

## **Migration and Environment in Los Ríos, Ecuador (1997-2008)**

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**Abstract.** For decades migratory movements in Ecuador were mainly internal, although starting about half a century ago there were some international flows to the United States, and from the last decade of the 20th century to Europe. To a certain extent, environmental factors have played a role in the formation and features of migratory flows in the past, both internal and international. We have centered our attention in the 1997-1998 El Niño climatic event, the strongest ever recorded. From both the findings of the literary review and field research, we can conclude that this event affected the migratory patterns of large regions of Ecuador forcing the change of the former internal, temporary or pendular migratory movements of the inhabitants of these regions as a normal way to face the economic effects of the damage caused by previous El Niño events, into new international movements, mainly to Spain and other EU countries.

**Keywords:** *Ecuador, El Niño Southern Oscillation, International Migration, Floods*

### **The new Ecuadorean massive migratory current**

Ecuador is located in western South America, bordering the Pacific Ocean at the Equator, between Colombia, Brazil and Peru. The country is usually divided by geographers into three main natural regions (Dalmasso & Fillon 1972): the coastal plain (*Costa*), the inter-Andean central highlands (*Sierra*), and the flat to rolling eastern Amazonic jungle (*Oriente*). Each of these natural regions present different environmental features: climate, vegetation, potential agriculture, as well as the influence of the history of human presence there. But these three regions can also be differentiated because of their past and present patterns of population and migratory behavior.

In fact, the weight of history can be easily noticed once we analyze the composition and trends of population, even in the most recent times. First of all, the Andean Mountains (*Sierra*), which is the most anciently populated zone of the country, at least from the times of the Incan Empire and beyond, holds the greatest

part of the Ecuadorean population even today. The majority and the most important Ecuadorean provinces in terms of population are in this area, with the largest of them being the province of Pichincha that has 17.94% of the total population of the country, in which Quito - the capital city - is situated (Pedone 2003). This region received almost all the currents of internal immigration until the middle of 19<sup>th</sup> century. Today however, internal migrants are increasingly moving to other regions of Ecuador like the Costa (the lesser part) and especially the Oriente, and to foreign countries (the metropolitan area of Quito being an exception to this general pattern because of its political functions) (Álvarez Velasco 2007).

The Pacific Coastal Low Lands (*Costa*), was mainly a marginal area of the former *Audiencia* of Quito - the colonial precedent of today's Ecuador - for ages, with the only exception being the province of Guayas, where the main sea port of the country, Guayaquil, was located. The situation changed abruptly after half a century of independence of Ecuador, after which the Costa increasingly became the destination for internal migration, especially during the last third of 19<sup>th</sup> and all through the 20<sup>th</sup> century. In fact, this region has showed the highest demographic growth rates of the whole country from 1900 to about 1990, because of the colonization of former tropical forests, the expansion of intensive agriculture for export (especially bananas) and the sustained economic growth of the city of Guayaquil, that strengthen its traditional importance as the main seaport of Ecuador. During this period, Guayaquil took over the capital city of Quito as the most populated city of the country: one quarter (25.81%) of the population of Ecuador resides today in Guayas, the department whose head is Guayaquil. The city's trade functions have not been replaced so far by any other port of the country, so the shift of the economic balance of the country to newly developing areas such as Amazonia in the aftermath of the oil boom has not displaced Guayaquil from its prime position as the commercial and financial capital of Ecuador. Nonetheless, the competence of the new economic developing regions of the country has a direct effect on the last migratory currents in the Costa. This region, especially Guayaquil, is both receiving some internal immigration from the Sierra and rural areas within the Costa itself, and being utilized as a point of departure for migrants on their way to Oriente and to Europe.

Finally, the Amazonian area (*Oriente*) is still a very sparsely populated region. While it occupies about 45% of the total surface of Ecuador, only 4% of

Ecuador's population lived there according to 2001 census. Nonetheless, it has experienced the highest rates of demographic growth in the last two decades. Furthermore, it has suffered a strong process of occupation because of its oil wells. This is today the most demographically dynamic area of the country, as its migratory balance is clearly positive - it receives more immigrants than the few emigrants it is sending outside.

