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Opportunities and challenges of food production for human health and the environment in the Americas: *Food production prospects - regional view on family production*

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SUMMARY

Family agriculture, referring to that which depends mainly on family members to perform agricultural and cattle-growing activities, makes up the greatest number of the region's producers, and it doesn't show any signs of reducing either its number or its contribution to food production, even though it characterizes itself for having few assets, for having to face market and government flaws (absence of targeted public policies), being located in regions with ecological, soil, and climate related limitations, and in many cases characterizing itself for its poverty, unmet basic needs, and health problems related in part to the type of activities they perform.

This paper also reviews the region's main plant and animal health problems. However, it doesn't limit itself to identifying those problems generally related to agriculture, the environment, and issues related to technology and health, but also points out those specific to family production. Based on this characterization, it reaches a series of conclusions concerning factors that both foster and limit family agriculture in Latin America. Finally, the paper proposes several cooperation guidelines between the region's Health and Agriculture Ministries. These may be summarized as the importance of cooperation as a tool to develop national policies that strengthen family production, since it is a key factor in issues such as food security, environmental protection, solving traditionally-ignored health problems, and poverty reduction. These refer to cooperation programs to research ecological and health problems in the region, establish a regional information system, and problems in technical cooperation to confront some of family agriculture's critical problems in terms of health, environmental protection and food security with an emphasis on cattle-raising.

CONTENTS

INTRODUCTION

This paper's objective is to analyze the importance of food production for family-based production as a whole, and its impact on nutrition and public health within a context of environmental sustainability. From there, it seeks to determine possible recommendations in terms of public policy and cooperation between the countries of the region. It puts particular emphasis on those areas related to animal-based food production and consumption, as well as its implications on health and environmental sustainability.

The cattle raising sector is not homogeneous. It contains a large and diverse number of productive units: cattle-raising enterprises, agricultural industries, medium-sized companies, family farmers, and subsistence farming units, as well rural and indigenous communities. This same heterogeneity is present in the fields of commercialization, transport, processing, retailing, and supply of agricultural inputs.

Family agriculture makes up and substantial segment of the Latin-American rural population and it characterizes itself in a contradicting manner, for although it produces food partly for its own consumption, partly for local and national markets, it still has high levels of vulnerability and poverty which lead, among others, to health problems related to nutritional deficiencies. It is also important to highlight that this population tends to be located in areas with agro-ecological limitations: low-fertility soils, erosion-stricken ladders, climatic instability, highly variable temperatures, evapotranspiration, rains, as well as limited access to water suitable for drinking or irrigation.

This is the result of historical patterns of land occupation by displaced rural populations. This, plus the poverty conditions in which they live, makes these populations highly vulnerable to the consequences of climate change, which manifests itself as a significant increase in agricultural risks suck as floods, water runoffs, long droughts, and irregular agricultural cycles.

Such limitations are often the result not only of factors such as the location of these populations and their exposure to climate-related problems, among others, but also of public and private flaws in the way in which this type of producers relate themselves to the market and to public agricultural support programs. Family-based agriculture often faces inefficient systems both when marketing their products and when supplying itself in production inputs, as well as high prices in credit access and financing, information problems, high transaction costs, and the absence of public goods such as highways, productivity infrastructure, or agricultural and livestock health.

In spite of these and other limitations, family producers (and rural populations in general) contribute not only to the local and national production of agricultural and livestock-based food products, but also, and in spite of their lack of assets, are important repositories of knowledge related to plants, animals and ecosystems, as well as of the practices best suited to the environment in which they live. Such potential may, within a framework of concrete policies, programs, and actions, form the basis from which to strengthen their contribution not only to food production, but also to the health and development of rural areas.

BACKGROUND

Approximately 942 million people live in the Americas, of which 600 million, or 63%, live in Latin America and the Caribbean. Of the total, 42% live in South America, 16% in Mexico and Central America, and 4% in Caribbean countries. The behavior of Latin America's population characterizes itself for: a demographic transition towards lower population growth rates and the growing urbanization of the region. Today, population growth rates have been rapidly reduced (a 1.15% rate in Latin American and Caribbean countries) and approximately 8 out of every 10 inhabitants live in cities, giving our region a fundamentally urban character.

Nevertheless, several studies point out that the proportion of the rural population may well be underestimated and that many rural territories have an important dynamism[1]. What's more, several countries in Latin America characterize themselves for being highly rural: Bolivia, Paraguay, Ecuador, and almost all countries in Central American except for Costa Rica and Panama (Table 1).

Latin America and the Caribbean have experienced an important economic growth in the last ten years of 3.4% annually, a period characterized by an unfavorable international economic context. However, this growth has not been uniform; South America grows generally faster at 4% than Central America, which grows at 3.6%, and the Caribbean (2.9%). The growth of South American countries is due to both counter-cyclical macroeconomic policies and to changes in the destination for its exports. These have been gradually been more and more directed towards Asian countries, partly replacing sales to Europe and the United States (Table 2).

Even though the agricultural[2] sector has seen its importance reduced during the last 20 years and today it represents around 6.3% of the regional GDP, it has witnessed an important dynamism in the last few years[3]. Additionally, the weight of agricultural exports on the GDP is considerably larger than that of primary activities (8%), thus reflecting the weight of the sector in its amplified form. In fact, agricultural exports, especially from South America, have grown in a significant manner, and one of its most important components are cattle-raising exports. Finally, the amplified agricultural and livestock sector is an important source of employment (17%) (Table 3).

The livestock sector contributes 45% of the agricultural valued added in Latin America and the Caribbean (LAC) with an annual value of US$79 billion, representing 13% of world livestock production. The sector has grown around 4% annually in the last years, doubling the global average of 2%. The term "cattle-raising" includes bovines, pigs, farmyard birds, sheep, goats, and other farm animals. Meat and cow-milk production is the most important in terms of value and represents 62% of the region's total livestock production. Poultry production (meat and eggs) has grown in the last decade, achieving 30% of livestock production. It is lead by Brazil and Mexico, which are among the greatest producers of poultry meat and eggs in the world, respectively. Pig production is in the third place, at 7% (ECLAC-FAO-IICA: 2009).

CURRENT SITUATION

Characteristics of family agriculture

There are several ways to define family agriculture, even more so if one considers the various denominations it is given: small agriculture, peasant-farmer agriculture, personal agriculture, or small-scale agriculture. Schejtman (1980) describes the critical elements necessary to define this type of agriculture: the predominantly family-based character of the labor used in the productive unit's agricultural and livestock tasks, the inalienable commitment to the family workforce, the partial merchandising of its production, the indivisibility of the family income, the preference for labor-intensive technologies, and the membership to a territorial group.

Other authors such as Chiriboga (1999), Echenique (2006), and Berdegué and Escobar (2002) complete this concept by introducing additional characteristics such as: limited access to productive assets such as land and capital, the combination of several survival and income-generating strategies, and a marked heterogeneity, especially in the way it coordinates with markets for its products and factors.

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[1] This is related to the way the urban population is defined in each country, in some cases using political and administrative criteria, in others by the number of inhabitants.

[2] The definition of agricultural sector in the national accounts includes the crops as well as the cattle-raising, forestry, fishing, and aquaculture activities.

[3] It must be noted that the agricultural and livestock GDP does not reveal, however, all the importance it has in the economies of the region's countries. Many studies held in different countries of the region highlight that the sector's contribution is doubled or tripled if one considers the amplified sector. ECLAC-FAO-IICA, Perspectives of agriculture and rural development in the Americas: a look towards Latin America and the Caribbean / ECLAC, FAO, IICA- San José, C.R.: IICA, 2009.

However, family agriculture does not constitute a homogeneous group. It tends to divide itself into several categories that are not static, a result of the different social and economic factors (both internal and external) that may affect it (Chiriboga, 2002). For Berdegué and Escobar (2002) and Berdegué and Fuentealba (2011), there are three broad categories that differ from each other in the assets with which they are endowed, the favorability of their surroundings, and the degree to which they are covered by public policies. The A-Type of capitalized family-based agriculture is made up of those homes that have a significant asset endowment (land, capital, and human) and a favorable productive environment, are usually fully integrated with markets, both national and international. This means it has ready access to the destination for its products, to the origin of the inputs it needs, and in many times to the financing it requires. The B-Type is usually one of transition or of simple reproduction with incomplete asset endowment: they have limited land and water, use inputs that they both produce on their own and purchase from the markets, do not have access to credit, are located far from routes suitable to the transportation of goods and from markets, to which they relate through long chains of intermediaries; the C-Type is one of subsistence, involving homes with an insufficient endowment of productive assets and an unfavorable surrounding, the origin of its production inputs is either their own plot of land or the community in which they are located, and do not have the capacity to subsist exclusively on the basis of its agricultural and cattle-raising activity, thus requiring other sources of income such as paid labor or informal, non-agricultural work. Part of this segment belongs to communities of country-workers, many of them indigenous peoples, which play a fundamental role in its reproduction[4].

Soto et al (2007) use a similar classification, differentiating between three large types: (1) family subsistence agriculture mainly oriented to self-consumption, with limited availability of assets and limited production, which leads its members to appeal to paid labor and other non-agricultural activities to complete their income; (2) transitional family agriculture which has a greater dependency on food production, both for self-consumption and for the market, with greater access to productive assets but without the capacity to generate surpluses; and (3), consolidated family agriculture, which produces mainly for the market, generates enough surpluses to capitalize the productive unit and has access to the factors' market (Table 15).

According to one of the most recent studies (Schejtman, 2008), the total farms engaged in family agriculture, considering twelve Latin American countries, would be of over 14 million units, most of which show characteristics proper to subsistence family agriculture (60%), where as only 12% may be considered as capitalized[5]. The most recent available information for 19 countries in the Americas, including the United States and Canada, shows that there are 17.8 million family farming units, or 84% of agricultural and livestock farms. They would be responsible for 43% of the sector's agricultural and livestock production. Of the region's family farms, 23% are found in Andean countries, 36% in Central America and Mexico, 28% in the Southern Cone countries, and 12% in the United States and Canada[6] (Table 4). This information on the weight of family agriculture in the sector's production and that of agriculture in the GDP allows us to calculate the importance these producers have in the GDP of different countries. Clearly, family agricultural production weighs in heavily in the economies of Nicaragua, Guatemala, El Salvador, Peru and Panama, whereas in Chile, Mexico, and Brazil, besides the United States and Canada, it is much smaller.

