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Latin American challenges: the role of the European Union

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Latin American challenges: the role of the European Union

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Food security in Latin America in the face of climate change

Abstract

Climate change is one of the most relevant and controversial issues discussed in the international community. Despite controversies, there is little doubt that its impacts are catastrophic. Even though Latin America produces lower levels of emissions of greenhouse gases in comparison to other parts of the world, it is especially vulnerable to their effects. Agriculture, which is a key productive sector in the region, is seriously threatened by the impacts of climate change. A recent report published by FAO, ECLAC and LAIA suggests that Latin American countries must implement climate change management into the CELAC Plan for Food and Nutrition Security and Eradication of Hunger 2025. Although Latin America is a rich region capable of producing enough food to meet the needs of its inhabitants and more, an increasing number of its population are unable to access it (42,5 million people in 2016). In this sense, climate change can deepen this problem if countries do not meet sustainable development measures to adapt their agriculture to climate change. This paper aims to analyze: which are the areas under significant threat, how Latin American governments and regional organizations are dealing with food security and climate change and the role of the European Union and their multimillion (€925 million) regional cooperation program for 2014-2020.

Introduction

The term “food security” has been evolving for thirty years. However, the most widely accepted definition comes from the 1996 World Food Summit: “*Food security exists when all people, at all times, have physical and economic access to sufficient safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life*” (FAO 2006). This concept primarily adopted by multilateral organizations, such as the Food and Agriculture Organization of the United Nations (FAO), the World Food Programme (WFP) and the World Health Organization (WHO) is being actively studied and promoted throughout a variety of programs in different parts of the world.

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One of the most important studies is the annual State of Food Security and Nutrition in the World published by FAO. According to the latest study, Africa is the continent with the highest prevalence of undernourishment in the world with 20% of its population suffering from it, then Asia (11.7%)², Oceania (6.8%), Latin America and the Caribbean (6.6%), and North America and Europe (2.5%). Nevertheless, the most concerning finding is that after a prolonged decline, world hunger is on the rise again, the number of undernourished people has increased from 777 million in 2015 to 815 million in 2016. The explanations that this report outlines in order to understand what is happening are: the great number of conflicts, the accelerated climate shocks and the economic slowdown. Therefore, if these issues are not seriously addressed, the prospects of economic growth and prosperity will be incredibly diminished in this century and beyond. (FAO, IFAD, UNICEF, WFP, WHO, 2017)

Chart 1: Comparison of prevalence and number of undernourished people by region. The size of the circles represents the number of undernourished people in millions.



Source: FAO, IFAD, UNICEF, WFP, WHO 2017.

Particularly, climate change and extreme weather events cannot only increase food insecurity in terms of availability and access but also can intensify armed conflicts and mass migration flows³ (Popovski 2017). Research shows that

² The prevalence of undernourishment is highest in Africa; the absolute number of undernourished people is largest in Asia. (FAO, IFAD, UNICEF, WFP, WHO 2017).

³ Although there is not yet concrete evidence that global warming directly increases conflicts, personalities such as the former U.N. Secretary General Ban Ki-Moon has suggested that the

the future and the already observable effects of climate change are: long periods of drought, frequent wildfires, animal and plant range shifts, trees flowering sooner, shrinking glaciers, powerful storms, loss of sea ice, accelerated sea level rise and more intense heat waves (NASA). For these reasons, agriculture could be the most affected sector as crops need not only sustainable soil but also water and sunlight to grow. The anomalies provoked by high temperature will severely impact food production, some areas where agriculture has been practiced for years might be no longer useful (EEA 2015). Moreover, agriculture can be a problem itself, not only as a contributor to climate change but as a sufferer. Farming and livestock production release significant amounts of methane and nitrous oxide, both greenhouse gases. In this sense, it is vital to adapt sustainable agriculture techniques that will reduce greenhouse gas emissions and protect food security (EEA 2015).

