Article

Climate Change Impacts and Evidence of Migration in Colombia

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Abstract

The international literature shows a polarised debate on the impacts of climate change on migration. Some studies find a positive linkage, whereas others find a negative one. It is, without a doubt, a complex process better considered case-specific.

There is no available information on the relationship between climate change and migration in Colombia, despite past research exploring each of these subjects independently. This study intends explicitly to investigate this linkage gap. Consequently, this paper's essential contribution is that it builds a bridge between climate change scenarios and migratory science for the first time in Colombia.

Despite their limitations, the theoretical and methodological framework suggested by IOM (2009b pp. 86, Section B, Chapter II) is demonstrated in this study to be very valid since it provides a methodology to predict where future flows will occur (based on past evidence). The methodological approaches of SLA and NELM explained in section A in the IV Chapter are also valuable for analysing and approaching this study's conclusions.

The primary conclusions of this study indicate that the "Coffee Region," Valle, and Atlantic (or Caribbean Coast) provinces that mainly send emigrants to Spain and the US are the key internal regions responsible for most of the international migration from Colombians. The same areas are especially vulnerable to the impacts of upcoming climate change in the A1B scenario produced by the IDEAM (2010) for 2040 and 2100. Thus, future flows of migrants are expected from these regions (2040-2100). However, issues such as visa requirements or the costs associated with migration constitute international barriers to this flow.

The sensitivity of these regions can also be associated with internal migration flows, more armed conflict, and forced displacement in a cyclical process. Theoretically, a resurgence of Colombia's armed conflict and displacement due to climate change can be expected. However, the need for empirical studies in Colombia to support this analysis is imperative and is the most crucial recommendation arising from this study.

Keywords: migrations, climate change, Colombia

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CONTENTS

Table of Figures

Index of Tables

Table of Maps

INTRODUCTION

Climate change is already generating displacement and migration in different parts of the world. Although the precise number of individuals on the move by mid-century is unknown, the breadth and magnitude of the movement might dwarf anything seen previously. People in developing nations and island states will be the first and worst affected (UNU 2009).

In Colombia, several previous studies have explored climate change (e.g. Climate Change National Communications to the UNFCCC by IDEAM) and separately forced displacement and migration (e.g. Guataqui 2006, Ibanez 2009, Ibanez & Velez 2003, Ceballos & Ahumada 2004). However, the documentation on the nexus between migration and climate change in Colombia is scarce. This study aims to explore this missing interconnection.

This document is divided into seven Chapters. Chapter I constitutes the context of Colombia, reviewing information on the natural vulnerability of the country to climate change and the social situation in terms of displacement. It also explains the implications of this research. Chapter II consists of the theoretical framework and background to the research, explaining the findings of the international literature regarding migration and climate change. It also identifies the main criticisms and limitations of the approach utilised here.

Chapter III establishes the objectives that guide this study. Chapter IV explains the research method, including the approach, limitations and tools used, and this is followed by Chapter V, which analyses the migration flows in Colombia. This chapter is subdivided into two sub-chapters, dealing with international migration and internal flows. Each of these sub-chapters explains why, when, from where and to where Colombians migrate, who they are, and which are the main drivers, consequences, and barriers to the migratory process.

Chapter VI constitutes the analysis of the sensitivity of migration flows to climate change. Here, the findings of Chapter V are linked to the information on climate change scenarios for Colombia. Specific analyses are conducted for the coffee region and the Atlantic coast of Colombia, and the chapter is also subdivided into international and internal flows. A theoretical analysis of the potential climate change impacts on the Colombian conflict is also conducted as well as the impacts of El Niño/La Niña ENSO concerning past and present events in Colombia.

Chapter VII concludes the document, summarising the main findings of this study, its limitations and main contribution, as well as identifying the opportunities for further investigation.

I.   COLOMBIAN CONTEXT – MIGRATION AND CLIMATE CHANGE

Colombia is a multiethnic country with 45,508,208 inhabitants (2010) (National Department of Statistics, DANE, 2005, cited in IOM 2010). Significant social, political, and economic changes have recently occurred in Colombia. Social indicators like poverty have dropped from 53.7 to 46% in the last decades (Employment, Poverty and Inequality Series Handover Mission-MESEP, 2009 as cited in IOM 2010 p. 12).

Migration patterns in Colombia shape a civilization that is constantly changing in response to its environment, its economic situation, and the unstable conditions common in Latin American countries. Latin America has witnessed one of the greatest migration rates among developing countries in recent decades (IOM 2010, p. 12).

According to the Mortality Risk Index of the United Nations (UN 2009), Colombia is the third most vulnerable country after Bangladesh and China, at risk from floods, earthquakes, landslides, and tropical cyclones. This is a crucial fact to consider when prioritising this country for this study. What is more, UNHCR (2009) considers Colombia as one of the countries with the most internally displaced people in the world, mainly due to the armed conflict (Ceballos & Ahumada 2004)

Colombia is subject to a wide variety of environmental stresses and shocks. Only recently (2010- 2011), hundreds of thousands of people were affected by floods due to a La Niña event (SNPAD 2011) (see Section B ii in Chapter VI for further details), including in Bogota, the capital city. The president of Colombia has publically attributed the past disasters caused by La Niña in 2010-2011 to the effects of climate change (Presidencia de la Republica de Colombia, 2011)

IMPLICATIONS OF THIS RESEARCH

This research project was conceived in Colombia in 2010 when in meetings of different policymakers from the Ministry of Interior – Disaster Prevention and Response Agency, the Ministry of Environment and the International Organization for Migration (IOM) - the lack of information on the migration-climate change nexus was recognised as evident. Thus it was agreed that further research in this area was needed for accurate policy-making. This paper provides an initial input in this regard.

II.   THEORETICAL FRAMEWORK AND BACKGROUND

Globally, climate change impacts people's livelihoods through phenomena including:

- an increase in natural disasters;
- an increase in the number of sinking island states; rising sea levels that make coastal regions uninhabitable;
- an increase in drought and warming that affects access to fresh water and agricultural production;
- increased competition for natural resources, potentially resulting in violence (Martin 2009 as cited in Black, Kniveton & Schmidt-Verkerk , 2011, p.2).

Migration is a multi-causal phenomenon with economic, social, political, demographic, and environmental dimensions. It has always been an essential process in many parts of the world, especially now with the recognition of the climate change role (Black et al., 2011).

The Intergovernmental Panel on Climate Change (IPCC 2007) indicated that one of the most serious effects of climate change might be human migration. According to the IPCC's Fourth Assessment Report published in 2007, climate change would probably increase the likelihood of humanitarian crises and lead to the migration of people. Extreme weather events occurring more frequently, sea level rise, and quickening environmental deterioration including coastal erosion and desertification, will likely augment and intensify human migrations and emergencies (IOM 2009a).

The likelihood is significant that an increasing number of people will migrate primarily for environmental reasons, even if the location and scope of future human movements are harder to anticipate than the specifics of climate change itself (IOM 2009a). Two hundred million environmental migrants are expected by 2050, according to the Stern study from 2006. This figure equates to the current estimated total number of international migrants in the world (IOM op.cit.).

A) MIGRATION DRIVERS

Climate change is already driving displacement and migration. Although economic and political causes continue to be the main drivers of migration and displacement today, climate change is already impacting (UNU 2009).

There is substantial literature on the determinants of migration. There is some consensus that the three main migration drivers are: (1) "Push" factors: reasons relating to the provenance country or region, such as conflict and political instability, rapid population growth, a shortage of economic possibilities, and restricted resources available; (2) "Pull" factors: reasons relating to the destination country or region, such as the availability of jobs, higher wages, the need for workers, population ageing, and political stability; and (3) intervening factors that either facilitate or impede migration, such as social or family networks, ease of transportation, government emigration or immigration policies, economic relationships including investment and trade links, or cultural and social exchanges (Black et al., 2011).

Many people's lives are impacted by an intricate interaction of cultural, social, political, economic, psychological, and environmental stressors and shocks, leading to various coping methods and decisions. A substantial portion of the world's population chooses migration as a coping decision. In the face of environmental stressors and shocks, the incentive to migrate might range from being compelled to escape for survival to making a purposeful plan to lessen household vulnerability and diversify one's sources of income in impacted areas. Instead, migration may be considered a continuum that, in reaction to shifting environmental conditions, ranges from displacement to an adaptation strategy (IOM 2009b p. 85).

In Figure 1, the range of migration processes in relation to climate change is shown where displacement is seen as a reactive response to climate change impacts and seasonal and permanent migration is seen as a proactive adaptation strategy to climate change. It is hypothesised that due to the migration process requiring social networks to occur, future new flows of migrants will tend to cluster towards displacement, where the driver of climate change directly leads to mobility. However, climate change is also expected to indirectly influence existing migration flows where established social networks form an enabling factor of

mobility. In these cases, climate change is anticipated to have a significant impact on migration through its effects on social, political, economic, environmental and demographic (SPEED) drivers. See Figure 1.

Figure 1. Integrated continuum of migration flows.

REACTIVE

PROACTIV

Displacement

Seasonal / permanent
(e.g labour migration)

New flows

Old flows

New flows become severe (Environmental factors driven directly by climate change)

Existing flows (dependent on networks) driven by SPEED, where climate change's interaction is often indirect.

on personal communica
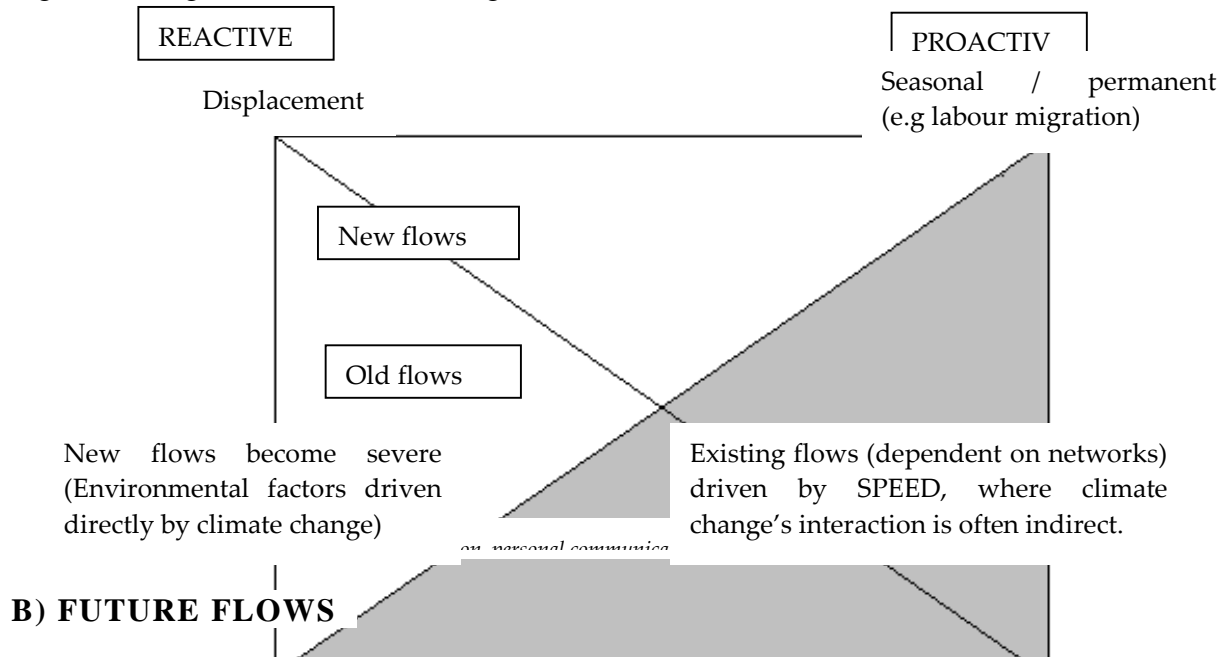
B) FUTURE FLOWS

Future flows of migrants impacted by the environmental change will include both new flows of migrants and existing ones whose magnitude and destinations are likely to be affected. An understanding of the drivers of existing migratory flows is frequently included in research on these migratory flows. Future migratory flow projections can be supported by comparisons with expected climate change ranges and the sensitivity of these migration drivers to climate change impacts. These integrated studies ought to look at the interactions and feedback between various migratory causes and their consequences (IOM 2009b pp. 86). This present study is precisely based on this approach.

C) MAIN CRITICISMS AND LIMITATIONS

The IPCC report (2007) stated that estimations of the potential population of environmental migrants "were, at best, guesswork" (Wilbanks et al. as cited in IOM 2009a p. 51) because of the following reasons:

(1) previous attempts to estimate migration in places impacted by climate change assumed that it was all one-way and permanent, whereas it was multidirectional and often episodic or temporary;

(2) people migrate for a myriad of reasons, which often are not directly related to climatic change and variability;

(3) migration can be a long-standing response to seasonal changes in environmental factors. However, migration can also be a path out of poverty or a wealth-building mechanism that helps both origin and receiving regions or nations;

(4) many crucial regions of the world lack accurate censuses or surveys on which to base such estimations;

(5) a lack of agreement over what environmental migrants are (Unruh et al., 2004; Eakin, 2006, cited in IOM 2009a p. 51).

These objections indicate that the environment-migration nexus has not been well studied due to a lack of information about human behaviour and the complexity of migration decisions (IOM 2009a p. 51).

These reasons also apply to the Colombian case. Given the primarily informal character of the movement, the patterns of Colombian migration remain unclear. The data supplied is insufficient and relies on dubious estimates (Marmora 1979, p. 443).

Furthermore, there are no studies or statistics on the relationship between natural disasters and displacement in Colombia. Unfortunately, there are no systematic databases in Colombia; thus, data on disasters is limited (A. Ibañez, personal communication, April, 2011). Apart from forced migration related to violence, finding the reasons for internal migration in Colombia is challenging. The immediate migratory triggers or reasons are the last incidences in a series of occurrences that ultimately lead to the choice to leave one's homeland. Nevertheless, the dynamics of the Colombian war lie at the root of displacement (Ibañez & Velez 2003).

III.   OBJECTIVES

a) Identify internal and international existing migration flows and their main drivers in Colombia based on domestic and international literature.

b) Review of national and international literature on environmental and climatic changes and their potential effects on the livelihoods of various populations at risk and/or in displacement conditions in Colombia.

c) Identify the relationship between the impacts associated with the occurrence of processes and/or events attributable to climate change and the alteration in the migration determinants of the population under analysis.