If one considers the three types of family farms pointed out previously: capitalized, transitional, and subsistence, the latter are clearly predominant, as they represent approximately 62.2% of the total, whereas transitional ones make up 28.2% and capitalized ones 18.6% of the total. Subsistence family farms are particularly numerous in

[4] Julio Berdegué, Strategies and Rural Poverty Reduction Programs. April 2009, pg 10. Also Conference, Sergio Schneider and Fabiano Escher, The Social Construction of the Concept of Family Agriculture in Latin America, Preliminary Version, manuscript, 2011.

[5] Argentina, Bolivia, Chile, Colombia, Ecuador, Guatemala, Mexico, Nicaragua, Paraguay, Peru, and Uruguay.

[6] We were unable to find updated information for countries in the Caribbean, both english speaking countries as well as for Cuba and Venezuela. There could be at least another 50,000 family united in those countries.

Colombia, Nicaragua, Bolivia, Brazil, and Paraguay; those in transition reach the highest percentages in Guatemala, Chile, Peru, and Ecuador, whereas capitalized ones represent a larger share in Argentina, Uruguay, Peru, and Mexico. This clearly shows that family agriculture may, with the right policies, increase its weight significantly, if a larger number of capitalized farmers could be achieved.

Even though there is no complete information for all 19 countries considered, on average family units in Latin American countries have access to 33% of the land. This percentage is larger in countries such as Nicaragua, Peru, Ecuador, and Guatemala, and lower in Paraguay, Uruguay, and Chile. The average surface of these farms is of approximately 22 hectares, although they are lower in the Andean and Central American countries, and larger in those of the Southern Cone. The size of the land used by agricultural business is, on average, twelve times larger than that of family farms.

From this information a particular geography stands out, as family agriculture has a significant presence in South-Central Mexico, in the plateaus of Guatemala, Honduras, and Costa Rica, and in the highlands of Andean countries, but also in the Pacific zones of Colombia and Ecuador, the Brazilian Northeast, and the North of Argentina. In these zones, self employment is predominant, the land is highly productive, rural poverty is generalized, and there is a high vulnerability to environmental degradation, natural disasters, and to the impact caused by the effects of climate change[7]. In spite of this, its presence is far from negligible in zones where agriculture is more integrated to the markets such as southern Brazil.

Family agriculture and poverty

Latin American poverty levels have decreased considerably in the last decade, but it still affects nearly one person out of three in the region: 31.4% in 2010. Rural poverty is more frequent and more intense; around one in two people living in rural areas is poor, whereas in the cities only one in four is. Honduras, Paraguay, and Colombia have the highest poverty rates of the region (Table 5). In addition, rural poverty has been reduced at a slower pace than in urban areas, and it seems less responsive to traditional instruments of economic and social policy.

The information available for 16 Latin American countries shows that most of the rural poor are part of what we have called family agriculture. Indeed, in twelve countries it is the self-employed (non-professionals and technicians) that are poor, especially those related to the agricultural and livestock sectors (Table 6).

An analysis of nine countries determines that most rural employment comes from family agriculture, even though its importance varies from country to country; it is greater in Bolivia, Peru, and Paraguay, and lower in Chile and Mexico (Table 7). According to the analysis of these cases, the sector's 62% employment average is due to family agriculture, and the income received by these farmers come, for the most part, from agricultural and cattle-raising activities (Soto et al, 2007: 15); however, the income generated by agriculture is not enough to satisfy the producers' needs: between 50% and 60% of agricultural independent workers are also active out of their plots, possibly as temporary employees or as dependent workers (Dirven, M., 2007).

Of particular significance are the percentages of poor people working in family agriculture in Andean and Central American countries, the Brazilian Northeast, and southern Mexico. Even more, a recent study by the RIMISP comparing poverty indicators, incomes, and inequality in more than 10,000 municipalities of eleven Latin American countries between the 1990's and the 2000's found that in 59% of municipalities, where 62% of the population lives, incomes were not improved. Furthermore, in 52% of the municipalities, where 65% of the

[7] FAO, IADB. Policies for Family Agriculture in Latin America and the Caribbean. 2007

population lives, poverty got worse. Only in 9% of municipalities, where 12% of the population lives, did poverty diminish and equity was improved[8].

The poverty conditions in which many family-based farmers find themselves include difficulties to satisfy basic needs such as education and health. According to FAO statistics, one may conclude that household heads of these farms barely completed the fourth year of elementary education, are for the most part over 50 years old, are frequently female (at the non-negligible proportion of about 20%), and are, at an equally high proportion, of indigenous origin. Even without explicit data concerning female participation at the farm level, it is estimated that over 30% of family farms depend on the woman's activity (Soto et al, 2007:52). In the case of Ecuador, in self-employed households 15.2% of poor homes are headed by women, and 24.5% of household heads are of indigenous origin (FAO, 2011).[9]

Family agriculture, food production and employment

According to the FAO, family agriculture plays a significant role in food and nutritional safety in Latin America and the Caribbean; in fact, it produces an important part of the food destined for internal consumption, without detriment to the assurance of its own nourishment[10]. According to Via Campesina (2011), family agriculture produces 70% of the world's food, a situation which replicates itself at the Latin American level, and can even account for a higher percentage in some territories.

According to the available information (Table 4), the sector's contribution to production is especially high in Panama, Peru, Nicaragua, and Guatemala. It is proportionally lower in Argentina, Chile, Paraguay, and Uruguay. On the basis of the information from nine countries, family agriculture produces 67% of beans and 63% of vegetables in Chile; 100% of the manioc and beans in Colombia; 50% of Peru's corn, 84% of the manioc, 67% of the beans, and 60% of the vegetables in Brazil; 88% of the vegetables in Uruguay, 80% of Paraguay's sugar cane, and 88% of Canada's fruits and vegetables (Table 8).

Also, family agriculture is important in livestock production and the supply of animal-based products (Table 9). In Chile 47% of beef and 72% of sheep meat is of this origin; in Uruguay 84% of pig meat comes from this type of units, and in Ecuador 82% of sheep and 70% of pigs is raised by family producers. These are responsible for milk production at percentages ranging from 33% in Argentina to 74% in Uruguay. To this information must be added the raising of small farmyard animals, which include birds, camelidae, donkeys, rabbits, guinea pigs, goats, and other similar ones[11]. It is important to highlight those animals in family units are not only a source of economic activity, but also a significant asset. These act as a sort of insurance when facing problems such as a death or sickness in the family.

Even though poverty has been reduced, and therefore farmers of most countries related to family agriculture have seen their living conditions improved in the last few years, a recent study by FAO shows that the agricultural boom in recent years increased agricultural and livestock production and prices, but this was not directly transmitted to the incomes of farmers and, therefore, rural poverty levels did not vary as much as the increases in production and prices (ECLAC-FAO-IIC, 2009; Chiriboga et al, 2009). This reflects the market and institutional flaws previously mentioned.

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[8] Berdegué, Julio, Ospina, Pablo et al. Determinants of Rural Territorial Development in Latin America, Working Document N°101. Dynamics of Rural Territories Program, RIMISP, Santiago, Chile

[9] There may be a high degree of underestimation in all data related to female participation due to the way in which the statistical information is collected, both in the census and in living condition surveys.

[10] http://www.rlc.fao.org/conozca-fao/prioridades-regionales/agricultura-familiar/

[11] Small producers generate more than 60% of total meat production in LAC, including bovine, poultry, and pigs, whereas production of other animals such as rabbits, goats, sheep, South American camelidae, and domestic guinea pigs also make up an important source of food and employment in many rural communities (FAO: 2009)

Most agricultural production from family agriculture is considered tradable, even when its participation in the production of non-tradable goods in far from negligible. A study on Colombia, Chile, and Ecuador determined that in all types of family production – be it subsistence, transitional, or consolidated – tradable production is important both for products intended for export as well as for those that compete with imports (Soto et al, 20017: 15) (Table 10). This causes family production, in many cases and in spite of the delay with which prices reach farmers, to react to changes in them. The per-capita food production index, an important proportion of which originates in family agriculture, has increased by 4% annually on average over the last decade (Table 11).

Generally speaking, the endowment of production support services for family agriculture is much more limited than for entrepreneurial agriculture. In Brazil, only 22% of small productive units are mechanized, whereas 52% of large units are. In Ecuador there is no technological nor infrastructure support for small-scale production, although that available to the large-scale one is also insufficient (3.5% of productive units). In Nicaragua, financing for production covers only 8% of subsistence farms, which have less than hectare, whereas more commercial farms are covered at 18%. Irrigation infrastructure available for family agriculture is minimal in countries such as Nicaragua and Ecuador, although in Chile more than 50% of productive family units are covered and subsistence agriculture is better represented. The endowment in technical assistance in Nicaragua and Brazil covers, at most, 18% of family farms, with lower percentages for subsistence-type ones and larger percentages for commercial agriculture (Table 12).

A recent study by the IADB and FAO summarizes these types of problems regarding access to inputs and production factors in the following table:

Restrictions and Opportunities for Family Agriculture Typology in Latin America

Typology	Restrictions	Opportunities
Subsistence Family Agriculture	Limited access to water Low technological and produ ctivity levels Insufficient income to satisfy family needs	Exceptionally, an agricultural output and with great internal support Non agricultural rural employment Training to improve employment and migration
Transitional Family Agriculture	Controls natural resources within limits High dependence on the public sector and NGOs Barriers to entry to participate in profitable supply chains; little capital of its own, and limited access to financing; little management ability; mediocre technical level More efficient small and medium-sized agricultural companies are isolated from modern markets	Improving access to natural resources (irrigation) Breaking up of barriers to entry to markets Integrating the small and medium-sized agricultural companies into commercial alliances Production contracts with agro-industries and exporters
Consolidates Family Agriculture	Dependent on public sector or private aid (NGO) Certain inflexibility towards change Management weaknesses	More direct and more stable work with markets More autonomy Capitalization of surpluses and broadening of productive base

Source: Technical Cooperation Project FAO-IADB (2007) “Policies for Family Agriculture in Latin America and the Caribbean”.

In zones of small-scale production, there is a prevalent a system of intermediation that faces high transaction costs for its purchases and for concentrating its production. The structural adjustment policies of the 80’s and

90´s fostered the elimination of those public organisms dedicated to small-scale agriculture. This void that was not filled by private-sector companies, except in those cases where these units form part of existing entrepreneurial supply chains or where non-governmental organizations develop programs to support this type of producers.

The new management methods for food supply chains, the liberalization of agricultural markets, the introduction of international food transport, the increase in world commerce for fresh products, the internationalization of the food industry, the changing consumption habits in developed countries, and the new traceability schemes have all contributed, over the last decade, to the emergence of various ways for small producers and consumers to liaise with one another, but nevertheless imply important challenges to this type of agriculture as well. In many cases, these new agricultural conditions hurt the role of family agriculture as major food suppliers[12].