Underdeveloped and developing countries are predominantly vulnerable to climate change as their economies depend in large scale on agriculture. Although these countries are not the main contributors to climate change, between 2001 and 2011, global emissions of greenhouse gases generated by agriculture grew by 14%, particularly due to a significant rise of agriculture⁴ in these countries (EEA 2015). Even though climate change will not affect all regions in the same way or intensity, developing nations will remain particularly exposed to it. According to the European Environment Agency, this trend is not going to change neither in the short term nor the long term, as the world needs to produce more food to meet its population needs.

Latin American food security and climate change

Latin American countries have achieved excellent results in reducing hunger in recent decades. In large part thanks to an unprecedented economic growth, hunger fell from 14.7% in 1990-93 to 7.9% in 2010-2013 (FAO LAC 2017). In addition, Latin America and the Caribbean managed to reduce their proportion of undernourished population by 60% achieving the remarkable accomplishment of being the only region in the world to achieve the goal of “halving the percentage of people suffering from hunger” set by the 2015 Millennium Development Goals (MDGs). By achieving these results FAO has named Latin America and the Caribbean as the foremost region in fighting global hunger (FAO LAC 2017).

Even though this region achieved extraordinary results, new data presented in 2017 shows that undernourishment increased by 2,4 million people from 2015 to 2016. This number indicates that Latin America challenges are far from being solved.

Darfur conflict was the first climate change related conflict. Moreover, the U.S. National Academy of Sciences claims that rising temperatures in Africa have coincided with significant increases in the likelihood of war (Popovski 2017).

⁴ The increase of food international prices (2004-2014), influenced the intensification of agriculture.

It also evidences the weaknesses the region still faces in this matter.⁵ Clearly, climate change is one of these challenges, which might be one of the most concerning in the long term. (FAO 2017) The region has a considerable economic dependence on agriculture as this sector represents 5% of the regional GDP, 23% of regional exports and 16% of the economically active population. Therefore, Latin America needs an urgent paradigm shift “a fully sustainable agriculture model that protects its natural resources, generates equitable socio-economic development and allows adaptation and mitigation of climate change effects”. (ECLAC, FAO, LAIA. 2016) For this reason, ECLAC suggests that it is imperative that Latin American countries implement climate change management into food and nutrition security and hunger eradication goals set for 2025.

