"DISASTER IS NATURE TELLING US HOW TO LIVE RESILIENTLY"

Indigenous disaster risk reduction, organizing, and spirituality in Tierradentro, Colombia

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Seeking to gain knowledge about resilience, this case study considered a 2007–09 Red Cross preparedness project funded by the Disaster Preparedness European Community Humanitarian Office (DIPECHO). The project was implemented around the Nevado del Huila volcano in Colombia, in a largely rural area with a predominantly indigenous population. The findings and analysis point to the importance of listening to and learning from the community, including its traditional and indigenous resilience practices, as well as the iterative nature of resilient development. The field research also yielded interesting material about perceptions and practices of resilience in Nasa indigenous communities.

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ACRONYMS AND KEY TERMS

ACRONYMS

CCA	Climate change adaptation
CRC	Colombian Red Cross
CLOPAD	Local Committee for Prevention of and Attention to Disasters
CREPAD	Regional Committee for Prevention of Disasters
CRIC	Consejo Regional Indígena del Cauca (Caucan Indigenous Regional Council)
DANE	Departamento Administrativo Nacional de Estadística (National Administrative Department of Statistics)
DIPECHO	Disaster Preparedness European Community Humanitarian Office
DRR	Disaster risk reduction
ECHO	European Commission Humanitarian Office
FARC	Fuerzas Armadas Revolucionarias de Colombia (Revolutionary Armed Forces of Colombia)
FRC	French Red Cross
GDP	Gross domestic product
IDP	Internally displaced person
INGEOMINAS	Instituto de Investigación e Información Geocientífica, Minero Ambiental y Nuclear (National Bureau of Geology and Mines)
NGO	Nongovernmental organization
SNPAD	National System for Disaster Prevention and Response
UNISD	United Nations Office for Disaster Risk Reduction

KEY TERMS

Cabildos: indigenous political and social authorities; they are the political leaders of *resguardos* (see definition below) and communities.

Cosmology: in its anthropological sense, the body of knowledge, practices, and beliefs of a society or culture.

Caucan Indigenous Regional Council (CRIC): the oldest and most influential indigenous organization in Colombia; the CRIC is an alliance of 10 regional indigenous organizations.

Lahar: a landslide of volcanic debris and water.

***Minga*:** indigenous collective physical, intellectual, spiritual, social, and community work. According to our findings, collective *mingas* are key elements of resilient living in Nasa indigenous communities in Cauca, Colombia.

Nasa: ethnolinguistic indigenous group inhabiting most of the Cauca Department in Colombia.

Nasa Çxhaçxha: indigenous organization in Tierradentro, Cauca, founded in 1994, in the aftermath of the deadly Páez earthquake and mudflow; Nasa Çxhaçxha is one of the 10 organizations that make up the CRIC.

OSSO Corporation: geological institute from Cali, Colombia; OSSO paired up with Nasa Çxhaçxha in 2007 to implement DRR activities and learning processes based on an ongoing, intercultural dialogue between scientific, ancestral, and spiritual knowledge.

***Resguardo*:** collectively owned land governed by one or more indigenous communities according to autochthonous customs and laws, based on Articles 63 and 329 of Colombia's 1991 Constitution; a *resguardo* is a protected collective property, inalienable and immune from seizure.

Tierradentro: region in the Department of Cauca, Colombia, comprising the municipalities of Inzá and Belalcázar.

EXECUTIVE SUMMARY

At the end of 2007, the French Red Cross (FRC) partnered with the Colombian Red Cross (CRC) to begin implementing DIPECHO-V, a 15-month-long disaster-preparedness project financed by the European Commission Humanitarian Office (ECHO). One of the project's objectives was to build capacity, at the community and government level, to manage events related to natural hazards—particularly lahars, earthquakes, and mudflows in high-risk communities near the volcano Nevado del Huila (ECHO, 2007).

In 2007, humanitarian and development programs were not yet incorporating a resilience framework; hence the French and the Colombian Red Cross did not approach DIPECHO-V as a resilience project. Accordingly, the implementers did not design, execute, or evaluate the project within a resilience framework. Rather, later observers attributed resilience characteristics to the program.

According to the literature consulted and material collected during field interviews, DIPECHO-V helped the municipality of Belalcázar prepare for the impact of landslides caused by volcanic activity and soil erosion. The collaboration between the Red Cross's project implementers, the mayor's office, the church, radio stations, and educational institutions helped create an environment of awareness and preparedness that may have saved lives during landslides in 2007 and 2008.

Particularly useful, according to Red Cross personnel as well as municipal employees who participated in DIPECHO-V, were the steps toward decentralization taken by the Colombian government as far back as 1998 with the establishment of the National System for Disaster Prevention and Response (SNPAD), the Regional Committee for Prevention of Disasters (CREPAD), and the Local Committee for Prevention of and Attention to Disasters (CLOPAD). Specifically, working within the CLOPAD provided the local government with indispensable coordination tools to manage prevention and response efforts and make the most of the DIPECHO-V project.

Although DIPECHO-V was implemented in a region where most of the rural population and a large percentage of the urban population belong to the Nasa ethnolinguistic indigenous group, the project lacked a specific ethnic approach. As a result, the project was implemented on the basis of "outsiders'" preconceptions and generalizations about Nasa society and failed to capitalize on the potential value of indigenous knowledge and spiritual beliefs.[1]

Assessed against current conceptions of resilience, the DIPECHO-V project resulted in a modest degree of resilient development, but not consistently across the focus area and not to the extent possible. Furthermore, owing to the breakdown of technical tools of the early warning system (i.e., radios and mud sensors), the gains have not been sustained—although there are differences of opinion among the relevant stakeholders on where responsibility sits for the sustainability of the project.[2]

Red Cross personnel in charge of the program showed high degrees of technical skill and great commitment in their respective fields and beyond. What was lacking, however, was staff with the expertise and capacity to incorporate indigenous organizations, knowledge, and perspectives into the program. Similarly, the DIPECHO-V lacked a structured gender approach and was implemented as a gender-blind program. According to the Colombian Red Cross, the project was implemented within the framework of gender notions and practices predominant in the country in 2007 (written communication with Colombian Red Cross staff, August 2017).

On the other hand, spokespeople from indigenous Nasa communities and members of the indigenous organization Nasa Çxhaçxha claim that their own climate change adaptation/disaster risk reduction project, concomitant with DIPECHO-V, was contextualized and implemented as a resilience program. Specifically, indigenous informants pointed out that the notion of resilience has affinities with a Nasa concept that they loosely translate into

Spanish as *pervivencia*. In the context of this research, *pervivencia* is translated as “resilient living”—in other words, people’s ability to live and persist within a spiritual-ecological system or, more broadly, a territory. *Pervivencia* connotes the sustainable interaction and equilibrium of social life, spiritual life, and ecological life. Each dimension is fundamental for the persistence of the spiritual life system within a territory. When humans push the boundaries of the life system in their quest to exploit it, the system is disrupted. This is the case with excessive mining, massive coca cultivation, cattle farming, and other extractive modes of production, which threaten the legitimate territories of the Nasa in Cauca and beyond.

The disaster risk reduction (DRR) program of the Nasa contextualized the eruptions and landslides as warnings or ruptures in the spiritual equilibrium within their territory. In response to the warnings, Nasa Çxhaçxha implemented a holistic program, blending spiritual practices and local knowledge of the environment with new information provided by key allies such as geologists from the OSSO Corporation. This exercise was deemed highly successful by the participants—both indigenous people and scientists—and by outside observers. In 2015, the UN Office for Disaster Risk Reduction (UNISDR) awarded the title of Champion for Disaster Risk Reduction in the Americas to the Nasa communities of Tierradentro, Colombia.

In sum, there is evidence of resilient development in Belalcázar. While we cannot conclusively attribute certain impacts to DIPECHO-V or indigenous initiatives, this research suggests that resilience gains are primarily due to the indigenous initiatives.

Moreover, the research suggests that resilient development and sustainability occurred in the context of several important and specific preconditions:

1. The communities involved showed a good degree of internal organization and cohesiveness tied to a long history of social struggles and processes.

2. Nasa Çxhaçxha, the main indigenous organization and the implementer of the indigenous DRR program, grew and strengthened itself through its own internal conflicts and long-term transformative processes. Within the organization a large constituency of women worked continuously to challenge gender inequality, opening spaces and acquiring agency in the organization and in Nasa society.

3. Spiritual knowledge and the practices of local traditional healers known as the *Wälas* form an integral part of development work and political organizing within Nasa Çxhaçxha. Resilient development or *pervivencia* is in fact conditioned on the existence of a spiritual understanding of life, the territory, and the world.

Interestingly, the Nasa DRR approach, based on local knowledge and spirituality, concurs with scientific frameworks, such as that of the Stockholm Resilience Centre, that acknowledge an equilibrium and interdependence between biosphere, atmosphere, stratosphere, and other so-called planetary boundaries.

The findings thus suggest that disaster risk reduction/climate change adaptation (DRR/CCA) programs should make greater efforts to understand and assimilate the knowledge and the voices of local constituencies. This assimilation should be applied to every step of the process, from the project’s design, to its implementation, to its evaluation. In the case of indigenous communities, spiritual knowledge and practices must inform and be incorporated into development programs in accordance with national and international legislation and covenants. Failure to do so might result in missing out on invaluable opportunities to generate inclusive and sustainable social and economic development.

Concerning sequencing and duration of DRR/CCA resilience efforts, the Colombian case study suggests that successful resilience programs are not extemporaneous. Rather, they rely on contextual preconditions and require follow-up programs.

Belalcázar municipal institutions and project implementers operated within DRR frameworks and with tools provided by the methodologies and legislation established in the aftermath of the 1984 and 1994 disasters in Armero and Belalcázar—specifically, the SNPAD, CREPADs, and CLOPADs. These preconditions influenced the development and outcomes of the DIPECHO-V project.

Further, the case study revealed that even though some DRR capacities remained in place eight years after the project, permanent structural changes have not occurred because of the obsolescence of the technical knowledge and the instrumentation used. These findings suggest that follow-up DRR programs, possibly integrated into departmental and national development plans, are necessary to sustain capacities over time.

Overall, both municipal and indigenous institutions showed a degree of non-homogenous, sustained improvements in specific absorptive, adaptive, and transformative capacities, as illustrated by two examples:

- Most of the informants interviewed for this research (civil and indigenous authorities) were familiar with specialized DRR knowledge and ideas, indicating that adaptations and transformations had taken place.
- Throughout the region most of the indigenous settlements now stand in safe areas, and no families have returned to risky locations affected by the 1994 and 2008 landslides.[3]

The material gathered for the research does not provide sufficient evidence to ascribe all specific improvements to the indigenous project, to the 15-month-long DIPECHO-V project or to the shocks themselves (1994, 2007, and 2008). It appears so far that they may be due to a combination of all of these factors.

In conclusion, the material analyzed for this research supports the argument that the experience of the Nasa indigenous communities in Tierradentro fits Oxfam's definition of resilience and complements it with culturally specific, yet universally important, notions:

1. Indigenous processes of self-determination, territorial defense, and cultural vindication are significant catalysts of resilient development in Latin America.

2. Indigenous ancestral, spiritual knowledge must be integrated in all development models. Resilient programming cannot occur if this crucial precondition remains unfulfilled.

Other papers in this series

- *Addressing Water Shortages: A catalyst for more resilient development in Fiji*
- *Building Resilience Through Iterative Processes: Mainstreaming ancestral knowledge, social movements and the making of sustainable programming in Bolivia*
- *Learning from Hindsight: A synthesis report on Oxfam resilience research*

1 INTRODUCTION

PURPOSE OF THIS REPORT

This research project is part of a larger resilience program funded by the Margaret A. Cargill Philanthropies focused on building resilience and capacities for disaster risk reduction (DRR) in vulnerable communities in Latin America and the Pacific Islands. The three-year project, launched in late 2014, took place in four countries: El Salvador, Guatemala, Solomon Islands, and Vanuatu. The project focuses on the following key outcomes:

- Reduced vulnerability to natural hazards through DRR and climate change adaptation (CCA);
- Greater absorptive capacity for increased resilience to natural hazards; and
- Greater capacity to adapt to hazards, create change, and ensure basic rights.

As part of this program, Oxfam has produced three case studies examining completed resilience, DRR, preparedness, or CCA projects in Latin America and the Pacific that were thought to have created resilience to multiple hazards:

- A 2007–09 preparedness project funded by DIPECHO and implemented by the French Red Cross and Colombian Red Cross around the Nevado del Huila volcano in Colombia;
- A resilience project implemented by the Secretariat of the Pacific Regional Environment Programme (SPREP) in Fiji in 2002–05; and
- An Oxfam landslide preparedness project implemented in La Paz, Bolivia, in 2010–11.

