



CONSUMPTION RESEARCH NORWAY (SIFO)

# **Food for Security. Mapping mechanisms of food security and conflict in Cauca, Colombia**

Edited by Arne Dulsrud and Sabina Kuraj

OSLO METROPOLITAN UNIVERSITY  
STORBYUNIVERSITETET



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<b>Summary</b> This report is the first deliverable from the project <b>Food for Security: Evidence from Cauca, Colombia</b> funded by NORGLOBAL 2 under Research Council of Norway. The objective of this report is twofold. First, we will provide an updated state of the art on the knowledge of food security and conflict in Cauca. We review existing and available literature describing the food security situation, key actors, divisions and alliances of conflict, and issues that are being raised on the public and political agenda in Colombia. This will provide a crucial knowledge base and input to later activities in this project, including data collection, interpretations, and dissemination. Second, we will question how the Covid19 pandemic affects food security and conflict, and how these impacts raise research questions that can be integrated and captured into our study. The pandemic hit Colombia with a powerful stroke during the spring of 2020, leaving Colombia in the deepest economic slump in many decades. Even though the Covid-19 pandemic occurred after our project was initiated, its consequences need to be addressed.		
<b>Sammendrag</b> Denne rapporten er den første leveransen fra prosjektet <b>Food for Security: Evidence from Cauca, Colombia</b> finansiert av NORGLOBAL 2 under Norges forskningsråd. Målet med denne rapporten er todelt. Først vil vi gi en oppdatert kunnskapsoversikt om matsikkerhet og konflikt i Cauca. Vi gjennomgår eksisterende og tilgjengelig litteratur som beskriver matvaresikkerhetssituasjonen, sentrale aktører, splittelser og konfliktallianser, og spørsmål som tas opp på den offentlige og politiske dagsorden i Colombia. Dette vil gi en viktig kunnskapsbase for senere aktiviteter i dette prosjektet, inkludert datainnsamling, tolkninger og formidling. For det andre vil vi stille spørsmål om hvordan Covid19-pandemien påvirker matsikkerhet og konflikt, og hvordan dette påvirker forskningsspørsmål som kan integreres og fanges inn i studien vår. Pandemien traff Colombia med et kraftig slag våren 2020, og etterlot Colombia i den dypeste økonomiske nedgangen på mange tiår.		
<b>Keywords</b> Food security, conflict, Colombia, food policy, poverty, migrants.		
<b>Stikkord</b> Matsikkerhet, konflikt, Colombia, matpolitikk, fattigdom, migrasjon.		



## Preface

This report is the first deliverable from the project *Food for Security: Evidence from Cauca, Colombia (SEGURA)* funded by the Research Council of Norway 2020–2023. The SEGURA project is an interdisciplinary study of how conflict shapes, and is shaped by, food security by choosing the Cauca region of Colombia as a case study.

During preparation of this project, one of the major stakeholders of our research proposal asked: “We see a lot of grave things happening down in Cauca that we do not understand. It doesn’t make sense to us. What is going on, really?” Indeed, Cauca is unique in its history, ethnic composition, power structures, agricultural topography, biological diversity, food traditions, etc. Our basic idea, however, is that by understanding what is going on in the Cauca region of Colombia, we will also be able to comprehend the complexities of the food security and conflict, not only in Cauca and in Colombia, but also in other similar conflict-affected settings.

The objective of this report is twofold. First, we will provide an updated state of the art on the knowledge of food security and conflict in Cauca. We review existing and available literature describing the food security situation, key actors, divisions and alliances in the conflict, and issues that are being raised on the public and political agendas in Colombia. This will provide a crucial knowledge base and input to further activities in this project, including data collection, interpretation, and dissemination.

Second, we will question how the Covid-19 pandemic affects food security and conflict, and how these impacts raise research questions that can be captured and integrated into our study. The pandemic hit Colombia with full force in the spring of 2020, leaving Colombia in the deepest economic slump in a century. Even though the Covid-19 pandemic occurred after our project was initiated, its consequences need to be addressed.

In addition, our ambition is to connect researchers who have never met each other before and who come from diverse disciplines and countries (Colombia and Norway). Our experience is that the quality of research is best nurtured through a dynamic interplay between the researchers right from the start of a project. The report consists of 10 chapters covering various aspects of conflict and dimensions of food security. In order to provide a mutual transmission of knowledge, both Norwegians and Colombians in the consortium collaborate on writing at least one chapter each. Each chapter will be reviewed and evaluated by at least three partners in order to create a common body of knowledge.

Our intention has not been to author a document as an internal academic exercise. The report is meant to provide knowledge to teachers and students of food security and to the wider public outside academia, namely NGOs, policy makers and, not least, practitioners who are working every day to improve the well-being of people living in conflict-affected areas. We hope not only to provide some answers to what is going on in Cauca, but also to present insights beyond that.

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# Chapter 1

## Conflict and food security in Cauca: basic concepts and research questions

Arne Dulsrud<sup>1</sup> and Arturo García<sup>2</sup>

The justification of our project – and this report – lies in what we consider one of the most demanding issues in the world today. Achieving food security and improved nutrition, the second of the UN Sustainable Development Goals to be reached by 2030, is one of the most pressing development challenges. Recent estimates from the Food and Agriculture Organization of the United Nations (FAO) suggest that much of the world's food insecure population resides in conflict-affected regions. These patterns reveal that developing effective policies for combating food security requires a deeper understanding of the food security–conflict nexus. By choosing Cauca in Colombia as a setting, the SEGURA project offers a much-needed interdisciplinary study of how conflict shapes, and is shaped by, food security. In this chapter, we introduce and define some basic concepts that will be addressed throughout the report.

### 1.1 Why Cauca?

When you think about Colombia's development challenges, including the issue of food security, you could hardly find a more pertinent department than Cauca.

Cauca is located in the south-east of the country. In colonial times and at the beginning of the republic, it was one of the most important departments. In the 1850s, when it became the sovereign state of Cauca, it had jurisdiction over the current departments of Chocó, Valle del Cauca, Nariño, Putumayo, Caquetá and a large area of the Amazon; in 1874 it covered an area of 668,400 km<sup>2</sup>, more than half of Colombia's current territory. The department's rich soil has made it an important province for agriculture and livestock, yet a recent study conducted in Cauca found that 55 percent of the population experienced food insecurity (Hurtado-Bermudez et al., 2020).

Today, after multiple divisions, the department covers an area of 29,308 km<sup>2</sup> and a population concentrated in the capital. Cauca consists mostly of rural areas, which present the greatest challenges to the country's development. Per capita income is 62 percent of the national average, which is ranked 18th out of 32 departments, while its level of human development index is ranked 22. Cauca ranks below the national average in terms of socioeconomic indicators (see following table).

**Table 1-1 Comparative analysis: Cauca, Valle del Cauca and Colombia**

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<sup>2</sup> Econometría Consultores. Bogotá – Colombia. Email: agarcia@econometria.com.

			Colombia	Valle del Cauca	Cauca	Source
Population	2018	Total	48,258,494	4,475,886	1,464,488	CNPV 2018
		Urban	36,424,653	3,809,542	545,902	
		Rural	11,833,841	666,344	918,586	
Rurality	2018	Total	25%	15%	63%	
Population growth rate %	2005–2018	Total	16%	10%	24%	CG 2005 and CNPV 2018
		Urban	16%	8%	14%	
		Rural	19%	24%	31%	
	1993–2005	Total	25%	22%	21%	CG 2005 and CG 1993
		Urban	34%	24%	34%	
		Rural	4%	9%	13%	
Indigenous (% of total population in 2018)	2018	Total	4.4%	0.8%	24.8%	CNPV 2018
Afro-descendants (% of total population in 2018)	2018	Total	6.2%	14.5%	16.8%	
GDP per capita	2018	Total	19,784,209	20,058,967	12,330,403	DANE 2018
GDP per capita growth rate %	2015–2018	Total	19%	19%	16%	DANE 2018
Multidimensional poverty %	2018	Total	20%	14%	29%	CNPV 2018
		Urban	14%	12%	13%	
		Rural	40%	22%	39%	

<b>Monetary poverty incidence (% of population)</b>	<b>2018</b>	<b>Total</b>	27%	20%	51%	GEIH 2018
<b>Gini of income coefficient</b>	<b>2018</b>	<b>Total</b>	0.517	0.468	0.520	
<b>Gini of land</b>	<b>2016</b>	<b>Total</b>	0.8789	0.9003	0.8717	UPRA
<b>Total homicides</b>	<b>2003–2018</b>	<b>Total</b>	254,498	5,525	9,088	Ministry of Defense
<b>Growth in total homicides %</b>	<b>2015–2018</b>	<b>Total</b>	-7%	6%	0.5%	
<b>Displacement (% of total population in 2018)</b>	<b>2000–2018</b>	<b>Total</b>	14%	10%	31%	Registro Único de Víctimas (RUV)
<b>Growth of displaced people %</b>	<b>2015–2018</b>	<b>Total</b>	-31%	-64%	-62%	
<b>Households with food insecurity%</b>	<b>2015</b>	<b>Total</b>	54.20%	53.60%	63.90%	ENSIN 2015

Source: Own elaboration based on data from DANE, ENSIN, Ministry of Defense, Single Registry of Victims (RUV).

Two aspects in the above table are worth highlighting. First, the department of Cauca it is not highly populated; with its 1, 464,488 inhabitants, Cauca ranks at the 11th place on the list of the Colombian departments by population. Yet, Cauca registers a very high percentage of the population living in the rural areas (63%), which is much higher than both the national average (25%) and the Valle del Cauca average (15%). In fact, only within the period 2005-2018 the rural population of Cauca grew with 31 percent, while at the national level there was a reduction of 3.1 percent. This demographic trend is associated with the high percentage of ethnic population that the department has. These population groups have a strong cultural connection to the land, and they refuse to leave their ancestral territories for moving to urban areas. Therefore, contrary to many other departments in Colombia that register a rural depopulation, the department of Cauca has highly populated rural areas. However, due to the considerable poverty gap between rural and urban areas, a highly populated rural area comes with the consequence of very poor living conditions for the rural population. In Colombia, this is linked to the fact that a growing rural population poses great land pressure in a country that suffers an extremely unequal distribution of land, regardless of several land reform that the state has implemented through years. Therefore, a second aspect that is highlighted here is that although the department of Cauca has an extended availability

of agricultural land able to secure food and a proper economic development for its population, the departments register instead high rates of poverty, social unrest and violence. Other influential studies have linked inequality with low agricultural productivity, high rates of poverty and oppressive relations (Mason, 1998 in Faguet, Sánchez Torres, & Villaveces, 2017). Cauca embeds these dynamics that prevent the department to explore its potential to boost agricultural production and economic development. The contrast is accentuated when compared with the neighboring department of Valle del Cauca.

This becomes more complex if we take into account certain problems in the country as a whole that are particularly apparent in Cauca. In particular, sensitive issues that persist on the country's development agenda<sup>3</sup> are the following:

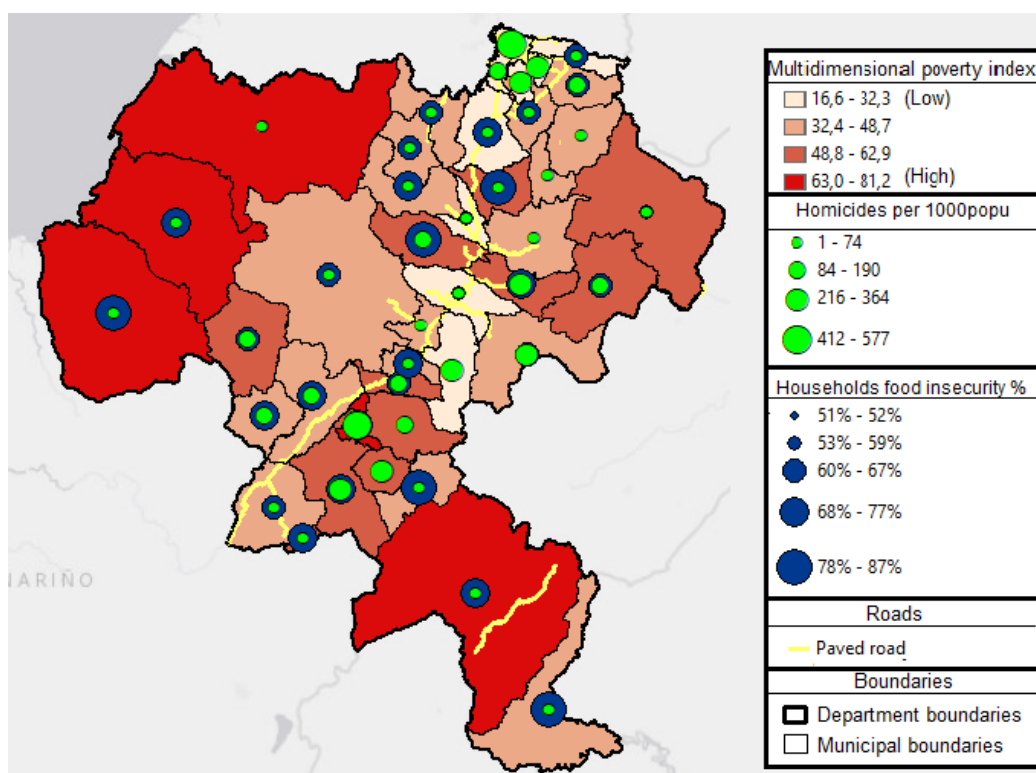
- Promote the inclusion of ethnic populations (indigenous and Afro-Colombians), which have a significant presence in Cauca.
- Make rural development a basis for growth and well-being, when Cauca can well be considered the most rural department in the country, excluding the former national territories (Amazon and Orinoquía).
- Control the planting of illicit crops.
- Provide responsible and sustainable management of mining, to avoid illegal exploitation.
- Value its main asset, for the region and the country, which is the water from the Colombian massif, where the main rivers of the country originate (Cauca, Magdalena, Putumayo, Caquetá and Patía).

On the other hand, the spatial perspective is critical to understanding the importance of the department and the dynamics within it. To begin with, Cauca borders in the north with one of the departments with the best indicators of economic and social development, Valle del Cauca. In this sense, it can be considered that in Cauca there is a development frontier that advances from the border with the Valle del Cauca in the flat zone and enters the department through the Pan-American highway a little further south of Popayán. By contrast, there are the less connected areas of the east and the west, where living conditions are more precarious and where there are additional problems such as illicit crops, illegal mining and violence.

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<sup>3</sup> For support, see the attached file "CaucaDatabase" that has the information on these and other variables disaggregated at the municipal level.

**Map 1. Poverty, homicide and food insecurity in Cauca**



Source: Own elaboration based on data from DANE, ENSIN, Ministry of Defense.

In particular, coca crops and drug trafficking are determined by the geography of the department. The Pacific coasts (extensive, sparsely populated and a low state presence) are one of the main points from which cocaine shipments depart, especially for Mexico and the United States. In this sense, it is not surprising that the municipalities that are on the western mountain or are part of the Pacific platform are where much of the coca production is concentrated and in particular where there has been greatest growth between 2015 and 2018 (between 52% and 369%). Additionally, the department is crossed by two corridors (one in the north and one in the south) that serve to extract cocaine from the eastern plains. In these corridors, living conditions are poor, communication possibilities are limited, and there is little state presence. In addition, most of the municipalities have high homicide rates.

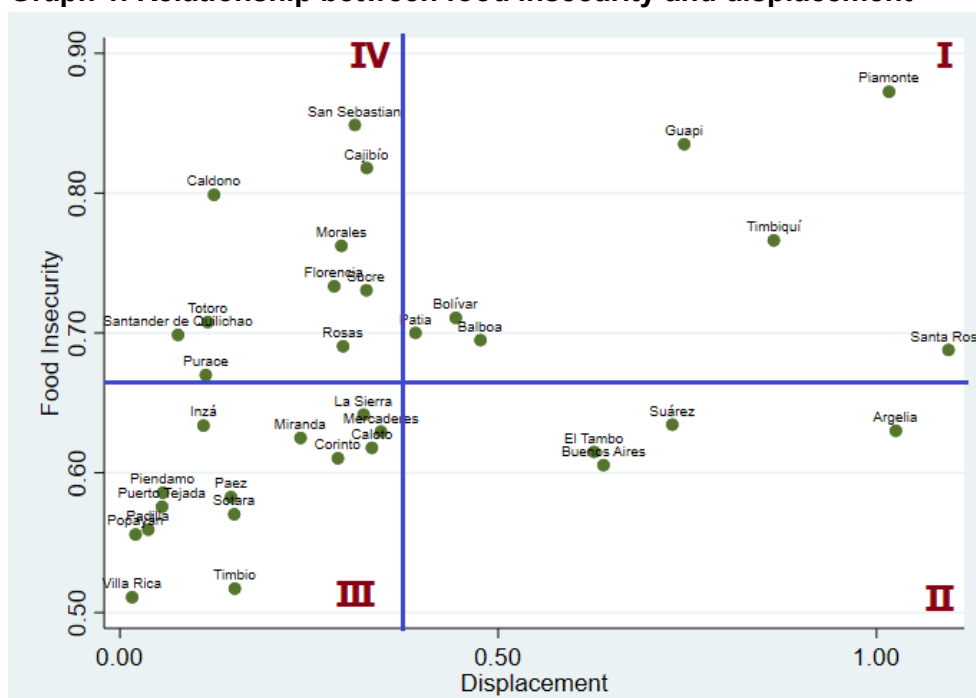
The spatial relevance can be seen in other respects. The concentration of ethnic populations has clearly defined geographic patterns. The municipalities with a majority of indigenous populations are located in the north-east and are all adjacent, and those with Afro-Colombian majorities are located mainly in municipalities in the north and the Pacific province.

The issue of access to land is critical throughout the department, but is more acutely expressed in the northern province, where more than 50 percent of the rural population has less than one hectare; an area where industrial crops (especially sugar cane) converge. If we look at the relationship between the percentage of the rural area inhabited by ethnic communities in the most recent National Agricultural Census (2015) and the percentage of indigenous populations living in the municipalities in the northern

area, this relationship is less than 0.1 in all the municipalities, except Caloto (0.45%).<sup>4</sup> Furthermore, the collective area with respect to the rural area of the municipality is zero or practically insignificant, except in Santander de Quilichao (25%) and Caloto (26%).

In this context, the relationship between food insecurity and armed conflict, which is central to SEGURA's work, is full of nuances to be taken into account. Although most of the municipalities have a positive relationship between food insecurity and displacement (quadrants I and III) in other municipalities (quadrants II and IV), the pattern is different.

**Graph 1. Relationship between food insecurity and displacement**



Source: Own elaboration based on data from ENSIN and Single Registry of Victims (RUV).

Forced displacement has, indeed, so far affected food production capacities with a direct impact on food insecurity. On the one hand, even in face of increased levels of violence, many ethnic groups would refuse to leave their territory due to their strong relationship to the land. In this case, displacement is not an option, even if the violence ends up affecting their lives. On the other hand, in regions where the ethnic population is not so prevalent, the relationship between food security and violence is mediated by other aspects such as the levels of economic development or the capacity of local governments.

Taken together, the dynamic in Cauca include a wide range of societal and local factors that represent challenges to food security and peaceful development, including unequal access to resources, poor infrastructures, weak state institutions, socio-

<sup>4</sup> If the ratio were 1, the ethnic groups would have access to land equal to the proportion of their population participation. Values less than 1 reflect less relative access to land.

cultural conflicts, and environmental degradation (Sañudo et al., 2016; Escobar, 2015; Rettberg and Ortiz-Riomalo, 2016). Thus, the knowledge that can be gained from Cauca on the nexus between food security and conflict, is relevant for future developments both at the departmental level and nationwide.

## 1.2 Food security and food sovereignty

The conventional definition of food security is a situation wherein “all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food that meets their dietary needs and food preferences for an active and healthy life” (FAO 2006). Food security, as it was formulated for the 1996 UN World Summit on Food Security (WFS), summarized numerous historical and disciplinary perspectives of what has been called the four major pillars of food security (Westengen and Banik, 2016). These include food *availability* (sufficient food supply and distribution), *access* (people's ability to access and to buy available food supplies), *utilization* (calorie and micro-nutrient intake) and *stability* (environmental, economic and political stability in access to food).

The food security concept has been however criticized for omitting political notions of power and control (Patel and McMichael, 2009) and concepts such as food justice and food sovereignty have emerged as critical alternatives. Food justice understands the food system as a social construction shaped by class and race. Although food justice offers analytical advantages, the concept of food sovereignty is now favored, not only by many NGOs, human rights organizations and small-scale farmer groups, but also by academics (Carney, 2011). By focusing on the “family farm” as the nexus of food supply, self-reliance and the capacity to produce their own basic food were defined as the rights of nations, peoples and communities (Patel, 2009).

The premise of self-sufficiency at household level is a compelling idea, but the concept is criticized for lacking clarity and for being too vague when it comes to analytical and normative dimensions (Agarwal, 2014). According to Agarwal local self-sufficiency, intended to counteract the dominance of multinational corporations, is not inherently a guarantee for food security, as the “necessity and even feasibility of local self-sufficiency is debatable” (2014, p.1248). Furthermore, the author writes that as countries urbanize, food security for millions will depend on their ability to purchase food rather than on their ability to produce it themselves (Agarwal, 2014:1265). According to the most recent national census in Colombia, only 23 percent of the population lives in rural areas, which reflects an accelerated urbanization process that is partly explained by the armed conflict. Critics also warn that proponents of food sovereignty “have inserted a rival normative agenda into what was originally a much more open-ended concept” (Clapp, 2014:2006), and that the definition consists of broad terms that do not always allow for precise operationalization (Jones et al., 2015).

In spite of these weaknesses, we do recognize that the concept of food sovereignty is helpful when it comes to exploring power relations in areas where land appropriation and land grabbing have taken place, as Hurtado-Bermudez et al. (2020) have shown in their study of ethnic minorities in the Cauca region. This is a region where cattle ranchers, paramilitaries, guerrillas, and national and foreign private investors have over



time excluded peasants from their land. Evidence from the Cauca region therefore demonstrates that food security is directly linked to struggles for dominance and ownership of land.

This leads us to a preliminary conclusion. In general terms, one could say that the food security concept is analytically strong, but poor as normative guidance because it omits processes of power and dominance as an explanatory factor for food insecurity. The food sovereignty concept is analytically weak, but strong as a normative benchmark in addressing inequality and injustice due to skewed distribution of natural resources. We agree with Agarwal (2014) that there is no necessary contradiction between scientific inquiry and normative evaluations. We need to openly explore the conditions for households' food sufficiency as well as power relations and policy solutions, and we need to accept that food security and conflict will remain a disputed and contested field of research. What is required is an explicit distinction between analytical and normative arguments, particularly related to the tension between collective and individual rights. The discussion between food security and food sovereignty within our project will not end here, but hopefully will provide a fertile ground for an exchange of arguments and ideas throughout our project.

### 1.3 Entitlements

The concept of entitlements, as formulated by Amartya Sen, complements some of the limitations associated with the food security and food sovereignty concepts. While access is a key concept in the food security literature, few address the institutional mechanisms that provide access. We characterize these as bundles of entitlements or institutionalized forms of access (Dulsrud & Kjærnes in press) as they play out in everyday life. Entitlements – first of all property rights, employment, and social rights – are often studied separately, with emphasis on formal and legal aspects. While property rights as a means of food production are a key to understanding issues raised in the food sovereignty debate, income through employment is central in literature on poverty and development. Social rights represent a third pillar. Examples are support for vulnerable households, such as cash transfers, food packages, school meals etc. As emphasized by Dreze and Sen (2013), such issues need to be considered together, as bundles of entitlements. A dynamic between conflicts over land use, migration, forced displacements and low penetration of social policies may seriously challenge households' entitlements to food. If one entitlement fails (e.g., a poor harvest or loss of labor due to ill health), are there others that replace or complement it (e.g., social security provisions)? Or are entitlements instead additive and excluding? A key issue here will be how different relations to food markets influence vulnerability and resistance to food insecurity, distinguishing between subsistence farming, households producing for the market, and households acting primarily as buyers of food. Like others, people in these situations will be very differently affected by price changes.

The literature identifies migrants as a group that is particularly vulnerable to food insecurity. Forced displacement severs ties to the land and to rural community and puts displaced people, particularly women and women-headed households, in a state of food insecurity (Osorio Pérez, 2008). To understand how food security shapes, and is shaped by, conflict at the household level, this project will pay attention to the broader

cultural values of food as it relates to preference, quality, traditions, and methods of production and distribution (Hammelman & Hayes-Conroy, 2015).

## 1.4 Food security and conflict

Food insecurity is among the most predictive and destructive effects of war (World Bank, 2011). In the past decade the complex connection between armed conflict and food security has been analyzed in several papers combining high-quality data and modern statistical techniques (see Martin-Shields and Stones, 2019 for an overview). In general terms, it is assumed that conflict leads to a fall in agricultural production. Armed conflicts entail political and military struggle to control and displace the population. Civilians may be exposed to plundering and damaging of crops, cattle, land, water sources, buildings and yields. Food is used as an “instrument of war” to win loyalty from a group or as a reward to civilians who enlist in armed groups. Armed conflicts harm infrastructure, roads, markets and means of communication. Armed conflicts provoke long-lasting deterioration in the ability of the household to access food that increases the risk of under- and malnutrition. Thus, armed conflict has negative impacts on all four pillars of food security, i.e. availability, access, use and stability.

Although research to a large extent confirms such impacts, the question of a causal link between food security and conflict remains unclear. As argued by Gomez et al. (2015), several studies illustrate how intervening factors influence the relationship between conflict and food security at micro and macro level. “The causal link from conflict to food security is not always straightforward,” they argue, “and anomalies are not hard to find” (Gomez et al., 2015: 256).

Rather, the topic raises a number of methodological issues, and illustrates the shortcomings of relying exclusively on either quantitative or qualitative data. Cederman and Gleditch (2009) warned that country-level aggregates may obscure any understanding of the impacts of violence in civil wars, which by nature are highly localized. Several have argued that in order to understand the emergence of armed groups and the cycle of violence occurring in Colombia, in spite of the peace agreement with FARC in 2016, a local and regional perspective is required (Gonzales Posso, 2020). The dynamics of conflict cannot be understood without a local context, i.e., analyzing the murders, the armed groups operating in the area, their control and influence, and their strategies and agendas.

As stated by Conflict Analysis Research Center (CERAC) (see chapter 8 of this report), the panorama of homicides, forced displacement, forced recruitment of children and killings of social leaders has been particularly strong in Cauca since 2016. An important implication of this is that we use the particular case of Cauca to provide better research questions that capture the diversity of processes and outcomes that characterize violent conflict and food security. This demands the use of a variety of methods in order to avoid fallacies. We recognize the importance of accounting for the interlinkages between economic, cultural, and ecological aspects in understanding conflict (Escobar, 2008, 2015), thus avoiding a depoliticized, Malthusian interpretation of conflict as “naturally” triggered by food and resource scarcity. Bearing this in mind, the project aims to contribute to a theoretically and more empirically grounded understanding of

the cross-cultural determinants of food security, in particular how it relates to social and ecological dimensions of conflicts.

To sum up, even though the food security concept has weaknesses, we suggest that it still holds potential for incorporating the analytical complexity that we are looking for, considering the institutional and social foundations of having enough to eat. We aim to expand the food security concept particularly as it relates to conflict and beyond its often narrow focus on nutritional status. We recognize that conflict has tremendous impacts on peoples' way of life. Food represents a mediator between people and their traditional territory. For people, food security therefore becomes more than a strategy for survival; food security is a source of mobilization and even resistance. This will enable analysis of mechanisms of conflict and food security, highlighting bundles of entitlements, identities, and social and environmental imaginaries.

## 1.5 The impact of Covid-19 pandemic

Since our project was designed in 2019, the Covid-19 virus got in the way of carrying out our original plans. It has dominated the news all day and every day in almost every country, not least in Colombia, as one of the most affected countries in the region. By the end of 2020, almost 2 million Colombians had been infected by Covid-19 and almost 50,000 had died. It is impossible to say anything about conflict and food security without taking into account the deep structural changes the pandemic has caused. Currently it is hard to anticipate the totality of the effect from the virus on people's lives. As the British sociologist Anthony Giddens expressed in a recent speech: "We are all travelers in unknown territory. No-one knows with any confidence what the knock-on effects will be" (Giddens 2020). What is clear, however, is that the Covid-19 pandemic interferes with the conflict–food security connection in a multitude of ways, not only its correlation, but also its dynamics and mechanisms.

There are no reasons to underestimate the high societal risks associated with the Covid-19 outbreak in terms of aggravated health conditions, setbacks for the economy, increased unemployment, plummeting productivity, and rise in poverty. In Colombia, the lockdowns led to the deepest economic slump in more than a century. In July, unemployment surged by 10 per cent and was at 20.2 percent nationally and at 26.1 percent in Bogotá according to Colombia's national statistics bureau (DANE, 2020). According to FAO (2020), the high-risk groups in Colombia are small-scale producers: agricultural laborers (landless farmers and laborers along the rural-urban food value chain), fishing communities, indigenous groups, migrants, and households deriving their income from remittances as well as from the informal economy.

To quote Anthony Giddens again, high risk also comes with high opportunity. The pandemic has its origin in deep structural changes that are also serving to reshape it. On the face of things, the virus appears to have created new opportunities. New forms of resistance and insurgency arise, violent and non-violent. Unrest has burgeoned directly or indirectly due to the Corona restrictions, and Colombia is no exception.

Clearly, destructive forces in Colombian society have used some of these opportunities to consolidate their power. According to Human Rights Watch (2020), "The pandemic

sparked a shift in Colombia as criminal actors nationwide sought to profit from the sudden change in conditions, the refocusing of state priorities and distracted security forces”. Criminal gangs have imposed their own coronavirus measures, forcing people not to leave their houses, and thereby undermining their access to food.

In the case of Colombia, the pandemic has made the food security–conflict nexus even more complex. The question is whether the spread of the pandemic in Colombia will overlap with the changes in Cauca and Colombia that are already under way. They include the emergence of a power vacuum after the disarmament of FARC, a surge in the production of illicit crops, a growth in the activities of armed groups, a rise in killings of social leaders, etc. and an escalation of conflict that increases food insecurity (Segovia, 2017). An updated version of the security situation in Cauca will be presented in the final chapter of this report.

However, the Covid-19 pandemic could also represent a window of opportunity for a better understanding of the conflict–food security nexus in Cauca. From an analytical perspective, the Covid-19 pandemic can be seen as an aggravating factor that may help expose the mechanisms and strategies used by vulnerable households to guarantee access to food in emergency situations. Covid-19 can also be used as an analytical lens through which to explore not only vulnerabilities, but also resistance and resilience mechanisms.

The Covid-19 pandemic is also a real opportunity for a more activist state. Social support provided by the government has proven to be a source of survival for the poor sections of the population. The Colombian government has unveiled around USD 3.7 billion (1.5% of GDP) in measures to counter the effects of the coronavirus outbreak. These include additional cash transfers for the most vulnerable, VAT rebates for the poorest, tax deferrals for companies, and financing support for SMEs. In these circumstances, there is a space for policy reform and public innovation, and an opportunity for policymakers to rethink their role and priorities. Will this political shift have a welfare dimension? Schemes of public investments reducing inequalities, combatting unemployment and enhancing welfare will be needed in order for states to recover. There are, however, fiscal limits to public spending. Can a food security policy be an engine that spurs growth?

These are some of the questions that will be raised in the chapters of this report. We argue that food security represents a golden opportunity for economic growth and social recovery. The Covid-19 pandemic highlighted the importance of robust and resilient food systems in order to respond to global shocks and disruptions in supply chains, and to mitigate food poverty. The shock of the current situation might lead countries whose economies are built around oil and other fossils to diversify. Creating new opportunities of economic development through food security could create a dynamic for growth and sustainability. It requires and builds on innovative solutions that can be scaled up, not only in terms of agro-economic practices, but also as mobilization of local communities, networks, farmers, consumers and workers along the food distribution chain.

Our project aims at collecting data, information and analyses on the actual and potential impacts of Covid-19 on food security in a country already experiencing a

crisis. Such research can then be used to inform policymakers and to envisage actors in the civil society.

## 1.6 Overview of chapters

In the following, we present nine chapters that address various aspects of the food security and conflict complex in Cauca and Colombia. Although each chapter stands on its own and should be regarded as independent and autonomous contributions written by the various partners in the SEGURA project, the chapters have a thematic structure. there is a plan and thematic structure in the organization of the chapters.

*Chapter 2* “Description of the food policy regime in Colombia” by Gilma Olaya Vega (Pontificia Universidad Javeriana) offers a comprehensive introduction to the current National Policy for Food Security and Nutrition. It focuses on strategies, lines of action, social support, strengths, gaps, and challenges, particularly in the light of the Covid-19 pandemic.

In *Chapter 3*, “Food availability in Cauca. Addressing the supply side of food security”, Nury Bejarano (Econometria) describes the production system in Cauca. She looks into the soil norm, the use of land for agricultural and livestock purposes, the access to land, the competition for land between the area for food products and non-food products, production, crop yield and productivity.

Food access is further analysed in *Chapter 4* “Access to food in Cauca, Colombia: Descriptive patterns from the 2011 National Quality of Life Survey” written by Fenella Carpena (OsloMet). Using household-level data from the Colombian bureau of statistics (DANA), she documents eight stylized facts related to the physical, economic, and social aspects of food access among households in Cauca.

*Chapter 5* offers an exploratory study of the interlinkages between food and culture in Cauca by identifying the linkages food security, culture and conflict in this region written by Guisela Camacho at University of Oslo. The chapter describes how eating practices in Cauca vary according to territorial, climatic and agronomic conditions as well as to cultural and ethnic diversity. At the same time, households’ access to food has changed drastically since the 20<sup>th</sup> century due to a transition from more diversified crops to monocultures, which has made the households of Cauca more dependent on the market.

*Chapter 6* “Nutritional status of Cauca. A life cycle approach” by Maria Gloria Cano (Econometria) addresses the coexisting triple burden of malnutrition existing in Cauca: underweight, micronutrient deficiencies, and obesity and overweight. She addresses these topics from a life-cycle point of view, disaggregating data for the Pacific region, Colombia as a whole and for Cauca.

In *Chapter 7* “Food security in the context of state stability” by Irene Velez Torres (Universidad del Valle), the links between conflict, stability and food security are further explored. The chapter examines three dimensions of state stability in the post-agreement, which, seen from the entanglements between peacebuilding and the

environment, could enlighten discussions on food security and the right to food in contemporary Colombia.

*Chapter 8* “Violence transformation during the post-conflict period in Cauca, Colombia” is written by Jorge Restrepo (Conflict Analysis Research Center (CERAC)). He describes the evolution of post-conflict security in the department of Cauca. After presenting its recent evolution, he makes risk-related observations arising from the growing insecurity threats while advancing some explanatory explanations for these violence dynamics.

In the final *Chapter 9* “Concluding remarks and future implications”, we consider how our updated in-depth review of available data on food security and conflict, recent research and, not least, how the pandemic events impact our future research.

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# Chapter 2

## Description of the food policy regime in Colombia

Gilma Olaya Vega<sup>5</sup>

### 2.1 Introduction

Food policy in Colombia has developed gradually over the past 30 years through multi-sectoral action plans. From 1996 to 2005, the guiding document was the National Plan for Food and Nutrition (PNAN). PNAN aimed to reduce the prevalence of global, acute and chronic undernutrition through the implementation of different programs and projects, including food aid for vulnerable population groups. These efforts have included food safety regulation, development of normative standards, dietary guidelines, technical guidelines, and specific actions to protect, detect and treat public health diseases. This plan has been managed by the National Food and Security Nutrition Committee (CONSA) and the National Prevention and Control of Micronutrient Deficiency (CODEMI) since 1996.

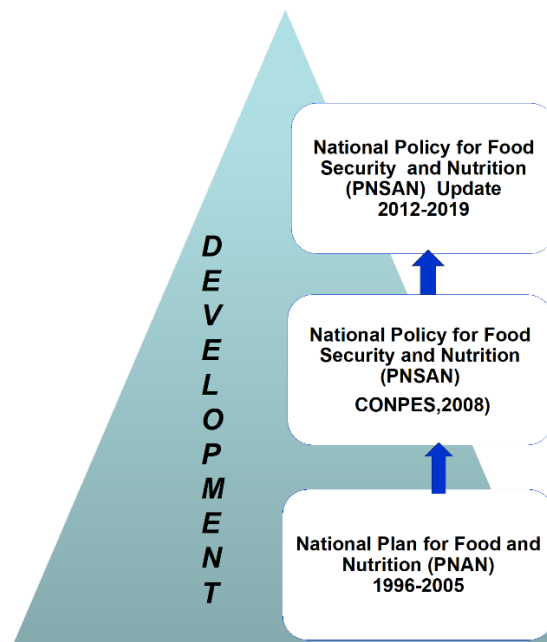
In 1998, PNAN was complemented with the Decennial Breastfeeding Plan (1998–2008), which was formulated to promote, support, and protect breastfeeding. Decennial Breastfeeding Plan was updated for another decade from 2010 to 2020 (Ministerio de la Protección Social et al., 2010). For its part, the National Council for Economic and Social Policy (CONPES) formulated the umbrella strategy in 2005 to achieve the Millennium Development Goals, through which Colombia committed to eradicating extreme poverty and hunger by reducing global undernutrition in children under five years of age, improving minimum energy intake, and reducing malnutrition (Documento CONPES 91, 2005).

From 2006 to 2010, the National Development Plan was the guiding document, which led to the formulation of the National Policy for Food Security and Nutrition 2012–2019 (PNSAN). This plan is one of the main strategies undertaken to guarantee economic and social rights, strengthen human capital, improve regional conditions to reach peace and reduce poverty. Since 54.2 percent of Colombians are food insecure (one out of two households), advancing food security is seen as critical for achieving overall development (ENSIN, 2015).

In this chapter we will address the current National Policy for Food Security and Nutrition (PNSAN, 2013) and will focus on its strategies, lines of action, social support, strengths, gaps, and challenges.

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**Figure 2.1 Food policy regime in Colombia. Source: Designed by the author**

## 2.2 Current food security and nutrition policy in Colombia

The current PNSAN 2012–2020 acknowledges the right of everyone to be free from hunger (PNSAN, 2013). Following FAO’s definition of food security (FAO, 2008), this policy seeks to ensure sufficient and stable food availability, which includes an access to food that is uninterrupted and timely, and adequate quantity and quality of food for all persons to lead a healthy and active life. The aim is to ensure availability, access and food consumption for all Colombians, with proper response to social needs in terms of adequate food supply, variety of foods, food quality and safety. In this sense, the policy’s guiding principles are: i) the right food; ii) social equality; iii) a gender perspective; iv) sustainability; v) co-responsibility; and vi) respecting identity and cultural diversity. It is supported by the Colombian National Political Constitution of 1991, in a context of environmental sustainability, guaranteed fundamental, economic and social rights. It also states the right to access adequate food as an essential right for children (Colombia Const. art. 44. Título 2. Capítulo 2).

## 2.3 Key inter-sectorial actors

PNSAN has involved the participation of public and private organizations at different levels (local, regional and national level), as well as international organizations and the academic sector, to form a participatory policy. The policy has been developed within the context of the National Development Plan ([PND] El Congreso de Colombia, 2019), a commitment undertaken at the World Food Summit in 2002 and within the context of the Millennium Development Goals (MDGs). The National Department for Planning’s role in the PNSAN framework was formalized by the National Council for Economic and

Social Policy (CONPES). This council is chaired by Colombia’s president and is the highest authority in the country.

In addition, the Intersectoral Committee on Food Security and Nutrition (CISAN) was created to direct and coordinate the National Policy for Food Security and Nutrition, with the participation and commitment of all entities involved in the development of food and nutrition security (Table 1), working with the Observatory of Food Security and Nutrition (OBSAN), which is in charge of monitoring PNSAN trends according to key variables.

**Table 2.1 Inter-sectorial actors in the CISAN**

<b>Ministries</b>	<b>Other entities</b>
Ministry of Health and Social Protection (MSPSS)	Presidential Agency for Social Action (APAS)
Ministry of Agriculture and Rural Development (MADR)	National Council for Economic and Social Policy (CONPES)
Ministry of Business, Industry and Tourism (MCIT)	Colombian Institute of Family Welfare (ICBF)
Ministry of National Education (MEN),	National Planning Department (DNP)
Ministry of Housing and Territorial Development (MVD)	

## 2.4 Axes and strategies of food and nutritional security policy

The definition of food security (FS) adopted by FAO in 1996 goes beyond the entire population having adequate food; it highlights the right not to suffer from hunger by addressing four cardinal dimensions of food security: physical availability of food, economic and physical access to food; food utilization, and stability of all these three dimensions over time (FAO, 2008). The PNSAN strongly relies on the FAO’s definition of food security and, taking this a starting point, we have been able to identify nine interrelated lines of action through which the government intends to tackle food insecurity in Colombia. These lines of actions are the result of what we have identified as axes and strategies incorporated within the goals of food security and nutrition policy (Table 2).

**Table 2.2 National Policy for Food Security and Nutrition Policy: Axes and strategies**

Axes	Strategies
<ul style="list-style-type: none"> <li>▪ Food availability</li> <li>▪ Access of food</li> <li>▪ Food consumption</li> <li>▪ Bioavailability</li> <li>▪ Food quality and safety</li> </ul>	<ul style="list-style-type: none"> <li>▪ Institutional development</li> <li>▪ National Food and Nutrition Security Plan (PNSAN)</li> <li>▪ Targeting families to other programs and plans</li> <li>▪ Strategic alliances</li> <li>▪ Community and citizen participation</li> <li>▪ Information, education and communication</li> <li>▪ Monitoring and evaluation.</li> </ul>

**Definition of axes**

i) *Food availability* is the amount of food available at the local or national, regional and local level, taking into account local food production, food imports and storage, to supply sufficient amounts of energy and nutrient intake in the population (FAO, 2008).

ii) *Food access* means physical and economic access to food, in other words the ability of all people in the household to achieve an adequate and sustainable food supply (Ibid.). The lack of access is often the cause of food insecurity.

iii) *Food consumption* refers to the foods that people eat, and is related to their selection, beliefs, attitudes and practices (Documento CONPES 113, 2008).

iv) *Food utilization* refers to how and how much the human body utilizes the food that is consumed, converting the food into nutrients to be absorbed by the body (FAO, 2008).

v) *Food quality and safety* means food characteristics that are suitable for human consumption, demanding an adequate food chain from production to consumption to ensure that, once food is ingested, it does not represent any risk (biological, physical or chemical) that undermines health (Documento CONPES 113, 2008).