According to Camacho (2004), the periods of more internal mobility within Ecuador can be linked without hesitation to the main periods of economic development: the growth of cocoa (1860-1950) and banana plantations (1948-1965) on the coast; and the "oil revolution" in the Oriente (1972-1995).

However, it is not internal, but international migration that define most accurately the current demographic dynamic and behaviour in Ecuador. Along with a very high natural population growth, the Ecuadorean population increased 12.8% from 1991 to 2001, one of the most important features of the demography of the country in the 1990s was the emergence of a significant emigration current abroad, mainly directed to European Union countries.

This does not mean that Ecuadoreans did not emigrate abroad before, even though most of the migrations at that time were primarily internal (Álvarez Velasco, 2007). In fact, at least from the early 1950s there is evidence of some persistent out-migration networks in Ecuador. Moreover, historically, the United States of America was the "natural" destination of Ecuadorean emigrants because of, among other reasons, (a) the geographical proximity; and (b) the widespread belief in the possibilities of the "American dream" among large social strata. Even until 2006, this country had the largest numbers of Ecuadorean immigrants living there. This preference of Ecuadoreans to migrate to the USA rather than to other destinations prevailed until 1998, although the flows were decreasing annually because of the strengthening of measures to control immigration to the USA. According to Goycochea and Ramírez Gallegos (2002: 36), the pioneering regions that first started the migratory flows to the USA were the southern provinces of Azuay and Cañar (Jokisch 2002: 23). Even today, the population of these two provinces shows a clear preference for emigrating to the USA rather than to Europe, in contrast to the rest of the country, because of the persistence of traditional, deeply rooted social networks.

A clear breaking point in the migratory behavior of Ecuadoreans occurred in 1998. Suddenly migration to Europe began, starting migratory flows previously

unknown in the country. Between 1998 and 2001, when migratory flows from Ecuador to Europe reached their peak (Aierdi et al. 2008), about 350,000 migrants had officially departed the country, even though some estimates increase this amount and roughly calculate up to 2 million citizens of Ecuador living abroad by 2002. In the first half of 1999 alone, for instance, 172,320 Ecuadoreans moved to Spain. Two indicators help us to understand the tremendous impact of these migratory flows in Ecuador: on the one hand, the emergence of a new kind of "enterprise", usually belonging to the "informal economy", to provide services to future emigrants: *chulqueros* or *prestamistas* (loaners) to support the cost of the travel, and *coyotes* (gangs that helped illegal immigrants crossing the borders). On the other hand, the Ecuadorean government had to implement for the first time a consulate service to look after their citizens living abroad: the *Dirección General de Ecuatorianos en el Exterior* (2005). The enforcement of new rules to enter Spain and the whole EU Schengen area with a newly implemented tourist visa in 2002, along with the changes in the immigration policy of the USA that made the procedure to grant visas to Latin Americans more difficult (Ricaurte 2007), slowed but did not stop the flows.

The intensity and quick development and growth of Ecuadorean migration to Europe in this period astonished politicians and public opinion in both departure and arrival countries, and thus created huge interest among social scientists specialized in the study of migration. In fact, the debate on the causes of this unexpected and quick growth, which has sometimes been referred to as a veritable "stampede" (Ramírez Gallegos and Ramírez 2005), has usually focused on "traditional" explanations such as the economy. In 1998 the financial system of Ecuador collapsed, pulling down the rest of the economy also. A second reason given is the importance of chain migration system (García-Calvo Rosell 2006). Three new main destinations abroad were clearly preferred: in order of quantitative relevance, Spain, Italy and the United Kingdom. Spain is chosen in most of the cases because of language, similarity of culture and identity. The change of the geographical patterns of Ecuadorean emigration abroad also affects the distribution of preferential regions of origin. Along with the two traditional provinces of origin mentioned above, other provinces in both the Sierra and the Coast joined the group of areas with high emigration rates: between 1998 and 2002, Azuay, Cañar, Loja, Manabí, Los Ríos, Guayas and Pichincha had the highest levels of outgoing emigration to other countries (De la Veg, 2006: 175). In almost all

the cases, with the surprising exceptions of Guayas and Pichincha - where the two most populated cities of Ecuador are located - they are usually provinces whose economy is mainly based upon agriculture, and whose poverty levels are extremely high, even for the average standards of the whole country: between 78.4 and 86.5% (according to UNDP data: *Informe sobre Desarrollo Humano* 1999: 146-152).