In response to this, new forms of coordination between agricultural families and enterprises have been developed, as well as systems for public purchases. For example, contracts between small producers and private companies to create food products with commitments in terms of price, quantity, and delivery dates. Other, more complex coordination methods include strategic alliances to jointly enter new markets, aligning each party's abilities and a shared distribution of the benefits. A paper by Intercooperation (2008) summarizes 34 cases of coordination related mainly to agricultural and livestock activities, in which agribusiness, exports, and retailing are some of the actors on the demand side. In such institutional ways of relating to one another, businesses and their supply chains manage to coordinate several types of family farmers, solve market and institutional flaws (through an institutionalized provision of production services and inputs), and take the necessary precautions concerning food sanitation and safety.

Another mechanism that directly relates family production with food safety are public procurements programs that prefer small-scale producers. This type of programs allows connecting production, food needs, nutrition, health, and producers' income. Brazil's "Fome Cero" (Zero Hunger) program included the purchase of food from small producers in order to supply public schools. Such programs have seen themselves multiplied in the region, which has helped solve matters of price and markets, but do not include technical assistance, credit, or standards for quality or food safety.

Other forms that have been multiplied throughout the region are the so-called "Inclusive Fairs", whose objective is to foster direct sales networks through public-private agreements that ease the creation of alternative markets, obeying the logic of "fair trade" and the promotion of consumption among urban, low-income consumers. These fairs seek to adjust the supply and demand for products that come from family-based economies by making room for its commerce, exchange experiences between the organizations that participate in the fairs, bring closer and raise the community's sensibility to economic and consumption practices that would benefit all parties. However, these do not include nor are they associated to technical assistance programs, even though Ecuador's system of agrarian and livestock extension, named "Schools of the Citizens' Revolution", is supporting the conversion of family agriculture to agro-ecology. Also, in many cases those NGOs that work in programs supporting the agriculture by peasant farm workers include efforts to coordinate stable markets, fair trade, and technical assistance, all with a focus on agro-ecology.

These and other coordination mechanisms have been determinant in making family agriculture work under the principles of sustainable peasant-farmer agriculture, which has put in place a revalorization of traditional

[12] Reardon and Berdegué point out that the role of supermarkets as the main sales channel for food tends to exclude small-scale producers, as their low-price policies and growing demands for quality standards. Under some conditions, however, these types of contracts with supermarkets introduce quality Matters among small-scale producers.

production methods, generated innovation in new practices, has introduced quality in its products, and strived to differentiate itself. Organic agriculture, fair trade, productive diversification, and value-added production are, among others, evidence of the dynamism of family or rural-peasant agriculture.

Family agriculture, nutrition, and health

In most countries in Latin America, there is surplus of agricultural and livestock production, they are net food exporters: in fact, the entire American hemisphere as well as Latin America and the Caribbean are fundamental for the world's food safety[13]. Generally speaking, one may say that in countries where family agriculture has an important share of the sector's production, dependency on imports is lower (not met in all countries), which ratifies its importance. The region's contribution could grow even more if additional efforts were made in terms of public goods for agriculture and livestock production such as public health and research, as well strengthening the attention given to family production. The share of imports in domestic consumption of calories is growing, going beyond 50% of the total offer in countries such as Argentina, Costa Rica, and Panama (Table 14). The increase in food imports until 2007 was particularly worrisome in Honduras and Panama.

Although most countries in Latin America and the Caribbean have net sales of food, the region's levels of undernourishment are still elevated when compared to developed countries (Table 16). It is thought that 8% of people and up to 14% of children between 0 and 5 years old are undernourished (UNICEF). This problem is generally deeper in the Caribbean and Central America, which have undernourishment rates of 23% and 14%, respectively, and in certain countries such as Haiti (57%), Bolivia (27%), Guatemala (22%), and Nicaragua (19%). It must also be noted that undernourishment tends to be worse in rural areas than in urban ones, where many of its inhabitants are net buyers of food.

Undernourishment has negative effects on health, education, and the economy, which both increases and deepens the population's poverty and extreme poverty. Undernourishment increases the probability for various pathologies to appear as well as their intensity, increases morbidity and mortality, and affects people's learning ability. The way in which it presents itself depends on each country's epidemiological profile.

As for education, undernourishment affects the performance and the learning capacity associated to restrictions in cognitive development. This translates into higher probabilities for late entry, repetition of school years, desertion and, consequently, low educational level. The effects on health and nutrition directly impact the productivity of the labor force, which also impacts desertion from labor and social exclusion.

Besides the problems caused by undernourishment in the region, other types of problems exist, some of which are tied to the modernization of societies and to poor eating habits. One of recent importance is excess weight and obesity. This refers to an abnormal accumulation or excessive fat that may be harmful for health, and is also an energy unbalance between calories consumed and spent. This is not a problem exclusive to urban areas but, rather, one of consumption patterns, strongly based on hypocaloric foods, carbohydrates, fats and vegetable oils, as well as of diminished presence of minerals and other essential micronutrients. Finally, problems associated to the insufficient consumption of several significant micro-nutrients present themselves, such as iron, zinc, and others, which leads to problems of anemia in the population.

These structural problems of the food and nutritional systems have been worsened lately due to the increase and/or strong variability in the price of many food items, whose causes are related to the world market. This means not only that the food component of the basic shopping basket becomes more expensive – food is the

[13] Argentina is the world's first exporter of soy oil, third of corn and soy, fifth of wheat, and sixth of cereals. Brazil is the world's top exporter of meat, ground coffee and sugar, second of soy and soy oil, and fourth of corn. Chile is the world's fourth exporter of apples and fifth of wines; Colombia is second in ground coffee exports and fourth for bananas; Costa Rica, the world's top exporter for pineapples and third for bananas; Paraguay, fourth soy exporter; Bolivia, the seventh for soy oil; Uruguay, the eight for rice; Honduras; ninth for pineapples; and Ecuador and Guatemala are the first and seventh banana exporters, respectively. (ECLAC – FAO – IIICA: 2009)

most important factor in the increases in the inflation rates – which has lead to stability problems in food consumption, changes in its pattern such as the replacement of more nutritious food items for poorer ones, etc. In this context, and especially for countries where food imports are an important part of the supply, the world market has ceased to be a reliable source, even more when one considers the multiplication of protectionist practices.

In this context, the countries of the region cannot neglect family agriculture as a potentially important source of production for essential foods, normally adapted to each country's particular agro-ecological context, and additionally with benefits in terms of variety, quality, and nutritional effect on the population, both rural and urban. This potential has not been entirely fulfilled, due to the absence of lasting policies directed at it.

There are successful experiences that support the development of family agriculture as a source of nourishment and nutrition. The food network in Brazil's schools, built around a law that demands that at least 30% of resources destined to feed students in public schools be used to buy products from family agriculture. There is also Ecuador's "Action Nutrition" program, where producers from family agriculture are supported through agricultural orchards to favor diversification in food consumption, as first phase, and then link production to the market based on local needs, mainly for public purchases.

Family agriculture and the environment

In the region, it is calculated that for every dollar raised by the agricultural and livestock sector, the countries' economies add between three and six dollars, this being higher in countries with more relative development, which makes the sector an important engine for regional progress. However, having turned Latin America into a net food supplier crucial to the world's food safety has resulted in important negative impacts on the environment.

The degradation of arable land due to intensive usage and poor rotation, fertilization, and irrigation practices; the reduction in natural forest land to broaden surfaces dedicated to industrial export crops – such as soy – and, in general, a deterioration of the environment reflected by a loss in biodiversity due to the substitution of native crops for others with high commercial value, besides the pollution caused by the use of agricultural chemicals are some of the problems detected. These tendencies in deforestation and increase in livestock production in the region are important causes behind the effects of greenhouse gases, especially methane. In fact, Latin America is today the world's second methane emitter, which traditionally associated to deforestation and expansion of livestock raising (UNDP: 2011).

According to Urquiaga et al, most countries located in Andean and tropical regions of Latin America and the Caribbean have soils that are either poor or very poor in nutrients, besides the toxicity problems caused by high levels of aluminum, iron, and manganese, a situation that leads to very low outputs in food products (2006).

Most of the region's extractive agriculture is based on the natural fertility of soils, leading to their impoverishment. A significant part of these areas corresponds to small farmers, whose livelihoods depend on the growing of corn, beans, potatoes, manioc, and others, without using fertilizers. According to the IFA, the region consumes 12% of world fertilizers, whereas only Brazil and Mexico consume 74% of it, a fact that makes explicit a serious lack of balance in the region, with an important orientation towards industrial or export crops, instead of towards food safety. The problem of degradation involves not only the reduction in the productive capacity of soils due to an excessive loss of nutrients, but due to erosion and the pollution of water resources.

The use of fumigating agents to solve problems in plant health and overcome quarantine barriers is common practice in the region. Many of these products have even been banned, due to their effects on human health and

the environment. At the same time, countries in the region face a series of problems with pesticide residues in food intended both for local consumption and for export.

An important share of the region's countries show a food deficit in terms of cereals and beans, which is directly related to the low outputs due to the use of varietals susceptible to sicknesses, insects, and climate change that affects crop production, due to abiotic factors, such as a raise of temperatures and reduced rainfalls.

According to FAO (2011), climate change will affect all four dimensions of food safety: availability, access, usage, and stability. It seems probable that global warming shall benefit the agriculture of developed countries located in temperate regions and have adverse effects on the production of many developing countries located in tropical and subtropical zones. Therefore, climate change could increase the dependency of several Latin American countries that are net food importers.

Additionally, the effects of climate change and environmental degradation in general (erosion, pollution, loss of biodiversity, and related natural disasters) tend to affect family agriculture more heavily, as it is located in riskier areas : slopes, less fertile, and near waterways, to mention a few.

FAO experts point out that climate change is among the main challenges faced by agriculture if it is to feed the world population. On the other hand, several options to mitigate climate change that are based on agriculture may have important benefits both for food safety and for adaptation to climate change. The increase in carbon retention through initiatives in forestry and agroforestry, as well as plowing practices that improve the efficiency of nutrient intake and the restoration of degraded soils are examples of actions that have a great potential in terms of mitigation and collateral benefits.

Policies and programs for family agriculture

Historically, in most cases perceived heterogeneity in physical, financial, human, and social resources within agriculture have not been sufficiently valued, identified, and characterized by countries, reason why the policies applied have not been differentiated and adapted to the needs of family agriculture. It is clear that incentives proper of big business are not adequate for small-scale-agriculture; even within family agriculture it is necessary to adopt differentiated support mechanisms as their realities differ in terms of labor force, asset endowment, links to the market, etc. This has caused opportunities for the development of family agriculture to be limited. Countries such as Brazil, Chile, Uruguay, and Mexico are those in Latin America that recognized this heterogeneity, invested more programs to promote agricultural and livestock production oriented towards poor farm workers and small producers with precarious ties to the market, and where pioneers in differentiated policies.