Examining these projects with the benefit of hindsight, we have sought to gather evidence about the impact of such projects on households and communities; what elements of such projects make them more likely to succeed; how we define and measure "success" in resilience projects; and the timeline, timing, and duration of resilience projects. The research is not an evaluation of the specific projects by any means, but a comparative research exercise to learn as much as we can from them about resilience, in order to inform future programming by Oxfam and other implementers. A synthesis report presents the common findings across the three case studies, together with relevant findings from a related Oxfam research project that evaluates a concluded CCA program implemented by CARE in Vanuatu.

OXFAM ON RESILIENCE

Oxfam's work toward a just world without poverty must address risk and its causes as well as the inequality in social relations that unfairly expose poor people and make them acutely vulnerable to shocks, stress, and uncertainty.[4] According to the new Oxfam Resilience Framework, resilience is not the ultimate desired goal or outcome; rather, it constitutes a quality of the pursuit of sustainable development. We cannot achieve Oxfam's vision if we do not integrate a resilience approach into our thinking, ways of working, and all our interventions.

Oxfam defines resilience as "the ability of women and men to realize their rights and improve their well-being despite shocks, stresses, and uncertainty." Oxfam's approach to resilience is rights-based, long-term, process-oriented, a gender-justice approach, and a systems approach.

Rights-based: Oxfam believes that risk and its impacts on people living in poverty is "no accident," (Oxfam International, 2013) but the result of inequitable and unsustainable development that fails to address poverty, creates vulnerability, and lets the burden of risk unfairly fall on the poorest and most vulnerable people. Growing inequality, unprecedented climate conditions, faster change, and greater uncertainty are new realities that require new knowledge and ways of working. The existing capacities of people living in poverty to prepare,

cope, and adapt are stretched, and some existing strategies may increase vulnerabilities in the medium and long term. Therefore, existing absorptive, adaptive, and transformative capacities need to be recognized, supported, and enhanced.

- Absorptive capacity is the capacity to take intentional protective action and to cope with known shocks and stress. It is needed because shocks and stress will continue to happen owing to, for example, extreme weather events, protracted conflict, and natural disasters.
- Adaptive capacity is the capacity to make intentional adjustments and incremental changes in anticipation of or in response to change, in ways that create more flexibility in the future. It is needed because change is ongoing and uncertain and because intentional transformation can take time and sustained engagement.
- Transformative capacity is the capacity to make intentional change to systems that create risk, vulnerability, and inequality. It is needed to influence the drivers of risk, vulnerability, and inequality and because social and natural systems are themselves being transformed by, for example, globalization and climate change (Béné et al., 2012).

Our approach affirms people's right to determine their own futures by enhancing the capacities of people and institutions to address the causes of risk, fragility, vulnerability, and inequality.

Long-term: Resilience needs to be built continuously over time. It is not a fixed or end state but an ongoing process of social change.

Process-oriented: Oxfam considers six closely linked social change processes that, when integrated into our interventions, will enhance absorptive, adaptive, and transformative capacities at different levels of society and across multiple sectors:

1. *Empowerment* includes processes for promoting gender justice and enhancing voice, empowerment and participation, conflict resolution, and psychological resilience.

2. *Securing and enhancing livelihoods* refers to processes for securing and building human, social, natural, physical, and financial capital and household assets based on the sustainable livelihoods framework.

3. *Informing* encompasses processes that develop information and knowledge to support decision making and action.

4. *Flexible and forward-looking planning* refers to processes that enable and enhance collective, forward-looking, and flexible decision making.

5. *Accountable governing* encompasses processes that secure accountable and enabling states and institutions.

6. *Learning* includes processes that enable people to learn together, support experimentation, and increase the potential for social and technological innovation.

A gender-justice approach: Oxfam puts women's rights at the center of all of its programming, recognizing that promoting women's rights is necessary to achieve gender justice. This is also critical if we want to achieve resilient development outcomes. Women and girls face daily and regular hazards in their life cycle as well as structural inequality through discriminatory gender norms and gender stereotypes based on patriarchal societies. These increase the exposure and vulnerability of women and girls and limit their ability to participate and exercise their agency and leadership capacity. We need to understand both the existing capacities of women and men and their specific and different vulnerabilities. And we need to understand how vulnerabilities are caused by inequality and exacerbated by risks.

- **A systems approach:** A systems approach recognizes and works with the relationships between the complex causes of risk and poverty and avoids approaches that are siloed by sector, discipline, or organizational structures, which are likely to increase vulnerability. It recognizes the limitations of short-term, technical fixes and requires teams to adjust strategies based on feedback from monitoring, evaluation, and learning. Such an approach is necessary to address the causes of multiple risks, fragility, and vulnerability without causing new risks and vulnerabilities.

METHODOLOGY

Case Study Selection

The geographic focus of this research is based on the focus of the larger Oxfam resilience program funded by the Margaret A. Cargill Philanthropies on the Pacific and Latin America. We decided to conduct three case studies—two in Latin America and one in the Pacific—supplemented with findings from a recently completed climate change adaptation project in Vanuatu. We chose projects that were framed as either (1) resilience projects or (2) DRR, preparedness, or CCA projects thought to have created increased resilience within the beneficiary communities—that is, projects that were considered successful by the relevant Oxfam staff, external experts, and existing evaluations. They needed to have been completed at least three to five years ago (i.e., by the end of 2013) to allow sufficient time for reflection on the enduring impact. We also sought a mix of Oxfam and non-Oxfam projects.

We identified potential case studies through a literature review and scoping interviews with Oxfam staff working on resilience in country and regional offices in the two regions and with external experts. We then used the above criteria to narrow down the list to the three selected.

Research Methods

To address this report's objectives, the researchers used a mix of qualitative methods, including a literature review, key informant interviews, and focus group discussions. The research was organized around case study analysis. The three case studies followed a common methodology that was adapted to each particular context.

The literature review included a review of project documents, including needs assessments, project design and supporting documentation, MEAL (monitoring, evaluation, and learning) plan, interim and final reports, evaluations, findings of listening exercises and learning events; materials written about the projects, including journal articles, research reports, news articles, blog posts, and newsletter articles; any related materials produced by the communities, including resilience frameworks, indigenous life plans (produced by many Colombian indigenous communities), news articles, and interviews; documents from related projects conducted in the communities, including needs assessments, interim and final reports, evaluations, findings of listening exercises and learning events; assessments of the resilience of the broader region and country, including peer-reviewed articles, gray literature, white papers, government assessments, reports of donors, and reports of local, national, and international nongovernmental organizations (NGOs); and documents regarding Oxfam's framework for resilience.

The researchers engaged a broad range of stakeholders through semi-structured interviews and focus group discussions. They consulted project staff from the projects; project participants (i.e., primary change agents); government officials (relevant ministries and agencies across all levels of government); local and national NGO representatives; community-based organization representatives, including women's rights organizations, indigenous organizations, and organizations representing disabled people and youth; local civic leaders; members of communities, including men and women, members of social groups that might be impacted differently, and informal groups; academics and researchers working in the communities or with national expertise; and multilateral organizations and international NGOs, at headquarters and in the field.

In this particular case study 35 key informant interviews and two focus group discussions were conducted during August 2016. The researcher visited the area where the project took place and met with four Colombian Red Cross coordinators who implemented DIPECHO-V in 2007 and 2008. In addition, the researcher met with current and former municipal authorities in Belalcázar, Páez, members of the indigenous organization Nasa Çxhaçxha and elected indigenous representatives in four indigenous *resguardos*: Avirama, Huila, Toes, and Belalcázar.[5]

The research was conducted according to Oxfam's ethical guidelines. In terms of research subjects, we adhered to the standards of voluntary participation, informed consent, avoidance of risk of harm, and the practice of offering (and abiding by requests of) confidentiality.

The Colombian Red Cross reviewed the draft report and provided feedback, which has been incorporated into the final version. The draft report was also shared with the European Commission in Colombia, but no feedback was provided.

Limitations

The projects selected as case studies are not intended to be representative of projects conducted in the respective countries but rather "success stories" offering lessons that could be applicable in other contexts within each country and ideally in other countries. The findings compiled in the synthesis report are those that occurred in multiple case studies; they are thus more likely to be applicable in some, but not all, instances globally.

Because time has passed since the projects in question ended, the researchers have had to rely on people's memory recall when seeking to pinpoint the facts, timing, and impact of the projects. Also, community-initiated or external programming in the relevant communities before or after the projects in question may have catalyzed resilience. Consequently, the researchers have been as careful as possible to pinpoint the immediate and longer-term impact of the projects, while acknowledging the potential impact of such developments and programs on the resilient development of the community.

Finally, because Oxfam is known as a provider of humanitarian, DRR, and resilience programming and funding to local partners, there is a risk of aid recipient bias—i.e., interlocutors may have told the interviewer what they thought he or she wanted to hear and what would best position them for future assistance, funding, or both. The researchers explained that they were independent of Oxfam and that responses were not tied in any way to assistance. But these practices only partly mitigate this risk. As a result, the triangulation of information—conducted through multiple interviews with various stakeholders and desk research—was critical.

STRUCTURE OF THIS REPORT

The report begins with an overview of the social and the geographic context of the study. It focuses on demographics, social differences, ethnic diversity, and conflict, as well as indicators of land distribution and urban and rural poverty. It then describes natural hazards related to volcanic activity and seisms in Colombia and the region.

Three more sections are devoted to the 1994 Páez earthquake and mudflows and the 1985 volcanic tragedy in Armero, which respectively took the lives of more than 25,000 and 1,200 people. These events prompted the beginning of DRR work in Colombia and set into motion events that are important for this research. Specifically, the 1994 earthquake and mudflows motivated Nasa indigenous communities to create the organization Nasa Çxhaçxha—a key player in the developing DRR and resilience strategies in the years to come—and the approval in 1998 of the body of legislation with which Colombia created the National System for Disaster Prevention and Response (SNPAD) and the decentralized DRR committees known as the Regional Committee for Prevention of Disasters (CREPAD) and the Local Committee for Prevention of and Attention to Disasters (CLOPAD).

The following section presents the case study of the DIPECHO-V project, emphasizing the specific conflicting sociopolitical scenario within which it was implemented. Here we look at the aims and scope of the project, the intended beneficiaries, and how it set about to build early warning systems and to develop educational and capacity-strengthening activities. The report discusses the impact the project had on government and municipal institutions as well as the urban and rural population. The case study section concludes with discussions of gender and ethnicity. DIPECHO-V was carried out as a gender- and ethnic-blind project; this report argues

that by operating in this fashion the implementers may have missed important opportunities to establish durable capacities.

The discussion and analysis section examines how different stakeholders and beneficiaries perceived the project and its impact on DRR strategies on the ground. It considers the timing of the project and how timing affected the project's outcomes and the creation of resilient development. Further, this part of the research examines how specific characteristics of Nasa communities set the ground for *la pervivencia en el territorio*—"resilient living within a territory"—a concept used by all Nasa indigenous spokespeople to describe their zeitgeist, their motivations, their history, and their spiritual connection with the natural and the supernatural worlds. In light of the material analyzed, we argue that social processes of resilience, close to Oxfam's definition, are taking place in Tierradentro, Cauca, due to specific cultural and historical circumstances.

2 CASE STUDY CONTEXT

COLOMBIAN SOCIAL INDICATORS

According to the Colombian National Administrative Department of Statistics (DANE), in 2016 Colombia had a population of 48.8 million, of whom approximately 50.8 percent were female and 48.2 percent male. The population is growing steadily at a rate of 1.3 percent a year (DANE, 2010).

Forty-nine percent of Colombians are identified as mestizo and 37 percent as Caucasian (DANE, 2010). Some statistical data on the ethnic makeup of Colombia differ depending on the source and are highly politicized, particularly for Afro-descendant and indigenous populations. DANE's 2005 national census estimated the Afro-Colombian population at 10.6 percent. In contrast, Afro-descendant groups themselves, the World Bank, and the United Nations report higher figures: 19.5, 20.0, and 22.0 percent, respectively (Minority Rights, 2017; CEPAL, 2005). The same 2005 national census estimated indigenous people at 3.4 percent of the Colombian population. This figure consists of approximately 1.4 million people belonging to 87 ethnic groups (DANE, 2005). As in the case of Afro organizations, the National Indigenous Organization (ONIC) contests the government's data and claims that Colombia is home to 102 indigenous groups speaking 65 autochthonous languages (ONIC, 2006). Seventy percent of indigenous people live in rural areas (United Nations, 2011).

DANE calculates Colombia's 2015 Gini coefficient, a measure of income inequality, at 0.52—in which a score of 0 indicates complete equality and 1 indicates complete inequality (DANE, 2016). However, research published by the United Nations Economic Commission for Latin America and the Caribbean (CEPAL) argues that DANE's data, based on households surveys, fail to account for the incomes of the richest 1 percent of the population, which amount to 20.5 percent of the country's total income (Jiménez, 2015). According to Jiménez (2015), during the last 10 years, the most vulnerable 20 percent of the population has become poorer while the top 1 percent of rich Colombians has gotten richer. This work suggests that a more accurate Gini coefficient for Colombia is probably between 0.54 and 0.56.