**2.5 PNSAN: Policy lines**

This section will give a brief description of the nine lines of the PNSAN that are interrelated. These nine lines were formulated taking into account causes of the main nutrition problems in Colombia (Table 3), which are related to food and nutrition insecurity due to poverty, inequality, limited basic sanitation, poor education, limited supplies of, and in some cases lack of, food. Thus, the first four lines are related to food availability, food access and food consumption to guarantee adequate supplies of the priority food groups established in the plan. Line 5 mainly addresses improved quality of life and well-being, which involves nutrition education strategies, preventing and reducing malnutrition and micronutrient deficiencies, improving breastfeeding practices, as well promoting healthy lifestyles. Therefore, this line involves all the food assistance programs. It is connected to line 7, food safety, and lines 6, 8 and 9

particularly addressing improved public services, food safety and developing human capacities.

**Table 2.3 Lines of action in the National Policy for Food and Nutrition Security (PNSAN)**

Lines of action
<p>i) <i>Stability in supply and the development of the agri-food market</i> to guarantee of stable food supplies, timely availability of food, and the protection of incomes of producers.</p>
<p>ii) <i>The promotion of associative and business forms</i> to create sources of employment and income to improve availability and access to food.</p>
<p>iii) <i>The improvement of the capacity to access production</i> for the vulnerable populations.</p>
<p>iv) <i>The guarantee of access to food</i> aimed at protecting the basic food basket.</p>
<p>v) <i>The promotion and protection of healthy lifestyles</i> to improve the nutritional situation, especially in the most vulnerable groups in the population, namely infants, children, adolescents, pregnant women, nursing mothers, elderly, and displaced and ethnic groups.</p>
<p>vi) <i>Improve public services, environmental sanitation and healthy environments</i> to improve health conditions and basic sanitation, thus facilitating the biological utilization of food.</p>
<p>vii) <i>Quality assurance and food safety</i>. This includes strengthening health and nutritional surveillance in order to produce adequate information and guidance to consumers so that they can make better purchase decisions for food products.</p>
<p>viii) <i>Scientific and technological development</i> of the five axes of food nutritional security. It seeks to identify and prioritize research topics on food security.</p>
<p>ix) <i>The development of human capacities, potentials and competence</i>. The aim is to promote training programs in different areas of food security and nutrition.</p>

The complexity of this policy has challenged its implementation, involving different actors and sectors ranging from production to biological use of food. Other challenges include:

- The diversity of regions and problems (public services, resources), agricultural issues (land property, technology, investment and subsidies)
- Characteristics of the population (ethnicity, educational level, culture, income)
- Poverty and inequality, reflected in lack of quality education, health services, housing

- Empowerment of vulnerable population groups to develop their capabilities and autonomy
- Food policies to promote the agricultural sector
- The need for coordination and partnerships between entities and organizations

## 2.6 Programs to improve food and nutrition security (SAN)

As part of the food and nutrition plan to improve food security, there is a range of nutrition and health actions to address undernutrition, overweight, micronutrient deficiencies, and chronic diseases related to diet. These actions have involved promotion and prevention strategies and food assistance programs, which are developed with the participation of public organizations in collaboration with FAO, UNICEF, WFP and in some instances NGOs. This section will go through the focus areas of those programs in their implementation, achievements and challenges in reaching the goals (Figure 2), Appendix 1.

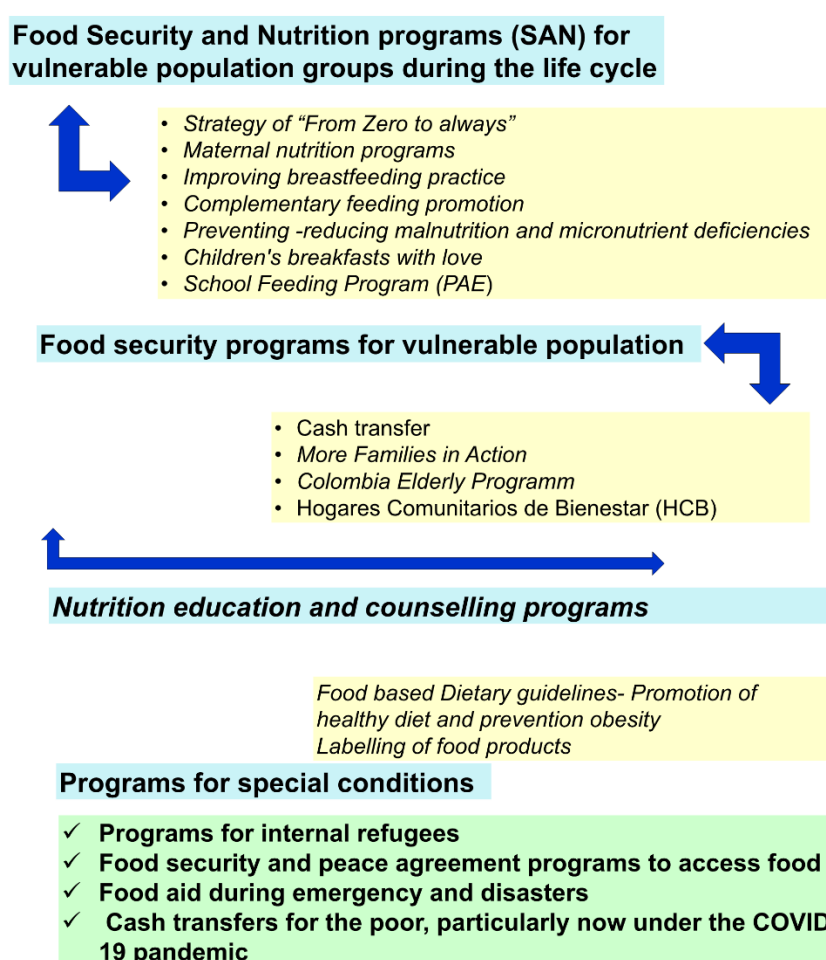


Figure 1.2 Summary of food aid programs for improving food security and nutrition in Colombia. Source: Designed by the author.

## **2.6.1 Food security and nutrition programs (SAN) for vulnerable population groups during the life cycle**

### **From Zero to Always strategy**

This national strategy started in 2011 and focused on mothers, infants and children under five and their families in order to provide integrated early childhood care and support for early childhood development in vulnerable communities, i.e. Afro-Colombians and indigenous groups, through access to health, nutrition, education and other services. This strategy includes support for pregnant women to reduce the prevalence of low birth weight, improve breastfeeding practices, and reduce micronutrient deficiencies (Comisión Intersectorial de Primera Infancia, 2013).

For that reason, SAN is interrelated with the programs in the From Zero to Always strategy, such as prenatal control; IAMI (mother- and infant-friendly institutions) strategy; AIEPI (integrated care for prevalent diseases in childhood) strategy; nutrition recovery centers to treat severe and moderate undernutrition; and healthy environments program. The main actions in this context include the promotion, protection and support of exclusive breastfeeding during the first six months, with adequate complementary feeding up to two years of age, micronutrient supplementation, fortification, education for diet diversification, the promotion of healthy lifestyles, and handwashing to reduce diseases related to food.

### **Improving breastfeeding practices**

The Ten-Year Plan for Breastfeeding 2010-2020 was implemented in order to increase exclusive and total breastfeeding as an important protective factor in the survival, health and nutrition of infants under two years of age (Ministerio de Salud y de la Protección Social et al., 2010). The aim is to promote exclusive breastfeeding up to six months of age and adequate complementary foods up to age two and older, among infants in vulnerable conditions, addressing breastfeeding mothers, with the participation of parents, grandparents and caregivers. It integrates the woman- and child-friendly institutions' strategy (IAMF), family, woman and infancy (FAMI) and the Kangaroo mother method. This plan also involves the promotion of human milk banks, strengthening skills and competencies in the implementation of breastfeeding counseling and adequate practices in infant feeding, directed at community agents, health personnel and other actors.

Other mechanisms included monitoring the international code of marketing of breast milk substitutes (formula milks, follow-up milks, other milks, complementary foods, bottles and pacifiers), which provided actions to improve breastfeeding practices in accordance with the requirements established at international level. However, it seems that this action is not reaching its goals. Exclusive breastfeeding for six months is not a common practice, and formula and bottle feeding is still the main mode of feeding of infants under two years of age, while complementary feeding is introduced at an early age with inadequate complementary foods (Ministerio de Salud y Protección Social, 2015; ENSIN, 2015)

The main goal by 2015 was to reach a prevalence of 50 percent exclusive breastfeeding (EBF) and complementary feeding (CF) until two years of age. But

despite the implementation of these strategies the prevalence of EBF decreased from 46.9 percent in 2005 to 36.1 percent in 2015. In other words, there was a reduction in prevalence of 4.1 percentage points from 2005 to 2010 and of 6.7 percentage points from 2010 to 2015, representing a reduction of 10.8 percentage points in 10 years (ENSIN, 2015).

Although there are some advances, such as increasing maternity leave to four months, there are limitations to improved breastfeeding and complementary feeding practices. There are still factors that might have interfered, preventing its success, such as a lack of consensus on complementary feeding, limited monitoring of the international code of marketing of breast milk substitutes, and limited growth monitoring. Therefore, the situation demands strengthened actions addressing mothers and infants from birth to two years of age, prioritizing nutrition and health interventions. There is also a need for research to identify the poorest effects of current interventions and causes of limited adherence to adequate BF and CF practices.

### **Preventing and reducing malnutrition and micronutrient deficiencies**

A combination of different actions has been developed to reduce and prevent malnutrition and micronutrient deficiencies (anemia, iron deficiency anemia, iron deficiency, zinc deficiency, vitamin A, and vitamin B12 deficiencies), with an emphasis on pregnancy, the childbearing period, infancy, early childhood, and school-aged children. The main goal of those actions is to reduce the prevalence of anemia, iron deficiency, vitamin A, vitamin B12 and zinc deficiencies, all representing significant public health problems (ENSIN, 2005, 2010, 2015). For instance, the prevalence of anemia in the age group 6–59 months was 27.9 percent, while the prevalence among infants 6–11 months was 59.7 percent (ENSIN, 2010). The situation for other micronutrients, such as zinc and vitamin A, is also causing concern, affecting various groups in the Colombian population (ENSIN, 2015). The prevalence of vitamin A deficiency in children aged 1–4 years was 27.6 percent, and 22–27 percent in the age group 24–59 months, while zinc deficiency among children aged 1–4 years was 43 percent at the national level. In 2004, the National Committee for the Prevention and Control of Micronutrient Deficiencies (CODEMI), an intersectoral committee, therefore supported the Ministry of Health and Social Protection (MSPSS) to develop a protocol for supplementation with folic acid, iron and calcium for pregnant women and children under five years of age (iron supplementation) with SISBEN 1 and 2. Furthermore, in 2015, due to the limited effect of these actions, CODEMI launched the National Strategy for the Prevention and Control of Micronutrient Deficiencies. This strategy has five lines of action: i) diversification of food, ii) strengthening of priority actions, iii) fortification, iv) biofortification, and v) supplementation. These actions targeted the general population though with an emphasis on more vulnerable population groups such as children under 12 years of age, pregnant women and women of childbearing age (MSPSS, 2015). The same year, MSPSS updated the health benefits plan and introduced food powder products with vitamins, iron and zinc according to WHO guidance for infants 6–24 months. The supplement is provided by the health services during prenatal check-ups.

This strategy is supported by other programs, such as: i) promotion of eating habits, hygiene and healthy lifestyles, ii) promotion and implementation of properly timed cord



clamping, iii) the promotion of exclusive breastfeeding for 6 months, continuing breastfeeding with complementary feeding until 2 years of age, iv) promoting and supporting appropriate complementary feeding and family feeding practices, v) nutritional assessment of pregnant women and nursing mothers, vi) growth monitoring, vii) supplying fortified complementary foods, viii) food fortification for the general population in accordance with the law (Decreto 1944, 1996) (food products containing wheat flour, domestic and imported, are subject to mandatory fortification with iron, folic acid, vitamin B1, B2, and niacin), plus salt (Decreto 547, 1996), and home fortification of foods with micronutrient powders (MNP) for children 6–23 months. Intake of MNP is promoted by adding the micronutrient mixture in powder form to any semi-solid food. The MNP mixture is presented in 1 g sachets containing a mixture of 15 micronutrients, including iron, zinc, vitamins A, C, D, E and complex B. The practice must be carried out daily for 60 continuous days, sprinkling the content over the food before consumption.

Fifteen years after these strategies were implemented, there is limited or no success regarding anemia, zinc and vitamin A deficiency, especially among pregnant women and children under five years of age (ENSIN, 2005, 2010, 2015). The prevalence of anemia among pregnant women was 44.7 percent in 2005, 57.3 percent in 2010, and 59.2 percent in 2015. Among infants under one year, the proportions were 59.7 percent in 2010 and 62.5 percent in 2015. Among schoolchildren 5–12 years, 37.6 percent suffered from anemia in 2005, and 27.2 percent in 2010. Among children 1–4 years, 26.9 percent were zinc deficient in 2005, 43.3 percent in 2010, and 36 percent in 2015. The proportion of vitamin A deficiency among children 1–4 years was 25 percent in 2010 and 27.3 percent in 2015.

There are challenges to reaching the goal of combatting micronutrient deficiencies. Despite the aim of the implemented strategies of preventing and reducing micronutrient deficiencies, anemia and iron, zinc and vitamin A deficiencies are still prevalent, and some have increased (ENSIN, 2005, 2010, 2015). Several factors may have limited the effects of the actions, such as inadequate follow-up and insufficient identification of adherence. The coverage of the programs may have been incomplete due to problems such as inadequate delivery in regions with limited access by road and problems with timely delivery. Compliance may have been low, and, in some cases, there may have been unwanted side effects. The differences between the regions are challenging. One of the regions with high vulnerability is the Pacific region, with the highest rates of anemia, 32 percent (ENSIN, 2010). There is wide variation at the department level. For example, the prevalence of anemia in Santander had the lowest prevalence of anemia, at 4.7 percent, compared with Sucre (16 percent) and Casanare (19.7 percent). At the other end of the scale, the highest prevalence of anemia in Colombia is found in Meta (42.6 percent) and Amazonas (43.9 percent).

More attention and efforts should therefore be directed at the fight against micronutrient deficiencies in Colombia, taking into account the limited effect of the interventions among pregnant women, infants under two years and children aged 1–4. These deficiencies in health and nutrition have considerable impacts; affecting motor and cognitive development at the individual level and the economy at the individual and the community level.

## **Children's Breakfasts with Love**

The Children's Breakfasts with Love is a social program in the Colombian state, and part of the Food Security and Nutrition Plan (SAN). The target group is vulnerable children from six months to four years of age. The main objective is to ensure basic essential nutrients for healthy growth through the delivery of a nutritious breakfast, including fortified supplements (ICBF, 2010). This program was developed by the Colombian Institute of Family Welfare (ICBF) and has national coverage. The inclusion criteria are children from rural and urban areas who are victims of forced displacement, children living in extreme poverty, and children belonging to SISBEN families. They should not be part of any other ICBF program. The family must have copies of the civil registry, the growth and development card, the vaccination card, and the health card for the child that receives the benefit. The father and/or mother must have an identity card. The applicant for this benefit must be the mother or father as head of the household. This program has two types of food delivery. Type 1 is a nutritional supplement, aimed at infants 6–11 months. The mothers receive a package of flavored Bienestarina<sup>6</sup> (900g). Type 2 of nutritional supplement is targeted at children ranging from 12 month to four years and 11 months. They receive a 200 ml ration of a flavored milk drink, a cracker or sandwich cookie enriched with iron and folic acid, and a packet of flavored Bienestarina (900 g). The delivery is monthly. The complement thus covers 20–25 percent of the daily recommended intake of nutrients for 20 days of consumption (ICBF, 2010). The program has benefited one million children belonging to families classified as SISBEN level 1, including some children from indigenous populations.

An evaluation conducted by the Instituto Nacional de Salud (INS) in 2007 found that the expected impact on the nutritional status by anthropometric measures was not statistically significant. However, it seems that there was a positive trend towards increased height and weight. Contrary to this, hemoglobin levels decreased, and the prevalence of anemia increased. In addition, the impact of the program on ferritin levels and iron deficiency was negative. The proportion of total expenditure allocated to the purchase of food decreased but was not significant. There was a lack of knowledge of the program and of commitment on the part of those responsible for the beneficiaries. Likewise, those in charge of operating the program lacked adequate knowledge of the community in which they were involved (INS et al., 2012).

## **School Feeding Program (PAE)**

This program is meant to provide a nutritional supplement to children and adolescents enrolled in the public educational system throughout the national territory. Established in 2002, the main objective is to supply macronutrients and micronutrients (zinc, iron, vitamin A and calcium) during the school day, promoting a healthy lifestyle and improving their ability to learn. The provision of school food services is adapted to the conditions of each place. It has established routes or mechanisms to guarantee that they receive their daily rations in conjunction with educational networks, the education

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<sup>6</sup> Bienestarina is a dietary supplement of high nutritional provided and distributed by the ICBF since 1976. This food supplement is included in various food security programs covering the entire national territory and it is addressed especially to children who are at risk conditions and food vulnerability. This food consists in a mixture of flours of vegetable origin, such as starch from corn, wheat and rice, soy, plus milk powder. It is also a highly enriched source of calories, carbohydrates, proteins, natural fats, calcium, vitamins A, C and other nutrients (Peñaloza et al., 2016).

administrations, rectors and teachers of the educational institutions, the ICBF, the PAE operators and other actors involved. This program is expected to include the prioritized food groups and progressively strengthen integration with productive pedagogical projects. Nutritional education is meant to promote home and school gardens, fruit trees, breeding of minor species in the community, and to promote regional production in order to consolidate the marketing network for school canteens.

PAE is organized by geographical area (urban or rural). It focuses on vulnerable ethnic communities, such as indigenous, Afro-Colombian, Raizal and Gypsy, as well as population groups that are victims of armed conflict, and groups with high nutritional and socio-economic vulnerability according to the cut-off points of the SISBEN. Food supplementation in this program involves the daily supply of at least one food ration to the students during the school year. The PAE is financed with resources from the General Participation System. Food supplements are delivered to the educational institutions for immediate consumption. There are three types of food supplements; i) breakfast, recommended for children and adolescents enrolled in the morning sessions, ii) food supplements for children and adolescents who are enrolled in the afternoon sessions, and iii) lunch for children and adolescents who are enrolled in the afternoon shifts.

The program receives funds from international agencies such as the World Food Program (WFP), which transfers USD 16 per child per month to targeted schools through CBTs. Recipes are decided locally on the basis of WFP guidelines for balanced meals, using locally purchased fresh ingredients from all food groups. The typical ration provides 30 percent of daily calorie and micronutrient requirements. A total of 68,000 children aged five to 18 years in 82 targeted boarding schools receive the remaining calorie and micronutrient requirements from the national program and the municipality. WFP also supports the development of a curriculum that covers nutrition education, healthy lifestyles and nutritional problems specific to boys and girls, prevention of violence, and school gardens.

The PAE program was evaluated in 2012. The report showed that the investment is around one billion pesos per year (0.19 percent of PIB) and that the program covered four million school children (primary and secondary schools), who received prepared meals in 29,000 public schools throughout the country (80 percent), with the participation of volunteers and teachers in the municipalities. The level of acceptance of the program and its different modalities was high among the beneficiaries. In terms of impact, it contributed to increasing school attendance, especially in rural areas. It favored interaction with Families in Action and generated desirable effects on food security. However, while the management office reported the distribution of 75 percent breakfasts and 25 percent lunches, field reports noted the delivery of 42 percent snacks, 30 percent breakfasts, and 28 percent lunches. The difference showed difficulties in terms of information for planning and programming that may impact the nutritional results of the program. The difference in the nutritional composition of the food delivered from the one planned indicates that the criteria were not applied. Other negative results were price inconsistencies and poor adaptation to local conditions. For the modality prepared on site, the report highlighted risks of contamination in the food production chain, including inappropriate practices of cleaning and disinfection and

food transport, as well as differences in prices. Thus, the weaknesses highlighted in the report are related to inconsistencies in the information about the modalities in terms of coverage, supply of macro and micronutrients, the modality served, and to differences between food prices reported by the managers and field reports, which were due to inadequate quality of information and monitoring (CINDE, 2013).

The main challenges are: guaranteeing coverage, especially in isolated regions, including rural areas; food and nutrition quality, with meals providing the right amount of food with adequate nutrients based on food culture and habits; and promotion of a healthy diet, physical activity and healthier lifestyle. There are concerns about the conditions that are facing these children, with undernutrition and micronutrient deficiencies on the one hand and increasing prevalence of overweight and obesity on the other. Other actions must be taken into account regarding integrity and equality, because the PAE is one of the programs where many cases of corruption have been reported, while it seems that nothing has been done to combat it.

### **2.6.2 Nutrition education and counselling programs to improve food security**

The National Plan on Food and Nutrition Education (EAN, 2017) aims to promote a balanced and healthy diet that contributes to reducing mortality, morbidity and inappropriate eating habits, and thus to protecting the health of the Colombian population. It has formulated common guidelines on healthy eating habits and nutritional health. In this particular action, two dietary guidelines were developed: i) dietary guidelines for pregnant women and children under two years, and ii) dietary guidelines for the rest of the Colombian population. These guidelines form the basis for nutrition education programs at the community level.

Nutritional education and training is provided through early childhood care programs (from Zero to Always); schools, public and private colleges, as well as in other places and programs that involve these population groups. Themes refer to SAN, healthy lifestyles and compliance with Law 1355 of 2009 “by which obesity and chronic non-communicable diseases associated with it are defined as a public health priority and measures are adopted for their control, care and prevention” (Gobierno de Colombia, Ley 1355 de 2009). Therefore, training strategies are developed for beneficiaries and their families, seeking to promote a culture of balanced eating and healthy lifestyles. PAE operators must guarantee permanent training of their staff in the correct handling of food and good food preparation practices, as well as balanced, sufficient and adequate nutrition. The Ministry of National Education (MEN), through the Secretaries of Education of the Certified Territorial Entities, should promote the creation of pedagogical projects for the promotion of healthy lifestyles through the participation of the educational community.

This strategy addresses intervention on the causes and effects of malnutrition, and the expected outputs include: i) training provided for national and local authorities, civil society, community members and vulnerable families; ii) nutrition messages adapted and delivered to target populations; iii) technical assistance provided to improve the effectiveness of nutrition programs.

These actions are expected to meet the goals of teaching-learning processes on desirable eating habits and health, and on improving the consumption of food sources of available micronutrients, food utilization, variety and diversity of diet, as well as on hygiene, physical activity, relationship with living beings and ecosystems. The World Food Program (WFP), in collaboration with the PNSAN, promotes education and training through three interrelated components: i) support to the development of innovative nutrition messaging and communication tools adapted to the needs of women, men, adolescents, children and elderly people, respectively; ii) training for WFP beneficiaries in healthy eating habits and adequate infant and young child feeding and hygiene practices, and iii) strengthening of networks of women volunteers to communicate messages in their communities.

This action is transverse and is supposed to support all the programs. However, there is a lack of evaluation of the effect of nutritional education upon the development of adequate food habits, healthy lifestyles and improved food practices. It seems that the nutrition education strategy did not work as expected regarding the main interventions to encourage breastfeeding and adequate complementary feeding practices. Nor did it work well in promoting a healthy and varied diet to prevent micronutrient deficiencies, overweight and obesity. Therefore, an intervention is required in order to explore the weaknesses and opportunities of this strategy. This should consider what might be the best strategy for nutrition counselling, education, and information, based on mass media or on a combination of strategies requiring commitment by the government, industry and community.

### **2.6.3 Food security programs for vulnerable population**

The main causes of food insecurity in Colombia are related to food access rather than to food scarcity. The predominant cause of food insecurity in vulnerable populations is low income. Structural limitations in the agriculture sector affect food supply and distribution, leading to increasing food prices (FAO, 2018). Even though Colombia has made efforts in social, health, nutrition, education and – especially – food aid programs for people living below the poverty line, the impact is still limited. In the period 2010–2014, the poverty index was reduced from 37.2 percent to 28.5 percent, and extreme poverty from 12.3 percent to 8.1 percent. Multidimensional poverty declined from 30.4 percent to 21.9 percent. This is equivalent to 3.4 million people (Prosperidad Social, 2016), meaning that a significant proportion of Colombians still live in poverty and extreme poverty, mainly affecting indigenous and Afro-descendent communities in rural and peripheral areas of the major cities. Colombia has significant regional differences. The Pacific region has the most multidimensional poverty in the country, the poorest department in the region being Choco. The lowest poverty levels are found in Bogota, the capital of the country. The gap between rural and urban areas has persisted since the 1950s.

The main programs to address food security for vulnerable populations include cash transfer programs such as More Families in Action. In addition, there is food assistance, which will be described below.

## Cash transfer

### More Families in Action

The More Families in Action program was designed in 1999 and launched in 2000, in accordance with CONPES 3081 (Arteaga, Trujillo, & Gómez, 2019). In its 19 years of operation, it has provided cash incentives every two months to poor and vulnerable families. It has gone through three phases.

Phase 1 between 2000–2006 was mainly a rural phase, due to its coverage in municipalities with fewer than 10,000 inhabitants. The purpose was to promote and support the protection of human capital in families with children under 18 years of age belonging to level 1 of SISBEN. The families were granted a conditional subsidy to meet needs for nutrition, health and education. In this phase, the program covered 622 municipalities with 340,000 beneficiaries. In 2000–2004, the resources used were equivalent to USD 336 million, financed by multilateral banks: the World Bank (WB), the Inter-American Development Bank (IDB), and a national counterpart. In 2005 a pilot study was conducted to include the population of victims of forced displacement. At the end of the first phase, the evaluation reported a reduction of 17.1 percentage points of poverty in urban areas and 12.6 percentage points in rural areas, reaching 699,391 beneficiaries at the end of 2006.

Phase 2 was developed from 2007 to 2011, targeting also the indigenous population and displaced people. The objective was to complement the incomes of families with children under 18 years of age in order to improve food consumption, food habits and health care. In addition, the nutritional status of children under seven years of age was monitored to support attendance and retention at primary and high school levels. At the end of the first and second phases, in the period 2002–2012, the evaluation of this program showed a reduction of 22.2 percentage points of poverty, but multidimensional poverty was 2.3 times higher in the rural than in the urban areas (Arteaga et al., 2019).

Phase 3 started in 2012 with impact evaluations conducted in phase 2, which reported social differences and inequalities. New objectives were introduced: i) comprehensive care for early childhood, ii) a national strategy to prevent and eradicate the worst forms of child labor and to protect young children, iii) relevant school retention strategies, iv) differentiated policies for social inclusion, v) a regional approach, and vi) a gender approach.

This program supports families through conditional cash transfers for health and education. The objective is to break the cycle of poverty through the provision of economic opportunity in the form of cash transfers to poor citizens. However, they have to fulfil a series of obligations, including: i) enrolling their children aged 7-17 years in public schools, ii) ensuring that their children are vaccinated, and iii) attending regular medical check-ups.

The education supportive services are delivered individually to each family for a maximum to up of three children, who are enrolled in the school system. The transfers are delivered every two months, except during school vacations. The condition is that the family fulfil two commitments: children and adolescents must attend at least 80

percent of the classes and may not miss more than two school years. The transfer is made in two modalities. The first provides access via their bank account using a debit card, so that the incentive can be withdrawn at any time. The second one provides bank transfers for the beneficiaries that allows the family to withdraw cash over the counter or via bank transfers.

The evaluation of health conditions in 2012 was positive, with a reduction of 6 percentage points in stunting at nine years of age, increased body weight among children aged 9–12 years living in rural areas, and increased body height of 1 cm. The impact evaluation of the education component was also positive; the probability of finishing high school in rural areas increased by 6.4 percentage points, and cognitive development among children 3–11 years increased as well. In the first phase (2000–2006), the number of beneficiaries was 3,487,013. By 2019, the program had 8,477,484 active beneficiaries, of which 57 percent were in urban areas, 17 percent in populated centres, and 26 percent in dispersed rural areas (Arteaga et al., 2019).

The main achievements of this program are increased school attendance, especially in rural areas, and reduced stunting. Despite its growing coverage over the years, there are still challenges. Coverage still needs to be increased, especially in rural areas and in the regions facing poverty, food insecurity, and lack of resources to guarantee healthy food. In addition, a healthy lifestyle needs to be promoted, including the prevention and reduction of overweight and obesity and more physical activity. On the other hand, consideration must be given to micronutrient deficiencies that are still prevalent, especially among pregnant women, infants and children.

### **Colombia Elderly Program**

The aim of this program is to improve the living conditions of older people who are living in poverty and extreme poverty conditions through an economic transfer that covers basic needs. A monthly financial subsidy is provided either directly via bank transfers or indirectly, granted as part of basic social services through welfare centers for elderly or through day centers.

The evaluation of the program in 2016 showed that 1,503,867 beneficiaries received direct subsidies and that populations with greater vulnerability were prioritized. 87.4 percent of the beneficiaries had one or more chronic diseases, 40.6 percent had a disability, 61.8 percent live in households with income below the poverty line, and 28 percent below extreme poverty (DNP, 2016). The program contributed to reducing poverty, especially in rural areas. The household income of those beneficiaries who did not have food to eat due to lack of money was increased to spend on food. They also received education and other services, which increased the proportion of elderly people participating in household decision making. However, the program needs to increase the number of beneficiaries and to improve pension schemes, especially in rural areas. The value of the subsidy should be adjusted according to the value of the extreme poverty line. Furthermore, it should be complemented by other health and housing programs, as well as better care for victims of violence. Other programs that need to be strengthened include those addressing healthy diets, especially directed at the prevention and treatment of chronic diseases related to diet.

## **Hogares Comunitarios de Bienestar (HCB)**

This program is developed at the community level, providing services in family homes. It is operated 200 days a year, during weekdays (8 hours a day) and is adapted to the demands and characteristics of each territory. Beneficiaries are pregnant women and children from birth to four years 11 months of age. They receive food, including a snack in the morning, lunch, and a snack in the afternoon, intended to meet 70 percent of nutritional requirements. The HCB program was established in the 1980s to provide services through a specific population group denominated “community mothers”. These community members work in partnership with the government, mainly through the Colombian Institute of Family Welfare (ICBF). The program attends to children’s needs for care, affection, education, and food according to nutrition guidelines (ICBF, 2014). Currently, HCB is present in 1,089 of the 1,103 Colombian municipalities, benefiting more than one million children under five years of age who belong to the most vulnerable sections of society.

In 2009, ICBF served 1,344,364 users through the HCB. Under this initiative, 27,299 community mothers received training, 1,976 homes were improved, adapting and establishing friendly spaces for early childhood as part of the scheme to serve as community homes, benefiting 22,260 children in 14 municipalities, and operating for 167 days. In 2011, the HCB achieved a coverage rate of 54 percent among the poor population between 0 and five years. However, the evaluation of the program showed that there was a modest effect on children’s cognitive socio-emotional development, but not on their nutritional status (Bernal & Fernández, 2013).

### **2.6.4 Programs for special conditions**

#### **Programs for internal refugees**

Programs for internal refugees are coordinated by the Ministry of Agriculture and Rural Development (MADR) and involve several agencies, the two most relevant being the Colombian Institute for Rural Development (INCODER) and the Vice-Ministry for Rural Development. The INCODER helps to reconnect displaced rural citizens with their landholdings. It also provides agricultural inputs and capacity building to farmers to improve their productivity and allow them to generate income from their agricultural activities. Furthermore, since 2013, INCODER has worked closely with the Vice-Ministry for Rural Development, which has three areas of responsibility. The first is concerned with the land property rights of displaced citizens. The second focuses on increasing agricultural productivity. The third works to improve access to services in rural communities. Efforts to improve access to services have relied on a territorial approach to rural development, representing a significant development in Colombia’s FSN policy framework (OECD, FAO, & UNCDF., 2016). El Programa de Desarrollo Rural Integral con Enfoque Territorial is perhaps the most tangible outcome of the recently adopted territorial approach to development. It is a quasi-experimental policy implemented in partnership with local governments in eight regions, aimed at improving rural households’ accessibility to public services.



## **Food security and peace agreement programs to access food**

In the past 50 years Colombia has been affected by both armed confrontations and natural disasters. Forty-five percent of the total population lives in conflict zones, affecting mainly rural areas. During the armed conflict, 7.1 million people were displaced and 2.3 million were in need of food assistance. At the same time, climate change and environmental challenges needed to be addressed. A peace agreement was signed in 2016 between the Government and the Revolutionary Armed Forces of Colombia -- People's Army (*Fuerzas Armadas Revolucionarias de Colombia—Ejército del Pueblo* [FARC–EP]) to end the armed conflict. This agreement was based on six points: i) a new Colombian rural sector; a comprehensive rural reform, (including funding for land distributions among farmers currently without land, plans to provide public services, infrastructure, social development, education, health and housing for farmers), ii) political participation, open democratic conditions to build peace, iii) an end to the conflict, iv) a solution to the issue of illegal drugs, v) agreement on victims and conflict-affected populations, and iv) implementation, monitoring and authentication.

The peace agreement included food security and was introduced to the negotiations as an argument for the return of displaced FARC soldiers and for their access to land. This provides an opportunity to rebuild conflict-affected areas to strengthen agriculture-based economies, aimed at achieving social stability especially for small farmers.

In line with the peace agreement, FAO designed a strategy called *Estrategia de acompañamiento de FAO a la implementación del Acuerdo de Paz en Colombia* (FAO follow-up strategy for the implementation of the peace agreement in Colombia) to be implemented in the period 2015–2019 (FAO, 2018). Its objectives include: i) management of agro-climate and social crises, ii) support vulnerable rural communities, enabling them to undertake and adapt their productive schemes to climate vulnerability, iii) support historic memory by encouraging traditional methods of production and consumption, iv) ensure human rights to food in highly vulnerable communities by establishing a model adapted to their situation and focusing on the dignity of agricultural activities, and vi) create space for humanitarian action in areas where illegal armed groups are still present after FARC- EP rebels left.

However, four years after the peace agreement, the government is not clear about the interventions. Because of that, it is impossible to see whether the goals for SAN among victims of the conflict are reaching the proposed objectives.

## **Food aid during emergency and disasters**

Food assistance programs are meant to guarantee the delivery of food rations to the affected population when there are serious restrictions on access during natural, social or economic disasters. The phases of emergency food assistance, transition and restoration always require comprehensive risk management. During emergencies, food aid packages are delivered under the Direction of Risk Management to prevent and assist disasters (DGRPAD), in coordination with local committees to prevent and assist disasters (CLOPAD) and regional committees (CREPAD) and agricultural secretaries. The emergency plans of the public works (*obras*) include strategies to guarantee food

supply to those affected. Even international agencies are involved during emergencies that include food aid, such as the Red Cross and WBF.

## **2.6.5 Cash transfers for the poor, particularly now during the Covid-19 pandemic**

### **Solidarity Income Program (PIS)**

The Solidarity Income Program (PIS) is an economic support program initiated by the national government for households in conditions of poverty, extreme poverty and economic vulnerability. Its purpose is to mitigate impacts from the emergency caused by the Covid-19 pandemic in the population. The government makes monthly transfers of USD 160,000 COP to families. The households included in *Familias en Acción*, *Colombia Mayor*, *Jóvenes en Acción* and *Devolución del IVA* are excluded. The government has planned to cover 32 regions of Colombia and support approximately three million families.

## **2.7 Impact of the food policy on food insecurity and nutritional status**

The reduction in food insecurity in Colombia from 2010 to 2015 was limited, its prevalence being reduced by 3.5 percentage points, from 57.7 percent to 54.2 percent. The Atlantic region had the highest food insecurity (65 percent). Here, the effect of actions implemented in PNSAN on nutritional status measured by anthropometry among children under five years, showed a decrease. In Colombia, the prevalence of stunting was 17.9 percent, in 2005 16.0 percent, in 2010 13.2 percent, and by 2015 it was 10.8 percent (ENSIN, 2005, 2015) There was a reduction of 7.1 percentage points in 15 years. Large improvements were also found in the economic conditions of families, mothers' education, and the ethnic composition among population groups in the country. However, the prevalence of acute undernutrition in children under five years shows a different trend; in 2000 the prevalence was 1.1 percent, in 2005 1.6 percent, in 2010 0.9 percent, and in 2015 it had increased to 2.3 percent (ENSIN, 2015)

The prevalence of overweight in children under five years and in schoolchildren has been increasing over the past 10 years. The prevalence of overweight in children under five years was 5.2 percent in 2015, which is 1.2 percentage points higher than in 2005. In contrast to thinness, in the period 2005–2015, the prevalence of both overweight and obesity increased considerably for children and young adults of all ages, genders, socioeconomic levels, the educational level of mothers, areas and in most regions of the country (ENSIN 2005, 2015). Thus, the shift from a decrease in stunting to increased overweight and obesity in all population groups has occurred in recent years and has increased by age. These nutritional problems among children occur along with micronutrient deficiencies and increased acute undernutrition. In adults, the main nutrition problems in Colombia are overweight (51.2 percent) and obesity (16.2 percent). The risk of overweight and obesity increases by more than three times with increasing age; the prevalence among adults 18–22 years is 21.4 percent, compared with 65.7 percent among the group 58–64 years (Neufeld, Rubio, & Gutiérrez, 2012).

In the period 2005–2010, Colombia achieved a significant reduction in the prevalence of chronic malnutrition and acute malnutrition, but simultaneously a significant increase was found in the prevalence of overweight and obesity affecting all population groups and regions. While there was an overall shift from undernutrition to overweight-obesity, micronutrient deficiencies are still prevalent, especially among pregnant women, infants and children. Current challenges for PNSAN are to fight this triple nutritional burden while also addressing differences between regions, social inequality, and weaknesses in the implementation, development and monitoring of the strategies and programs in PNSAN. In addition, it is necessary to include the promotion of nutritious diets and sustainable consumption in rural areas and ethnic communities, and to develop programs for the emerging nutrition and health problems of overweight and obesity in children and adults.

## 2.8 Conclusions

Conclusions that may be drawn from this analysis are:

- Colombia has had a National Policy for Food Security and Nutrition (PNSAN) during the period 2012–2019, updated to address the main food and nutrition problems in vulnerable population groups.
- The impact of the policy is limited, especially among pregnant women, infant and children under two years of age. In some cases, micronutrient deficiencies have been increasing.
- The coverage and impact of the policy seem to be limited, especially in vulnerable groups such as indigenous, Afro-Colombians, and other ethnic groups.
- The PNSAN has involved a large number of public and private organizations, demanding a wide variety of collaborations which in turn require communication, monitoring and evaluation to reach the objectives and goals. This has represented a limitation, with possibilities of overlapping and duplication of efforts.
- This policy appears to be ambitious and complex, with no clear guide for monitoring that might influence its implementation and development of strategies and plans. Its success is unclear.
- The policy has faced some important challenges to its implementation and surveillance, such as violence, internal conflicts, illicit crops, and massive displacement from rural areas, with impacts on agricultural growth, food access and food security.
- Food availability and access rely mainly on agriculture. The policy is not very clear on how to achieve its goals, taking into account problems of access to land, subsidies, incomes for peasants and employers in the sector, and infrastructure, with roads to guarantee food supply chains.
- Even though there are a number of food aid programs for vulnerable groups, some of them target the same groups. There are no clear guidelines for monitoring them.

## 2.9 Food policy challenges and needs for research and evaluation

- The PNSAN is facing urgent challenges, such as preventing and treating micronutrient deficiencies during pregnancy and infancy (from birth to two years of age) and promoting breastfeeding together with adequate complementary feeding.
- There is a need to identify the major causes of the low impact of some of the programs, such as the promotion of breastfeeding and strategies to prevent micronutrient deficiencies.
- New malnutrition problems should be addressed, particularly overweight and obesity in all groups by age and ethnicity, region and socio-economical situation.
- The PNSAN should include actions aimed at maintaining achievements in the prevention of acute malnutrition (early detection and timely treatment) and food security in the country.
- To prevent acute malnutrition problems, necessary actions of intervention should be implemented. The identification of such actions requires an efficient and effective growth monitoring system for all Colombian children from 0–2 years of age, with follow-up from 2–3 years of age.
- Interventions should give particular attention to the prevention and control of iron, zinc and other micronutrient deficiencies. Emphasis should also be given to the promotion of growth, the prevention of chronic malnutrition, the promotion of a healthy weight, and to the prevention and control of overweight and obesity.

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## Appendix 1.