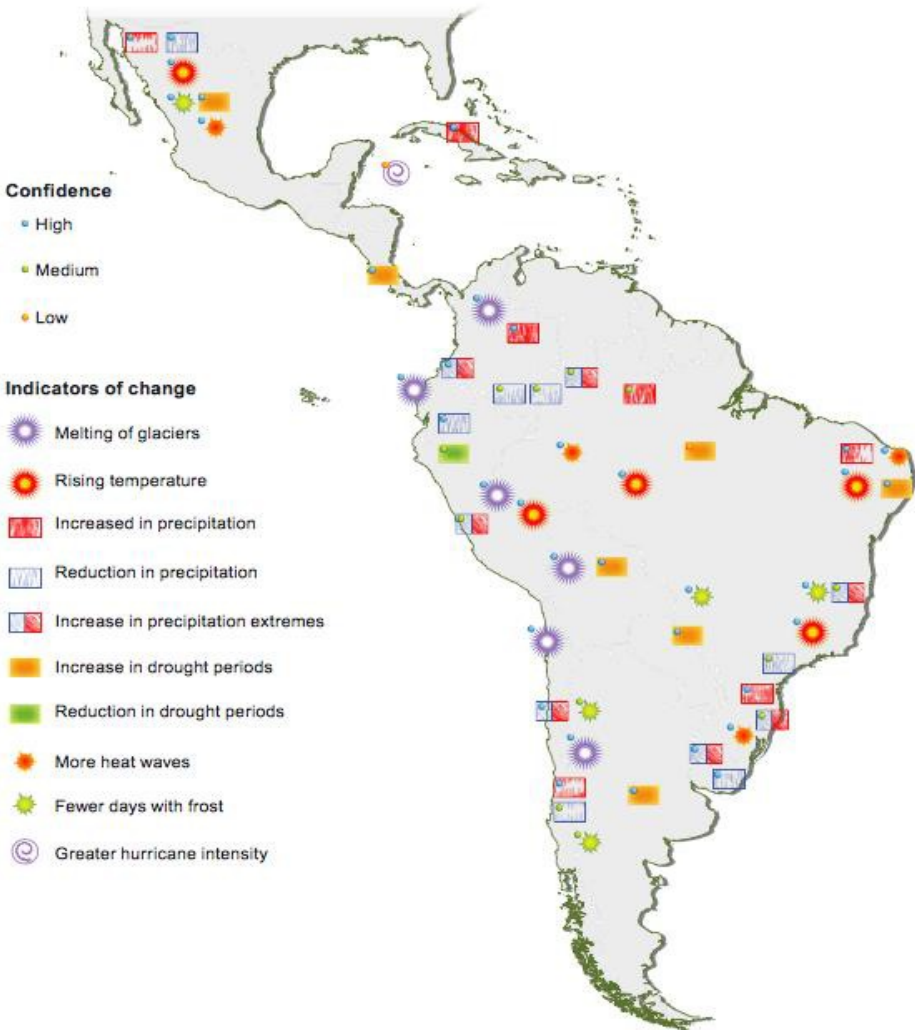
It is important to understand that Latin America is home to approximately 60%-70% of all types of life of the planet which means that this region presents a privileged geographical and biological diversity. The current levels of deforestation and agricultural and mining production pose a notable threat to the diverse ecosystem the region has, if climate change adaptation measures are not taken seriously. According to the Intergovernmental Panel on Climate Change (IPCC), over the XX century Latin America experienced a temperature increase from 0.5°C to 3°C, and thus longer drought periods, powerful hurricanes, glaciers regressions and excessive rains. Research suggests that this problem will be associated with displacement of crops, in altitude and latitude and decrease of water availability for food production. (Magrin 2015)

As stated in various scientific research studies published by several regional organizations and cooperation programs ECLAC, FAO EUROCLIMA, climate change is expected to particularly affect Northeast Brazil, parts of the Andean region and Central America. Especially countries like Bolivia, Ecuador, El Salvador, Honduras, Nicaragua, and Paraguay are those that will face a more negative impact as these are now having problems with food security (FAO 2015). In the tropical Andes, in semiarid areas, the Central America dry corridor and Northeast Brazil, the consequences of glacial retreat, decrease of precipitation and increase of evapotranspiration would diminish the availability of water for production an impact food security. In parts of Bolivia changes in precipitation and temperature would reduce significantly rural incomes; in Peru, climate change impact would generate decreases in production of multiples crops, especially on those that need great amount of water like rice. The ancestral “milpa” production system used in Mesoamerica will be affected by the changes of rainfall distribution, creating a potential humanitarian crisis. In other parts, the increase of precipitations will worsen erosion, increase runoff with loss of available water and even damage to crops themselves. (ECLAC, FAO, LAIA 2016)

⁵ “In 2013 hunger affected 39,1 million people (6,3% of the regional population), in 2015 raised to 40,1 million (6,3%) and in 2016 reached 42,5 million (6,6%)” (FAO)

Map 1: Latin America and the Caribbean: synthesis of climate change patterns projected to 2100

Latin America and the Caribbean: synthesis of climate change patterns projected to 2100



Source: ECLAC, FAO, LAIA. Seguridad alimentaria, nutrición y erradicación del hambre CELAC 2025, Elementos para el debate y la cooperación. 2016.