According to the World Bank (2017), 27.8 percent of Colombians live below the poverty line. In 2011 the Colombian government announced a poverty reduction plan. The program was complemented by the adoption of a multidimensional poverty index, which goes beyond monetary income and includes health, education, and standard of living. According to DANE, poverty measured by the multidimensional index was reduced by 1.7 percent, going from 21.9 percent in 2014 to 20.2 percent in 2016 (DANE, 2016; *El Tiempo*, 2016). Nevertheless, 7.9 percent of Colombians still live in extreme poverty (DANE, 2016).

The Colombian Gini coefficient for land distribution is 0.86, placing Colombia among the most unequal countries in the continent and the world. Rural poverty is extreme, with 44.7 percent of the peasant population living in poverty according to the multidimensional poverty index (DANE, 2016). According to CEPAL, social spending in Colombia is the second lowest in South America: 13 percent of GDP, compared with an average of 19 percent in the region (Jimenez, 2015).

Life expectancy in Colombia for females and males is 78 and 71 years, respectively, placing the country in 73rd place worldwide (WHO, 2017; World Health Rankings, 2017).

UNDERSTANDING RISK: NATURAL HAZARDS IN COLOMBIA

Lying at the northernmost tip of South America, Colombia has a total area of 1,141,748 square kilometers. The country consists of 32 administrative departments comprising five main climatic and ecological regions (Figure 1); 35 percent of Colombia is part of the Andean mountain chain. It shares borders with Brazil, Ecuador, Panama, Peru, and Venezuela. Colombia is the only country in South America with coastal access to both the Atlantic and the Pacific Oceans.

Figure 1: Colombian climatic regions

Source: Author.

Seismic and Volcanic Hazards: Tectonic plates and faults

Colombia sits at the juncture of five tectonic plates: the Nazca Plate and the Caribbean Plate, which are sinking, or subducting, under the South American Plate, and two more lithospheric formations, known as the Panama and the North Andes Plates. The Panama formation has been referred to as an “indenter” (Rosen, 2013) because instead of undergoing subduction, this buoyant plate rams against South America, increasing the morphological complexity of the region. Recent studies claim that the pounding action of the Panama microplate against the South American plate might be responsible for the Caldas Tear**.** This is a fault-like lithospheric rupture that extends from West to East crossing the cities of Manizales, Caldas, and Tunja. According to some geologists, the discovery of the Caldas Tear radically alters the map of earthquake risk zones in Colombia and may explain the seismicity of an area previously thought to be outside the influence of tectonic thrusts (Phys.Org, 2013).

Disagreements among scientists about the effects of such intricate geomorphological characteristics abound (Oskin, 2013; Rosen, 2013). It is certain, however, that the remarkable Colombian crustal pattern of subducting plates, featuring at least 47 active quaternary fault systems, is responsible for the country’s extensive volcanism and high incidence of earthquakes (Tables 1 and 2).

Table 1: Major disasters in Colombia, 1875–2017

Location and year	Cause	Fatalities and damage to infrastructure
Cúcuta, Santander, 1875	Earthquake	16,000 fatalities, three towns destroyed
Tumaco, Nariño, 1979	Earthquake and tsunami	450 fatalities, major destruction
Popayán, Cauca, 1983	Earthquake	300+ fatalities, major destruction
Armero, Tolima, 1985	Eruption and landslide	25,000 fatalities
Villatina, Antioquia, 1987	Landslide	500+ fatalities, major destruction
Colombia, 1992	Drought	No data
Belalcázar, Cauca, 1994	Eruption and landslide	1,200+ fatalities, major destruction
Armenia, Quindio, 1999	Earthquake	1,900+ fatalities, major destruction
Girón, 2005	Flood	26 fatalities, major infrastructure damage
Belalcázar, 2007 (February and April)	Landslides	No fatalities, moderate infrastructure damage
Belalcázar, 2008	Eruption and landslide	16 fatalities, moderate infrastructure damage
Mocoa, Putumayo, 2017	Landslide	350+ fatalities, major infrastructure damage

Source: Author's compilation.

Table 2: Volcanic eruptions in Colombia

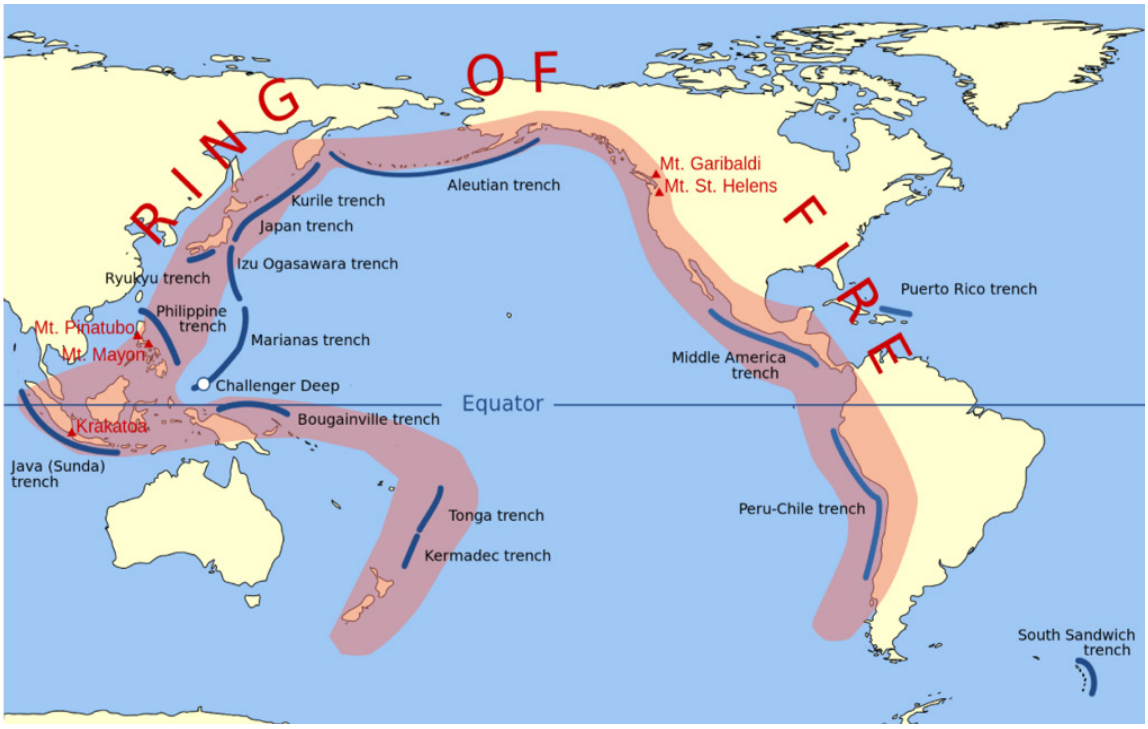
Volcano	Altitude (meters)	Last eruption
Nevado del Huila	5,365	2008
Nevado del Ruiz	5,321	1991
Nevado del Tolima	5,200	1943
Santa Isabel	4,950	Ca. 783 BCE
Cumbal	4,764	1926
Puracé	4,650	1977
Cerro Negro	4,445	1936
Sotará	4,400	Unknown
Galeras	4,276	2010
Doña Juana	4,150	1906
Azufral	4,070	Ca. 1087
Petacas	4,054	Ca. 3933 BCE
Cerro Bravo	4,000	Ca. 297 BCE
Romeral	3,858	Ca. 3933 BCE
Cerro Machín	2,750	Ca. 837 BCE

Source: Author's compilation, retrieved from Astroono, 2012.

An area known as the Bucaramanga Nest in northeastern Colombia is an important instance of the country's high seismicity. Together with the Hindu Kush in Afghanistan and the Vrancea in Romania, the Bucaramanga Nest is considered one of the areas with the highest density of earthquakes anywhere on earth (Zarifi et al., 2007).

Colombia is also part of the circum-Pacific seismic belt, also known as the Ring of Fire. This area stretches more than 40,000 kilometers around the Pacific Ocean (Figure 2). Along its contours the activities and thrusts of tectonic plates have caused 90 percent of the world's earthquakes, including 81 percent of the most intense earthquakes in known history (Cosker, 2016). Among these were the 2004 earthquake off the coast of Sumatra, which caused the devastating tsunami that affected 14 countries and left approximately 230,000 people dead, and the 2011 9.0-magnitude earthquake and resulting 10-meter tsunami that devastated Tōhuko, Japan, killing more than 15,000 people. The Tōhuko earthquake caused damage to infrastructure costing as much as 16.9 trillion yen, amounting to 3.5 of Japan's total GDP (BBC News, 2012; Romano et al., 2014; Waldenberger and Eilker, 2011).

Figure 2: Ring of Fire



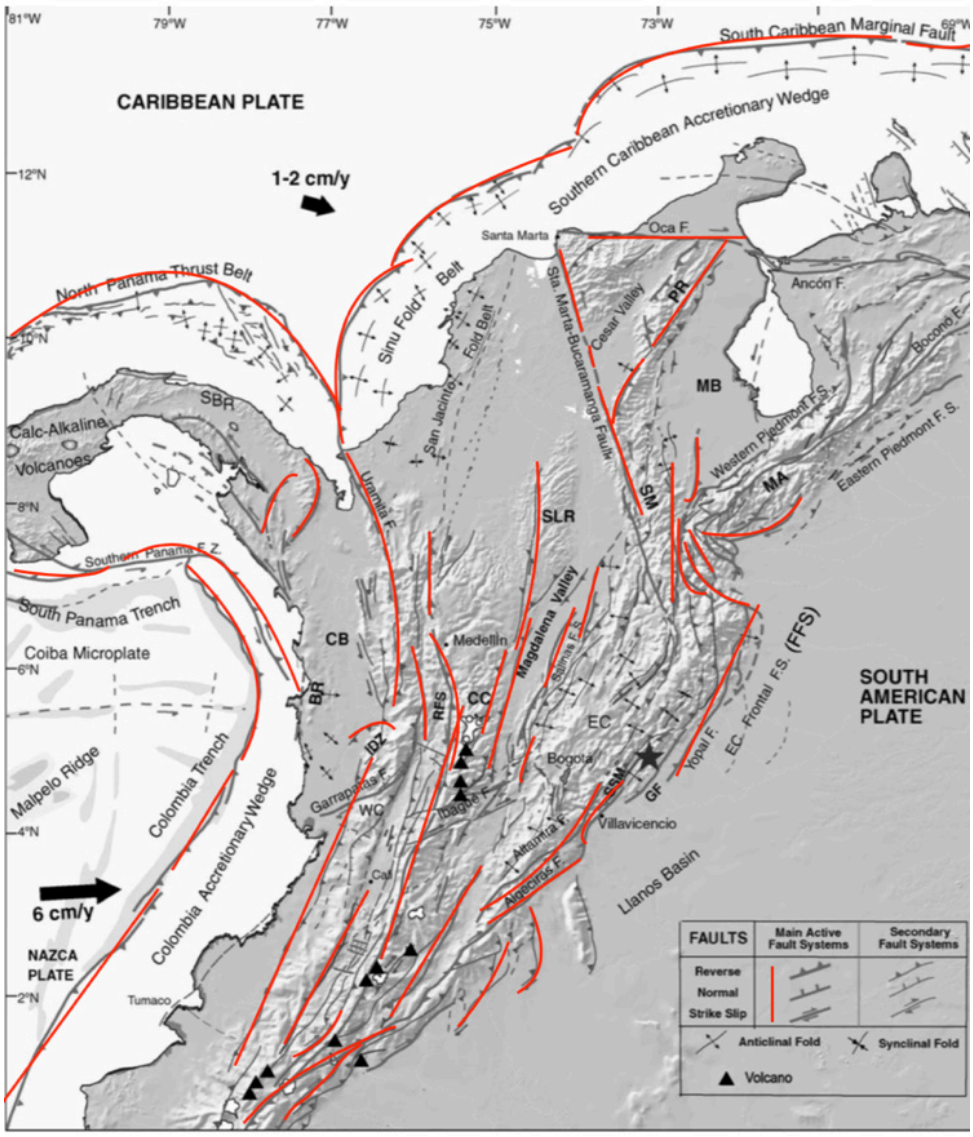
Source: Reproduced from Cosker (2016). Available for download at http://inhomelandsecurity.com/ring-fire-mega-quake-cards/.