## **Methodology**

This article is based upon the research carried out during 2007 and 2008 within the frames of Environmental Changes and Forced Migration Scenarios (EACH-FOR) research project<sup>1</sup>, to study the links between environmental changes and migration. The fieldwork consisted of several interviews using the EACH-FOR survey model<sup>2</sup> with Ecuadorean migrants in Spain, (53) and non-migrants (16) in the province of Los Ríos, Ecuador, along with expert interviews with Ecuadorean politicians, functionaries and NGO officials. Historical documentation and statistical sources, when available, were also used.

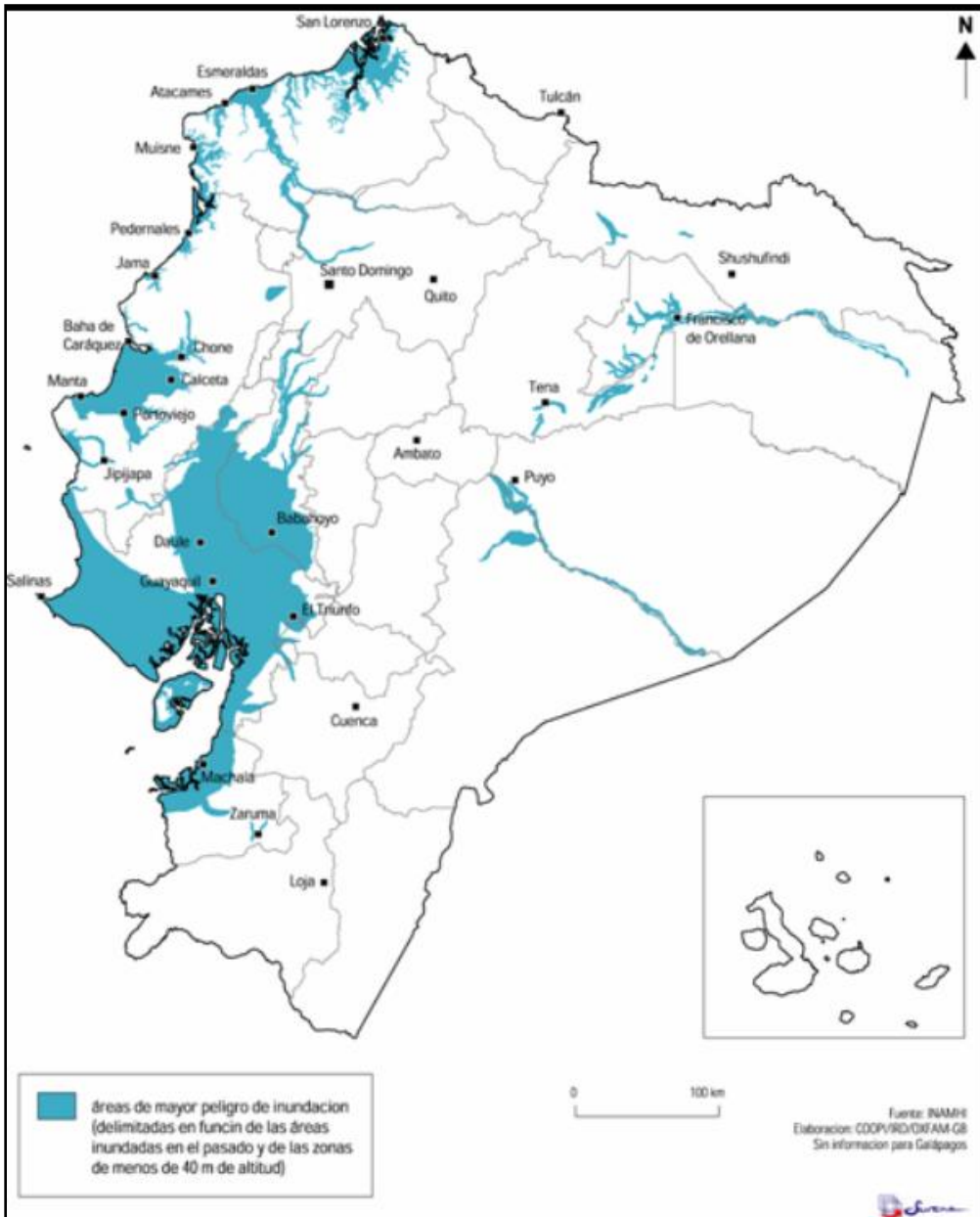
In Spain, the areas selected to conduct the surveys were Catalonia and the Upper Ebro Valley (Saragossa, Navarre, La Rioja and Álava), because it is a focus that have attracted Ecuadorean workers for services and agriculture. Fieldwork in Ecuador was centered on a very specific province, Los Ríos, located in the *Costa*. This province is located in the Guayas river basin, very close to its mouth. The name of the province comes from its principal geographical feature, as it occupies an area drained by a dense web of rivers, all of them tributaries of the Guayas. It was once covered by a compact rainforest, but today only a few small areas of it remain. In the place where the rainforest used to be, today there is a succession of plantations and farms. Agriculture is the main source of income for the province's economy (cocoa, coffee, rice and bananas). The province is located in the middle of a huge, low plain, so the capacity of the land to drain the excess of water is extremely low, especially in times when the flows are abnormally high. The risk of floods is the main environmental problem that affects this province (Map 1).