This evidence clearly suggests that climate change is an important challenge for Latin American food security not only for the great economic dependence on agriculture, the low adaptive capacity of its population and businesses but also because of the difficult geographical location of some countries. (ECLAC, FAO, LAIA 2016)

Current policies implemented by national government and regional organizations

Latin American countries have already begun to take steps to mitigate climate change. Countries like Brazil and Mexico have significantly reduced deforestation, other countries like Costa Rica, Uruguay, Nicaragua, and Chile have improved their renewable energy resources. From 2006-2013 renewable resources increased more than 270% in the region. (WWF 2017) According to United Nations, although hydroelectric energy is still the most common renewable energy in the region since 2006 countries are investing more resources in solar energy. More than 14 countries have created public funds that support clean energy development. Besides, countries in the region have signed important international treaties, such as the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol and the Paris Agreement, committing not only to reduce greenhouse gases but also they pledge to adapt to climate change. (Zanetti, Gómez, Reyes 2017)

Most Latin American countries have implemented, through parliament, national legislation concerning climate change. In general, most countries have designated a particular ministry or secretary to deal with climate change adaptability and mitigation in order to achieve the commitments acquired by international treaties and recommendations made by multilateral organizations. Most countries have started these policies in the early and late 2000s and developed regional and sectorial policies concerning different types of productive industries and regional necessities. (Alencastro 2014)

Even though most national governments understand what is at stake if they do not adapt their agriculture, fishing, energy, tourism and infrastructure to climate change, they continue to fail to implement significant reforms. A recent report published by the Development Bank of Latin America (CAF) suggests that Latin America is far from achieving the correct adaptation measures due to important structural problems countries are facing. Factors like governance and economic performance are extremely important to understand if a country has an effective adaptive capacity. Other important factors are: natural resource availability, sufficient infrastructure and financial resources and human capital. According to the adaptability capacity index made by the CAF, countries with the most diverse

economies of the region such as Chile, Uruguay, México, Argentina and Brazil have more chances to adapt their economies than countries with high dependence on agriculture such as Nicaragua, Honduras, Belize, Guatemala, El Salvador, Guyana, Paraguay and Bolivia and the majority of Caribbean countries⁶. (CAF 2014)

The report suggests that economic dependency on agriculture represents a major disadvantage to adapt to climate change. In this sense, according to this index, Central America and some parts South America remain the most vulnerable regions. In countries like Guyana, Nicaragua, Paraguay, Bolivia, Dominica, Honduras agriculture represent between 13% and 25% of the GDP. Thus, food security is an extremely complex issue in these regions, producers not only depend on endogenous variables like productivity or effective public policies, but they also depend on exogenous factors such as food prices and an increasingly unstable weather. Millions of people, particularly in Central America, live in rural areas and depend exclusively on what they produce for their livelihood. (CAF 2014)

In general, Central American countries have limited public funds to develop policies to address these issues. For this reason, most countries depend on private sector initiatives, international cooperation, and academic institutions. In fact, foreign financing is vital for not only Central America but for the whole continent. Numbers suggest that countries are receiving financing to mitigate change but not to adapt to climate change, which is clearly a concerning issue as countries are not preparing their economies and population to deal with increasingly threats. (CAF 2014) The biggest mitigation projects put in place in the region are mainly those to address deforestation in countries like Brazil and Mexico. According to a study published by the United Nations Environment Programme (UNEP) in 2012, mitigation projects represent seven times more the amount of

Chart 2: Adaptability Capacity Risk Index (extreme, high, medium, low)