IV.   RESEARCH METHODS

A) APPROACH

This study follows the Sustainable Livelihoods Approach (SLA) to understand the causal linkages between migration behaviour and climate stimuli. SLA attempts to elucidate how households respond to external threats using a range of strategies. Consistent with SLA, this research considers migration as one possible strategy in response to variability and climate change, which in turn, are viewed as factors that alter households' levels of vulnerability. SLA should be considered together with The New Economics of Labour Migration (NELM) – approach, which goes into further detail about why persons migrate, but still in the context of household decision-making (IOM 2008 pp. 38-39).

When combined, the NELM and SLA methodologies provide a framework for comprehending how households react to environmental shocks and the degree to which migration takes part in that response (Ibid, p. 39). The focus of the questions during the information-gathering step utilising the SLA and NELM techniques is shown in Figures 2 and 3.

Figure 2. SLA-based enquiry focus
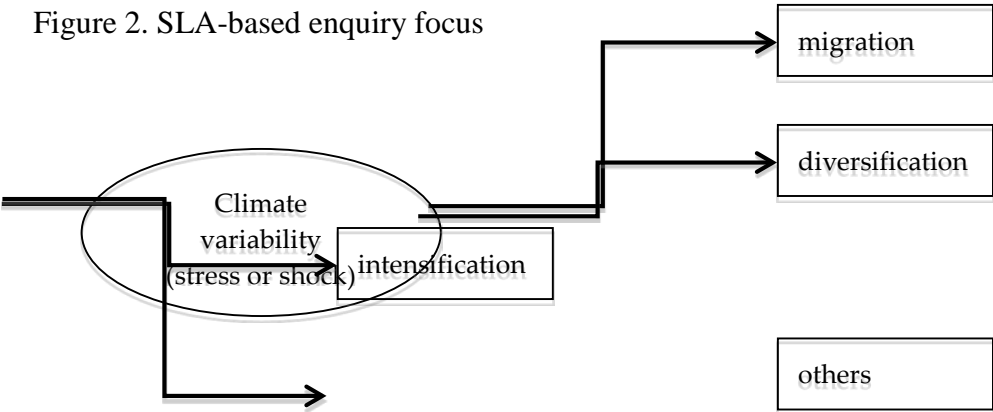
Source: IOM 2008, p. 39

Figure 3. NELM-based enquiry focus
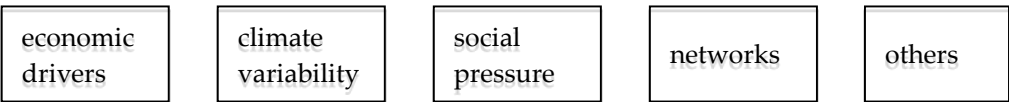
(different types of migration)

Source: IOM 2008, p.40

B) METHODOLOGY

Because of time and resource limitations, the main focus was on secondary source information, which appears to provide sufficient background for the set research objectives, considering the number of different sources studied. This approach was chosen since it offers the advantage that it saves cost and time, offers high-quality data (Bryman & Bell, 2007, p. 328); (Zikmund, 2003, p. 136), more time for data analysis (Bryman & Bell, 2007, p. 333) and reanalysis that offers space for new interpretations (Bryman & Bell, 2007, p. 334). One of the potential risks within this approach is a lack of control over data quality (ibid.). To offset this problem, as many different available sources as possible have been consulted, thus applying triangulation (Bryman & Bell, 2007, p. 412); e.g. by the use of IDEAM (2010) climate scenarios and using scholarly articles as well as international reports such as IOM (2009a; 2009b).

The approach can be defined as qualitative (Bryman & Bell, 2007, p. 408) since the research was conducted by concentrating on the particulars (Silverman, 2005, p. 9) of what climate change patterns might trigger migration rather than studying a possible empirical correlation. This approach was chosen to increase the comprehension of the study problem rather than provide precise measures (Zikmund, 2003, p. 111), even though this approach contains the problem that it is 'subjective in nature' (Zikmund, 2003, p. 132).

The information collected for this study was primarily based on the research of past national and international migratory flows (from where to where, when, and reasons). The next step was collecting the information on available climate scenarios for Colombia, found in the Second Communication of Colombia to the United Nations Framework Convention on Climate Change – UNFCCC.[1] (IDEAM 2010). Based on these sources of information, the analysis of sensitivity was conducted.
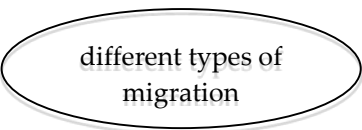
As pointed out in the literature review (previous chapter), several limitations make a study on the numbers of migrants a 'guesswork'. Therefore this study will focus on the drivers of migration and its sensitivity to climate change (approach suggested by IOM 2009b pp. 86), rather than on estimates of the numbers of climate migrants in Colombia (Section B, Chapter II in this document).

C) LIMITATIONS OF THIS STUDY

Section C in Chapter II pointed out the limitations of the approach used for this study. In addition to them, the reasons for migratory flows are multiple and interrelated (e.g. education, conflict, economy, social issues, and land distribution at domestic and international levels). Yet, for practical reasons, only the ones that could be associated with climate change and where information is available are considered.

Both climate change[2] and migratory studies have levels of uncertainty. Bringing these fields and their uncertainties together makes this more challenging to create certain scenarios, as Wilbanks *et al.* (2007 as cited in IOM 2009a p. 51) have pointed out (Section C, Chapter II in this document). The precise climate impacts and the adaptive responses by population are both unknown.

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[1] Models and predictions of climatic variables reflected in future scenarios of changes in temperature, precipitation, sea level rise and associated phenomena such as desertification, and flooding, among others (Scenario IPCC A1B).

[2] A detailed explanation of the treatment of uncertainties in climate change science is found in IPCC (2007) pp. 118-121.

Even more uncertainty is inevitably involved when speculating about possible future scenarios for how human societies and political institutions may be affected by climate-related environmental change (Raleigh & Urdal, 2007).

However, Raleigh & Urdal also advise that given the uncertainties in the relationship between conflict (and migration) and climate change, one may make the most accurate predictions for the future based on historical information (records and relationships) of demographics, ecology, and violent conflict. This is precisely the approach this study pursues.

The analysis of sensitivity is based on one climate scenario (IPCC A1B), which is the only available from the Second National Communication to the UNFCCC (IDEAM 2010).

Finally, it is essential to reiterate that this study is only based on secondary information.

V.   MIGRATION FLOWS IN COLOMBIA

This chapter is divided into two parts: (1) International migration flows and (2) Internal migration flows.
FIRST PART: INTERNATIONAL MIGRATION

Colombia is one of Latin America's top nations with the highest migration rates. The National Census (DANE, 2005a) registers 3,378,345 Colombians living abroad, whereas the number of foreigners currently residing in the country is 109,971. This reflects the condition of Colombia as a "sending" country of migrants rather than a "receptor" of them (IOM 2010). See figure 4 below.

Figure 4: Migrants estimated by five-year period, 1970-2005
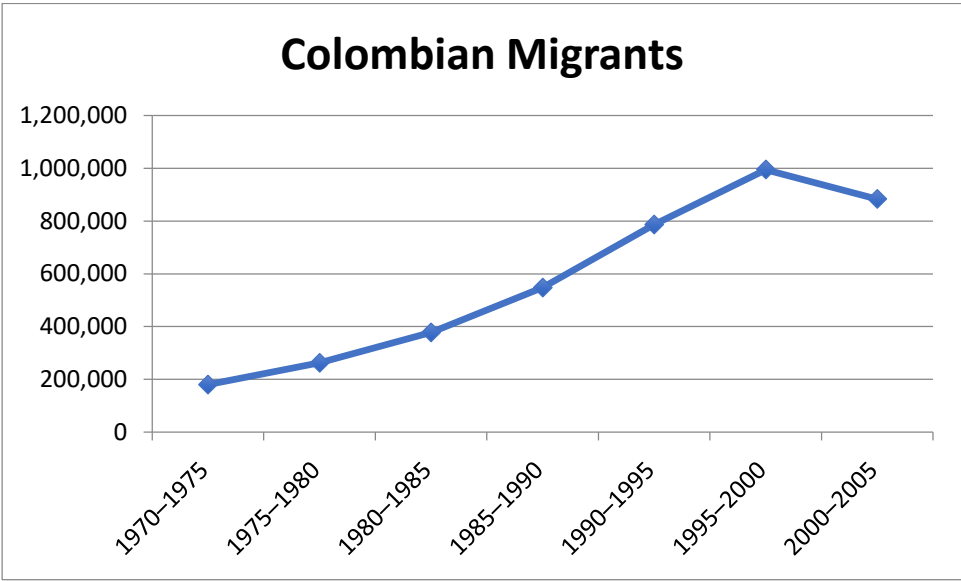
Source: Adapted from DANE, 2009 as cited in IOM, 2010, p. 49

The year 2008 shows a rise in emigration. Likewise, 2008 highlights a negative migratory balance for Colombians who departed between 2004 and 2008. According to the *Colombia Nos Une* Program 533,189 Colombians are registered in North America, 409,626 in South America, 84,559 in Europe, 24,514 in Central America and the Caribbean; and 15,993 in Asia and Oceania, (DANE, the Intelligence and Security Agency (DAS) and the IOM, Ministerio de Relaciones Exteriores, 2009 as cited in IOM 2010, p. 13).

A) WHY, WHEN AND WHERE DO COLOMBIANS MIGRATE?

According to the different information sources, the major reasons why Colombians migrate overseas are economical, followed by reasons relating to family and, less commonly, security concerns (Figure 5).

Figure 5: Reasons for Colombian migrants to live abroad before and after 2005 (%)
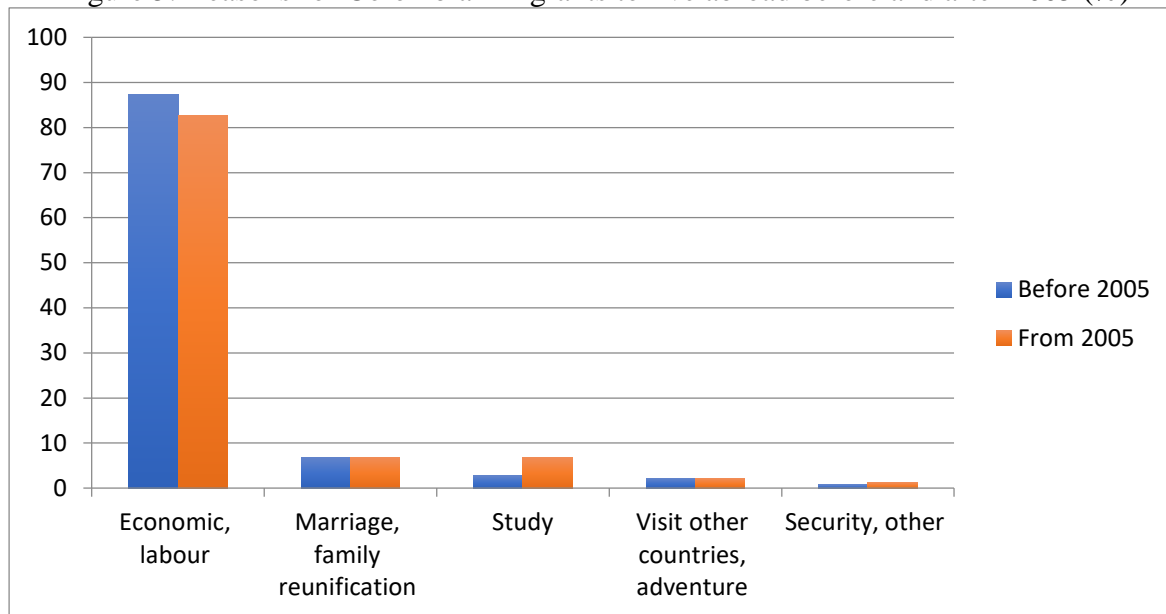
Source: Adapted from National Survey of International Migration and Remittances (ENMIR); Mejia, W. et al (2009); as cited in IOM 2010 p. 54

However, the explanation of the emergence and maintenance of migration flows is far beyond the sum of the reasons given by those directly involved or their families. Thus, the individual reasons do not fully explain the migration flows, but their value contributes to understanding the dynamics of migration (National Survey of International Migration and Remittances (ENMIR), as cited in Mejia *et al*. 2009).

Figure 5 leaves no doubt about the economic nature of Colombian migration and the slight weight of the security reasons, which definitely do not determine the flows. However, Mejia, *op.cit* states that security reasons tend not to be declared with the same freedom as other causes because of the fears associated with the same facts that generated the movements (Ibid). UNHCR (2009) corroborates, in fact, that security reasons hover around 10% instead of less than 1% (Chapter V, First Part, section D).

In the same figure (5), the reason 'study' has been rising among the more recent migrants in contrast to economic and work causes. This pattern could be associated with the increase in the regularisation of Colombian migrants in Spain, which would allow their children to study as part of the family assembly process (Ibid).

i.   Labour and economic migration

Colombian labour migration has been significant to Venezuela, the United States and later to Europe, especially Spain. Other border countries, such as Ecuador, have also been part of the destinations for Colombian workers who cross land borders in search of opportunities (IOM 2010).

a)   The first wave of migrants (60s and 70s)

1.   Venezuela

The first wave of immigrants that started the migration phenomenon in Colombia in the late 1960s and early 1970s were those whose final destination was the bordering Republic of Venezuela (Cardenas and Mejia, 2006 as cited in IOM 2010).

Migrants to the Bolivarian Republic of Venezuela arrived from departments located on the shared border of both countries, such as North Santander, Cesar and Guajira. At that time, the emigration of Colombians accounted for people with low education and training. Once the Venezuelan economy began to decline, emigration also showed a declining trend (IOM 2010).

2.   United States of America (USA)

Due to, in part, significant reforms to US migration legislation, the USA has been a desirable immigration destination for Colombians. Guarnizo (2004) asserts that most Colombian immigrants to the United States were educated professionals, mainly physicians and engineers, and members of higher social strata. The USA's changing economic circumstances for immigrants caused the migration to become more diverse in the middle of the 1970s, encompassing not just professionals, but unqualified labourers, tradespeople, and middle-class business owners as well.