<b>Español</b>	<b>English</b>	<b>Source</b>
Plan Nacional de Seguridad Alimentaria y Nutricional	National Plan for Food Security and Nutrition	<a href="http://www.scielo.org.co/scielo.php?script=sci_arttext&amp;pid=S0120-55522015000100016">http://www.scielo.org.co/scielo.php?script=sci_arttext&amp;pid=S0120-55522015000100016</a>
Comite de Seguridad Alimentaria y Nutricional	Committee on Food Security and Nutrition	<a href="http://www.fao.org/right-to-food/news/news-detail/en/c/1323824/">http://www.fao.org/right-to-food/news/news-detail/en/c/1323824/</a>
Comisión Intersectorial de Seguridad Alimentaria y Nutricional (CISAN)	Intersectoral Commission for Food Security and Nutrition	<a href="http://www.fao.org/right-to-food/news/news-detail/en/c/1323824/">http://www.fao.org/right-to-food/news/news-detail/en/c/1323824/</a>
Política Nacional de Seguridad Alimentaria y Nutricional	National Policy for Food security and Nutrition	<a href="https://plataformacelac.org/en/politica/100">https://plataformacelac.org/en/politica/100</a>
Observatorio de seguridad alimentaria y nutricional	Observatory of Food Security and Nutrition	<a href="https://raca.fiocruz.br/index.php/raca/article/view/6">https://raca.fiocruz.br/index.php/raca/article/view/6</a>
Plan decenal de lactancia materna 2010–2020	Ten-Year Plan for Breastfeeding 2010–2020	<a href="https://scielo.conicyt.cl/scielo.php?pid=S0717-75182019000600708&amp;script=sci_arttext_plus&amp;tlng=en#B12">https://scielo.conicyt.cl/scielo.php?pid=S0717-75182019000600708&amp;script=sci_arttext_plus&amp;tlng=en#B12</a>
Estrategia para la Implementación de los Objetivos de Desarrollo Sostenible (ODS) en Colombia.	Strategy for the Implementation of Sustainable Development Goals in Colombia	<a href="https://mppn.org/sdgs-colombia/">https://mppn.org/sdgs-colombia/</a>
Plan de Desarrollo Nacional. “Pacto por Colombia, Pacto por la equidad”	National Development Plan 2018–2022. Pact for Colombia, Pact for Equity	<a href="https://www.oecd.org/dev/america-s/Colombia-Country-Note-Leo-2019.pdf">https://www.oecd.org/dev/america-s/Colombia-Country-Note-Leo-2019.pdf</a>
De cero a siempre. Estrategia nacional de Atención Integral a la Primera Infancia	Strategy of From Zero to Always. Policy on Comprehensive Early Childhood Care.	<a href="https://www.minsalud.gov.co/English/Paginas/The-children-of-Colombia,-a-priority-for-the-Ministry-of-Health-and-Social-Protection.aspx">https://www.minsalud.gov.co/English/Paginas/The-children-of-Colombia,-a-priority-for-the-Ministry-of-Health-and-Social-Protection.aspx</a>
Encuesta Nacional de la Situación Nutricional	National Survey of the Nutritional Situation of Colombia	<a href="https://www.minsalud.gov.co/English/Paginas/The-National-Survey-of-the-Nutritional-Situation-of-">https://www.minsalud.gov.co/English/Paginas/The-National-Survey-of-the-Nutritional-Situation-of-</a>



		<a href="http://Colombia-(ENSIN)-2015-is-presented-in-Villavicencio.aspx">Colombia-(ENSIN)-2015-is-presented-in-Villavicencio.aspx</a>
Monitoreo al Código Internacional de Comercialización de sucedáneos de la leche materna	Monitoring the International Code of Marketing of Breast-Milk Substitutes	<a href="http://2nd_comparative_analysis_studies_netcode_june2016.pdf">2nd comparative analysis studies_netcode_june2016.pdf</a> (who.int)
Programa de Alimentación Escolar	School Feeding Program	<a href="https://plataformacelac.org/es/programa/366">https://plataformacelac.org/es/programa/366</a>
Programa Colombia Mayor	Colombia Elderly Program	<a href="https://socialprotection.org/es/discover/programmes/programa-colombia-mayor-colombia-elderly-programme">https://socialprotection.org/es/discover/programmes/programa-colombia-mayor-colombia-elderly-programme</a>
Más Familias en Acción	More Families in Action	<a href="https://dds.cepal.org/bpsnc/cct">https://dds.cepal.org/bpsnc/cct</a>

Database	Link
Database of social programmes on food security in Colombia (WHO)	<a href="https://extranet.who.int/nutrition/gina/en/programmes/1410/topics">https://extranet.who.int/nutrition/gina/en/programmes/1410/topics</a>
Database of social protection programmes in Colombia (CEPAL)	<a href="https://dds.cepal.org/bpsnc/cct?pais=co">https://dds.cepal.org/bpsnc/cct?pais=co</a>



## Chapter 3

# Food availability in Cauca. Addressing the supply side of food security

Nury Bibian Bejarano Cardenas<sup>7</sup>

According to the Food and Agriculture Organization of the United Nations (FAO), the food security has four main dimensions: availability, access, utilization and stability. This chapter will focus on the physical availability of food; in other words, it will carefully examine the supply side. This dimension is determined by the production, stock level and net trade (FAO, 2008) and this research will consider its production, distribution and market structure. Secondary data such as the national agricultural statistics provided by the National Department of Statistic (DANE) will guide this research and shed light on the dynamics of food security in the department of Cauca (Agricultural Sector's supplying and Prices System -- National Administrative Department of Statistics).

### 3.1 Production

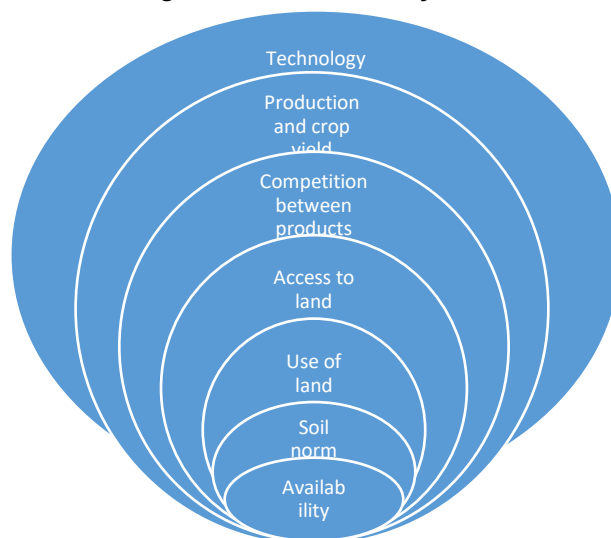
To describe the production system in Cauca, it is necessary to look into the soil norm<sup>8</sup>, the use of land for agricultural and livestock purposes, the access to land, the competition for land between the area for food products and non-food products, production, crop yield and productivity. Besides, the level production depends not only of the land itself, but it is also affected by the access to technology such as irrigation systems, machines for agricultural purposes and technical assistance. The following figure illustrates the sequence in the production system.

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<sup>8</sup> In this chapter, the soil norm refers to what in Colombia is called "Vocación del uso del suelo". These are official guidelines that seek to determine the most appropriate use of the soil, considering its biological characteristics, in order to have sustainable production that protects natural resources. For more information, see <https://geoportal.igac.gov.co/contenido/datos-abiertos-agrologia>

**Figure 3.1 - Production system**



Source: Own elaboration

### 3.1.1 Availability, soil norm and use of land

To begin, Cauca has 2,954,546 hectares where the rural area represents 99.1 percent and the urban 0.9 percent. Considering the soil norm, according to the National Institute of Geography in Colombia (IGAC), the 66.8 percent is land for the forest, the 14.3 percent is for agro-sylvo-pastoral activities, the 8.5 percent is the area for conservation, the 7.5 percent is for agricultural purposes, the 1.5 percent is for livestock and 1.3 percent for other purposes. As one can see, 23.3 percent of the area is available for the production of food.

**Table 3.0 – Availability of land and land use rule in Cauca**

		Hectares	%
Availability of land	Total area	2,954,546	
	Urban area	26,834	0.9%
	Rural area	2,927,712	99.1%
Soil norm. Land for ...	Agricultural	222,588	7.5%
	Agro-sylvo-pastoral	422,847	14.3%
	Conservation	252,193	8.5%
	Forest	1,974,693	66.8%
	Livestock	42,910	1.5%
	Non-agriculture purposes	27,741	0.9%
	Other	11,574	0.4%
	Total area	2,954,546	100.0%

Source: own estimation based on National Agricultural Census (DANE, 2016) land use rule (IGAC, 2013)

Considering that agriculture develops in the rural area, 42.7 percent of the land is used for agricultural and livestock activities. A simple comparison between the data (table 1 and 2) suggests that there is a conflict of land because the use for agriculture is larger than the soil norm for this purpose (1,2 million versus 0.68 million of hectares). This portion of the area could be taken from the land for conservation and forest because the use (1.5 million of hectares) is smaller than the norm of use (2,2 million of hectares).

Looking into the agriculture and livestock area, 41.8 percent of the land is used for agricultural activities, 29.8 percent is stubble, and the 27.9 percent is for pastures. To sum up, even though more than the half of the soil in Cauca goes for activities that allow the

production of food, it is important to mention that it is probable that a large fraction of this land is taken from the conservation area.

**Table 3.1 – Use of land in the rural area in Cauca**

		Hectares	%
Rural land distribution	Forest	1,558,584	53.2%
	Agriculture and livestock area	1,251,347	42.7%
	Non-Agriculture and non-livestock area	55,467	1.9%
	Other	62,314	2.1%
	Total of rural area	2,927,712	100.0%
Agriculture and livestock area	Pastures	348,565	27.9%
	Stubble	370,619	29.6%
	Agricultural (includes fallow land and rest land)	523,194	41.8%
	Farming infrastructure	8,969	0.7%
	Total	1,251,346	100.0%

Source: own estimation based on National Agricultural Census (DANE, 2014)

### 3.1.2. Competition for land

In order to determine whether there is competition for land between non-food and food production purposes, the study estimated the percentage of area that demands the main crops in Cauca. The following table shows the sown area by main groups disaggregating them, such as food and non-food products.

The total sown area in Cauca is 546,270 hectares, where the 43.2 percent goes for agroindustrial crops, the 20.6 percent for plantain and tuber crops, the 17.5 percent for fruits, the 13.4 percent for flowers, foliages, vegetables and aromatics, and the 5.3 percent for cereals.

For what is concerns agroindustrial crops, 69.9 percent is land for food products, 29.5 percent for other agroindustrial crops and 0.6 percent for non-food products. Within food products, the most representative crop is coffee (41.7%) followed by sugar cane (18.4 %), panela cane (7.7%) and cocoa (2.1%).

Considering the plantain and tubers group, all of the disaggregations are food-products. Plantain demands around 40 percent of the area, followed by other tubers (26.7%), yucca (26.3%) and potato (6.2%). Regarding fruits group, as well as plantain and tubers, all the crops go for food-products.

As regards flowers, foliages, vegetables and aromatics group, the 69.8 percent of the area goes for non-food products (forest plants with 69.2% and flowers and foliages with 0.6%) and the 30.2 percent for food products (vegetables 28.3% and 2% aromatics).

About cereals, all the crops go for food products. The 73.9 percent is land for corn and 18.3 percent for rice and 7.8% for other grains.

Considering these results, one can argue that there is not a competition for land between food and non-food products such that the former at least has 77 percent of the area (424,455 hectares).

**Table 3.2 – Competition for land in Cauca**

Sown area in Cauca	Hectares	% of total sown area	Type	Crop	Hectares	% of group
Agroindustrial crops	235,888	43.2%	Non-food products	Palm Oil	1,227	0.5%
				Rubber	88	0.0%
				Tobacco	53	0.0%
				Total non-food products	1,368	0.6%
			Food products	Coffee	98,321	41.7%
				Sugar cane	43,484	18.4%
				Panela cane	18,274	7.7%
				Cocoa	4,918	2.1%
			Total food products	164,997	69.9%	
			Other agroindustrial	69,523	29.5%	
Plantain and tubers crops	112,668	20.6%	Food products	Plantain	45,972	40.8%
				Yucca	29,607	26.3%
				Potatoe	6,977	6.2%
				Other tubers	30,111	26.7%
				Total food products	112,668	100.0%
Fruits	95,745	17.5%	Food products	Banana	1,570	1.6%
				Citrus	12,980	13.6%
				Pineapple	11,661	12.2%
				Avocado	2,642	2.8%
				Papaya	1,227	1.3%
				Other fruits	65,666	68.6%
				Total food products	95,745	100.0%
Cereals	28,992	5.3%	Food products	Rice	5,301	18.3%
				Corn	21,435	73.9%
				Other cereals	2,256	7.8%
				Total food products	28,992	100.0%
	72,978	13.4%	Non-food products	Flowers and foliages	437	0.6%
				Forest plants	50,488	69.2%
				Total non-food products	50,925	69.8%
			Food products	Vegetables	20,624	28.3%
				Aromatics	1,428	2.0%
				Total food products	22,053	30.2%
Total sown area	546,270		Total food products		424,455	
			Total non-food products		52,293	
			Total other agroindustrial		69,523	

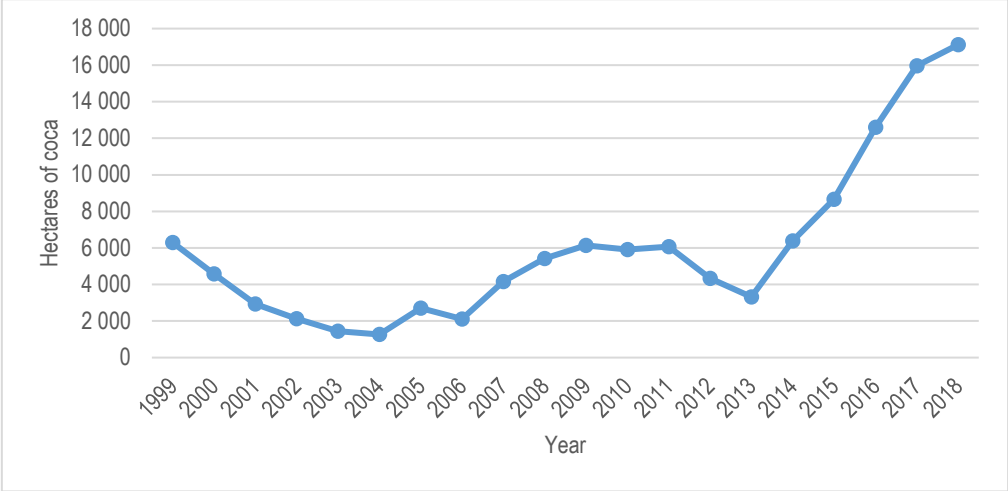
Source: own estimation based on National Agricultural Census (DANE, 2014)

Note: The first column reports the main crop. The second column shows the number of hectares per the leading group and the total of sown area in Cauca. The third column illustrates the number of hectares by the main crop over the total of sown area. The fourth column reports the type of product (food-product and non-food product) by the main crop. The fifth column shows the crop by type of food or non-food product. The sixth column illustrates the number of hectares per crop and type of food and non-food product. The seventh column reports the number of crop hectares over the total food or non-food products hectares.

Nonetheless, along the history, Cauca has been seriously affected by violence, reporting a significant number of hectares in coca. One can assume that coca production competes for land for food production purposes. In this regard, if we look at numbers, we see that in 2014 Cauca's coca cultivation hectareage was about 6,389 hectares (CEDE, 2018) and the total sown area was small (around 1%). After 2013, these numbers grew significantly, and in 2018 the coca cultivation area registered 17,117 hectares (see next figure). Assuming that the sown area reported in table 3 remains constant, the proportion of land for coca production is

nearly 3 percent. Even though this jump<sup>9</sup>, it is clear that the illegal crop is not crowding out the availability of land for food production.

**Figure 3.2 – Hectares of coca in Cauca by year**



Source: Own estimation based on data from Colombian Drug Observatory (CEDE, 2018)

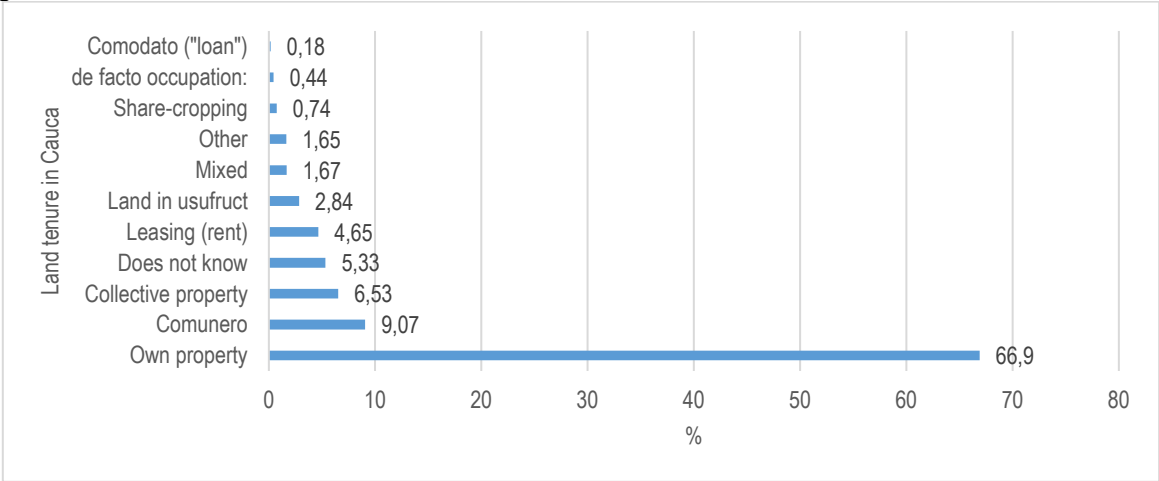
However, if we include income revenues from coca in the scenario, the outlook may change. According to the UNODC’s (2019) report on the monitoring of territories affected by illicit crops in Colombia, the payment per month in 2018 for the growers was the following: COP 859,200 was derived from the sale of coca leaf , COP 399,300 derived from the basic cocaine paste and COP 394,000 derived from the cocaine paste per hectare harvested cocaine. For the same year, according to DANE, the population employed in agricultural activities had the lowest average income at the national level (COP 542,982 per month) (DANE, 2019b). In this sense, considering that the most common activity in coca production is the sale of coca leaf (UNODC, 2019), there are incentives to produce coca instead of agricultural products. The competition between activities is more evident, considering the incomes rather than the hectares of land.

**3.1.3 Access to land**

Until this point, the study has shown that there is the availability of land for food production. Now, it is time to analyze whether the producer has access to the soil. As regards land tenure, 66.9 percent of the properties in the rural area are owned. Also, Cauca concentrates an important part of the indigenous and afro population of the country. These two groups do not have an individual title of ownership over the land, the tenure is collective. For this reason, the categories *comunero* and *collective property* can be understood as own property category (not as an individual but as a group). In conclusion, the majority (82.5%) of rural people in Cauca has direct access to land for food production.

<sup>9</sup> According to (Garzon & Llorente, 2018), even though the behavior of coca plantations has been cyclic, there are four hypotheses to explain the jump: “1. The recomposition of drug trafficking in the zones of influence of the FARC; 2.Low levels of manual eradication and substitution in key clusters for production; 3. The increase in cocaine seizures could have stimulated the growth of coca crops; 4. The backlash of the peace process and the effects of crop substitution” (Garzon & Llorente, 2018)

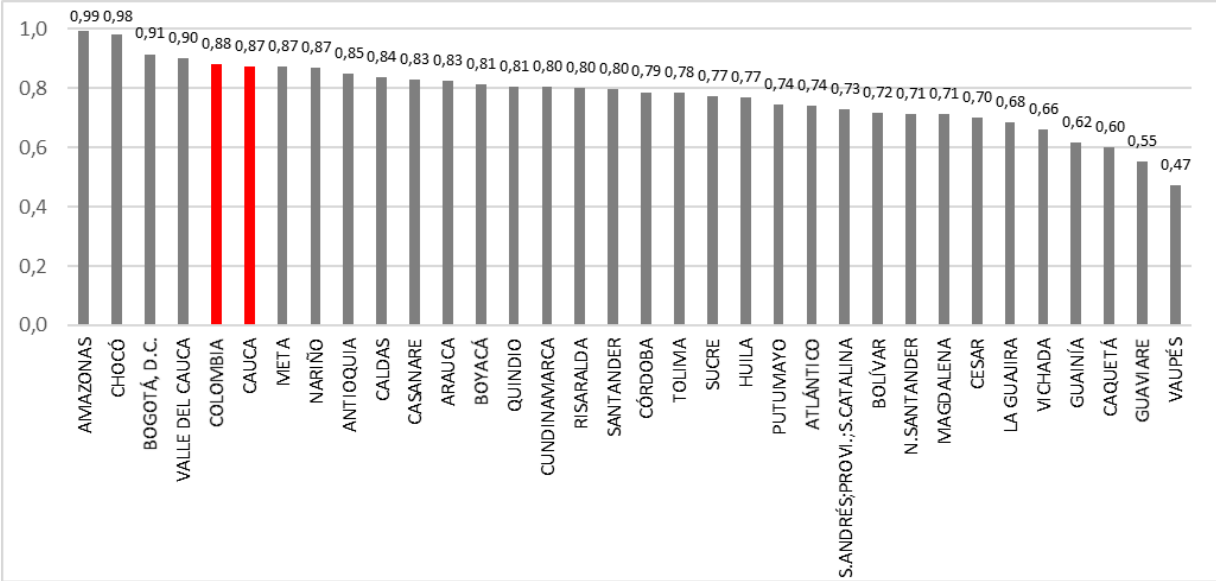
**Figure 3.3 – Land tenure in Cauca**



Source: own estimation based on National Agricultural Census (DANE, 2014)

However, even though the majority of land tenure is own property, the Gini index reports a problem of distribution. Considering the next figure, Cauca shows an index of 0.88 which reflects inequality in land distribution.

**Figure 3.4 – Gini index of area of private properties with agricultural destinations in the departments (2014)**



Source: own elaboration based on data from The Rural Agricultural Planning Unit (UPRA, 2014)

**3.1.4 Production, crop yield and livestock productivity**

Regarding production<sup>10</sup>, the following table shows the tonnes of food that the department of Cauca produce and its participation in the national production, by main groups of crops. The department has a wide variety of food, and some of them are relevant in Colombian production. For example, 18.2 percent of the sugar cane and 11.4 percent of coffee is cultivated in this department.

<sup>10</sup> To strengthen the analysis, there are additional estimations (using National Agricultural Survey and Agricultural Evaluations) about food production, crop yield and productivity in annex 1. Even though the estimations show differences, in general, as one can see using the National Agricultural Census, the crop yield for Cauca is lower than the value reported for Colombia.



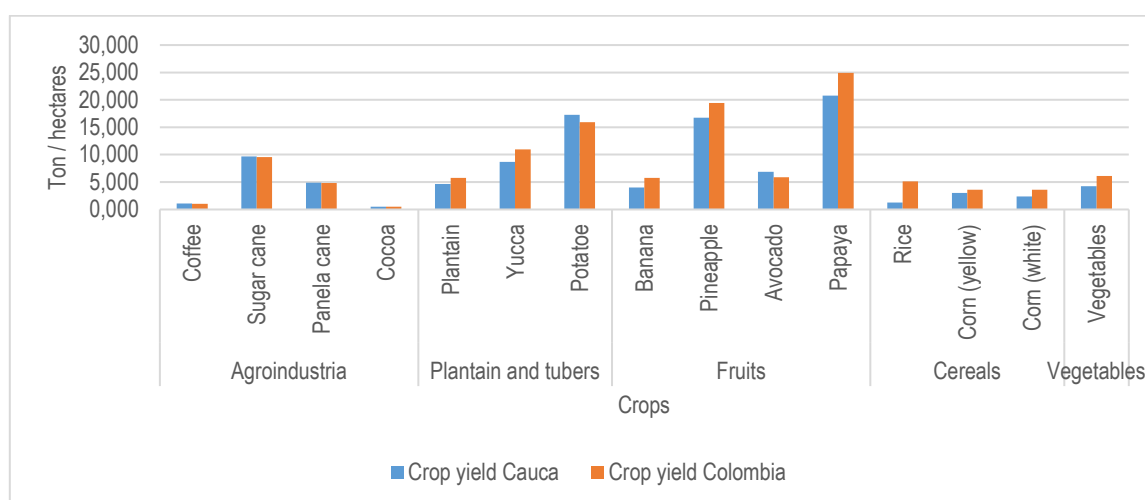
**Table 3.3 – Food production in Cauca and the participation in the national production**

Main Crops		Production (t)		% of Colombia
		Cauca	Colombia	
Agroindustrial	Coffee	88,762	776,522	11.4%
	Sugar cane	384,766	2,116,403	18.2%
	Panela cane	80,520	1,438,623	5.6%
	Cocoa	1,957	87,632	2.2%
Plantain and tubers	Plantain	198,079	4,831,241	4.1%
	Yucca	257,834	4,869,507	5.3%
	Potatoes	112,401	2,742,348	4.1%
Fruits	Banana	5,777	813,970	0.7%
	Pineapple	139,376	1,854,163	7.5%
	Avocado	15,236	442,652	3.4%
	Papaya	24,542	514,935	4.8%
Cereals	Rice	6,074	2,425,573	0.3%
	Corn (yellow)	43,744	1,191,107	3.7%
	Corn (white)	19,545	838,462	2.3%
Vegetables	Vegetables	57,529	1,433,022	4.0%

Source: own estimation based on National Agricultural Census (DANE, 2014)

Considering the crop yield, for coffee, sugar and panela cane and cocoa, Cauca shows similar values as the average for Colombia. The department is more productive in potatoes but is less productive for the rest of the crops (see figure 5).

**Figure 3.5 – Crop yield in Cauca and Colombia**



Source: own estimation based on National Agricultural Census (DANE, 2014)

As regards livestock activities, Cauca is slightly more productive than Colombia considering the liters of milk per cow but is marginally less productive considering the number of bovines per hectare. The last one index (the bovines per hectare index) shows that cattle ranchers need to improve their productive model not only in Cauca but also in Colombia. Ranchers have almost one cow per two hectares which is inefficient and impacts in a negative way the use of the land.

**Table 3.4 – Livestock productivity in Cauca**

	Litres (thousand)		Milking cows (thousand)		Livestock productivity	
	Cauca	Colombia	Cauca	Colombia	Cauca	Colombia
Liters per cow	400.90	19,352.46	66.09	3,530.36	6.07	5.48
Bovines per hectare	276.11	21,502.81	348.56	24,797.93	0.79	0.87

Source: own estimation based on National Agricultural Census (DANE, 2014)

Until this point, the study illustrates that the crop yield for Cauca is lower than the value reported for Colombia. But, has Cauca the potential to become one of the most important food producing area in Colombia?

According to the ranking of the departments with the largest productive area in Colombia, Cauca is located in position number 16 (of 27 departments). This ranking is based on agrological studies and analysis, where the National Geographic Institute (IGAC) in Colombia, established by the department, how many hectares have characteristics to host crops, and thus identified where the best soils for agriculture area (IGAC, 2016). Therefore, the answer is that Cauca has the potential to become an important source of food for the country, even though the department does not have the largest productive area in the country.

**Table 3.5 – Ranking of the departments with the largest productive area**

No.	Departament	Total area (hectares)	Productive area (hectares)	% productive departmental area
1	Vichada	10,008,757	1,486,706	14.85
2	Antioquia	6,296,299	1,280,310	20.33
3	Meta	8,555,025	1,079,766	12.62
4	Magdalena	2,314,438	996,031	43.04
5	Córdoba	2,499,858	901,799	36.07
6	Cesar	2,256,550	640,628	28.39
7	Cundinamarca	2,398,439	568,765	23.71
8	Bolívar	2,665,496	552,261	20.72
9	Sucre	1,071,860	488,083	45.54
10	Santander	3,054,326	421,761	13.81
11	Tolima	2,415,020	397,200	16.45
12	Casanare	4,434,139	329,630	7.43
13	Valle Del Cauca	2,076,805	249,637	12.02
14	Huila	1,813,533	242,913	13.39
15	Boyacá	2,317,531	195,607	8.44
16	Cauca	3,125,130	195,195	6.25
17	Atlántico	331,159	169,074	51.06
18	Norte De Santander	2,182,705	142,100	6.51
19	Nariño	3,146,804	138,633	4.41
20	La Guajira	2,061,936	128,583	6.24
21	Caldas	743,890	109,837	14.77
22	Chocó	4,824,344	93,693	1.94
23	Caquetá	9,010,823	80,838	0.9
24	Quindío	193,217	54,717	28.32
25	Putumayo	2,584,632	29,521	1.14
26	Risaralda	356,035	20,451	5.74
27	Guaviare	5,557,912	8,650	0.16

Source: Data of Agustin Codazzi Geographical Institute (IGAC, 2016)

Cauca thus produces a wide range of foods, but it still has much room for improvement. In fact, by being more productive, the department could use the availability and access of land to enhance food production.

**Relation between conflict and the use of the land and milk productivity/crop yield in Cauca**

The study uses the rate of displacement, the number of terrorist attacks and the number of coca hectares as proxies of the level of violence. The next table reports the correlation between violence and land use, sown areas, pastures, milk productivity and crop yield.

**Table 3.6 – Use of land in the rural area in Cauca**

	Displacement rate	Number of terrorist attacks	Hectares of coca
Agricultural and livestock area	-0.0694*	-0.0193*	0.0211*
Forest area	0.0674*	0.0538*	0.1240*
Pastures	0.0022	0.0002	0.0029
Sown area	0.0228*	0.0217*	0.0350*
Mil productivity	-0.0534*	-0.0883*	0.0659*
Crop yield	-0.0964*	-0.0547*	-0.2115*

Source: own estimation based on National Agricultural Census (DANE, 2014) and data from (CEDE, 2018)

Note: \*p-value<0.05

Regarding the correlation between conflict and the percentage of land for agricultural and livestock purposes, there is a negative and significant (p-value<0.05) correlation for the first two proxies of violence (-0.0694 and -0.0193 respectively). In contrast, the relation between coca hectares and the percentage of land for agriculture activities is positive (0.0211). In addition, the correlation between the portion of land for forest and the level of conflict is positive and statistically significant (0.0674 using displacement rate as a variable, 0.0538 using the number of terrorist attacks and 0.1240 using the hectares of coca).

Furthermore, we find that violence is statistically significant (p-value<0.05) and positively correlated with the sown area in hectares (0.0228 with displacement rate, 0.0217 with terrorist attacks and 0.0350 with hectares of coca)<sup>11</sup>. Finally, considering milk productivity, displacement rate and terrorist attacks affect negatively the litters of milk produced per cow (-0.0534 and -0.0883 respectively) while the relation between milk productivity and hectares of coca is positive (0.0654) and statistically significant (p-value<0.05). The displacement rate, the terrorist attacks and the number of hectares of coca are statistically negative correlated (p-value<0.05) with crop yield (-0.0964, -0.0547 and -0.2115 respectively). In other words, without implying causation, conflict affects in a negative way, the level of productivity.

To sum up, in general, these results suggest that, even though all the correlation are low, the larger the area for the forest, larger is the level of violence. Also, violence is positively correlated with the sown area, but negatively correlated with crop yield.

<sup>11</sup> The correlation between violence and hectares of pasture is positive. However, it is not statistically significant.

### 3.1.5 Technology for food production

One way to improve productivity is by using technology for production such as irrigation systems, machines for agricultural and technical assistance. As reported in the following table (table 8), almost 80 percent of food producers in Cauca does not use any system of irrigation which affect negatively the production capability. In addition to that, only, around 12 percent of farmers have access to machineries for agricultural purposes, and nearly 23 percent receives technical assistance. These two variables are also crucial to boost productivity, and the values for the department are low.

**Table 3.7 – Technology for food production in Cauca**

		%
The producer uses an Irrigation system	Drip	8.75
	Sprinkling	1.82
	Gravity	7.79
	Manual	10.9
	Does not use any system	79.29
Machinery for agriculture purposes	The producer has access to machinery	11.74
Technical assistance	The producer receives technical assistance	22.78

Source: own estimation based on National Agricultural Census (DANE, 2014)

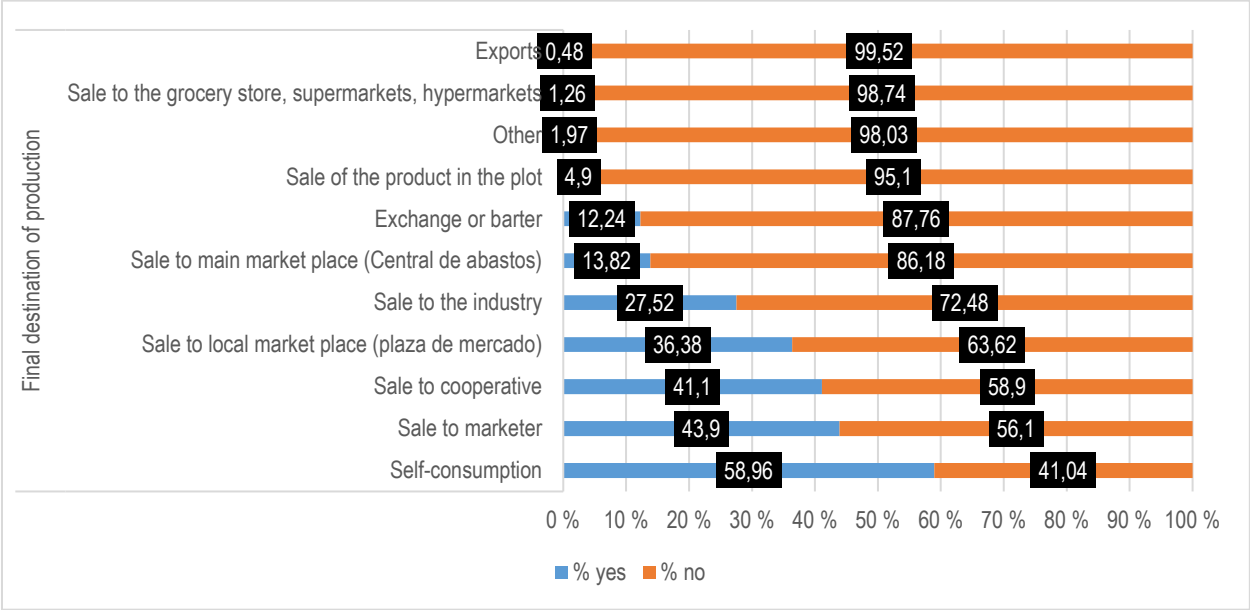
After analyzing the system of production, one can argue that Cauca has availability and access to land for food production. Besides, there is not a competition for land between food and non-food products (at least 77% of the area goes to produce food), and the majority of rural people in Cauca (82.5%) own land. Nonetheless, the crop yield and the productivity in livestock activities are low (in some cases, lower than the national average) which could be explained by the lack of access to technology for food production (irrigation system, machinery and technical assistance). In conclusion, Cauca has the potential to become an essential source of food for the country. The department has the agriculture inputs necessary to produce food, but more consideration should be given to reducing the obstacles that can boost production.

## 3.2 Distribution

As a second step to untangle the availability of food is the distribution. One of the main obstacles for the supply chain is the distribution network and infrastructure for trade. Farmers in the rural areas are able to keep agriculture production at a good level, but the difficulties will emerge when they need to find marketplaces to sell their produce. In fact, they lack a network where they can sell directly to consumers, and an important proportion of farms are located in areas with deficient roads networks. To test this hypothesis, this chapter analyzed the final destination of production and the kilometres of roads that food products traveled in Cauca.

The main destination for the production of rural people in Cauca is self-consumption (59%), sale to the marketer (middleman) (44%), sale to the cooperative (41%) and sale to the local marketplace (36%), whereas sales to the industry, main marketplaces, hypermarkets and exports report low percentages.

**Figure 3.6 – The final destination of production in Cauca**



*Source:* own estimation based on National Agricultural Census (DANE, 2014)  
*Note:* The figure illustrates the final destination of food products as divided my marketplaces. The unit of analysis is the production by crop by rural producer, and the production could have more than one destination. For example, the production of coffee of one producer could go to the marketer, to the cooperative and to the industry.

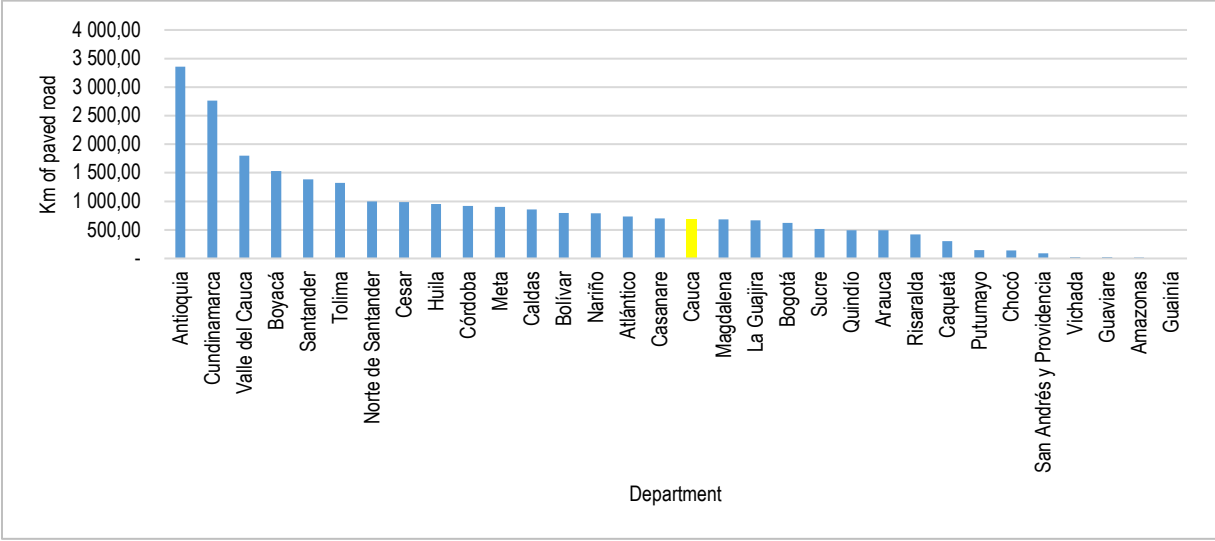
Considering the infrastructure network, the proportion of paved roads is smaller than the average for the country (5.8% vs 8.9%), and the unpaved roads are larger (48% vs 41%). Going deeper, in comparison with the other departments, the number of paved kilometres is significantly low (689 Km in Cauca vs 3,358 Km in Antioquia). This lack of infrastructure affects the distribution of products negatively. This could be a reason why the final destination of the production in the majority of cases is local.

**Table 3.8 - Kilometres of roads in Cauca and Colombia**

Type	Kilometers of road			
	Cauca		Colombia	
Paved	689.39	5.8%	26,120	8.9%
Other	5,443.98	46.1%	147,011	50.2%
Unpaved	5,668.91	48.0%	119,849	40.9%
Grand Total	11,802.29	100.0%	292,980	100.0%

*Source:* own estimation based on Colombian roads shape file (IGAC, 2015)

**Figure 3.7 – Paved roads by department**



Source: own estimation based on Colombian roads shape file (IGAC, 2015)

### 3.3 Market structure

The final stage of the supply chain is the market. To understand how the market structure in Cauca is, the study analyzed the following data: the provisioning system (national and food aid), the food prices and brief analysis of restrictions and incentives or food supply.

#### 3.3.1 Provisioning system

The following table (table 10) shows between 2018 and 2020, the tons of food that arrive at the Popayán supply center (left side) and the tons of food that leave Cauca (right side). In the first case, the table indicates the place of origin of the products and in the second the destination department.

Agricultural products in the central market of Popayan come mainly from municipalities in the same department of Cauca (65.1%) and municipalities of Valle del Cauca (10.7%), Nariño (9.6%) and Huila (5%); considering the provision from outside the country, 3 percent of the staples that arrive to the central market are imported. Regarding the destination of agricultural products from Cauca, it is shown that 52 percent goes to the central market in Popayan. Outside the department, production goes mainly to Valle del Cauca (38%), Bogota (3%) and Antioquia (3%). It is evident that the provision is mainly inside Cauca and the closest department (Valle del Cauca).

**Table 3.9 - Origin and destination of agricultural products in Cauca (January 2018 - July 2020)**

Origin of agricultural products in the central market of Popayan			Departments-destination of Cauca's agricultural production		
Origin	2018-2020			2018-2020	
	Tons	%		Tons	%
Cauca	92,647,427	65.05%	Cauca	92,647,427	52.17%
Valle del Cauca	15,274,984	10.73%	Valle del Cauca	66,695,188	37.56%
Nariño	13,658,328	9.59%	Bogotá	5,406,904	3.04%
Huila	7,060,291	4.96%	Antioquia	4,804,429	2.71%
Imports	4,267,302	3.00%	Caldas	1,850,305	1.04%
Tolima	3,030,939	2.13%	Huila	1,322,130	0.74%
Quindío	1,367,311	0.96%	Atlántico	1,101,007	0.62%
Cundinamarca	1,263,749	0.89%	Norte de Santander	1,036,692	0.58%
Cesar	654,345	0.46%	Sucre	855,000	0.48%
Bogotá	500,045	0.35%	Nariño	583,783	0.33%
Córdoba	498,391	0.35%	Risaralda	470,032	0.26%
Santander	491,115	0.34%	Quindío	451,300	0.25%
Meta	410,938	0.29%	Tolima	116,444	0.07%
Risaralda	409,147	0.29%	Cesar	115,987	0.07%
Boyacá	308,518	0.22%	Santander	96,000	0.05%
Caldas	190,528	0.13%	Bolívar	29,977	0.02%
Antioquia	189,242	0.13%			
La Guajira	104,500	0.07%			
Magdalena	38,450	0.03%			
Casanare	23,375	0.02%			
Atlántico	13,200	0.01%			
Norte de Santander	12,875	0.01%			
Bolívar	5,000	0.00%			

Source: own estimation based on data from SIPSA, DANE

The table below (table 11) illustrates the provision by food groups (meats, fruits, grains and cereals, dairy and eggs, fish, processed, tubercules, roots and bananas and vegetables). The left side of the table shows the tons, and the percentage of product considering the department of origin (or imports) and the right side represents the percentage of the product by destination. As regards the origin of the food, the meats (95%), fruits (31%), dairy and eggs (61%), fish (53%), and tubers (96%) comes from inside Cauca. The processed products (70%) and the grains (32%) comes mainly from Valle del Cauca and the vegetables (66%) from Nariño. What have in common Valle del Cauca and Nariño is that are Cauca's neighbors. Taking into account imports, 11 percent of fruits and 19 percent of grans and cereals come from another country.

Considering the destination of the Cauca's production, the main commercial partner is Valle del Cauca because the 68 percent of the meat, the 65 percent of the fruits, the 94 percent of the eggs and dairy products, the 31 percent of processed products, and the 63 percent of the vegetables goes to that department.