Índice de Capacidad Adaptativa para la Región de ALC

País	Posición	Puntaje	Categoría
Haití	1	0,00	extremo
Nicaragua	2	0,13	extrem
Honduras	3	0,50	extreme
Guatemala	4	0,64	extremo
Guyana	5	0,66	extremo
Bolivia	6	0,80	extremo
Paraguay	7	0,94	extremo
El Salvador	8	1,44	extremo
República Dominicana	9	2,31	extremo
Belize	10	2,75	alto
Surinam	11	3,31	alto
Venezuela	12	3,62	alto
Ecuador	13	4,44	alto
Perú	14	5,32	medio
Colombia	15	5,66	medio
Argentina	16	6,07	medio
Jamaica	17	6,15	medio
Santa Lucía	18	6,31	medio
Panamá	19	6,70	medio
San Vicente y Las Granadinas	20	6,74	medio
Trinidad y Tobago	21	6,78	medio
Dominica	22	6,86	medio
Antigua y Barbuda	23	7,00	medio
Granada	24	7,26	medio
San Kitts y Nevis	25	7,50	medio
México	26	7,66	bajo
Brasil	27	7,88	bajo
Uruguay	28	8,18	bajo
Cuba	29	8,44	bajo
Costa Rica	30	9,23	bajo
Chile	31	9,40	bajo
Barbados	32	9,58	bajo
Bahamas	33	9,89	bajo

Source: CAF 2014

financing than adaptation projects (1.43 billion dollars in comparison to 200 million dollars). In this sense, UNFCCC has stated that in global perspective it is needed to

⁶ Climate change will impact tourism in the Caribbean, one of the most important sources of economic growth. (CAF 2014)

increase financing in adaptation policies as a priority step to address climate change in a more sustainable way.

Since Latin American countries count on limited resources to address this problem, multilateral organizations play a key role in research, promoting and supporting governments not only mitigate but also adapt to climate change. Especially, regional organizations such as the United Nations Economic Commission for Latin America and the Caribbean (ECLAC), the Community of Latin America and the Caribbean (CELAC), the Latin America Integration Association (LAIA), the Inter-American Development Bank (IADB) and the Development Bank of Latin America (CAF).

International Cooperation: the role of the European Union

The European Union and its member states are the most important donors of international cooperation and development worldwide. Since the organization's early days, solidarity and cooperation have become key words to describe the European project. The Treaty of Rome (1957) had planned to create a European fund to aid overseas territories and newly independent countries. Then in 2000, the European Union signed the Cotonou Agreement with some African, Caribbean, and Pacific countries in order to provide them with assistance in the fight against hunger. In addition, in the early 2000s, the EU pledged to contribute to achieve the 2015 Millennium Development Goals (MDGs) set by the United Nations. In 2009, the Lisbon Treaty reinforced the European cooperation framework by setting specific objectives, *"The Union shall define and pursue common policies and actions, and shall work for a high degree of cooperation in all fields of international relations, in order to (...) foster the sustainable economic, social and environmental development of developing countries, with the primary aim of eradicating poverty"* (European Commission). In this sense, the European Commission is the institutional body through the Commission's Directorate-General for International Cooperation and Development (DGDEVCO) responsible for planning the EU international cooperation and development policies. (European Commission)

Latin American countries have had long relations with the European Union cooperation programs. In one way or another, most countries have actively received funding from the EU. The first program was launched in the early 1990s, primarily designed to assist higher education needs, support enterprises and urban development. Then in the regional cooperation program for 2007-2013, sustainable development, was introduced as a key element in the cooperation program. In these years, the European Union invested and developed different programs such as EURO-SOLAR, in charge of promoting the use of clean energy and internet connectivity; EUROCLIMA, a special program that coordinates the EU and Latin America actions on climate change related issues; RELACEA, a network of knowledge centers in the water sector and FLEGT South America, a program that studies the impact of forest laws. (European Commission)

Particularly, EUROCLIMA, is one of the key programs in the region designed exclusively to study, draft public policies and make recommendations concerning not only climate change mitigation but also climate change adaptability. EUROCLIMA has contributed to raise consciousness about this issue throughout the continent by publishing studies. It is important to underline that this program is run not only by European agencies, Joint Research Center of the European Commission (JRC), the DG International Cooperation and Development of the European Commission but also by Latin American and international institutions, the Inter- American Institute for Cooperation on Agriculture (IICA), ECLAC and the UNEP.