Colombian migration in the United States of America has been mainly located in the metropolitan area of New York and southern Florida (Ibid). Colombians came to the United States to seek professional careers, work as labourers, factory workers, and domestic helpers, and create small companies that frequently serve Latin Americans. Those who could afford to purchase real estate in New York City did so as soon as they could. During the 1960s and 1970s, they worked in manufacturing whenever they could, particularly in the textile and garment industries, which were seen as the most desirable of the available manual jobs (Sturner 2011).

3.   United Kingdom (UK)

The UK promoted the migration of Colombian workers for commercial services in this period, diversifying the migratory composition by including a growing number of skilled and unskilled workers, merchants and small urban business entrepreneurs. Between 4,000 and 10,000 Colombians from the 'Coffee Grown Region' and Valle del Cauca were hired as temporary employees with annually renewable contracts.

Guarnizo (2008 as cited in IOM 2009) states that most Colombians residing in London are, on average, in economically productive ages (37 years old), with high levels of education (44% have University degrees and graduate studies) and come from urban cities (76%). The main areas of origin of migrants are Valle del Cauca, the Coffee-Growing Region, Bogota and Antioquia. Seven out of ten migrants came from middle and lower-middle classes, and two in ten came from upper-middle and upper classes.

In the US and UK cases, these workers created networks that allowed other Colombians to have connections, information and logistic support for their migration process (IOM 2010).

b)   Second (80s) and third waves (90s onwards)

In the middle of the 1980s, there was a second large migration wave to Venezuela, driven mostly by its productivity expansion due to the increase in oil prices from 1979. In addition, Colombia's economic difficulties at that time, characterised partly by the structural consequences of the debt crisis in Latin America, strongly stimulated migration to the USA and Venezuela (IOM 2010).

As a result of the United States' and Venezuela's successful migration-stemming efforts in the 1990s, migration to other countries surged. These conditions gave birth to a third wave, which increased quickly and was distinguished by various destination nations and varied makeup of the migrants. At that time, Colombian citizens began to flock to Spain as one of their top destinations (Ibid).

From the second half of the 90's, Colombians' migration was accelerated, which was mainly attributed to the financial crisis of the end of the 20th century (Cardenas and Mejia 2006, cited in IOM 2010). In the mid 90's there was a decline in real GDP. During these years, Colombia's GDP growth rate showed significant variability, changing from 2.37% in 1991 to -4.20% in 1999, with a recovery of 7.52% in 2007 (Bank of the Republic, 2010 as cited in IOM 2010). The behaviour of the Colombian economy has been associated with some of the migration flows in the country (Ibid). The behaviour of international migration corresponds to the Colombian cycles of rising and declining economic growth, immigration regulations and the economic and employment situation in the US and Spain (Mejia, W. *et al*. 2009).

During these years, transnational networks were consolidated to open the way for other Colombians who were planning to emigrate. However, the combination of socio-economic conditions in Colombia and legal restrictions on US immigration pushed the geographical diversification of Colombian immigration. Consequently, Colombians opened to alternative destinations such as Canada, Spain, the UK, France, Italy, Germany, Australia, Costa Rica, Mexico, Chile, Argentina, and Dominican Republic (IOM 2010). Simultaneously, female migration growth also occurred in Asian countries, such as Japan (Ibid).

4. Spain

In Spain, 88% of migrants are Latin American, and 21.1% are Colombian, concentrated mainly in Cantabria, Basque Country, Galicia and Asturias. This migration began significantly during the nineties when visas were not required to travel to this country (Ibid). Currently, the EU has required Spain to define specific conditions to regulate Colombian migration (Durand 2009, cited in IOM 2010).

Through the Regulation and Management of Labour Migration Flows agreement between Spain and Colombia in 2001, a total of 8115 Colombian workers travelled to Spain between 2001 and 2008 (SENA 2010, cited in IOM 2010).

Approximately 60% of Colombians in Spain are female. The average age of the primarily active Colombian population is 25 to 44 years, whose main objective is to work. 45% of the Colombian population residing in Spain have high school studies, 21% have university degrees, and 34% have primary, elemental or no education (Hurtado 2007).

Men are mainly construction workers, plumbers, electricians or traders, and women are domestic workers or carers for children or the elderly. Another important group is students. 13% of international University students in Spain are Colombians, and they mainly study art, architecture, business management, literature and medicine (Hurtado 2007).

Most Colombian immigrants in Spain came from the 'coffee grown region' departments (Risaralda, Quindío and Caldas) and northern Valle del Cauca. The coffee economic crisis due to the decline of

international prices in the 90s and a significant earthquake in the region in 1999 can partly explain one of the push factors that pushed migrants from this region to countries such as Spain (Garay & Medina 2007). The latest migration wave of the early 2000s was characterised by rapid growth, recording the highest rate of Colombian migrants. They presented a heterogeneous social background, regional origin (departments), and multiple final destinations (IOM 2010). The estimated number of Colombian migrants abroad as of 2005 is presented in figure 6.

Figure 6: Estimates of Colombian migrants abroad, 2005
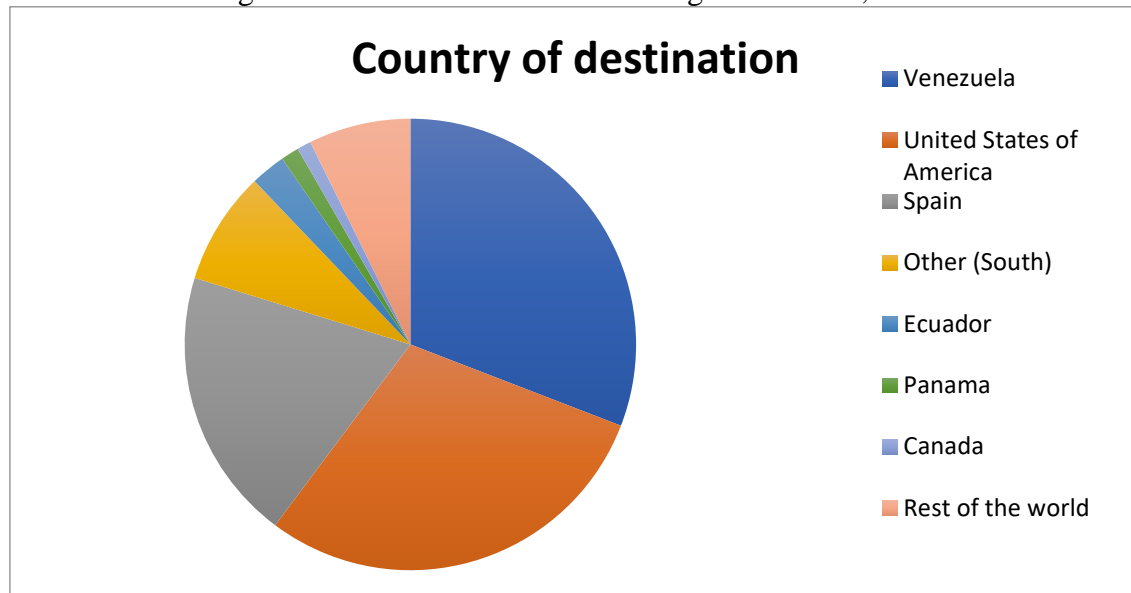
Source: Adapted from Ratha y Shaw, 2007 p. 52 in IOM 2010

Various studies on Colombian migration conclude that international migration is driven mainly by economic factors, with migrants looking for improved employment prospects and financial stability. The number of remittances given to Colombia, the degree of education of migrants, the migrants' average age, the financial circumstances at the time, the choice to move made, and the development, consolidation, and integration of social networks are some characteristics of this form of migration (IOM 2010, p. 14).

ii.   Flows of origin and destination

Five of the 32 Colombian departments concentrate near half of the Colombian population (46%) (i.e. Bogotá DC 16%, Antioquia 13%, Valle del Cauca 10%, Risaralda 5%, and Atlántico 2.1%). In addition, these same departments are the primary sources from which international migration flows originate (i.e. Valle del Cauca 23.1%, Bogota DC 17.6%, Antioquia 13.7%, Risaralda 6.9%, and Atlántico 5.8%). The rest of the country contributes 32,9% to the international migration flows (Table 1) (DANE 2007, as cited in Garay & Medina 2007).

Table 1: Intensity of international migratory experience by department (2005)

Department	Share of Households	Share of Households with migratory experience	Index of the relative migratory experience
Risaralda	2,2	6,9	3,2
Quindío	1,4	3,3	2,4
Valle del Cauca	10,1	23,1	2,3
San Andrés y Providencia	0,2	0,2	1,4
Atlántico	4,5	5,8	1,3
Caldas	2,3	2,9	1,3
Antioquia	13,8	13,7	1,0
Bogotá D. C.	18,3	17,6	1,0
Bolívar	3,8	3,7	1,0

Norte de Santander	2,8	2,6	0,9
La Guajira	1,2	1,0	0,9
Sucre	1,6	1,2	0,8
Santander	4,7	3,6	0,8
Magdalena	2,4	1,7	0,7
Cesar	1,9	1,0	0,5
Tolima	3,3	1,6	0,5
Cauca	2,8	1,3	0,5
Córdoba	3	1,4	0,5
Meta	1,7	0,8	0,4
Nariño	3,4	1,3	0,4
Huila	2,4	0,9	0,4
Cundinamarca	5,6	2,0	0,4
Boyacá	3,1	1,1	0,4
Chocó	0,8	0,3	0,3
Rest of the country	2,7	1,0	0,4
Total	100,0	100,0	2,7 (national average)

Source: DANE 2007 as cited in Garay & Medina 2007, p. 36

The same departments showed an elevated index of the relative migratory experience[3], regardless of the differences of its population and geographic size (i.e. Risaralda 3.18; Valle del Cauca 2.28, Atlántico 1.30, Antioquia 1.0, and Bogotá D. C. 0.98). Consistently, the share of the percentage of households with international migration experience by departments in 2005 coincides with the order of the index above (Table 1, Figure 7, and Map 1) (Garay & Medina 2007).

This suggests that the international migration of Colombians is not a uniform national phenomenon but rather a regional one. Different kinds of determinants influence Colombians' international migration, ranging from economic, social and cultural to the consolidation of migrant networks (family, friends) in specific areas between the regions of origin and countries of destination, among others (Ibid).

Figure 7: First 10 Colombian departments by migratory intensity
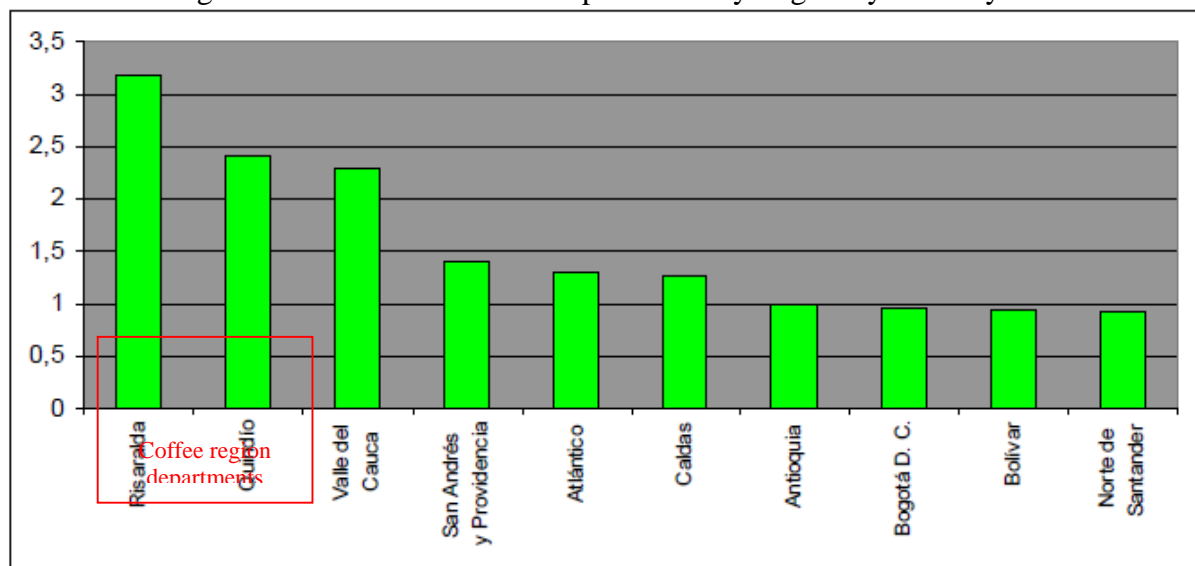
Source: Adapted from DANE 2007 as cited in Garay & Medina 2007, p.35

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[3] The index is defined as the ratio between the proportion of households with migration experience in the department or region of all Colombians households with migration experience and the proportion of department or region households in the total households in the country (Garay & Medina 2007)

The same departments with a high index of relative migratory experience show a trend of lower rates of unmet basic needs and social exclusion and higher rates in the index of quality of life compared to the rest of the country (Garay et al., 2002, as cited in Garay & Medina, 2007). The opposite is also true, which means that Colombia would confirm the hypothesis that "the poor (almost) do not migrate", also considering the barriers for international migration set out in section viii (Garay & Medina 2007).

Labour and economic reasons are the main reasons for the departure of emigrants in the Mid-West region, with 91.2% participation. In comparison, marriage and family reunification are highlighted in the Valle with 11.9%. Moreover, the 'study' reason stands out in Bogotá with 6%, while in the Centre-West region, it reaches 3.1%. In terms of return, labour and economic reasons have distinct differences between Bogotá and Valle (26.2% and 8.8% respectively), as well as adaptation (6.6% and 20.7% respectively for each region) (Ibid).

Since Spain, the USA and Venezuela together account for at least 70% of reported Colombian immigrants settled, the regional differences in terms of origin are significant. For example, 51% of immigrants in Spain come from the West, Central and Valle regions (including the coffee region), and only 13% and 27% are from the North and Bogota. In Venezuela, 56% of emigrants come from the northern region and between 4% and 14% from other regions of Colombia (Ibid).