To summarize, the close commercial connection between the department of Cauca and the department of Valle del Cauca stands out. Valle Del Cauca is the main commercial partner of Cauca for agricultural production; the flow of production between the two departments is evident in all group products.

**Table 3.10 - Origin of agricultural products in the central market in Popayan and Cauca's main agricultural production destination by product group**

	Origin	Tons 2018-2020	%	Destination	Tons 2018-2020	%
Meats	Cauca	2,494,452	95.27%	Cauca	2,494,452	31.75%
	Valle del Cauca	123,762	4.73%	Valle del Cauca	5,362,998	68.25%
Fruits	Cauca	4,598,798	31.15%	Valle del Cauca	14,993,625	65.40%
	Huila	2,575,444	17.44%	Cauca	4,598,798	20.06%
	Valle del Cauca	2,096,950	14.20%	Antioquia	1,623,425	7.08%
	Others	3,869,920	26.21%	Others	1,710,247	7.46%
	Imports	1,624,503	11.00%			0.00%
Grains and cereals	Valle del Cauca	3,681,208	32.30%	Cauca	101,635	55.05%
	Huila	2,718,350	23.85%	Antioquia	64,000	34.66%
	Tolima	2,215,375	19.44%	Bogotá	14,000	7.58%
	Others	561,360	4.93%	Antioquia	5,000	2.71%
	Imports	2,220,275	19.48%			0.00%
Dairy and eggs	Cauca	46,894	60.95%	Valle del Cauca	1,901,682	94.06%
	Valle del Cauca	29,762	38.68%	Cauca	46,894	2.32%
	Meta	175	0.23%	Antioquia	39,672	1.96%
	Others	106	0.14%	Others	33,559	1.66%
Fish	Cauca	7,084	52.93%	Norte de Santander	11,300	56.55%
	Huila	6,300	47.07%	Cauca	7,084	35.45%
			0.00%	Santander	1,000	5.00%
			0.00%	Valle del Cauca	600	3.00%
Processed	Valle del Cauca	8,895,321	70.16%	Valle del Cauca	5,870,325	31.13%
	Cundinamarca	1,071,089	8.45%	Bogota dc	4,995,700	26.49%
	Cauca	938,466	7.40%	Antioquia	3,149,350	16.70%
	Others	1,591,716	12.55%	Others	4,841,412	25.67%
	Imports	181,944	1.44%			0.00%
Tubercules, roots and bananas	Cauca	81,080,677	95.52%	Cauca	81,080,677	69.86%
	Nariño	2,079,525	2.45%	Valle del Cauca	32,415,085	27.93%
	Quindío	689,580	0.81%	Caldas	1,619,650	1.40%
	Others	869,596	1.02%	Others	938,400	0.81%
	Imports	161,600	0.19%			0.00%
Vegetables	Nariño	10,474,626	65.51%	Valle del Cauca	6,086,873	63.00%
	Cauca	3,379,423	21.13%	Cauca	3,379,423	34.98%
	Huila	1,254,741	7.85%	Nariño	86,050	0.89%
	Others	880,980	5.51%	Others	109,688	1.14%

Source: own elaboration based on data from SIPSA, DANE (Agricultural Sector's supplying and Prices System -- National Administrative Department of Statistics)

Besides, the availability of food is determined not only by the national production; the several food assistance programs that Colombia has benefited from, have improved food availability for Colombians. The following chart (table 12) reports the tonnes of food that the World Food Programme (WFP) has granted to Colombia between 2014 and 2016. One example is the transfer of food commodities through the food aid shipment scheme which is concentrated in six food commodities: cereal, non-cereals, pulses, rice, sugar and vegetable oils. Unfortunately, it is not possible to disaggregate the data by department, but it is clear that there is a decreasing tendency in food aid.

**Table 3.11 - Food aid shipment**

	Food Aid Shipment 2014-2016						
	Cereal	Non-Cereals	Pulses	Rice	Sugar	Vegetable Oils	Total
2014	3,335	1,263		3,335	405	858	9,196
2015	1,672	1,649	849	1,672		800	6,642
2016	1,963	770	770	1,963			5,466
Total	6,970	3,682	1,619	6,970	405	1,658	

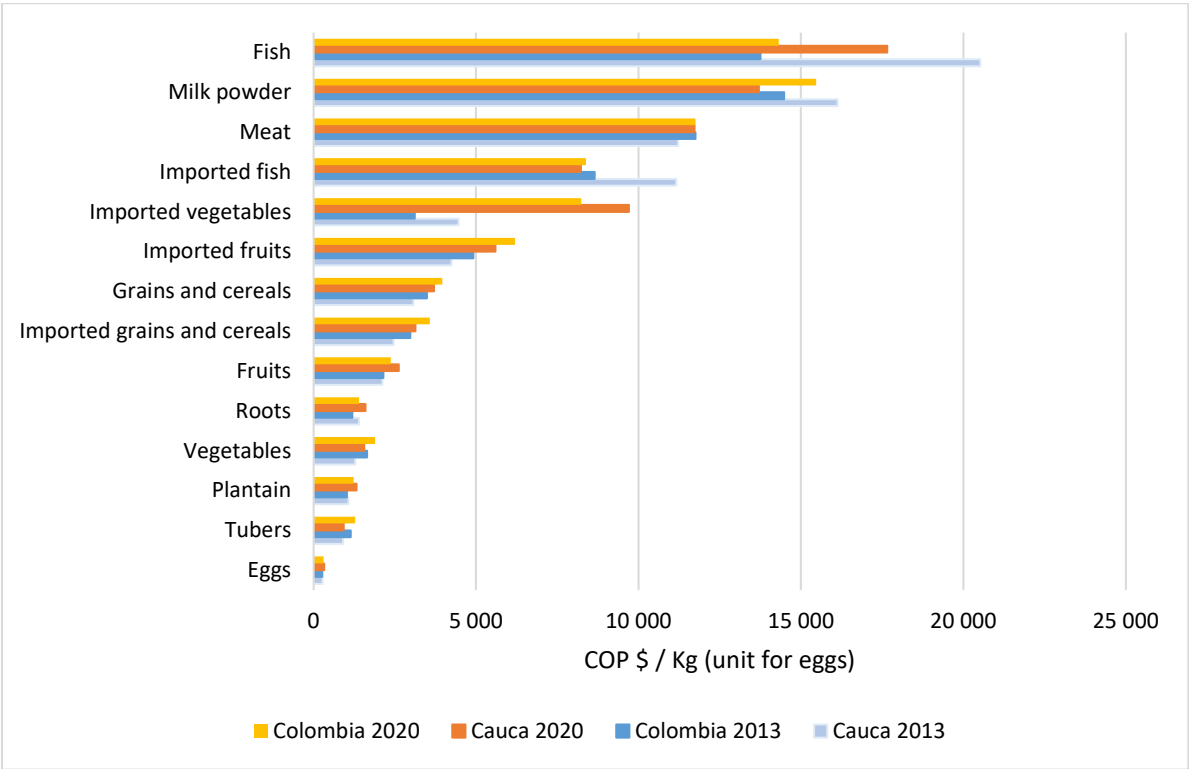
Source: own estimation based on data from FAOSTAT (2016)



### 3.3.2 Food prices and the regulation on food supply

Considering the food prices, the following graphic reports the evolution of price levels by food group in Cauca and Colombia, for 2013 and 2020. In 2013, in comparison to the national price level, products such as fish, roots, milk powder and import vegetables reported higher prices for Cauca. The rest of the food groups (vegetables, tubers, grains and cereals, fruits and meat) show instead price values under the national level. Except for imported fish, milk powder and fruits, the tendency is the same for the year 2020 (June).

Figure 3.8 – Food prices in Cauca and Colombia in 2013 and 2020.



Source: own elaboration based on data from SIPSA, DANE  
 Note: July 2020 constant-price.

Several policy measures have been implemented to avoid food price volatility and one of these policies has been the establishment of price stabilization funds, created in order to provide a remunerative income for food producers, regulate national production and increase exports, by financing the stabilization prices Incentives and direct support to the producer (UPRA, 2015). ) Among the products that are covered by the price stabilization funds, we find some very relevant products such as coffee, sugar, cotton and oil palm. Besides price stabilization policies, government’s support to agricultural production has been expressed through direct subsidies to farmers. The Law 101 of 1993 enacted for instances such subsidies in order to alleviate temporary market failures (Szegedy-Maszák, 2017). Furthermore, as Szegedy-Maszák points out, subsidies and incentives were delivered to farmers as part of the Rural Capitalization Incentives program that provided direct subsidies up to 40 percent for projects of irrigation, processing, storage, and new technologies. Other policy measure included that this law included were the following:

- The establishment of tariff rates.

- The determination of minimum guaranteed prices set by the Ministry of Agriculture and Rural Development (MADR) when deemed relevant (for example, milk).
- Rediscount lines established by the National Agricultural Credit Commission that seek to promote directed credits, among others.

Even though this law has received criticism on the grounds that the incentives it provided has been captured mainly by large farmers (Heath & Binswanger, 1996), one must argue that small farmer benefited as well from this from of governmental support to agriculture. More importantly such law affirmed the role of the state as a promoter of agricultural development.

### 3.4 Conclusions

Considering the system of production, one can argue that Cauca has the availability of agricultural land to secure its own food production. However, this chapter concluded that even though the majority of land is privately owned (82.5%), there is considerable inequality in the access to the land (Gini coefficient of 0.87) due to highly concentrated land ownership that exclude small farmers from accessing land. Furthermore, this study found that there is not a competition for land between food and non-food products (at least 77% of the area goes to produce food), but there are incentives to produce coca instead of agricultural products because the monthly income for the former is larger than the latter (COP 859,200 vs COP 542,982); the competition between activities is more evident, considering the incomes rather than the hectares of land. In addition, the statistical data illustrated so far, show that Cauca ranks among the departments with the largest productivity area in Colombia, and therefore has the potential to become an essential source of food production for the country. Nonetheless, the crop yield and the productivity in livestock activities are low (in some cases, lower than the national average) which could be explained by the level of violence and the lack of access to technology for food production (irrigation system, machinery and technical assistance). To sum up, Cauca has the potential to become an essential source of food for the country, but the department needs to work on factors which are under its control such as investing in technologies that can boost food production

Regarding the distribution, the final destination of production is in local marketplaces. The percentage of sales in the central market, industry or exports are lower. Together with that, there is a lack of road infrastructure which affect the distribution which could explain why the final destination of production remains local.

## Annex

		EVA 2014							
		Cauca			Colombia			Participation of Cauca in National production %	
		Harvested area (ha)	Production (t)	Crop yield	Harvested area (ha)	Production (t)	Crop yield		
Agroindustry	Coffee	77,068.46	63,365.76	0.82	<b>795,563.19</b>	<b>728,400.00</b>	0.92	8,7%	
	Sugar cane	36,120.13	4,039,392.50	111.83	<b>202,192.00</b>	<b>24,696,493.91</b>	122.14	16,4%	
	Panela cane	14,545.00	65,813.30	4.52	<b>203,839.51</b>	<b>1,226,464.76</b>	6.02	5,4%	
	Cocoa	1,297.60	713.71	0.55	<b>154,513.08</b>	<b>81,302.02</b>	0.53	0,9%	
Plantain and tubers	Plantain	14,173.08	88,550.61	6.25	<b>386,607.65</b>	<b>3,360,690.29</b>	8.69	2,6%	
	Yucca	7,235.50	59,463.47	8.22	<b>180,228.68</b>	<b>1,894,008.88</b>	10.51	3,1%	
	Potato	2,324.00	45,769.00	19.69	<b>150,398.12</b>	<b>2,943,307.46</b>	19.57	1,6%	
Fruits	Banana	442.50	1,510.75	3.41	<b>27,167.65</b>	<b>277,886.03</b>	10.23	0,5%	
	Pineapple	821.50	68,911.00	83.88	<b>15,121.25</b>	<b>652,758.88</b>	43.17	10,6%	
	Avocado	425.30	2,525.45	5.94	<b>34,513.40</b>	<b>288,739.26</b>	8.37	0,9%	
	Papaya	33.70	436.50	12.95	<b>4,649.53</b>	<b>149,879.83</b>	32.24	0,3%	
Cereals	Rice	1,894.71	8,852.00	4.67	<b>471,963.08</b>	<b>2,289,264.84</b>	4.85	0,4%	
	Corn (traditional)	5,534.06	6,543.35	1.18	<b>404,440.99</b>	<b>601,156.54</b>	1.49	1,1%	
Vegetables	Vegetables	1,090.20	16,140.71	14.81	<b>77,285.20</b>	<b>1,835,292.52</b>	23.75	0,9%	

		EVA 2012						Participation of Cauca in National production %
		Cauca			Colombia			
		Harvested area (ha)	Production (t)	Crop yield	Harvested area (ha)	Production (t)	Crop yield	
Agroindustry	Coffee	56,825.00	50,588.14	0.89	710,462.03	626,771.34	0.88	8,1%
	Sugar cane	42,154.00	3,675,156.00	87.18	207,464.00	20,836,972.41	100.44	17,6%
	Panela cane	13,273.10	57,330.53	4.32	201,848.60	1,251,332.41	6.20	4,6%
	Cocoa	881.00	472.15	0.54	151,156.59	81,105.41	0.54	0,6%
Plantain and tubers	Plantain	12,433.80	90,724.19	7.30	380,394.05	3,083,934.09	8.11	2,9%
	Yucca	5,625.82	42,807.43	7.61	180,958.30	1,961,392.81	10.84	2,2%
	Potatoes	2,443.27	38,331.34	15.69	149,939.71	2,845,075.22	18.97	1,3%
Fruits	Banana	682.00	3,593.00	5.27	29,070.61	286,362.02	9.85	1,3%
	Pineapple	716.00	53,994.80	75.41	12,867.97	487,425.11	37.88	11,1%
	Avocado	377.40	2,453.10	6.50	27,705.48	255,383.75	9.22	1,0%
	Papaya	18.70	597.10	31.93	4,642.55	158,438.40	34.13	0,4%
Cereals	Rice	2,360.64	12,426.74	5.26	512,137.05	2,532,832.32	4.95	0,5%
	Corn (traditional)	5,961.27	7,463.29	1.25	373,978.92	556,625.42	1.49	1,3%
Vegetables	Vegetables	864.79	11,180.60	12.93	79,320.52	1,843,078.82	23.24	0,6%

		EVA 2017						Participation of Cauca in National production %
		Cauca			Colombia			
		Harvested area (ha)	Production (t)	Crop yield	Harvested area (ha)	Production (t)	Crop yield	
Agroindustry	Coffee	78,810.00	89,292.86	1.13	773,291.00	859,782.10	1.11	10,4%
	Sugar cane	39,213.54	4,122,113.45	105.12	225,886.33	26,240,136.95	116.17	15,7%
	Panela cane	13,097.80	74,725.80	5.71	195,590.28	1,224,787.54	6.26	6,1%
	Cocoa	1,381.00	715.60	0.52	176,715.50	91,022.97	0.52	0,8%
Plantain and tubers	Plantain	21,313.95	100,239.39	4.70	415,776.24	4,081,177.46	9.82	2,5%
	Yucca	8,548.50	103,320.70	12.09	234,794.55	2,494,329.79	10.62	4,1%
	Potatoes	4,860.00	100,267.34	20.63	177,211.64	3,923,054.22	22.14	2,6%
Fruits	Banana	584.40	2,149.00	3.68	34,736.07	363,923.33	10.48	0,6%
	Pineapple	985.50	61,559.00	62.46	21,940.34	898,979.52	40.97	6,8%
	Avocado	910.80	5,385.20	5.91	44,401.54	396,001.90	8.92	1,4%
	Papaya	25.00	305.00	12.20	5,637.91	191,041.65	33.89	0,2%
Cereals	Rice	2,328.65	13,069.77	5.61	679,602.69	3,465,642.21	5.10	0,4%
	Corn (traditional)	11,659.80	19,652.48	1.69	423,903.42	648,226.09	1.53	3,0%
Vegetables	Vegetables	1,640.88	24,693.01	15.05	100,855.36	2,337,101.52	23.17	1,1%

Source: own elaboration based on data of Agricultural Assessments (EVA) (DANE, 2017)

		ENA 2012						Participation of Cauca in National production %
		Cauca			Colombia			
		Harvested area (ha)	Production (t)	Crop yield	Harvested area (ha)	Production (t)	Crop yield	
Agroindustry	Coffee	38,534.4	21,288	0.6	440,472.0	509,858	1.2	4.18%
	Panela cane	7,758.4	13,203	1.7	144,227.2	1,097,285	7.6	1.20%
	Cocoa	2,541.1	1,561	0.6	65,057.6	38,937	0.6	4.01%
Plantain and tubers	Plantain	4,286.9	30,323	7.1	145,881.5	1,568,316	10.8	1.93%
	Yucca	1,640.7	14,690	9.0	39,456.6	425,273	10.8	3.45%
	Potatoes	4,098.3	54,325	13.3	102,114.5	1,847,145	18.1	2.94%
Fruits	Banana	705.0	2,597	3.7	10,581.8	130,260	12.3	1.99%
	Pineapple	83.6	2,300	27.5	2,164.9	61,529	28.4	3.74%
	Avocado		555			175,026		0.32%
Cereals	Corn (yellow)	1,563.0	4,435	2.8	125,313.8	355,578	2.8	1.25%
	Corn (white)	1,94.4	698	3.6	119,171.8	427,953	3.5	0.16%
Vegetables	Vegetables	7,87.3	12,644	16.1	15,979.2	256,621	16.1	4.93%

Source: own elaboration based on National agricultural survey 2012 (DANE, 2019a)

		ENA 2014						Participation of Cauca in National production %
		Cauca			Colombia			
		Harvested area (ha)	Production (t)	Crop yield	Harvested area (ha)	Production (t)	Crop yield	
Agroindustry	Coffee	58,089.1	70,345	1.2	603,397.9	913,312	1.5	7.70%
	Panela cane	8,812.0	28,513	3.2	132,562.7	1,118,616	8.4	2.55%
	Cocoa	2,046.3	816	0.4	73,481.9	53,423	0.7	1.53%
Plantain and tubers	Plantain	7,015.2	14,277	2.0	184,493.0	983,139	5.3	1.45%
	Yucca	3,259.8	33,984	10.4	43,199.4	482,595	11.2	7.04%
	Potatoes	3,850.2	99,842	25.9	107,597.8	2,157,568	20.1	4.63%
Fruits	Banana	94.2	417	4.4	14,397.9	128,959	9.0	0.32%
	Pineapple	755.6	20,786	27.5	4,588.9	130,425	28.4	15.94%
	Avocado	231.3	622	2.7	34,908.4	302,882	8.7	0.21%
Cereals	Corn (yellow)	9,620.0	12,824	1.3	176,706.8	565,422	3.2	2.27%
	Corn (white)	2,591.9	7,871	3.0	85,002.7	319,174	3.8	2.47%
Vegetables	Vegetables	547.5	1,436	2.6	20,607.5	362,443	17.6	0.40%

Source: own elaboration based on National agricultural survey 2014(DANE, 2019a)

		ENA 2017						Participation of Cauca in National production %
		Cauca			Colombia			
		Harvested area (ha)	Production (t)	Crop yield	Harvested area (ha)	Production (t)	Crop yield	
Agroindustry	Coffee	77,714	95,304	1.2	644,665	1,062,396	1.6	12.05%
	Panela cane	8,333	34,250	4.1	181,728	1,164,443	6.4	4.59%
	Cocoa	909	489	0.5	104,146	89,282	0.9	0.55%
Plantain and tubers	Plantain	3,707	16,356	4.4	176,577	1,312,732	7.4	1.25%
	Yucca	5,623	58,859	10.5	89,717	1,056,556	11.8	5.57%
	Potatoes	4,685	96,076	20.5	162,879	3,706,563	22.8	2.59%
Fruits	Banana	117	593	5.1	79,866	2,020,915	25.3	3.95%
	Avocado	641	2,829	4.4	41,068	308,165	7.5	13.33%
Cereals	Corn (yellow)	9,051	14,666	1.6	296,942	939,677	3.2	31.60%
	Corn (white)	1,453	4,478	3.1	82,965	390,179	4.7	21.26%
Vegetables	Vegetables	256.7	3,249	12.7	33,783.7	480,432	14.2	0.68%

Source: own elaboration based on National agricultural survey 2017(DANE, 2019a)



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## Chapter 4

# Access to Food in Cauca, Colombia: Descriptive Patterns from the 2011 National Quality of Life Survey

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Food security remains a critical development challenge in Colombia today. Following the 1996 World Food Summit, food security is defined as a situation that 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, 2008). This definition points to four main pillars of food security: (1) availability; (2) access; (3) utilization; and (4) stability.

This chapter focuses on how the second of these four pillars—access—plays out in the region of Cauca. Food access concerns whether individuals have adequate resources or entitlements to acquire suitable foods for a nourishing diet (FAO, 2006). While the previous chapter (Chapter 3) explored food availability in Cauca, in isolation, the availability of food at the regional level—in and of itself—does not necessarily guarantee that households and individuals are food secure. For instance, income, education, and employment may influence how much money households have for food expenditures. In addition, the bundle of entitlements that households possess within the political and socio-economic context in Cauca—including land rights, participation in social programs, and community or exchange networks—may also determine households’ food access.

To investigate these issues, I draw on microdata at the household level from the 2011 National Quality of Life Survey or *Encuesta Nacional de Calidad de Vida* (DANE, 2011a). Using these data, I document eight stylized facts related to the physical, economic, and social aspects of food access among household in Cauca:

1. Households in Cauca obtain food primarily from the market.
2. Among the different non-market sources of food, home production appears to be the most meaningful point of supply—rather than gifts, payment-in-kind, or exchange/barter.
3. The majority of rural households in Cauca possess land, and they use the products from the land for either selling or own consumption.

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4. Still, a large proportion of Caucan households do not have secure land access.
5. Overall educational achievement among individuals living in Cauca is low, especially in rural areas.
6. Working-age individuals living in Cauca are predominantly either employed or engaged in household chores.
7. Nevertheless, most Caucan households remain poor and do not have enough income.
8. Few households in Cauca report skipping a meal last week due to lack of money.

The rest of this chapter proceeds as follows. In the next section, I briefly describe the 2011 National Quality of Life Survey and explain why it is a particularly useful micro-dataset for understanding food security in Cauca. Then, I present detailed results regarding the eight descriptive patterns described above. Finally, the last section discusses caveats to the analysis, and I conclude by outlining potential avenues for future research on food security in Cauca.

## 4.1 Data

The 2011 National Quality of Life Survey is a household survey implemented by Colombia's National Administrative Department of Statistics or *Departamento Administrativo Nacional de Estadística* (DANE). The objective of the survey is to collect information on a wide array of measures of household well-being, including housing; access to public, private, and communal utilities; demographics; health; the care of children; education; and employment, among others (DANE, 2011c). The survey was first conducted in 1993. Since then, it has been conducted in 1997, 2003, 2008, and annually from 2010 to 2019.

Although many years of the survey are available, I take advantage of the 2011 wave because it is especially suitable for investigating food security among households in Cauca. The reasons are two-fold. First, the data from 2011 are representative for Cauca; the rest of the survey years are not representative at the department level, with the exception of 2018 and 2019. Second, the 2011 wave contains information related to household food security that is not available in other years: it includes a module on household food consumption which is not available in either 2018 or 2019. Moreover, the 2011 survey has an expanded module on rural households. This module helps to illuminate on several important elements of food access in rural settings, such as the availability of land, the purpose of agricultural production, and land tenure and security.

There are, however, several important limitations to the 2011 National Quality of Life Survey. The survey does not collect information on ethnic background, making it impossible to study access to food of different racial groups and indigenous populations. Likewise, the survey does not contain any data directly about conflict. The relationship between food security and conflict will be discussed in more detail in Chapters 7 (Food Stability) and 8 (Conflict and Food Security).

## 4.2 Results

In this section, I present eight descriptive patterns regarding the physical, economic, and social aspects of food access among households in Cauca. Throughout the analysis below, I restrict the data to households living in Cauca (yielding a sample size of 2290 households), and I employ sampling weights provided by DANE.

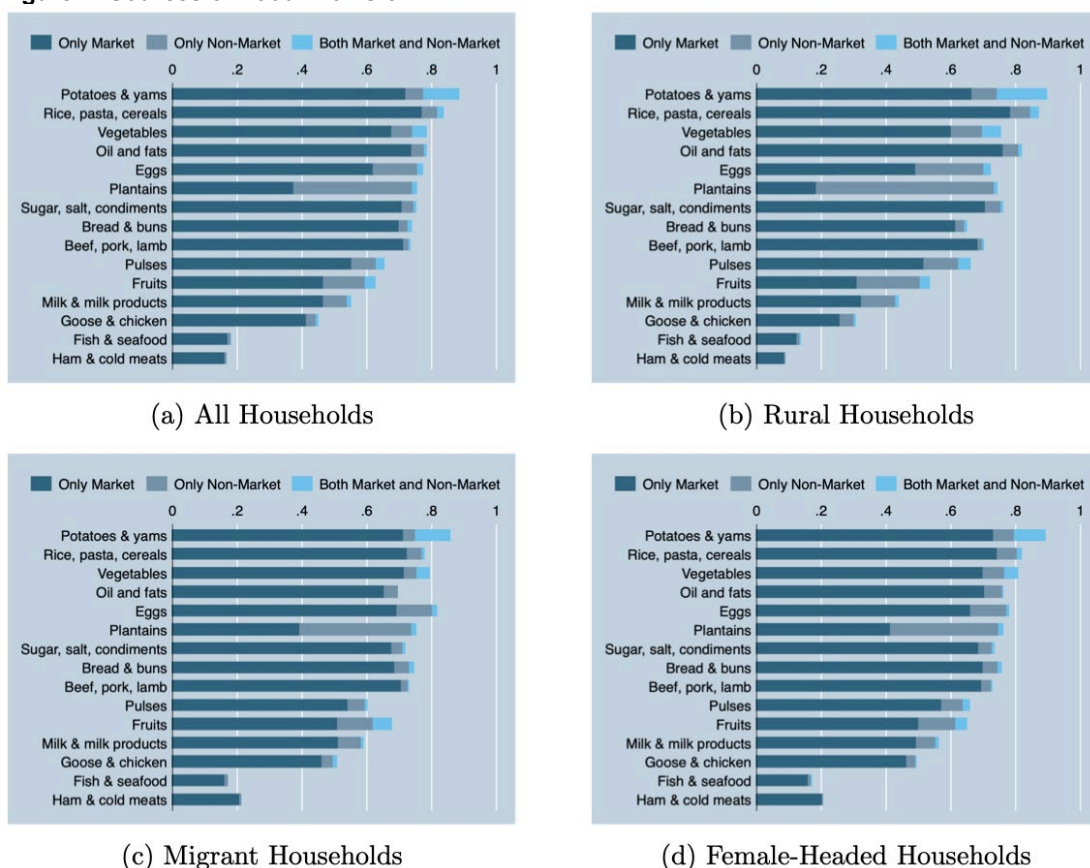
### **Pattern 1. Households in Cauca obtain food primarily from the market.**

To begin, I consider the proportion of Caucan households that consume different food groups—such as pulses; vegetables; fruits; milk and milk products; and beef, pork, and lamb (Figure 1a). I find that the vast majority of households eat carbohydrate-rich foods: in the last seven days, 89 percent procured potatoes and yams, and similarly, 84 percent procured rice, pasta, and cereals. In contrast, relatively fewer households, at around 20 percent, consumed fish and seafood or ham and cold meats. These patterns could be related to both prices (e.g., seafood, ham, and cold meats tend to be more expensive protein sources than foods such as chicken or pork) and culture (e.g., carbohydrate-rich foods are typical components of Colombian diets). A more comprehensive study of these diet patterns is beyond the scope of this chapter, but it will be discussed in more detail in the next chapter (Chapter 5) which deals with food utilization—the pillar of food security that encompasses diet quality, diet quantity, and nutrition.

I then examine to what extent households physically obtain these different food products from only market sources (i.e., purchases from a seller), only non-market sources (i.e., own production, payment-in-kind, gift, exchange/barter), or both non-market sources. The results show that across all food groups, the market is the dominant source of household food provision (Figure 1a). For example, 72 percent of all households procured potatoes and yams from only market sources—compared to 5 percent from only non-market sources, and 11 percent from both market and non-market sources. Importantly, the dominance of the market as the main source of food is by and large persistent across different types of households. In fact, I find that this is true for rural households—defined as those living in geographical areas classified by DANE as *cabecera resto* or *rural* (Figure 1b); migrant households—defined as those whose head has not always lived in the current municipality (Figure 1c); as well as female-headed households (Figure 1d).

That said, there are a few food groups for which non-market sources appear to be somewhat essential, particularly in rural areas. Here, the top three food groups are plantains, eggs, and fruits, suggesting that in rural areas, households have access to their own plantain trees, hens, and fruit trees (Figure 1b). Specifically, of all rural households who ate plantains last week, the vast majority at 75 percent obtained the plantains from non-market sources. Some households who procured eggs or fruits last week also obtained these foods from outside the market. However, doing so is not as common as with plantains: of all rural households who consumed eggs and fruits last week, between 30 and 40 percent procured them from non-market sources.

**Figure 1: Sources of Food Provision**



*Notes:* The length of the bars represent the proportion of households that obtained the given food product from only market sources, only non-market sources, or both market and non-market sources. Market sources refer to purchases of the given food item, while non-market sources refer to acquisitions without having to purchase (e.g., own production, payment in kind, gift, exchange or barter). In all panels, the sample is restricted to households living in Cauca. Panel A is based on the full sample (N = 2290). Panel B is based on rural households, where rural is defined as geographical areas classified by DANE as *cabecera resto* or *rural* (N = 1149). Panel C is based on migrant households, where a migrant household is defined as a household whose head has not always lived in the current municipality (N = 447). Panel D is based on households with a female head (N = 691). Data at the household level from the 2011 National Quality of Life Survey. Sampling weights are applied throughout.

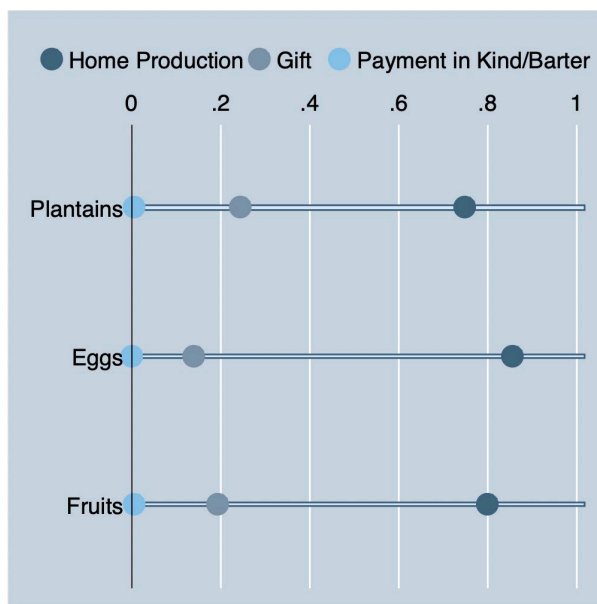
**Pattern 2. Among the different non-market sources of food, home production appears to be the most meaningful point of supply—rather than gifts, payment-in-kind, or exchange/barter.**

Since a non-trivial portion of rural households obtain plantains, eggs, or fruits from outside the market, I delve deeper into this food source by breaking it down into three categories: home production (i.e., from one’s farm, orchard, or enterprise; from the sea or river), gifts, or payment in kind/barter.<sup>13</sup>

<sup>13</sup> According to the survey manual, gifts are defined as goods and services received by a member of the household without any consideration of money or work in exchange (see (DANE, 2011b)). Therefore, in principle, gifts should include food products obtained by the household from social support programs.

The data reveal that of these three non-market sources, home production is by far the most typical (Figure 2). Among rural households who consumed plantains, eggs, or fruits last week, around 80 percent procured these foods from home production, while the remainder received them as gifts. Interestingly, none of the households obtained these foods through barter/exchanges or payment-in-kind.

**Figure 2: Non-Market Sources of Food among Rural Households**



*Notes:* This figure shows the proportion of households that obtained different food products (i.e., plantains, eggs, and fruits) through home production, gifts, or payment in kind/barter. The sample consists of rural households living in Cauca who have obtained the given food product from non-market sources. The number of households in the sample that obtained plantains, eggs, and fruits from non-market sources are 644, 262, and 257, respectively. Data at the household level from the 2011 National Quality of Life Survey. Sampling weights are applied throughout.

**Pattern 3. The majority of rural households in Cauca possess land, and they use the products from the land for either selling or own consumption.**

One critical factor that shapes households’ ability to access food through home production is land availability. The data demonstrate that 61 percent of all rural Caucan households possess land—defined as having own property, leasing, sharing, land in usufruct or de facto possession (Table 1, Panel A). Households within this subset have on average 1.22 parcels of land, with a mean total land area of 3.20 hectares. It is also important to note that the median total land area is 1.91 hectares, which is much lower than the mean and indicates that the distribution of land holdings has a long right tail. As a matter of fact, the data show that 42 percent of all households in Cauca have less than or equal to 1 hectare of land, and 65 percent have less than or equal to 2 hectares of land.

I likewise find that in the last 12 months, most households (70 percent) used the land for agriculture or forestry; only a small portion (20 percent) used the land for livestock activities (Table 1, Panel B). Meanwhile, 85 and 75 percent of rural households report that the output from the land are put up for sale or used for own consumption,

respectively. A scant 1 percent of households report using land production for barter. These findings are consistent with the previous two patterns described above, which indicate that rural households who access food through non-market sources rely principally on own production and not barter/exchanges.

Although later chapters in this report will study food security and conflict more extensively, I provide a first look at the relationship between the two by exploring land access, size, and production among migrant and female-headed households in rural areas. From a social perspective, these subgroups are important to consider in light of the long history of violent conflict in Colombia. Indeed, existing studies have argued that the main mechanism through which armed conflict has had a negative effect on food security is through the forced displacement of families and communities, as a result of dispute over rural territories by guerrillas, paramilitaries, drug traffickers, criminal gangs, and other legal and illegal actors (Segovia, 2017) . Furthermore, these negative effects are thought to be larger for female-headed households, which tend to be more vulnerable to food insecurity.



**Table 1: Land Access, Size, and Production Purpose of Rural Households**

	All Households			Migrant			Female-Headed		
	N	Mean	SE	N	Mean	SE	N	Mean	SE
<i>Panel A. Land access</i>									
Possesses land	1149	0.61	0.01	177	0.47	0.04	273	0.50	0.03
<i>Panel B. Land size and use</i>									
Total number of land parcels	703	1.22	0.02	81	1.16	0.04	138	1.14	0.03
Total land area, hectares	703	3.20	0.20	81	4.38	0.87	138	2.92	0.40
Harvested agri/forestry products from the land, last 12 mos.	703	0.70	0.02	81	0.64	0.06	138	0.59	0.04
Used the land for livestock, last 12 mos.	703	0.20	0.02	81	0.23	0.05	138	0.17	0.03
<i>Panel C. Land production purpose</i>									
Purpose of land production is for sale	522	0.85	0.02	56	0.87	0.05	86	0.71	0.05
Purpose of land production is for own consumption	522	0.75	0.02	56	0.82	0.05	86	0.77	0.05
Purpose of land production is for barter	522	0.01	0.00	56	0.03	0.02	86	0.02	0.02

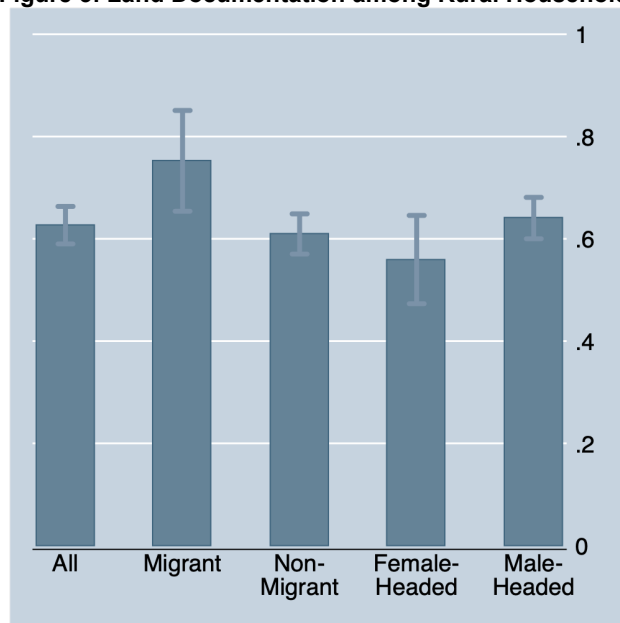
*Notes:* This table describes land access, use, and production purpose of rural households in Cauca. All variables in the table are indicator variables, with the exception of total number of land parcels and total land area. In Panel A, the sample consists of rural households living in Cauca. In Panel B, the sample is restricted to households who possess land. In Panel C, the sample is further restricted to households who have used their land in the last 12 months for agricultural, forestry, or livestock production. Possessing land is defined as having own property, leasing, sharing, or land in usufruct or de facto possession. Recreational farms are excluded. The variable for total land area is winsorized at the top and bottom 1 percent. Data at household level from the 2011 National Quality of Life Survey. Sampling weights are applied throughout.

The data reveal that in rural areas, migrant and female-headed households are less likely to possess land than the typical rural household. Only around 50 percent of migrant and female-headed households have land (Table 1, Panel A). Conditional on having land, both migrant and female-headed households are less likely to have used their land for agriculture or forestry in the last 12 months. This may be because these types of households have less capital to finance land production activities—thus highlighting the important negative consequences of conflict for food access through home production.

**Pattern 4. Still, a large proportion of Cauca households do not have secure land access.**

Although most rural households in Cauca have land, many such households' land possessions remain insecure. Specifically, I find that only 62 percent of rural households have any documentation (e.g., property deed, lease agreement) certifying their land possession (Figure 3). Male-headed households are more likely to have documentation than female-headed households. Additionally, migrant households are more likely to have documentation than their non-migrant counterparts.

**Figure 3: Land Documentation among Rural Households**



*Notes:* This figure shows the proportion of rural households that have documentation certifying their land possession. The vertical line at the top of each bar represents the 95 percent confidence interval. The sample consists of rural households in Cauca who report possessing land. Data at the household level from the 2011 National Quality of Life Survey. Sampling weights are applied throughout.

**Pattern 5. Overall educational achievement among individuals living in Cauca is low, especially in rural areas.**

Apart from physical land holdings, I examine the economic aspects of food access. Since as explained above, markets appear to be the main source of food in Cauca, educational attainment can play an important role: it affects job opportunities and income, which subsequently facilitate food access in the market.

The survey shows that among all working-age individuals living in Cauca (defined as aged 15 to 64, following international organizations such as the OECD), the median educational attainment is basic primary school (Figure 4a). Few reach education levels beyond this: 13 and 18 percent achieved at most basic secondary and middle education, respectively. Higher education is not very common, and only 13 percent report having attended technical, university, or post-graduate education.<sup>14</sup>

While the levels of education appear to be quite similar between migrants vs. non-migrants (Figure 4c) and females vs. males (Figure 4d), there are striking differences between rural vs. non-rural individuals (Figure 4b). For instance, 29 percent of non-rural individuals attended higher education, compared to only 3 percent of rural individuals. Moreover, the median educational attainment in rural areas is basic primary, whereas in non-rural areas, it is middle school. These findings suggest that access to food through markets may be much more challenging for rural individuals, as their lower levels of education negatively impact their earning potential and purchasing power.

**Pattern 6. Working-age individuals living in Cauca are predominantly either employed or engaged in household chores.**

To further understand the economic aspects of food access in Cauca, I probe into the employment outcomes of working-age individuals (Figure 5a). I find that 50 percent of such individuals say that their primary activity in the last week was being employed, 30 percent were occupied in household chores, 4 percent were looking for work, and the remaining 16 percent were not in the labor force (e.g., studying, incapable of working, or engaged in other activities).