In the late 2000's, after the boom in agricultural prices and the financial crisis, a new generation of policies directed at family agriculture has been put in place, initially to face the emergency and then as long term programs, seeking to support through them the role of family agriculture in achieving higher levels of food safety and productive development and reducing poverty. Said policies relate to three different fields: support for the productive development of family agriculture directed at promoting food production; income transfers through programs such as "Bolsa Familia" in Brazil, "Human Development Bonus" in Ecuador, and "Oportunidades" in Mexico; this, as well as programs directed at formalizing rural labor markets.

These production promotion programs were mostly directed at making resources available to finance, mainly, the purchase of imports and to support production, but not only of foods. This has been achieved through the participation of public entities that channel credits and (non-refundable) direct transfers, as is the case for programs such as Mais Alimentos ("More Foods") in Brazil, Vamos a Sembrar ("Let's Plant") in Ecuador, and the bonus for fertilizers in Chile. In many cases these programs were completed with support or non-financial services such as input supply, technical advice, commercial support, with an important intervention of the state

through its Rural Development and Agriculture Ministries (FAO, 2010: 4). However, most of these programs have an agricultural bias and do not include animal-based foods in any significant way.

Programs directed at agricultural food markets where there is a combination of management, production development, and transferences, show a greater state intervention in the processes of coordinating production and consumption, price regulation for basic products, and direct purchases of food, and new agreements between regions to complement production, the implementation of agricultural insurance against risks, among others. In many of these programs the government works in cooperation with the agricultural industry, as is the case for supply programs and contract agriculture carried out in countries such as Brazil, Colombia, Costa Rica, and Peru.

The many changes in labor law that give more security to agricultural workers, that directly or indirectly are part of family agriculture, have contributed to make salaries an important mechanism for leaving behind poverty in the region. This has been achieved through the improvement in remunerations, thus reducing urban-rural gaps, or in the access of agricultural workers and, in some cases, family farmers to social security.

Main problems in sustainability and in plant and animal health posed by family agriculture

The institutional and market flaws that characterize family agriculture are mostly found in its high heterogeneity and differentiation, both from the point of view of incorporating technological innovations as from the impact of its agricultural and livestock production in the presence of problems in plant and animal health; in turn, this is reflected in yields and productivity. Generally speaking, one may say that family units suffer proportionally more technological backwardness as well as greater loss due to plagues and after-harvest diseases than does entrepreneurial agriculture. Even more, these problems are especially important in what we have previously called transitional and subsistence family agriculture.

Even though family agriculture has available to it a bundle of knowledge that has allowed it to adapt to the ecosystem where it is located through a series of sustainable practices which include crop rotation, ley farming, scaling in time sowing seasons, share and shadow cropping, complementing agriculture with cattle-raising, use of manure as a natural fertilizer, natural methods of plague control, and production of ecological layers, today many of these systems face new tensions and are not always enough to lessen the effects of their new challenges. Some of the problems that characterize family agriculture in this regard are listed below:

a. In the region, the use of conventional “modern” technologies in vegetable farming and animal production for export is rather extensive, for example: coffee, bananas, grapes and other fruits from temperate climates, vegetables and critics, flowers, pineapples, other crops (wheat, corn, rice, soy), meat and milk, and has contributed to the mass use of several types of inputs (pesticides, hormones, and antibiotics). This is also the case for products destined for the great agro industry of food processing, but not for production from family agriculture destined for local market and food fairs. In this sense, there is an unequal penetration of technical and scientific progress within agriculture and, therefore, one of the fundamental challenges for agriculture is to ensure a greater and better access to new technologies for family agriculture.

b. In the region, a series of norms and standards have been established for plant health and safety, which aim to improve food consumption. However, there is a weakness in their application, especially for small-scale agriculture because it has not received technical assistance or support, mainly in the establishment of good agricultural practices that lead to improved quality standards.

c. In practice, regional extractive agriculture, based only of the natural fertility of soils, is leading to their decreasing impoverishment. This phenomenon conditions the increasing use of marginal areas for “migratory” agriculture – areas with steep slopes and deforestation of its own, creating severe environmental problems, among which erosion and greenhouse gas emissions stand out. In this sense,

agriculture contributes to problems related to climate change and flooding and droughts that affect, among others, their yields and productivity. This demands added attention to research and to foster agricultural and livestock research that eases the adaptation of these countries to climate change. Such research must influence the development of varietals resistant to drought and heat-induced stress, as well as the development of technologies fit for zones prone to droughts.

d. The problem of soil degradation involves not only the reduction of their productive capacity due to an excessive loss of nutrients, which affects both crops and cattle-raising activity, but also the fact that many agricultural zones are affected by erosion and the pollution of their water resources. The recovery of these areas for agricultural activity demands urgent attention, as this situation of degradation encourages the continuous deforestation that affects even ecological reserves, as is currently the case in the Amazon region, resulting in a serious environmental impact. This needs, among others, a better zoning of productive activity delimiting the soils where it may take place, changes in the management of agricultural land such as conservation tilling, agroforestry, and the rehabilitation of degraded lands, among others and as well as improvements in watering infrastructure, management of irrigation systems, and an improved use of technology.

e. The degradation of soils and the deforestation of the region have expanded themselves, due to the use of "extensive" livestock production, prevalent in Latin America, and the cultivation of soy in fragile areas. Enormous strips have been deforested for these two purposes and the livestock sector has become the main responsible for methane gas emissions, which contribute to global warming (ECLAC-FAO-IICA: 2009). This required research to be strengthened vis-à-vis of increased intensification of livestock production, including better grasses and nutrients, semi-barnyard systems, systems the tie together agricultural, forestry, shepherding activities, among others.

f. In order to reduce losses and the use of insecticides, additives and veterinary products, protect vegetable, fruit, and livestock production, promote its development so that it is able to supply the current and future needs of regional and world markets, it is necessary to establish in the region areas that are free of, or at least little-affected by, the many plagues and sicknesses that exist such as fruit flies, foot-and-mouth disease, brucellosis, rabies, and other similar ones.

g. The region has recently observed several isolated activities aimed at the development and/or perfecting of services dedicated to epidemiological control and surveillance of animal diseases that by their very nature cross national borders and are also of economical importance, such as foot-and-mouth disease (PAHO/WHO, 2006), highly pathogenic avian influenza –H5N-1 (ECLAC- United Nations, 2006), and bovine spongiform encephalopathy – BSI (FAO, 2003). This needs the acknowledgement not only of their effects on livestock activity, but also of its possible and maybe catastrophic consequences on human health. The main sicknesses affecting livestock in the region need special attention. The most important being: foot-and-mouth disease, classical swine sickness, New World screwworms, and bovine tuberculosis.

h. The attention given to livestock diseases such as the ones mentioned in the previous paragraph must not entail a lack of attention towards other diseases prevalent in the region that affect, above all, the poorest members of the population; this includes diseases that have been neglected, among which those present at the local level stand out: human rabies transmitted by dogs and other animals; and those present at the national level such as helminthiasis transmitted through the contact with the ground, echinococcosis, a zoonosis produced by the larvae or the hydatid of cestodes, Echinococcus granulosus, whose adult is a parasite found in the small intestine of dogs and other wild canines (dingoes, coyotes, and foxes, among others) – its definitive hosts – and herbivores (sheep, bovines, swine, and other animals), Fascioliasis, a zoonosis transmitted via the defecation of animals into water used by humans, goat brucellosis and Malta fever, and sheep's hidatidosis. They are similar in that they affect more frequently cattle-raising related to family agriculture, often in fragile ecological zones, and that they have repercussions on human health. In most cases they receive less attention and resources, there is no baseline for each one of them, and cooperative actions between countries are limited.

i. Among the fundamental causes determining the food deficit are the low yields caused by the use of traditional varietals susceptible to disease and insects (biotic factors) and global changes in climate that radically affects crop production and the yields of cattle-raising activity, due to the raise in temperature and the reduction in rainfall (abiotic factors). In the last few decades, the genetic improvement of crops has reached significant increases in their productivity, resistance to diseases and plagues, tolerance to drought, adaptability to mechanized harvest, and uniformity of their grain and fruit. Traditional agriculture and a low technological level limit the production of native plants that are traditionally planted by small farmers as well as of small-scale cattle-raising activity. Besides, the atomization of their land, their location in marginal zones with adverse climates, and monoculture have all contributed to a loss of diversity in native foods and originally foreign varieties typical of the region. The same is happening with native species of livestock, many which are endangered, which will lead to a reduction of livestock biodiversity.

j. According to a study by ECLAC, FAO, and IICA (2009), aquaculture in Latin America has grown at an average annual rate of 22% between 1970 and 2006, making it the region of the world with the highest growth (although it only contributes 3% of world production). Mexico and Guatemala are among the ten countries with the most growth in aquaculture, but 80% of the region's production comes from Chile, Brazil, Mexico, and Ecuador, thanks to the farming of salmon, shrimp, and tilapia. In spite of their importance, the main aquaculture activities are prone to health problems as was the case for shrimp in Ecuador during the 90's and, more recently, salmon production in Chile. The increase in intensity of aquaculture methods surpassed the ecosystems' maximal biological capacity, as well as the tolerance of some organisms to living in conditions of elevated density. This brought along viral infestations that had significant negative impacts on production and employment. In spite of their proven negative effects, little is known about the genetic and plant health problems of aquaculture, reason why countries should dedicate more efforts in research and technological support, especially in small-scale production, very important for some species such as tilapia or native species such as the "chame".

PROSPECTIVE VISION: STRENGTHS AND WEAKNESSES

Projections by FAO and the OECD in 2011 indicate that prices will remain high and volatile in the following years. This puts at risk not only those countries and peoples that are net importers and buyers of food, but is at the same time a great opportunity to strengthen the contribution of family agriculture to the food security of our countries. Not doing so will affect, through prices, both urban and rural consumers and increase their food insecurity[14]. Doing so requires policy changes that focus in this segment of the population, but that take care as well of critical problems it faces in relation to both environmental and plant and animal health.

