the three figures.
Source: IICA (CAESPA) with data from the IMF.

and doubts about the level of global economic growth, which combined to drive up the prices of food commodities (Abbott et al. 2011).

The uncertainty caused by price volatility, combined with the high cost of agricultural inputs, leads producers to cut back on investment, with a consequent fall in supply at the end of the cycle. This, in turn, can push up prices in international markets, and make them more volatile.

At the country level, rising and volatile international prices may reduce economic efficiency, create serious risks for small farmers, and lead to food insecurity and undernutrition, a negative trade balance, migration and social and political unrest, among other things. The degree to which a country is affected will depend on its level of integration into the international market, and the steps it takes to manage the risks with which it is faced. Rising and volatile food prices at the level local mainly affect the poorest families, which struggle to maintain a healthy daily diet.

3.3 The problem is not the availability of food, but access to it

In this document, the status of access to food has been considered at three levels: country, vulnerable groups and small-scale farmers.

This section includes variables that measure the short-term difficulties faced by countries in financing their imports and ensuring a sufficient level of food in the domestic food supply (country access), as well as variables that measure the population's purchasing power to ensure acceptable levels of food and nutrition (individual access).

In a globalized world with open trade, "country access" acquires greater importance. Country access is measured using variables which, depending on their performance, either hinder or facilitate food imports and ensure an appropriate level of domestic supply. This analysis mainly considers macroeconomic

Table 6. Purchasing power of international monetary reserves in months of food imports

Region	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Andean	108,6	90,5	96,8	123,6	120,8	137,3	143,3	131,2	90,8	108,9	173,2
Caribbean	35,1	35,8	52,9	48,5	59,9	58,5	65,6	59,4	38,3	51,1	97,9
Central	35,3	35,7	35,6	37,5	41,4	37,9	44,5	35,2	33,7	38,9	42,6
Northern	35,0	36,1	39,9	40,7	38,3	35,8	36,0	39,6	37,8	54,1	57,8
Southern	134,8	136,5	153,5	173,0	194,6	207,9	230,6	289,0	227,2	337,0	523,1
Americas	46,8	46,1	49,4	52,2	51,1	49,9	53,0	62,1	57,4	78,3	88,2

Source: IICA (CAESPA) with data from IMF & COMTRADE

financial variables that would allow countries to import food in the event of local shortages.

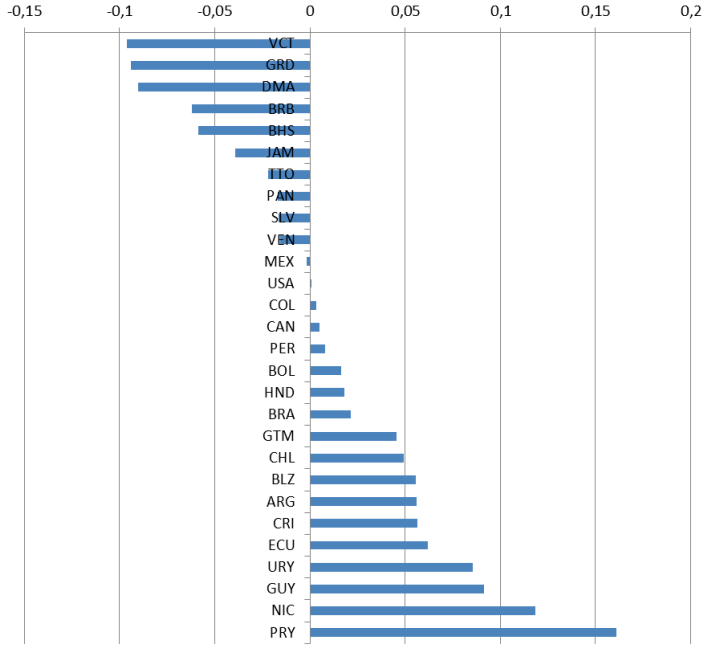
The purchasing power of international monetary reserves increases, in terms of food imports. In addition to the revenues originating from the export of goods, countries use other resources to finance their food imports, such as those obtained from the export of services, external loans and remittances sent by persons resident abroad. All these items are included in the international monetary reserves (IMR).

The indicator of international monetary reserves expressed in terms of the number of months of food imports (Table 6) shows that net food importing regions are able to finance from 43 months (Central region) to 98 months of food imports. It is recommended that this indicator be no less than 12 months and, therefore, based on IMF data, countries like Haiti, and to a lesser extent St. Lucia, Dominican Republic and Nicaragua, have little liquidity to supply themselves with food in the international market, in the event of domestic food shortages.

The purchasing power of IMR measured in months of food imports has increased significantly in the last two years. This is not only due to a decrease in the price of most agricultural commodities (with the exception of maize and soy), but also to the efforts made by nearly all the countries of America to increase their IMR.

The Caribbean countries are more vulnerable in terms of access to international food supplies. International net food purchases (balance of trade) taken as a percentage of Gross Domestic Product (GDP), represent from 2% to almost 10% in the Caribbean countries, a fact that makes them highly vulnerable to potential increases in international food prices. El Salvador and Panama show a moderate level of vulnerability, with 1.7% of net imports over GDP (see Figure 3).

Figure 3. International food access
(Food trade balance/GDP - in %)



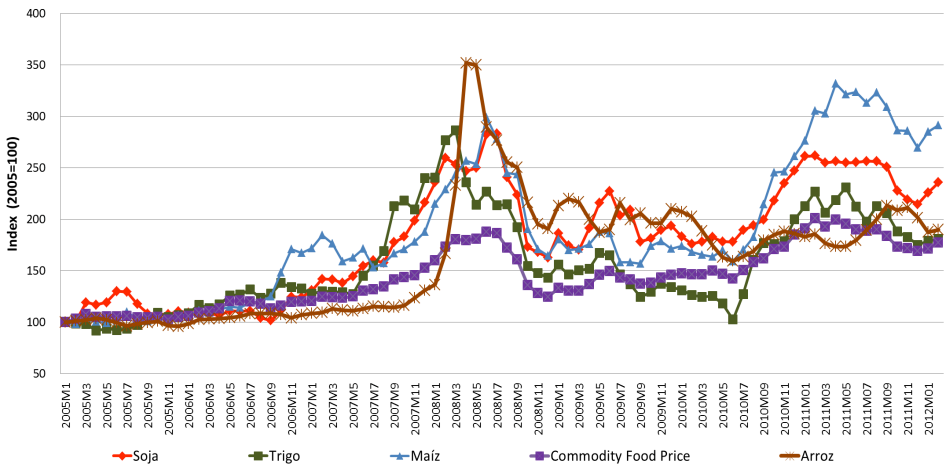
Source: IICA (CAESPA), with data from FAO and World Bank

High international prices limit access to food by net food importing countries. Depending on the importance of imports in the domestic food supply and the composition of the baskets of agricultural exports and imports, international prices can have a significant impact on access to food.

Given that grain and oilseed imports account for a high proportion of the domestic food supply of the Caribbean, Central and Andean regions, the price increases in these commodities that occurred from 2008 led to a deterioration in food access in these regions.

By contrast, in the Northern and Southern regions access to food improved, since the products that increased most in price on the international markets constitute the basis of their basket of agricultural exports (see Figure 4).