Map 1: Colombian departments by the percentage of households with international migration experience (at least one member has migrated abroad).
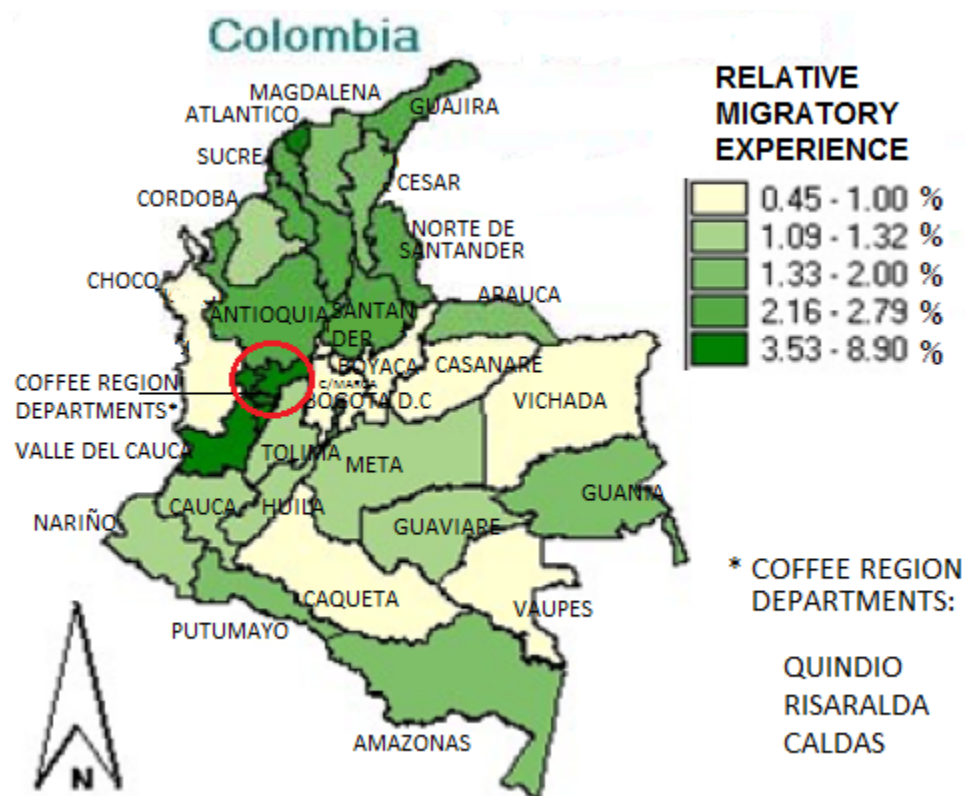
Source: Adapted from DANE 2007, cited in Garay & Medina 2007, p.35

In terms of geographical location on the destination, usually, Colombians tend to cluster based on two criteria: the region of origin and the social class they come from, and not just because of their nationality (Guarnizo 2003, cited in Garay & Medina 2007).

In London, Colombian native populations are mainly from Tulua, Palmira and Anserma (municipalities of Valle del Cauca and Caldas). In Paris, migrants are from Santuario (Antioquia). In Madrid, migrants are mainly individuals from departments such as Risaralda (Pereira and Dosquebradas towns) and Valle del Cauca (Buga, Cartago, and Palmira towns) (Garay & Medina 2007).

Regarding the work they perform, these vary according to the city and country of destination; however, the majority of Colombians work in the service sector, regardless of previous experience or education level (Guarnizo 2003, cited in Garay & Medina 2007).

B) WHO ARE THE COLOMBIAN MIGRANTS?

According to the National Survey of International Migration and Remittances (2009), there is a clear predominance of immigrants who are in the range from 18 to 44 years, concentrating 71.3% of the migrants reported. This figure had become accentuated since 2005 when it reached 80.8% of the total. This corresponds to the selectivity known from the migration process, mainly due to labour reasons. In contrast, those over 44 years represent 47.9% of returnees, suggesting a significant return for 'retirement' (Mejia *et al.* 2009).

Education level data indicate significant differences and especially an essential selectivity in terms of levels of education. Migrants with middle and higher levels of education (at least completed secondary education) account for 72% of the total emigrants. Such selectivity becomes evident when comparing the data of migrants with the total Colombian population between 20 and 49 years. The latter presents no more than 30% of the total number of people with a secondary education or above (Ibid). This process can be associated with the so-called "brain drain", which is better explained in section E of Chapter V.

C) REMITTANCES

The development of Colombia is significantly impacted by remittances. Remittances made up a sizeable portion of the GDP between 2005 and 2008, according to data from the Central Bank (Bank of the Republic). With USD 4,843,000, remittances reached a new high in 2008 before falling 14.4% to USD 4,145,000 in 2009 (Table 2 and Figure 8) (Ibid).

Table 2: Income from remittances from workers in Colombia, 2000-2009 (in million US dollars)

Date	Workers' Remittances		
	Monthly (December)	Quarterly	Annual
2000	170.1	435.0	1.578,0
2001	226.2	602.7	2.021,4
2002	257.1	678.8	2.453,7
2003	322.4	830.5	3.060,1
2004	354.1	944.5	3.169,9
2005	348.0	927.9	3.313,7
2006	376.2	1.042.4	3.889,6
2007	438.7	134.7	4.492,6
2008	438.4	1.189.7	4.842,4
2009	420.7	1.122.7	4.145,0

Source: Banco de la República, 2010b as cited in IOM   p. 63

The following figure shows the increasing trend of remittances in Colombia.

Figure 8. Colombia, monthly income of workers' remittances in thousands of US dollars. January 2000 - March 2009
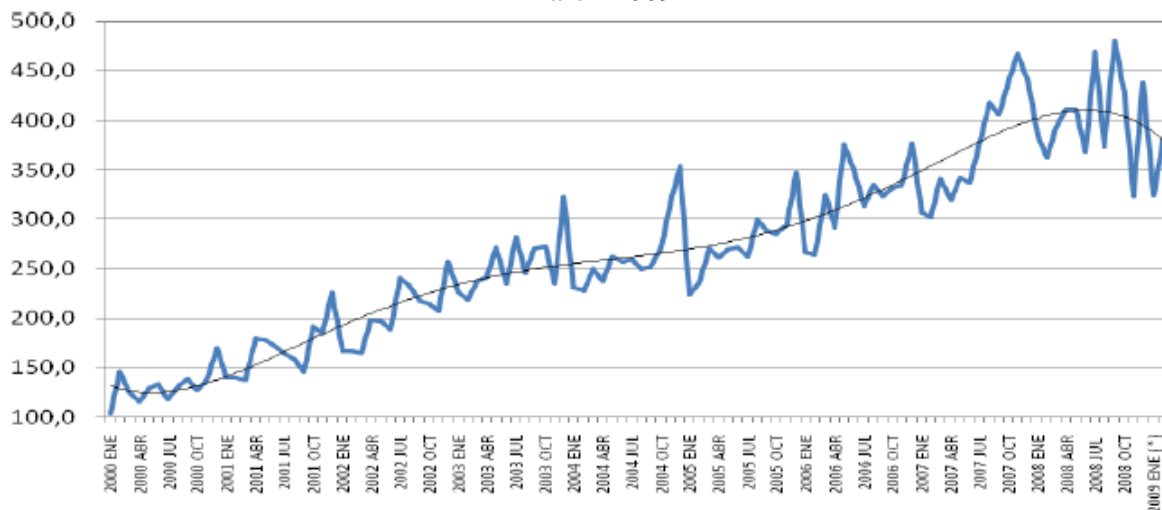
Source: Banco de la República, 2009 as cited in Mejia, W. et al. (2009).

According to the information of the Central Bank on the destination of the foreign money arriving in the country, a clear predominance of Central West Region (Departments of Antioquia, Caldas, Quindio and Risaralda- coffee region) followed by Valle (Valle del Cauca) is indicated. Figure 9 shows the distribution of remittances by region of destination.

Figure 9. Remittances by region of destination - 2008. Distribution by percentages.
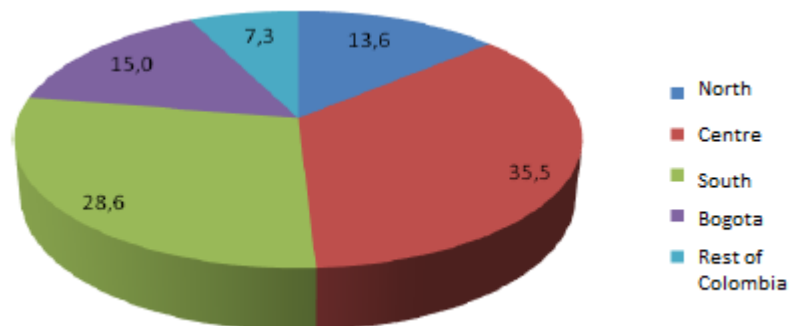
Source: Banco de la República, 2009 as cited and modified in Mejia, W. et al. (2009). Author's translation

As analysed before, the trend in remittances also confirms that the most important receiving regions are the central, central-west and south, where the five departments discussed previously (including those in the coffee-grown region) are located. Table 3 shows the origin of those remittances, which are increasingly from Spain and decreasingly from the United States.

Table 3: Income from remittances from Colombian workers by country of origin, 2005-2009

Country of Origin	2005%	2006%	2007%	2008%	2009%
Spain	38.8	39.1	38.2	37.7	41.2
United States	45.2	41.3	38.4	35.5	32.6
Venezuela	0.5	3.0	7.8	9.1	7.0

United Kingdom	3.2	2.9	2.4	2.8	3.0
Italy	2.7	2.7	2.1	2.3	2.7
Panama	1.0	1.8	1.3	1.5	1.8
Germany	0.7	0.5	0.6	0.8	0.8
Mexico	0.4	0.6	0.6	0.8	1.0
France	0.5	0.6	0.6	0.8	1.1
Canada	0.4	0.4	0.6	0.8	1.0
Aruba	0.8	0.9	0.9	0.7	0.9
Ecuador	2.4	1.6	1.3	0.8	0.9
Costa Rica	1.0	0.8	0.8	0.7	0.7
Netherlands	0.7	2.4	0.7	0.6	0.6
TOTAL	100.0	100.0	100.0	100.0	100.0

Source: Banco de la República, 2010b as cited in IOM p.64

Note: The distribution by countries does not include remittances received through channels other than intermediaries' exchange.

D) INTERNATIONAL REFUGEES

The report of the United Nations High Commission for Refugees (UNHCR, 2009) states that approximately 374,000 Colombians lived abroad 'in a similar situation of refugees' in 2009, meaning that the actual proportion of Colombian immigrants for security reasons would hover around 10% and not as much as 1% as figure 5 shows (Chapter V, First Part, section A) (Mejia *et al.* 2009). However, the same source demonstrates that compared to prior years, the number of Colombians seeking foreign protection has dropped by 30% (Ibid).

E) SOME CONSEQUENCES OF THE INTERNATIONAL MIGRATION

Colombia shows human capital losses, demonstrating that many Colombians with advanced degrees fled the country without coming back (IOM 2010, Guataqui 2006). Very few opportunities exist for highly qualified workers to return. However, the likelihood of return rises when the level of education and the kind of employment shift towards the second tier—a labour force comprising individuals engaged in various occupations that do not require specialised training (Medina & Posso, 2009, as cited in IOM 2010, p. 14).

F) BARRIERS TO INTERNATIONAL MIGRATION

The financial costs of migration are exceptionally high, including intermediaries, legal documents for travel arrangements and visas. For the Colombian case, when travelling to Spain, it is estimated that these costs are equivalent to 1 year, eight months and three days of Colombian GDP per capita (UNDP, 2009).

The Ministry of Foreign Affairs of Colombia and IOM (2005) have stated that asymmetries and incomplete information are essential barriers to accessing other countries.

The same source stated that 21% of the Colombian returnees experienced strong cultural and social limitations in the destination society, mainly related to language barriers and the low educational level of migrants.

More than half of the returnees had no other interaction other than casual or work relations with citizens of the destination country, making the integration very difficult.

Another critical barrier concerns legal aspects. At least one out of four returnees migrated without all the necessary legal documents to the destination country. Around 64% of the returnees did not have access to financial services (debit accounts and credit cards) due to their informal permanency (Ministry of Foreign Affairs of Colombia and IOM 2005).

SECOND PART: INTERNAL FLOWS

A) CHARACTERISTICS OF THE MOBILITY OF THE POPULATION

The Colombian population is characterised by high geographical mobility: by 1964, more than a third of the Colombian rural residents younger than 40 who lived there in 1951 had departed. Qualitatively, gender results indicate that urban immigration was strongly biased toward women (Guataqui 2009).

The ability of "pull variables" to explain the probability of rural-urban migration more effectively than "push factors" has empirical evidence. In contrast to increased rural supply of labour and rural violence, which tend to enhance the probability of rural-urban migration, greater rural earnings and opportunities to education in rural regions tend to diminish it (Schultz 1971 as cited in Guataqui 2009 p. 49).

Continuous flows of internal migration geographically distributed the whole process of population growth. A population's spatial movement can take many distinct forms. Migration from rural to urban areas is one of these manifestations. The urban population climbed from 31% in 1938 to about 69% in 1993. The majority of this progression took place in the 50s and 60s, with the share of the urban population growing to 52% in 1964 from 39% in 1951 (Florez as cited in Guataqui 2009, p. 77), the year when the urban population in Colombia first surpassed the rural one (Posada *et al*., 1993, cited in Guataqui 2009 p. 77).

However, according to Guatiqui (2009), the distribution of the rural-urban population has changed, but this is not the sole sign of population movement. The analysis of the official population censuses may be used to demonstrate how mobile the population is. The following timeline shows the precise development of population migration in Colombia:

i)   Internal migration in Colombia is associated with a uniform spatial dispersion of migrants (migrants do not cluster in a single major urban centre as in the other Latin American nations) (Ortiz, 1957; Jefferson, 1939; Schoultz 1972 as cited in Guataqui 2009, p. 77).

ii)   The rate of rural-to-urban migration was 1.2% between 1938 and 1951, rising to 3.3% between 1964 and 1973 (Galvis, 2002).

iii)   14% of Colombians came from a different region than where they were residing when the 1951 National Census was taken. Regarding the 1964 National Census, this proportion was 18.1% (Bernal and Lopez 1970 as cited in Guataqui 2009 p. 77).

iv)   Data from the 1964 National Population Census point to greater mobility. 6.3 million people, or almost 36% of the 17.5 million people in the country in 1963, could be categorised as migrants. (Martine 1975, as cited in Guataqui, 2009 p. 78).

v)   By 1964, more than one-third of Colombia's rural residents under 40 years old in 1951 had departed (Schultz 1971 as cited in Guataqui, 2009 p. 78).

vi)   In 1973, 22% of Colombians could be considered permanent migrants, which suggests a decline in internal migration flows compared to 36% in the 1963 Census of National Population (Fields 1979 as cited in Guataqui 2009 p. 78).

vii)   In the 1993 Census of National Population, 40% of all Colombians lived in a region other than the one they were born, while 15% of all inhabitants were "fresh migrants" (individuals who had been residing at their present address for less than six years) (Mesclier et al. 1999 as cited in Guataqui 2009 p. 78).

viii)   Every Colombian citizen will experience internal migration at least once over their lifetime, based on particular circumstances of the 1993 National Population Census. In comparison to nations with significant population mobility, such as the United Kingdom, Canada, Australia, and New Zealand, this probability of migration might be categorised as middle-upper (Martinez 2001 as cited in Guataqui 2009, p. 78).