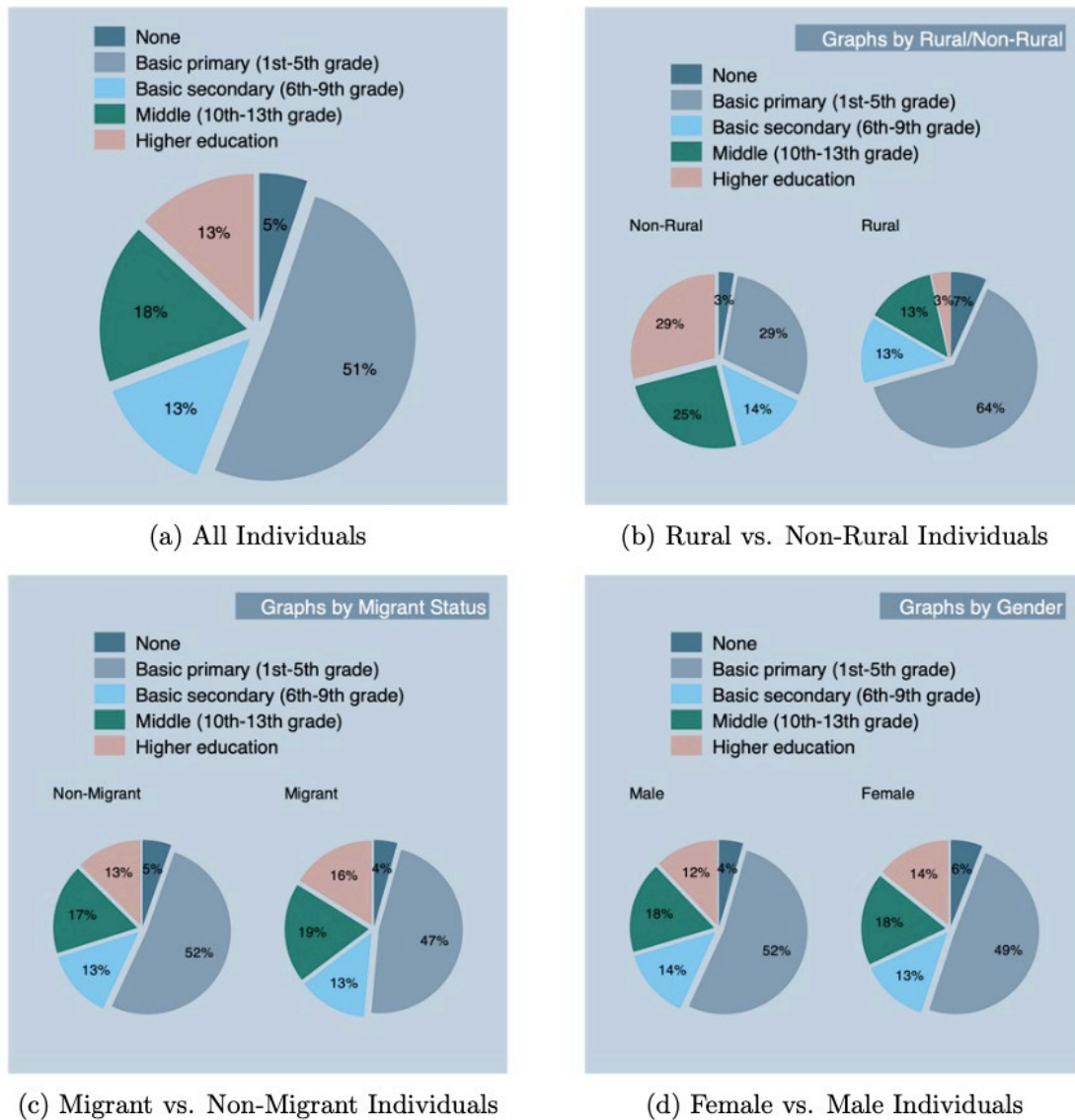
There does not seem to be large differences in employment when comparing rural vs. non-rural individuals (Figure 5b) or migrants vs. non-migrants (Figure 5c). However, employment outcomes diverge heavily between men and women (Figure 5d). In particular, 70 percent of men were employed, in comparison to only 29 percent of women. The vast majority of working-age women in Cauca (53 percent) are engaged in household chores. These patterns underscore the gendered dimension of food security: women play a crucial part in the households' subsistence since they tend to domestic activities such as cooking and caring for their families. But at the same time, they lack access to opportunities (e.g., as discussed earlier,

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<sup>14</sup> In the sample, only 5 percent have never attended school, which appears to have some relationship with age. Among individuals aged 40 or below, only 2 percent have never attended school. Among individuals older than 40, 9.5 percent have never attended school.

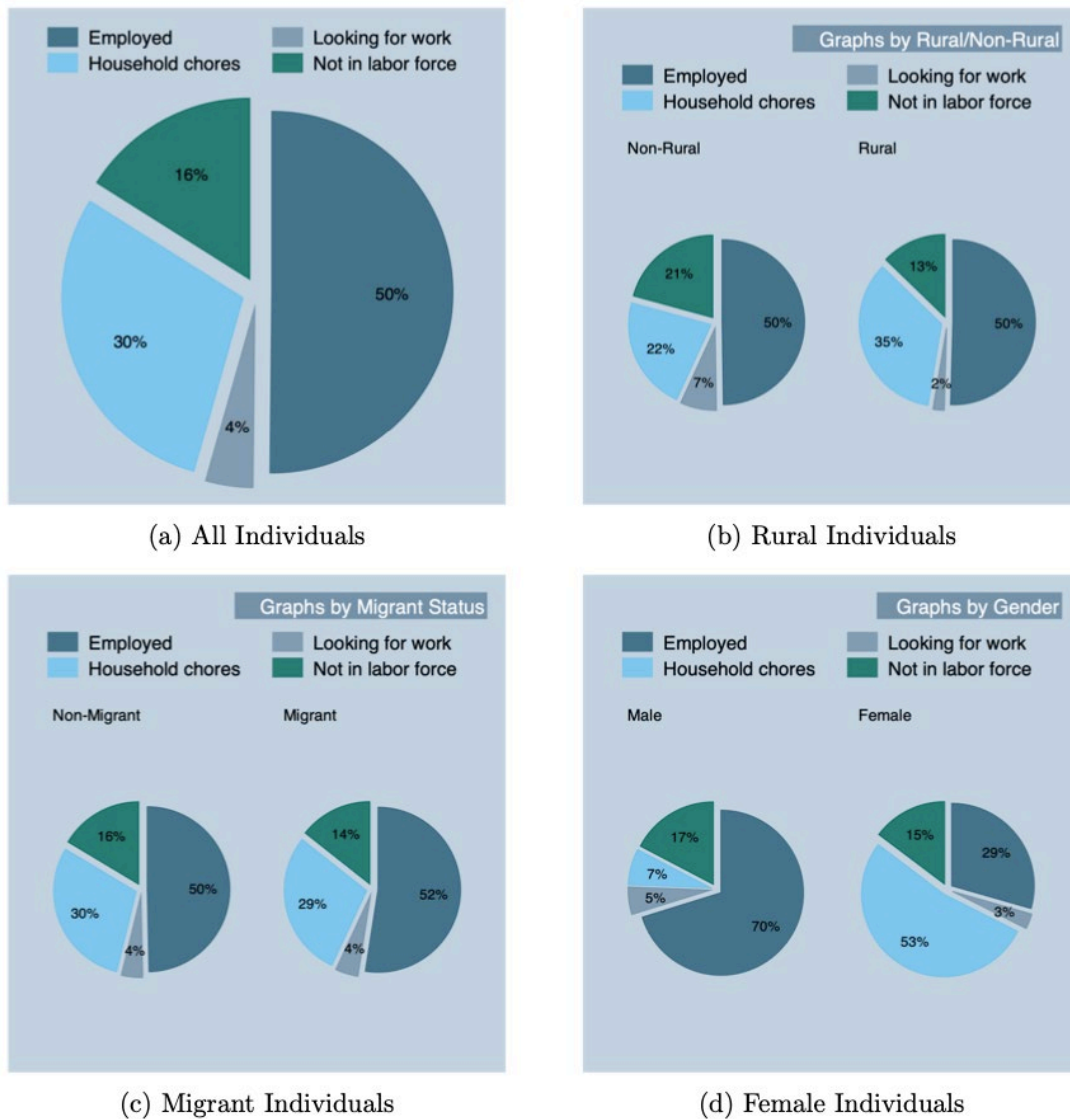
they are less likely to possess land and to have secure land access), which pose important challenges especially for female-headed households.

**Figure 4: Education Levels**



*Notes:* This figure shows the proportion of individuals whose highest level of educational attainment is no schooling, basic primary, basic secondary, middle, or higher education. In all panels, the sample is restricted to individuals living in Cauca, aged 15-64. Individuals who are still in school are excluded. Panel A is based on the full sample (N = 4362) of individuals. Panel B compares rural (N = 2346) vs. non-rural (N = 2016) individuals. A rural individual is defined as a person living in geographical areas classified by DANE as cabecera resto or rural. Panel C compares migrant (N = 733) vs. non-migrant (N = 3589) individuals. A migrant individual is defined as a person who has not always lived in the current municipality. Panel D compares females (N = 2246) vs. males (N = 2116). Data at the individual level from the 2011 National Quality of Life Survey. Sampling weights are applied throughout.

**Figure 5: Employment Outcomes**



*Notes:* This figure shows the proportion of individuals whose primary activity last week was being employed, looking for work, doing household chores, or not in labor force (i.e., studying, incapable of working, or other activities). In all panels, the sample is restricted to individuals living in Cauca, aged 15-64. Panel A is based on the full sample (N = 5178) of individuals. Panel B compares rural (N = 2662) vs. non-rural (N = 2516) individuals. A rural individual is defined as a person living in geographical areas classified by DANE as cabecera resto or rural. Panel C compares migrant (N = 914) vs. non-migrant (N = 4264) individuals. A migrant individual is defined as a person who has not always lived in the current municipality. Panel D compares females (N = 2662) vs. males (N = 2516). Data at the individual level from the 2011 National Quality of Life Survey. Sampling weights are applied throughout.

**Pattern 7. Nevertheless, most Caucan households remain poor and do not have enough income.**

Even though generally speaking, most individuals living in Cauca are employed, the data show that the majority households see themselves as being poor (Table 2, Panel A). A substantial 67 percent of all households living in Cauca self-report that they are poor. Though this estimate is based on self-reports from the 2011 National Quality of Life Survey, it is very similar to DANE's estimates of the poverty rate in Cauca for 2011, which stands at 67 percent (DANE, 2013). In addition, around half of all households mentioned that they do not have enough income to meet even their minimum, basic expenses. Thus, it appears that while most households are engaged in economically gainful employment, this income is not enough for their day-to-day needs.

I then explore households' asset ownership—in particular whether the household has a color TV, refrigerator, radio, washing machine, or motorcycle (Table 2, Panel B). In comparison to households' self-reports of poverty status and having enough income, asset holdings may provide a more objective measure of households' wellbeing. The data show that while most households in Cauca have a colored TV (70 to 80 percent), ownership of other assets remain low. For example, less than 20 percent of households in Cauca have a motorcycle or washing machine. Relatedly, access to formal financial services such as bank accounts, which can help households to save and to smooth their consumption, is considerably low. Only 8 percent of households have a bank account, and among female-headed households, it is even lower at 5 percent.

It is also interesting to investigate how poverty in Cauca compares to the national level. The data show that across almost all measures, households in Cauca are poorer. The incidence of households who self-report being poor and who do not have enough income to meet minimum expenses are 24 and 12 percentage points higher in Cauca than the national average, respectively. Moreover, households in Cauca are more likely than the typical Colombian household to receive aid from social programs, and less likely to own a color TV, refrigerator, radio, washing machine, and motorcycle than the national average (Table 2, Panels A and B).

**Table 2: Household Finances and Poverty**

	National		Subsample of Households in Cauca							
			All Households		Rural		Migrant		Female-Headed	
	Mean	SE	Mean	SE	Mean	SE	Mean	SE	Mean	SE
<i>Panel A. Self-reported measures</i>										
Considers the household to be poor	0.43	0.01	0.67	0.01	0.81	0.01	0.60	0.03	0.65	0.02
Does not have enough income to meet minimum expenses	0.33	0.00	0.45	0.01	0.56	0.02	0.43	0.03	0.50	0.02
Skipped meal last week due to lack of money	0.07	0.00	0.09	0.01	0.09	0.01	0.09	0.02	0.13	0.02
Received aid from <i>Familias en Acción</i> , last 12 mos.	0.17	0.00	0.33	0.01	0.40	0.01	0.28	0.02	0.32	0.02
<i>Panel B. Asset ownership</i>										
Has color TV	0.91	0.00	0.80	0.01	0.70	0.01	0.83	0.02	0.82	0.02
Has refrigerator	0.77	0.00	0.55	0.01	0.39	0.01	0.58	0.03	0.59	0.02
Has radio	0.51	0.01	0.33	0.01	0.23	0.01	0.33	0.03	0.29	0.02
Has washing machine	0.49	0.01	0.17	0.01	0.04	0.01	0.24	0.02	0.17	0.02
Has motorcycle	0.18	0.00	0.16	0.01	0.14	0.01	0.19	0.02	0.08	0.01
<i>Panel C. Access to financial services</i>										
Has bank account	0.03	0.00	0.08	0.01	0.11	0.01	0.08	0.01	0.05	0.01

*Notes:* This table describes the financial and poverty status of households in Cauca (columns 3 to 10) and compares it with the national statistics (columns 1 to 2). All variables in the table are indicator variables. The sample size for the national-level statistics is 25364. For the subsample of households in Cauca, the sample sizes are 2290 for all households in, 1149 for rural households, 447 for migrant households, and 691 for female-headed households. Data at the household level from the 2011 National Quality of Life Survey. Sampling weights are applied throughout.

## **Pattern 8. Few households in Cauca report skipping a meal last week due to lack of money.**

Finally, I explore the implications of the above-mentioned economic aspects of food access in Cauca on a measure of food security available in the National Quality of Life Survey: that is, whether any household member skipped a meal last week due to lack of money (Table 2, Panel A). I find that only 9 percent of households report doing so, and this proportion is the same for rural and migrant households. Among female-headed households, the number is slightly higher, at 13 percent.

These results are perhaps quite surprising, given that the data also show low education and a high proportion of households reporting not having enough income for basic needs. One potential explanation is that there may be measurement error in the survey (e.g., due to recall bias). Another potential explanation may be that non-market sources (e.g., home production from the households' own plantain trees, fruit trees, and livestock; food aid; gifts from relatives) enable households to eat meals regularly in spite of their low income. Still, this seems unlikely given that not many households rely on non-market sources of food (Figure 1). Likewise, if home production were a vital factor, the data should show a lower prevalence of skipping meals in rural areas, where home production is more easily available: this is not evident in the data, as there is no statistical difference in the percentage of households who skipped a meal last week in rural vs. non-rural areas (i.e., around 9 percent in both contexts).

It may also be the case that households receive assistance from social programs that provide them with food access. For example, the data indicate that in the last 12 months, between 30 to 40 percent of households received aid from *Familias en Acción*, a conditional cash transfer program for households with children (Table 2, Panel A). The presence of such programs may allow households to achieve food security, despite their low economic access to food, insufficient income and purchasing power, and poor education.

### **4.3 Conclusion**

This chapter sheds light on the physical, economic, and social aspects of access to food in Cauca using data from the 2011 National Quality of Life Survey. While the survey contains a rich set of variables on household well-being—including households' sources of food provision, land holdings, land security, education, employment, and poverty—there are several important caveats to the results. Specifically, although this chapter has sought to disaggregate the statistics by migrant households and female-headed households, there are few such households in the data (447 and 691 households, respectively). Further, the survey does not collect information on ethnic background and location details (i.e., inland vs. coastal areas), so it was not possible to study these factors.

Despite these necessary caveats, the patterns presented in this chapter point to several potential avenues for future research. First, it would be important to collect household level data on different subsets of households to obtain a better understanding of their food security situation. This is especially true for migrant households: in the analysis above, I have defined



migrant households as those whose head has not always lived in the same municipality, as this was the only available variable in the dataset that allows me to construct a measure related to migration. However, such a definition of migration is not perfect, and it is not possible to identify which households in the data have migrated particularly because of conflict and civil war, or to what extent displaced households and migrants have moved to a nearby town in the same area or to another district in a different area. Future survey household survey data collection activities in Cauca would do well to carefully consider the sampling of households. It may be necessary oversample different types of households—based on migrant status, the gender of the household head, ethnicity, and geographic conditions—as these households are either minimally present or virtually inexistent in secondary data sources, such as the National Quality of Life Survey.

Second, households' bundle of entitlements and their coping mechanisms for lack of money that allow them to access healthy and nutritious food requires additional investigation. Indeed, as described above, households in Cauca self-report being poor and not having enough finances to cover minimum expenses, and yet, very few households say that they skipped any meal last week due to lack of money. This begs the question of how these two patterns can be reconciled; it may be that there are other ways in which households access food that are not fully captured in the National Quality of Life Survey (e.g., social support, food aid, gifts from relatives). This is where a more detailed household survey focusing on food security might be helpful, by combining recent food access through different sources, meals, formal entitlements, and self-reported food insecurity.

Third, the sources of households' food provision also warrant further research. In particular, the results in this chapter indicate that: (1) most households in Cauca obtain food primarily from the market; (2) plantains, eggs, and fruits are the only significant food items that are procured through own production; (3) very few households use their land for livestock. These patterns in the data open up many additional questions that can be investigated through household interviews. For instance, what are the roles of purchasing power, logistical constraints, and conflict in households' food access through markets? Why are plantains, fruits, and eggs the only food items that households are able to procure through non-market sources? Moreover, what are the barriers that households face in being able to use their land for livestock?

Fourth, it would also be interesting to consider changes over time in the eight patterns described in this chapter. Most of the variables that have been used in the analysis—especially those on food consumption, land holdings, and rural households—were collected only during the 2011 wave of the National Quality of Life Survey, so this chapter has not been able to consider the time dimension. The descriptive analysis that has been presented here can therefore be extended by exploring additional datasets—ideally, household panel datasets—that would be more suitable to studying changes over time.

Lastly, apart from the statistics presented in the previous section, the National Quality of Life Survey does not contain additional information on food markets, including data on food prices. This is to be expected given that in many other developing countries, high-quality information on prices are very difficult to obtain. As a result, this chapter has not been able to fully explore the

role of prices in food access. Future work can delve into this aspect further, to expand our knowledge about food access in Cauca.

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# Chapter 5

## Culture and Food: Eating in Cauca

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April 30. 2021

### 5.1 Introduction

As stated in the Preface, this report aims to provide an updated state of the art on the interlinkages between food security and conflict in Cauca-Colombia. To do so, it draws on the concept of food security as established by 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).

As stated in Chapter 4, food security points to four pillars: availability (sufficient food supply), access (ability to access the available food), utilization (calorie and micronutrient intakes) and stability (environmental, economic and political stability in food access). This definition, while widely accepted, does not consider the critical role of culture in food security. This omission revealed an initial tendency for food policy rhetoric and quantitative studies to universalize what food is and the adequate systems to produce and access food across cultures and regions (Hayes-Conroy & Sweet, 2015, p. 235). To make up for it, clauses such as *“culturally appropriate foods”* and *“socially acceptable means of production”* were added to the 1996's definition (Hammelman & Hayes-Conroy, 2015).

Currently, studying food security necessarily demands exploring the linkages between food and culture within spatial-temporal references. This chapter aims to meet such demand by offering an exploratory study of the interlinkages between food and culture in Cauca. This report provides a basis for a deeper study on the relationship between food security, culture and conflict in this region. Thus, this report is more of a starting point than a final destination.

To achieve these objectives, I draw on the concept of eating as theorized by the sociologist Allan Warde in *The practice of eating* (2016). Warde sees eating as a social practice based on shared understandings of food selection, social eating, and physiological and alimentary processes. To explore the practice of eating in Cauca, I rely mainly on secondary sources such as studies and reports developed by the Academia and the Colombian Government, which are all accessible through the internet<sup>16</sup>.

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<sup>16</sup> These secondary sources are sociological, geographical and historical studies.

This chapter is organized into four sections. The first one briefly describes the population and eco-regions of Cauca and provides a basis for understanding food practices in this region. The second part explains the notion of eating as theorized by Warde with the objective of developing a theoretical framework. Following such framework, the third section explores food selection, food arrangements, adequate food, food production and food access in Cauca. Lastly, the fourth section outlines the main conclusions and future research venues.

It is important to note that there are three limitations to this study. First, since it relies on secondary sources, there is a risk of showing a fragmented or biased picture of eating practices in Cauca. Second, since this analysis is restricted to a small number of Cauca districts, it may not be indicative of the department as a whole. Cauca is described as being demographic and biogeographic diverse, which provides different cuisines, diets and food practices. Unfortunately, because of source constrictions, this study may not reflect Cauca's culinary richness. Third, studies on food and culture in the Cauca department are scarce, unlike those in the Valle del Cauca department. As a result, this chapter also relies on research conducted in the Cauca valley, a geographical area that encompasses the north of the Cauca department and the south of the Valle del Cauca department.

## 5.2 Cauca: Ecoregions and populations

The complexity of studying the relationship between culture and food in Cauca is explained in part by the wide variety of ecoregions and distinct ethnic groups. In such a context, this report collects data from various municipalities, allowing for a broad but fragmented image of the subject.

### **Ecoregions**

As described in previous chapters, Cauca is a department located in the southwestern part of Colombia. It covers an area of 29 308 Km<sup>2</sup> that is cut across by the western and central mountain ranges (Gobernacion del Cauca, 2012). Cauca is largely part of the Andean region, though some municipalities are located in the Pacific and Amazon regions (Rivera, 2013). The climate and vegetation of Cauca differ greatly depending on altitude (Gobernacion del Cauca, 2017). Below 1000 m, the *Tierra Caliente* of the Cauca river valley enjoy a tropical rain forest environment suitable for crops such as bananas, cacao, sugarcane, coconut and yuca (*Manihot esculenta*)<sup>17</sup>. From 1000 m to 2000 m, the *Tierra Templada* region has a cooler overall climate, making it ideal for growing crops like coffee, pineapple, avocado and corn. Between approximately 2000 m and 3500 m, the cooler climate of the *Tierra Fria* area, with temperatures ranging from 10 °C to 18 °C, allows for the cultivation of wheat, potatoes, carrots, onions and plums. The climate becomes colder from 3200 m upwards until the *Nevado del Huila* at 5364 m.

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<sup>17</sup> The major rivers of Colombia are all born in Cauca, including the Magdalena and Cauca.

## Populations

From a political perspective, Cauca is divided into 42 municipalities and has a population of 1 416 488 inhabitants (see Chapter 1). Cauca stands out for its strong rural character and inter-ethnic configuration. While 25 percent of the national territory is categorized as rural, in Cauca, rurality reaches 63 percent (see Chapter 1). Moreover, 24.8 percent of the Cauca's population identifies as indigenous and belongs to eight ethnic groups officially recognized. Up to 2006, the Colombian Institute for Agrarian Reform (INCORA) had recognized 48 indigenous reservations located in 26 municipalities that covered 531 150 ha (Gobernacion del Cauca, 2012). Furthermore, 17.2 percent identified as afro-descendant, and most rural inhabitants are mestizo peasantry (see Chapter 7). The afro-descendant communities are located in coastal and jungle rural areas of the south of the department. Up to 2006, INCORA had recognized 17 property titles to these communities which cover an area of 575 000 ha in the municipalities of Guapi, Lopez and Timbiqui (Gobernacion del Cauca, 2012).

## 5.3 Culture and Food security

Culture is commonly used in social sciences but rarely explained, maybe because it is a notorious overbroad and ambiguous concept (Lenard, 2020). Following (Murcott, 2019) in her sociological research on food and eating, this report grounds on the working definition given by Giddens and Sutton (2017). Thus, culture is *"the way of life, including knowledge, customs, norms, laws, and beliefs, which characterizes a particular society or social group"* (2014:135). It follows that a society's culture is whatever is required to know or believe in order to function in an appropriate manner to its members (Goodenough, 1957). Culture plays a crucial role in what food is and which practices are considered adequate to produce, access, and consume food (Briones Alonso, Cockx, & Swinnen, 2018). For instance, cow meat is not considered food in some cultures, and, for others, dumpster diving is seen as an inappropriate way to access food.

Researchers in the field of food studies have approached the complex relationships between culture and food using different concepts. The American folklorist Lucy Long uses the term "foodways" to describe the *"network of activities, habits and conceptualizations surrounding food and eating"* (2015, p. 192). Long's concept seems narrow in comparison to that of "food culture". The Norwegian scholars Bergflødt, Amilien and Skuland use "food culture" to refer *"the sum of food knowledge and food experience (...). Not only does it include the norms, values, beliefs, and actual foods and dishes, but also the entire food system"* (2012, p. 5). Others, such as Murcott (2019, p. 17), do not believe that a new term is needed to investigate culture and food relationships and instead she relies on classical approaches.

To prevent conceptual ambiguity, I build on the concept of eating as theorized by Warde since it facilitates linking the four dimensions of food security and cultural aspects of food. According to Warde (2016), eating is a social practice determined by mutual understandings on what, when,

where and how food is consumed<sup>18</sup>. Practices refers to the embodied capacities to respond a situation by implementing procedures based on previous experiences that generate a stream of action. Thus, studying eating as a practice demands exploring the mutual understandings, procedures and strategies around food, cooking and food embodiment. To operationalize the practice of eating, Warde proposes to examine three concepts: food selection, social arrangements and bodily incorporation.

Food selection questions which food items are consumed and how they are combined together. Here the concept of dishes - understood as the culinary preparations symbolically identifiable in a given cultural context - turns critical. Social arrangements, for its part, focus on the temporal (sequence and schedule) and spatial characteristics of the meal, understood as a one-time eating event. It also questions which role different agents play in the preparation and embodiment of the meal. Finally, bodily incorporations refer to the physiological mechanisms behind the experience of tasting, taste and physical manifestation in and on the body.

The practice of eating relates to the four pillars of food security. Indeed, food practices depend on the available food items, as well as the resources individuals and families have to access them. In this chapter, I focus exclusively on food availability and food access because a large body of literature reviewed revolves around them. Food availability refers to the existence of sufficient quantities of food through domestic products or imports. In this regard, this chapter examines how shifts in domestic food production have affected food selection in Cauca. Food access, for its part, refers to individuals' resources for obtaining sufficient food, whether through the market or other mechanisms. In this vein, this chapter focuses on the effects of monetization for food access in Cauca.

As a result, the analysis is structured in three parts. The first focuses on the experience of eating in Cauca. It mainly addresses food selection, and social arrangements since literature about bodily incorporations is scarce. The second elaborates on the case of the urban chicken in Medellin to illustrate how certain foods are considered inadequate in Cauca valley. The third aims to link how food production and food access relate to the practice of eating in this region.

## 5.4 Eating practices in Cauca

As stated above, Cauca is characterized by its geographic and demographic diversity. Such diversity has resulted in similarly diverse eating practices. In such context, this section describes common eating patterns in three eco-regions of Cauca: the Pacific, Andean and Amazonian region.

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<sup>18</sup> Throughout this chapter, I rely on Warde's definition of consumption i.e. "a process whereby agents engage in appropriation of a good, service, performance, information or ambiance, and which is a product of human work" (Warde, 2017).

### **Cauca's pacific region**

This region is known for eating coconut-based food items (coconut milk and coconut oil), seafood and herbs such as culantro cimarron or chillangua (*Eryngium foetidum*). These food items are often smoked, salted, stewed, fried or served in ceviches (marinated in lemon juice) (Ardila Pinto, Valoyes, & Melo, 2013). For instance, in Guapi - a municipality located in the Pacific region of Cauca - it is usual to eat shell stews for lunch, especially clams, oysters, pianguas (a type of mussel) and choras (a type of mussel) accompanied with banana and coconut rice. During Easter, it is also typical to drink coconut milk (made of grated coconut and water) and corn-based beverages (Orejuela et al., 2015)

### **Cauca's Andean region.**

This region covers most of Cauca's territory and the population characterizes for eating a great variety of products due to the diversity of climate zones. The most prevalent food products are sugar cane, banana, corn, potatoes, beans cacha (*Phaseolus polyanthus*), yuca (*Manihot esculent*) and ulluco (*ulluco tuberosus*). These products are often baked, fried or stewed; with frying being the most common cooking method (Ardila Pinto et al., 2013). Sugar cane is the base of various sweets such as manjar blanco (milk-based delicacy) and candies. For its part, banana, yuca, and potatoes are the base for the famous "sancocho" (a soup made of meat, tubers and vegetables served in broth) (Instituto Colombiano de Bienestar Familiar & Universidad Nacional de Colombia, 2017).

Moreover, corn is used as the base of carantana and cornmasa. Carantana is a food item made by cooking ground corn, drying it, and detaching the part of the dough glued from the pot's walls. Carantana is eaten in Cauca as a fried and salted snack or as the main ingredient of soup (Sopa de carantana) (Ordonez Caicedo, 2012) . Cornmasa is a versatile food item made of ground corn, water and salt that is used in the preparation of arepas (flat, round, unleavened patty of cornmasa which are eaten with almost every meal), empanadas (baked or fried turnover consisting of pastry and filling) and tamales (corn-based dough usually steamed in a banana leaf). Nowadays, pre-fabricated products such as Areparina and Super arepa have replaced domestic preparation of arepas (Ardila Pinto et al., 2013). Corn is also used as the main ingredient of soups, such as in the Crema de choclo (a soup made of corn, beef rib, yellow potatoes, milk, eggs and cilantro) (Ordonez Caicedo, 2012).

### **Cauca's Amazon region**

This region is made up of just three municipalities: San Sebastian, Santa Rosa, and Piamonte (Bota caucana). This region is well-known for eating tubers such as yuca (*Manihot esculent*), which is the basis of the versatile yuca flour often used to make casabe (unleavened bread). River fish and bushmeat, such as turtles, are the primary sources of protein. It is also popular to consume Amazon fruits as snacks and beverages and hot chilli in soups (Ardila Pinto et al., 2013). Typically, food items are smoked or fermented. There is little information available about food selection in this region, probably due to its geographic isolation.



## Common eating practices across Colombia

Cauca, in addition to its regional diversity, shares eating practices that are common across the country. For instance, white rice is a food item widely eaten in Cauca and Colombia as a side dish, despite the availability of other carbohydrate sources such as potatoes, yuca and bananas. Another common food practice is cooking soups. Soup is a mestizo dish that is prevalent in Colombia due to its practicality. It allows for the use of leftovers, entrails, giblets, and bones and increases its quantity by adding water. According to Pinto et al. (2013), soups make for most of the vegetable consumption since salads- as main or side dishes- are still not commonly eaten.

Furthermore, in Cauca, as in Colombia, eating habits are passed down from grandmother to mother and mother to daughter; this means that women are the gatekeepers of eating practices, as well as the ones that develop and transform those practices through time (Pinto et al., 2013). Another common practice is that food is served in the kitchen before going to the table. This means that the person serving decides the portions based on factors such as age, food available, breadwinner status, and gender. This practice will be the subject of a more profound study. What is relevant to point out here is that women play a crucial role in shaping food practices in Cauca.

Finally, regarding meal format, foods are normally separated into three meals: breakfast, lunch, and dinner. Breakfast is usually served between 7 a.m. and 10 a.m., and it might include food items such as fried eggs, oatmeal, banana, hojaldras (a fried food made of wheat flour, water and margarine) and arepas. These food items are usually served with coffee or agua de panela (an infusion derived from hardened sugar cane juice). Lunch is served between 12 p.m. and 2 p.m. and it usually consists of the starter and the main course. The meal content varies by region, as described above. Dinner is generally served between 6 p.m. and 10 p.m. with the same meal content as the lunch, but it is a smaller portion.

## 5.5 Adequate food in Cauca

What is regarded as adequate food is cultural and socially conditioned. Previous research demonstrates that people operate with relatively simple classifications on what is adequate food or not (Murcott, 2019), and that these classifications vary over time and across social strata. In analyzing food culture within a particular context, and in an attempt to understand eating practices, these categorizations have to be taken into account.

From a preliminary literature review, in Cauca the concept of adequate food and acceptable means of food production is shaped around the dichotomy "food with chemicals" and "food without chemicals." An emblematic case is the one of urban chicken. According to a study conducted by Hayes-Conroy and Sweet (2015) in Medellin among displaced women in 2014, the "urban chicken" is *"a chicken produced in a factory, that hasn't seen the outside world, a chicken that as fattened quickly with the use of chemicals or hormones."* Displaced women in Medellin were uneasy about consuming "urban chicken" because they are animals that "have not seen the light of the day" and "are full of chemicals" (Hayes-Conroy & Sweet, 2015). The

same storylines were found by Bernal Galeano (2019) in her study on food security in the village of El Tiple, in the department of Valle del Cauca, where women complained at urban chickens stating the animals *"are put in sheds, and after 45 days they are taken out. How do they lift them? With pure chemical! I say that now everything you eat is chemical"*.

These depictions of the use of chemicals for food production and food preservation extended to all kinds of food, from vegetables to cow's milk. Hayes-Conroy and Sweet (2015) concluded that the critics of the urban chicken represent a critic to the industrial food system, which is seen as incapable of producing tasty and safe foods through respectable and acceptable relationships with nature. However, according to Bernal Galeano (2019) "food with chemicals" are considered inadequate food by older generations, but it seems younger generations do not share the same concerns.

Bernal Galeano (2019) reported that young people have a more distant relationship with the land and consider industrialized products culturally adequate. In El Tiple, for instance, pizza, hamburgers and other fast foods are more attractive to young people, and they are even among their favorite foods. It seems that the dichotomy between "food with chemicals" and "food without chemicals" is not prevalent in the imaginaries of younger generations. Alban (2015) considers that this change responds to incorporating productive urban systems in rural areas. However, more research is needed on these shifts, their causes and their implications.

Beyond these practices, government actors respond to "the nutritional paradigm" that prioritizes nutritional input over other considerations, such as production methods (CISAN, 2009). The nutritional paradigm grounds on the idea of a balanced diet according to WHO standards. The relationship between this paradigm and typical food in Cauca is challenging. On the one hand, there is an exaltation of the culinary richness of Cauca (Ordonez Caicedo, 2012), and on the other hand, Cauca's traditional diets are disproved for being too rich in carbohydrates (CISAN, 2009).

According to FAO (2021), the disconnection between culture and food systems has led to a world where obesity and malnutrition co-exist side by side. Cauca seems to be an example of such disconnection and the struggles between former, current and future ways of understanding food.

## 5.6 Food production and eating in Cauca

What is eaten in a region is interlinked with the food items available. In this vein, it turns relevant to explore how changes in food production have influenced eating practices in Cauca.

Until the '70s, Cauca valley was known for its fertile lands, rich biodiversity and numerous wetlands. The landscape was dominated by large farms, which were run by conservative elites (Bernal Galeano, 2019, p. 5). These farms dedicated to the production of diversified crops such as soy, corn, sorghum, millet and beans, as well as cattle breeding. Indigenous peoples and afro-descendant communities gathered in less productive areas where they cultivated basic

food commodities in small farms. Family agriculture production was complemented by fishing, hunting, and harvesting fruits (Bernal Galeano, 2019, p. 44).

This landscape started to change in the '50s<sup>19</sup>. The spreading and consolidation of monocultures of sugarcane, rice, coffee and, most recently, cocoa beans led to land dispossession processes among indigenous and afro-descendant communities (Hurtado-Bermúdez, Vélez-Torres, & Méndez, 2020). The expansion of monocultures also resulted in biodiversity loss and water resource depletion. As stated by Torres et al. (2013), these changes have contributed to the impoverishment of afro-descendants and indigenous households and the loss of control over their territories.

Sociological studies report that this process has profoundly influenced eating in Cauca. According to Alban (2015, p. 241), typical dishes cannot be prepared as before because their ingredients are no longer locally produced. For instance, in the mid-nineteenth century, the wild duck was a common source of animal protein in the Cauca valley. Cauca's families used the wild duck to make sancocho –a soup with various regional variants. Nowadays, in El Tiple (a village located in Cauca valley), this dish is prepared with chicken, beef or fish since wild ducks are no longer present and family farms do not raise ducks for breeding (Bernal Galeano, 2019, pp. 44–47).

Another example is river fish that was formerly at the base of the Cauca valley's cuisine. Bernal Galeano (2019, p. 47) reports that nowadays, getting fish in El Tiple is more difficult since lakes and ditches have dried because of the expansion of monocultures. In other cases, the lack of sowing of certain products has led to a substantial reduction in their preparation. For instance, in Patia (municipality located in Cauca department), products such as batata (*Ipomoea batatas*) and Tahiti lemon are no longer cultivated and have disappeared from Patia's dishes (Alban, 2015, p. 241).

Finally, in the study conducted by Hurtado Bermudez (2019) in the villages of Hormiguero, El Tiple and Lopez Adentro, the interviewees generally complained about dishes that are no longer prepared because some ingredients are too costly to purchase and are not self-produced anymore. As a resistance strategy, some families have formed cooperatives and producer organizations to share agricultural "know-how" and resources to produce diversified crops meant for self-consumption and supply urban markets (Municipio de Silvia, 2019).

## 5.7 Food access and eating in Cauca

What is eaten in Cauca is also linked to the resources available to families and individuals to obtain food items. In this line, it is useful to investigate how changes in food access have influenced eating practices in Cauca.

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<sup>19</sup> These processes started in the 50s and escalated during the 70s.

the 20<sup>th</sup> According to the ethnographic studies conducted by Bernal Galeano (2019) in El Tiple and Alban (2015) in Patia - both villages in the Cauca valley- the mechanisms used by Cauca's households to access food changed drastically during century. During the first half of the 20<sup>th</sup> century, households often grew crops for food consumption and exchanging/bartering with other communities (Albán Achinte, 2015, pp. 276–279). Exchange/barter practices were part of a trading system that favored the development of inter-ethnic and inter-cultural relationships while ensuring access to various food products by Cauca valley communities. This system enriched the cuisine of the Cauca region since it allowed the exchange of products from warm and cold regions (Restrepo Jiménez, 2017)

Nowadays, exchange/barter practices have almost disappeared in Cauca valley. Chapter 4 concluded that by 2011, households in the Cauca department obtained their food supplies mainly from the local market<sup>20</sup>, while other forms of food supply such as gifts, payment-in-kind, or exchange/barter were rare. The shift in food access practices responds to transformations in global and national food systems. The literature reviewed focused on two phenomena: (i) the transition from diversified crops to monocultures, which necessarily make Cauca's household more dependent on the market (Albán Achinte, 2015) and (ii) a normative change from food as commons to commodity<sup>21</sup>, which converted the market and monetized mechanisms as the hegemonic spaces to access food. It is important to note that the reliance of ethnic groups on food markets is not uniform. Indigenous households in the Cauca valley are more reliant on the market to access food than afro-descendant groups (Hurtado-Bermúdez et al., 2020)<sup>22</sup>.

These changes have significantly affected eating in Cauca. Cauca's households have a monetary poverty incidence of 51 percent -the national average is up 27 percent, which means that 51 percent of households do not have enough money to buy adequate food for all its members (Chapter 1). In such a context, variety and nutritional balance are compromised over more filling foods. As demonstrated in Chapter 4, by 2011, most of Cauca's households eat carbohydrate-rich foods (84 percent), and relatively fewer households consumed fish and seafood or ham and cold meat (20 percent). Formerly, families relied on fishing and hunting to access cheap protein sources, which are more restrictive now.

Moreover, Alban (2015) states that the access through the market to ultra-processed food, canned food and industrial flours has contributed to simplifying the gastronomic richness of Cauca valley. The current food system encourages Cauca's households to sell local-produced products to obtain revenues that allow them to buy industrialized food items.

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<sup>20</sup> As pointed out in Chapter 4, the exceptions are plantains, eggs, and fruit trees, which were obtained through home production.

<sup>21</sup> See Vivero-Pol, José L. 2017. "Food as Commons or Commodity? Exploring the Links between Normative Valuations and Agency in Food Transition" *Sustainability* 9, no. 3: 442. <https://doi.org/10.3390/su9030442>.

<sup>22</sup> Changes in food access processes have also broken solidarity relationships between families and communities, although they are not totally lost.

To sum up, it is reported that changes in the mechanisms to access food in Cauca (from exchange/barter to buying in the market) have led to less variety of locally produced foods and more ultra-processed foods.

## 5.8 Conclusions and future research avenues

This chapter sheds light on eating practices in Cauca and how changes in food production and access have influenced them. It concludes that the geographical and demographic diversity of Cauca correlates to the diversity in eating practices. Moreover, the expansion of monocultures, the disappearance of family farms, loss of exchange practices, and the introduction of industrialized food items have influenced eating practices in Cauca. Nowadays, typical dishes are not common in the daily diet of Cauca's households. They are part of a collective grievance that yearns for a different way of life. This is the tone reported by the literature reviewed, which are all secondary sources.

These findings point to potential avenues for future research. First, it would be interesting to conduct a historical analysis of the changes in cuisines in a district in Cauca and different generations' attitudes towards these changes. Second, in Chapter 6 was evidenced that obesity and malnutrition have increased in recent years in Cauca. Thus, it would be helpful to analyze the interrelations between loss of traditional eating practices and obesity. Third, it is needed an analytical framework that allows the study of the physiological mechanisms behind the experience of eating and tasting in Cauca and beyond.

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# Chapter 6

## Nutritional status of Cauca. A life cycle approach.

Maria Gloria Cano<sup>23</sup>

### 6.1 Introduction

In Colombia a triple burden of malnutrition coexists: underweight, micronutrient deficiencies, and obesity and overweight. Colombia underwent an epidemiological transition from a high prevalence of malnutrition due to deficits, to a triple nutritional burden, defined as malnutrition, overweight-obesity and micronutrient deficiency. Those most affected are pregnant women, lactating /nursing women, infants, children under five years of age and schoolchildren. Cauca is no stranger to this problem. This chapter will address these topics from a life-cycle point of view, disaggregating data for the Pacific region, and for Cauca, as data are available. The main source is the 2015 National Survey of Health and Nutrition of Colombia ([ENSIN] Encuesta Nacional de la Situación Nutricional). Some variables can be compared with the 2005 and 2010 survey results.

A breakdown of the nutritional information contained in ENSIN (2015) is as follows:

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<sup>23</sup> Econometría Consultores. Bogotá – Colombia. Email: mgcano@econometria.com.

**Table 1. Anthropometric indicators by age group**

Population	Indicator
Children aged 0–4 years	Stunting
	Wasting
	Underweight
	Overweight and obesity
Children and adolescents aged 5–17 years	Stunting
	Overweight and obesity
Adults aged 18–64 years	Thinness
	Overweight and obesity
Pregnant woman	Underweight
	Overweight and obesity
Childbearing-age women	Stunting

**Table 2. Measurements for estimating nutritional status by vitamins and minerals**

Measurement	Population
Hemoglobin	Population aged 6 months–49 years
Ferritin	Population aged 1–17 years, women of childbearing-age and pregnant women aged 13–49 years
Vitamin D	
Vitamin B12	
Vitamin A	Children aged 1–4 years
Zinc	
Iodine	Children aged 1–12 years and women of childbearing-age 13–49 years

Source: Own elaboration based on data from ENSIN (2015)

As shown in Map 1 below, the population of Cauca aged between 0 and 12 years has the highest vulnerability in nutritional status compared with the national data, with higher proportions of malnutrition (stunting and wasting). Children in Cauca aged 5–12 years and adolescents from 13–17 years have a higher prevalence of stunting as well as more overweight and obesity. Overweight is the main problem of malnutrition among adults 18–64 years and among pregnant women and women of childbearing age.

Data are available at the regional level for micronutrient deficiencies. Here, Cauca is part of the Pacific region. The Pacific region has greater deficiency of micronutrients, especially iron and iodine. Compared with the national level, the levels of iron deficiency anemia are higher in all age groups.