If this window of opportunity is to be seized, and if family agriculture is to become a fundamental part of the relaunch of Latin American agriculture, support regional food security, and be able to participate in international markets, one must consider at least the following strengths of family agriculture:

a. Family agriculture makes up 84% of all agricultural and livestock production units, which have access to 33% of the land in Latin America. Of these, 12% are capitalized and therefore fully integrated to markets, 28% of them are in transition and 60% are subsistence ones. If becoming capitalized is to be an objective, this will depend not only of a favorable context but also of an alignment of policies, among which one may mention irrigation, technical assistance, credit, the ability to create alliances, as well as investment in education and health. This means developing differentiated policies and institutions specialized in this type of farmers and livestock producers; as well as zoning in such a way as to affect the immediate context in which they are active.

[14] http://www.rlc.fao.org/es/areas-tecnicas/lucha-contra-hambre/hambre-precio-alimento. Moreover, one must take into account that an important part of (poor) family farmers are net food buyers, and the increase in prices may render their access to food considerably more difficult, with sever implication for health (from Janvry and Saudolet, 2010).

b. Support for family agriculture and livestock production must be considered as a significant source of employment for the rural population, since it is particularly well suited for crops that labor-intensive, such as fruits and vegetables, big and small cattle-raising, coffee and cocoa production, as well as after-harvest activities and the slaughtering of said production, such as the selection, cleaning, classification, packing, and local transformation.

c. An important share of family agricultures are located in particular ecosystems, with unique combinations of soils, slopes, native plants and animals, climate cycles that allow for a wide array of products that in many cases only allow for a small-scale production and for which they have knowledge acquired through processes of experimentation and adaptation to local conditions. This gives them great potential in terms of guarantees of origin, especially in times when consumers look for unique products, associated to particular ecosystems and to productions whose social conditions are positively valued.

d. In many countries of the region there is a growing affirmation of its cultural identity, a topic that is especially relevant, though not exclusive, of indigenous peoples and those of African origin, who often live in rural areas of Latin America. This puts forth the contributions of said populations to development in matters such as ancestral knowledge, practices friendly with the environment, agricultural products and unique animals that are tied to their cultural and gastronomical traditions.

e. The predominance of democratic governments in the region and the massive inclusion of rural citizens to voting rights, as well as the decentralization processes occurring in the region, cause the political systems of these countries to look for answers to the demands of the rural population as part of government proposals. What's more, many local governments have assumed important functions related to activities that may or may not be linked to agricultural and livestock production.

f. Finally, the growing preoccupation within modern societies for the environment and for the current and potential climate changes and its effects on vulnerable populations, particularly rural ones, causes the governments of the region to develop more and more frequently policies and programs aimed at the mitigation of and adaptation to these effects, seek to implement actions that are friendlier to the environment, and reduce the impacts of agriculture on climate change.

In spite of its potential, family agriculture in Latin America and the Caribbean shows many limits that restrain it from developing its potential, keeping it as subsistence agriculture, traditionally associated to poverty. Among the main limits one may mention:

a. Public policies towards agriculture, which in many countries have been prone to having more of a normative role, only now start to focus on policies specific to family agriculture. However, they don't always have priority in terms of resources and in dedicated institutions. Neither do decentralized governments, that have growing attributions in the field of production, possess the human and technical resources necessary to perform their responsibilities. Even though the region does have good examples of collaboration between public, private, and non-governmental organizations to support small family-based production, these don't cease to be relatively isolated experiences. It must be mentioned that the attention given by public policies must adapt to the heterogeneity of family agriculture and, as such, not only tend to capitalized and transitional groups, but also subsistence ones. This support may play a critical role in matters of food safety, nutrition, and health conditions.

b. A particularly worrisome matter is the weakening, even absence of research regarding agricultural and livestock production as it relates to small-scale production and the conditions of producers. The weakness in research regards seeds (genetically engineering included), products traditionally grown by small farmers, production inputs (both conventional and agroecological), irrigation management adapted to small-scale conditions, control of plagues and diseases affecting small-scale production, tilling and other production systems better adapted to the ecosystem where these producers are located, as well as all aspects post-harvest and post-slaughtering. The absence of research causes extension systems to not always have the knowledge that would allow them to answer the needs of family farmers.

c. A field that needs special attention that has been greatly left aside has to do with native crops and animal species, in spite of its enormous market potential. This causes the knowledge on how to grow, raise, use, and consume them to be at risk of being lost, as there is a lack of systems to record, systematize, research, and spread such knowledge. Although there are some promising experiences such as the Andean potato, fine cocoa and, to a lesser degree, Andean camelidae, studies in this field are only starting to be produced, thus wasting its great potential.

d. Deficient practices for the management of agricultural land and the inadequate use of fertilizers and other agricultural chemicals, as well as their effect on water, bring forth the need to develop productive activities that are less polluting. Additionally, one must consider that such practices would allow family farms to access markets that care for the social and environmental impact of the products they consume. However, this requires the development of systems of technological support for production that take into account technologies that are friendly both with the environment and with the agro-ecological conditions of where small farmers are located. This may include agricultural, forestry, and shepherding proposals, zero- or reduced-till systems, irrigation management systems of reduced environmental impact on soils, better rotation systems, fallowing, association crops, and agro-ecological technologies.

e. A field of family agriculture that is important fragility is its exposition to the potentially devastating effects of climate change, as evidenced by the several natural events such as floods, landslides, runoffs, hurricanes, and droughts. This must raise awareness towards the need for governments of the region to pay more attention towards actions to mitigate and adapt to climate change. In many well-documented cases, farming communities themselves have experiences that may very well be used. Among others, environmental NGOs have developed highly valuable experiences that may potentially be scaled up for use by larger populations; other government organisms and cooperation programs have carried out experiences of great relevance, even though these have not always incorporated the organisms related to agriculture and livestock production.

f. A particularly keen problem has to do with the conditions of plant and animal health in which family agriculture takes place. However, governments of the region have placed a lot of emphasis in those plagues and diseases that affect commercial crops, especially exportable ones, such as the fruit fly and foot and mouth disease, or have responded to health emergencies produced by intensive farming, beyond the limits said ecosystems can handle, as in the cases affecting salmon or shrimp; little attention has been given to other plagues and diseases affecting family agriculture above all, with effects on people's health. The so-called neglected diseases include, but are not limited to, fascioliasis, goat brucellosis and Malta fever, and sheep hidatidosis. Although the most effective eradication procedures are known for some of these diseases, this is not the case for all of them, nor have all countries made successful progress in eliminating them. This creates great losses not only in the health of the population, but also erases any possibility of selling livestock products to the markets.

RECOMMENDATIONS

This section lists several recommendations related to actions directed at supporting family agriculture, its interaction with the environment, and its implications on health issues. The actors that should participate in its implementation are identified for each one of them. Given the characteristics of this document, special emphasis will be given to aspects related to livestock production, both large and small.

a. A program for global and permanent collaboration between Agriculture and Public Health Ministries for the prevention and control of infectious diseases of animal origin must point towards, in the shortest time possible, a program that includes the following: an integrated research program, the establishment of interdisciplinary research centers focusing on zoonotic diseases with a corresponding infrastructural endowment, continuous surveillance of domestic animals, wildlife, and humans living in infection hot-spots, give support services to agricultural and livestock production, and, most importantly, emphasize

multidisciplinary coordination. This needs an ambitious regional effort that includes countries as well as the main financial and technical cooperation agencies of the region. It must be considered that at the world level, diseases originating in foods of animal origin are the most prevalent among food-related diseases, and they kill more people than HIV or malaria, and that 20% of new human diseases have this origin.

b. Support for cattle-raising activity in family agriculture in Latin America and the Caribbean and the creation of a regional collaboration group. Several policies are needed in order to increase productivity in cattle-raising activity in family farmlands, such as those that reward the sustainable use of soils, preservation of water and biodiversity, reduction of emissions, as well as better animal health to improve production and reduce the impact of zoonoses. Similarly, family producers need special credit lines, technical assistance and technologies that allow them to make the transition towards a more intensive livestock production, environmentally friendly, and competitive. It is suggested that the RIMSA supports the actions developed by FAO and IICA in the region in terms of support to family agriculture, but emphasizing a better understanding of cattle-raising activity within it, and the actions needed to achieve said objectives of livestock production of large, small, introduced, and native animals.

c. Research on small-scale livestock production in fragile ecosystems. Much of the livestock production undertaken by small farmers in family agriculture is done within fragile ecosystems such as tropical forests, Andean plateaus, the "puna", foothill areas, and semi-desert zones. Here, the presence of animals has hazardous effects on said ecosystems and its resources, contributing to serious problems such as erosion, deforestation, and desertification. It is absolutely necessary to develop research that helps in the identification of activities sustainable in these and neighboring zones. This means studies on animal genetics, animal raising and management, feeding, etc. The RIMSA should incite ILRI, and generally all of CGIAR's centers to work io such matters in Latin America and the Caribbean, as well as promote collaborative programs in livestock research centers and universities.

d. A little-known subject matter is the impact climate change has and will have on the livestock production of family agriculture, especially in fragile areas and eco-systems, and the answers that can be developed to adapt and mitigate its effects. The loss of livestock in such farms is not only an economic loss, but also of security and safety for families and homes. The main objective is developing efficient farms from the point of view of the emission of greenhouse gases per kilogram of animal protein produced. This obviously means developing a baseline of efficiency for livestock systems, upon which to develop systems with a lower effect on climate change. Once again, the RIMSA should call for CGIAR's institutions and national research centers to perform such research.

e. Regional notification and registration system of animal diseases with implications on human health, including neglected diseases. Even though the RIMSA and PAHO have promoted such systems on several diseases with consequences for human health, it should be broadened and perfected, and geo-referencing and early-warning systems should be developed, as well others that focus on actions for prevention and eradication.

f. Research on neglected diseases. PAHO and the RIMSA should continue to develop research on the several zoonoses that exist in the region, encourage research on them by Latin American universities, and make an assessment at least once every ten years of the knowledge on and the state of zoonoses in the region, including innovative experiences regarding early detection, prevention, eradication, and the involvement of local actors such as local governments and communities.

g. Continuous support for programs of disease eradication, such as foot and mouth disease, brucellosis, bovine tuberculosis, especially on aspects that are still an open question regarding diagnosis through indirect methods, effectiveness of vaccines, and the epidemiology of these zoonoses through the consumption of fresh food. Particular emphasis should be given to achieving the eradication of said diseases in specific zones of each country, as well as making additional efforts where such diseases are chronic. A specific field were more efforts should be made is that of diseases in marine species raised in captivity such as shrimp, salmon, and tilapia, especially where small-scale aquaculture is concerned.

h. Promoting agreements between bordering countries for the use of similar surveillance procedures and epidemiological control. The RIMSA should play an important role in encouraging such agreements on surveillance and epidemiological control of the several zoonoses that exist, particularly those present in

border zones between countries. Mixed bi-national committees on agriculture and health may create an agreement mechanism is efficient and on which both parties may agree.

i. Develop, along with Health Ministries and/or coordinators of social policy, programs directed at the eradication of human diseases of animal origin, associated to poverty conditions. Programs such as conditional cash transfer in prevalent zones could help focus the attention given to health on those diseases, especially if the more affected zones are known. For this, the strengthening of local governments and health agencies located in these territories must be considered in order to achieve preventive and eradication actions.