B) THE PROFILE OF MIGRANTS

Some characteristics of migrants strongly depend on the location they come from. While low-skilled labourers mostly come from rural regions, trained, skilled migrants typically arrive from the better social strata in intermediate cities (Cardona and Simmons as cited in Guataqui 2009 p. 78).

6.3 million people, or almost 36% of the 17.5 million Colombians in 1963, could be categorised as migrants. This percentage was primarily made up of young, unmarried migrants, especially women (women between the ages of 10 and 19 searching for jobs as domestic helpers or industrial labourers in cities). Human capital factors account for the majority of the economic adaptation of migrants. Migrant workers exhibit greater rates of labour engagement than non-migrants of the same gender and age. Likewise, higher-educated individuals frequently relocated to the capital city, whilst lesser-educated individuals were more commonly found in other urban regions (Guataqui 2009 p. 50).

In addition, migrants' educational levels tend to be greater than those of the locals in their place of origin and inferior than those of the locals in their final destination (Cardona and Simmons as cited in Guataqui 2009 p. 78). A distinct self-selection pattern is exhibited in migrants' education profiles: the more educated the migrants, the bigger the city they come from (Martine as cited in Guataqui 2009 p. 78).

C) FLOWS OF ORIGIN AND DESTINATION IN COLOMBIA

Fajardo (2004) has asserted that internal migration occurs within five geographical areas, which this author calls 'circuits', identifiable by the main origin of its immigrants.

Each of these circuits contains within themselves: 1. an urban system' tree of cities', consisting of a principal capital, intermediate cities and small regional centres; 2. a large agricultural area; 3. an area of cattle ranches; 4. small landholder areas, and 5. new settlement areas (Ibid).

According to this, Fajardo *op cit.* identifies the six circuits in which migratory cycles occur. They overlap, to some extent, the traditional macro geographical regions of Colombia:

1. Tolima, Boyacá, Cundinamarca, Meta, Casanare, Guaviare, Vichada.   Migration trends are governed by oil exploitation in the last four departments.

2. Cauca, Nariño, Valle, Huila, Quindio, Caqueta and Putumayo. The origin of migration is given by small-holdings of Nariño, Cauca, Huila and Caqueta, Chocó, whose migrants are attracted to infrastructure projects in Putumayo.

3. Caldas, Risaralda, Antioquia, North of Valle, Choco and Cordoba. Following the historical process, most migratory flows come from Cordoba.

4. Magdalena, Atlántico, Bolivar, Sucre, Guajira, Cesar, San Andres, Santander, Norte de Santander and Arauca. Venezuela is included here as a connector axis with the Colombian Caribbean. The expulsion of people from the lands in Cesar's department generates flows to Arauca's petroleum activities and the border with Venezuela or is articulated with the business activities in San Andres (island), Manaure and Maicao.

5. Magdalena Medio and neighbouring regions of Santander, Antioquia, Boyacá, Cundinamarca, Tolima, Bolivar and Sucre. This circuit has no major cities and serves as a migratory intersection for the four primary circuits.

6. Microclimate poppy farmers and micro-producers of coffee. In this circuit, migration flows overlap in the mountain ranges from Nariño to Cesar and are strongly linked to changes in the global market. Here, it is vital to highlight the coincidence that took the fall in international coffee prices and the 'takeoff' of poppy production and its work markets (Ibid).

The main features of migratory flows in Colombia were also analysed by Marmora (1979). According to the author, Colombia, like most other nations in Latin America, has seen four distinct migration flows: rural-rural, rural-intermediate cities, migration to big urban cities, and large-scale seasonal movement in addition to emigration. The dynamics of the first three flows in the Colombian scenario indicate a significant shift in the country's population distribution. Between 1951 and 1973, the population of cities with more than 500000 residents increased at a pace of 782% (DANE, 1977 as cited in Guataqui 2009 p. 52).

D) RURAL, URBAN AND SEASONAL FLOWS

According to Ribe (1981), the dominant pattern of internal migration in Colombia has been the flow from rural areas or small urban centres to the bigger cities, although rural-rural flows are also considerable.

Since 1940, a consistent internal migratory movement has existed from the departments of Caldas, Boyaca, Cundinamarca, Huila, Tolima, Quindio, Risaralda, Magdalena, Santander, Cauca, Narino, and Choco. The destination has been to the three main urban cities—Bogota, Medellin (Antioquia) and Cali (Valle)—and, starting in the 1950s, Meta and Cesar's departments. Afterwards, due to Norte de Santander's and Guajira's closeness to Venezuela, they rose to prominence. Both rural-urban and rural-rural migration take place within these migration movements. The urban expansion over the previous few decades is vividly represented by rural-urban migration (Marmora 1979, p. 443).

According to Marmora (1979), no Colombian city had more than 500,000 residents in 1938. Bogota had 639,000 inhabitants by 1951, Cali and Medellin each had over 500,000 by 1964, and Barranquilla reached this number in 1973. Migration was primarily responsible for this urban expansion.

There has also been a sizable degree of migration from rural to rural. It is essential to note the seasonal shifts directly related to the agricultural harvesting seasons. With the exception of the sugar harvest, which needs around 25,000 employees year-round, the other crops have a wide range of labour requirements. For instance, between 260,000 and 300,000 men are needed to harvest cotton along the Atlantic coast in December and January, while 600,000 people are needed to gather coffee from October to December, and 385,000 people are needed to sow it from April to June (Kalmanovitz, 1978 as cited in Marmora 1979).

However, Adams (1969 as cited in Guataqui 2009 p. 45) focuses on how rural migration and development are related and criticises the traditional approach that economics has taken to understanding migration in terms of return-to-labour differentials. Adams paints an astonishing depiction of Colombia's population change: Between 1951 and 1964, the population growth rate grew from 2.2% to 3.2%. In 1964, there were 47 cities with a population of 20,000 or more, up from 16 in 1938. In the same time frame, the proportion of people residing in these urban centres increased from 13 to 36%. Between 1951 and 1964, 2.7 million individuals transitioned from country to urban regions, accounting for 36% of people living in rural areas in 1951. Urbanisation was accompanied by an extension of the agricultural boundaries: between 1951 and 1964, 400,000 people relocated into new colonisation regions.

The same author cites a number of factors as major contributors to this trend, including violence in rural areas, a shortage of social possibilities, increasing rates of rural population, and land monopolisation. Adams compared the attributes of rural migrants to the general characteristics identified in other migration studies using information from 700 interviews that were explicitly focused on the migratory aspects of rural families. His research revealed a connection between education level and an inclination to move to metropolitan regions (Adams 1969, cited in Guataqui 2009 p. 46).

In Adams's study, the likelihood of leaving rural regions did not significantly depend on the land property. However, Rodriguez (2004) and Fajardo (2004) refuted Adams's assumption (Section i of part G in Internal Flows in Chapter V). Adams determined that the average age of migrants when they first begin to immigrate was 30 years. The author assumed that the majority of Colombia's rural-to-urban migration movements in the 1960s had a strong individual character. During the severe rural violence of the early 1950s, family out-migration was, in Adams view, a more pervasive phenomenon in Colombia (Ibid).

Schultz (1971) analyses the migration rates for the 1951-1964 period. The author confirms: i) that migration is age selective, ii) that while urban in-migration is rather selective of women, rural out-migration is not particularly sex-selective, and iii) that big cities gained their population mainly from migration.

E) DRIVERS OF INTERNAL MIGRATION IN COLOMBIA

The literature on Colombia's internal migration is vastly focused on forced displacement by the conflict as the leading cause of migration, unlike the literature on international migration of Colombians, which finds that the main drivers are economic and labour.

Regarding other causes, such as economic migration, Guatiqui (2009) concludes that most economic research on internal migration in Colombia gives an incomplete or skewed impression of the overall economic environment that influences migratory activities. The argument that for Colombian migratory patterns, violence is a crucial historical constant could be rebutted by pointing out that some internal migration flows occurred during relatively times of peace in Colombian history, such as the 1970s. However, given the sufficient empirical and conceptual evidence for this claim, the Colombian situation defies the generalizability of economic issues alone as an explanation (Guataqui, 2009, p. 83). However, Guataqui's conclusion should be considered in light of what Fajardo (2004) (section C of Internal Flows in Chapter V, and Section D of the Internal Flows in Chapter V) has shown in terms of other important factors (such as the cities as pull factors attracting population).

Guatiqui (2009), Ibañez & Velez (2003) and Marmora (1979), among many others, agree that the main driver of the internal migratory movement in Colombia is the armed conflict. Although their conclusions are significant and well documented, for this research, the available information on other drivers aside from violence and conflict in Colombia will be analysed in the following sections, followed by a review of the conflict and forced displacement drivers.

i.   Labour and economic migration

Galvis (2002, cited in Guataqui 2009, p. 67) analyses internal migration from an economic perspective, offering empirical support by comparing various estimates of the rural-urban migration rate and concluding that it was 1.2% between 1938 and 1951 and climbed to 3.3% for the years 1964 to 1973. According to quantitative estimates of the factors influencing migration between different Colombian areas, some characteristics of possible destinations significantly impact internal movement (i.e. on migration decisions, per capita income at the destinations turned out to be more significant than per capita income at the origins). Although theoretically expected, the peculiar violent circumstances in some Colombian locations may explain the absence of statistical significance of some economic factors. This acknowledges the possibility that unstable security situations can override economic trends in migratory decisions (Guataqui 2009, p. 67).

Likewise, Florez (2003, cited in Guataqui 2009, p. 73) examines forced relocation and internal migration from the economic perspective of how immigrants affect urban labour markets. The author discovers that the rate of growing population first augmented from 1.8% at the start of the 20th century to 3% in the 60s before falling back to 1.8% at the end of the 90s. Colombia saw a significant urbanisation development that coincided with the demographic shift: the percentage of the population who lived in urban centres rose from 31% in 1938 to roughly 69% in 1993.

Numerous studies concur that novel spatial movements without a clear change in residency are occurring, such as circular migration, and whereas rural migration flows have been dropping since the 1970s, urban-urban mobility has been growing (Florez, 2000; Goueset, 1998, Florez p. 3 as cited in Guataqui 2009, p. 73).

The impact of violence on internal migration is acknowledged by Florez, particularly during two historical periods. The first occurred between 1938 and 1951, when at least one million individuals moved from rural regions to urban ones as a result of political unrest there. The second is the growing wave of forcible relocation that began to hit Colombia in the middle of the 1990s and has since displaced, according to Florez, two million people. However, Guataqui (2009) disputes this claim historically, noting that both historical periods that mostly saw rural-urban voluntary migration and periods that saw involuntary migration or forced displacement had these particular labour market effects on a regular basis (Bernal & Lopez, Martine as cited in Guataqui 2009, p. 73).

Ribe (1981) demonstrated that in Colombia, migrants economically benefit from their migration since they are in better or similar conditions than the native population under the same age, sex and education level in both the origin and destination places. Ribe concludes that internal migrants in Colombia are, on average, less poor than natives.

Ribe *op. cit.* also considers the education factor on migration flows in Colombia and states that the probability of migration increases with higher education levels. On average, migrants are better educated than non-migrants in their places of origin.

Bernal and Lopez (1970, cited in Guataqui 2009) found that the growth in unemployment and underemployment rates and the growth in hovels in the city suggest that migration is more than just a rational decision. There are clearly two migration dynamics: economic migration (of educated/qualified individuals) and reactionary migration (due to poverty and political violence) (Guataqui 2009, p. 88).

In the same way, Schultz (1971) argues that the leading cause of migration in Colombia is deliberate behaviour. People often move because they have reason to think that doing so would better their situation and that of their family. According to this perspective, the significant interregional population transfers brought on by development are mostly a result of a dynamic response to labour market imbalances at the regional level. Thus, a high migration rate reveals significant interregional disparities in the pace of population increase, economic activity expansion, or both.

F) BARRIERS TO INTERNAL MIGRATION

Shultz (1971) recognised several elements that influence a person's decision to migrate, including the cost of moving, the relative educational prospects, and geographical variations in the severity of violence.

In particular, Shultz conjectures that the cost of migrating is reflected in the migration distance. The distance between the town of origin and the most accessible major city is considered to impact the migration rate since the urban centre is where most migration is concentrated.

Shultz (1971) mentions that migration is obviously age-selective and is the movement of individuals rather than 'representative men', and its rates vary from age, sex, and level of education. Young people, who are still relatively unburdened and can anticipate many fulfilling years in a new location, better-educated people, who are able to weigh the advantages and risks of migration, and women, who frequently stand to benefit the most from abandoning traditional rural life will differ in their propensity to migrate (Shoultz 1971, p. 158).

G) FORCED DISPLACEMENT DUE TO VIOLENCE

"Colombia is by essence a country of displaced people: ... for more than a century, families have seen loved ones killed in political conflict and have fled under threat of death" Feeding the Tiger, from the U. S. Committee for Refugees (1993) p.5

Many studies emphasise the persistence of violence throughout Colombian history as a decisive factor influencing internal migration: Florez (2003), Fagen et al. (2003), Fajardo (2001), Casasfranco (2001), Women's Commission for Refugee Women and Children (1999,2002), Segura-Escobar (2000), Pecaut (2000), Colombian Bishop's Conference (2000), Meertens and Segura-Escobar (1996), U. S. Committee for Refugees (1993), Cardona (1978), and Guzman et al. (1962). However, the historical element in these studies is generally specialised in trying to unravel the origins and causes of violence (how far back it can be traced) (Guataqui 2009 p. 81).

Guataqui (2009) has sufficiently documented that despite being comprehensive and thorough, the literature does not adequately clarify or attempt to dissect the complicated subject of forced displacement in Colombia (Guataqui op cit. p.61).