Figure 4. Evolution of international price indexes of all food commodities, wheat, soybean, rice and corn



Source: IICA, based on IMF data

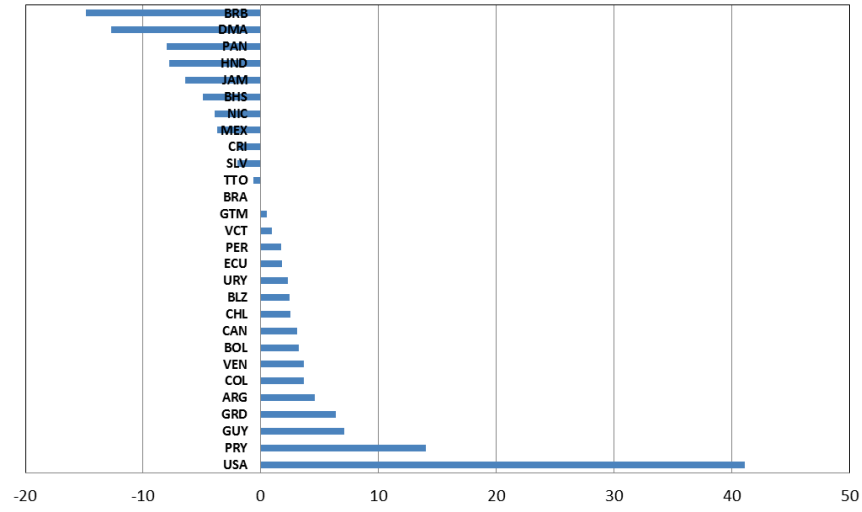
Price volatility affected the region's agricultural terms of trade and with it the purchasing power of its exports. Price increases and price volatility in many of the commodities traded on international markets affected the purchasing power of the agricultural exports of countries in the Americas. Countries such as the United States, Paraguay and Argentina saw a significant improvement in their agricultural terms of trade (ratio between the evolution of prices of a basket of exported agricultural goods and the evolution of prices of the basket of imported agricultural goods), essentially due to the fact that grains and oilseeds have a high share in their basket of exports and the prices of those products increased significantly in the international market.

By contrast, the countries that export tropical commodities (tropical fruits, flowers, coffee and others) and import grains and oilseeds saw the purchasing power of their agricultural exports significantly diminished (in terms of agricultural imports) during the 2005-2009 period. This was the case for Mexico and the countries in the Caribbean and Central regions, as shown in Figure 5.

"Individual access" and the large debt of many LAC countries is the fundamental problem. If the status of food access is analyzed at a more disaggregated level than the national level, the indicators for many countries change significantly. This is due to the high indices of poverty, indigence and inequality in the distribution of income existing in the countries of the region, which is reflected with greater intensity in vulnerable population groups and territories. Food consumption is directly linked to the population's income level, its growth and the way in which it is distributed.

Per capita food consumption increases with income. The relationship between per capita food consumption and income is analyzed using GDP as a proxy of the population's income. Figure 6 shows that there is a direct and positive correlation between per capita food consumption (expressed in calories) and per capita GDP. The countries with the lowest levels of incomes and food consumption are the same ones included in the preceding analyses as being in

Figure 5. Variation in the terms of agricultural trade in the Americas. 2005-2009



Source: IICA (CAESPA), with data from COMTRADE

a situation of food insecurity (Nicaragua, Bolivia, Paraguay, Guatemala and Honduras).

The countries with the highest levels of per capita food imports are those with higher levels of per capita income (see Annex 2). This is associated with two basic facts:

a. In the first place, in countries with higher levels of per capita incomes, the primary agricultural sector is of less relative importance, given that their economy is based mainly on the industrial and service sectors, forcing them to rely, to a greater extent, on the external sector to ensure sufficient food for their populations.

b. In the second place, higher income countries are able to allocate a larger percentage of their income to the purchase of food products, regardless of whether these are produced within the country itself or abroad.

The fall in GDP further reduced access to food. From 2008, the sharp increases in the prices of the most widely consumed agricultural products, coincided with a slowing in the growth rate of most of the hemisphere's economies, which had a negative impact on the population's access to food.

The economic and financial crisis of 2008-2009 was felt throughout America. In 2009, GDP fell in all the regions of America, except in the Caribbean region, where it remained practically unchanged (see Table 7). However, the performance of the regions was heterogeneous. Thus, while the Northern region experienced a drastic fall in GDP (3.6%), in the Andean, Central and Southern regions the decrease in GDP was less than 1%.

Nor has the recovery been homogeneous in the hemisphere. The Southern region experienced an accelerated growth which, in addition to restoring GDP to its long-term trend (7.9%), doubled the growth of GDP in the rest of the regions.

Given the weight of the Southern region in LAC's agricultural output, the fall in regional agricultural value added (VAA) was greater than the national average. Although the Southern region was the only area to experience a fall in its VAA during 2009 (-7.2%), its major importance in regional agricultural output caused the growth of VAA in LAC to be negative during that year. By contrast, that same year (2009) saw exceptional growth in the VAA of the Caribbean region (over 9%) and moderate growth in the Northern region (3.9%). Furthermore, in the Andean and Central regions VAA remained practically unchanged (Table 7).

In 2010, the VAA of LAC experienced a recovery, growing at very similar rates to GDP. However, once again the performance of the Southern region had a major influence on the regional aggregate, given that the difference between the growth of VAA and GDP in the Southern region more than compensated for the increased growth of GDP

over VAA in the Andean, Central and Northern regions.

Poverty and indigence are the variables with the greatest impact on access to food. Poverty rates in the region range from 60% of the total population in Bolivia and Honduras, to 15.1% in Chile (World Bank 2012). The most critical levels of poverty occur among indigenous and rural populations; to cite a few examples, poverty rates in indigenous populations exceed those in non-indigenous populations by a factor of 2.3 in Bolivia, 1.8 in Peru and 1.8 in Ecuador.[9] Furthermore, poverty rates in rural areas are up to 80% higher than the average for population overall, depending on the country (World Bank 2012).

Table 7. Annual rates of growth of GDP and AVA in the Americas.

Region	2006	2007	2008	2009	2010
	PIB (constant dollars 2000)				
Americas	3,18%	2,61%	0,76%	-3,16%	3,58%
LAC	5,83%	5,91%	4,29%	-1,82%	6,17%
Andean	7,93%	7,65%	5,68%	-0,50%	2,95%
Caribbean	8,94%	6,02%	3,36%	0,45%	3,71%
Central	6,58%	7,18%	4,28%	-0,59%	3,55%
Northern	2,81%	2,03%	0,09%	-3,59%	3,14%
Southern	5,22%	6,71%	5,57%	-0,26%	7,87%
	AAV (constant dollars 2000)				
Americas	-0,42%	-3,12%	5,58%	0,37%	3,65%
LAC	3,99%	4,50%	2,85%	-3,89%	6,37%
Andean	3,72%	3,18%	3,12%	0,01%	0,29%
Caribbean*	8,12%	-1,74%	-2,65%	9,62%	3,35%
Central	4,55%	4,93%	1,67%	0,29%	2,07%
Northern**	-3,39%	-8,61%	7,44%	3,95%	1,22%
Southern	4,13%	5,63%	3,84%	-7,21%	10,81%

Source: IICA (CAESPA), with data from World Bank

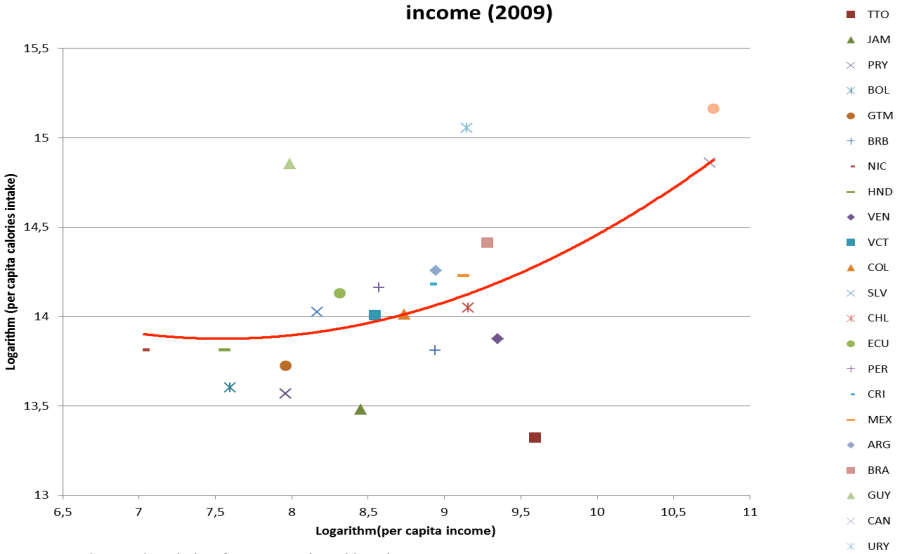
Notes: *Caribbean includes only countries with complete data series (DOM, ATG, BLZ, DMA, GRD, GUY, HTI, JAM, KNA, LCA, TTO, VCT)

**Does not include Canada due to 2010 missing data

Another of the great disparities between the LAC countries is reflected in the incomes earned by their populations. These range from US$ 20,916 dollars per capita (in terms of Purchasing Power Parity - PPP) in the Bahamas, to US$ 1,131 per capita per year in Nicaragua. The values of the GINI Index also show a concentration of incomes, to the detriment of the most vulnerable populations. It is important to note that income distribution is more equitable in the countries with the highest per capita incomes.