Active Colombian Volcanoes

Although it is difficult to predict volcanic eruptions and even more difficult to predict earthquakes, scientists can identify active volcanoes based on historical records and specific events such as fumaroles (mainly sulfur and carbon dioxide emissions) and hot springs. The conventional wisdom is that volcanoes that have not erupted for more than 10,000 years can be considered extinct. All the rest, whether erupting or dormant, are generally classified as active. Colombia has 15 active volcanoes (Figure 3), all related to the lithospheric subduction zones and situated along the Andean mountain range. The tallest volcano is Nevado del Huila, followed by Nevado del Ruiz.

As shown on the map, Colombia's active volcanoes are situated along the Andes Cordillera. The Andes Cordillera begins in southern Colombia as a single formation; as it travels north, the cordillera splits into three mountainous chains known as the Western, the Central, and the Eastern Cordilleras.

Figure 3: Map of Colombia's active volcanoes



Source: Adapted from Bulletin of the International Institute of Seismology and Earthquake Engineering (2003).

Lahars and Landslides

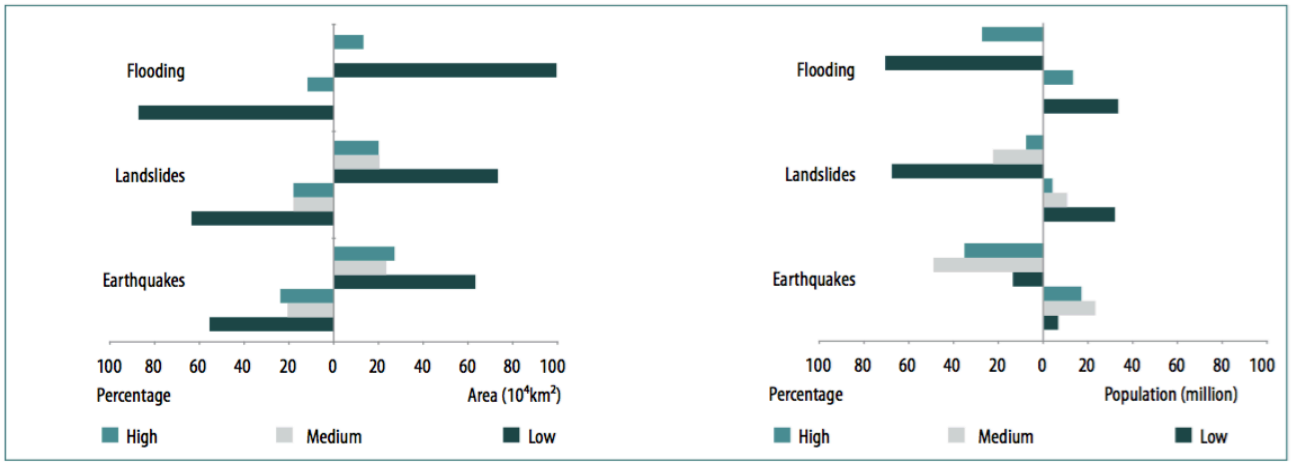
Lahars occur when volcanic pyroclastic material (including rocks, lava, pumice, and ashes) mixes with melted water from glaciers, mud, rocks, and other debris and descends, following morphological depressions, valleys, or riverbeds. Lahars are compared to flows of wet concrete, and like tsunamis they have the power to obliterate any obstacle in their path. Colombia's deadliest natural disaster and the deadliest lahar ever recorded was the Armero tragedy, which left more than 25,000 people dead. It was caused by lahars produced by a relatively small eruption in the volcano Nevado del Ruiz.

Colombia also has a high risk of landslides (ECHO, 2007; Petley, 2012; Ojeda and Donnelly, 2006) because of the country's tectonic conformation and its environmental and land degradation. This degradation is mainly the product of anthropic factors and the high intensity of yearly rainfall.

Unplanned Urbanization and Internally Displaced People

Colombia's urban population has risen rapidly, going from 4.4 million to 34.7 million in the last 60 years (World Bank, 2017). The demographic expansion of vulnerable sectors of the population, including internally displaced people (IDPs) in unsuitable urban areas, has raised the risks and costs of landslides and floods dramatically in recent years. Rural migrants and forcibly displaced people tend to build fragile dwellings on the slopes around Bogotá, Cali, Medellin, and other cities, and these areas are generally exposed to hazards such as floods and landslides. Research shows that 86 percent of the Colombian population is exposed to a high or medium risk of earthquakes; 31 percent, to a high or medium risk of landslides and mudflows; and 28 percent, to a high risk of flooding (Figure 4) (Campos et al., 2011).

Figure 4: Area and population exposed to landslides, earthquakes, and floods in Colombia



Source: OSSO Corporation, 2011 from OSSO-EAFIT Corporation, 2011

Source: Campos et al. (2011).

At present 75 percent of Colombians live in the Andean mountainous region, where they are exposed to seismic risks and risks related to hydro-meteorological events that can lead to inundations and movements of soil, rocks, and debris. These landslides and lahars are generally due to heavy rainfall and climatic variations such as those caused by phenomena like El Niño and La Niña. In 2010 and 2011 particularly heavy rains caused floods and landslides that left approximately 1,374 people dead and destroyed more than 100,000 homes (Aljazeera, 2015).

Past Disasters

Armero, 1985: Kumanday, "the big father with white long hair"

Nevado del Ruiz, or Kumanday. Photo: Mildred Bernal, http://www.experienciacolombia.com/fotos.php?Colombia=&n=nevado-del%20ruiz.

Kumanday is the pre-Columbian name of Nevado del Ruiz. At 5,321 meters high, it is the second tallest volcano in Colombia after Nevado del Huila. In Spanish, "*nevado*" means "covered in snow." True to its name, this volcano is the site of glaciers and perennial snows. After 140 years of dormancy, in 1984 Nevado del Ruiz began showing signs of activity. Fumaroles increased in intensity, emitting gases containing carbon dioxide and sulfur dioxide. Unusually high concentrations of magnesium, calcium, and potassium were detected in water springs around the volcano. This and other evidence indicated that volcanic magma was getting closer to the surface. A report by a European volcanology team that visited the volcano in late 1984 was delivered to the Colombian authorities. The document warned that an eruption was imminent and specifically underlined the high risk of mudflows and lahars. A few newspapers in Bogotá published hazard maps, but officials largely ignored these. In the weeks and days before the eruption, Ramon Rodriguez, the mayor of Armero, tried in vain to raise awareness about the imminent danger, contacting departmental and national politicians.

Dismissing the warnings as too alarmist, national and departmental political authorities failed to act and avert the disaster. On November 13, 1985, a few hours before the eruption, the Red Cross and the Civil Defense finally issued an evacuation order. It was too little too late. Communication had already broken down, and the order never made it to the towns at risk. Unaware that deadly lahars were speeding toward the towns of Armero and Chinchiná, local radio stations advised people to stay indoors to avoid exposure to volcanic ashes.

When Nevado del Ruiz erupted at approximately 9 pm, it caused the collapse and melting of about 10 percent of the Arenas crater and glacier. Melted ice, pyroclastic material, and other debris formed as many as four lahars, which descended along the volcano river valleys at about 30 kilometers an hour.[6] The mudflows rapidly traveled the 48 kilometers that separate the volcano from Armero and Chinchiná in the Departments of Tolima and Caldas, causing enormous devastation and killing at least 25,000 people. Eighty-five percent of Armero disappeared under the mud. As some observers pointed out, history had repeated itself: both Armero and Chinchiná were built on top of mudflow deposits caused by an eruption in 1845 (How Volcanoes Work, 2004).

In the aftermath of the tragedy, analysts concluded that the staggering death toll of the Armero tragedy could have been dramatically reduced had the institutions acted upon the warnings

delivered by scientists, experts, and the volcano itself. Although no courts found the Colombian government guilty of any negligence or wrongdoing, the utter failure of the institutional response is an accepted fact (Rocks, 2015; Orozco Tascón, 2015).

Páez, 1994: "A loud warning from the white-haired old man"

In 1994, nine years after the Armero tragedy, an earthquake epicentered near the summit of Nevado del Huila in the department of Cauca caused 10 landslides, which then turned into one powerful mudflow with an estimated mass of 320 million cubic meters. The mudflow descended along the course of the Páez and Simbola Rivers, passing through the municipal capital, Belalcázar.[7] As it made its way through the valleys of Tierradentro, the mudflow destroyed and buried the villages of Irlanda, Malaga, and Toes, together with all the other settlements it encountered in its path. The death toll in Tierradentro reached approximately 1,300 people, consisting mostly, but not only, of indigenous peasants living in settlements along the rivers.

People interviewed for this research reported that the 1994 catastrophe caught communities and institutions completely unprepared. The tragedy brought to light the fragility of both communities and institutions in Páez.

> *It was chaos, everything was covered in mud and we didn't understand where the helicopters were taking people. No one told us anything, we didn't know where we were going to be taken or if we were going to come back. Families got separated. People from the same village were taken to different locations. Some people ended up living in tents for four or five years after the avalanche.*
>
> *The economy of the region was disrupted. We lost livestock, we lost crops, the fishponds disappeared, we had nothing to eat. All roads and bridges were gone. There was no infrastructure left.*
>
> *We had forgotten our old ways and we had forgotten to care for the volcano. We lived detached from Mother Nature. Dreams were gone. Outsiders had begun settling into our lands, and people were abandoning traditional crops in favor of coca cultivation, which gave higher returns.*
>
> *This is why the volcano intervened. He is our friend. The avalanche was nature's way to awaken our dormant consciences. It was because of this tragedy that we understood that we had to reorganize and regroup as an indigenous nation. This is why Nasa Çxhaçxha, our main association, was born* (personal interview with residents of indigenous *resguardo* Toes, Tierradentro, August 2016).

Coincidentally, the year of the Páez disaster was also the year of the World Conference on Natural Disasters, which produced the Yokohama Strategy and Plan of Action for a Better World. This international framework emphasized the strict relationship between sustainable development and "disaster prevention, mitigation, preparedness and relief" (Sustainable Development Knowledge Platform, 2015). Years later, Nasa Çxhaçxha would officially adopt first the Hyogo and then the Sendai frameworks[8] with the clear understanding that disaster mitigation depends on sustainable development.

Páez, February 2007: "*Mata Pescado* (the fish killer)"

On February 18 and 19, 2007, seismological stations in Cauca and Bogotá registered a series of approximately 100 volcanic seisms in the vicinity of Nevado del Huila. Fumaroles around the volcano increased in intensity. Elderly Nasa spiritual leaders (*The Wälas* in Nasayuwe) warned the communities that their dreams suggested that something sinister was about to happen (field interviews, Páez, August 2016).

On the morning of February 19, the volcano erupted, producing a tower of smoke and ash almost 2,000 meters high. A lahar descended along the Páez River, reaching Belalcázar. Although no victims or damage to structures were reported, people living near Nevado del Huila recalled finding dead fish floating in the waters of creeks and rivers. Eventually, studies carried out by the Nature and Territory Team of Nasa Çxhaçxha found that the fish had died because of

high levels of acidity in the water produced when lahars carried volcanic ash and gases that were poisonous to freshwater life (Comunidad Andina, 2009).[9]

The eruption of 2007 generated a national emergency and alerted local communities and municipal institutions that Nevado del Huila was still a threat. This was the spark that motivated disaster risk reduction (DRR) and preventive work in the months that followed, at both the institutional and the community level.

> *The avalanches of 2007 were an opportunity for us to test the preparation work that we had been doing within the CLOPADs. And, we realized that we had to intensify monitoring of the volcano and disaster preparedness. This is also why, soon after the first lahar, we began collaborating with the Colombian Red Cross and INGEOMINAS on a regular basis* (personal interview with J. Yasnot, former mayor, Belalcázar, 2016).

People from Nasa Çxhaçxha recalled going through a similar process. In response to testimonies of warning dreams and reports of observable changes in their environments, indigenous authorities felt the need to prepare for the worst and prevent a tragedy similar to the one they had suffered in 1994. It was in this context that the Nature and Territory Team was created, kickstarting in 2007 a long and intensive process of resilience programming in the form of collective empowerment and community-based DRR activities.

Belalcázar, 2007: "*Tumba Puentes* (the bridge crusher)"

On April 17, 2007, the National Bureau of Geology and Mines (INGEOMINAS) began recording a significant increase in seismic activity around Nevado del Huila. In the early morning hours of April 18, a strong eruption produced a lahar of considerable strength. The mudflow destroyed 18 pedestrian bridges and three major vehicular bridges, cutting off a large number of communities (Peralta-Buritica, 2014).

As in the case of the *Mata Pescado,* no human fatalities were reported, but more than 2,300 people abandoned their houses and villages, relocating to more secure areas. The exodus was also a response to local spiritual leaders, who warned that nature and spirits were sending signs portending tragedy. A few weeks after the eruption, a two-year-old baby fell from a makeshift bridge and drowned when her mother's *chumbe* (baby sling) came undone during an attempt at crossing. Members of Nasa Çxhaçxha pointed to this tragic event as an example of the fragility of their communities. Colombian citizens, they argued, should not be forced to build makeshift infrastructures to connect their villages, to transport food, and to reunite with their relatives.