Guataqui (2009) asserts that the impact of Colombia's political violence on migration suggests that it had a significant rural impact. According to Schultz, the result of political violence on forced displacement is one fatality per year, which corresponds to the emigration of about 18 individuals from the nearby rural region (Guataqui 2009 p. 48).

Forced migration is a war tactic used by armed organisations in Colombia to fortify territorial strongholds, reduce civilian support for the adversary, grab important properties, and easily produce and transport illegal drugs. 3.5 million people in Colombia are being impacted by forced displacement. This demonstrates the severity of the humanitarian catastrophe the nation is dealing with and is equal to 7.8% of Colombia's population, making it the second worst in the world after Sudan. The issue affects the entire country of Colombia, and roughly 90% of its municipalities either get or lose inhabitants as a result. In contrast to other nations, Colombia's forced migration is primarily internal. The primary culprits are illegal armed organisations. Migration does not produce large-scale refugee flows but rather occurs on an individual basis, and the displaced population is distributed around the territory rather than concentrated in refugee camps. These qualities present particular difficulties in developing state policies that can successfully lessen the effects of displacement (Ibanez, 2009, p.1).

Ibanez perspective is shared by Guataqui (2009 p. 40), for whom forced relocation has typically meant internal population migrations within the Colombian border's confines.   It has some similarities to internal migration in that both include a distinct social transition and are important (i.e., have demographic repercussions) as well as a shift in status or link to the physical environment as well as the social one (Jackson, 1986, p. 4 as cited in Guataqui 2009).

The importance of violence as a "push" factor for internal migration in Colombia was early recognised (Guzman et al., 1962, Guataqui, 2009, p.47). However, this acknowledgement did not result in more thorough investigation (Guataqui 2009).

Some basic estimations of the number of people involved in the process of internal migration by 1961 account for approximately 800,000 who had been forced to migrate due to political violence (Guzman 1968, cited in Guataqui 2009 p.43). The National Office for Rehabilitation and Help estimates that 60,000 displaced individuals had relocated to Bogota City by 1953, which is a more precise and authoritative figure (Guataqui 2009 p.44).

According to Ibanez (2009), the most severe kind of victimisation of citizens is forced displacement, which has reached alarming proportions in Colombia. The displaced population numbered 2,452,152 people (Registry for Displaced Populations - RUPD, 2008). Ibanez (2009) also explains that, according to estimates, 30% of the displaced persons in Colombia are not registered, bringing the actual number of displaced individuals to approximately 3.5 million (i.e. 7.8% of the country's total population).

The displacement trend depicted since 1999, when the RUPD was established, shows a significant rise in forced migration between 1999 and 2002 (a period of intense war in Colombia). The number of displaced

people peaked at around 400,000 in 2002. After 2002, there was a decline in forced migration, although an average of 266,635 people—equivalent to a medium-sized Colombian city—still moved voluntarily per year. Between 2003 and 2007, more than 50% of all the forced migrations between the years 1999 and 2007 took place, even as peace talks with paramilitary organisations advanced and the conflict's severity decreased. This shows that a drop in violence does not always mean an automatic decrease in forced displacement (Ibanez, 2009).

When compared to worldwide indexes, the scope of forced migration is evident. For example, the Internal Displacement Monitoring Centre estimates that 24.5 million people were internally displaced (IDP) worldwide in 2008. Only Sudan has a higher percentage of IDPs than Colombia (where 14.3% of the world's IDPs are found). This ranking holds regardless of the data source. Not only is an enormous number of individuals displaced, but the number has been growing rapidly nationwide. Over 90% of the nationwide municipalities were affected by out-placement (expelled citizens), which increased to 949 municipalities by 2002 (Ibid).

i.   The roots of the conflict and displacement in Colombia

The breadth, development, and possibly even results of the migrant flows discernible in Colombia can all be attributed to violence, particularly political violence, according to some historical data (Guataqui 2009, p. 82). However, the same author also finds another intriguing pattern: migration studies from fields like economics or demography typically do not address the historical significance of Colombian violence on migrant flows.

Guataqui (2009, p. 81) also explains that any interpretation of the migration phenomenon may be considered time- and place-specific. Migration appears to be voluntary (primarily economic) or unintentional (as a response to violence, which is deemed a push factor), subject to the circumstances, the field of study, and the methodology used.

a)   Land distribution and forced displacement

Numerous studies have discovered concrete evidence suggesting that one factor contributing to forced displacement in Colombia is the forcible takeover of land. The land property trends indicate that these are structural factors determining forced migration in Colombia. Empirically, this has been corroborated by examining each displaced household's unique patterns of land ownership (lbanez and Velez, 2003; Kirchhoff and lbanez, 2001; and especially Ibanez and Querubin, 2003). Likewise, on an aggregate level, in provinces where land ownership is more concentrated, forced displacement is more significant (Suarez and Vinha 2003; lbanez; and Querubin, 2003; Fajardo, 2001 as cited in Guataqui 2009, p. 84).
Guataqui (2009) explains that there are several characteristics of households that, concerning the affected population, would indicate a higher chance of being displaced. The fact that compared to other groups, landowners have a four times greater likelihood of leaving their hometown suggests violent methods of appropriation and the consolidation of landed property. PMA (2001, in Guataqui op. cit.), calculates that 4,000,000 hectares of land—roughly 1/3 of Colombia's fertile land—have been lost due to population displacement (Guataqui 2009, p. 69).
Fajardo (2004) asserted that the location of forced displacements in Colombia directly relates to land concentration, control of strategic territories for its resources, prospected facilities for the development of large-scale development projects and/or by its political-military significance.
Violence—usually linked to asymmetrical patterns of structural land concentration and appropriation—appears to explain, to a considerable extent, the migratory flows that Colombia experienced throughout the late nineteenth and early twentieth centuries. This suggests that the reasons for forced displacement are deeply ingrained in the foundation of the Colombian nation-state and are not just temporary (Guataqui 2009, p. 226).

b) Environmental factors, conflict and displacement

Rodriguez (2004) stresses how many studies on the ongoing armed conflict in Colombia conducted by a wide range of specialists focus on social and political concerns but ignore human ecological aspects that explain how the conflict is rooted and sustained. There is much information regarding how and where significant human migration takes place. Displacement is closely related to land hoarding, how control of areas strategically crucial for their abundance of renewable and non-renewable resources is sought, forecasting future benefits from implementing major development projects, or the military and political significance of specific areas in relation to armed conflict. In regions of the nation where the Gini coefficient for land ownership is higher than 0.73 per cent, 78.4% of the displaced people reside. However, while environmental variables are at the heart of the conflict and have traditionally played a role in stoking violence, they are not the root of the problem. Environmental conditions can fuel violence, but violence is always fueled by interactions between environmental and other economic, political, and social elements (Rodriguez, 2004, p.65).

Environmental resources, including water, wood, and non-timber-yielding goods, are involved in the armed conflict. Since insurgent guerrillas were founded more than forty years ago, they have lived in natural forests, where most studies have been carried on. Guerrilla groups have utilised these forests for military purposes. Today, rebels build their fronts in jungles throughout Colombia. These forests serve as a safe haven from which to plan and launch swift attacks against cities, military and police outposts or to cultivate illicit crops. In addition, the difficult-to-access Amazon rainforest region served as the nest where the FARC, the nation's leading guerrilla group, was nurtured and started to spread throughout the rest of the country in the 1980s (Rodriguez, 2004, p.65).

The displacements occur mainly from rural areas, small towns and even some medium-sized cities, such as Ocaña, Barrancabermeja, Segovia, La Gabarra, or Carmen de Bolívar where strategic resources are located (commercial plantations, mineral deposits or strategic geographical positions) (Fajardo, 2004).

VI.   SENSITIVITY OF MIGRATION FLOWS TO CLIMATE CHANGE

A) INTERNATIONAL FLOWS

Chapter I left no doubt that the main drivers of Colombian international migration are economic reasons and labour. Moreover, it is also clear that the main flows come predominantly from the Coffee Region, followed by Valle, Bogotá, and the Atlantic coast. The main destinations are Spain, the United States and Venezuela. There have been at least three waves of migrants to those countries, each with specific characteristics in terms of composition and numbers.

In the interaction between international flows and future climate scenarios, this analysis considers the past migratory experience of the regions and the evidence of the future climate coming from modelling developed by the Institute of Hydrology, Meteorology and Environmental Studies of Colombia - IDEAM for the Colombian Second National Communication to the UNFCCC (IDEAM 2010). The scenarios shown are those that are publicly available.

i.   The Coffee region case

Studies such as Garay & Medina (2003) suggest that the Coffee Region Departments have the highest international migratory experience, explaining this phenomenon in terms of the high economic dependence of this region to the fluctuations of the coffee industry and its international prices.

a) Sensitivity of the coffee region to climate change (Based on IDEAM 2010)

The results of the Colombian Second National Communication to the UNFCCC (IDEAM 2010) show an exceptionally high sensitivity of coffee crops to climate change scenarios of a multimodel assessment[4]. This section is based on its findings.
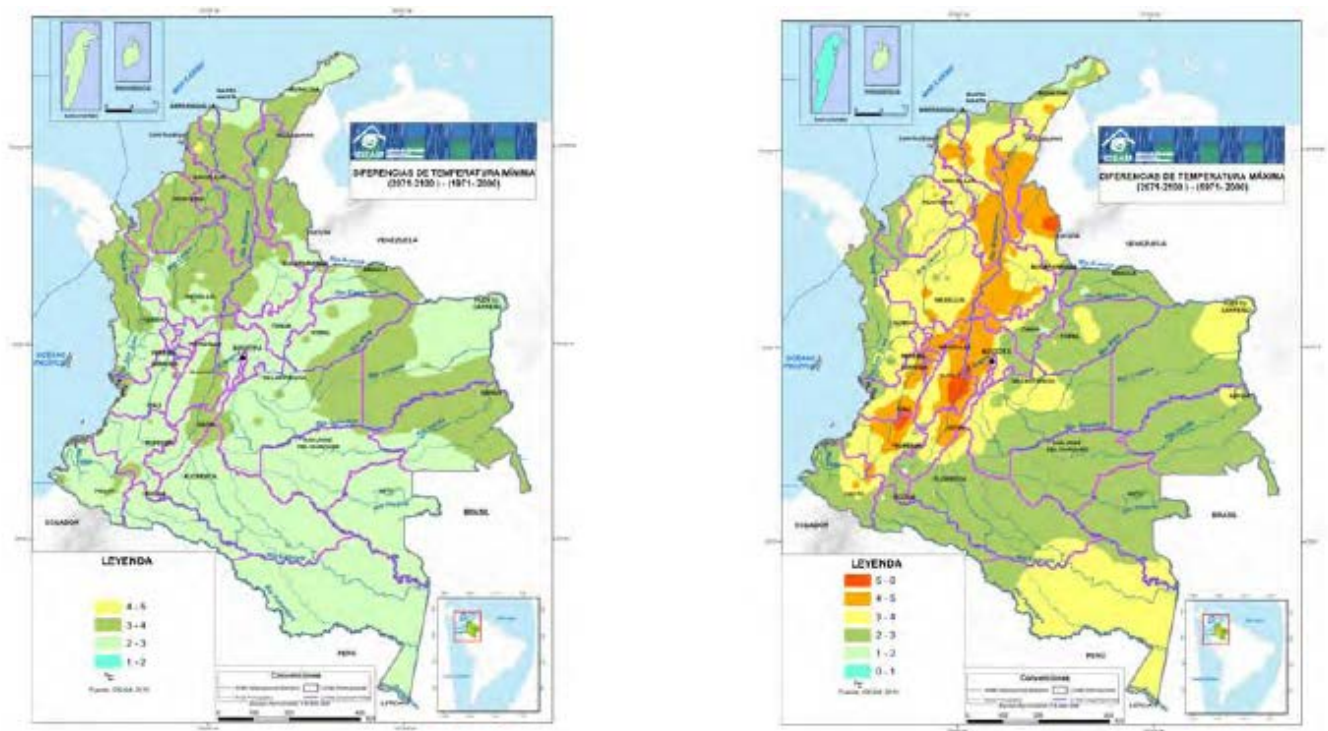
1.   Temperature

Comparing the phase 2011-2040 to the 1971-2000 period, much of the national territory would experience an increase of one Celsius degree in average temperatures. The most significant changes in maximum air temperature would occur in different areas of the departments that surround the coffee region (Tolima, Cauca and Valle del Cauca).

For the period 2071-2100, compared to the 1971-2000 period, models show that the most significant increases in average temperature would happen in the Caribbean and Andean region (where the coffee departments are located), with values ranging between 3°C and 4°C or even higher values (See Map 2).

Map 2: Differences in Celsius degrees in minimum temperature (left) and maximum (right) between the climate of 2071-2100 vs 1971-2000

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[4] Scenario IPCC A1B without sulphates with models Precis (Providing Regional Climates for Impacts Studies, UK) and GSM-MRI (Global Spectral Model - Meteorological Research Institute Japan).

Source: IDEAM 2010

In both cases, the departments located in the coffee region would experience the highest temperature variations (maximum and minimum temperatures).

2.   Precipitation

In comparison to the 1971-2000 period, in the 2011 – 2040 period, the departments that would experience a reduction of precipitation greater or equal to 10% are those included in the coffee region (Caldas, Quindío, Risaralda) and Antioquia, Cauca, Cordoba, Huila, Nariño, Putumayo, Tolima and Valle del Cauca (See Map 3).

For the period 2071-2100, the areas with the most significant reductions in precipitation would be in the departments of Huila, Putumayo, Nariño, Cauca, Tolima, Córdoba, Bolívar and Risaralda (one of the coffee departments) where rainfall would be reduced by 15% with respect to 1971-2000 climatology (See Map 3).