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1 With the financial support of the European Commission's Sixth Framework Programme (contract No.: 044468).

2 Both methodological background and model of interviews, available at <http://www.each-for.eu>

**Map 1: Flood risk in Ecuador.**



Source: Peña Herrera (2008)

The area highlighted in blue represent those whose risk of flood is considered high, according to the recurrence of past episodes of floods. The southern part of Los Ríos province is covered by this risk.

## **Ecuadorean immigrants in Spain: How did environmental problems affect migration?**

If we only take into account the sole results of the survey on Ecuadorean immigrants in Spain, we would probably deduce that environment has not played a major role in the latest migratory movements from Ecuador to Europe. In fact, only six people in the surveys said that the problems of the environment affected their decision to move from the place they lived in. Even in these cases however, when the same people were asked other questions related to environmental matters, they stated that the environment did not concern them

Perhaps one of the reasons for this can be found in the process of data collection. It seems that some parts of the survey were misunderstood by interviewees, especially regarding concepts related to the definition of “environment” and “environmental problems.” Notably, a very similar kind of problem emerged in previous studies, such as the one developed by Goycochea and Ramírez (2002: 37): when they asked a Ecuadorean that had not migrated yet about whether environmental factors would influence their decision to migrate, the answer was: "I only know Europe from the photos, it's a nice place, with beautiful scenery (..) It's like a paradise". It seemed that the interviewee was interpreting environment to mean landscape. And thus, from this point of view, it was not rational for him to contend that the mere beauty of the countryside could be reason enough to force people to cross an ocean to settle in a foreign country so far away from home.

When interviewees are directly asked about their reasons for migrating, as we would have probably expected, all the answers quote economic reason for their decision, sometimes highlighting the economic problems that hit them in their country, and other times noting their desire for improvement. Moreover, this same desire lies behind the second of the most important declared cause of migration: the search for better living conditions for their families (79% of the answers): "My life has improved here, I have a job and I have formed my family". "I do not think about going back because I have gathered my family together and we all have built our life here".

Nonetheless, when interviewees are asked about specific environmental problems, people who came from rural areas admit that, to a certain extent, floods, droughts, the lack of water and some disasters like earthquakes,

eruptions and El Niño events have often hit their country and affected their life quality strongly (32% of answers): "Droughts prevented me from working the fields and now pollution affects my breathing". There was an earthquake in Manabi in 1998 and I emigrated as a result of it". "In Ecuador floods filled my house with water".

In fact, the only direct and clearly established statements of environmental reasons provoking migration in the answers provided by people coming from rural areas were concerning natural disasters such as earthquakes and volcanic eruptions, and their direct outcomes. There is actually a long tradition in Ecuador that links the occurrence of this kind of event and the emergence of forced displacements of population. For instance, when in August 1949 the Tungurahua volcano exploded, affecting several areas of the provinces of Cotopaxi and Tungurahua with landslides and similar damages, one of the responses of the government was to resettle the most vulnerable populations to safer areas. Some of these emergency displacements finally resulted in permanent migration, as in the case of those that moved from the town of Pelileo (Petit- Breuilh Sepúlveda 2004: 267). The connection with migration could also be established indirectly however, in that the interviewees recognized that environmental changes have produced effects on the economic base of their families by means of the decreasing of productivity or even the destruction of crops, both leading to a reduction of family income and forcing relocation.