Informants from Nasa Çxhaçxha and the Colombian Make Cities Resilient Campaign of the United Nations Office for Disaster Risk Reduction (UNISDR) recalled how, following the 2007 eruptions, aside from a visit from President Álvaro Uribe, the people of Páez found themselves abandoned and isolated from national and departmental institutions. The absence of emergency aid and the utter isolation in which the communities were left in the aftermath of the 2007 eruptions prompted indigenous authorities to strongly denounce the negligence at the departmental and national levels and to urge the government to take action.

> *This area of the country has been always stigmatized. This is because of the guerrilla presence in the area and because we have strong local organizations, which historically have never been afraid to denounce injustice and the wrongdoing of the departmental and national governments* (personal interview with member of Nasa Çxhaçxha, Belalcázar, August 2016).

Páez, 2008: "*Mata Gente* (the people's murderer)"

On November 20, 2008, Nevado del Huila erupted once again, forming a crater with a diameter of more than 400 meters. The explosion caused the melting of a relatively small area of the glacier and perennial snows, producing a lahar that, according to the geologists of the OSSO Corporation, was three times bigger than the mudflow of 1994.[10] As it made its way down the valleys, this lahar destroyed six main vehicular bridges and obstructed most of the roads in Páez (see photo). The number of fatalities ranges between 10 and 16, depending on the source (Personal interviews with members of Nasa Çxhaçxha, former municipal employees, and local radio journalists).

Belalcázar a few days after the 2008 eruption. Photo: *Semana* (2008).

The significant difference in the number of victims in the events of 1994 and 2008 stem from a number of transformative processes that occurred within institutions, indigenous communities and organizations, and civil society before the 2008 volcanic eruption. People interviewed for this research confirmed this view, stressing that the 2008 avalanche would have left hundreds or thousands of people dead had the communities and institutions not been prepared to act according to DRR contingency plans and procedures built in the months before the volcanic event.

This result raises a series of questions: What processes catalyzed the outcomes? How were the capacities built? What was the role of DIPECHO-V, the indigenous communities, and local government and institutions in this scenario? Are the capacities still in place, or were they lost over time? Was resilience generated anywhere in the context of the DRR projects and initiatives that were implemented in Tierradentro? Answers to these questions could help us understand more about sustainable programming, resilience, and DRR.

THE SOCIAL CONSTRUCTION OF DISASTER

The reasons why the 1985 eruption of Nevado del Ruiz and the 1994 Páez earthquake turned into deadly and tragic events go beyond geological explanations. As early as the 1970s theorists began considering “natural disasters” socially constructed events (Cannon, 2011; McCurley-Stafford, 2012). Based on a wide range of case studies, DRR theory has established that exposure to hazards and vulnerability is determined by the social context. This is one of the central notions of disaster risk reduction and prevention behind the Hyogo and Sendai frameworks (WCDR, 2005; UNISDR, 2015). Disasters, rather than being inherent in natural phenomena, are development failures that can be substantially prevented or mitigated with adequate programming (Oxfam International, 2016).

The Armero and Páez tragedies fall into the category of socially constructed disasters. Several elements transformed these natural phenomena into so-called “unnatural” disasters:

- **Lack of a DRR mindset at the governmental level and lack of a DRR culture at the national, departmental, and municipal levels.** At the time of the tragedies, Colombian politicians lacked the knowledge and preparation to respond to the risk and mitigate and manage the disasters. In the days and weeks before the 1985 eruption, government officials at the departmental and national levels ignored or downplayed reports from Colombian and foreign scientists.

- **Breach of communication and lack of trust among institutions.** The National Bureau of Geology and Mines (INGEOMINAS), the body in charge of monitoring seismic and volcanic activity, together with the Red Cross and the Civil Defense, equipped with data provided by European scientific teams, warned the government in 1985 that an eruption was imminent and that Armero and nearby towns should be evacuated. The government response was hostile to the point that some officials accused the relief agencies of scaremongering (Arenas Jaimes, 2015).
- **Absence of a common DRR language and lack of alignment between the central government and local departmental and municipal bodies.** In spite of mounting scientific evidence in the months and weeks before the 1985 eruption, there was no meaningful communication or effective collaboration between politicians and aid professionals.
- **Absence of a working intergovernmental and interagency platform that integrated the national, regional, and the local levels.** As the Armero and the Páez crises unfolded, the lack of a coordinating body was felt at the local, departmental, and national levels.
- **Lack of early warning systems and preventive measures such as evacuation routes and communication systems.** Departmental and local authorities failed to prepare for the Páez disaster, leaving everything to chance.
- **Lack of understanding of the risk and lack of preparation at the community level.** People who lived near Nevado del Ruiz were not conscious of or informed about the behavior of the volcano and about the potentially destructive effects of volcanic eruptions, earthquakes, mudflows, and lahars. Local authorities misinterpreted the risk and sent out conflicting or inaccurate information. While the Armero disaster was unfolding, municipal officials spoke via local FM radio stations, telling the population that they were in no danger. Listeners were also told to remain indoors to avoid coming into contact with falling volcanic ashes, and this left them vulnerable to the advancing lahars.
- **Lack of a functional monitoring and distribution chain of aid supplies.** In both Armero and Páez the distribution of aid was improvised and chaotic.
- **Lack of attention to historical records, local oral knowledge, and the location of ancient settlements in development and urban planning.** Historical records and local oral knowledge and practices should inform development and urban planning. Armero and Chinchiná were built on top of solidified mudflows caused by the 1845 eruption. Places indicated as unsafe in local written and oral history should not be included in the Territorial Organization Plans.

The disaster in Armero, together with the 1994 earthquake and mudflow in Páez, presented a context of uncoordinated stakeholders and failure of the central state to produce an adequate response. In the case of Páez, the 1994 disaster also revealed an enormous regional void in terms of economic and social development (personal interview, Secretary of Planning, Páez, 2016).

GOVERNMENT COORDINATION OF DISASTER PREVENTION AND RESPONSE

Although the Armero eruption and the Páez earthquake and mudflow revealed Colombia's vulnerability to potentially disruptive natural phenomena, they also prompted advances in how government institutions and community organizations thought about risk and constructed DRR strategies. In 1988, in the aftermath of the Armero disaster, the Colombian government passed Law 46, establishing the National System for Disaster Prevention and Response (SNPAD). The SNPAD defines the responsibilities and functions of all actors involved in DRR, disaster response, and reconstruction. In 2004, in anticipation of the World Conference on Disaster Reduction in Kobe, Japan, the SNPAD was officially designated as the Colombian National Platform for Disaster Risk Reduction.

The SNPAD decentralized power and responsibility at the departmental and municipal levels by establishing the CREPADs and CLOPADs. The CREPADs are responsible for risk management, prevention, and response at the departmental level. Within this space all government institutions and specialized bodies, such as the Colombian Civil Defense, INGEOMINAS, and the Fire Department, meet to share information and coordinate activities. The CLOPADs perform a similar function at the municipal level. The creation of the CREPADs and CLOPADs was an important step that increased Colombia's capacity to manage risk and prevent and respond to disastrous events. During the course of this research, international operators and government officials in La Paz, Bolivia, repeatedly mentioned Colombia's CREPADs and CLOPADs as examples of good practice in the DRR field.

Nonetheless, there is still work to be done. In the context of the DIPECHO-V program, the French Red Cross and the Colombian Red Cross (FRC and CRC) recognized the complexity of social relations in the region and pointed out communication gaps between indigenous political organizations and government stakeholders involved in DRR (DIPECHO-V, 2008). During interviews carried out for this research, Red Cross personnel in the region emphasized that indigenous organizations are not integrated in the SNPAD and do not form part of the CREPAD and CLOPAD—the main political and coordinating tools for DRR at the national, departmental, and municipal levels. This situation, the product of mutual historical and ongoing mistrust between government and indigenous institutions, reduces exchanges of information and limits cooperation, increasing vulnerability for all sectors of the population (ECHO, 2008; written communication with Colombian Red Cross, August 2016).

A SCENARIO OF HIGH SOCIAL COMPLEXITY AND CONFLICT

The project discussed in this paper took place in the Department of Cauca. Of the 1.3 million inhabitants of Cauca, 58 percent are rural peasants, of whom 21 percent are Afro-descendants and 20 percent indigenous. Caucan indigenous people belong to the following 13 ethnolinguistic groups: Ambaló, Eperara-Siapidara, Guanacos-Nasas, Inga, Kokonuvo, Kokonuco-Yanakona, Kokonucos-Pubenences, Misak, Misak-Quizgó, Nasas, Polindara, Totoró, and Yanakonas. With 261,031 registered victims, Cauca is one of Colombia's departments that has been most affected by the 50-year long internal conflict (Victims' Unit, 2016).

Both Afro and indigenous communities have a long legacy of political struggle related to land tenure and the right to self-determination. Afro-descendant communities organize themselves around community councils. These are local governing bodies, products of Law 70 of 1993 that granted Afro communities autonomy and collective property rights over their ancestral lands. Indigenous people enjoy similar rights, stemming from the 1991 Colombian Constitution. The Constitution guarantees collective and cultural rights and the "inalienable, non-seizable, and imprescriptible " character of the territories (*resguardos*) they occupy and govern, according to customary laws and practices (CRIC, 2014). At present, in Cauca there are 100 indigenous *resguardos* and 22 community councils. Fifteen of the 100 indigenous *resguardos* are situated in Tierradentro, Cauca, in the municipality of Páez.

Of the 36,287 inhabitants of the municipality of Páez, approximately 5,000 live in the capital, Belalcázar. The remaining 30,000 are rural settlers living in indigenous territories or small rural villages. Seventy percent of the population of Páez is composed of indigenous people belonging to the Nasa ethnolinguistic group; 30 percent are mestizo and Afro-descendant peasants. Although Spanish is spoken in urban Belalcázar, the main language in the rural settlements is Nasayuwe.

> *Belalcázar, the municipal capital of Páez, is a profoundly divided town. The mestizo population on one side and the indigenous population on the other side. There is racism and mutual mistrust. In urban Belalcázar indigenous students are self-conscious about their identity and ashamed of their origins and succumb to peer pressure not to speak in*

their mother tongue Nasayuwe (personal interview with the head of the Family Council, Nasa Çxhaçxha, Belalcázar, 2016).

The Colombian countryside is a battlefield of conflicting interests involving national and transnational companies, drug traffickers, legal and illegal miners, cattle ranchers, politicians, landowners, and communities, to name a few, in the midst of an armed conflict.[11] Cauca is no exception. Thanks to its ethnic diversity, Tierradentro possesses a rich cultural heritage. Concomitantly, Tierradentro has experienced a high level of conflict owing to competing notions and practices of land management and land exploitation, territorial disputes, mining interests, competition over resources, and the significant and historic presence of FARC guerrillas. Social and political relations among indigenous, Afro, and *mestizo* communities and institutions[12] are complex and difficult to navigate. One source of tension before the 2008 eruption was the profound rupture between municipal institutions and indigenous authorities.

20 percent of the population of Cauca has been directly affected by the war (Victims Unit, 2016).

Colombian jurisprudence concerning indigenous autonomy is possibly the most advanced on the continent. However, integrating indigenous jurisprudence with central and decentralized DRR norms and regulation in the context of departmental and municipal development planning is a complex exercise. As mentioned, indigenous communities are not part of the SNPAD. They have also been historically marginalized and kept out of the decision-making processes related to territorial planning and national development models. Structural discrimination and marginalization of indigenous communities have been denounced in various forums. These, according to indigenous representatives and Colombian transitional jurisprudence such as Writ 004 of 2009, are reflected in multiple mechanisms of social and political exclusion.

Judgment T-025 and the writs that followed are powerful legal tools. This piece of legislation, together with International Labor Organization Convention 169 of 1989 (incorporated in the Constitution of 1991 with Law 21) and the United Nations Declaration on the Rights of Indigenous Peoples of 2007, which have been adopted by the Colombian government, should always inform the design of public polices, DRR, and development programs related to indigenous people and other vulnerable communities.

Simultaneously, however, Tierradentro, Cauca, is also one of the regions in Colombia where indigenous organizations have been able to exert strong territorial control and have achieved a high degree of social and political autonomy, through years of painstaking political struggle and resistance. Local communities and organizations are therefore skilled in diplomatic relations and have managed to consolidate alliances with national and international bodies.

Because of their historical importance, their accomplishments, and the recognized charisma of their leadership, indigenous organizations from Cauca are an example for the rest of the region. Local governments based on the autochthonous worldview and cosmologies are in place, and they exercise a high degree of territorial control vis-à-vis the state and the FARC insurgents in various municipalities.[13]

3 CASE STUDY

Figure 5: Maps of Colombia, the Department of Cauca, Páez Municipality, and the indigenous *resguardos* within Páez (from left to right, top to bottom)

Source: Adapted from Making Cities Resilient (2015).