The current aid program designed for Latin America for the period 2014-2020 distributes an amount of 925 million euros in different cooperation programs. This plan designed by the Development Cooperation Instrument (DCI) comprises two components. The first component focuses on the whole continent, specifically in: security-development nexus, good governance, accountability, and social equity, as well as sustainability growth for human development, environmental sustainability and climate change, higher education, and support measures. The second component is designed to emphasize on specific issues of Central American countries such as: regional economic integration, security, and rule of law, in addition to climate change and management of disasters. It is important to highlight that in both components climate change is one of most important items in terms of resources assigned, in the first component (300 million euros) and in the second component (35 million euros). According to this regional program, the European Union clearly understands how critical it is to tackle climate change in this region. The main measures they are committed to achieve related to climate change are: fostering environmental sustainable development, improving capacity to adapt to changing temperatures and contributing to build more resilient societies that are better prepared to face climate related disasters. (European Commission)

How to increase food security and adapt to climate change?

After having outlined the importance of adapting the economy to climate change, especially in the agricultural sector, a significant provider of resources and food security for the region, it is essential to understand which policies are the most effective to achieve this goal.

In order to decrease weaknesses and increase resilience in the agricultural sector it is important to recognize which are the vulnerabilities and how to tackle them. There are two main methods of evaluation, known as “top-down” and “bottom-up”. (Magrin 2015) Top-down evaluations start on a global scale and use complex meteorological tools to identify adaptability measures. In contrast, bottom-up evaluations start on a local scale by studying the socioeconomic challenges of a particular region and then identify concrete policies to help that region. Once the vulnerabilities are acknowledged and the measures identified it is important to study the advantages and disadvantages of each policy by making a valuation of the financial, socioeconomic, and institutional environment of the region. Among the

options and policies recommended to adapt agriculture to climate change and increase food security, there are three main pillars: **structural and physical options**, which consist of making resistant infrastructure, introducing research and technology to improve crops productivity, genetics and efficient management of the water; **social options**, such as expanding education programs, social security and awareness campaigns; **institutional options**, which includes designing comprehensive public policies, promoting economic benefits and investing in funds intended to help when it comes to climate disasters. (Magrin 2015)

In addition, it is imperative to prioritize research and spread knowledge by strengthening regional knowledge chains in order to understand the interactions between natural and human systems and vulnerabilities associated with climate change. Furthermore, it is necessary to promote a framework between climate related, urban and sectorial policies; to boost strategies that would consolidate links between different policies, such as, adaptation, mitigation, risk management and development goals and increase and support institutional capabilities. (Magrin 2015)

It is also important to point out that Latin America needs to seek more international cooperation programs such as the one the European Union offers as this region cannot overcome alone these challenges. For this reason, it is extremely important to improve democratic institutions, deepen the fight against corruption and invest in education, science, innovation, and research in order to increase cooperation funds from public and private institutions. (CAF 2014) Moreover, Latin America can learn from successful experiences, such as the European Union, which managed to reduce 24% of greenhouse gases emissions from agriculture between 1990 and 2012 by declining livestock numbers and applying fertilizers in an effective way. (EEA 2015)

Conclusion

At this point it is clear that adapting a country to climate change is not an easy task. It takes time and hard work to implement effective policies. Although, Latin American countries have a significant amount of problems, climate change is maybe one of the most challenging ones because it affects a key resource such as agriculture. Moreover, it can be said that the prosperity of the continent and food security in the long term relies on achieving this goal.

It is certain that climate change will impact agriculture in a significant way and will affect the amount of food to be produced and its localization. This complex problem requires well designed policies that reach different aspects that are interconnected such as food security, energy resources and climate change. The food industry will need to be transformed in a significant way in order to reduce greenhouse gas emissions and at the same time improve crops yields to feed the rapid growing world population. In this sense, climate change and food security will remain critical concerns for the next generations; so, everything this generation is doing right now, will undoubtedly impact on the future.

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