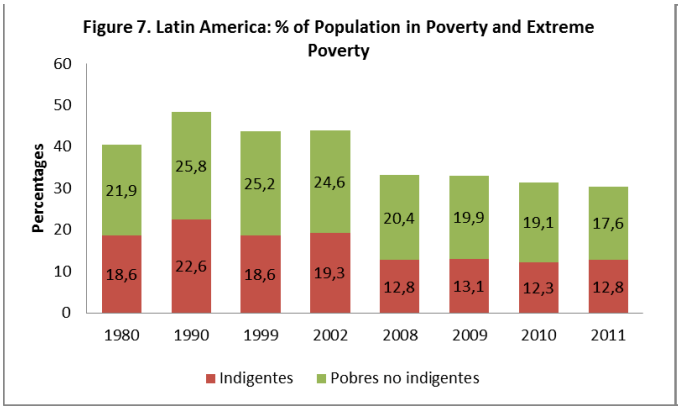
Most experts on the subject consider that chronic food insecurity is directly related to problems of continuous or structural poverty and low incomes. Thus, the decline in poverty and indigence rates in Latin America means that the population is far less vulnerable to food insecurity now than it was two decades ago. The poverty rate fell 17 percentage points between 1990 and 2010 (from 48.4% to 31.4%), while the rate of indigence fell by 10.3 percentage points (from 22.6% to 12.3%). Despite this improvement, over 174 million people still live in poverty Latin America, and of those 73 million live in extreme poverty (see Figures 7 and 8).

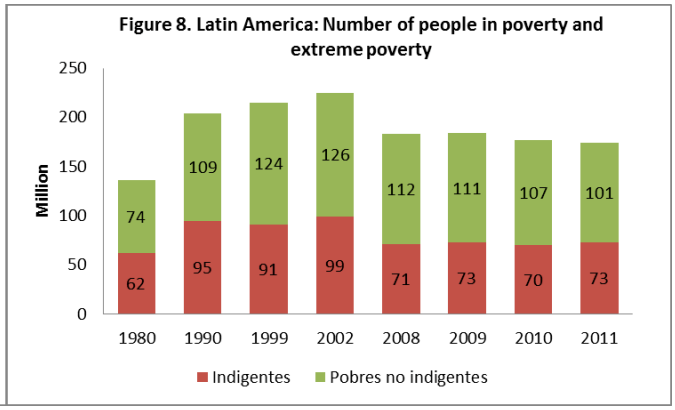
Figure 6. The Americas: Apparent consumption of calories and per capita income (2009)



Source: IICA (CAESPA), with data from FAO and World Bank.

[9]Analysis Unit for Economic and Social Policies (UDAPE), INE-Bolivia, 2008; National Institute of Statistics and Census (INEC) of Ecuador, 2009; Central Intelligence Agency: www.cia.gov - INEI - National Household Survey on Living Standards and Poverty 2004-2008, prepared by MTPE.





Source: ECLAC, based on the statistics of 18 countries plus Haiti. The figures for 2011 are projections.

Although in aggregate terms Latin America has substantially improved its poverty indicators, at the country level the situation is still very uneven and, in some cases, very critical. While extreme poverty rates in Argentina or Uruguay are below 2.5% (2010), in Haiti, Honduras, Paraguay, Bolivia and Nicaragua extreme poverty affects over 30% of the population.

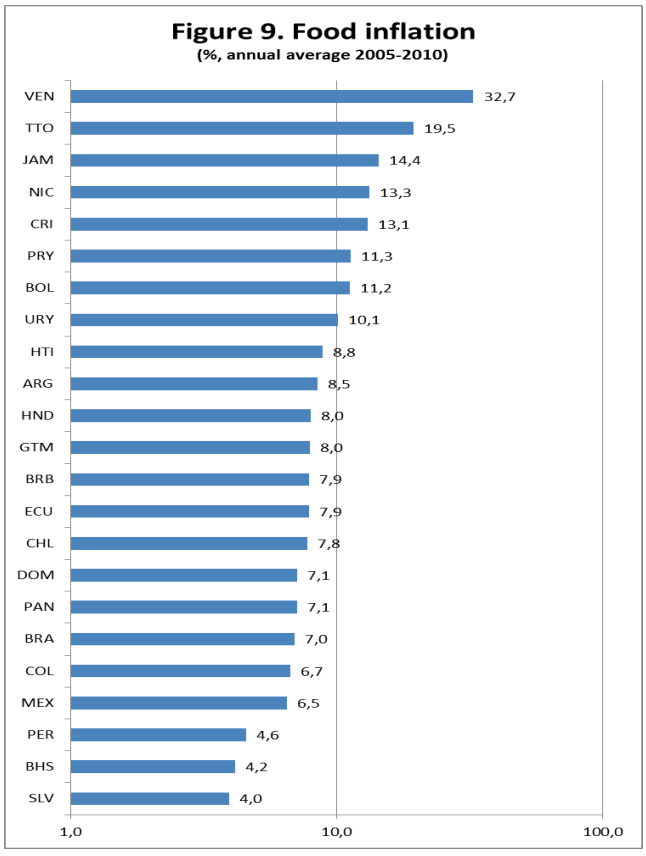
Food price inflation has accelerated in recent years, with the greatest impact being felt by the poorest groups. Inflation in food prices mainly affects lower income populations, because they are the ones who spend a larger proportion of their income on food. Indeed, in the least developed countries, such as Nicaragua, the lowest income groups spend more than 50% of their income on food, whereas in countries such as the United States the figure is just 10%.

As was to be expected, during the period when the international prices of agricultural products increased, the most vulnerable populations faced even greater difficulties in gaining access to sufficient food, due to the inflationary effect in general, and food inflation in particular. Inflation levels of 8% or more in food prices (Figure 9) are of the utmost concern in the countries that are most vulnerable to food insecurity, such as Haiti, Bolivia, Nicaragua and Guatemala.

During the 2007-2009 period, out of all the components of the basic basket, food was the item that suffered the sharpest price increases. The impact was felt mainly by the poorest segment of the population, as the group that spends the largest percentage of its income on food.

3.4 The importance of small-scale agriculture and family agriculture for food security

According to IFAD (2011a), in Latin America there are approximately 15 million smallholder farms, of which 65% rely significantly on income from non-agricultural sources to complete



Source: IICA (CAESPA), with data from CEPALSTAT

Table 8. Role of family agriculture in some countries of America

Sector importance	Brazil	Chile	Colombia	Ecuador	Mexico	Nicaragua
Share of value of Production Sector (%)	38	27	41	45	39	67
Participation in Employment Sector (%)	77	57	57	--	70	--
Number of Holdings						
Total Farms	4 139	285	737	740	4 834	287
Share of Total Holdings (%)	85	87	87	88	78	98
Area of Farms						
Average Size of the Farms Associated to Family Agriculture (ha)	26	23	3	7	6	16
Average Size of the Farms Not Associated to Family Agriculture (ha)	433	1 090	15	71	--	343

Source: FAO-BID 2007

their household incomes. Thus, many families complement their farm income with resources from other activities, plus remittances and social transfers. Small-scale farmers own or control approximately 100 million hectares and, even though their income from agriculture represents only a small percentage of their total income, agricultural activities are critical in reducing their vulnerability to shocks of all types.

In addition to small-scale agriculture, family agriculture endures in LAC. This type of agriculture is characterized by being the only or principal source of income for families, employing little or no non-family labor and being operated and managed by members of the farm family. In Latin America, this group is comprised of approximately 14 million small-scale producers, who control between 30 and 60% of the countries' agricultural land and forests, with an associated population of around 60 million people (Schejtman 2008). Producers of this group are embedded in the local economies of LAC as food suppliers, making them important local and regional players.

In addition to its economic importance, family agriculture encourages its members to settle in rural areas, creates social safety nets, promotes the conservation of plant and animal species that are endemic to the region and generates direct and indirect employment, to the extent that its production is market-oriented and adds value to products before their sale. It is a socioeconomic sector with the potential to create centers of economic development and commercialization systems (FAO 2011a).