## 6.2 A general overview of the nutritional status of the population of Cauca

The national average of chronic malnutrition in Colombia (ENSIN, 2015) is 10.8 percent for children under five. In rural areas the proportion is 15.4 percent, and among indigenous children it is 29.6 percent. Overweight and obesity have reached concerning levels; in 2015, 56.5 percent of Colombian adults were overweight and 18.7 percent were obese.

According to ENSIN (2015), 54.2 percent of Colombian households suffered from food insecurity. Food insecurity is understood here as the lack of a safe and permanent access by households to sufficient food in quantity and quality in order to lead a healthy and active life.

From 2010 to 2015, food insecurity dropped 3.5 percentage points. However, the country's inequalities are evident: eight out of 10 indigenous-led households are food insecure, compared with five out of 10 non-ethnic households. Also, as shown in Map 1, regional inequalities are evident. The most affected regions are the Pacific one, La Guajira, and the south-eastern part of the country.

Map 1 Household food security 2015

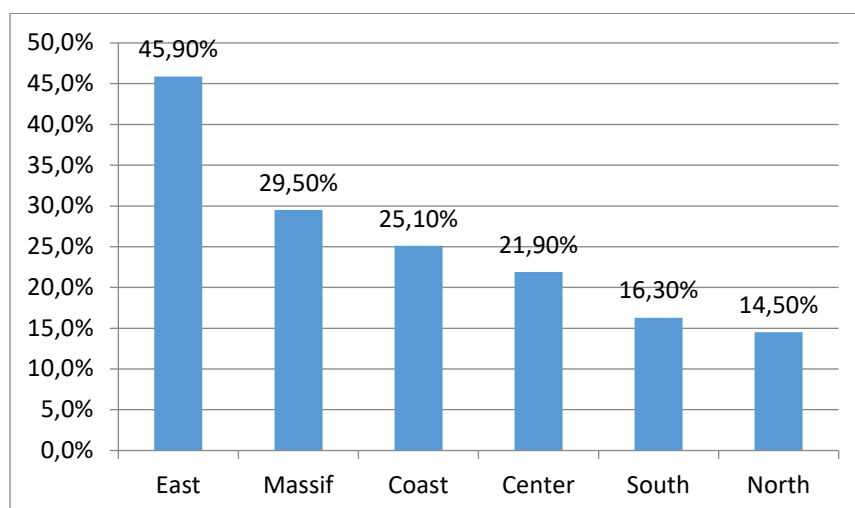


Source: ENSIN (2015)

<https://www.minsalud.gov.co/sites/rid/Lists/BibliotecaDigital/RIDE/VS/ED/GCFI/ensin-colombia-2018.pdf>

As stated in the report *Cauca without hunger*, the department of Cauca is one of the food and nutrition insecure regions of Colombia (CISAN, 2009). According to ENSIN (2015), 72.5 percent of households in Cauca are food insecure (32.5% mild insecurity, 24.1% moderate insecurity and 15.9% severe insecurity). In addition, the report identifies the eastern part of the department as the area with the highest percentage of stunting, followed by the massif and the coast, and, finally, the center, the south and north of the department (see Figure 1).

**Figure 1 Cauca: Stunting prevalence by region**



Source: Food and Nutrition Security Plan for the Department of Cauca 2009–2018 (CISAN, 2009)

### 6.3 Children aged 0–4 years

As shown below, in Cauca a higher percentage of the population in early childhood suffers from stunting, wasting and overweight compared with the national percentage and with the Pacific region. Regarding indicators of micronutrient deficiencies, the Pacific region has a higher percentage of children aged 1–4 years with iron deficiency, iodine deficiency, vitamin A deficiency, and a higher prevalence of iron deficiency anemia than at the national level.

**Table 3. Malnutrition in early childhood 0–4 years (ENSIN, 2015)**

	Early childhood aged 0–4 years		
	National	Pacific region	Cauca
Stunting	10.8%	10%	*13.3%
Wasting	1.6%	1%	**2.1%
Underweight	3.1%	2%	**1.4%
Overweight and obesity	6.4%	6%	*7.1%
Overweight	5.2%	^4%	**4.3%
Obesity	1.1%	1.4%	**2.8%

Source: Own elaboration based on data from ENSIN (2015)

(\*\*) Coefficient of variation => 30%, precision is very low. (\*) Coefficient of variation => 20% and < 30%, precision is regular. (^) Coefficient of variation => 15% and < 20%, precision is acceptable.

*Stunting* refers to growth retardation or low height according to the infant’s age. This indicator of nutritional status is largely related to the level of development of a country. In Colombia, stunting in early childhood is 10.8 percent–9 percent in urban areas and 15.4 percent in rural areas. Among indigenous boys and girls aged 0–4 years, stunting is almost three times the national average, at 29.6 percent; see Table 1 in the annex. As shown in Table 3, in Cauca, stunting in early childhood is 2.5 percentage points and 3.3 percentage points higher than the national and regional levels, respectively.

*Wasting*, on the other hand, refers to low weight for height and is the most sensitive anthropometric indicator of early weaning. A poor diet, infection and disease-related appetite reduction, and inadequate sanitation conditions, among others, are associated with wasting. The importance of this indicator lies especially in the fact that the probability of death among children with wasting is nine times higher than for non-wasted children. Wasting in early childhood in Colombia is 1.6 percent–1.4 percent in urban areas and 1.8 percent in rural areas. Wasting is significantly higher among indigenous boys and girls aged 0–4 years: 2.9 percent; see Table 1 in the annex. Cauca records show that early childhood wasting is 0.5 percentage points higher than the national level and 1.0 percentage points higher than the Pacific region.

Early childhood *underweight*<sup>24</sup> in Colombia is 3.1 percent, 2.7 percent in urban areas and 4 percent in rural areas. Among indigenous boys and girls aged 0–4 years, it is 7.2 percent; see Table 1 in the annex. Contrary to the previous two indicators, early childhood underweight in Cauca is 1.7 percentage points and 0.6 percentage points lower than the national and regional levels, respectively.

<sup>24</sup> Low weight for-age relative to the National Center for Health Statistics/World Health Organization (NCHS/WHO).

Comparisons of ENSIN data from 2005, 2010 and 2015 show an important decrease in early childhood stunting and wasting; see Figures 2 and 3. In Cauca from 2005 to 2015, the prevalence of stunting decreased from 20.3 percent to 13.3 percent and wasting from 4.1 percent to 2.1 percent.

Figure 1. Stunting in children aged 0–4 years

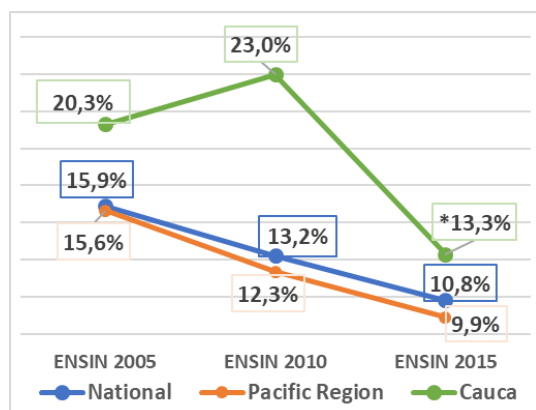
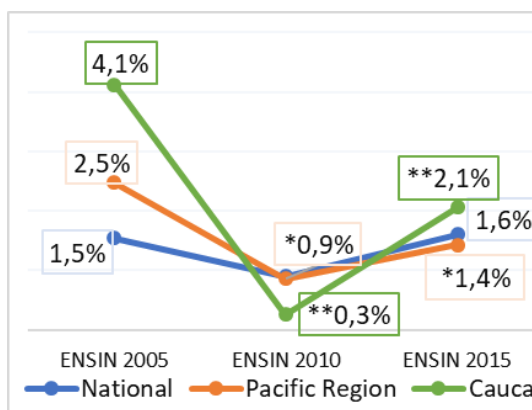


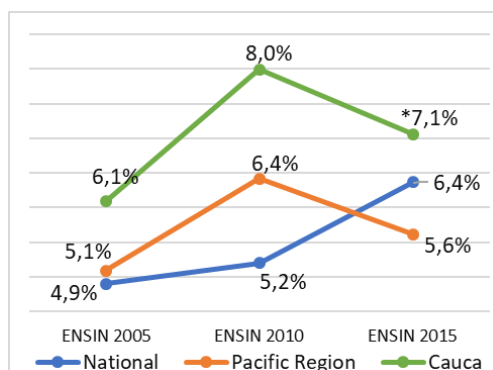
Figure 2. Wasting in children aged 0–4 years



Source: Own elaboration based on data from ENSIN (2015)

*Overweight*, calculated as the body mass index (BMI) for age, affects 6.4 percent of Colombian children aged 0–4 years. It is related to higher risk of non-communicable diseases over a lifetime, such as diabetes, hypertension and cancer. Early childhood overweight in Cauca is 4.3 percent, which is 0.9 percentage points below the national level, but 0.3 percentage points higher than the average in the Pacific region. As shown in Figure 3, in Cauca the percentage of overweight children increased by 1 percentage point from 2005 to 2015.

Figure 3. Overweight in children aged 0–4 years



Source: Own elaboration based on data from the ENSIN (2015)

**Table 4. Micronutrient deficiency / excess and anemia in early childhood<sup>25</sup> ENSIN, 2015: National and Pacific region**

	<b>Early childhood (1–4 years)</b>	
	<b>National</b>	<b>Pacific region</b>
Iron deficiency	14.8%	15.3%
Vitamin A deficiency	27.3%	28.3%
Zinc deficiency	36.0%	27.2%
Vitamin D deficiency	31.4%	28.9%
Iodine deficiency	8.1%	9.8%
Excess iodine	63.8%	58.6%
Anemia	24.7%	26.6%
From the % with anemia: iron deficiency anemia	26.1%	^23.1%

Source: Own elaboration based on data from ENSIN (2015).

(^) Coefficient of variation => 15% and < 20%, precision is acceptable.

There is ample evidence of the consequences of vitamin and mineral deficiency in childhood related to reduced abilities and cognitive development, and to higher mortality and prevalence of morbidities throughout the life cycle (ENSIN, 2015). As shown in Table 4, in the Pacific region the deficiency of iron (15.3%), vitamin A (28.3%), and iodine (9.8%), and the prevalence of iron deficiency anemia (26.6%) in the early childhood population exceed the national level.

Additionally, the national level of prevalence of iron deficiency anemia is higher among indigenous and Afro-descendant infants (34% and 33%, respectively) than among non-ethnic infants. In fact, the level of iron deficiency anemia among non-ethnic infants was 10 percentage points lower than that of indigenous and Afro-descendant infants; see table 1 in Annex.

## 6.4 Boys and girls aged 5–12 years and 13–17 years

Stunting among children aged 5–12 years and adolescents aged 13–17 years is higher in Cauca than the national average and the Pacific region results. The prevalence of overweight in these age groups is higher than the proportion of stunting. However, in the adolescent population aged 13–17 years, overweight does not exceed the national percentage. In the case

<sup>25</sup> The hemoglobin levels that determine the prevalence of anemia were measured for the population from six months of age. The other indicators in the table are for children between 1 and 4 years old.



of micronutrient deficiency, only vitamin D deficiency among children aged 5–12 years is lower in the Pacific region compared with the national prevalence.

**Table 5. Malnutrition due to excess and deficit in population from 5–17 years (ENSIN, 2015)**

	Children aged 5–12 years			Adolescents aged 13–17 years		
	National	Pacific region	Cauca	National	Pacific region	Cauca
Stunting	7.4%	6.5%	**10.2%	9.7%	*11.3%	**11.9%
Overweight and obesity	24.4%	26.7%	28.5%	17.9%	18.9%	*16.7%
Overweight	16.8%	18.3%	19.7%	13.9%	15.3%	13.7%
Obesity	7.6%	8.4%	*8.8%	4.0%	3.6%	**3.0%

Source: Own elaboration based on data from ENSIN (2015).

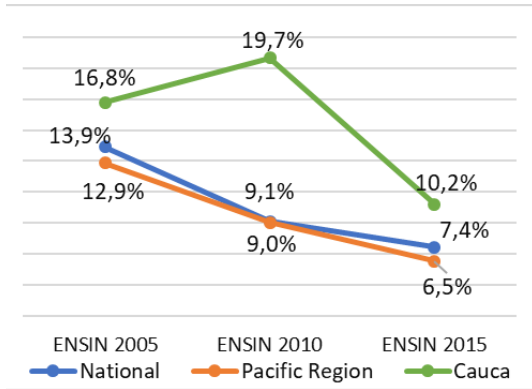
(\*\*) Coefficient of variation => 30%, precision is very low. (\*) Coefficient of variation => 20% and < 30%, precision is regular.

As shown in Table 5, 10.2 percent of children in Cauca aged 5–12 years are stunted. This indicator is 3.7 percentage points and 2.8 percentage points higher, respectively, than in the Pacific region and at the national level. In Cauca, stunting among adolescents aged 13–17 years was more pronounced (11.9 percent) compared with the national (9.7%) and regional (11.3%) levels.

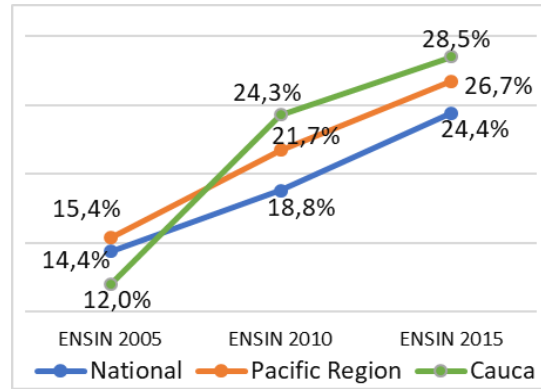
The prevalence of overweight in Colombia for children aged 5–12 years is 24.4 percent. Overweight in this age group in Cauca exceeds the national and the regional percentages by 4.1 percentage points and 1.8 percentage points, respectively. In the case of adolescents aged 13–17 years in Cauca, the proportions of overweight and obesity were lower than in the Pacific region (18.9%) and the national level (17.9%).

Comparing ENSIN data from 2005, 2010 and 2015, the prevalence of stunting among children aged 5–12 children and adolescents aged 13–17 decreases while overweight increases; see Figures 4 to 7. The most dramatic increase is in the prevalence of overweight in Cauca among children aged 5–12, which increased from 12 percent in 2005 to 28.5 percent in 2015.

**Figure 4. Stunting in children aged 5– 12 years**

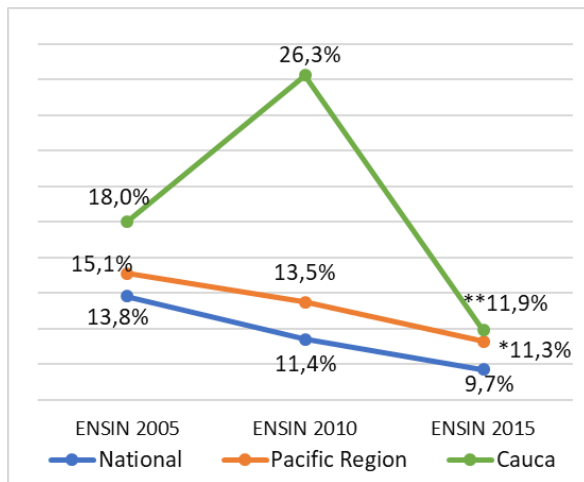


**Figure 5. Overweight in children aged 5–12 years**

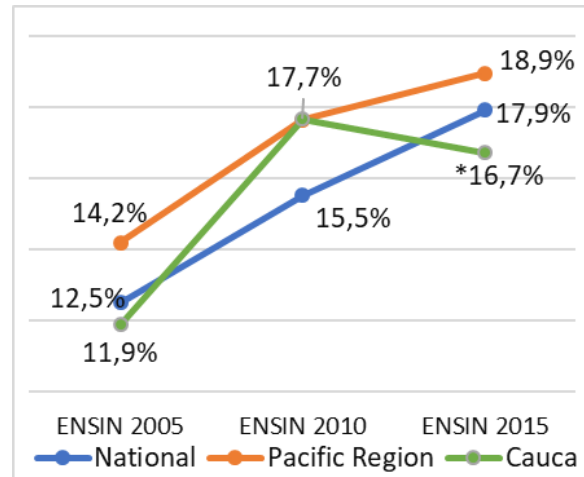


Source: Own elaboration based on data from ENSIN (2015)

**Figure 6. Stunting in adolescents aged 13– 17 years**



**Figure 7. Overweight in adolescents aged 13–17 years**



Source: Own elaboration based on data from ENSIN (2015)

**Table 6. Micronutrient deficiency / excess and anemia in children aged 5–12 years and adolescents aged 13–17 years (ENSIN, 2015)**

	Children aged 5–12 years		Adolescents aged 13–17 years	
	National	Pacific region	National	Pacific region
Iron deficiency	8.8%	9.2%	15.3%	18.7%
Vitamin B12 deficiency	1.5%	^2.7%	3.5%	^5.5%
Vitamin D deficiency	21.8%	20.7%	20.4%	20.8%
Iodine deficiency	4.4%	5.4%		
Iodine excess	75.2%	69.3%		
Anemia	8.0%	13.3%	10.4%	14.8%
From the % with anemia iron deficiency anemia	17.7%	^17.9%	34.1%	^35.9%

Source: Own elaboration based on data from ENSIN (2015).  
 (^) Coefficient of variation => 15% and < 20%, precision is acceptable.

Children aged 5–12 years from the Pacific region show higher percentages of vitamin D deficiency (20.7%), excess iodine (69.3%) and prevalence of iron deficiency anemia (17.9%) compared with the national averages. In this population group, the regional percentage of vitamin D deficiency and excess iodine are the only indicators that do not exceed the national levels.

Adolescents aged 13–17 years in the Pacific region show less optimal behavior in all the indicators presented in Table 6 compared with the national average. It is highlighted that the prevalence of iron deficiency anemia in the Pacific region exceeds the national average by 4.4 percentage points.

## 6.5 Men and women aged 18–64 years

Compared with the national and Pacific region, a higher percentage of the population of Cauca aged 18– 64 years suffers from overweight (Table 7). Thinness in this age group is lower, however, and does not exceed the national percentage.

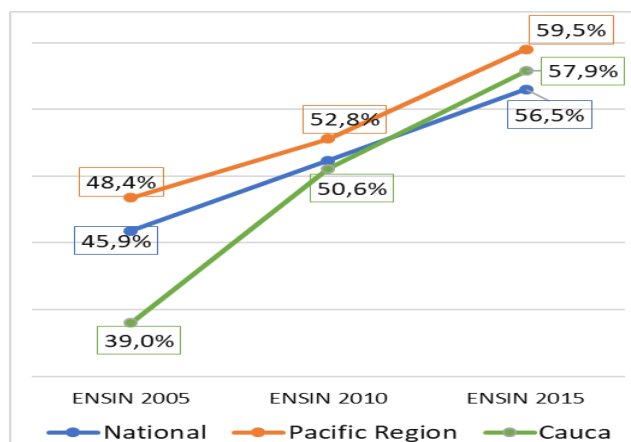
**Table 7. Malnutrition due to excess and deficit in population aged 18–64 years (ENSIN, 2015)**

	Adults aged 18–64 years		
	National	Pacific region	Cauca
Thinness	2.4%	1.8%	1.8%
Overweight and obesity	56.5%	59.5%	57.9%
Overweight	37.8%	38.5%	40.0%
Obesity	18.7%	21.0%	17.9%
Abdominal obesity in women	59.6%	58.4%	62.7%
Abdominal obesity in men	39.3%	36.0%	29.5%

Source: Own elaboration based on data from ENSIN (2015)

In Colombia, 56.5 percent of adults are overweight, related to the imbalance between food intake and energy expenditure and subsequent accumulation of body fat.<sup>26</sup> In Cauca, 57.9 percent of adults are identified as overweight, 1.4 percentage points above the national average and 1.6 percentage points below the average for the Pacific region. The Pacific region has the highest percentage of overweight in the adult population in Colombia (ENSIN, 2015) The prevalence of overweight shows a dramatic increase from 2005 to 2015 among adults in Cauca and at the regional and national levels, as can be seen in Figure 8.

**Figure 8. Overweight in population aged 18–64 years**



Source: Own elaboration based on data from ENSIN (2015)

<sup>26</sup> Increased intake of energy-dense food, physical inactivity, lack of supportive policies. <https://www.who.int/news-room/fact-sheets/detail/obesity-and-overweight>. Approach based on the FAO and OPS (2017) definition of obesity and overweight in the report *Panorama de la seguridad alimentaria y nutricional en América Latina y El Caribe* (Overview of food and nutrition security in Latin America and the Caribbean).

## 6.6 Pregnant women and women of childbearing age

Compared with the results for the Pacific region and at national level, Cauca has a higher percentage of pregnant women and women of childbearing age suffering from overweight. The indicators of underweight and stunting, on the other hand, do not exceed the national percentages, but are equally representative, especially in pregnant women. Regarding the indicators of micronutrient deficiency in both population groups, the Pacific region shows greater deficiency of iron, vitamin B12 and a higher prevalence of iron deficiency anemia.

**Table 8. Malnutrition due to excess and deficit in pregnant women and childbearing-age women (ENSIN, 2015)**

	Pregnant women			Childbearing-age women		
	National	Pacific region	Cauca	National	Pacific region	Cauca
Underweight	14.2%	*13.5%	**10.6%			
Stunting				2.6%	1.6%	*1.3%
Overweight and obesity	40.0%	40.7%	41.9%	49.7%	54.8%	55.9%
Overweight	24.8%	*29.2%	30.7%	32.4%	34.1%	36.7%
Obesity	15.2%	**11.6%	**11.2%	17.2%	20.7%	19.2%

Source: Own elaboration based on data from ENSIN (2015).

(\*\*) Coefficient of variation => 30%, precision is very low. (\*) Coefficient of variation => 20% and < 30%, precision is regular.

From Table 8, it is important to highlight that overweight in both population groups continues to be the most common nutritional problem.

In the department of Cauca, the percentage of pregnant women with overweight is 41.9 percent. It is about 2 percentage points higher than the national and regional average. Otherwise, underweight is 10.6 percent. It is 3.6 percentage points and 3 percentage points lower than the national and regional levels, respectively. Both overweight and underweight among pregnant women compromise the future health of the newborn and increase the risks for the mother at the time of the baby's birth (ENSIN, 2015).

In the case of women of childbearing age in Cauca, 1.3 percent are stunted and 55.9 percent suffer from overweight. Stunting in the department is 0.3 percentage points and 1.3 percentage points lower than in the Pacific region and the national level, respectively. On the other hand, overweight in the department of Cauca exceeds the percentage in the Pacific region by 1 percentage point, and in the national level by 4.2 percentage points.

As in the previous figures, the prevalence of overweight shows a dramatic increase in women of childbearing age in Cauca and at regional and national levels from 2005 to 2015, as can be seen in Figure 9. On the other hand, thinness decreases (Figure 10).

Figure 9 Overweight among women 13–49 years

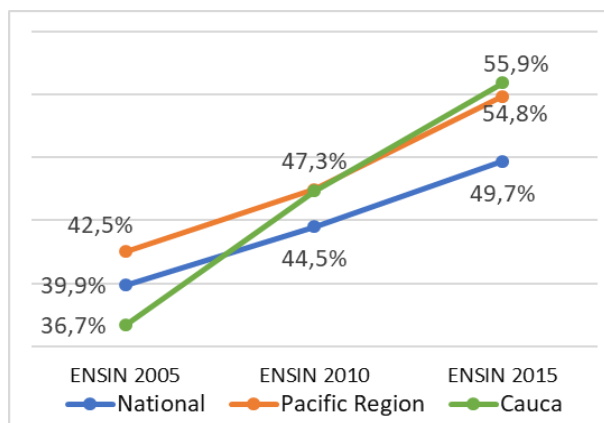
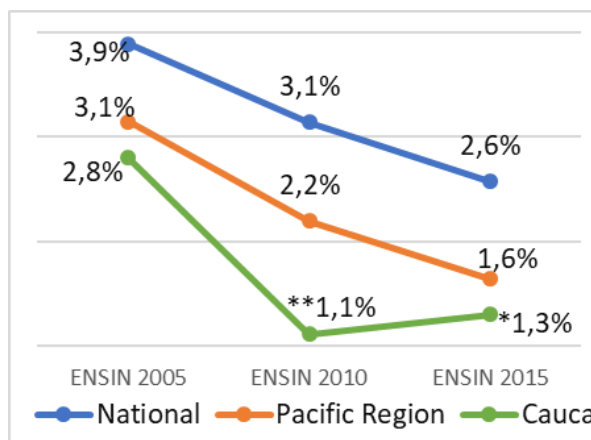


Figure 10 Thinness among women 13–49 years



Source: Own elaboration based on data from the ENSIN (2015)

Table 9. Micronutrient deficiency/excess and anemia among pregnant women and women of childbearing age (ENSIN, 2015)

	Pregnant women		Childbearing-age women aged 13-49 years	
	National	Pacific region	National	Pacific region
Iron deficiency	44.5%	46.7%	23.8%	27.3%
Vitamin B12 deficiency	11.6%	*12.5%	3.5%	**7.1%
Vitamin D deficiency	32.8%	^26.5%	24.1%	19.3%
Iodine deficiency			4.9%	*5.4%
Iodine excess			70.5%	69.3%
Anemia	26.2%	42.0%	15.5%	18.5%
From the % with anemia: Iron deficiency anemia	59.2%	57.7%	52.3%	51.6%

Source: Own elaboration based on data from the ENSIN (2015).

(\*\*) Coefficient of variation => 30%, precision is very low. (\*) Coefficient of variation => 20% and < 30%, precision is regular. (^) Coefficient of variation => 15% and < 20%, precision is acceptable.

In the Pacific region, as shown in Table 9, the prevalence of iron deficiency anemia among pregnant women is 42 percent, which is about 16 percentage points higher than the prevalence at national level. It is important to mention that at national level, iron deficiency anemia is higher among Afro-descendant women (40.2%) and indigenous women (34.8%) than non-ethnic women with no ethnicity; see Table 5 in the annex.

The prevalence of vitamin B12 deficiency was more common among pregnant women than in the other population groups evaluated, reaching 11.6 percent. In the Pacific region, it exceeded the national level by about 1 percentage point.

The prevalence of iron deficiency anemia in childbearing-age women in the Pacific region is 18.5 percent, which is 3 percentage points higher than the national level. At national level, this indicator is higher in indigenous women (28.4%) and in Afro-descendant women (18.8 %) than in women of childbearing age with no ethnicity; see Table 6 in the annex.

## 6.7 Conclusions

Cauca's food insecurity and nutritional results show the deep regional gap in Colombia. In the center of the country an average of 40 of 100 households suffer from food insecurity, while in Cauca the corresponding figure is 72 of 100 households. The nutritional status from ENSIN (2015) (latest available data) shows this reality:

- A larger percentage of the population in early childhood suffers from stunting, wasting and overweight compared with the national average and the Pacific region.
- Stunting among children aged 5–12 years, and adolescents aged 13–17 years is higher in Cauca compared with the national average and the Pacific region.
- Compared with the national and the Pacific region, a higher percentage of the population in Cauca aged 18–64 years suffer from overweight.
- Compared with the national average and the Pacific region, Cauca has a higher percentage of pregnant women and women of childbearing age suffering from overweight.
- Anemia among all different age groups shows a worse situation in the Pacific region compared with the national average, especially related to iron deficiency.

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## Annex

**Table 1. Malnutrition due to excess and deficit and anemia in children aged 0–4 years (ENSIN, 2015)**

Children aged 0–4 years					
	Stunting	Wasting	Underweight	Overweight and obesity	Iron deficiency anemia
National (2015)	10.8%	1.6%	3.1%	6.4%	24.7%
Area					
Urban area	9.0%	1.4%	2.7%	6.3%	24.1%
Rural area	15.4%	1.8%	4.0%	6.6%	26.1%
Sex					
Man	12.1%	1.6%	3.0%	7.5%	24.6%
Woman	9.5%	1.5% ^	3.1%	5.1%	24.7%
Ethnicity					
Afro	7.1%	2.1%*	1.7%	5.4%	33.0%
Indigenous	29.6%	2.9%**	7.2%	5.5%	34.0%
No ethnicity	10.0%	1.4%	3.0%	6.5%	23.2%

Source: Own elaboration based on data from the ENSIN (2015)

**Table 2. Malnutrition and anemia in children aged 5–12 years (ENSIN, 2015)**

Children aged 5–12 years			
	Stunting	Overweight	Anemia
National (2015)	7.4%	24.4%	8.0%
Area			
Urban area	5.7%	26.5%	7.0%
Rural area	12%	18.9%	10.6%
Sex			
Man	8%	25.3%	8.4%
Woman	6.8%	23.5%	7.6%
Ethnicity			
Afro	3.8%	20.8%	16.2%
Indigenous	29.5%	14.4%	^16.5%

No ethnicity	6.5%	25.4%	6.5%
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Source: Own elaboration based on data from ENSIN (2015)

**Table 3. Malnutrition in adults aged 18–64 years (ENSIN, 2015)**

Adults aged 18–64 years	
Excess weight	
National (2015)	57%
Area	
Urban area	58%
Rural area	53%
Sex	
Man	53%
Woman	60%
Ethnicity	
Afro	57%
Indigenous	51%
No ethnicity	57%

Source: Own elaboration based on data from ENSIN (2015)

**Table 4. Malnutrition and anemia in adolescents from 13–17 years (ENSIN, 2015)**

Adolescents aged 13–17 years			
	Stunting	Over weight	Anemia
National (2015)	9.7%	17.9%	10.4%
Area			
Urban area	7.6%	18.7%	9.0%
Rural area	15.7%	15.6%	14.5%
Sex			
Man	10.6%	14.8%	7.6%
Woman	8.7%	21.1%	13.4%
Ethnicity			
Afro	5.1%	17.9%	8.6%
Indigenous	36.6%	17.9%	22.4%
No ethnicity	8.7%	17.8%	21.8%

Source: Own elaboration based on data from ENSIN (2015)

**Table 5. Malnutrition due to excess and deficit and anemia in pregnant women (ENSIN, 2015)**

Pregnant women			
	Overweight	Underweight	Anemia
National (2015)	40.0%	14.2%	26.2%
Area			
Urban area	41.6%	12.4%	26.9%
Rural area	36.2%	16.1%	24.5%
Ethnicity			
Afro	35.3%	13.1%*	40.2%
Indigenous	34%*	6.7%**	*34.8%
No ethnicity	41.0%	15.0%	23.4%

Table 6. Malnutrition due to excess and deficit and anemia in childbearing-age women (ENSIN, 2015)

Childbearing-age women aged 13–49			
	Overweight	Stunting	Anemia
National (2015)	49.7%	2.6%	15.5%
Area			
Urban area			15.3%
Rural area			16.2%
Ethnicity			
Afro			24.5%
Indigenous			^28.4%
No ethnicity			14.2%

Source: Own elaboration based on data from ENSIN (2015)

# Chapter 7

## Food Security in the context of State Stability

Irene Vélez-Torres<sup>27</sup>

### 7.1 Introduction

The “Stability” of the Colombian state has been on the international agenda since the 1960s when the United States attempted to hinder the communist expansion throughout the Americas (Elhawary, 2010). However, it is since the late 1980s that government actors and multilateral entities have increased their concern about the instability created as a result of the links between the insurgency, drug trafficking and poverty (Chernick, 1988; Rabasa & Chalk, 2001). Although since the end of the 2000s, the peace accords were conceived as an opportunity to guarantee stability and build “effective states” (Ghani & Lockhart, 2007, p. 276), in Colombia the main stabilization strategy adopted in this period was the Plan Colombia, devoted to military and police assistance to fight the production of illegal drugs and counter left-wing insurgency (Rochlin, 2011; Ince & Bedoya, 2013; DeShazo, Forman & McLean, 2009).

More recently, the Peace Agreement between the FARC-EP guerrilla and the government allowed to rethink the opportunities for stabilization build-up, not only from the laying down of arms by the insurgency, but from a positive peace that, through state programs, could also bring social welfare (Rettberg, 2020). Welfare has been promoted by some scholars and practitioners as a primary necessity to provide both justice and stability in «post-conflict» societies (Taydas & Peksen, 2012). Policies of minimum wage to deal with economic vulnerability, provision of universal basic services, and entitlements to land and land-based rights have been found relevant for welfare peace-making (Unruh & Williams, 2013; Pugh, 2010). Furthermore, dominant international discourse of peacebuilding has encompassed new dimensions of welfare such as mental health, local agency, institutional decentralization, gender inclusion, and the efficiency of subnational governments to counter moral hazard and multidimensional impacts of conflict (Lederach, 1997, 2005; Paffenholz, 2014).

However, concerns emerge regarding the capabilities and willingness of the Colombian government to administer the Peace Agreement and fulfill its most progressive aims regarding land-access by impoverished communities, political participation of victims, and other transformative policies for rural peripheries (Cairo et al., 2018). State stability and lasting peace are questioned when witnessing that various forms of violence have emerged, returned, and escalated after the signing of the Peace Agreement in 2016 (Gobierno de Colombia & FARC-EP, 2016). The increase in the murder of social leaders, the expanded criminality, the increase in actions by paramilitary and new groups Dissidents from the FARC guerrilla, and the growth of

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the illicit economies that sustain the war are clear indications that peacetime challenges are at least as relevant as wartime conflicts (Kerr, 2020; Maher & Thomson, 2018). A recent study by the Fundación Paz y Reconciliación (PARES) indicates that 28 Dissident groups operate in 113 of the 242 municipalities previously controlled by the FARC-EP guerrilla (Arias 2020). In the department of Cauca, at least 6 of these armed structures dispute new local orders for territorial control.

Some academics have also warned that the implementation of the Peace Agreement has been characterized by a neoliberal vision of state-building, resulting in new privileges to corporate actors, increased militarism to protect foreign investments, and the expansion of cattlefarms, mining and agrarian extractivism in geographies where peace operations take place (Grajales, 2020; Vélez-Torres, Hurtado & Bueno, 2021). Peacetime neoliberalism runs the risk of diverting «post-conflict» state-building from solving root-causes of war, while centering institutional consolidation for corporate enlargement and private entrepreneurship. In the meantime, rural communities, victims of conflict, and reinserted excombats are forced to encounter new cycles of impoverishment, violence, and dispossession (Vélez-Torres & Lugo-Vivas, 2021; Vélez & Lobo, 2019; Berman-Arévalo & Ojeda, 2020).

In this context of old and new conflicts, this chapter examines three dimensions of state's stability in the post-agreement, that seen from the entanglements between peacebuilding and the environment could enlighten discussion on food security and the right to food in contemporary Colombia. In what follows, we will first hint on the new violence and linkages with ethnicity, later we will offer a critical approach to the War on Drugs in the Cauca region, and finally we will present connected reflections on some trends of environment change and effects in the territory.

## 7.2 Rural violence, ethnicity, and synergic effects

In May 2020, more than a dozen social organizations in Cauca came together to systematize and denounce the worrying impact of the increased violence on the human rights of the indigenous, peasant and Afro-descendant population in the department. The report accounts that since the signing of the Peace Agreement, 215 social leaders have been assassinated, among them 36 reincorporated from the FARC-EP, 3 of their relatives and 1 member of the new political party FARC. Interestingly, according to the complainant organizations, most of these assassinations took place in areas with high levels of militarization, where the Plan Victoria “for the consolidation and stabilization of the regions” has been developed since 2017 (Human Rights Network of the South West of Colombia (“Francisco Isaías Cifuentes” et al., 2020). The social organizations producing the report have also called for a distinct analysis that could account for the gender-based violence as well as for the socio-political violence that women face in the region. Additional relevant statistics to verify the increase in violence in the Cauca department since 2016 are presented in Table 1.

**Table 7.1 Violence during the post-agreement in the department of Cauca (2016-2020)**

<b>EVENT / YEAR</b>	<b>2016</b>	<b>2017</b>	<b>2018</b>	<b>2019</b>	<b>2020*</b>
Social leaders assassinated <sup>28</sup>	43	35	58	72	56
Masacres <sup>29</sup>	2	No registra	2	1	9
Homicides <sup>30</sup>	207 (278)	199 (303)	277 (533)	142	---
Forcedly displaced population <sup>31</sup>	7.036	7.560	7.795	5.515	---
Armed confrontations (affected population) <sup>32</sup>	86	113	157	213	---

\* Data available for the first semester only.

Source: Designed by the author.

Although the figures vary significantly according to the date of registration and the identification criteria of each organization, the increase in murders and violence associated with the internal armed conflict in the context of the post-agreement is undeniable. And though the statistical aspect in the investigations and reports makes it possible to increase visibility of the number of homicides, disappearances and threats that affect social leaders (Ball et al., 2018; Indepaz,

<sup>28</sup> Informe anual sobre líderes de organizaciones sociales y defensores de derechos humanos asesinados en el 2016. Informe especial Registro de líderes y personas defensoras de DDHH asesinadas del 24/11/2016 al 15/07/2020. Retrieved from: <http://www.indepaz.org.co/wp-content/uploads/2020/07/3.-Informe-Especial-Asesinato-lideres-sociales-Nov2016-Jul2020-Indepaz-2.pdf>

<sup>29</sup> Informe de masacres en Colombia durante el 2020. Indepaz. Retrieved from: <http://www.indepaz.org.co/informe-de-masacres-en-colombia-durante-el-2020/> & línea de tiempo de las masacres cometidas en el cauca desde 1964 a marzo de 2019. Indepaz. Retrieved from: <http://www.indepaz.org.co/linea-de-tiempo-de-las-masacres-cometidas-en-el-cauca-desde-1964-a-marzo-de-2019/>

<sup>30</sup> El Cauca lleva más de medio siglo azotado por la violencia: así es el territorio colombiano de las dos masacres esta semana. Retrieved from: <https://cnnespanol.cnn.com/2019/11/01/cauca-masacres-indigenas-colombia-violencia-conflicto-armado/>

<sup>31</sup> Red Nacional de Información RNI. Víctimas conflicto armado. Unidad De Víctimas. Retrieved from: <https://www.unidadvictimas.gov.co/es/ruv/37385>

<sup>32</sup> Red Nacional de Información RNI. Víctimas conflicto armado. Unidad De Víctimas. Retrieved from: <https://www.unidadvictimas.gov.co/es/ruv/37385>

2020), the ethnic and racial dimensions of violence still seems poorly analyzed. An ethnic-based analysis of the violence associated with the internal armed conflict in this region acquires greater relevance when noticing the inter-ethnic configuration of the region, where more than 24,8% of the population is indigenous and 17,2% Afro-descendant<sup>33</sup>; the mestizo peasantry represents most of the rural inhabitants in the region<sup>34</sup>.

The Cauca is niche of some of the strongest black and indigenous organizations in Colombia, who have constructed a strong and long-lasting route of struggle based on inter-cultural initiatives such as La Minga (Dest, 2020a; Chavarro & Tyrou, 2016). But this region also engender what some authors have characterized as "inter-ethnic" or "intercultural" conflicts, which describe disputes between indigenous, Afro-descendant and mestizo-peasants for territorial interests that are divergent between the groups (López-Gómez, 2014; Duarte, 2013). Other scholars propose an alternative perspective, arguing that these tensions rather have a socio-environmental nature as they arise from the unequal access to goods and services in the territory, and from competing territorial models. It is argued that it is not ethnic or cultural differences that give rise to these conflicts, but rather exploitative relationships of power and property that have been historically overclouded (Vélez-Torres, 2018). Structural inequities, historical rural impoverishment, and ordinary dispossession of land, water, biodiversity, minerals, and immaterial goods are argued to be the root causes of these conflicts, which manifest in tensions -occasionally violent- between diverse local groups.

The situation of violence against social leaders has been openly presented by the Ombudsman, who acknowledged that by 2019, 75% of the homicides of social leaders occurred in municipalities warned by the early warning system, and in areas that were prioritized for the implementation of the Peace Agreement (Defensoría, 2019). Indepaz (2018; 2020) has also denounced an increase in the cases of murders against social leaders, as well as the inability of the government to stop this violence and its effects on the fulfillment of what is committed in the Agreement. A total of 817 homicides have occurred nationwide since the signing of the peace accords (Indepaz, 2020, p. 8).

Nationwide, violence has worsened during the mandatory lock-down due to COVID-19, between March and September 2020. The Fundación Ideas para la Paz (FIP, 2020) has reported in this sense that, although in this period the homicide rate at the national level was reduced by 16%, the selective rural violence has increased considerably, especially affecting the departments of Cauca, Putumayo and Antioquia. In addition, FIP found that during the first four months of 2020, aggression against social leaders increased by 10% and the murder of social leaders enlarged by 53%. Forced displacement increased by 5% (FIP, 2020), disproportionately affecting former

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<sup>33</sup> See data by the DANE (2018): <https://www.dane.gov.co/files/censo2018/informacion-tecnica/presentaciones-territorio/190814-CNPV-presentacion-Resultados-etnicos-Cauca.pdf> & <https://www.dane.gov.co/files/investigaciones/boletines/grupos-etnicos/presentacion-grupos-etnicos-poblacion-NARP-2019.pdf>

<sup>34</sup> The mestizo peasant population in Colombia does not enjoy constitutional recognition as a special subject of rights - as indigenous and Afro-descendants do since the 1991 Political Constitution-. Their struggle for political recognition, however, has been reinvigorated with the Declaration of the United Nations on the Rights of Peasants and Other People who Work in Rural Areas, adopted in New York on December 17, 2018 (Castilla Salazar, 2015; Uprimny Yepes, 2020).



FARC-EP combatants who have been massively displaced (Soto, 2020). Furthermore, the recruitment of children by illegal armed groups increased by 113% compared to 2019 (Coalición contra la vinculación de niños, niñas y jóvenes al conflicto armado en Colombia [COALICO], 2020). In the first half of 2020 alone, the Office of the UN High Commissioner for Human Rights informed of more than 42 massacres and 13 yet to be verified (Misión de Verificación de la ONU, 2020). According to a newly published survey, the lock-down has also affected food security at a national scale: “10% of households went from 3 to 1 meal per day, 68% from 3 to 2 meals, and only 22% were able to continue to make three meals per day” (PMNCH WHO, PAHO WHO & Asociación Profamilia 2020, p. 8). An articulated analysis of the above statistics allows us to draw attention to the synergistic and syndemic effects of violence and COVID-19 in Colombia, and in the Cauca region.