THE DIPECHO-V PROJECT, 2007–09

At the end of 2007 the French Red Cross (FRC) partnered with the Colombian Red Cross (CRC) to begin implementing DIPECHO-V, a 15-month-long disaster preparedness project financed by the European Commission's Humanitarian Aid department (ECHO). One of the objectives of this program was to build capacity at the community and government levels to manage events related to natural hazards—specifically lahars, earthquakes, and mudflows in high-risk communities near the volcano Nevado del Huila. The project area comprised five municipalities in the departments of Cauca and Huila, with an emphasis on Tierradentro, including the municipalities of Inzá and Páez.[14]

In line with the established design of DIPECHO projects, the CRC's approach to risk reduction in Tierradentro consisted of "strengthening the capacities of communities and institutions

through participatory activities. A lot of resources were oriented toward activities involving educational institutions, students, and teachers" (field interviews with CRC representative, former and current municipal employees, radio journalists, and others, Belalcázar, August 2016). Workshops and presentations employed a variety of methodologies, prioritizing participatory and interactive pedagogical tools. CRC personnel in both Belalcázar and the departmental capital Popayán said they worked in complete coordination with state institutions and within the parameters of the SNPAD.

One informant involved in the project on behalf of the CRC recalled the importance of the collaboration between municipal institutions, the Catholic Church, and the local Red Cross:

> *The mayor and the Catholic Bishop of Belalcázar became our primary allies. The mayor, in particular, was a good friend of mine. We played music in the same band and grew up together. Because of our long-time friendship we worked together and collaborated flawlessly.…*
>
> *The mayor and I traveled to indigenous territories and spoke with the traditional authorities. As Red Cross we had no problems with the guerrillas, and we could safely travel through rural areas. The FARC understood our work, and they did not interfere with our personnel* (personal communication with CRC representative, Belalcázar, August 2016).

At the outset of the project, DIPECHO-V identified a series of strengths and weaknesses in the target population (Table 3). Notably, the project's documentation referred to specific vulnerabilities of the indigenous communities related to the absence of an institutional dialogue with indigenous governmental structures. It also mentioned the fact that autonomous indigenous governmental institutions are not represented in the SNPAD.

Table 3: Perceived capacities and vulnerabilities affecting DRR in Tierradentro, Cauca, according to Red Cross personnel interviewed during the research

Capacities	Vulnerabilities
The SNPAD, CREPADs, and CLOPADs were important tools for DRR and risk management in the region.	Isolation from urban centers, lack of roads, and vast territorial scale posed challenges to DRR work.
Local indigenous institutions were well organized.	Lack of collaboration between governmental and indigenous organizations hindered DRR and increased vulnerability in the region.
Indigenous, autonomous programs aimed at DRR and community resilience had positive impact in the communities.	Socioeconomic conditions and rural poverty raised challenges.
The mindset of indigenous and peasant communities was receptive toward DRR language and practices.	Rural municipalities were not open to sharing information with outsiders.
Municipal authorities were highly interested in the development of DRR strategies.	Armed conflict was present on the ground.
The Catholic Church was involved in DRR strategies in Belalcázar.	Some local and indigenous people hold archaic, non-scientific beliefs about the volcano and Mother Nature.[15]
Local radio stations were committed to DRR strategies.	Non-urbanized rural indigenous communities were reluctant to receive DRR training from outsiders.

Source: Personal interviews at the national and local level; ECHO (2007).

The project documentation also recognized that the dynamics of structural marginalization affecting indigenous communities, which made up 80 percent of its target population in Páez, prevented the implementation of comprehensive DRR strategies.

According to the project's documentation as well as interviews conducted during this research, the framework of intervention used by the FRC and the CRC centered on community participation, the strengthening of existing risk reduction institutions, and the establishment of community networks. Moreover, DIPECHO-V focused on disaster preparedness at the national, regional, and local levels and the realization of localized contingency plans for each of the towns and communities involved. Planning meetings for the project took place at the national and regional level in Bogotá and Popayán.

The project was primarily, but not only, directed at 11 Caucan communities in the municipalities of Páez and Inzá. Situated near Nevado del Huila, most of these communities had suffered heavy losses during the 1994 mudflows.

CREPADs and CLOPADs in the Huila and Cauca departments received specific training related to Sphere Standards, Logistical Supply System (LSS), and Humanitarian Supply Management Systems (SUMA). Most of this work was centered in the town of Belalcázar. Belalcázar was the municipality most affected by the devastation of the 1994 earthquake and mudflows. Educational activities and training workshops focusing on DRR were also held in the municipalities of Paicól, Tesalia, and La Plata in the department of Huila. The project directly benefited a range of local actors (Table 4).

Table 4: Beneficiaries of DIPECHO-V

DIPECHO 2007–09 direct beneficiaries	Number of people
11 rural communities	3,800
Indigenous leaders	60
Facilitators	50
Members of 6 CLOPADs and 2 CREPADs (Cauca and Huila)	100
Students from 7 educational institutions	600
Teachers and other local school personnel	70
Community emergency teams (CETs)	55
Journalists from local radio stations and the written press	10
Local government institutions	6
Caucan Indigenous Regional Council (CRIC)	25
National Bureau of Geology and Mines (INGEOMINAS)	5

Source: Adapted from ECHO (2007).

DIPECHO-V set out to engage with eight broad sectors. A series of complementary pedagogical and strengthening tools were designed to be implemented at the regional and the municipal levels. The following areas of operation were identified:

1. Infrastructure
2. Early warning systems
3. Education
4. Raising awareness
5. Training and development of local capacities
6. Institutional strengthening at the municipal level
7. Mapping and digitalization of existing data
8. Coordination

According to the project's implementers, activities were performed in each of the eight fields, resulting in increased disaster preparedness in both civil society and local government institutions. One important component of the project was the creation of an early warning system. To establish this system, the project built a VHF radio network and provided INGEOMINAS with six pairs of radio antennas along with one seismographer.

> "Early alert system [EAS] saves lives during volcano eruption. In Colombia, the Red Cross, with a 2007–2008 DIPECHO Action Plan, installed an EAS, organized and trained communities that were vulnerable due to their closeness to the Nevado del Huila volcano. In November 2008, right near the end of the project, an eruption occurred that was previously informed and alerted [sic] by the indigenous communities closest to the radio devices donated by the project. This allowed for an evacuation of the urban centre of Belalcázar (Páez municipality), and for the death toll to be reduced to 10 people, whereas in 1994, a similar event of tectonic origin that also produced an eruption, created a toll of 1100 dead people. Authorities and technical-scientific bodies acknowledged that, thanks to the capacities strengthened by the DIPECHO project, many more lives could be saved, since the alert came on time and the population was prepared, organised and trained to respond…" (ECHO, 2014).

IMPACT OF THE PROJECT: BUILDING INSTITUTIONAL CAPACITY IN BELALCÁZAR

Narrative reports, along with the logical framework's indicators and data, show that DIPECHO-V at least temporarily improved the DRR capacity of students, educators, municipal employees, elected officials, indigenous representatives, and radio journalists, as well as local Red Cross personnel (ECHO, 2007). These conclusions were corroborated during field interviews with government officials, one teacher, and a media professional in charge of the local radio station in Belalcázar (personal interviews, Belalcázar, August 2016).

Among the DRR actions promoted by the project's implementers, the following activities stood out both in the written material and during the interviews:

- Awareness and knowledge of volcanic risk were raised within local organizations.
- A VHF radio early warning system was tested and put in place.
- A system for monitoring volcanic activity was established, increasing the capacity of INGEOMINAS.
- One seismographer was installed.
- Within the local Red Cross chapter in Popayán and Belalcázar, 55 paid volunteers were trained in DRR with the help of specifically designed pedagogical material.
- Sixty indigenous leaders from 11 communities were given DRR training and attended workshops about risks related to volcanic phenomena.
- Radio journalists were taught basic volcanology concepts and terminology.
- In Popayán, members of CRIC attended a workshop on DRR and volcanic risks.
- Emergency kits were distributed to educational institutions, CLOPADs, and CREPADs.

Project implementers also strongly emphasized that DIPECHO-V helped strengthen institutional capacity and legitimize the work of the CREPADs and CLOPADs. According to indicators and personal interviews, the project fulfilled the following objectives:

1. It strengthened knowledge about volcanic and seismic risks within the CREPADs and CLOPADs in Huila (six municipalities) and Cauca (two municipalities).

2. Members of the media who attended the CLOPAD meeting were provided with useful information about the local context and DRR strategies.

3. Fifty percent of the media professionals who participated in the CLOPAD meetings published informative articles about DRR.

4. CREPADs and CLOPADs made teaching materials on DRR available to the public.

5. Sixty percent of the beneficiaries polled while the project was being finalized were satisfied with the DRR process.

6. Following the project, 70 percent of the beneficiaries polled who were living in indigenous communities were aware of volcanic risks and were ready to respond to a crisis.

7. Following the project, 60 percent of a sample of people interviewed by the implementers were aware of contingency plans and knew where to access them.

8. An early warning system was in place.

9. A seismographer was assigned to INGEOMINAS.

The former mayor of Belalcázar recalled that the first months of 2007 were crucial to develop a culture of DRR within local municipal institutions. As the risks were identified and studied, municipal and departmental institutions began strengthening their response network. DIPECHO-V aligned itself effectively to complement municipal institutional programs.

> *The work that all of us performed in 2007, the interplay of activities organized by the mayor's office, by the Colombian Red Cross, by the cabildos [the term refers to both indigenous authorities and territories], Nasa Çxhaçxha [local indigenous organization] and its Nature and Territory Team, the participation of the bishop and the school teachers.… All of this created an environment of interest, preparedness, and general social commitment toward disaster prevention…*
>
> *Personally, I focused my entire mandate and political office on DRR work. I am a survivor of the 1994 mud avalanche, and I executed my first mandate as a mayor in the years of the reconstruction.…*
>
> *The thought of mudflows and avalanches kept me up at night. I didn't want to be responsible for losing people's lives. Some of my best friends died in the mudflow in 1994; five of them were Colombian Red Cross volunteers who were trying to save people. Negligence kills people. Throughout my mandate, I summoned and presided over as many as 600 CLOPAD meetings.…*
>
> *Belalcázar is a rural municipality. We don't have much in terms of infrastructure. Even today we don't have a properly functioning and stable cellphone network.…*
>
> *Information here is often delivered by the local FM radio stations, Radio Eucha and Radio Nasa—which also broadcast in Nasayuwe. We rely on the FM radios for personal and general inter-municipal communications.…*
>
> *In 2007 and 2008, our local radio journalists were completely committed to disaster prevention and awareness. They broadcast important meetings about volcanic risks that took place in the cathedral; they generated public awareness and gave out important information about evacuation routes and safety norms.…*
>
> *It was because of all this preparatory work that the powerful avalanche, the one that struck in November 2008, left only 12 people dead, which was still sad but a very negligible number compared with 1994 when a much smaller mass of mud and debris went through our communities* (personal interview with J. Yasnot, Belalcázar, August 2016).

Facts gathered during our fieldwork confirmed that under the administration of former mayor James Yasnot, urban Belalcázar achieved a good degree of preparedness with regard to the tangible threat of landslides caused by soil erosion or volcanic activity. Escape routes and congregation points were established; and radio broadcasters and the church were informed and in turn informed the population about landslides, volcanic activity, safety measures, and evacuation procedures. This success was the result of organized collaboration between the municipality, the church, local radio stations, and educational institutions. The Red Cross, through DIPECHO-V, played a significant role complementing these efforts with finances and resources.

THE PROJECT'S APPROACH TO GENDER

Aside from one short paragraph stressing the importance of women's participation, the project's documentation makes no specific reference to gender and does not present gender-disaggregated indicators on activities, outputs, and outcomes. People (both implementers and beneficiaries) interviewed for this study confirmed that the project did not include a gender framework and approach. Furthermore, no gender analysis appeared to have been carried out. The possibility that gender inequities might have affected women's access to the capacities installed does not appear to have been contemplated. More research would be needed to ascertain whether the project failed to include a population group (i.e., women) or whether it contributed to the perpetuation of unjust power relations. According to the Colombian Red Cross, practices around gender programming in development have evolved over the past ten years, and the DIPECHO-V project followed the best methodologies for gender equality at the time (written communication with Colombian Red Cross staff, August 2017).

THE PROJECT'S APPROACH TO ETHNICITY

Interviews with CRC personnel and other stakeholders, together with analysis of written documentation, showed that DIPECHO-V was not equipped with a structured intercultural framework. The project did not present a theoretical analysis of ethnic diversity in the region. The teaching materials presented during the workshops and the emergency kits delivered to schools were all in Spanish. Privileging the Spanish language and failing to include bilingual teaching materials could have put sectors of the Nasa population at a disadvantage.