Family agriculture plays an important role in securing the countries' food supply, creating jobs, generating incomes and creating value, as shown in Table 8. In Brazil, for example, family farms produce 67% of the national bean crop, 84% of yucca, 49% of maize and 52% of the milk. In Colombia, this sector produces over 30% of the annual crops (particularly maize and beans). In Ecuador, it provides 64% of national potato production, 85% of onion production, 70% of maize and 83% of sheep meat (FAO and IDB 2007).

In Central America, small-scale basic grain farmers are leading players in family agriculture. According to FAO and PRESANCA II (2011), this group represents 96% of all basic grain producers and includes over 80% of family-based farms

in Central America whose harvests supply the domestic and regional markets.

According to FAO and PRESANCA II (2011), between 1987 and 2007 the number of basic grain producers increased by 660,000 (45.7% more); this increase was concentrated mainly in Guatemala and Nicaragua, and to a lesser extent in El Salvador and Panama. Despite this, 34% of small-scale producers and family-based farmers in Central America live in poverty and another 32% live in extreme poverty, which means that at least 6 out of every 10 households of smallholders face problems in ensuring their own food security.

3.5 To achieve food security, it is crucial that people improve the biological utilization of the food they consume

To ensure a state of nutritional wellbeing in a population, where all their physiological needs are met, it is essential to promote the biological utilization of food through adequate diet and access to clean water, sanitation and health care. Without these basic requirements, efforts by countries to increase the supply of healthy foods, and make them more accessible to the population, are unlikely to produce lasting benefits. For this reason, it is important to assess the status of these crucial factors, in order to implement national actions for their improvement.

The description that follows concerning the level of access to potable water and sanitation facilities for wastewater produced by the population focuses on Latin America and the Caribbean (LAC), given that there is extensive access to both factors in the United States and Canada.

In LAC, much still remains to be done to improve access to potable water. Based on data from CEPALSTAT, the population's access to safe sources of potable water has improved if current figures are compared with those presented at the Fourteenth Meeting of the Forum of Ministers of the Environment in 2003. Nevertheless, in 2008, 7% of LAC´s total population still lacked access to reliable sources of potable water. On the other hand, the situation with respect to the rural population is more encouraging, considering that in 2003 39% of rural dwellers lacked access to reliable and safe sources of potable water, and by 2008 this percentage had fallen to 20% (UNEP 2003, ECLAC 2011).

However, these global percentages and aggregates of access to water in LAC conceal the profound differences existing among countries and even between regions within a same country: the higher the income, the better the access both to a higher quantity and quality of water (UNEP 2003). In many cities of LAC, a substantial proportion of the population lives in slums or favelas and has limited access- or even no access - to safe sources of potable water (ECLAC 2011).

Wastewater treatment is a pending task. International and hemispheric organizations emphasize the importance of proper management and treatment of sewage and wastewater. As noted in the 2003 UNEP Report, a lack of access to safe water sources and sanitation services, together with the high population density characteristic of slums in many cities of LAC, causes serious public health problems. For example, the presence of sewage and stagnant wastewater is directly associated with high rates of diarrhea and infant mortality among the poor populations of LAC countries, as well as a high incidence of malaria and other transmissible diseases. All this affects incomes of families, adding to their high vulnerability to natural disasters such as floods and landslides.

According to the UNEP study (2003) 87% of the urban population and 48% of the rural population had access to some type of sanitation system for wastewater. Subsequently, in the Statistical Yearbook for Latin America and the Caribbean 2011, published by the Economic Commission for Latin America and the Caribbean (ECLAC), reported a slight improvement in this situation: it found that 79% of LAC's total population now has access to some type of sanitation system, although this access varies according to whether the population is urban (86% access) or rural (55%, a slight increase with respect to the measurement cited by UNEP).

4. POTENTIAL FOR FOOD SECURITY IN THE AMERICAS AND MAIN CHALLENGES

4.1 Why regional agriculture is important for food security

The problem of food security in the Americas is not associated with food availability, given that the region produces sufficient food to supply its population and even to export. On the contrary, the Americas region has an important role to play in securing the global food supply because it has a base of natural resources (land, forests, water and biological diversity), human resources and knowledge to contribute to the food supply required to meet the needs of a world population that is expected to reach around 9 billion by the year 2050.

To fulfill that role, it is essential to increase agricultural yields, particularly in LAC, and that means reversing the recent trend of underinvestment in agriculture.

In the short term, the problems of food availability are associated with growing climate vulnerability and, in the medium and long term, with the impacts of climate change on agricultural yields and changes in the conditions of production. Agricultural production is extremely sensitive to climate change and climate variability: temperature increases, changes in rainfall patterns and in water availability directly affect the quantity and quality of the food produced per unit of land. In addition, climate change will increasingly influence the distribution of pests and the virulence of diseases that affect crops and livestock. The storage and distribution of agricultural products will also be affected: in addition to damaging infrastructure, climate change will lead to the emergence of pests and diseases that cause post-harvest losses, to which the poor farmers will be most vulnerable (Vermeulen et al. 2010).

Climate change and variability pose major challenges for agriculture and the livelihoods of rural populations. Meeting these challenges requires mitigation policies and efforts to adapt crops, livestock and species to the new climatic conditions, so that the agriculture of the Americas may contribute, with all its potential, to global food security.

The problems of food security in the region are fundamentally associated with individual access to food. Overcoming poverty and improving the distribution of incomes are the determining factors to be corrected. To accomplish these objectives it is essential to implement policies that do not necessarily involve agriculture directly, but have to do with other types of national policies (related to prices, salaries, education and health, among others) and are under the responsibility of institutions other than the Ministries of Agriculture.

It is necessary to reaffirm the importance of small and medium-scale agriculture. In LAC, family-based agriculture alone provides between 27% and 67% of all foodstuffs, occupies between 12% and 67% of the agricultural land and generates between 57% and 77% of agricultural employment (FAO 2011a). To the contributions of family farmers must be added those of small and medium-scale producers. However, despite their combined contributions, these producers are highly vulnerable to the crises and instability in world markets: the volatility in food prices witnessed since 2008 has driven many of these producers into poverty again, which is a major blow to the efforts made by countries to attain the Millennium Development Goals (FAO 2011b).

Despite the many efforts made by governments and different organizations over the years to improve the situation of **small and medium-scale producers** and family farmers, these groups still have limited access to technologies that would enable them to improve and diversify their production, and have not been able to integrate into markets in an effective and permanent way. Furthermore, no institutional framework or policies are in place to facilitate these processes. In general, urgent action is required to provide a

[10] This document adopts the FAO's current definition of Family Agriculture: "all families directly engaged in the management and production of their own crops (with no more than 5 employees), and who mainly produce food and supplies for the community (not excluding specific production for other markets)."

sustainable solution to these needs at all levels of intervention in the countries.

Therefore, guaranteeing the region's food security implies efforts to improve conditions for the development of small and medium-scale agriculture. With this objective in mind, the Ministries of Agriculture must improve conditions for the participation of small-scale and family farmers, ethnic groups and marginalized rural populations, so that they can make a two-fold contribution to the region's food security: on the one hand, by boosting their contribution to food supply (for which they must improve their productivity); and on the other, by promoting and ensuring access to local, regional, national and international markets (which would help to generate employment and incomes and would contribute to reducing rural poverty and improving access to food). To achieve all these goals it is crucial to promote associative arrangements as a means to access services and increase their negotiating power in the markets.

Food utilization becomes an increasingly important problem. In addition to concerns about unhealthy diets, "junk food" and growing levels of obesity, there are also concerns over problems of sanitation, lack of access to potable water, medical care and agricultural health and food safety services. The availability of these last services tends to increase as trade flows grow and, although in some countries (e.g. the United States) those issues are within the operational scope of the Ministry of Agriculture, in most LAC countries they are addressed by institutions responsible for health and education policies, with little or no involvement by the Ministries of Agriculture.

Access to land and sustainable use of natural resources: important emerging issues. The region of the Americas has enormous potential for production, in terms having a great availability and diversity of natural resources and means of production. However, LAC needs to address some major challenges, such as overcoming the high levels of land concentration, improving access to agricultural inputs and maximizing the sustainable use of natural resources. Then again, not all the countries of the Americas have sufficient arable land that can be used for agriculture (particularly Central America and the Caribbean); technological gaps and an insufficient use and assimilation of innovative technologies also prevent efforts to increase agricultural yields in a manner that is sustainable and does not damage the environment (FORAGRO 2009); and, many countries lack comprehensive and inclusive State Policies on food security aimed at achieving a socially and environmentally sustainable development.