### 7.3 Coca-farming and the (failed) War on drugs

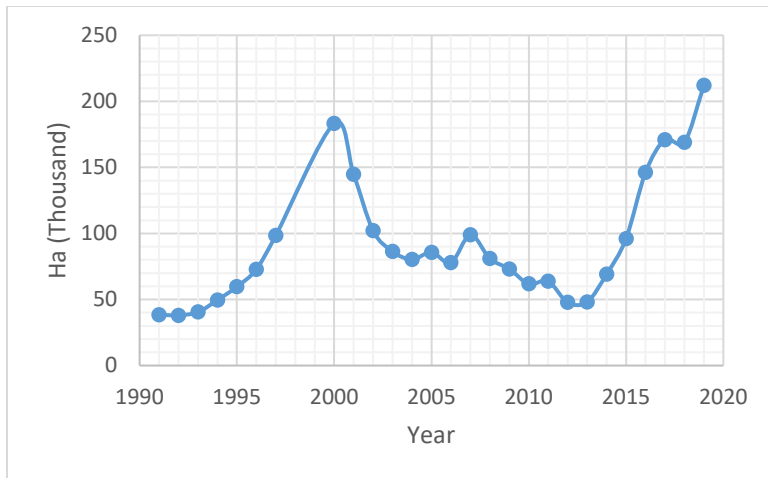
The United States' led War on Drugs has demonstrated to be a salient governmental strategy capable of crossing state borders to promulgate a policy that criminalizes the weakest links in the drug trafficking chain: producers and consumers (del Olmo, 1987). A disastrous result of this policy of international relations between the United States and Colombia has been to endure a postcolonial form of state consolidation based on the expansion of the military response to crime (Vélez-Torres, Hurtado & Bueno, 2021; Andreas & Nadelmann, 2008). Developed as a two-headed system based on prohibition and control, it aims at defeating terrorism and eliminating illegal drug use and production (Jensen, Gerber & Mosher, 2004). A basic principle in this punitive discourse is that the use and trade of illicit drugs is the main threat to global peace and security (Crick, 2012). As a result, the geopolitics of drug-criminality makes governments on the global south victims of the war on drugs when international cooperation and aid is conditioned to antinarcotics operations, often implying the implementation of both aerial fumigations and military interventions for eradication.

Punitive state rationality has resulted in two major problems. On the one hand, a “prison overdose” (Yepes, Guzmán & Norato, 2012; Yepes, Hernández & Olivera, 2017; United Nations Development Programme [UNDP], 2015; Collins, 2016) that, in the case of Colombia, has resulted in the increase of nearly 300% of drug-related crimes between 2000 and 2015 (Yepes, Hernández & Olivera, 2017). And, on the other hand, a predominant investment of states and transnational cooperation in fighting supply rather than transforming demand and reducing harm (Mejía, 2010; Colectivo de Estudios Drogas y Derecho [CEDD], 2014). In Colombia, military spending has occupied more than 13% of the general national budget (3.2% of GDP, the second highest in Latin America). In 2019 alone, approximately 377 million dollars were invested in side activities of the war on drugs, such as aerial spraying of glyphosate, interdiction, prosecution, and incarceration, while in this same year the US Congress approved 418 million dollars, 27 million more than in the previous year, to expand Plan Colombia (Banco Mundial, 2019; Rico et al., 2018; *El País*, 2019).

Below, Figure 1 shows the cyclical fluctuation in the cultivation of coca crops; a playball between shifting government policies and market pressures that have pushed forced eradication

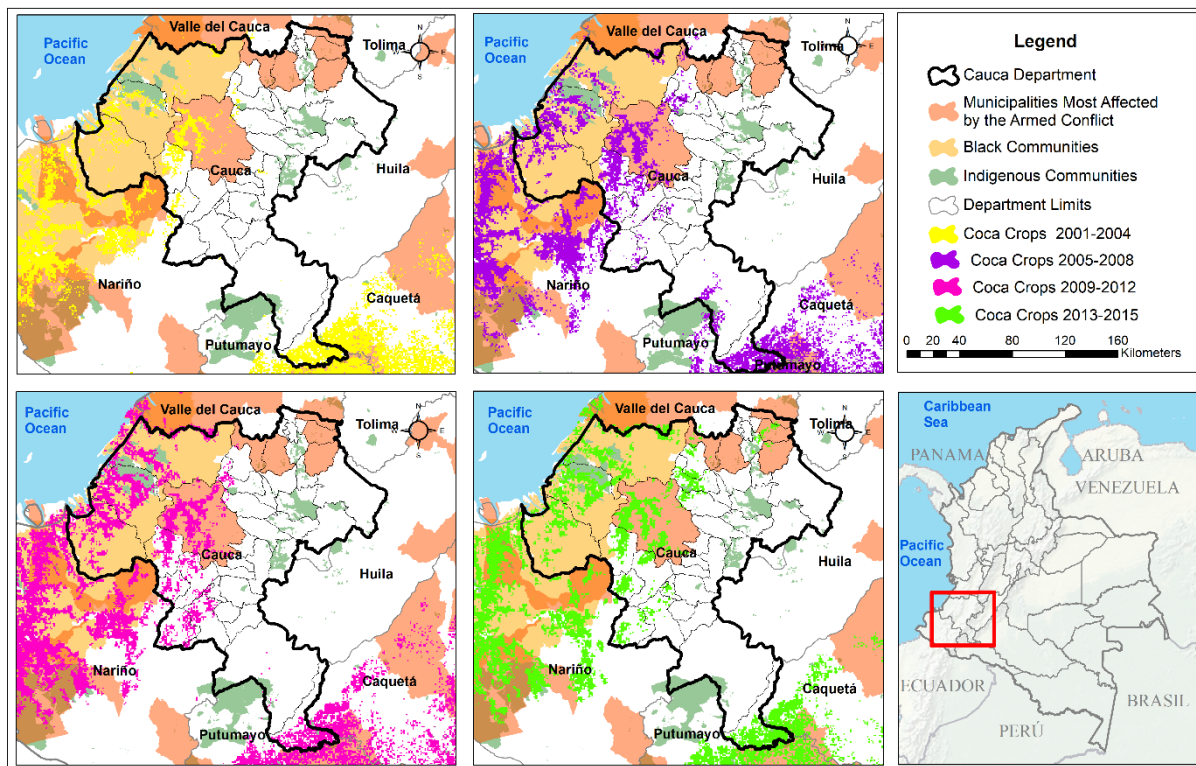
and resulted in community impoverishment and mobility of coca crops. Figure 2 illustrates that, despite the economic and institutional efforts put into forced eradication for more than a decade, coca crops have persisted in the department of Cauca.

**Figure 7.1 Coca cultivation area in Colombia 1991-2019**



Source: Designed by the author based on UNODC (2020) and Vélez-Torres & Lugo-Vivas (2021).

**Figure 7.2 Coca cultivation in the Cauca Department 2001-2015**



Source: Designed by the author.

Numerous scholars have argued that the War on Drugs has created a balloon effect that engenders two counterproductive phenomena: first, the spatial displacement of crops of illicit use that, pushed by toxic and military eradication, cause deforestation of tropical forests (Sollund, Maldonado & Rico, 2019). And second, the perpetuation of cyclical displacement of poor rural populations that are pushed away by toxic fumigations and pulled to other territories by the need for campesinos to search for new areas to cultivate (Fergusson, Romero & Vargas, 2014; Ibáñez, 2010). Forced eradication, therefore, has been criticized due to the disproportional punitive and military pressure put on those at the bottom of the drug trafficking hierarchy (Patten, 2016), who often result deprived of their livelihoods and left without sustainable alternatives for cultivation (Vélez-Torres & Lugo-Vivas, 2021; Vargas, 1999; Vargas, 2005). Furthermore, the ecological impact of toxic fumigation, coupled by the expansion of the agrarian frontier for new geographies for coca cultivation, could be considered under-researched crimes against the environment that violate human and environmental rights (Reuter, Pollack & Pardo, 2016; Álvarez, 2007; del Olmo, 1987; del Olmo, 1998; Massey, 2001; Joyce, 1999; Thoumi, 2002).

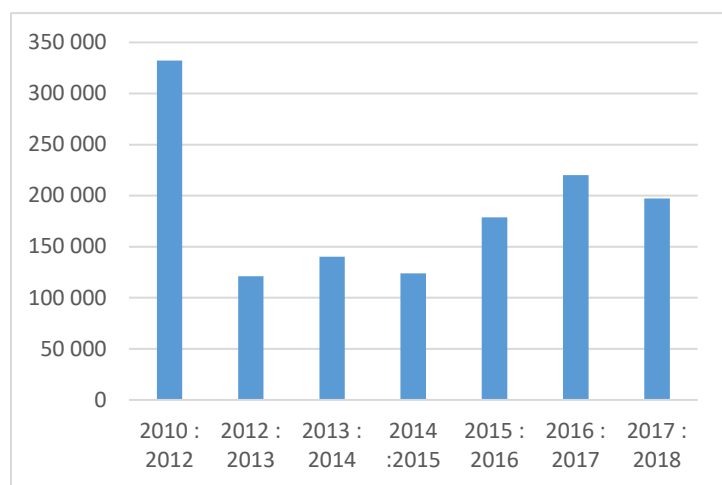
The Peace Agreement, through Chapter 4, proposed a concerted, voluntary, and participatory solution in which coca growers throughout the country could transition to licit agricultural economies. Consequently, the government's National Comprehensive Program for the Substitution of Illicit Crops (PNIS) was directed at families who grow coca or collect coca-leaves and whose family-economies depends on illicit crops. The program included provisions on: (1) voluntary eradication of illicit coca crops; (2) investment and technical assistance in productive projects; (3) social participation for territorial planning; and (4) a transition period (of two years) in which peasants were to receive basic economic food assistance. This gradual transformation would be guaranteed through Immediate Attention Plans (PAI) at the municipal level, articulated with Development Programs with Territorial Approach (PDET), which contemplated environmental recovery strategies, property formalization plans, and other transversal strategies for rural development.

Though this design connected the problem of illicit crops with a comprehensive agrarian reform, set out in Chapter 1 of the Agreement, to date very limited progress in the Agrarian Reform posts an insurmountable barrier for the weakening of the drug-trafficking and the needed transition towards legal economies for coca-farmers. Additionally, the PNIS has been underfunded and the government of President Duque has privileged forced eradication, even calling to return to aerial fumigations with glyphosate. In this contexts, three important queries emerge: How does the poor implementation of the PNIS negatively affect the opportunities of coca-growing families to satisfy their basic needs and food security? How does the forced eradication that continues in most territories generate conflicts that produce displacement and confinement that also affect the access to food in adequate quantities and qualities? And how the expansion of coca-economies, entangled with legal and illegal military disputed, undermine struggles by indigenous, afrodescendants and mestizo peasants for autonomy and self-determination (cf. Dest, 2020b).

## 7.4 Biodiversity, deforestation, and the right to territory

Though forest remnants in the Colombian Amazon, Andes, and Chocó are considered the last repositories of a highly diverse and endemic biota at a global scale (Álvarez 2003), increased deforestation is a conflict that has become more acute in recent years. After the Peace Agreement, governmental institutions have documented that the expansion of the agricultural frontier, cattle farming, and the timber industry are causes of this phenomenon (Otálvaro, 2020). However, academics have pointed out the importance of locally investigate direct and indirect deforestation drivers that have been found linked to both the cultivation and the forced eradication of illicit crops, and the waves of forced migration of rural communities (Hoffmann, Márquez & Krueger, 2018). According to Rozo López (2018), deforestation in Colombia has to do with processes of dispossession directly associated with the internal armed conflict, such as land grabbing, illicit crops, and mechanized and illegal mining. Figure 3 shows the evolution of deforestation in Colombia between 2014 and 2018.

**Figure 7.3 Deforested area in Colombia 2010 al 2018 (Ha.)**



Source: Designed by the author based on IDEAM<sup>35</sup>

In the context of the Peace Agreement, a series of initiatives emerged to promote public-private alliances that would advance zero-deforestation policies, overlapping REDD+ initiatives with the new institutional framework for peace-making in ecologically strategic territories (Furumo & Lambin, 2020; Krause, 2020). Beyond the opportunities and limitations that peace treaties could bring for the conservation of biodiversity, Suarez, Arias-Arévalo & Martínez-Mera (2018) have warned that in «post-conflict» countries i) deforestation and land use conflicts can increase, ii) ineffective land use planning can fuel the return of violent conflicts, (iii) extractivism tends to intensify, and (iv) dependency on the primary sector increases turning a new driver of conflictive environmental change. In the case of Colombia, using open-access global forest change

<sup>35</sup> Instituto de Hidrología, Meteorología y Estudios Ambientales. Monitoreo de Bosques y Recursos forestales (<http://www.ideam.gov.co/web/ecosistemas/bosques-y-recurso-forestal>)

dataset and yearly deforestation data from satellite images, different scholars have demonstrated that areas controlled by FARC-EP guerrilla have experience a dramatic and highly significant increase in the deforestation rate after the start of the ceasefire (Prem, Saavedra & Vargas, 2020; Clerici et al., 2020).

Besides the obvious consequences of deforestation on the biodiversity loss, it is worth asking what peacetime mechanisms, actors, speed, and direction of socio-ecological change are articulated to deforestation processes. Also, how these different constellations -- with strong local specificity -- have effects on rural communities and their cultural processes of territorial construction. These concerns are much more relevant when verifying that the production and consumption of food depends on the close relationships between the communities and their territories, so that disruptions in these interactions have direct and indirect consequences on the communities' food security, sovereignty and autonomy.

## 7.5 Concluding remarks

Not only the fraught, delayed, and fractured implementation of the Peace Agreement has generated criticism and concern by international agencies and social sectors in Colombia. Furthermore, new conflicts have emerged and upscaled. On the one hand, the imposition of the neoliberal state through peace operations have reflected in a conflictive expansion of corporate mining and agrarian frontiers. On the other hand, the failure in the substitution of illicit crop and the delay in rural welfare policies have allowed for the persistence of illicit economies associated with the production of cocaine, which entails a criminalizing and ecocide chemical War Against Drugs led by the state. Peacetime environmental change not only reveals that the internal armed conflict has not been overcome and has been transformed into new local orders that violently dispute territorial control. It also unfolds a complex nexus between conflict and food security: while the continuity of the conflict creates direct instability in the communities' livelihoods and means of food production, violence also produces diverse impacts on local food cultures. In Cauca, an analysis of these complexities will have to go through understanding local entangles of agencies, struggles and resistances by rural and ethnic communities who defend food justice, peace, territory, and life.

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## Chapter 8

# Violence transformation during the post conflict period in Cauca, Colombia

Lina Asprilla, David Fernando Correal and Jorge Restrep<sup>36</sup>

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Cauca was one of the most affected departments<sup>37</sup> of Colombia by the internal armed conflict with the now-defunct FARC<sup>38</sup> guerrilla group and by its violent actions. It was also one of the first departments that achieved a rapid improvement in security indicators, even well before the bilateral ceasefire in August 2016. Such improvements, however, were quickly reversed in terms of conflict-related violence and negatively affected other security indicators: since the end of 2017 there has been a continuous acceleration in such indicators, with a rising impact on indigenous peoples, black communities, political activists, leaders of community organizations and human rights defenders.

In this chapter we describe the evolution of post-conflict security in the department of Cauca. After presenting its recent evolution, we make risk-related observations arising from the growing insecurity threats and we advance some explanatory hypotheses for these violence dynamics.

### 8.1 The deterioration of security in Cauca

The deterioration in security conditions that has occurred in Cauca since 2017 took place during the transitioning from conflict to post-conflict and is characterized in Cauca by the emergence of organized armed groups, armed disputes among them and the use of violence as an instrument, for the capture of illegal rents and for the resolution of conflictivities of diverse origin.

Such a process of violence transformation<sup>39</sup> assumes that idiosyncratic incentives or external ones, lead to changes in the form violence is exerted, who carries it out, the instruments used and even in its functional purposes. Violence transformation in transition is facilitated by the

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<sup>36</sup> This study benefited from the research assistance of Andrés Palencia and Valeria Vargas.

<sup>37</sup> Departments are major administrative and political districts in Colombia.

<sup>38</sup> FARC stands for Colombia Revolutionary Armed Forces, for its Spanish acronym.

<sup>39</sup> Violence transformation has previously been seen as a process of changes, in response to exogenous and endogenous incentives, occurring in the exercise of intentional force, with the aim of causing harm to others, evident through changes in the ways in which violence is exercised, in those who cause it, in the population groups that suffer the victimization, in the instruments used and even in the impacts it has on the country's formal and informal institutions. Violence transformation can be observed and specified both by its effects on violence levels and in its scope and distribution (Restrepo J. & Tobón. A., 2012, p 31).

ineffectiveness of institutions both for the resolution of local conflictivities and for protecting population groups at risk of victimization.

Although this process of violence transformation can also be documented today in at least two other departments of Colombia (namely Arauca and Norte de Santander), in the case of Cauca the intensification of violence has been deeper, reversed the rapid process of stabilization that did not occur in those other two departments, and has markedly affected indigenous peoples, peasants and black communities.

This deterioration in security has had a regionally differential impact. This is not surprising since Cauca is characterized by a great marked regional heterogeneity, in terms of population characteristics, social and productive structure, and the level of regional interconnection with urban centers, which impacts on security and economic conditions.<sup>40</sup> Thus, although there is evidence of a general deterioration in security, the spatial distribution of violence shows concentration and persistence. The population affected concentrates on indigenous communities, rural and isolated population centers. In terms of the characteristics of victims, there is evidence of a disproportionate and growing level of victimization of civilians not involved in organized armed groups and of political activists, community leaders, human rights defenders and ex-FARC combatants in the process of reincorporation to civilian life. Surprisingly, for unsuspecting observers, disputes between organized crime groups have a close relationship with the highest levels of violence, rather than the area of illicit use crops - coca, poppy. and marijuana - present in the region years back.

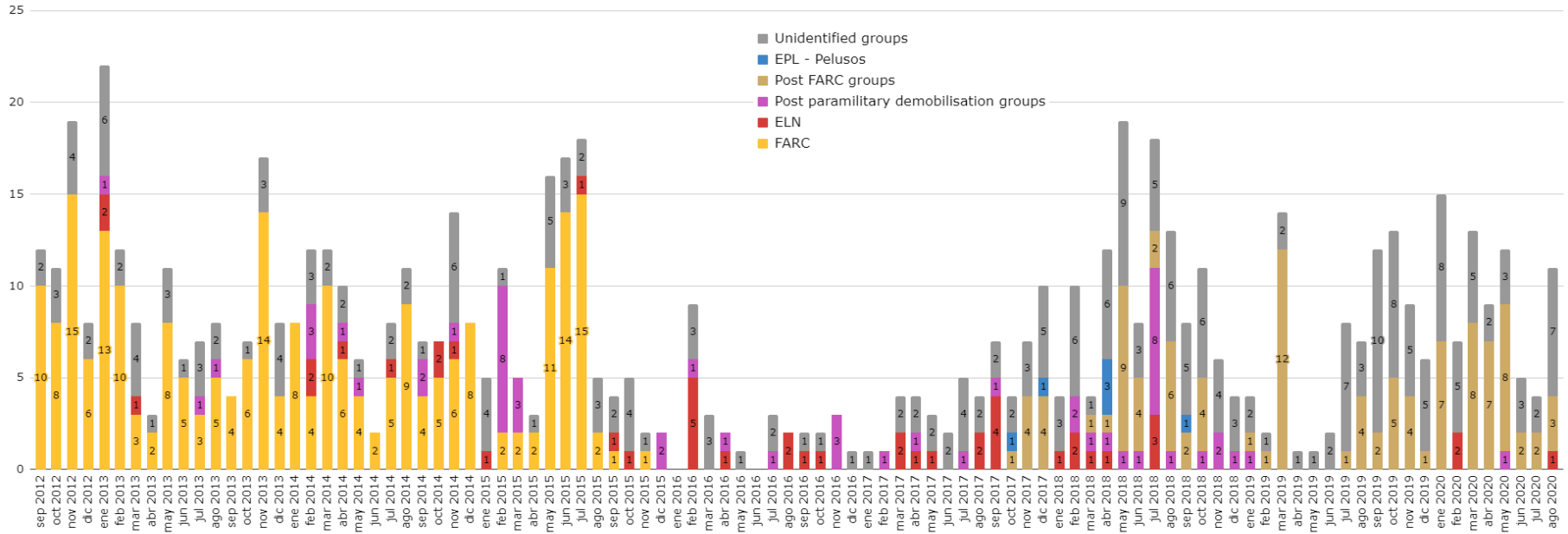
This new panorama of violence in Cauca represents enormous challenges for peacebuilding, humanitarian action and development interventions in the region, which are briefly analysed at the end of the document.

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<sup>40</sup> The municipalities of the Pacific subregion: Guapi, Timbiquí and López de Micay are the most isolated in the department.

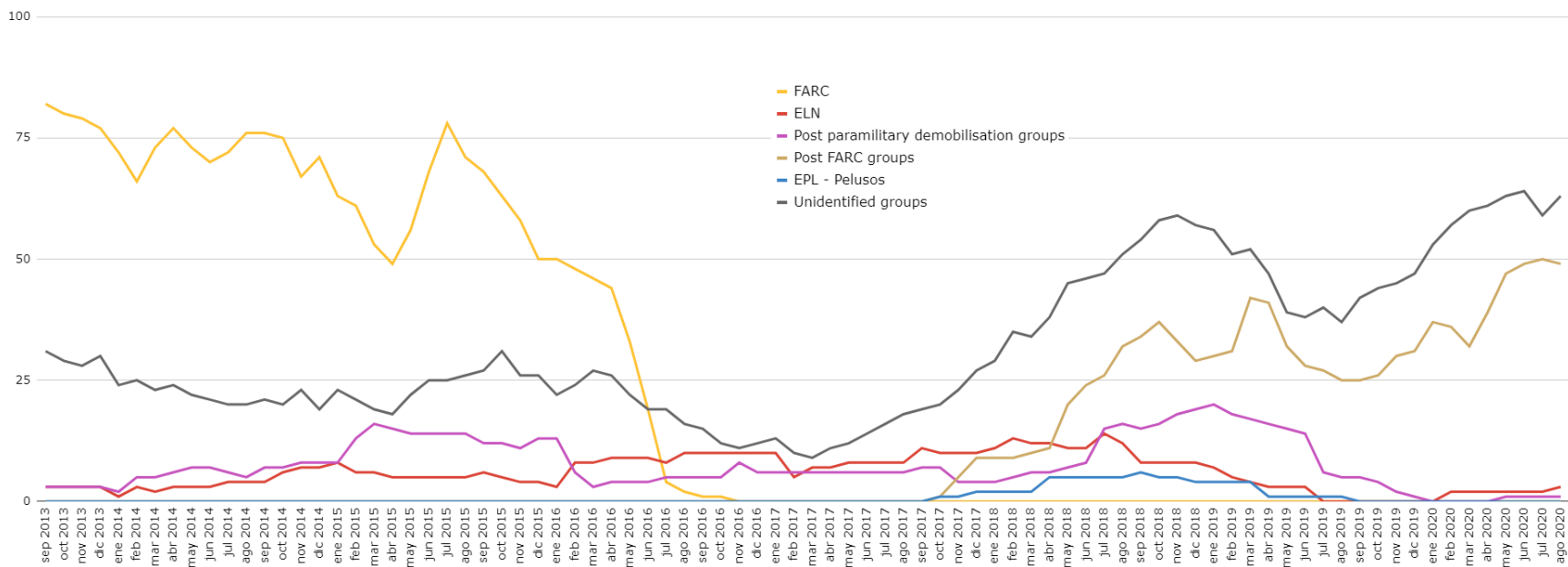
## 8.2 Recent internal armed conflict dynamics

**Offensive actions by armed groups in the Cauca department 2012-2020 (monthly)**



Source: Base de Datos del Conflicto Armado en Colombia - CERAC. Last updated: December 3, 2020

### Offensive actions by armed groups in the department of Cauca 2013 - 2020 (monthly annual value)



Source: Base de Datos del Conflicto Armado en Colombia - CERAC. Last updated: December 3, 2020



The Peace Agreement with the former FARC guerrilla significantly reduced the intensity of conflict violence during 2016 in the department of Cauca. Since the end of 2017, however, this reduction has been reversed and there has been a sustained increase in violence associated with the armed conflict, accelerating since 2018. The violence of the former FARC guerrilla group abruptly disappeared in mid-2015, after a series of events with a large number of dead combatants brought a period of conflict violence reduction and bilateral truces. During these 18 months, there was a substantial reduction in conflict violence in Cauca which, although did not bring about complete peace, as we will see later, it did improve the levels of risk and the humanitarian situation.

Actions by the ELN (National Liberation Army, by its Spanish acronym), a smaller guerrilla group with long-standing violent presence in Cauca, remained stable and at relatively low levels observed since 2016. Still, the ELN, as we will consider later, is involved in myriad violent disputes. Violent actions by groups associated with the FARC only started since the end of 2017, well after the laying down of weapons and the start of the reincorporation into civilian life of ex-combatants, accelerating until 2019. These groups emerged at the same time as several other violent groups, to which was added the arrival of a small group associated with the EPL which apparently "failed" in its attempt to settle in the region (see section 2 below).

### 8.3 Homicidal violence and kidnapping

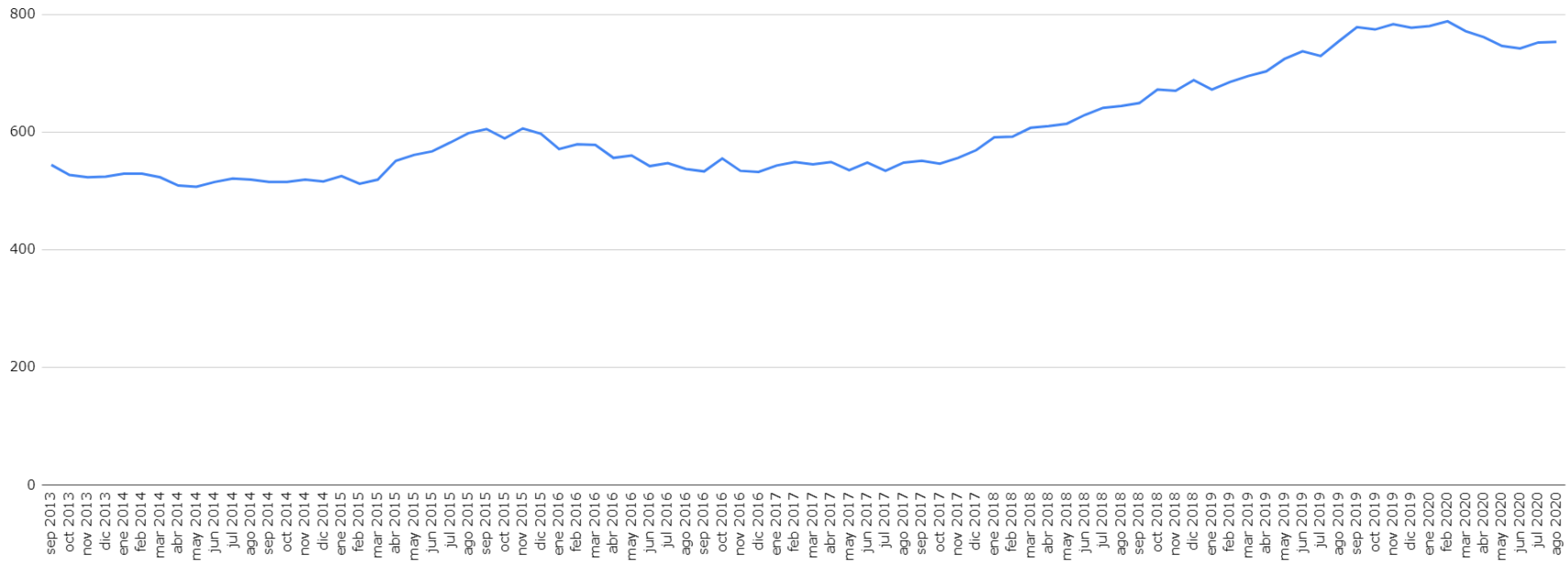
Conflict violence in Colombia explains only a fraction of intentional life losses. Intensification of both conflict violence and political violence has impacted on homicidal violence throughout the department of Cauca, which already had high, persistent and disproportionate levels of violence for its population size. The reduction in conflict violence during the period 2015 to 2018 had a marginal effect on homicidal violence: "basal" homicidal violence remained sustained. By the end of 2019, the highest number of homicide cases in eight years was reached in the department, as well as the highest share of Cauca in Colombia's total. During 2020, there has been a reduction in homicidal violence in the department, as in the rest of the country, attributable to the restrictions on mobility and lockdowns established throughout Colombia as a measure to face the Covid-19 epidemic.

**Offensive actions by armed groups in the department of Cauca**

Year	FARC	ELN	EPL - Pelusos	GPDP	Pos FARC Group	Unidentified group	Total per year
2012	39	0	0	0	0	11	50
2013	77	3	0	3	0	30	113
2014	71	7	0	8	0	19	105
2015	50	4	0	13	0	26	93
2016	0	10	0	6	0	12	28
2017	0	10	2	4	9	27	52
2018	0	8	4	19	29	57	117
2019	0	0	0	1	31	47	79
2020	0	3	0	1	37	35	76
<b>Total</b>	<b>237</b>	<b>45</b>	<b>6</b>	<b>55</b>	<b>106</b>	<b>264</b>	<b>713</b>

Source: Colombian Database of the Armed Conflict - CERAC.  
 Observation period: from september the 1st of 2012 to august 31 of 2020.

Homicides in Cauca department, 2012-2020 (monthly annual value)



Source: Policía Nacional de Colombia. Last updated: December 3, 2020

Kidnappings remained at high levels, also much higher than the proportion of the Cauca population in the country.<sup>41</sup> Note how extortion, a criminal practice used by both guerrilla groups and common organized crime in Colombia, increased significantly in the department in 2018 and 2019.

<sup>41</sup> On December the 5th, 2020, an unidentified armed group kidnapped the Spanish citizen Jesús Quintana García, in the rural part of Toribío, in a now rare kidnapping of a foreign citizen in Colombia. Quintana has diplomatic accreditation in Colombia as director of the International Center for Tropical Agriculture - CIAT-. The victim was eventually released on December 7th. Before the signing of the Peace Agreement, FARC was the group that carried out most kidnappings in the department, followed by the ELN. Since the end of the conflict with that guerrilla, the post-FARC groups have been the ones that have kidnapped the most in the department of Cauca, with Suárez, Inza, Corinto and Patía being the municipalities most affected by this form of violence.

**Cauca's share of homicides and Cauca's share of political violence deaths 2012 - 2020**

Year	National homicides	Homicides in Cauca	Cauca's share of homicides	Deaths in political violence in Colombia	Deaths in political violence in Cauca	Cauca's share of political violence deaths
2012	16033	225	1,40%	134	15	11,19%
2013	14971	524	3,50%	145	14	9,66%
2014	12958	516	3,98%	94	11	11,70%
2015	12460	597	4,79%	124	14	11,29%
2016	12164	532	4,37%	90	19	21,11%
2017	12079	569	4,71%	97	14	14,43%
2018	12667	688	5,43%	208	43	20,67%
2019	12656	777	6,14%	139	31	22,30%
2020	12122	481	3,97%	129	34	26,36%

Source: Colombian National Police and CERAC's Political Violence Database  
 Dates covered: from September the 1st of 2012 to August 31st of 2020.

### Homicides, kidnappings and extortion in the department of Cauca

Year	Homicides	Kidnappings	Extortion	Total per year
2012	225	8	12	245
2013	524	26	226	776
2014	516	14	224	754
2015	597	12	259	868
2016	532	16	258	806
2017	569	20	290	879
2018	688	25	457	1170
2019	777	10	425	1212
2020	481	10	177	668
Total	4909	141	2328	7378

Source: Colombian National Police

Dates covered: from September the 1st of 2012 to August 31st of 2020.

## 8.4 Emerging armed groups in Cauca and violent disputes

Violence by organized armed groups coexisted with that of the internal armed conflict groups (guerrillas and paramilitaries) and appeared well prior to the peace process with the FARC: since, at least 2012, organized armed groups have carried out violence in the department. To these, a large number of armed groups of unstable structure and duration started to exert violence in Cauca. Today the department has the highest concentration in the country of violent groups related to that extinct guerrilla: of 31 documented groups of dissidents or rearmed ex combatants, 12 groups that have some level of association with the former FARC have acted violently in Cauca.

The ELN sought to expand early in the FARC's laying down of arms and from the north of the neighboring department of Nariño towards the North and Central regions of Cauca. Today the ELN is a catalyst of violence due to disputes it holds with other groups in the department. The expansionary violent effort of the ELN has been however limited both in its territorial scope and in the ability to control and hold on to the sources of illegal resources.

Since April 2018 violence have appeared in the municipalities of Caloto and Corinto from “*Los Pelusos*”<sup>42</sup> - a group that claims to have links with the dissidence of the demobilized EPL (Popular Liberation Army, from its Spanish acronym) guerrilla. This group “*Los Pelusos*” emerged after the EPL demobilization in 1991 and operates in several municipalities of the El Catatumbo region in the department of Norte de Santander.

Violent disputes between these groups are the most likely reason for the persistence of violence in Cauca, not disputes with the state forces. The total number of sub-regions of Cauca affected by territorial disputes and the distribution in these regions remained practically constant during the four years prior to the signing of the Peace Agreement and the four years after.

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<sup>42</sup> Los Pelusos emerged after the demobilisation of the Popular Liberation Army (EPL) in 1991. The EPL operated mainly in the department of Norte de Santander, from 1985 to 2014, in some municipalities of the El Catatumbo region. After its disappearance, Los Pelusos have been violently controlling sources of criminal rents in that area from 2015 onwards.

**Armed groups in dispute by subregion in the department of Cauca 2012 - 2016**

Subregion	ELN - GDPD	ELN - Unidentified groups	FARC - ELN - EPL/Pelusos - Unidentified groups	FARC - ELN - GDPD	FARC - ELN - GDPD - EPL/Pelusos - Unidentified groups	FARC - ELN - GDPD - Unidentified groups	FARC - ELN - Unidentified groups	FARC - ELN - EPL/Pelusos - Unidentified groups	FARC - GDPD	FARC - GDPD - Unidentified groups	FARC - Unidentified groups	GPDP - Unidentified groups	Total by subregion
Center						1	1	1		1	1		5
Massif	1	1					1	1	1				5
North			1		1		1	1				1	8
East										1	1		2
Pacific						1	1						2
Amazon askmonte							1						1
South				1			1	1					3
<b>Total disputes</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>26</b>

Source: CERAC's Colombian Conflict Database.

Dates covered: from September the 1st of 2012 to August 31st of 2016.

**Armed groups in dispute by subregion in the department of Cauca 2012 - 2016**

Subregion	ELN - GDPD	ELN - Unidentified groups	FARC - ELN - EPL/Pelusos - Unidentified groups	FARC - ELN - GDPD	FARC - ELN - GDPD - EPL/Pelusos - Unidentified groups	FARC - ELN - GDPD - Unidentified groups	FARC - ELN - Unidentified groups	FARC - EPL/Pelusos - Unidentified groups	FARC - GDPD	FARC - GDPD - Unidentified groups	FARC - Unidentified groups	GPDP - Unidentified groups	Total by subregion
Center						1	1	1		1	1		5
Massif	1	1					1	1	1				5
North			1		1		1	1				1	8
East										1	1		2
Pacific						1	1						2
Amazon askmonte							1						1
South				1			1	1					3
<b>Total disputes</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>1</b>	<b>5</b>	<b>6</b>	<b>2</b>	<b>1</b>	<b>3</b>	<b>3</b>	<b>1</b>	<b>26</b>

Source: Colombian Database of the Armed Conflict in Colombia - CERAC.

Observation period: from September the 1st of 2012 to August 31 of 2016.

Armed groups in dispute by subregion in the department of Cauca 2016 - 2020

Subregion	ELN - GPDP - EPL/Pelusos - Post FARC groups - Unidentified groups	ELN - GPDP - Pos FARC groups	ELN - GPDP - Post FARC groups - Unidentified groups	ELN - GPDP - Unidentified groups	ELN - Post FARC groups - Unidentified groups	ELN - Unidentified groups	EPL/Pelusos - Post FARC groups - Unidentified groups	GPDP - Post FARC groups - Unidentified groups	GPDP - Unidentified groups	Post FARC groups - Unidentified groups	Total by subregion
Center			1			1	1	1		1	5
Massif		1		1		1					3
North	1		1		1		1		1	1	7
East								1		1	2
Pacific			1		1						2
Amazon askmonte					1						1
South		1	1	1	1						4
Total disputes	1	2	4	2	4	2	2	3	1	3	24

Source: CERAC's Colombian Conflict Database.

Dates covered: from September the 1st of 2016 to August 31st of 2020

During the public phase of the negotiations and until the ceasefire, FARC was the group that were involved in most disputes with other armed groups, including the ELN, Post Paramilitary Demobilization Groups<sup>43</sup> (GPDP) and unidentified groups<sup>44</sup>, in Cauca, being the municipalities of the Northern region were those most affected by these disputes. After the signing of the Peace Agreement and the consequent abandonment of the FARC from the territory of the department, the ELN is the group that maintains the most disputes, followed by the post-FARC groups<sup>45</sup>, the GPDP and, finally, “Los Pelusos”.

<sup>43</sup> We refer to “Grupo Post Desmovilización Paramilitar” (GPDP, for its Spanish acronym) as any dissident, rearmed or emerging group, directly related to paramilitary groups, whose existence has been registered after the demobilization of the United Self-Defense Forces of Colombia (AUC, for its Spanish acronym) in 2006. These groups have been linked to drug trafficking or organized crime activities, which did not exist or lacked visibility before the demobilization of the AUC.

<sup>44</sup> We define as unidentified groups those armed groups that carry out actions typical of the conflict, in terms of the scale of violence and against the civilian population or the state forces, but that are not claimed or that there is not an accusation or adjudication by judicial authorities. This is the case, for example, of an incursion by an armed group into a populated center, an offensive action with explosives or a multiple homicide, all cases that do not necessarily respond to the violence of common criminal groups.

<sup>45</sup> We refer to a post-FARC group as a dissident, deserter or rearmed group, with direct links with the FARC guerrillas. These groups are those characterized as dissidents (those factions that were not part of the peace process, did not abide by the ceasefire and did not lay down their arms) as deserters, those factions that were part of the peace process but did not abide by the cease fire and they did not lay down their arms; Once those factions that were part of the peace process were rearmed, they complied with the ceasefire and laid down their weapons, but they relapsed into violence.



### Clashes by group involved, Cauca department, 2012-2020 (monthly)



Source: Base de Datos del Conflicto Armado en Colombia - CERAC. Last updated: December 3, 2020

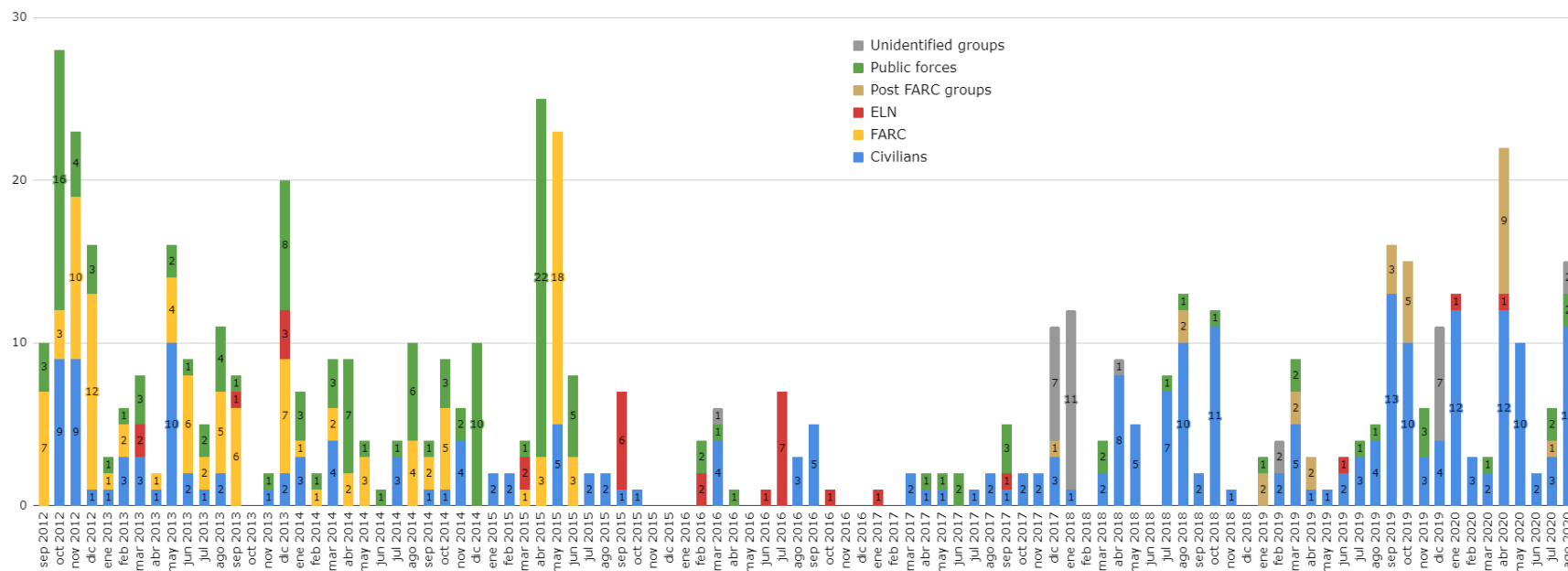
The human impact of violence directly associated with the conflict allows us to measure the violence transformation, leading to a growing majority of civilian deaths in the total number of victims after the end of the conflict with the FARC. Almost all FARC's armed actions during the last four years of the conflict were directed against state force targets, hence the pattern of victimisation then concentrated in combatants.