CRC personnel interviewed for this research pointed out that early warning systems should have been designed with ethnic diversity in mind, incorporated local knowledge and culture, and integrated indigenous languages. These conditions were not present, however. In fact, communications in indigenous languages over the radio system were explicitly prohibited initially. One informant who performed a leading role in implementing the project said that certain remote indigenous communities were "too recalcitrant and removed from modern life to be able to make the most of DRR programs" (personal interview, Colombia, August 2016).[16]

At the same time, informants reported that DIPECHO-V adopted a multicultural approach. They argued that thanks to "an inclusive cultural outlook," the project generated resilience and relatively durable DRR capacities.

- *The VHF radio communication system was a success in that we managed to install the capacity even in faraway communities, in the vicinity of the volcano. The network worked, and we were able to train operators from 11 communities. Contingency plans were agreed upon, and we organized and rehearsed evacuation routes in each of the 11 target communities.…*

- *At present the capacity is gone and the equipment is obsolete. We are hoping that a new project will be funded to update the electronic equipment that sustains the early warning systems* (personal communication, Colombia, August 2016).
- *An informant who viewed the VHF radio network as a successful component of the program also recalled that the system started failing soon after its implementation.*
    - *Quite early into the project we ran into problems with the VHF network. Operators in Belalcázar began quarreling over the radio with people who were stationed in the indigenous villages. Insults were exchanged in several instances.*
    - *The problem had to do with the fact that the Nasa radio operators used Nasayuwe, their mother tongue, for radio communications possibly not related to DRR work.…*
    - *Eventually, after a series of encounters, we reached an agreement, and Nasayuwe was permitted in the early warning network. It was too late, however, and by then some indigenous governors had returned the radio equipment.…*
    - *Even without the radios, the mindset to operate an early warning system had been installed and helped save lives. In 2008, when the Nevado del Huila erupted, a gentleman called Bernardino Achiqué saw the eruption, and as most people were already running toward the safe spots, he used his cellphone to call Belalcázar, warning us that a mudflow had formed and that it was heading towards us* (personal communication with CRC representative, Belalcázar, August 2016).

The project implementers interviewed for this research all held the view that the project was developed within multicultural parameters, taking into account the ethnic diversity of Tierradentro, Cauca. When asked what made the project multicultural, informants provided the following answers:

- The DIPECHO-V project coordinator in Belalcázar was a native of Tierradentro.
- Eleven indigenous communities were included.
- Project implementers met with indigenous leaders and visited indigenous communities.

Despite these statements, the rest of the ethnographic material and the project's documentation point to the fact that DIPECHO-V was not intended as an intercultural project. It did not provide an ethnic analysis of the context and was not implemented incorporating local cultural practices and knowledge. Moreover, the main indigenous organization in the region, Nasa Çxhaçxha, claimed that the project had been designed and implemented with a strong bias toward the urban population and municipal institutions.

IMPACT ACCORDING TO INDIGENOUS ORGANIZATIONS (NASA ÇXHAÇXHA)

In January 2004 the Colombian Constitutional Court issued Judgment T-025. The ruling, which continues to shape Colombian public policies, pointed out that a *status quo* of "unconstitutional things" affected internally displaced people, and specifically women, Afro-descendant communities, and the indigenous population. T-025 obliges the government to take specific actions and implement strategies to transcend the unconstitutional status of things. In addition, Judgment T-025 was followed by a series of rulings pertaining to the rights of women, Afro-descendants, and indigenous people (i.e., Ruling 092 of 2008 for the protection of women victims of the armed conflict and Ruling 004 of 2008 pertaining to indigenous communities). The rulings order that a "differentiated focus" must be implemented in response to the needs of Colombia's vulnerable communities. The differentiated focus must be applied to public policies, aid interventions, and emergency and development programs.

Indigenous authorities interviewed for this research pointed out that DIPECHO-V "possibly installed some DRR capacities in urban Belalcázar" but failed to integrate indigenous communities in an appropriate and inclusive manner and following appropriate political, social, and cultural protocols. However, they emphasized that community initiatives, designed within

indigenous organizations and allied organizations, succeeded in building a DRR culture among the Nasa population (personal interviews, Nasa Çxhaçxha, Belalcázar, August 2016).

The reasons supporting this statement are explored below and are related to issues of self-determination and the implementation of autochthonous programs outside of the government framework.

Box 1: Landslides strike Mocoa, Colombia, April 2017

The night between March 31 and April 1, 2017, the city of Mocoa in the Putumayo department (which borders the Cauca department), was hit by a series of huge landslides that swept away several neighborhoods, killing hundreds of people. Despite the fact that local authorities had been warned about the risk of landslides in the area, early warning systems were not in place, giving people little chance of surviving when disaster struck. This tragic occurrence highlights the critical need for local governments to have the capacity to learn from and capitalize on previous experiences of risk management, or lack thereof. It is also a reminder of how important it is for civil society organizations to construct and strengthen their own localized, adaptive, resilient risk management systems.

4 DISCUSSION AND ANALYSIS

Páez River, Tierradentro, Cauca. Photo: Riccardo Vitale, 2016.

ETHNOGRAPHIC PERCEPTIONS: DRR AND RESILIENCE IN TIERRADENTRO, CAUCA

Not surprisingly, different actors involved in DRR work in Tierradentro, Cauca, reported different perceptions of which processes were most helpful in building capacities that limited the loss of life in the 2008 avalanche and which stakeholders held a primary role or exerted the most agency through the network. Most informants viewed the success of DRR strategies as an internal accomplishment of their own organization—that is, they attributed the strength of specific DRR networks to their own potential to build capacity. This was the case for the Red Cross, the municipality, and the indigenous organization Nasa Çxhaçxha.

Red Cross personnel emphasized the importance of DIPECHO-V as the main catalyst of DRR in Tierradentro between 2007 and 2009. They also viewed the establishment of early warning systems and the distribution of emergency kits in educational institutions, CREPADs, and CLOPADs as successful DRR strategies tied to the project. Officials from the municipality argued that the CLOPADs and CREPADs played a fundamental role in building DRR capacities, and they viewed the DIPECHO-V project as a complement to their own primary DRR efforts. For their part, indigenous leaders and authorities reiterated the importance of DRR initiatives carried out using principles of self-determination and autonomy. They also pointed out that spirituality and local traditional knowledge of the territory played central roles in the capacity-building processes.

Nasa Çxhaçxha's Nature and Territory Team emphasized the importance of social mapping as a methodology to assess risk, vulnerability, and capacities. Former and current members of the Nature and Territory team cited collaboration between the OSSO Corporation and their

organization as a key component in the success of DRR strategies. Importantly, former members of the Nature and Territory Team also cited recovery of traditional knowledge and cultural practices as the central DRR strategy and one of the main achievements of their work.

A representative of the Colombian UNISDR Making Cities Resilient campaign held the view that the collaboration between that campaign, Nasa Çxhaçxha, the United Nations Institute for Training and Research (UNITAR), and the United Nations Operational Satellite Applications Programme (UNOSAT) was an important element in building more resilient communities in Tierradentro, Cauca.[17] This informant also underlined the importance of combining traditional knowledge with a scientific outlook.[18]

Most of the stakeholders used the word “resilience” in a loose and interchangeable manner to indicate installed capacities and/or acquired coping mechanisms and strategies. Indigenous spokespeople from Nasa Çxhaçxha consistently used the term to refer to social learning processes pertaining to sustainable development models that encompass risk management practices. At times, the Spanish word *pervivencia* was used to express the capacity to evolve and survive in a specific environment. This report argues below that this term, as used by Nasa spokespeople, can be translated as “resilient living.” All stakeholders agreed that collaboration with other bodies is a key element for resilient and sustainable programming.

TIMING AND DURATION

Clearly, in the case of DIPECHO-V, efficacy went hand in hand with timing. Several informants, for example, defined DIPECHO-V as a “lucky project” because of its time frame (personal interviews, Belalcázar, Popayán, and Armenia, August 2016). The educational and institutional strengthening programs began in 2007 and lasted 15 months, the average duration of most DIPECHO projects. During this period schools, communities, and government institutions received the training that equipped them to face first the small eruption and mudflows of February 2007 and later the large volcanic event of 2008. Interestingly, both events occurred while the project was being executed.

According to the Colombian Red Cross coordinator of DIPECHO-V:

> *We were lucky because the first eruption of 2007 gave us the opportunity to rehearse the work and the planning that we had done, test the early warning systems, and test the response network. This event helped a great deal to prepare everybody [stakeholders and population] for the major eruption of 2008 with its massive mudflow* (personal interview, Armenia, August 2016).

When asked about sequencing and timing, indigenous and government representatives expressed the view that DRR projects do not exist in a contextual or temporal vacuum. Specifically, informants from municipal institutions pointed out that DIPECHO-V’s contribution to local DRR governmental activities was rendered possible by a preexisting set of conditions and frameworks. These sources underlined the importance of the SNPAD, CREPADs, and CLOPADs. This setup, they argued, provided the legal and methodological DRR frameworks that permitted the development of DIPECHO-V.

Spokespeople from Nasa Çxhaçxha agreed that the eruption of 2008 found the communities sufficiently prepared and organized to face the disaster. However, they argued that the preparedness of Nasa indigenous communities was a product of their own autochthonous resilience and DRR processes, which were completely unrelated to DIPECHO-V.

Overall, most of the local representatives interviewed during the research showed a good degree of DRR knowledge, suggesting that they had acquired a certain degree of resilience, as defined by the Oxfam framework. Moreover, as of eight years after the last major landslide, no indigenous settlement has been rebuilt in unsafe areas in the municipality of Belalcázar. This, however, was not the case in parts of urban Belalcázar, where people have remained in or repopulated unsafe, risky areas adjacent to the riverbed.

NATURAL HAZARDS ARE NATURAL TEACHERS: SHOCKS AS GENERATORS OF CAPACITY AND RESILIENCE

At the same time DIPECHO-V was being implemented, indigenous communities in Tierradentro organized and carried out an independent DRR program considered highly successful by observers and participants alike (personal interviews, Belalcázar and Cali, August 2016). The program was a collaboration with geologists from the OSSO Corporation. Because of this effort, the UNISDR awarded Nasa communities the title of Champions of Resilience in 2015 (UNISDR 2015).

Nevado del Huila. Photo: PREDECAN (2009).

Nevado del Huila in Nasa cosmology. Photo: PEBI-CRIC (2014b).

Indigenous communities in Colombia argue that governments and program implementers must incorporate indigenous voices, ancestral spiritual practices, and local knowledge into development models everywhere. The spiritual forces that inhabit the earth are manifesting themselves in multiple ways in the dreams and visions of traditional healers or through natural warnings, which we see as disasters. The message, according to indigenous healers from across the country, is an urgent call for a global change of conscience leading to the emergence of new, more sustainable relationships between the human species and the planet we inhabit.

Immediately after the eruption of April 2007, indigenous authorities from the municipalities of Páez and Inzá organized a series of extraordinary meetings to assess the damage and the risk level for their communities and to decide on responsive actions. As soon as data came in from all the localities affected by the landslide, Nasa authorities agreed on a local response plan. Simultaneously they began lobbying the state to start implementing DRR measures.

Box 2: Statement by Nasa authorities in the aftermath of the 2007 eruption

1. We declare a state of economic, social, environmental, and cultural emergency in Tierradentro, Cauca.
2. We call on the national and departmental governmental institutions to also declare a state of emergency and unleash the proper procedures to address a zone in distress.
3. To reestablish negotiations with the national government so that the agreements stipulated regarding acquisitions of new territories are implemented. These new territories will be used to relocate families now living in danger zones.
4. We delegate the organizations Nasa Çxhaçxha, Juan Tama, and the Caucan Regional Indigenous Council to represent our communities with national, international, governmental, and nongovernmental institutions in charge of implementing emergency measures.
5. We call on other nations, indigenous organizations, and social movements to express solidarity and to come to our support managing the emergency through the mediation of our representative authorities.
6. We hold the governor of Cauca responsible for any lack of proper risk management procedure and any damage to the integrity of our people and our territory caused by the lack of appropriate attention, lack of information, lack of direct communication, and lack of research aimed at assessing the risk with exactitude.
7. We order the relocation of the Nasa FM radio station to a safer location and we urge the Ministry of Telecommunications to direct resources toward this initiative. The FM radio is the only vehicle of reliable communication available in Tierradentro, Cauca and will be of fundamental importance in sending alarms in case of new eruptions.
8. We call to the institutions responsible for public safety to implement an alarm system to prevent and respond to eventual emergencies.
9. We urge the departmental government to resolve the chaotic state of our emergency health system.
10. We urge the departmental Education and Culture Secretary to adopt measures that guarantee the development of education methodologies aligned to our worldview, customs, spiritual and cultural traditions.
11. The financial resources toward this emergency must be directed to those areas of Tierradentro that have been most affected by the eruptions and to the areas outside of the region where the displaced families are relocating.
12. In compliance with our practices and customs we urge the National System for Disaster Prevention and Response (SNPAD) to respect our autonomy to develop our own disaster prevention systems.