Map 3: Percentage change in precipitation multimodel period of 2011 - 2040 vs. 1971-2000 (left) and 2071-2100 vs. 1971-2000 (right)
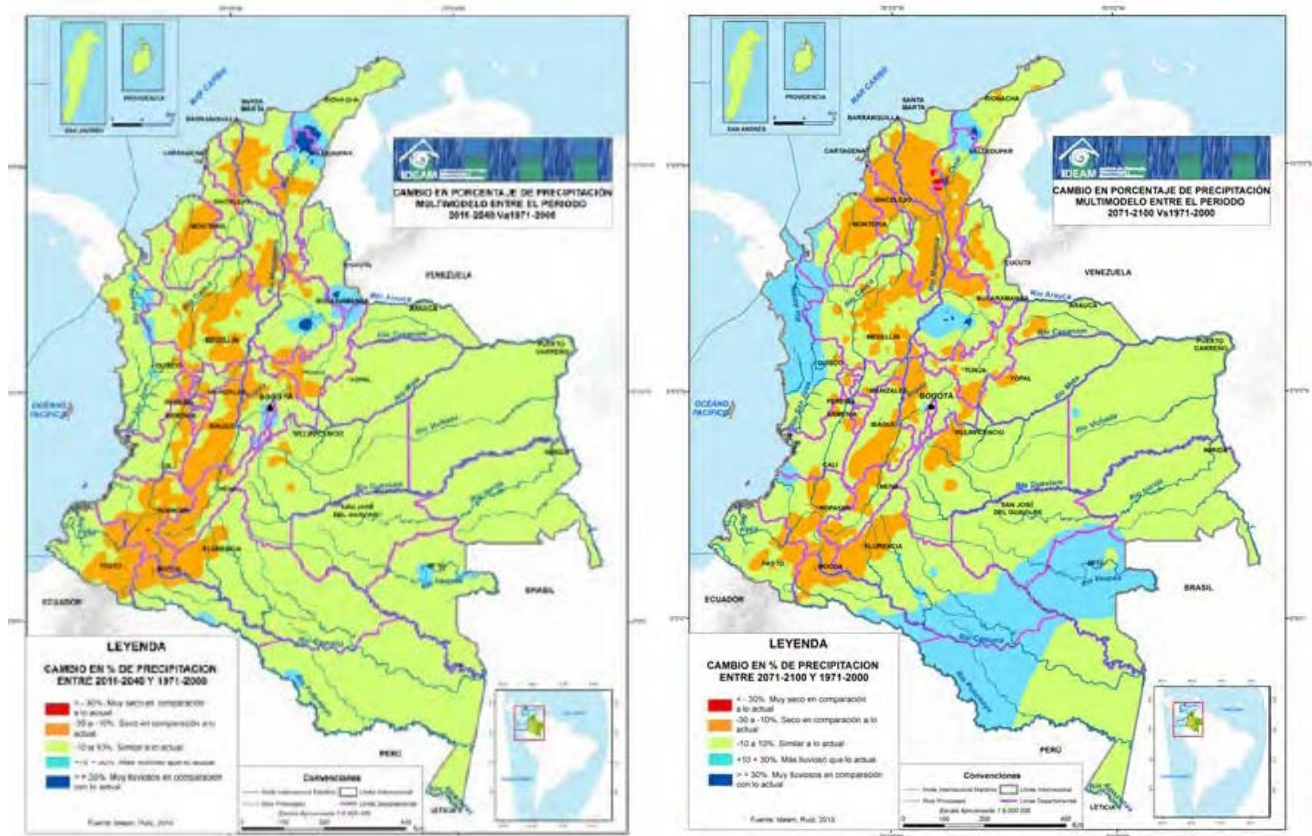
Source: IDEAM 2010

Given the worst-case scenarios (A2, for example), the most significant reductions of rain throughout the XXI century would occur in two of the coffee region departments (Caldas and Risaralda) and in Córdoba, Cauca, Bolívar, Sucre, Valle, Antioquia, and Nariño, where rainfall would be reduced between 20% and 30% in comparison to the rainfall recorded during the period 1971-2000.

If the above conditions of temperature are added to precipitation variations, as well as changes in vegetation, impacts on the characteristics of the hydrology of high mountains are expected, resulting in increased variability and extreme flows[5] in natural hydrological series, which will affect productive sectors that are the support of society (IDEAM 2010), such as the coffee production economy. This may be particularly critical if it is considered that most of Colombia's population lives in the mountains of the Andes (Ibid).

3. Potential impacts and vulnerability to climate change in coffee growing areas (2011-2040)

The departments that would potentially be highly impacted with respect to the total area of semi-permanent and permanent crops in this period are mainly two of the coffee regions (Caldas and Risaralda) and two on the border of the coffee region: Valle del Cauca and Cauca.

However, the potential impacts are different for each vegetal specie and, in the case of coffee, for every variety. IDEAM (2010) has analysed the information for each coffee variety cultivated (Typical, Caturra and Colombia). Potentially very high impacts are associated with the rainfall deficit for the period 2011 to 2040. According to the analysis provided by IDEAM (2010), the largest areas with potentially very high impact would be for the variety Colombia (10%) and high for the variety Caturra (66%). Areas where coffee crops would receive very high (57%) and high (6%) potential impacts would be for the variety Typical.

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[5] Severe maximum hydrological flows and droughts more and more extreme (IDEAM 2010)

It would be expected to have very high (63%) and high (8%) potential impacts on approximately 71% of all the coffee crop areas identified in Colombia for the period 2011 to 2040 (869.000 ha, approx.). Of the total crop cover, the distribution of the very high and high potential impacts by coffee varieties is as follows: Caturra (75%), Typical (63%) and Colombia (71%).

b) Adaptation capacity (Based on IDEAM 2010)

The following map shows the areas of low adaptive capacity (green) and high adaptive capacity (orange to brown). The medium adaptive capacity of the country is coloured in yellow. The Coffee region, as well as other departments in the Andean region, shows a low adaptive capacity (see Map 4):

Map 4: Adaptive capacity in Colombia

Source: IDEAM 2010
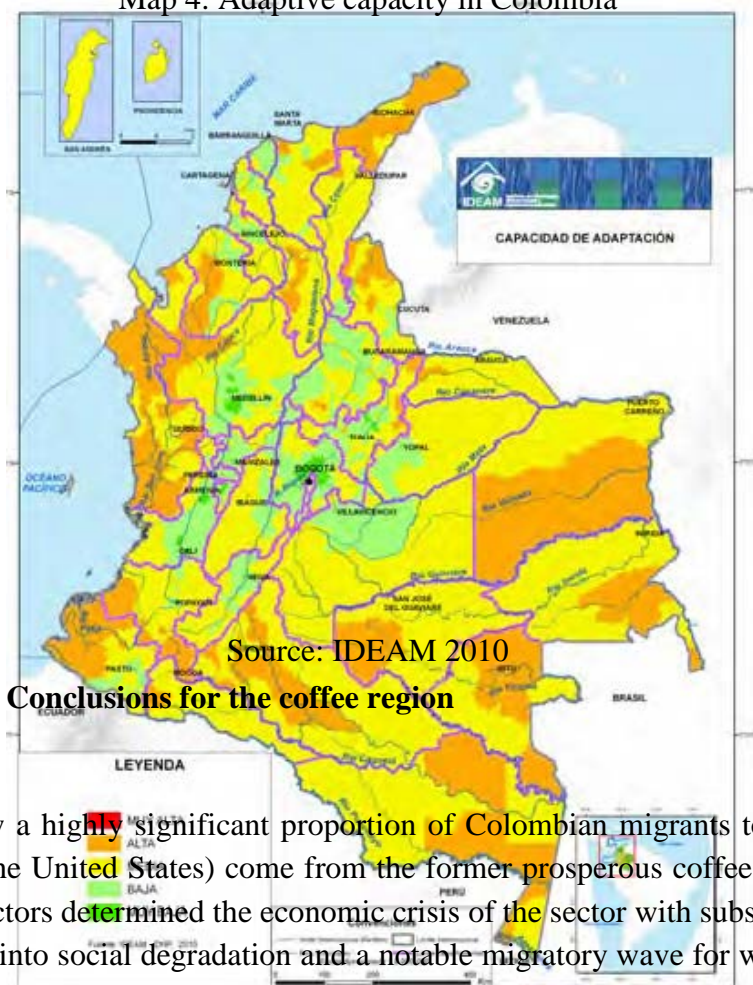
c) Conclusions for the coffee region

It has been explored how a highly significant proportion of Colombian migrants to the main international destinations (Spain and the United States) come from the former prosperous coffee region. It has also been explained how diverse factors determined the economic crisis of the sector with subsequent negative impacts that have been translated into social degradation and a notable migratory wave for which around 10% of the population currently live abroad (Garay & Medina 2007). Although the Colombian GDP is, to date, not as dependent on the coffee economy as decades ago, this sector still generates direct jobs for roughly one million inhabitants.

The analysis of sensitivity found that out of the total Colombian territory in the climate change scenario A1B, the worst conditions of changes in temperature and precipitation will appear in the coffee producer regions - departments. Coffee varieties are highly vulnerable to those possible changes, and approximately 71% of all the coffee crop areas in Colombia can expect very high and high impacts between 2011 and 2040. Moreover, this region has shown a very low adaptive capacity to the impacts of climate change in comparison to other regions of the country (Map 5)

Bearing in mind that a past-coffee crisis has generated a huge flow of migrants from this region, it can be expected that climate change (scenario A1B) can play a very important role in generating another future crisis of the coffee economy by lowering the production, with the consequent social effects that can push the population to migrate.

Although the United States' and Spain's industrial and service sectors (which employ a high amount of Colombians) are relatively robust to climate change, the barriers to international migration exposed above (specifically legal, concerning visas and permits) can make this international flows very difficult for Colombians. Consequently, migrants can choose other different (international and internal) destinations or opt for illegal processes to enter countries.

ii. The Atlantic (Caribbean) coast[6] and the sea level rise

Considering table 1, figure 7, and map 1, it becomes evident that after the coffee region departments, the Atlantic coast departments (Atlántico, Bolivar, Magdalena and La Guajira) have the most significant international migratory intensity and experience after Bogota (the capital city).

According to IDEAM (2010), in the index of environmental sensitivity, the Atlantic coast and the Andean region present the highest sensitivity. That is why it is seminal to consider the potential impacts of the sea level rise. IDEAM (2010) analysed the possible impacts in scenario A1B (one meter of sea level rise in 2100). It is worth mentioning that the Pacific coast shows low environmental sensitivity (See map 5).

Map 5: Environmental sensitivity in Colombia (very high: red, high: orange, medium: yellow, low and very low: green)
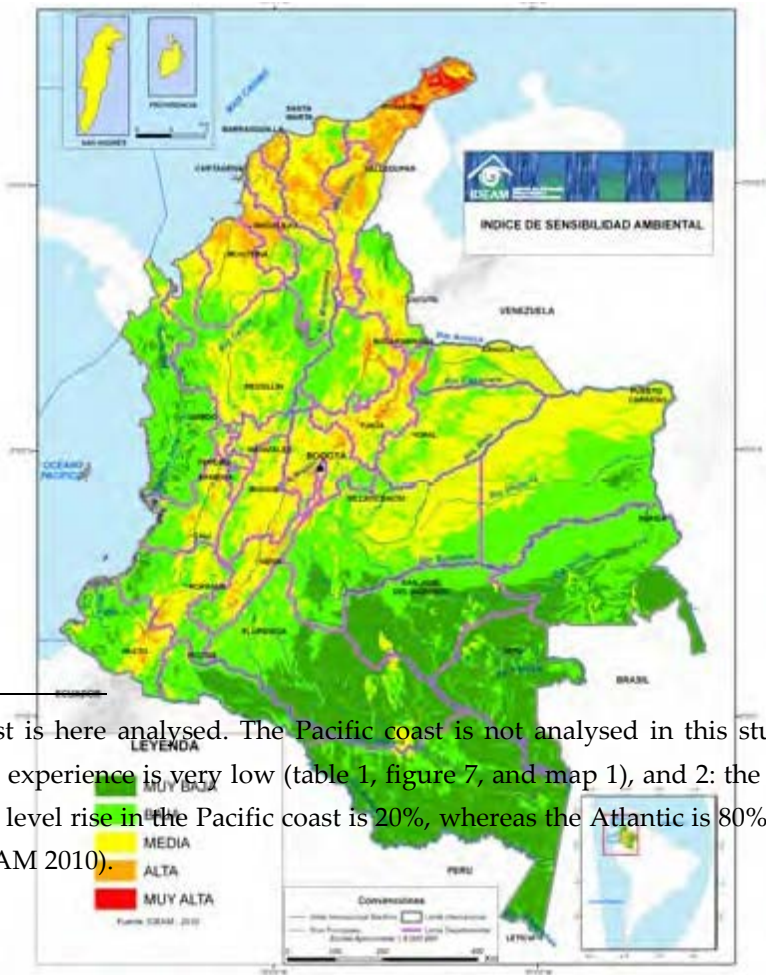
[6]Only the Atlantic coast is here analysed. The Pacific coast is not analysed in this study for two reasons: 1. The international migratory experience is very low (table 1, figure 7, and map 1), and 2: the projected population affected by one meter in the sea level rise in the Pacific coast is 20%, whereas the Atlantic is 80% of the total population in the Colombian coasts (IDEAM 2010).

Source: IDEAM 2010

According to IDEAM (2010), the population located on the Caribbean (Atlantic) coast was 2,103,787 inhabitants in 2000, of which approximately 55% will be exposed to the direct effects of sea flooding. Approximately 90% of the affected population is located in the most populated urban centres and coastal municipalities, such as Cartagena, San Juan de Uraba, Turbo, Ponedera and Puerto Colombia.

In the case of agriculture, 23% of the total cultivated area in the coastal areas is exposed to flooding processes. In the industrial sector, the vulnerability analysis showed that 75.3% (475 ha) is occupied by manufacturing facilities in Barranquilla and 99.7% (877 ha) in Cartagena are highly vulnerable to flooding by sea level rise. Regarding land road infrastructure, 44.8% has high vulnerability (Ibid).

18.5% of the coastline of Providencia and Santa Catalina islands is highly susceptible to coastal erosion and potentially develops the most severe processes, affecting land and beaches with residential and tourist uses. More than 10% of San Andres Island may be flooded (Ibid).

The results of the vulnerability assessment of IDEAM op.cit show that during this century, 107 sites along the Caribbean coast can continue to lose soils due to the effects of erosion, 33% of this loss can be placed in the range from 40 to 70 meters inland, and 12% can be affected beyond the 100 meters. Seventy-five coastal municipalities with a total coverage area of 9440 km2 are currently at risk of flooding from extreme high tides. Moreover, 3.1% of the national population lives at risk of flooding from high tides and runoff (Invemar 2003, cited in IDEAM op.cit).