Besides, some pioneering studies, such as the one by Jokisch (2002), have asserted that that consideration of slow-onset environmental factors helps to explain some of the migratory patterns in several rural areas. For instance, he found a correlation between migration and deforestation in two cantons in the N.E. section of the province of Cañar (cantons of Mazar and Llavircay (2002: 33), an area that - as we have stated before- is characterised by a long tradition of both internal migration and, from the 1950s, to the United States. In the case of the Sierra region, slow processes like land degradation are eroding the productivity of farms and putting stress in the evolution of average income of households.

On the other hand, people from urban centres - who seem less affected by disasters, at least in the same direct way as a flood or a drought can affect the livelihood of a farmer- are more willing to admit the presence of some





environmental problems in the pool of causes that made them decide to leave their homeland. Some of the interviewees, for instance, agreed that air pollution in the cities they lived in Ecuador is the main cause that made them migrate - even though they paradoxically decided to settle down in cities and urban areas in which air pollution is also a major environmental concern: "There was much pollution that affected my breathing". "I had breathing problems and infections there".

It is also quite interesting to note that the only group of Ecuadorean immigrants in Spain that consider themselves primarily as "environmental migrants" is the community from the city of Otavalo. Otavalo is located in the central-northern part of the country, in the Sierra. It is a mining town whose growth occurred during the 20<sup>th</sup> century. This city is an exception in the Sierra, as for decades it has been a place that has received a lot of Ecuadorean internal immigrants because of its flourishing economy. But this situation also has a reverse side: mining has created one of the most polluted environments in the whole country (Interview with the consul of Ecuador in Barcelona, December 2007). In this city, there is also a great presence of trade unions of workers and miners, with a high level of participation in political parties, associations of workers and so on. It has been considered "the most politicized city of the country." The fight against pollution is one of the hot topics on the political agendas of local groups. Thus, there is a greater awareness of environmental problems inside *Otavaleños* than in any other city in Ecuador. This likely explains why people of Otavalo see environmental problems as important driving forces for migration (Pujadas & Massal 2002: 68).

Not surprisingly, emigrants from Otavalo tend to focus on the question of the lack of adequate policies of the government and other responsible agencies to help the society facing the problem. A statement repeated by some of the *Otavaleños* says that the solution to the problem would start once the politicians decided to use the public resources in the development of the country and the fight against climate change, instead of stealing them. As one interviewee stated; "all the blame is to be put in the hands of the bad governments that have ruled the country" (Goicoechea & Ramírez 2002: 37).

Thus, the difference between immigrants coming from rural and urban areas in relation to the importance they place on environmental problems affecting their decision to migrate, can be summarized as follows:

**Table 1: Relevance of environmental factors in the decision to migrate.**

Area of origin (Ecuador)	RURAL	URBAN
Area of destination (Europe)	BOTH RURAL AND URBAN	PREDOMINANTELY URBAN
Level of study, skills	LOW	LOW - MEDIUM
Incidence of environment immigration	HIGH (environmental changes affected crops yield, high interannual variability; El Niño)	MEDIUM (catastrophical events, pollution)
Level of knowledge and awareness of environmental issues	LOW (They do not quote "environment" as cause of migration)	HIGH (Some of them highlight "pollution" as main cause of migration)
Examples	Provinces of Los Ríos, El Oro, Imbabura or Manabí	City of Otavalo

### The effects of El Niño 1997-1998 in Ecuador. An overview from the literature

Two important events related to the two main topics of our analysis (environment and migration) had happened very closely to each other in the late 1990s: on the one hand, the El Niño event of 1997-1998, that was the strongest recorded since the starting of modern climate data collection; and on the other hand, the migratory "stampede" of Ecuadoreans abroad, most of them to Europe, that began in the second half of 1998 and 1999. An important question is: Were these two events connected to each other? Or was the time connection only a mere coincidence? The search for answers to this question was tackled in two ways. First of all, a review was conducted of the available literature. Secondly, the question was explored as part of the field research in Los Ríos, because this province was inside one of the areas most affected by the worse consequences of the 1997-1998 El Niño, and because it was also a zone with almost no previous experience of international migration (Albornoz Guarderas and Hidalgo Pallarés, 2007). If any connection could be established between El Niño's effects and international migration, this province would probably offer us one of the best and clearest examples of it.