Consequently, the governments of the Americas are called to work on the formulation and application of short and long-term macroeconomic and sectoral policies, taking into account each country's budgetary restrictions, and to **adopt State Policies that consider agriculture as a priority sector for achieving food security, placing emphasis on small and medium-scale producers and family agriculture.**

Governments, together with public, private and civil society organizations, are engaged in coordinated efforts, with a long-term vision, to devise and implement policies, strategies and regulatory frameworks that will make it possible to develop and strengthen food production systems closely linked to value chains and transparent markets, and thereby facilitate the sustainable integration of small and medium-scale producers and the incorporation of family-based agriculture into those markets.

This is not only a hemispheric priority, but also a global priority, as was made clear in the **Action Plan on Food Price Volatility and Agriculture** adopted by the G-20 Agriculture Ministers at their meeting in June 2011 in Paris. This plan focuses on the achievement of five objectives:

1. Improve agricultural production and productivity, both in the short and long term.
2. Increase market information and transparency.
3. Improve international policy coordination.
4. Mitigate the effects of price volatility, particularly in the poorest countries.
5. Strive for transparent and properly regulated agricultural financial markets.

Within that general framework, the G-20 Ministers pledged to give special attention to smallholders in developing countries (especially women and young farmers), with a view to improving their production capacity and incomes, given the crucial contribution that small farmers make to food production and to the development of rural economies. The ministers also emphasized the need to develop capabilities for increasing food production and improving food distribution, in order to provide a positive response to climate change and its related effects (such as extreme climatic events) and to food price volatility in world markets.

4.2 It is essential to develop and implement comprehensive food security strategies

There is now a greater political awareness of the importance of adopting effective measures to promote food production, address price increases and volatility in commodity markets and adapt to climate change and variability, so as to guarantee the sustainable availability and access to food for the entire population. However, despite this growing awareness, policy decisions and comprehensive actions to tackle the two challenges together are not sufficient and have often been contradictory.

In order to achieve food security, the first decision to be made is to formulate and implement **National Food Security Strategies** and, where possible, **Regional Strategies**[11], through a process involving the leading public and private sector stakeholders. These strategies should be based on the real situation and should define the overall vision of what the country and the region wish to accomplish. Such Strategies, which many countries have not yet formulated, also require a realistic plan of action for their implementation, which should pursue at least the following objectives:

1. **Significantly and urgently increase investment in agriculture to develop and strengthen scientific, research, innovation and extension capabilities.** These efforts should take into consideration the specific technological and extension needs of the majority segment, i.e. small and medium-scale producers (including family-based agriculture). Budget allocations are also required to support women and young people in agriculture. Investment in agriculture is crucial, since growth in GDP generated by agriculture is up to four times more effective in reducing poverty than the growth generated by other sectors of the economy (IFAD 2011).

2. **Develop and strengthen national and local agricultural markets to make them more efficient and transparent.** To achieve this objective, a country must have accessible, reliable, complete and timely information on production, stocks, trade flows and agricultural prices, to help reduce price speculation and volatility. Information and communication technologies (ICT) play a crucial role in generating and disseminating market information.

3. **Create a political environment that makes it possible to adopt policies, establish institutional arrangements and implement actions that promote the sustainable integration of small-scale farmers into markets.** To integrate these farmers into value chains, they also need access to technological innovations commensurate with their scale of production, and to productive and social resources through credit and various financial and commercial tools.

4. **Promote free international trade in food.** Open global agricultural trade and the integration of markets make it possible to connect food producing countries that generate surpluses with those that do not produce enough food (Huang et al. 2011), and to promote the diversification and increase in the supply of agricultural products. In this way, they contribute to the global stability of food prices and the food security of the countries (Nelson et al. 2011). The willingness of the

[11] The Central American countries and the Dominican Republic are committed to a process to develop a common food and nutritional security strategy and a proposal is currently being reviewed by the national authorities. For its part, the Caribbean Community (CARICOM) already has a Food and Nutritional Security Strategy.

countries of America to eliminate barriers and facilitate exports is a positive development for the food security of the LAC countries; however, mechanisms are still needed to facilitate the trade in food among them (FAO 2010).

5. **Implement programs that provide access to food for population groups that are vulnerable** for structural reasons, or due to catastrophic events or shocks in the global agrifood markets. The objective is to guarantee stable access to food, and it is up to countries to decide whether to maintain food stocks at the local level, allocate financial resources to deal with emergencies, or opt for a combination of both policies.

6. **Implement strategies and programs designed to minimize the risks that climate change, climate variability and agricultural price volatility pose,** particularly for small and medium-scale farmers. It is imperative that countries develop public-private agricultural insurance and early warning systems to protect farmers from climatic and economic threats, (prevent loss of capital investment), increase their resilience and help them to be more competitive.

7. **Promote comprehensive education programs in food and nutritional security** that begin during the first years of school and include the home, in order to instill healthy eating habits.

As FAO (2010) emphasizes, the State's participation in strategic areas such as the promotion of production and the supply of food for the domestic market, agricultural financing, the implementation of social protection programs and the signing of trade agreements enables countries to develop better capabilities for alleviating the food crisis and food price volatility at the global level.

5. IICA AND FOOD SECURITY

IICA has Offices in its 34 member countries and, as the agency of the Inter-American System that specializes in agriculture, pursues the following permanent objectives: "to encourage, promote, and support the efforts of the Member States to achieve their agricultural development and rural welfare." IICA has developed a specific strategy for supporting the countries in the area of food security, a topic that has been a permanent feature of the Institute's Medium-term Plans (MTP) and its cooperation projects and actions.

More precisely, one of the strategic objectives defined in the new 2010-2014 MTP is "to improve agriculture's contribution to food security." Accordingly, the MTP calls for providing the Member States with support in developing national food security strategies and national plans for making investments in agriculture that are aimed at improving the production and quality of food and increasing over time the participation of farmers in markets, especially those engaged in small- and medium-scale agriculture.

IICA's **Programs** address the four generally recognized dimensions of food security: availability, access, stability and use, and contribute to the objective of improving food security in the Americas.

As support to the "availability" and "stability" dimensions, the **Innovation for Production and Competitiveness Program** and the IICA Offices in the countries implement a number of projects intended to improve research, innovation and technology transfer/extension, for the purpose of increasing productivity and making agriculture competitive and sustainable. These national, regional and hemispheric projects, financed with external and IICA's own resources, are designed to benefit the agrifood sector as a whole and small- and medium-scale agriculture in particular. In addition, IICA supports the strengthening of the institutional frameworks of the national agricultural innovation and extension systems and the hemispheric system for cooperation among countries (PROCIs and FORAGRO).

The **Agricultural Health and Food Safety Program** supports, to differing degrees, all the dimensions of food security. The Program and the IICA Offices in the countries implement projects financed

with IICA's own and external resources (from donors and the countries) for the purpose of modernizing national agricultural health services; strengthening national capacities in the application of sanitary and phytosanitary measures, which will enable the countries to tap existing opportunities on global markets; developing and strengthening technical capacities in the area of food safety and handling; and responding to emergencies and emerging issues related to agricultural health and food safety.

The Agribusiness and Commercialization Program is focused on the "access" and "availability" dimensions. Together with the IICA Offices in the countries, the Program implements projects aimed at promoting the inclusion of small-scale farmers and those engaged in family agriculture in the value chains, as a means of increasing their incomes, improving their access to food, and, in turn, boosting rural economies. The projects also contribute to the development and modernization of national and international markets and marketing systems, and include actions to improve the operation, transparency and efficiency of agricultural markets. Through this Program, IICA belongs to the Market Information Organization of the Americas (MIOA), which has 33 member countries and provides its members with up-to-date information and analyses related to agricultural markets and business opportunities.

The **Agriculture, Territories and Rural Well-being Program** and the IICA Offices in the countries support the implementation of public policies and national and regional projects intended to increase agriculture's contribution to the sustainable development of rural territories, as a means of maximizing the social benefits generated by agricultural production activities and improving the access of this population segment to food. This Program places special emphasis on strengthening family agriculture, given its importance in terms of food security and social cohesion and well-being in rural territories.