51% of urban areas belonging to the Caribbean coast would suffer the effects of sea level rise differently. According to demographic projections, it is estimated that the population settled in coastal areas by 2030 will be approximately 9,000,000 inhabitants, of which 4% could be displaced by the effects of flooding (Ibid).

Moreover, the total population affected would be between 1.4 to 1.7 million, equivalent to 2 to 3% of the total population of Colombia. The total GDP affected by rapid sea level rise would be between 0.06% and 0.1% of the total GDP in the coastal departments of Colombia. By 2100 these percentages correspond to 0.4% to 3% (Invemar 2003 cited in IDEAM op.cit).

The coastal and insular areas of Colombia classified as critical in the Caribbean by IDEAM (2010) are Cartagena de Indias, Barranquilla and Santa Marta. Only for Cartagena, IDEAM calculated that 60,705 people are at risk of moderate flooding, and 308,558 are at risk of intense flooding.

a. Conclusions for the Atlantic coast

The Atlantic coast, Colombia's second most important region in terms of international migratory experience, is highly sensitive to a possible sea level rise. 1.4 to 1.7 million inhabitants are at risk of being directly affected, and 360.000 can become displaced due to sea flooding.

The same analysis for the coffee region applies to the Atlantic coast: climate change and sea level rise can play a critical role in generating a future economic crisis, and the subsequent social effects can push the population to migrate. In terms of international migration, the same barriers apply, and as a consequence, migrants can choose other different (international and internal) destinations or opt for illegal processes to enter countries.

B) INTERNAL FLOWS

i.   The Armed Conflict, land distribution and the future climate in Colombia

This section is based on theoretical approaches rather than models or scenarios. Section G of Internal Flows in Chapter V analysed the relationship between displacement, conflict and land distribution. There are uncertainties in analysing the future effects of new policies or laws currently being implemented and looking for better land distribution. However, this study analyses the international literature on the relationship between conflict and climate change that could hold to the Colombian case.

The international literature shows a polarised debate over the role of climate on conflict. For instance, Black (2001), after reviewing several case studies from various parts of the globe, concludes that it is problematic to say that environmental decline should represent the main reason for conflicts and, therefore, migrations. Hence for Black, the connections between migration, conflict, and environmental change have not yet been conclusively established, given that some information on how migration reacts to environmental stress points toward the opposing direction.

Conversely, Warner (2010) demonstrated with empirical data from a 23-case scoping study that environmental impacts are now one of multiple elements causing conflicts and migration connected to quick and gradual environmental change.

This polarised debate demonstrates that in the environment-conflict-migration nexus, each case is specific, and it is impossible to generalise. It will depend on the specific circumstances if migration is a successful adaptive strategy or not and if the environment is indeed the main trigger of migration. Thus, no "formula" could be applied to all the cases in the world.

Recent studies have suggested that upcoming climate-related disruptions might lead to violent conflicts in different parts of the world (Stern 2007, Sachs 2005, Swart 1996 as cited in Raleigh & Kniveton 2012). Rather than temperature, the scientific uncertainty around the forecasts is particularly obvious for the rainfall (Meehl et al., 2007 as cited in Raleigh & Kniveton 2012). Raleigh & Urdal (2007) have also pointed out the issue of uncertainty in both migration studies and climate change but explain that the knowledge of the past must serve as the foundation for the best forecast of the future (see Section C in Chapter IV).

Barnett and Adger (2007, cited in Gleditsch *et al.* 2011) examine a variety of research on the effects of changes in precipitation and temperature, focusing mainly on nations where the primary sector remains the main source of employment for the vast majority of the citizens (like in Colombia). Suppose climate change leads to greater temperatures and less rainfall (as in the IDEAM climate scenarios for Colombia). In that case, droughts will follow, making it harder for people to use the natural resources that support their livelihoods. In that scenario, poverty will be more pervasive, and the likelihood of violence will increase.

Numerous studies have established a connection between hot weather and individual hostility, including violent crime and rioting (Gleditsch et al. 2011). Since there is a causal connection between global warming and violence, Anderson (2001) hypothesises that it may cause an increase in violence. However, the link between armed conflict and climate change, centrally framed by the scarcity theory (Reuveny, 2007; Burke et al., 2009 as cited in Gleditsch et al., 2011) differs from the causal mechanism suggested in these works (personal discomfort), and the type of violence also differs (Gleditsch et al., 2011).

The characterisation of the internal conflict and forced displacement in Colombia, as primarily caused by land concentration and distribution (Fajardo 2004; Cardenas & Rodriguez 2004; Rodriguez 2004; Ibanez & Velez 2003; Ibáñez & Moya 2009 and Ibanez 2009), permits to classify it as the Type III of the Seven Ideal Types of Environment conflict distinguished by Baechler (1998). According to it, the climate change scenarios

produced by IDEAM (2010) for Colombia may determine that climate change will act as a catalyst of the ongoing Colombian conflict (Baechler 1998) and even more if heat can have an immediate effect on violent tendencies (Anderson 2001). Accordingly, a resurgence of the armed conflict in Colombia due to climate change can be expected, but empirical studies are needed to allow better certainty.

ii.   El Niño/La Niña ENSO impacts

By analysing the primary interannual phase of the contemporary climate, the El Niño/Southern Oscillation (ENSO), Hsiang et al. (2011) explicitly link global-scale climatic changes with worldwide patterns of social strife. The authors extend this claim to the contemporary age and empirically examine it using data from 1950 to 2004. Historians suggested that ENSO may have caused worldwide patterns of societal strife in the remote past. Hsiang et al. (2011) demonstrate that in comparison to La Niña years, the probability of new civil wars erupting throughout the Intertropical (equatorial) Zone doubles during El Niño years. This finding, which suggests that ENSO may have contributed to 21 per cent of all civil strife since 1950, is the first to show a direct connection between the stability of contemporary civilisations and the state of the world's climate.

According to IDEAM (2010), between 1950 and 2007, disasters associated with rainfalls increased by 16.1% in Colombia during the months of La Niña, compared to standard conditions, while during El Niño, there was a decrease of 33.5% on average.

Similarly, reports of disasters associated with droughts have increased by 216% during the El Niño periods and a reduction of 99.6% during the La Niña periods. In general, it can be concluded that historically a high percentage of events associated with low rainfall, especially in the Andean, Caribbean and Orinoco regions, are associated with (El Niño), and have impacted agricultural production, livestock, power generation, health and water supply of cities and rural communities in several ways. Obviously, each event is unique, and its impacts have specific characteristics (IDEAM 2010).

Surprisingly, during La Niña years, precipitation increases in these same regions, increasing reports of mass wasting processes, landslides and floods (Ibid). In 2011, according to the National System of Disaster Prevention and Response, due to La Niña, 77% of the damages and losses were found in the Caribbean region, Chocó, Valle and Cauca. Bolivar is the department with the highest number of people affected (16% of the total).

The total of people affected has been 2,488,354 in the entire Colombian territory. Three hundred thirty-one human losses were presented, and 12,565 houses were destroyed and damaged due to landslides. The ten most affected departments are in order: Bolivar, Magdalena, Guajira, Atlántico, Córdoba, Chocó, Sucre, Cesar, Valle and Cauca (see Map 6) (SNPAD, 2011).

Map 6. People affected by floods in Colombia 2010-2011due to La Niña effect
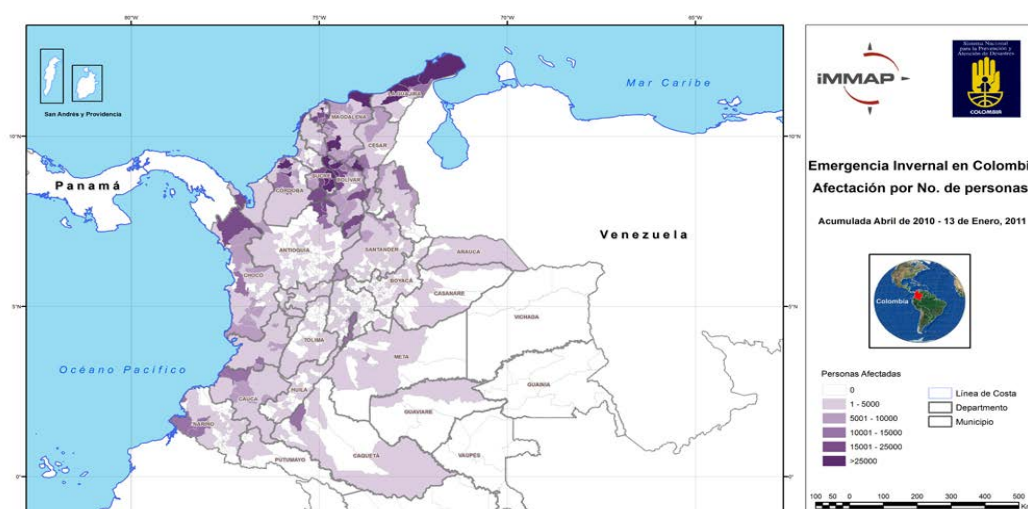
Source: SNPAD 2011

According to this, it becomes evident that the Atlantic coast has been the most affected by the ENSO, and this factor will definitely add to those already analysed in terms of migratory flows (sea level rise and changes in temperature and precipitation) and future flows from this region (internal and international) can be expected.

VII.   CONCLUSIONS

A) MAIN FINDINGS

i.   International flows

This study has identified the main provinces (internal regions) responsible for most international migration. Those regions are in order of importance: 1 Coffee region and Valle (mainly sending migrants to Spain and the US), 2 The Atlantic (Caribbean coast) (mainly sending migrants to the US and Spain) and 3, Northern region (Venezuelan border), which have sent the majority of migrants to Venezuela during the oil boom.

The sensitivity analysis found that out of those three regions (provinces), the coffee region and the Atlantic coast are highly sensitive to future climate change impacts in the A1B scenario produced by the IDEAM (2010) for 2040 and 2100.

To sum it up, both regions have shown the highest migratory experience in the past and a potentially high climate change sensitivity. Other regions, such as Santanderes, have experienced high international migration to Venezuela but do not show high climate sensitivity. Likewise, the Pacific coast can have climate sensitivity (not as high as the Atlantic coast), but it has not shown any significant migratory experience in the past. Such regions have not been considered in the analysis.

The coffee region shows, along with other departments, the lowest adaptive capacities, high impacts of future changes in precipitation and temperature and very high sensitivity of the coffee crops to those changes. Due to the high dependence of this region on the coffee economy and based on the migratory waves this region has experienced in past coffee crises, new flows of migrants from this region can be expected due to climate change.

The index of environmental sensitivity shows that the Atlantic coast (along with the Andean region) presents the highest level of sensitivity and dramatic potential impacts due to the sea level rise. 1.4 to 1.7 million inhabitants are at risk of being directly affected, and 360.000 can become displaced due to sea flooding. This will definitely impact future migratory flows, which are expected to intensify internationally and internally.

The Atlantic coast has been the most affected by the ENSO, and this factor will definitely add to those already analysed in terms of migratory flows (sea level rise and changes in temperature and precipitation) and future (international and domestic) flows from this region can be expected.

The main barrier for future migrants coming from these regions to the usual destinations (the US and Spain) is acquiring legal documents and visas to travel since every time, the migratory regulations in those countries are stricter for Colombians. For instance, the costs of migrating to Spain, estimated in 1 year, eight months and three days of Colombian GDP per capita (2009), are exceptionally high and constitute a significant barrier.

ii.   Internal flows

The processes mentioned in the last section (i, A, VII) will definitely also influence the internal flows (rural-rural, seasonal) and displacement. The circuits analysed in section C of Internal Flows in Chapter V, for which a drop in coffee production would also have implications for internal flows, particularly for the boom of illicit crops (as analysed by Fajardo (2004) in the same section). Therefore, a decrease in coffee production can lead to a cyclical process in which an increase in illegal crops results in more armed conflict, which is associated with more forced displacement.

In the same way, one of the factors that could undermine the levels of resilience and adaptation could be the same conflict (in a complex and cyclical manner), in which the expansion of the agriculture frontier (explained in Section D of the Internal Flows in Chapter V and Section i of part G in Internal Flows in Chapter V), reduce the fitness of the natural ecosystems, thus generating factors of stress that can influence the conflict and forced displacement. The same could apply if current policies of mining expansion are implemented without the appropriate environmental regulation.

It is also expected that climate change will influence the rural-rural migratory flows (currently seasonal movements associated with harvesting periods (Section D of the Internal Flows in Chapter V) due to the expected changes in precipitation and temperature that will affect the crops in different manners (Chapter VI). Theoretically, a resurgence of the armed conflict and displacement in Colombia due to climate change can be expected (section i, B, Chapter VI), but empirical studies are needed.

B) LIMITATIONS

These conclusions are limited by the natural uncertainty of the future climate change scenarios, added and augmented by the known uncertainty of the social and demographic behaviour responding to a crisis. However, as Raleigh & Urdal (2007) have mentioned, the knowledge of the past (violent conflict, demographics, and ecology) must serve as the foundation for the best forecast of the future.

This study has focused only on the available information on the known impacts (e.g. the case of the coffee economy). Due to insufficient information, it has not been possible to analyse other possible cases (such as in all six circuits mentioned by Fajardo 2004 in section C of Internal Flows in Chapter V).

It also needs to be noted that this study did not have a field trip to make triangulation of information with primary resources.

C) CONTRIBUTION OF THIS STUDY AND GAPS TO BE FILLED BY FUTURE STUDIES

The main contribution of this paper is that this constitutes the first approach to this issue (climate change and migrations) in Colombia.

While recognising the information gaps on this matter, this study builds a bridge between climate change scenarios and migratory science for Colombia.

It is recognised by the literature that every case is specific, and generalisation of the climate change-migration nexus is not possible (Section i,B Chapter VI). However, in the case of Colombia, it is suggested that future climate scenarios might affect or reproduce migratory flows, considering the factors and cases explained.

The approach suggested by (IOM 2009b pp. 86, Section B, Chapter II) is demonstrated in this study to be very valid since it allows having an idea of where future flows can occur (based on the past). The methodological

approaches of SLA and NELM explained in section A in the IV Chapter are also demonstrated to help make the analysis and approach the conclusions of this study.

It is necessary to model other climate scenarios (different to IPCC A1B) and compare the sensitivity to have a more detailed and complete analysis.

The need for empirical studies in Colombia to deepen this study is imperative and is the most crucial recommendation this study can suggest.

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