Almost none of the official reports published by Ecuadorean governmental agencies on the effects of the 1997-1998 El Niño, noted a relationship between this event and the migratory movements in the decade after. However, when the



*Corporación Andina de Fomento [CAF]*, an inter-state agency formed by several countries of Southern America collected an extensive assessment of the damages produced by the El Niño event in each of the most affected countries of the group (CAF, 2000), migratory movements were actually accepted as one of the social changes due to the effects of El Niño. In the case of Ecuador, the main findings of the CAF report pointed out that the most damaged areas (principally in the *Costa*, as the incidence of El Niño is moderate in the Andean plateau, and not significant in the Oriente), in which unusually strong precipitation, floods, soil erosion and even sea level rise were noticed, were related to flows of internal migration, which brought people especially from poor, remote rural areas to the cities in search of jobs to compensate for the lack of income because of the loss of crops. In fact, agriculture was the sector of the economy most deeply hit by El Niño - agriculture exports account for 60% of the external trade balance of the country. In the four most damaged provinces (Guayas, Manabí, Los Ríos and Esmeralda), livestock also suffered great losses, a circumstance not widely experienced in previous flood events that have affected the same area (Rosero and González 2003). From a demographic point of view, the 1997-1998 El Niño event simply intensified a tendency to concentrate the former rural population into urban areas that started some decades before; but there is no mention about the start of international mass migration in the aftermath of the event.

A review of the literature reveals that only a few scholars specialized in migration studies believe that there was a direct cause-effect relationship between the damage produced by El Niño and the dramatic changes in Ecuadorean migratory patterns. For most of scholars in this field, the strong economic crisis that hit Ecuador between 1998 and 1999 is understood as the main -and maybe only- cause of the migratory boom of those years (Gómez Quintero, 2005; De la Vega, 2006, who offer an interesting summary of the main findings of the previous literature on the topic). This point of view is seemingly shared by the wider public opinion, who view the events of 1998 also focus on the mix of poverty, economic crisis and pernicious political practices as the most remarkable cause of migration (for instance Pereda and De Prado 2003). The main economic and social indicators in those years present an almost catastrophic situation: after a decade of continuous positive economic growth (average 2-3% per year), GDP dropped -6.3% in 1999, and did not start recovering until the end of 2000: the fall of GDP in the last years of the century almost completely erased all the growth of a decade

before. Unemployment rates almost doubled between 1997 (about 8% of active population) and 1999 (more than 15%); and public budget for social issues (education, health) dropped about 37% between 1996 and 1999 (De la Vega 2006: 172). By 2000, 6 of every 10 Ecuadorean households were below the level of poverty, the highest rate in several decades. Rosero and González state that the average effects of El Niño events in Ecuadorean economy are about a 5,3% reduction of GPD from the beginning of the event, and that usually take 1,3 years to be recovered (2003:9).

However, when we turn to the work of experts in the economics field, we can find that most of the researchers coincide in explaining the drastic increase in migration levels as a result of a concurrence of circumstances, one of which was the effects of 1997-1998 El Niño event, that hit forcibly the production of agriculture and fisheries - the first economic sector in Ecuadorean exports. Three other events noted were:

(1) The financial crisis after a general failure of the credit system of the country, after a general financial crisis in the whole Latin American bank system (although triggered in SE Asia), that led to a decrease of credit funds available to both public and private banks;

(2) The striking collapse of the international prices of oil - the second most important income for Ecuador's international balance of trade - that reached historically low levels, thus diminishing the Ecuadorean state budget by about 4% of GPD in 1998 and 1999;

(3) The political instability and, thus, the lack of a well-defined economic policy to face the crisis and the increase of the huge external debt.