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ANNEXS

TABLE 1

POBLACION TOTAL (MILLARES)							
	POBLACION TOTAL				POBLACION RURAL (% DEL TOTAL)		
GRUPOS DE PAISES	1980	1995	2010	2011	1980	1995	2010
MUNDO	**4.428.081**	**5.713.069**	**6.908.685**	**6.987.000**	**61%**	**55%**	**49%**
TOTAL AMERICA	**616.751**	**782.338**	**940.306**	**942.000**	**36%**	**30%**	**24%**
AMERICA DEL NORTE	254.097	300.073	351.659	346.000	26%	23%	18%
AMERICA CENTRAL	91.879	124.004	153.115	158.000	40%	33%	28%
CARIBE	29.860	36.640	42.311	42.000	48%	41%	33%
AMERICA DEL SUR	240.915	321.621	393.221	396.000	32%	23%	16%
AMERICA LATINA Y EL CARIBE	362.654	482.265	588.647	596.000	35%	27%	21%
Fuente: FAO, El Estado Mundial de la Agricultura y la Alimentación 2010-2011, CUADRO DE DATOS DE POBLACION MUNDIAL 2011							

TASA DE CRECIMIENTO POBLACIONALPOR REGION				
Area	1990-1995	1995-2000	2000-2005	2005-2010
MUNDO	1,523	1,339	1,216	1,162
AMERICA LATINAN Y EL CARIBE	1,713	1,546	1,321	1,153
CARIBE	1,265	1,070	0,883	0,718
AMERICA CENTRAL	1,910	1,685	1,400	1,394
AMERICA DEL SUR	1,688	1,545	1,338	1,104
AMERICA DEL NORTE	1,012	1,152	0,993	0,908
Fuente: United Nations, World Population Prospects: The 2010 Revision, 2050-2010				

TABLE 2

AMERICA LATINA Y EL CARIBE. TASAS DE VARIACION ANUAL DEL PRODUCTO INTERNO BRUTO												
REGIONES	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**	**2008**	**2009**	**2010**	**PROMEDIO 2000 - 2010**
AMERICA CENTRAL	3,82	1,62	2,37	3,41	4,63	4,79	6,05	6,20	3,66	(1,41)	4,12	3,57
CARIBE	3,66	1,96	3,51	6,07	3,74	3,57	7,62	3,15	1,00	(3,06)	0,16	2,85
AMERICA DEL SUR	1,94	1,07	(1,26)	2,61	7,83	5,94	5,96	6,46	6,20	0,04	6,47	3,93
AMERICA LATINA Y EL CARIBE	4,43	0,72	0,49	1,82	5,85	4,57	5,60	5,61	3,99	(2,03)	5,92	3,36
Fuente: CEPALSTAT												

TABLE 3

AMERICA LATINA Y EL CARIBE. IMPORTANCIA EN LA ECONOMIA, GENERACION DE DIVISAS Y EMPLEO			
AÑO	**% VALOR AGREGADO AGRICOLA / PIB TOTAL**	**% EXPORTACIONES AGRICOLAS/TOTAL**	**EMPLEO AGRICOLA/TOTAL**
2000	5,6%	8%	16,3%
2001	5,8%	8%	18,3%
2002	6,8%	8%	17,9%
2003	7,1%	9%	18,3%
2004	6,8%	8%	18,3%
2005	6,1%	7%	17,6%
2006	5,8%	7%	17,2%
2007	6,0%	8%	15,8%
2008	6,3%	8%	14,4%
2009	6,0%	9%	14,9%
2010	6,3%	9%	
PROMEDIO	**6,2%**	**8%**	**16,9%**
Fuente: http://datos.bancomundial.org / CEPAL. Publicaciones Estadísticas. http://websie.eclac.cl/anuario_estadistico/anuario_2011/esp/content_es.asp			

TABLE 4

AMERICA LATINA Y EL CARIBE. IMPORTANCIA DE LA AGRICULTURA FAMILIAR						
	Número de explotaciones familiares	**% de explotaciones**	**% de la Tierra**	**Superficie Media de la Explotación familiar**	**PARTICIPACION DE LA AGRICULTURA FAMILAR EN EL EMPLEO SECTORIAL 6/**	**Participación en la Producción Sectorial (%)**
ARGENTINA 1/	251.116	51%	18%	100		19%
BOLIVIA 8/	550.000	92%	11%			
BRASIL 4/	4.139.369	84%	31%	26	77%	38%
CHILE 4/	284.388	87%	13%	23	57%	27%
COLOMBIA 4/	737.949	87%	57%	3	57%	41%
COSTA RICA 5/	76.000	82%			36%	41%
ECUADOR 4/	739.952	88%	41%	7		45%
EL SALVADOR	134.000	82%		2,27	51%	43%
GUATEMALA 3/	631.320	98%	43%	1,52	62%	49%
HONDURAS 5/	377.000	90%			77%	57%
MEXICO 4/	4.834.419	78%	40%	6	70%	39%
NICARAGUA 4/	286.395	78%	67%	6,7	65%	67%
PANAMA 5/	120.300	93%		3,9	71%	71%
PARAGUAY 9/	266.000	84%	6%	5,5		20%
PERU 7/	2.170.000	97%	53%	1		70%
REP. DOMINICANA 13/	63.833	83%			83%	
URUGUAY 2/ 12/	39.000	74%	15%	100		30%
CANADA 10/	190.393	83%				63%
ESTADOS UNIDOS 11/	1.940.217	88%				16%
TOTAL	**17.831.651**	**84%**	**33%**	**22**	**64%**	**43%**

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Fuente: CEPAL - FAO

TABLE 5

AMERICA LATINA. NIVELES DE POBREZA (PORCENTAJE)												
	Total Nacional				Total Urbano				Total Rural			
PAIS	**2000**	**2005**	**2009**	**2010**	**2000**	**2005**	**2009**	**2010**	**2000**	**2005**	**2009**	**2010**
Argentina						26,0	11,3	8,6				
Brasil		36,4	24,9			32,9	22,1			53,3	39,3	
Chile	20,2		11,5		19,7		11,7		23,7		10,4	
Colombia		50,6	45,7	44,3		45,1	39,7	38,5		67,3	64,5	62,7
Costa Rica		21,1	18,9	18,5		20,0	18,5	17,0		22,7	19,5	20,8
Ecuador		48,3	42,2	39,2		45,2	40,2	37,1		54,5	46,3	43,2
El Salvador			47,9	46,6			42,3	41,1			57,6	55,8
Honduras			65,7	67,4			54,5	56,3			75,1	76,5
México	41,1	35,5		36,3	32,3	28,5		32,3	54,7	47,5		42,9
Nicaragua		61,9				54,4				71,5		
Panamá		31,0	26,4	25,8		21,7	16,3	15,1		47,2	43,9	44,8
Paraguay		56,9	56,0	54,8		53,4	48,2	46,5		61,6	67,1	66,6
Perú		48,7	34,8	31,3		36,8	21,1	19,1		70,9	60,3	54,2
República Dominicana		47,5	41,1	41,4		45,4	39,3	39,6		51,4	44,7	45,2
Uruguay		...	10,4	8,4		18,8	10,7	8,6			5,9	4,2
Venezuela		37,1	27,1	27,8								
América Latina		**39,7**	**33,0**	**31,4**		**34,0**	**27,3**	**26,0**		**59,8**	**54,9**	**52,6**
Fuente: CEPAL en base a los datos estadísticos de los países. (base estadística CEPAL)												

TABLE 6

DISTRIBUCION TOTAL DE PERSONAS EN SITUACION DE POBREZA EN ZONAS RURALES		
(PORCENTAJES DEL TOTAL DE LA POBLACION RURAL OCUPADA EN SITUACION DE POBREZA)		
PAISES	**ASALARIADOS SECTOR PRIVADO**	**TRABAJADORES POR CUENTA PROPIA**
BOLIVIA (2004)	10%	84%
BRASIL (2006)	27%	69%
CHILE (2006)	66%	30%
COLOMBIA (2005)	29%	68%
COSTA RICA (2006)	29%	58%
ECUADOR (2006)	26%	71%
EL SALVADOR (2004)	47%	51%
GUATEMALA (2002)	34%	63%
HONDURAS (2006)	31%	61%
MEXICO (2006)	52%	45%
NICARAGUA (2001)	27%	65%
PANAMA (2006)	15%	84%
PARAGUAY (2005)	17%	79%
PERU (2003)	11%	85%
DOMINICANA (2006)	36%	55%
VENEZUELA (1994)	48%	45%
Fuente: Elaborado a partir de CEPAL (2008a). Cuadro anexo 10. Los porcentajes excluyen a los empleados públicos		

INCIDENCIA DE POBREZA RURAL SEGÚN GRUPOS OCUPACIONALES (PORCENTAJES)				
	ASALARIADOS		**TRABAJADORES POR CUENTA PROPIA**	
PAISES		**PRIVADOS**	**TOTAL**	**AGRICULTURA**
BOLIVIA (2004)	31%	75%	83%	87%
BRASIL (2006)	24%	32%	48%	48%
CHILE (2006)	4%	10%	7%	8%
COLOMBIA (2005)	7%		50%	44%
COSTA RICA (2006)	2%	9%	27%	42%
ECUADOR (2006)	8%	40%	52%	56%
EL SALVADOR (2004)	16%	50%	59%	76%
GUATEMALA (2002)	27%	62%	65%	73%
HONDURAS (2006)	24%	85%	86%	89%
MEXICO (2006)	21%	43%	38%	50%
NICARAGUA (2001)	46%	67%	80%	87%
PANAMA (2006)	4%	24%	60%	68%
PARAGUAY (2005)	21%	53%	70%	72%
PERU (2003)	27%	65%	76%	79%
DOMINICANA (2006)	33%	45%	35%	57%
VENEZUELA (1994)	27%	50%	42%	44%
Fuente: CEPAL (2008A) OP.CIT. Cuadro anexo 8. 1/ Empleados en empresas hasta 5 ocupados.				