After the laying down of arms, the violence of emerging groups in the region has been directed mainly against civilians, in an atrocious deterioration of the violence. The fighting does not occur now between state forces and armed groups as before, but almost exclusively between these groups, as a result of the violent disputes between them. FARC, a clashing guerilla, was substituted by smaller groups offensive actions targeting civilians, with a higher level of lethality and a reduction in fighting. In simple terms, Cauca went from a low-intensity state-guerrilla conflict to a violence transformed by organized armed groups against unarmed civilians, seeking to subdue them to these groups' interests.<sup>46</sup>

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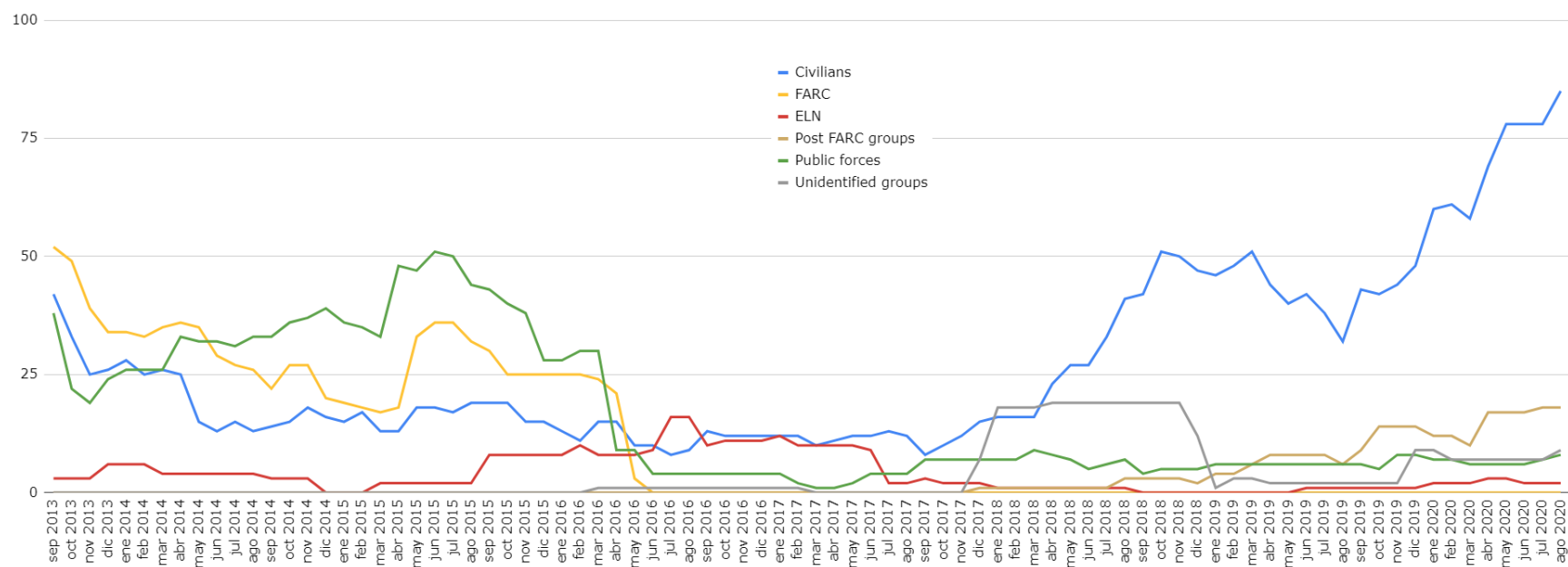
<sup>46</sup> As Arturo García maintains, "The reason for seeking this submission [of the population] is associated with the fact that this civil population has a commitment to a territorial use and occupation that enters into a conflict of interests with those of the armed groups." (García, 2020)

### Deaths in conflict actions by group affected, Cauca department, 2012-2020 (monthly)



Source: Base de Datos del Conflicto Armado en Colombia - CERAC. Last updated: December 3, 2020

### Deaths in conflict actions by group affected, Cauca department, 2012-2020 (monthly annual value)



Source: Base de Datos del Conflicto Armado en Colombia - CERAC. Last updated: December 3, 2020

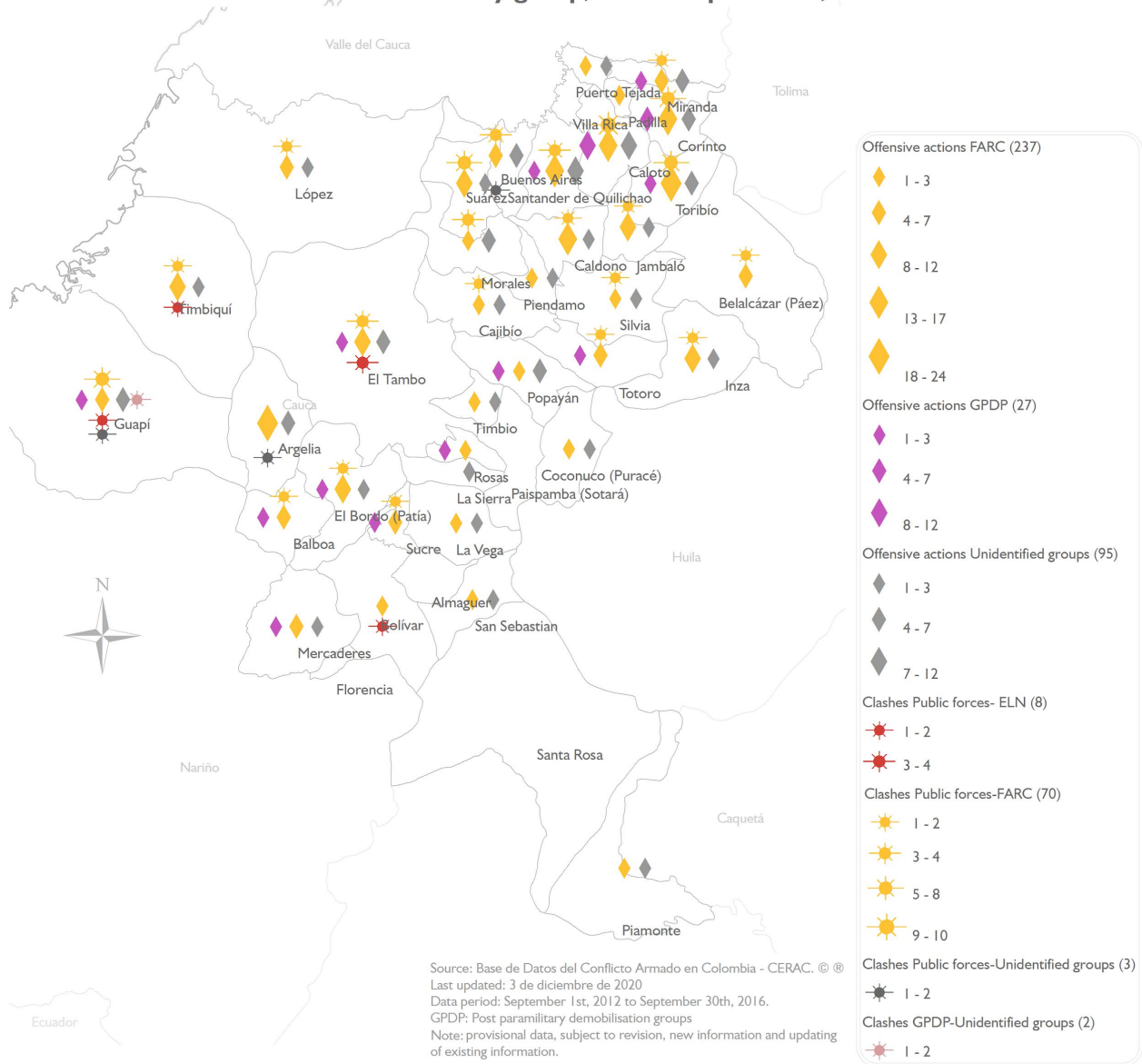
## 8.5 Violence spreads out from the Andes

From a municipality<sup>47</sup> perspective conflict moved away from being concentrated in the Andean region of the department during the four years before the laying down of arms and the ceasefire to spread out towards other regions, including the Pacific's coast. Two aspects of this are worth mentioning: The first is the diversity in the risk levels for population groups, arising from municipality disputes and the threat of the use of violence posed by organized armed groups. This heterogeneity of risk is changing in many municipalities, given the process of dispersion of territorial disputes already mentioned, and in some regions it is consistent with the persistence of the conflict after the signing of the Peace Agreement. Secondly, this territorial dispersion poses a growing humanitarian risk (and higher humanitarian attention cost) for the population of municipalities in highly isolated regions, where the population of ethnic minorities and indigenous peoples lives, particularly in the high Andean mountains of Cauca, southern Cauca and in the pacific Cauca.

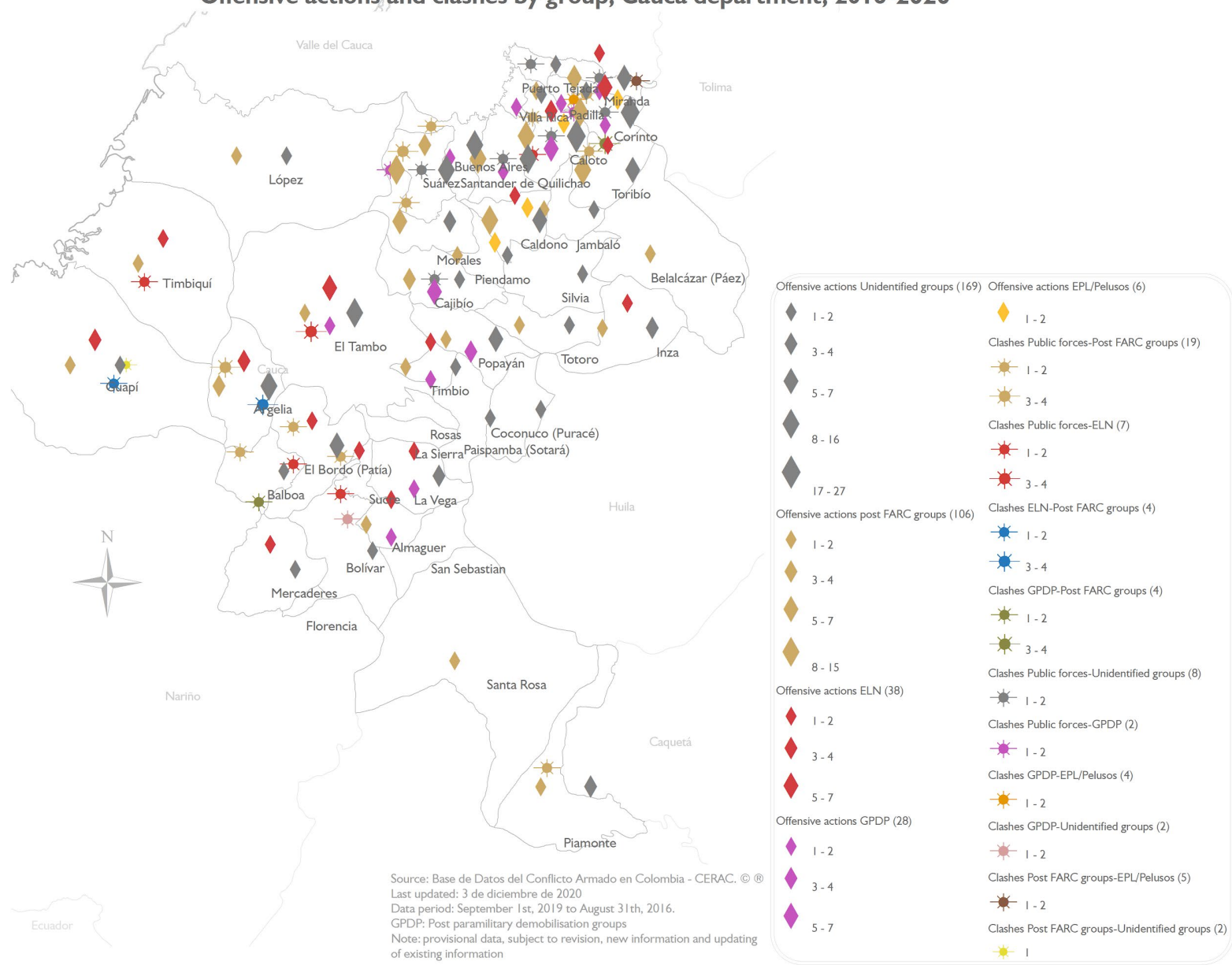
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<sup>47</sup> Municipalities are the smallest administrative and political division in Colombia.

## Offensive actions and clashes by group, Cauca department, 2012-2016



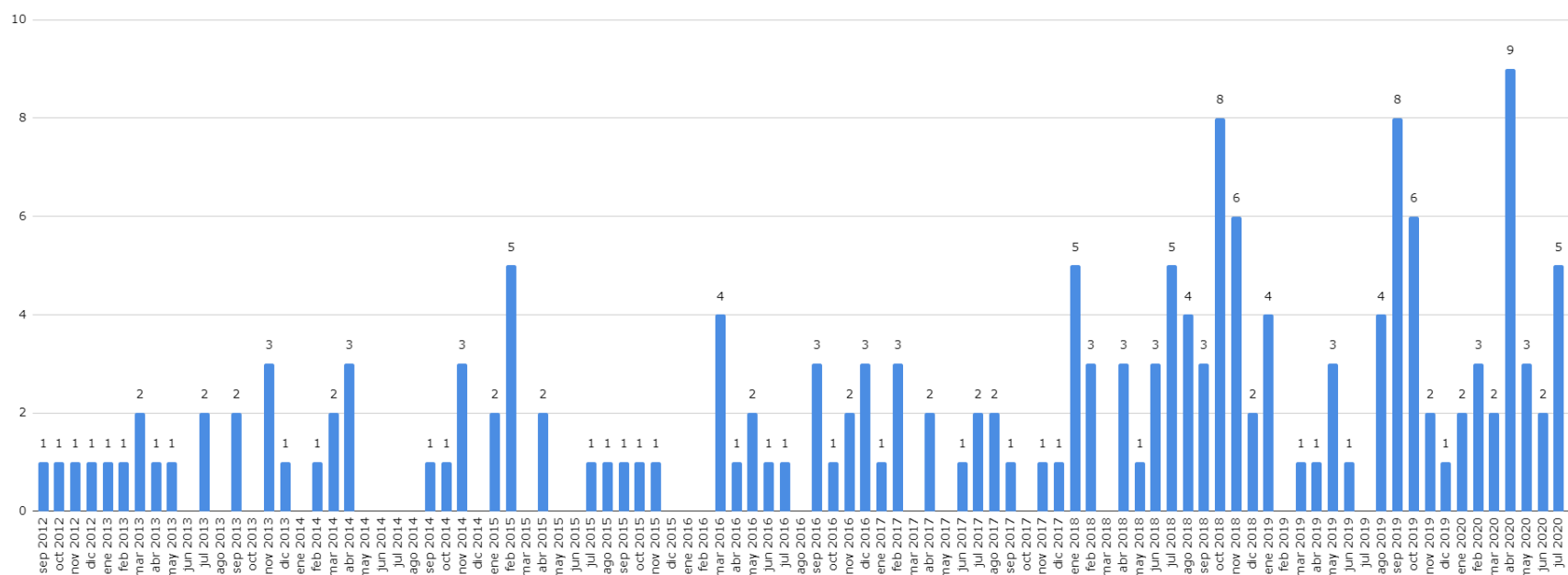
## Offensive actions and clashes by group, Cauca department, 2016-2020



## 8.6 Political violence

A factor that contributes to the acceleration of homicidal violence in Cauca is political violence<sup>48</sup> targeted against community and political activists and human rights defenders.

Deaths in political violence, Cauca department, 2012-2020 (monthly)

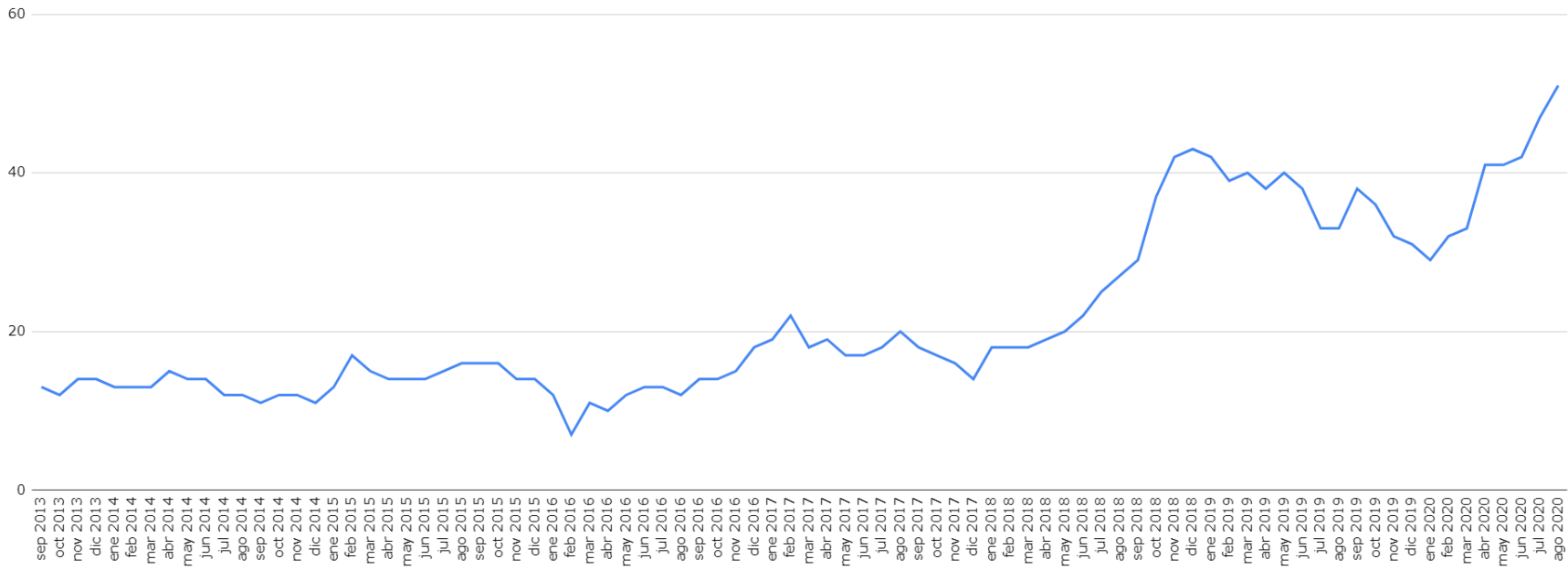


Source: Base de Datos de Violencia Política en Colombia - CERAC. Last updated: December 3, 2020

<sup>48</sup> We define political violence as actions that seek to cause intentional harm to a person involved in roles or activities representing groups interests, societal preferences, representation of interests, community organization or collective decision-making.



### Deaths in political violence, Cauca department, 2012-2020 (monthly annual value)

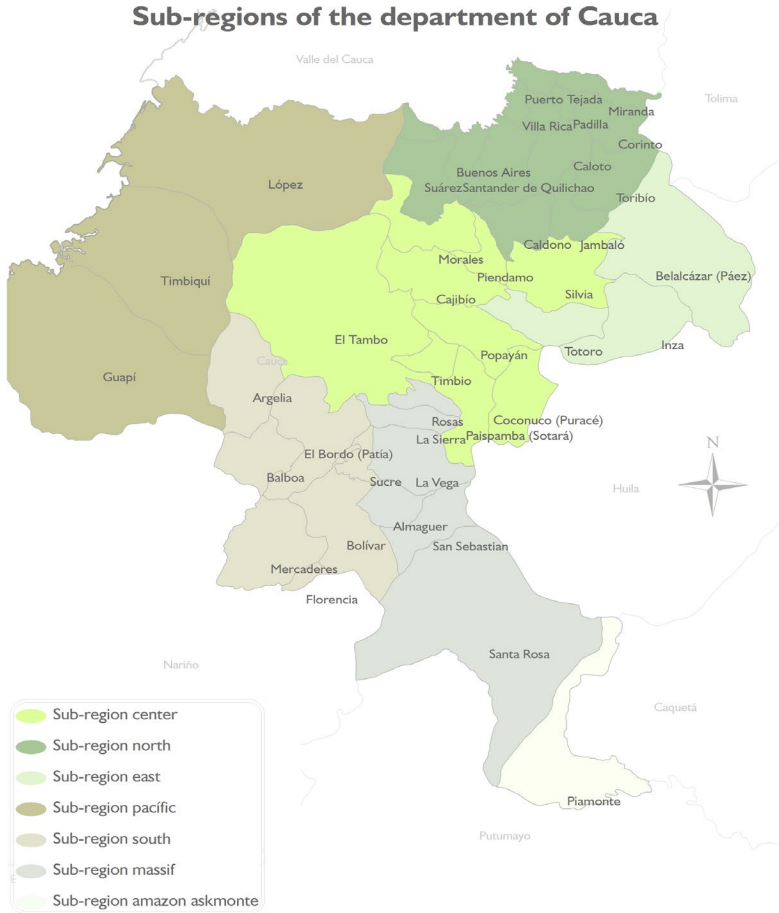


Source: Base de Datos de Violencia Política en Colombia - CERAC. Last updated: December 3, 2020

Since 2014, deaths in actions of political violence have increased steadily. Cauca was the department of Colombia most affected by this type of violence in 2016, 2018 and 2019, years in which it almost doubled deaths registered in other departments highly affected by lethal political violence such as Antioquia, Norte de Santander and Valle del Cauca. Cauca has a disproportionate larger share of national cases and a growing number of cases, exceeding 26% of such total deaths so far in 2020.

### 8.7 Subregional effects

Although this department has historically been affected by different types of violence, its geographical, cultural and social diversity, as well as the dynamics of the conflict there, require a subregional perspective to approach the complexity of security conditions in the seven subregions<sup>49</sup> that make up Cauca.



<sup>49</sup> The Cauca 2020-2023 Departmental Development Plan establishes that the department is subdivided in the North, South, Center, East, Pacific, Massif and Amazonian Piedmont subregions.

The North, Center and South have been the subregions most affected by conflict violence, political violence, and homicidal violence. “As [mobility] corridors, the North and Center of Cauca attracted the attention of armed groups towards the beginning of the 2000s. In particular, they became areas of dispute for being a corridor that borders the departments of Huila, south of Tolima and Caquetá ”(Sánchez et al, 2011, p. 98).

Between 2012 and 2016, the level of armed conflict was high in the North, Central and South subregions, mainly due to FARC violent actions and the fighting between the security forces and the FARC. Between 2017 and 2020 North is the region most affected by conflict violence, reaching very high levels of affectation due to the fighting and offensive actions.

Clashes by groups participating in the confrontation by sub-region in the department of Cauca 2012 - 2020

Subregion	Public force - ELN	Public force - FARC	Public force - GPDP	Public force - Post FARC groups	Public force - Unidentified groups	ELN - Post FARC groups	GPDP - Post FARC groups	GPDP - EPL/Pelusos	GPDP - Unidentified groups	Post FARC groups - EPL/Pelusos	Post FARC groups - Unidentified groups	Total by subregion
Center	7	9	0	2	1	0	0	0	0	0	0	19
Massif	0	0	0	0	0	0	0	0	0	0	0	0
North	1	43	2	10	8	0	3	4	0	5	1	77
East	0	4	0	0	0	0	0	0	0	0	0	4
Pacific	3	11	0	0	1	1	0	0	1	0	0	17
Amazon askmonte	0	0	0	1	0	0	0	0	0	0	0	1
South	4	3	0	6	1	3	1	0	1	0	0	19
Total	15	70	2	19	11	4	4	4	2	5	1	137

Source: CERAC's Colombian Conflict Database.

Dates covered: from September the 1st of 2012 to August 31st of 2020.

After the signing of the Final Peace Agreement, these subregions concentrate most of the deaths associated with conflict violence actions, with civilians making up the highest proportion of human losses. The North is the region mostly affected by political violence also. Deaths in political violence both in this subregion and in the South have increased significantly compared to the four years prior to the signing of the peace accord.

**Homicides, kidnappings and extortion by subregion of the department of Cauca 2012 - 2020**

Sub-region	Homicides	Kidnappings	Extortion	Total per year
Center	1214	51	1368	2633
Massif	149	6	109	264
North	2317	64	527	2908
East	133	9	63	205
Pacific	151	2	46	199
Amazon askmonte	44	4	9	57
South	901	5	206	1112
<b>Total</b>	<b>4909</b>	<b>141</b>	<b>2328</b>	<b>7378</b>

Source: Colombian National Police

Dates covered: from September the 1st of 2012 to August 31st of 2020.

Regarding the citizen security indicators between 2012 and 2020, data from the National Police show that again these three subregions concentrate the majority of homicides, kidnappings and extortion in Cauca. In fact, since the Agreement was signed, homicides have increased in these same regions.

In the subregions of the Massif, East and Pacific, the impact due to the violence of the conflict did decrease after the signing of the Peace Agreement. As of 2017, although we have registered offensive actions by post-FARC groups and unidentified groups, these do not reach the levels registered with the FARC before the signing.

### Offensive actions by armed groups by subregion of the department of Cauca 2012 - 2020

Subregion	FARC	ELN	EPL - Pelusos	GPDP	Post FARC Groups	Unidentified groups	Total by subregion
Center	20	11	2	13	15	45	106
Massif	3	4	0	4	2	7	20
North	121	16	4	30	76	158	405
East	19	0	0	1	3	6	29
Pacific	22	4	0	1	5	14	46
Amazon askmonte	3	1	0	0	1	5	10
South	49	9	0	6	4	29	97
<b>Total</b>	<b>237</b>	<b>45</b>	<b>6</b>	<b>55</b>	<b>106</b>	<b>264</b>	<b>713</b>

Source: CERAC's Colombian Conflict Database.

Dates covered: from September the 1st of 2012 to August 31st of 2020.

Despite this, deaths from conflict violence and from political violence do not maintain the same downward trend in the three subregions. After the signing of the Agreement, only in the Massif, we did not evidence deaths associated with violent actions due to the conflict, contrary to the East and Pacific. With regard to political violence, only in the East did the death toll from this type of violence remain low before and after the signing. On the other hand, in the Massif and the Pacific there is a slight increase in deaths.

When comparing the number of homicides in the two periods of analysis, figures show that in the three subregions this crime has increased, slightly in the Macizo and in the Oriente, and more significantly, in the Pacific.

Finally, in the Piedemonte subregion, although the same level of involvement is maintained before and after the signing, the offensive actions now come from unidentified groups. Only after the signing of the Agreement, CERAC recorded the death of civilians associated with conflict violence and political violence. As for other security indicators, in the last four years with the exception of 2018, homicide is a crime on the rise.

## 8.8 Differentiated subregional risks

As a whole, the entire department of Cauca maintains a high security risk due to the violence associated with conflict, political violence and a disproportionate share of violent criminality. However, the security conditions and therefore the risk associated with violence, are highly differentiated and variable among the subregions that make up this department.

The North is the sub-region most affected by violence. The high levels of violent activity keep the security risk at critical level for the municipalities of this subregion, especially for Caloto,

Corinto, Santander de Quilichao, Suárez and Toribío. Likewise, disputes between armed groups and with the state forces bring about very high humanitarian risk for the civilian population of this northern subregion, with members of indigenous communities being the most affected. The North also displays societal conflicts related to the use of land, ethnic tensions between indigenous, Afro-descendant and peasant communities, and the coca economy (Sánchez et al, 2009, p. 97), which keep this sub-region in constant dispute.

At an average level of violence are the subregions of the South, Center, Pacific and Massif. In the municipalities of Argelia (South) and El Tambo (Center), respectively, the effects of violence from the conflict are concentrated and therefore, both face a security risk and a high humanitarian risk. On the contrary, in larger municipalities of these subregions, such as Popayán, the departmental capital these risks are low.

In the Pacific subregion, naturally isolated due to its geographical conditions and the absence of land road infrastructure that connects it with the department and the rest of the country, the security and humanitarian risks are medium-high, but low in urban areas. In this subregion there are also criminal phenomena related to the exploitation of natural resources such as illegal mining and illegal timber exploitation.

Finally, the risk is low in the Eastern and Piedmont subregions, as the intensity of violence associated with the conflict has been significantly lower compared to the other subregions.

**Number of hectares of coca crops in the department of Cauca**

Municipality	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Almaguer	4	0	0	0	0	0	0	0	0	0
Argelia	296	200	470	121	1328	959,73	1754,51	1956,52	2369,96	2351,45
Balboa	77	62	43	24	80	223,8	112,27	82,33	198,37	321,43
Bolívar	142	16	20	1	24	48,98	51,71	85,31	15,9	4,19
Buenos Aires	0	0	0	0	16	27	2,2	64,54	125,74	442,79
Cajibío	0	0	7	0	15	68,95	132,45	407,19	323,07	355,09
Caloto	0	0	0	0	0	16,1	26,26	0	1,6	18,45
Corinto	0	0	0	0	0	26,7	38,91	0	10,54	10,88
El Tambo	1560	1514	1876	1297	2522	3468,18	5300,28	6661,01	7242,99	7102,46
Florencia	29	0	0	0	0	0	0	0	0	0
Guapi	1022	984	396	182	191	256,88	525,78	720,88	678,57	634,89
Jambaló	0	0	0	0	0	0	0	0	0	68,96
López	791	1040	341	548	686	867,22	941,41	1467,97	1319,76	1308,33
Mercaderes	137	420	17	21	120	95,06	140,7	126,54	25,14	0
Miranda	0	0	0	0	0	3,67	5,98	0	2,27	58,69
Morales	55	32	76	17	70	155,25	166,89	340,32	309,79	361,67
Patía	82	51	58	76	97	203,53	327,96	350,34	405,01	376,95
Piamonte	131	253	516	461	602	1166,89	1458,49	1780,44	1997,22	1905,07
Rosas	0	0	0	0	0	0	0	2,78	3,89	0
Santa Rosa	0	0	0	0	0	0	0	0	0	54,85
Suárez	1	0	0	1	49	139,65	170,45	267,19	383,53	501,67
Sucre	0	0	0	5	17	15,57	18,67	13,5	6,8	4
Timbiquí	1581	1494	507	572	572	907,47	1405,67	1633,45	1696,92	1464,04
Toribío	0	0	0	0	0	9,47	14,85	0	0	9,97
<b>Total</b>	<b>5908</b>	<b>6066</b>	<b>4327</b>	<b>3326</b>	<b>6389</b>	<b>8660,1</b>	<b>12595,44</b>	<b>15960,31</b>	<b>17117,07</b>	<b>17355,83</b>

Source: Observatorio de Drogas, Ministry of Justice.

Crops for illicit use have increased considerably in Cauca after the signing of the Agreement, with coca crops having the greatest number of hectares in the department. However, in terms of association, it is not true that distribution or dynamics of coca crops is closely associated with the conflict violence, as some observers and government officials have argued. On the contrary, the presence of illicit crops is significantly associated with homicidal violence (with a Spearman correlation of 0.31).

Data from the governmental Colombian Drug Observatory indicate that coca crops for 2019 are mostly concentrated in the municipalities of Algeria, El Tambo, Piedmont, Timbiquí and López de Micay (OCD, 2020). In addition, since the signing of the Peace Agreement, municipalities that did not have coca crops for 2019 now do have them.

Municipalities where coca crops are not recorded are Almaguer, Florencia, Mercaderes and Rosas; In the first two municipalities, the aforementioned Observatory never documented areas of crops for illicit use; While in the last two for 2019, the data from the source shows that there may have been some type of eradication or crop substitution process since for that year in those municipalities there was no record of coca cultivation.



**Number of hectares of poppy crops in the department of Cauca**

Municipality	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Almaguer	12	9,3	10,5	4,5	12,6	42,6	10	0	0	0
Bolívar	55	68	48	109,9	70,2	75	52	0	0	0
El Tambo	0	0	0	0	1,6	1,6	2	0	0	0
Inzá	0	0	0	0	3,6	3,6	4	0	0	0
La Sierra	0	0	0	1,5	2,2	2,2	2	0	0	0
La Vega	9	12,8	21,5	60,8	54,4	69,4	42	0	0	0
Páez	0	0	0	0	1,7	1,7	2	0	0	0
Patía	0	0	0	0	2,1	2,1	2	0	0	0
Rosas	0	0	0	0	2,8	2,8	3	0	0	0
San Sebastián	8	5,8	14	22,9	25,6	40,6	28	0	0	0
Silvia	0	0	0	0	2,7	2,7	3	0	0	0
Sotará	8	6	8	20,1	23,2	6,3	6	0	0	0
Toribío	0	0	0	0	5,7	5,7	6	0	0	0
<b>Total</b>	<b>92</b>	<b>101,9</b>	<b>102</b>	<b>219,7</b>	<b>208,4</b>	<b>256,3</b>	<b>162</b>	<b>0</b>	<b>0</b>	<b>0</b>

Source: Observatorio de Drogas, Ministry of Justice.

Finally, Almaguer, Bolívar, La Vega and San Sebastián are the municipalities most affected by the planting of poppies, but in the years prior to the signing of the Peace Agreement with the FARC. They are all located in the center of the department and are also bordering each other. The municipalities that registered poppy crops belong mostly to the Massif and central regions of the department of Cauca. The Colombian Drug Observatory did not present data on hectares of poppy crops in municipalities of the department for the post-conflict period with the FARC, in the years prior to the signing of the Peace Agreement, The source does not record information for the years 2017, 2018 and 2019, however, in the years prior to the Agreement there is evidence of a concentration of poppy crops in the municipalities of Almaguer, Bolívar, La Vega and San Sebastián.

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## Annex 1. Subregional division of Cauca

1. Central: It is made up of the municipalities of Popayán, Cajibío, El Tambo, Morales, Piendamó, Puracé, Silvia, Timbío, and Sotará.
2. North : it is made up of 13 municipalities: Buenos Aires, Caloto, Corinto, Jambaló, Miranda, Padilla, Puerto Tejada, Santander de Quilichao, Suárez, Toribio, Villa Rica, Caldono and Guachené.
3. East: Inzá, Páez and Totoró.
4. Pacific: Guapi, López de Micay and Timbiquí.
5. Southern: Includes the municipalities of Algeria, Balboa, Bolívar, Patía, Florencia, Mercaderes and Sucre.
6. Massif Subregion: Almaguer, La Sierra, La Vega, Rosas, Santa Rosa and San Sebastián.
7. Amazonian Piedmont subregion: municipality of Piedmont.

Acrónimo / acronym	Nombre	Name
FARC	Fuerzas Armadas Revolucionarias de Colombia	Revolutionary Armed Forces of Colombia
ELN	Ejército de Liberación Nacional	National Liberation Army
EPL	Ejército Popular de Liberación	Popular Liberation Army
GPDP	Grupos pos desmovilización paramilitar	Post paramilitary demobilisation groups
CERAC	Centro de Recursos para el Análisis de Conflictos	Conflict Analysis Resource Center

## Annex 2. Post FARC groups actively present in Cauca

Grupo pos FARC / Post FARC group	Tipología*	Typology*
Carlos Patiño	Rearmado	Rearmed
Dagoberto Ramos	Rearmado y desertor	Rearmed and deserter
Frente 29	Disidente	Dissident
Frente 30	Rearmado y desertor	Rearmed and deserter
Frente 31	Rearmado	Rearmed
Frente Décimo	Rearmado y desertor	Rearmed and deserter
Frente Primero	Disidente	Dissident
Frente Sexto	Rearmado y desertor	Rearmed and deserter
Jaime Martínez	Rearmado y desertor	Rearmed and deserter
Segunda Marquetalia	Rearmado	Rearmed

Source: CERAC's Colombian Conflict Database  
 Typologies are non-exclusive.

## Chapter 9

### Concluding Remarks and Future Implications

The objective of this report has been to provide an updated state of the art on the knowledge of food security and conflict in Cauca, taking into account the challenges of the food policy regime of Colombia and the evolution of the post-conflict region of Cauca.

The researchers in the SEGURA team have examined existing literature, analyzed register data, and combined and cross checked several data sources in order to shed light on the complexity of the food security and conflict complex in Cauca and identify mechanisms. Each chapter concludes by identifying knowledge gaps and questions for future research. Here we summarize some of the most relevant findings and data.

- **Food insecurity levels.** Household food insecurity is 10 percent higher in Cauca than in the rest of Colombia. The proportion of displaced people in Cauca is very high, close to one-third of the population (31 %), which is also much higher than in the rest of Colombia (14 %).
- **Mechanisms of food insecurity.** Food insecurity correlates with conflict through forced displacement. This means that in municipalities where there is a high ratio of displacement, we also find a high level of food insecurity, such as in the southern, western and northern parts of Cauca. These are located along the corridors for coca distribution and transport in the south and in the north.
- **Food policy.** Colombia has an ambiguous policy program for food security (National Food Security and Nutrition). However, it also has several policy imperfections; coverage seems to be limited, especially among vulnerable groups such as indigenous groups and Afro-Colombians, which constitute a considerable proportion of Cauca's population.
- **Supply of food.** Cauca is a fertile territory that has the potential to become an essential source of food for the country and a food basket for its own region. There is, however, considerable inequality in distribution of land. Crop yields and livestock productivity are low (in some cases lower than the national average), due largely to the level of violence.
- **Food access.** Households in Cauca have less secure access to food than the rest of the country. The incidence of households who self-report being poor and who do not have enough income to meet minimum expenses are 24 and 12 percentage points higher in Cauca than the national average, respectively. Moreover, households in Cauca are more likely than the typical Colombian household to receive aid from social programs.
- **Triple burden of malnutrition** refers to the prevalence of malnutrition, obesity and micronutrient deficiencies. Cauca's food insecurity and nutritional results

show the deep regional gap in Colombia. A higher percentage of the population in early childhood suffers from stunting, wasting and overweight compared with the national average. The level of stunting among children aged 5–12 years and adolescents aged 13–17 years is higher in Cauca than the national average. Compared to the national and Pacific region results, a higher percentage of the population of Cauca aged 18–64 years old suffers from overweight

- **Conflict.** New conflicts have emerged and escalated since the 2016 peace agreement, creating a vicious circle of violence particularly targeting social leaders. The failure of the government program for the substitution of illicit crops and the delay in rural welfare policies have allowed the growth of illicit economies associated with the production of cocaine. Deforestation in Colombia has to do with the processes of dispossession directly associated with the internal armed conflict, such as land grabbing, illicit crops, and mechanized and illegal mining.
- **Violence.** The increase in violence in Cauca is alarming. The entire department of Cauca maintains a high security risk level due to the violence associated with political conflict. In addition, Cauca has a disproportionate share of violent criminality. In fact, Cauca has 2.6 percent of Colombia's population (1.3 million people) but the department has 25 percent of the country's homicides due to political violence. The security conditions and the associated risk of violence in the subregions that make up this department are highly differentiated and variable.
- **Confinement.** While the mechanism of forced displacement from violent actions of armed actors provokes a state of food insecurity due to loss of land and crop destruction, the confinement of families and communities produces the same devastating effects. Restricted mobility imposed by the guerrillas prevents the access to goods and services provided by the state and negatively impacts the adequate access to food for thousands of communities and household not only in Cauca but nationwide.

As several factors and mechanisms operate together to shape the food insecurity and conflict nexus, we join other scholars' call for a more in-depth understanding of the nature, dynamics, intensity and pattern of effects caused by conflict, since only then will it be possible to understand the particular relationships with food security.

## 9.1 Future directions

We are confident that in the future it would be important to collect household-level data on different subsets of households to obtain a better understanding of their food security situation. This especially applies to migrant households. It may be necessary to oversample different types of households – based on migrant status, gender of the household head, ethnicity, and geographic conditions – as these households are either minimally present or virtually non-existent in secondary data sources. Through household interviews, the SEGURA project will explore the roles of purchasing power,

logistical constraints, and conflict in households' food access through markets. It will also explore what barriers households face to being able to use their land for livestock.

Furthermore, new conflicts have emerged in the wake of the post-agreement and that will need further investigation. On the one hand, the imposition of the 2016 peace agreement has resulted in a conflictual expansion of corporate mining and agrarian frontiers. On the other hand, the failure in the substitution of illicit crops and the delay in rural welfare policies – further intensified by the pandemic – have allowed the growth of illicit economies associated with increased production of cocaine. Policy goals that aim to substitute illicit crops holds great potential for improving households' incomes and their access to adequate food as well as reducing the impact of armed conflict on their lives. Hence, analyzing the factors and strategies that diminish the obstacles for substituting illicit crops will definitely need further research.

Finally, the Covid-19 pandemic raises additional questions which has already been addressed in this report but which we wish to investigate deeper within the up-coming activities of the Segura project. First, we will need to discuss how and to what extent the Covi-19 pandemic will impact the food security discourse. If nothing else, the pandemic has demonstrated that access to food depends on people's ability to buy food and on their purchasing power. Without cash transfers and social support programs reaching vulnerable households, a serious food crisis would have emerged in several affected parts of the world, Colombia included.

In Colombia, however, although the effects of the pandemic have been devastating for in terms of infections, fatalities, unemployment and recession, there is also a window to new opportunities and change. Formulating an ambitious policy of food security could be the way through which the government can stimulate the development of lawful commercial activity to create alternatives to the drug trade and other illicit economies that fuel conflict. A food security program could be a viable strategy to address the deep-seated rural poverty and the almost complete absence of effective state institutions across large swathes of territory. FAO is already emphasizing a need for short collaborative value chains (*circuitos cortos de comercialización*) of food to bring urban areas and their surrounding food producers closer to each other. This would combine efficiency and resilience and would increase diversification, supplier redundancy, inter-sectoral linkages, value added, bio-economic and digitization.





Consumption Research Norway (SIFO) is a non-profit, transdisciplinary research institute at OsloMet – Oslo Metropolitan University. SIFOs research aims to understand the role of consumption and consumers in society and to provide the knowledge basis for public consumer policy in Norway.

SIFOs core research areas are:

- Sustainable consumption
- Digitalization of everyday life
- Market based welfare
- Clothing and food