From the literature therefore, we can conclude that it is likely that environmental factors influenced the Ecuadorean migratory explosion of the last years of 20th century (Goycoechea and Ramírez Gallegos 2002: 34-35). There is also some research available in which a link between the 1997 El Niño event and migration has been established in other regions of Latin America (Retana and Villalobos Flores 2003). As these authors pointed out in their conclusions that migration tends to appear when the impact of the climatic event damages the level of "social comfort" of the most vulnerable populations -understood as a mix of household income level and regularity, and the capacity of the whole society to deal with the damage inflicted on public infrastructures.

## **The 1997-1998 El Niño in the province of Los Ríos. Fieldwork results**

The results of the fieldwork seem to indicate that, at least in the case studied in the province of Los Ríos, El Niño transformed migratory patterns. Half of the surface of the province, including a large part of the lands used for agriculture and farming, is located in an area with high level of risk of floods. One of the main climatic outcomes of El Niño episodes in Ecuador is the increase of precipitation and the intensification of flood risk. 4 of the 11 cantons of the province suffered the maximum level of damage, 6 the medium, and only 2 minor overflowing of rivers (Vos, Velasco and Labastida 1999:5). During 1997 and 1998, a series of recurrent floods were experienced in the province, with two main features: their extremely high intensity, stronger than other previous floods; and their persistence - as they lasted two years. As a consequence, crops were lost and most of the livestock were drowned or killed by the spread of diseases caused by water-related vectors. As noted by Vos, Velasco and Labastida (1999):

The rural population of the province of Los Ríos, where many farmers are engaged in the production of rice and corn, was hardest hit by El Niño. Foregone agricultural income amounts to 25% of mean consumption of rural households in this province. We estimate a rise in the incidence of rural poverty of 18.6 percentage points, increasing the number of poor by 53,000.

All the interviewees stated in the surveys that they had previous experiences of migration in their and/or their families' lives. In the first case, when interviewees were giving an account of their own personal experiences, all of them claimed to have participated in previous internal migratory movements within Ecuador, mainly in two forms:

- Migration from rural to urban areas within the same province, from small settlements or *caseríos* to the small- and medium-size urban centers of the province (especially the capital, Babahoyo, and other towns like Quevedo or Vinces). These movements have tended to be permanent.

- Migration out of the province to other regions of Ecuador, mainly to Guayaquil - only 75 km away from the town of Babahoyo -, but also to Quito or to the Oriente. These movements have tended to be temporary or even circular. For instance, two of the interviewees declared that they worked half of the year in their town of origin, Palenque, as farmers or agriculturalists, but spent at least five months every year in Guayaquil, working on the construction.

It is very interesting to note the timing of these low-distance and pendulating migratory movements. All of those who were undertaking circular migration recognized that they started migrating - or migrating more often, in the case of those that claimed previous migratory experiences - "cuando lo del Niño" ("by the time the El Niño happened"), in reference to the 1997-1998 event. Also remarkable is the use of the Spanish expression quoted above, that somehow seems to convey an implicit acceptance of the links between the climatic event and the decision to migrate. At the same time, all the interviewees claim to have relatives living abroad. In all the cases, the departure of the international emigrants had happened after 1998; none of them before. Another interesting feature is the great number of women that participated in this international flow; in contrast with the internal one, mainly protagonized by males: according to INEC, 59.95% of Los Rios migration abroad (2001) was composed of women. A bit surprisingly, almost none of them stated, in the first instance, a link between environmental problems and their migratory experience. In fact, the only one that agreed with this idea, actually accepted the environment as a cause, not to emigrate but to come back, when he explained that he had decided to return from Guayaquil "because of the noise and pollution, life was very hard for me. I earned a lot there, but I didn't like it at all so I returned". Pollution, for instance, was for many a key reason why living in rural areas was preferable to living in urban areas, even though contamination because of fertilizers in pesticides is a crucial problem in agricultural areas of the *Costa*.