TABLE 7

ESTRUCTURA DEL EMPLEO RURAL POR GRUPOS DE CATEGORIA OCUPACIONALES		
PORCENTAJES		
PAISES	**RELACIONES ASALARIADAS**	**EMPRESAS FAMILIARES**
BOLIVIA	20%	80%
BRASIL	39%	61%
CHILE	70%	30%
ECUADOR	42%	58%
GUATEMALA	36%	64%
HONDURAS	38%	62%
MEXICO	58%	42%
PARAGUAY	24%	76%
PERU	22%	78%
Fuente: Tabulaciones especiales del Proyecto CEPAL -FAO (2008)		

TABLE 8

AMERICA LATINA Y EL CARIBE. AGRICULTURA FAMILIAR Y SU CONTRIBUCION A LA PRODUCCION DE ALIMENTOS								
PAISES	**PRODUCTOS**							
CHILE 1/	**CEREALES Y CULTIVOS**	**FRUTALES**	**HORTALIZAS**	**FREJOL**	**TRIGO**	**MAIZ**	**PAPAS**	
	39%	29%	63%	67%	30%	21%	57%	
COLOMBIA 2/	**PAPA**	**YUCA**	**MAIZ**	**HORTALIZAS**	**FREJOL**	**ARROZ**	**FRUTALES**	**CAFÉ**
	45%	100%	54%	21%	100%	4%	21%	76%
ECUADOR	**PAPAS**	**CEBOLLAS**	**MAIZ**	**MAIZ SUAVE**	**ZANAHORIA**	**COL**		
	64%	85%	70%	85%	80%	75%		
PERU	**PAPA**	**MAIZ**						
	44%	50%						
BOLIVIA 5/	**PAPA**	**FRUTALES**	**TRIGO**	**ARROZ**	**MAIZ**			
	90%	95%	50%	50%	50%			
BRASIL 3/	**YUCA**	**FREJOL**	**VEGETALES**	**MAIZ**	**TRIGO**	**ARROZ**	**CAFÉ**	
	84%	67%	60%	49%	46%	31%	25%	
PARAGUAY 3/	**BANANAS**	**AZUCAR DE CAÑA**	**FREJOL**	**TOMATES**	**YUCA**			
	90%	80%	75%	70%	45%			
URUGUAY 3/	**HORTALIZAS**	**FRUTAS**						
	88%	38%						
CANADA 4/	**FRUTAS Y VEGETALES**	**CULTIVOS**						
	88%	84%						
1/ Porcentaje de la producción en base al cálculo de valor agregado para agricultura familiar.								
2/ Porcentaje del valor de la producción de agricultura familiar dividido para el valor de la producción total.								
3/ Susana Márquez and Alvaro Ramos. En Differential Policies for Family Farming in Mercosur. Contribution of Political Dialogue in the Design of Public Policies and Institutionalization. International Fund fo Agricultural Development.								
4/ The financial picture of farms in Canada. 2006. Proportion of farms by receipts class by farm type. (under $250.000)								
5/José Antonio Peres Arenas y Gustavo Ignacio Medeiros Urioste. La Inversión Pública en la Agricultura. El caso de Bolivia. Enero 2011.								

Fuente: CEPAL, FAO

TABLE 9

AMERICA LATINA, AGRICULTURA FAMILIAR, CONTRIBUCION A LA PRODUCCION DE ALIMENTOS DE ORIGEN ANIMAL						
	CARNE BOVINA	**CARNE DE AVES / HUEVOS**	**CARNE DE CERDO**	**OTROS ANIMALES**	**OVINOS**	**VACAS LECHE**
CANADA 1/	92%	43%	43%	95%		43%
CHILE 2/	47%				72%	42%
URUGUAY 3/	79%	85%	84%			74%
ARGENTINA 4/	26%		64%	82%	25%	33%
BRASIL 4/	24%	50%	59%			58%
PARAGUAY 4/		70%	80%			55%
ECUADOR 5/			70%		82%	42%
BOLIVIA						67%
1/ The financial picture of farms in Canada. Census of Agriculture: 2006. Farms under $ 250.000						
2/ Evolución de la Agricultura Familiar en Chile en el Período 1997-2007. FAO. Porcentaje de número de cabezas						
3/ I Programa Nacional de Investigación Producción Familiar. Http://www.inai.org.uy/online/site/21466811.php						
4/ Susana Márquez and Alvaro Ramos. En Differential Policies for Family Farming in Mercosur. Contribution of Political Dialogue in the Design of Public Policies and Institutionalization. International Fund fo Agricultural Development.						
5/ FAO - CEPAL . 2007						

TABLE 10

VALOR DE LA PRODUCCION TRANSABLE DE LA AGRICULTURA FAMILIAR			
CATEGORIA DE COMERCIO	**CHILE**	**COLOMBIA**	**ECUADOR**
EXPORTABLE	24%	65%	32%
IMPORTABLE	42%	10%	27%
NO TRANSABLE	34%	25%	41%
Fuente: Soto Baquero, F., Rodríguez Fazzone, M. y Falconi, C. Políticas para la Agricultura Familiar para América Latina y el Caribe".			

TABLE 11

ESTADÍSTICAS E INDICADORES ECONÓMICOS

Estadísticas Sectoriales: Agricultura

Índices de producción de alimentos por habitante

(Año base: promedio anual trienio 1999-2001=100)

	AÑOS							
PAIS	**2000**	**2001**	**2002**	**2003**	**2004**	**2005**	**2006**	**2007**
Antigua y Barbuda	98,0	100,0	100,0	101,0	101,0	95,0	93,0	94,0
Argentina	99,0	99,0	95,0	101,0	102,0	112,0	111,0	117,0
Bahamas	88,0	91,0	89,0	96,0	99,0	100,0	92,0	92,0
Barbados	104,0	93,0	92,0	92,0	99,0	106,0	106,0	113,0
Belice	103,0	102,0	92,0	92,0	104,0	102,0	98,0	95,0
Bolivia	102,0	100,0	103,0	108,0	104,0	107,0	100,0	98,0
Brasil	98,0	103,0	108,0	116,0	118,0	120,0	115,0	119,0
Chile	98,0	105,0	104,0	104,0	107,0	112,0	111,0	107,0
Colombia	100,0	101,0	101,0	100,0	105,0	105,0	92,0	89,0
Costa Rica	99,0	99,0	94,0	96,0	94,0	100,0	104,0	107,0
Cuba	105,0	104,0	107,0	108,0	112,0	92,0	79,0	82,0
Dominica	103,0	95,0	93,0	86,0	87,0	85,0	98,0	101,0
Ecuador	98,0	101,0	102,0	102,0	108,0	106,0	101,0	103,0
El Salvador	102,0	96,0	96,0	88,0	93,0	96,0	100,0	104,0
Granada	102,0	91,0	106,0	92,0	97,0	67,0	79,0	84,0
Guatemala	100,0	99,0	102,0	100,0	100,0	110,0	111,0	115,0
Guyana	98,0	101,0	94,0	105,0	104,0	89,0	100,0	99,0
Haití	103,0	97,0	98,0	98,0	95,0	96,0	92,0	90,0
Honduras	101,0	101,0	109,0	119,0	122,0	125,0	126,0	125,0
Jamaica	95,0	100,0	96,0	98,0	95,0	90,0	95,0	93,0
México	98,0	102,0	101,0	105,0	107,0	105,0	112,0	113,0
Nicaragua	104,0	104,0	106,0	116,0	114,0	121,0	119,0	118,0
Panamá	99,0	99,0	98,0	96,0	95,0	97,0	97,0	97,0
Paraguay	95,0	104,0	102,0	111,0	105,0	106,0	111,0	131,0
Perú	101,0	101,0	106,0	108,0	108,0	117,0	122,0	125,0
República Dominicana	97,0	105,0	107,0	113,0	114,0	117,0	127,0	123,0
Saint Kitts y Nevis	99,0	96,0	95,0	94,0	116,0	59,0	52,0	55,0
San Vicente y las Granadinas	103,0	95,0	105,0	95,0	97,0	93,0	95,0	97,0
Santa Lucía	98,0	86,0	100,0	85,0	88,0	76,0	80,0	82,0
Suriname	95,0	102,0	87,0	93,0	93,0	93,0	101,0	100,0
Trinidad y Tabago	105,0	104,0	129,0	116,0	109,0	107,0	105,0	107,0
Uruguay	101,0	89,0	92,0	97,0	120,0	117,0	130,0	125,0
Venezuela	100,0	102,0	100,0	93,0	88,0	97,0	94,0	96,0
PROMEDIO	**100**	**99**	**100**	**101**	**103**	**101**	**101**	**103**

Fuente: CEPALSTAT

TABLE 12

DOTACION DE SERVICIOS DE APOYO			
BRASIL			
SUPERFICIE	% UNIDADES PRODUCTIVAS MECANIZADAS	%UNIDADES PRODUCTIVAS Y USO DE ABONOS	% UNIDADES PRODUCTIVAS Y ASISTENCIA TECNICA
0-5 HA	22%	24%	9%
5-20 HA	22%	33%	12%
20-50 HA	32%	51%	25%
50-100 HA	52%	69%	44%

CHILE		MEXICO	
SUPERFICIE	% SUPERFICIE REGADA	SUPERFICIE	%TRACTORES EN UNIDADES PRODUCTIVAS
0-1 HA	64%	0-2 HA	25%
1-5 HA	39%	2-5 HA	36%
5-10 HA	35%	5-20 HA	49%
10-20 HA	35%	20-50 HA	45%
20-50 HA	32%	50-100 HA	50%
50-100 HA	30%	+ 100 HA	67%
100 - 200 HA	32%		
200 - 500 HA	32%		
+ 500 HA	32%		

ECUADOR			
SUPERFICIE	% SUPERFICIE REGADA	% UNIDADES CON LUZ	% DE MAQUINARIA EN UNIDADES PRODUCTIVAS
0-1 HA	0%	17%	0,0%
1-5 HA	1%	29%	0,0%
5-10 HA	3%	35%	1,4%
10-20 HA	5%	44%	1,7%
20-50 HA	10%	55%	1,8%
50-100 HA	23%	61%	2,1%
+ 100 HA	90%	54%	3,5%

NICARAGUA				
SUPERFICIE	%CREDITO EN UNIDADES PRODUCTIVAS	% UNIDADES PRODUCTIVAS REGADAS	%TRACTORES EN UNIDADES PRODUCTIVAS	% UNIDADES PRODUCTIVAS CON ASISTENCIA TECNICA
0-1 HA	8%	1%	2%	9%
1-5 HA	18%	2%	4%	15%
5-10 HA	19%	1%	4%	18%
10-20 HA	18%	1%	4%	18%
20-50 HA	13%	1%	3%	15%
50-100 HA	11%	1%	3%	13%
+ 100 HA	12%	2%	8%	16%

Fuente: La Agricultura Familiar en América Latina. Marcelo Carmagnani. 2008. FAO.
Datos de Brasil en base al Censo Agropecuario de 1996
Datos de Chile en base al Censo Agropecuario de 1997
Datos de Ecuador en base al Censo Agropecuario de 2000
Datos de Nicaragua en base a CENAGRO 2001

Datos de México en base a CAG 1991 Y Grammont, 2000

TABLE 13

Recuadro 1

Ejemplos de Programas de apoyo a la agricultura familiar para la producción de alimentos básicos

Argentina tiene programas para mejorar las condiciones de financiamiento para los ganaderos y tamberos. www.sagpya.mecon.gov.ar

Bolivia cuenta con un plan de financiamiento productivo y el programa para la Mecanización del Agro. www.bdp.com.bo

Brasil ejecuta el programa *Mais Alimentos* para el fortalecimiento de la agricultura familiar. Además, en marzo 2009, el Banco de Brasil liberó más de R$2 mil millones para la compra de insumos utilizados para la producción de soja y maíz. www.mda.gov.br

Ecuador reactiva el programa Vamos a Sembrar, que incluye acciones en los campos de la innovación tecnológica, organización y capacitación, así como la legalización de las comunas.