As mentioned above, climate variability and change are having a serious impact on food security. Furthermore, in order to guarantee the production and availability of food for the long term, agricultural production must be sustainable. To this end, IICA created the **Agriculture, Natural Resources Management and Climate Change Program for Cross-cutting Coordination,** which focuses on adapting agriculture to climate change and promoting environmentally responsible agriculture. The Program and the IICA Offices in the countries promote the adoption of systemic approaches and implement projects of differing scales aimed at enabling the countries to meet the challenges posed by climate change and variability. The Program encourages the improved use and sustainable management of natural resources in agriculture (including the comprehensive use of water), the efficient management of environmental risks in agriculture, the development and strengthening of institutional capacities for coping with climate change, and the mitigation of the damage caused by agriculture to the environment, etc.

IICA also created the **Center for Strategic Analysis for Agriculture** (CAESPA), which also works on topics closely related to food security, especially by providing information and analyses for decision making: a) foresight and strategic analyses for agriculture (the Institute prepares, jointly with FAO and ECLAC, an annual analysis of the state of and outlook for agriculture in the countries; b) public policies for agriculture; c) international trade regulations and their implications for agriculture; and d) the institutional framework of agriculture and investments in its modernization. At present, CAESPA is developing an Observatory on agriculture and food security in the Americas.

In October 2011, IICA hosted the Meeting of Ministers of Agriculture of the Americas, the theme of which was "Sowing Innovation to Harvest Prosperity." In the ministerial declaration issued at the close of the meeting, the ministers underscored the leadership role IICA plays in supporting innovation for the competitive and sustainable development of the agrifood sector and the improvement of rural life, by providing technical cooperation, disseminating specialized knowledge, implementing projects and carrying out joint efforts with its Member States (IICA, 2011).

ANNEXES

Annex 1: Evolution of the terms Food Security and Food Sovereignty

a. Food Security

The roots of the concept of *food security* can be traced back to Article 25 of the 1948 Universal Declaration of Human Rights, which reads: "Everyone has the right to a standard of living adequate for the health and well-being of himself and of his family, including food, clothing, housing and medical care and necessary social services..."

The concept of *food security* took on greater importance as a result of the global food crisis of the 1970s (caused by the oil crisis and the increase in world population), sparking interest in matters related to the global food supply. Thus, at the World Food Conference of 1974, the term food security, which underscored the volume and stability of the supply of food at the global and national levels, came into use and was defined as "the availability at all times of adequate world food supplies of basic foodstuffs to sustain a steady expansion of food consumption and to offset fluctuations in production and prices" (UN, 1975).

In 1983, FAO analyzed and redefined the concept, adding the component or dimension of access to food for all, especially the most vulnerable, and implied that attention should be paid to both the demand and supply sides of the food security equation. In addition, the concept, rather than referring to a *global or national concern, now included households and individuals* (Clay 2002; FAO 2006), with the objective of *food security* being "to ensure that all people at all times have both physical and economic access to the basic food that they need" (FAO 1983).

In 1986, the World Bank Report, *Poverty and Hunger,* proposed a concept of *food security* that underscored "access of all people at all times to enough food for an active, healthy life" (World Bank, 1986), which emphasized access over time, not only to survive but also to participate actively in society. It also recognized the complexities involved in ensuring access at the level of individuals, households, communities, nations and the international economy (Maxell, 1996).

The generally accepted definition of food security appeared in the 1996 Rome Declaration of the World food Summit:

"Food security exists when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life."

According to FAO (2006), this definition calls attention to the multidimensional nature of food security and identifies the following dimensions:

Food availability: The availability of sufficient quantities of food of appropriate quality, supplied through domestic production or imports (including food aid).

Food access: Access by individuals to adequate resources (entitlements) for acquiring appropriate foods for a nutritious diet. Entitlements are defined as the set of all commodity bundles over which a person can establish command given the legal, political, economic and social arrangements of the community in which they live (including traditional rights such as access to common resources).

Utilization: Utilization of food through adequate diet, clean water, sanitation and health

care to reach a state of nutritional well-being where all physiological needs are met. This brings out the importance of non-food inputs in food security.

Stability: To be food secure, a population, household or individual must have access to adequate food at all times. They should not risk losing access to food as a consequence of sudden shocks (e.g. an economic or climatic crisis) or cyclical events (e.g. seasonal food insecurity). The concept of stability can therefore refer to both the availability and access dimensions of food security.

In addition, in the 1996 Rome Declaration of the World food Summit, the countries pledged "to achieve food security for all and make an ongoing effort to eradicate hunger in all countries, with an immediate view to reducing the number of undernourished people to half their present level no later than 2015."

In 2001, FAO redefined the concept of food security, incorporating social access to food into its definition. This new concept is introduced in the report State of Food Insecurity in the World 2001: "Food security exists when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life."

In the Declaration of the 2002 World Food Summit: Five years later, emphasis was placed on "the need for nutritionally adequate and safe food" and "the need for attention to nutritional issues as an integral part of addressing food security" was underscored. It also suggested paying attention to improving the quality of diet; access to potable water, health care, and education; and sanitation" (FAO, 2002).

b. Food Sovereignty

The term *food sovereignty* was brought into the public debate by Via Campesina during the 1996 World Food Conference, held in Rome, where it was defined as "Food sovereignty is the right of each nation to maintain and develop its own capacity to produce its basic foods, respecting cultural and productive diversity…autonomously. Food sovereignty is a pre-condition of genuine food security" (Via Campesina, 1996).

The World Forum on Food Sovereignty was held in Cuba in 2001, at the same time that the Second World Food Summit was taking place in Rome. The Forum issued a declaration in which food sovereignty was defined as "the peoples' right to define their own policies and strategies for the sustainable production, distribution and consumption of food that guarantee the right to food for the entire population, on the basis of small and medium-sized production, respecting their own cultures and the diversity of peasant, fishing and indigenous forms of agricultural production, marketing and management of rural areas, in which women play a fundamental role."

In this definition, the emphasis is on people; small- and medium-scale production, as well as the role of women in ensuring food sovereignty, are also emphasized.

That same year, a number of social movements and other global social actors signed the declaration *Primero está la soberanía alimentaria de los pueblos,* which offers a definition of *food sovereignty* that emphasizes the option populations have to adopt trade policies and practices that will strengthen national production: "The right of peoples to define their own food and agriculture policies; to protect and regulate domestic agricultural production and trade in order to achieve sustainable development objectives; to determine the extent to which they want to be self-reliant; to restrict the dumping of products in their markets; and to provide local fisheries-based communities with priority in managing the use of and the rights to aquatic resources."

In April 2002, the Indigenous Peoples' Consultation on the Right to Food was held in Guatemala, which issued the Declaration of Atitlan, in which *food sovereignty* is defined as

"the right of peoples to define their own policies and strategies for the sustainable production, distribution, and consumption of food, with respect for their own cultures and their own systems of managing natural resources and rural areas, and is considered to be a precondition for food security." It also mentions that, for indigenous peoples, access to land, water and territory are vital in achieving food sovereignty and security.

The NGO/SCO Forum for Food Sovereignty was held in Rome at the same time as the World Food Summit: Five years later (2002). In the declaration issued at the close of the Forum, food sovereignty was defined as "the right of peoples, communities, and countries to define their own agricultural, labor, fishing, food and land policies which are ecologically, socially, economically and culturally appropriate to their unique circumstances. It includes the true right to food and to produce food, which means that all people have the right to safe, nutritious and culturally appropriate food and to food-producing resources and the ability to sustain themselves and their societies."

In this definition, emphasis is placed on the precedence of the right of peoples and communities to food and food production over trade interests, as well on as the autonomy of countries in the formulation of policies (Carrasco and Tejada 2008).

In the Cancun Declaration of the International Peasant Farmers and Indigenous Peoples Forum, which coincided with the Fifth Ministerial Conference of the WTO, held in September 2003, food sovereignty was defined as "the right of peoples to produce their own food in a sustainable manner and in keeping with their traditions and the defense of natural resources and biodiversity."