After further questioning, it became apparent however that crops and livestock were the key to the relationship between environment and migration. When they were asked about the reasons that impelled them or their relatives to migrate, there was unanimity in citing the failure of crops, massive deaths of livestock and, thus, the dramatic decrease of the family income and the availability of economic resources as the main factor that made them take the decision. Even in the only case in which the survey was not answered by an agriculturalist or a farmer but an artisan from Palenque, the same problems lay behind, as the general lack of purchasing capacity of their clients also hit him strongly and obliged him to go away to find supplementary income: "... lots of my clients got totally ruined, so they couldn't buy the tools I made anymore. Sales dropped off and I had to give up working for a time. Wait for better times. So I went to Quito to work with a brother of mine that has a shop there". So we can deduce that these migrations were

caused by an economic problem with underlying environmental factors. It was neither the El Niño event itself, nor their effects in some aspects that can lessen life quality such as the destruction of infrastructure like roads or the spread of infectious diseases, the main driver of migration, but its effect on local and family economies.

Actually, the 1997-1998 El Niño event was not the first time when floods had hit the province. Because of this, the local population had developed ways to adapt to the recurrent floods for a long time. In the words of Mayte Labayru from the Basque Country-based NGO *Elizbarrutietako Mixioak* (Interview, August 2008), long time established at the region, referring to the floods that happened in March 2008 in Los Ríos.

Even though the most damaged people have been obliged to take refuge in several provisional camps, most of the inhabitants haven't needed such aid, as they use to build *palafitos* (stilt houses or pile dwellings) or two-floor houses to live in; so when the flood comes, they just remain upstairs until water backs down. People know how to face flood: if they need to go out from home, they just swim, or use their canoes, or construct *puentes-balsa* (raft bridges) to cross the flooded areas. Even for the kids these are amazing times, as they don't have to go to school and can go swimming just in front of home. Usually livestock doesn't suffer very much, if there is a normal flood, as they are also used and can keep eating the plants underwater. (..) If the flood doesn't last very long, no major damage is done to crops.

The main difference between the 1997-1998 El Niño and other previous events lay in the intensity and duration of the floods that extended beyond the coping capacities and the limits of the traditional ways of adaptation. For instance, the accumulation of successive losses of crops for two years finally drained the households' reserves prepared to prevent the damages based on the outcomes of previous, shorter floods. So this could explain the delay of approximately one year between the El Niño event and the outbreak of massive migration. Moreover, some experts also highlight the increase of deforestation from the 1970s, a process that has worsened the effects of extreme events as droughts and floods (Interview to Juan Ramon Etxebarria from *Elizbarrutietako Mixioak*, October 2008).

The acquired experience of previous floods also made migration happen in two stages. At first, the redistribution of the population was driven through traditional patterns, intensifying internal flows within Ecuador, from rural to urban areas, and from small to big or growing cities. Since the environmental problems

were not the only problems effecting the country however, which by that time was involved in a more serious economic crisis, the capacity of Ecuadorean economy to cope with the internal redistribution of the population diminished quickly. The migratory pressure finally gave way a sudden start of international migration, primarily to Spain, helped by other two circumstances: the exceptional good shape of Spanish economy within the EU, that had recently commenced an ascending cycle, and the actual reduction of the prices of international air transportation from the start of the 1990s, that improved the access of wider sectors of Ecuadorean society to the use of this travel system. Finally the possibility of an easier integration in the host society also resulted in Spain being a main destination for Ecuadorean emigrants.

In consequence, the 1997-1998 El Niño acted as a trigger for the outbreak of migration to Europe from the province of Los Ríos. As a result of the damage to the economy produced by the extreme features of this climatic event, exacerbated by the general downturn of the Ecuadorean economy, internal redistribution of population was no longer sufficient for improving the livelihoods of the people affected. Europe, or more precisely, Spain, emerged as a new solution. Once the El Niño event and its outcomes disappeared, migration did not cease but continued, because of the implementation of new, successful migratory networks that started operating autonomously from the external triggers that had created them, due especially to the pull effect exerted by the economic differential between Ecuador and the new places where Ecuadorean immigrants had become rooted. So the persistence of migratory networks between Los Ríos and other regions of Ecuador or Europe, even if they were eventually frozen because of an adverse economic situation, could be reactivated in the future when other environmental danger make them necessary again. In fact, it seems that they have already been reactivated at least once again so far, if the statement made by the NGO volunteers in Los Ríos is true and the floods of March 2008 have really "caused migrations to towns and cities."

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