Guatemala, Honduras, Nicaragua, El Salvador (www.pesacentroamerica.org/) Los programas PESA co-financiados por AECID, contribuyen al desarrollo de buenas prácticas SAN cuya incidencia desde el apoyo a las familias rurales pobres quiere retroalimentar el proceso de formulación, implementación y seguimiento de políticas SAN a nivel nacional.

Chile entrega un Bono de Fertilizantes para productores de trigo con el objetivo de mejorar la competitividad de este sector. www.indap.gob.cl

Colombia ha creado incentivos para la producción de granos básicos en las principales zonas cafetaleras del país, con el objetivo de garantizar su abastecimiento en la época de cosecha. PROSEAN-FAO (http://www.prosean-fao.org/) apoya al Programa Red de Seguridad Alimentaria ReSA de la agencia presidencial para la Acción Social y la Cooperación Internacional que impulsa proyectos de producción de alimentos para autoconsumo con el fin de estimular la permanencia en el campo de la población en riesgo de desplazamiento y/o permitir el retorno de la población desplazada a sus tierras, recobrado en parte su capacidad productiva.

Costa Rica está ejecutando el ambicioso Plan Nacional de Alimentos con el objetivo de conciliar el desarrollo del sector productor de alimentos con la garantía del abastecimiento nacional y la reducción de la pobreza. www.casapres.go.cr

México implementa el Programa Nacional de Maíz y Frijol. Asimismo, reajusta y actualiza PROCAMPO ampliando y anticipando las transferencias a productores de menos de 5 hectáreas cuyas siembras se realizan en el ciclo agrícola primavera-verano 2009. www.sagarpa.gob.mx A través del proyecto estratégico para la seguridad alimentaria – PESA – (http://www.sagarpa.gob.mx/saladeprensa/boletines/paginas/detalle.aspx?SiteUri=http://www.sagarpa.gob.mx/saladeprensa/boletines&ListUri=Boletines%202010&ItemID=397) la SAGARPA tiene un instrumento para llegar a los productores que viven en zonas de alta y muy alta marginación , se aseguran mejores niveles de alimentación para las familias y se contribuye a reducir la pobreza con la operación de diversos proyectos productivos.

Perú crea el Programa Munitractor para facilitar el acceso al crédito a pequeños agricultores para adquirir maquinaria. www.minag.gob.pe

Venezuela apoya la producción a través del programa Todas las Manos Siembran y reparte insumos a través del Fondo de Desarrollo Agrario Socialista (FONDAS), que financió en 2008 la producción en 450.000 mil hectáreas. www.mat.gob.ve

TABLE 13 (cont.)

Recuadro 2

Algunos ejemplos de cómo se ha extendido el mecanismo de compras públicas

Brasil. Se ampliaron las compras públicas de alimentos para formar reservas (maíz, trigo, arroz) que subasta periódicamente para influir en la formación de precios al consumidor.

Ecuador. A través de Nutriendo el Desarrollo, incluye a 2.800 pequeños productores de leche en el programa de compras públicas del Gobierno Nacional, para después destinar la leche comprada a los programas públicos de alimentación.

Guatemala. Para enfrentar una situación de desabastecimiento, resultado de una fuerte sequía, el Gobierno en agosto de 2009 importa 150.000 quintales en granos básicos, cuyo valor asciende a US$ 7,5 millones. Otros US$17 millones se invertirán en la compra de insumos y ayudas alimentarias.

El Salvador. Para enfrentar una previsible reducción en las cosechas de maíz debido al fenómeno climático El Niño, el Gobierno está planificando la importación directa de semillas e insumos agrícolas para asegurar la siguiente siembra.

Nicaragua. Se realizaron compras públicas de frijol a más de 30.000 pequeños productores, garantizándoles precios mínimos y compromisos de compras futuras a través de la Empresa Nacional de Abastecimiento. www.enabas.gob.ni

Colombia. Se realizó la adquisición pública temporal de excedentes de la producción de leche para su distribución a través del Instituto de Bienestar Familiar. www.icbf.gov.co

Venezuela. El Gobierno garantizó las importaciones de los rubros básicos para la canasta alimentaria a través del Plan de Siembra Petrolera, que consiste en traspasar los recursos de reservas internacionales al Fondo de Desarrollo de la Nación (FONDEN). www.inia.gob.ve

Recuadro 3

Programa de Adquisición de Alimentos de la Agricultura Familiar (PAA)

El PAA es una de las acciones estructurales del Programa Hambre Cero en Brasil, cuyo objetivo es vincular la producción local con el consumo de alimentos. Entre sus objetivos está constituir reservas mínimas de productos de la canasta básica a través de la compra directa y anticipada de la producción de la agricultura familiar en las propias regiones de consumo, y distribuir esos alimentos para el consumo de poblaciones en situación de riesgo alimentario.

El Programa permite la adquisición gubernamental de alimentos de la agricultura familiar sin licitación, hasta un valor máximo de 5.000 reales al año. Los productos comprados deben ser donados para la alimentación escolar, para poblaciones que estén en riesgos nutricionales y para entidades públicas como guarderías, hospitales y otros. En junio del 2009 el programa había invertido aproximadamente US$ 20,5 millones para la compra a 97.000 productores. www.fomezero.gov.br

TABLE 14

PARTICIPACION PROMEDIO DE LAS IMPORTACIONES DE ALIMENTOS EN LA OFERTA DOMESTICA CALORICA (PORCENTAJES)			
PAISES	**2000/05**	**2005/07**	**Importancia de la agricultura familiar en la producción sectorial**
Argentina	66%	51%	19%
Brasil	9%	8%	38%
Canadá	11%	12%	63%
Chilé	24%	30%	27%
Colombia	29%	34%	41%
Costa Rica	50%	55%	41%
Ecuador	19%	26%	45%
El Salvador	51%	49%	43%
Estados Unidos	3%	4%	16%
Guatemala	46%	47%	49%
Honduras	16%	32%	57%
México	31%	29%	39%
Nicaragua	23%	26%	67%
Panamá		53%	71%
Paraguay	1%	3%	20%
Perú	31%	34%	70%
Venezuela	35%	30%	30%
Fuente: IICA, con base en la información oficial de las Naciones Unidas (COMTRADE) y la FAO (FAOSTAT)			

TABLE 15

TIPOS DE AGRICULTURA FAMILIAR			
PAISES	**AGRICULTURA FAMILIAR SUBSISTENCIA**	**AGRICULTURA FAMILIAR TRANSICION**	**AGRICULTURA FAMILIAR CONSOLIDADA**
Argentina	52%	27%	22%
Bolivia	67%	23%	10%
Brasil	66%	24%	10%
Chile	54%	43%	3%
Colombia	79%	13%	8%
Ecuador	62%	37%	1%
Guatemala	46%	48%	6%
México	57%	29%	15%
Nicaragua	76%	17%	7%
Paraguay	63%	27%	11%
Perú	46%	35%	19%

Uruguay	52%	27%	22%
TOTAL	60%	28%	12%

Fuente: Alexander Schejtman, En Alcances sobre la Agricultura Familiar en América Latina, 2008, Cuadro 2.

TABLE 16

AMERICA LATINA Y EL CARIBE. PREVALENCIA DE LA SUBNUTRICION

PAISES	No. Personas subnutridas (millones) (2006-08)	Variación hasta la fecha (%)	Progreso hacia el objetivo de la CMA 1/	Proporción de personas subnutridas en la población total 2006 - 2008 (%)	Variación hasta la fecha (%)	Progreso hacia la meta del ODM 2/
Argentina	n.s.	n.d.		-	n.d.	
Bolivia	2,5	29,7		27	-7	
Brasil	11,7	-31,5		6	-45	
Chile	n.s.	n.d.		-	n.d.	
Colombia	4,1	-20,7		9	-40	
Costa Rica	n.s.	n.d.		-	n.d.	
Ecuador	2	-16,1		15	-34	
El Salvador	0,6	-17,6		9	-27	
Guatemala	2,9	113,4		22	46	
Guyana	0,1	-60,6		8	-61	
Honduras	0,9	-10,6		12	-37	
México	n.s.	n.d.		-	n.d.	
Nicaragua	1,1	-50,4		19	-62	
Panamá	0,5	10,4		15	-19	
Paraguay	0,6	-11,3		10	-37	
Perú	4,5	-26,1		16	-42	
Suriname	0,1	27,9		15	3	
Uruguay	n.s.	n.d.		-	n.d.	
Venezuela	1,9	-6,5		7	-32	
Cuba	n.s.	n.d.		-	n.d.	
Haití	5,5	21,7		57	-9	
Jamaica	0,1	-52,3		5	-58	
República Dominicana	2,3	11,7		24	-14	
Trinidad y Tobago	0,2	14,2		11	6	

Fuente: FAO, El Estado de la Inseguridad Alimentaria en el 2011, Anexo Técnico.

1/ CMA: Objetivo de la Cumbre Mundial sobre la Alimentación

2/ ODM: Objetivo de desarrollo del Milenio

3/ Significado de los colores:

- El objetivo ya ha sido alcanzado o se espera que haya sido alcanzado para el 2015
- Progreso insuficiente para alcanzar el objetivo si la tendencia actual persiste
- Progreso nulo o deterioro
- El país tiene una proporción inferior al 5% de personas subnutridas

4/ n.d. no disponible.

5/ n.s. cifra estadísticamente significativa