In the Declaration of Nyéléni, issued at the World Forum for Food Sovereignty, held in Mali in 2007, food sovereignty is defined as is "the right of peoples to healthy and culturally appropriate food produced through ecologically sound and sustainable methods, and their right to define their own food and agriculture systems." This declaration attaches priority to, among others, the following topics: local economies as well as local and national markets; transparent trade; management of and access to production resources (water, land, seeds, livestock, biodiversity); family agriculture; environmentally sustainable production, distribution and consumption of food, etc. (World Forum for Food Sovereignty 2007).

At present, Nicaragua, Venezuela, Bolivia and Ecuador have incorporated the term food sovereignty into their State policies.

Annex 2: Statistics and figures
Growth and stability of food production (2000-2009)

Region/ product	Growth (%)1	Index of variability (%)2
Andean	2.73	1.00%
Veg Oils	3.62	3.23%
Meat	4.29	4.00%
Grains	3.66	2.49%
Fruit	1.22	2.23%
Vegetables	1.99	2.47%
Milk	4.45	5.10%
Tubers	1.97	2.02%
Caribbean	1.56	2.74%
Veg Oils	0.64	1.34%
Meat	5.14	5.06%
Grains	0.44	3.90%
Fruit	1.73	5.79%
Vegetables	-2.37	5.06%
Milk	3.25	9.63%
Tubers	2.52	6.01%
Sur	2.49	3.27%
Veg Oils	5.05	5.24%
Meat	4.37	1.94%
Grains	2.77	7.59%
Fruit	1.00	2.97%
Vegetables	2.02	3.59%
Milk	2.96	2.35%
Tubers	1.17	5.02%
Overall Total	2.17	3.19%

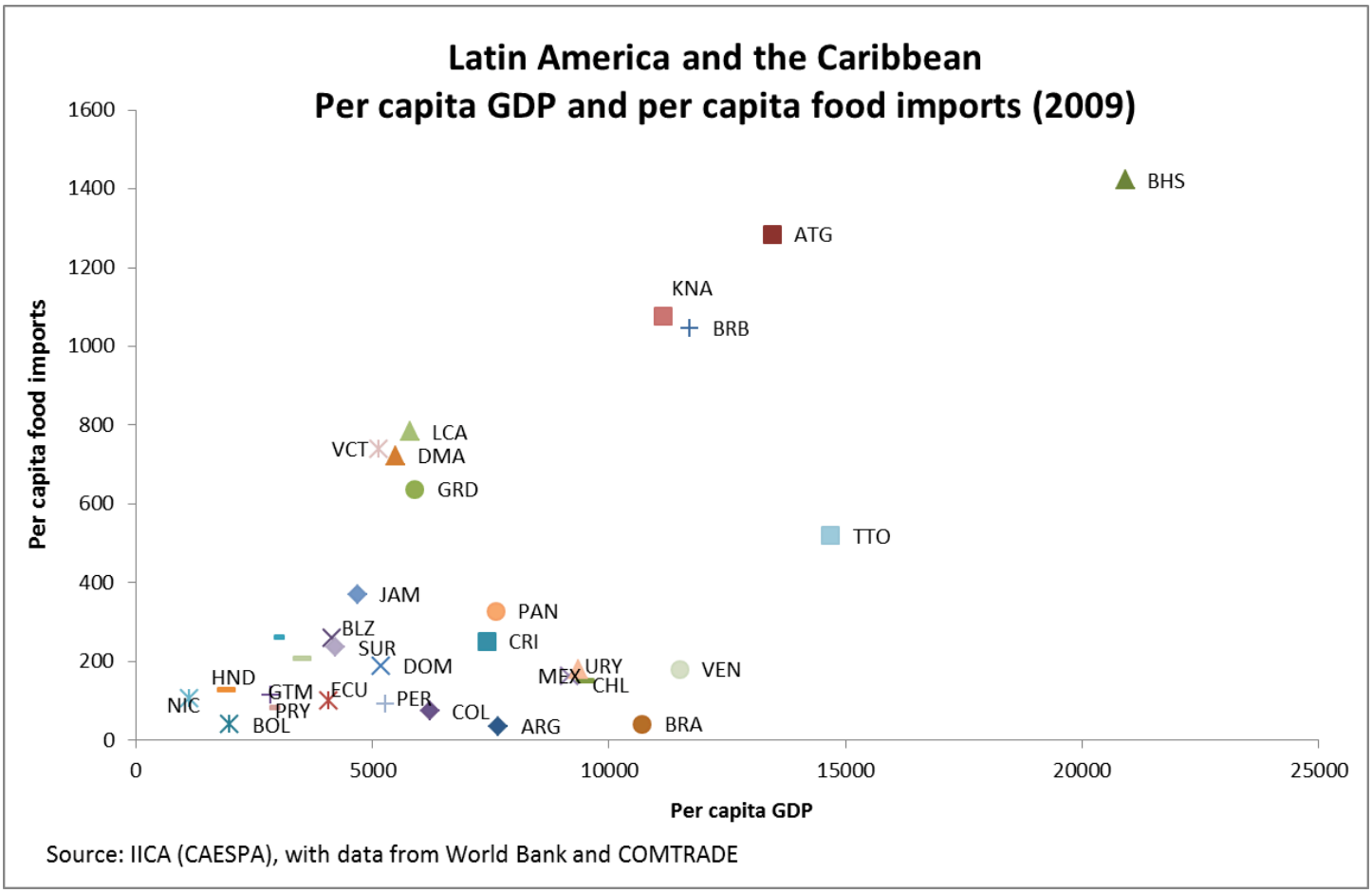
Region/ product	Growth (%)1	Index of variability (%)2
Central	4.38	2.63%
Veg Oils.	8.68	4.93%
Meat	3.97	1.70%
Grains	2.56	4.17%
Fruit	4.75	4.28%
Vegetables	6.53	6.26%
Milk	3.24	2.32%
Tubers	4.38	5.54%
Northern	1.93	4.19%
Veg Oils	1.73	4.88%
Meat	1.50	1.01%
Grains	2.74	6.62%
Fruit	-0.80	2.87%
Vegetables	0.09	2.04%
Milk	1.52	1.26%
Tubers	-0.81	3.77%

Source: IICA, with FAO data

Notas:

1 Annual average rate of exponential growth.

2 Positive or negative percentage changes in the average, around the long-term trend.



Source: IICA (CAESPA), with data from World Bank and COMTRADE

Literature cited

Abbot, P; Hurt, C; Tyner, W. 2011. What's driving food prices in 2011? Farm Foundation: Issue Report. Illinois, US. 39 p.

Carrasco, H; Tejada, S. 2008. Soberanía alimentaria: la libertad de elegir para asegurar nuestra alimentación. Lima, PE, Soluciones Prácticas. 85 p.

Clay, E. 2002. Food security: concepts and measurements (on line). Presented at: FAO Expert Consultation on Trade and Food Security: Conceptualizing the Linkages (2002, Rome, IT). In FAO (United Nations Food and Agriculture Organization, IT). 2003. Trade reforms and food security. Rome, IT. Consulted Apr. 2, 2012. Available at http://www.fao.org/docrep/005/y4671e/y4671e06.htm#TopOfPage

Declaration "Primero está la soberanía alimentaria de los pueblos" (on line). 2001. Consulted Mar. 20, 2012. Available at http://www.citizen.org/documents/wtooutoffoodesp.pdf

ECLAC (Economic Commission for Latin America and the Caribbean, CL). 2011. Statistical Yearbook for Latin America and the Caribbean (on line). Santiago, CL. Consult Apr. 2, 2012. Available at: http://www.eclac.org/publicaciones/xml/8/45608/LCG2513b.pdf

FAO (United Nations Food and Agriculture Organization, IT) 1983. World food security: a reappraisal of the concepts and approaches: Director General's report (on line). Rome, IT. Consulted Mar. 23, 2012. Available at http://www.fao.org/docrep/x5563E/X5563e06.htm

_____. 1986. Rome Declaration on World Food Security (on line). Rome, IT. Consulted Mar. 23, 2012. Available at http://www.fao.org/docrep/003/w3613s/w3613s00.htm

_____. 2001. State of food security (on line). Rome, IT. Consulted Mar. 23, 2012. Available at http://www.fao.org/docrep/003/y1500s/y1500s06.htm#P13_5516

_____. 2002. Declaration of the World Food Summit: Five Years Later (on line). Rome, IT. Consulted Mar. 23, 2012. Available at http://www.fao.org/DOCREP/MEETING/005/Y7106s/Y7106S07.htm#TopOfPage

_____. 2006a. FOASTAT: Statistical data base on food and agriculture (on line). Rome, IT. Consulted Oct. 15, 2006. Available at: http://faostat.fao.org/?lang=es

_____. 2006b. Food security: policy report No. 2 (on line). Rome, IT. Consulted Mar. 23, 2012. Available at ftp://ftp.fao.org/es/ESA/policybriefs/pb_02_es.pdf

_____. 2010. Panorama of food and nutrition security in Latin America and the Caribbean 2010. Rome, IT. 79 p.

_____. 2011a. Family Agriculture (on line). Consulted Apr. 2, 2012. Available at http://www.rlc.fao.org/es/conozca-fao/prioridades/agricultura-familiar/

_____. 2011b. Panorama of food and nutrition security in Latin America and the Caribbean 2011. Rome, IT. 91 p.

_____; IDB (Inter-American Development Bank, US). 2007. Family farming policies in Latin America and the Caribbean (on line). Santiago, CL, FAO Regional Office for Latin America and the Caribbean. Consulted Apr. 2, 2012. Available at http://www.rlc.fao.org/proyectoiniciativa/expertos_agri/documentos/interes/8.pdf

_____; PRESANCA II (Regional Food and Nutritional Security Program for Central America, SV). 2011. Centroamérica en cifras: datos de seguridad alimentaria nutricional y de agricultura familiar. Consulted Apr. 2. 2012. Available at http://www.rlc.fao.org/uploads/media/ca_en_cifras_01.pdf

FORAGRO (Forum for the Americas on Agricultural Research and Technology Development, CR); IICA (Inter-American Institute for Cooperation on Agriculture, CR); GFAR (Global Forum on Agricultural Research, IT). 2009. Innovaciones institucionales y tecnológicas para sistemas productivos basados en agricultura familiar. San Jose, CR. Consulted Apr. 2, 2012. Available at http://www.iica.int/Esp/Programas/Innovacion/Paginas/PublicacionesxLinea.aspx?linea=1

Huang, H; Lampe, M von; Tongeren, F van. 2011. Climate change and trade in agriculture. Food Policy 36:S9-S13.

IFAD (International Fund for Agricultural Development, IT). 2011a. Latin America: the state of smallholders in agriculture. Presented at: IFAD Conference on New Directions for Smallholder Agriculture (Jan. 24-25, Rome, IT). 37 p.

_____. 2011b. The future of world food security: investing in smallholder agriculture – an international priority (on line). Consulted Jul. 26, 2011. Available at http://www.ifad.org/hfs/

IICA (Inter-American Institute for Cooperation on Agriculture, CR). 2011. Report on the Meeting of Ministers of Agriculture of the Americas and on the Sixteenth Regular Meeting of the Inter-American Board of Agriculture. San Jose, CR. 175 p. Official Documents Series No. 89.

Indigenous Peoples' Consultation on the Right to Food (2002, Atitlán, GT). 2002. Declaration of Atitlán (on line). Consulted Mar. 20, 2012. Available at http://www.ifg.org/spanish/declarguate.htm

International Peasant Farmers and Indigenous Peoples Forum, Fifth Ministerial Conference of the World Trade Organization (2003, Cancun, MX). 2003. Cancun Declaration (on line). Consulted Mar. 20, 2012. Available at http://168.96.200.17/ar/libros/osal/osal11/d2documentos.pdf

Maxell, S. 1996. Food security: a post-modern perspective. Food Policy 21(2):155-170.

Nelson, G; Rosegrant, M; Palazzo, A; Gray, I; Ingersoll, C; Robertson, R; Tokgoz, S; Zhu, T; Sulser, T; Ringle, C; Msangi, S; You, L. 2011. Food security, farming and climate change to 2050: scenarios, results and policy options. Washington, DC, US, IFPRI. 131 p.

NGO/SCO Forum for Food Sovereignty (2002, Rome, IT). 2002. Political Declaration of the NGO/SCO Forum for Food Sovereignty 2002 (on line). Consulted Mar. 20, 2012. Available at http://www.soberaniaalimentaria.com/textos/ForoSobAlimentaria2002.htm

OAS (Organization of American States, US). 2004. Declaration of Nuevo Leon (on line). Monterrey, MX, Special Summit of the Americas. Consulted Mar. 23, 2012. Available at http://www.summit-americas.org/SpecialSummit/Declarations/Declaration%20of%20Nuevo%20Leon%20-final-span.pdf

_____. 2005. Declaration of Mar del Plata (on Line). Mar del Plata, AR, Fourth Summit of the Americas. Consulted Mar. 23, 2012. Available at http://www.iin.oea.org/DECLARACIONES/declaracion_IV_Cumbre_de_las_Americas.htm

_____. 2009. Declaration of Commitment of Port of Spain (on line). Port of Spain, TT, Fifth Summit of the Americas. Consulted Mar. 23, 2012. Available at http://www.summit-americas.org/V_Summit/decl_comm_pos_sp.pdf

Schejtman, A. 2008. Alcances sobre la agricultura familiar en América Latina (on line). Consulted Apr. 2, 2012. Available at http://www.rimisp.org/FCKeditor/UserFiles/File/documentos/docs/pdf/Alcances_agricultura_familiar_ALatina_AlejandroSchejtman.pdf

SIRG (Summit Implementation Review Group). 2012. Mandates Arising from the Sixth Summit of the Americas. In Sixth Summit of the Americas (2012, Cartagena de Indias, CO). Consulted Apr. 23, 2012. Available at https://www.vicumbredelasamericas.com/assets/files/mandatos/Mandatos-SC_ENG.pdf

UN (United Nations Organization, US). 1975. Report of the World Food Conference (on line). New York, US. Consulted Mar. 23, 2012. Available at http://www.eclac.cl/cumbres/listado_cumbres.asp?idioma=IN

_____. 2000. Millennium Declaration (on line). New York, US. Consulted March 23, 2012. Available at http://www.un.org/spanish/milenio/ares552.pdf

UNEP (United Nations Environmental Programme). 2003. XIV Meeting of Ministers of the Environment of Latin America and the Caribbean (UNEP/LAC-IGWG.XIV/Inf.5). Panama, PA, UNEP Regional Office for Latin America and the Caribbean.

USDA (United States Department of Agriculture). 2010. Food Security Assessment 2010-2020. Washington, DC, US. 54 p.

Vermeulen, SJ; Aggarwal, PK; Ainslie, A; Angelone, C; Campbell, BM; Challinor, AJ; Hansen, J; Ingram, JSI; Jarvis, A; Kristjanson, P; Lau, C; Thormton, PK; Wollenber, E. 2010. Agriculture, food security and climate change: outlook for knowledge, tools and action. CCAFS Report 3. Copenhagen, DK, CGIAR-ESSP Program on Climate Change, Agriculture and Food Security. 16 p.

Via Campesina. 1996. The right to produce and access to land. Food sovereignty: a future without hunger (n line). Rome, IT. Consulted Mar. 20, 2012. Available at http://www.voiceoftheturtle.org/library/1996%20Declaration%20of%20Food%20Sovereignty.pdf

World Bank. 1986. Poverty and hunger: issues and options for food security in developing countries: a World Bank policy study (on line). Washington, DC, US. Consulted Mar. 23, 2012. Available at http://www-wds.worldbank.org/external/default/WDSContentServer/WDSP/IB/1999/09/17/000178830_98101901455676/Rendered/PDF/multi_page.pdf

_____. 2012. Poverty (on line). Washington, DC, US. Consulted Apr. 2, 2012. Available at http://datos.bancomundial.org/tema/pobreza

World Forum for Food Sovereignty (2007, Sélingué, ML). 2007. Declaration of Nyéléni (on line). Consulted Mar. 20, 2012. Available at http://www.revistapueblos.org/spip.php?article548

World Forum on Food Security (2001, Havana, CU). 2001. Final declaration: For the peoples' right to produce, feed themselves and exercise their food sovereignty (on line). Consulted Mar. 20, 2012. Available at www.fao.org/righttofood/kc/downloads/vl/docs/AH290_Sp.pdf