Source: Nature and Territory Team, Nasa Çxhaçxha, 2007.

Oxfam's resilience framework suggests that in times of uncertainty and crisis, existing systems might be disrupted, generating social conditions that can give rise to transformative processes. In this scenario, shocks can be converted into social capital that produces strengthened institutions, communities, and resilient living (Oxfam International, 2016). This theoretical approach can explain how indigenous institutions and grass-roots organizations such as Nasa Çxhaçxha adapted and became empowered as they responded to crisis between 1994 and 2008.

By 2007 the members of Nasa society in Tierradentro began manifesting a heightened awareness of their own vulnerability to perceived risks. Nasa Çxhaçxha, the largest indigenous organization in the area, responded by creating the Nature and Territory Team. The Nature and Territory team first set out to identify resilient cultural practices and traditional coping strategies. Moreover, in an important step, they strengthened their alliance and collaboration with the geologists of the OSSO Corporation and the United Nations regional DRR agencies.

Box 3: Steps taken by Nasa indigenous communities in the aftermath of the 2007 lahars, in Tierradentro, Cauca

- Acknowledge risk
- Identify vulnerabilities and capacities
- Strengthen own social networks and organizations
- Forge alliances and expand networks (multi-stakeholder collaboration)
- Strengthen information and communications networks
- Engage in forward planning and prevention
- Demand accountability from government institutions
- Demand accountability from aid agencies
- Demand respect for self-determination and own culture within existing legal frameworks
- Identify and remedy spiritual weaknesses
- Initiate risk reduction processes based on own cosmologies, culture, and traditions

According to the people involved, the social mapping exercises and the synergy generated by the combination of Nasa spirituality with scientific geological and technical knowledge were crucial elements of this unique experience. Overall the process helped build a culture of DRR that enhanced the resilience of Nasa communities in Tierradentro.[19]

> *We worked from below. The men, the children, the women, the elderly they all got together and participated in the exercises of social mapping.*
>
> *The social mapping that we produced collectively represented our world, our knowledge, our food, the animals, the medicinal plants.… We remembered what we knew about the volcano and our relationship with it.…*
>
> *We identified safety routes and higher and safer locations for our houses and agricultural lands. We remembered that before the arrival of clergymen in our territories, our ancestors never built houses near the rivers.…*
>
> *By remembering who we are, how we did things, what rituals we have to perform, we make our territory resilient* (personal interview, Victor Hurtado, Belalcázar, 2016).

Nasa Çxhaçxha approached DRR from the perspective of sustainable development, combining risk management and prevention with Nasa life plans.[20] This approach was crucial to enhance the resilience of local communities and create a stronger DRR culture among the indigenous *cabildos* (PREDECAN, 2009).

Box 4: Activities promoted by Nasa Çxhaçxha Nature and Territory Team to promote resilient development in Tierradentro

- Undertaking social mapping exercises disaggregated by gender and age groups
- Conducting activities aimed at recognizing forgotten cultural potential and strengths
- Strengthening of local culture through the use of Nasayuwe language during the exercises of social mapping
- Restoring ancestral ritualistic practices to repair the broken relationship between people and the rest of the ecosystem (Mother Nature or Kiwe Mama)
- Reviving local practices and abilities related to "the power of dreaming"
- Recognizing the importance of sharing the territory, performing collective work, and performing the ancestral rituals that establish communication between people and the environment
- Taking steps and performing rituals to build harmonious, collective relations between people and the environment. These are the rituals that assure that people can live in a risk-free territory, called *wêtwêt fxi'zenxi* in Nasayuwe.
- Reviving the relationship with *kpi'sx*, the thunder, a very important elder, crucial defender and cleanser of Nasa territories
- Rebuilding the relationship with *îisx tuhme*, the white-haired elder, also known as *nxadx*
- Incorporating Nasa life plans into every step of the DRR process
- Recognizing medicinal practices that can enhance the resilience of Nasa communities during times of crisis
- Identifying safe spaces and safety routes in case of eruptions
- Establishing an early warning system based on constant monitoring of volcanic activity and involving communities, Nasa Çxhaçxha, the OSSO Corporation, and geologists from the national service INGEOMINAS
- Identifying and recovering resilient "natural family kin" such as native seeds, roots and tubers, resistant to volcanic ash
- Developing the capacity to read signs of volcanic activity
- Installing the capacity to operate seismic and volcanic monitoring instruments

Source: Comunidad Andina, 2009; personal interviews with members of Nasa Çxhaçxha.

DRR social mapping. Photo: Nasa Çxhaçxha (2007).

> "*There is no inert matter in Nasa cosmology. Everything is alive and all things are connected.*"
>
> —Victor Hurtado, Nasa linguist and philosopher, Belalcázar, 2016

"WE ARE A RESILIENT TERRITORY": COLLECTIVITY AND IDENTITY

The implementers of DIPECHO-V recognized that the project was developed in a difficult and potentially hostile social context. Nevertheless, they claimed that the project succeeded in building capacity that lasted long enough to save many lives during the 2008 eruption. In contrast, spokespeople of the indigenous organization Nasa Çxhaçxha and former members of the Nature and Territory Team believe that DIPECHO-V did little or nothing to create resilience in their communities. They argue that DIPECHO implementers favored urban Belalcázar and discriminated against Nasa communities. These informants emphasized the importance of the Nasas' own initiatives as the main building blocks of a culture of DRR and resilient living (*pervivencia en el territorio*) in Tierradentro.

"Resilience" is the latest buzzword in Tierradentro. More than once during the course of this ethnographic work, mention of "resilience" made community leaders smile: not derisively, but with complicity and a bit of benevolent condescension. Oxfam defines resilient development as "the ability of women and men to realize their rights and improve their well-being despite shocks, stresses, and uncertainty" (Oxfam International, 2016). On October 20, 2015, the UNISDR, in an official ceremony in Panama City, conferred the award of Champions of Resilience on the Nasa communities of Tierradentro, Colombia. No one from Tierradentro was there to collect a plaque, shake hands, or pose for the obligatory photograph.

In contrast, when talking about sustainable development and the defense of their land and culture, Nasa spokespeople use the Spanish word *pervivencia.* According to dictionaries, this word should be translated as "survival," but this is not entirely correct. "Survival" is better rendered in Spanish by the term *supervivencia*. Whereas the word "survival" evokes coping mechanisms and perhaps resistance, the term *pervivencia,* as contextualized by Nasa informants, can also suggest ongoing processes of learning, adaptation, and positive transformation. It thus encompasses the ability to exercise rights and improve collective well-being.

Resilience through Collective Thinking and Action: The example of community *mingas*

One form of local collective action that has implications for communities' resilience is the *mingas comunitarias*, or *mingas*. The word *minga* (singular) is reminiscent of the English word "mingle." Curiously, along with a phonetic similarity, the two words also share an affinity in meaning. *Minga* is an old Quechuan term meaning "community work for the benefit of a social collective."

Box 5: Most common types of *mingas*

There are different types of *mingas*. The most common are as follows:

- **Cleaning *minga***: a collective activity involving cleaning work around the village.
- **Thinking *minga***: exercise in collective reflection, thinking, and analysis over matters of social importance that require decision making at a level broader than elected traditional authorities.
- **Political *minga*:** a complex political event, often involving a multiplicity of social and political actors. Mobilizations can last days or months. *Mingas* in recent history have turned violent and involved strong confrontations with the police and the army.
- ***Minga* of indigenous guards**: a *minga* for purposes of organization, coordination, and other internal matters for indigenous guards (*guardia indigena*), the people in charge of maintaining law and order in indigenous territories. At present Nasa indigenous guards consist of approximately 13,000 volunteers.
- ***Minga* for social communicators:** discussion of strategies, political postures, coordination, and other themes among people in charge of press, internet work, local radio stations, and video communication within indigenous organizations.

There can be as many *mingas* as there are opportunities for collective work. At the time of the fieldwork for this research, Nasa Çxhaçxha was in the midst of the First Interethnic Minga of Indigenous People, Afro-descendant Communities and Peasants United for the Defence and Protection of Our Territories, for Right of Dignity, and for the Right of Peace. The main goal of this *minga* was to help prevent the encroaching of business interests related to cattle-ranching, mining, and hydrocarbon exploitation in Tierradentro, Cauca. During the *minga*, pamphlets with death threats against indigenous leaders signed by paramilitary death squads appeared on the Internet and were distributed around Belalcázar (personal interviews with Nasa Çxhaçxha, Belalcázar, 2016).

In 2008 and 2016, two important *mingas* had a profound effect on Nasa communities and on national politics. The 2008 *minga* demanded the fulfillment of a series of accords on land restitution and indemnification related to the massacre of 21 Nasa peasants in El Nilo, Cauca, in December 1991. This mobilization also denounced the staggering number of killings (over 1,500) and the forced displacement of thousands of indigenous people during the Uribe government. The *minga* lasted for several weeks and was attended by more than 20,000 members of Guambiano, Nasa, Yanacona, Totoró, Coconuco, and Eperara-Siapidara ethnic groups. Two people were fatally shot by the police, and hundreds were wounded. In spite of the excessive police force, which was documented by eyewitness accounts from human rights lawyers, United Nations delegates, and representatives from the Canadian, Swiss, Swedish, US and Spanish embassies, the *minga* pressed on, forcing President Uribe and his government to travel to La Maria, Piendamó, Cauca, and to negotiate with Nasa leaders (Bruno, 2008; Cometa, 2008). During this time the nation got to know the eloquent and charismatic Nasa indigenous leader Aida Quilcué (Contravia, 2012).

Caucan indigenous organizations meet with the Habana Peace Dialogues delegation in La Maria, Piendamó, Cauca, in September 2016. Photo: CRIC (2016).

The 2016 *minga* was instigated by the government's failure to honor the accords it signed with national peasant organizations during the massive agrarian strike of 2013 that left several Colombian cities short of food supplies. On this occasion, Nasa and other indigenous nations blocked the Pan American Highway for more than 15 days. This *minga* left three people dead and 145 wounded; the number of detained people surpassed 100 (AIPAZCOMUN, 2016).

Indigenous *mingas* are important manifestations of indigenous life, collective identity, and collective organizing. They strengthen communities internally, and they serve as an example to the non-indigenous world that collective thinking, collective action, reciprocity, and solidarity are fundamental conditions on the road to social justice and ecological sustainability.

Minga of indigenous peasants "walking the word," 2016, Cauca, Colombia. Photo: NASA ACIN.

RESILIENCE THROUGH EMPOWERMENT OF WOMEN

Beatriz Saniceto, Belalcázar, Tierradentro. Photo: Riccardo Vitale, 2016.

The Oxfam resilience framework is clear that social justice cannot be achieved without the full exercise of women's rights. Sustainable, resilient development implies the transformation and demise of patriarchal power structures before a society can achieve gender equality and equitable living (Oxfam International, 2016).

DIPECHO-V did not specifically address issues of gender and women's participation. Nevertheless, Nasa society presents a scenario of ongoing, complex, and, at times, contradictory relations and processes around absorptive, adaptive, and transformative change. These take place in different social spheres, ranging from education and health to family relations, and they do have an effect on gender relations (personal interview, Usnas A., Belalcázar, August 2016).

Indigenous women leaders interviewed for this research have pointed out how existing power structures within their rural communities and outside are informed by patriarchal values:

> *My first territory is my body. A woman's body is a territory that one needs to honor and respect* (personal interview with L. Venegas, El Salado, *Páez*, 2016).

Intra-familial violence was signaled as a priority issue:

> *Violence against women is very often related to alcohol abuse, a traditionally male practice. Men drink in groups, and since village authorities are composed of a majority of men, violent episodes, when they are reported, are seldom pursued with severity* (Ibid.).

These practices are not easy to confront and can remain hidden if women do not come forward—and they will come forward only when these practices are addressed specifically, first among women and then at the level of the local *cabildos* (field interview, Avirama, August 2016).

> *When we first started talking about gender, the men grew scared. They said, the women are going to leave the organization.*
>
> *Outsiders might have a hard time understanding this, but family disputes and domestic violence can be caused by lack of harmony and the rupture of spiritual connections in the*

ecosystem and within our territory. We are the territory and we are the ecosystem. When we forget this, imbalances happen (field interview, Avirama, August 2016).

As patriarchal structures are recognized as obstacles to resilient development, women social leaders interviewed in Tierradentro warn that “Nasa women don't want to be stigmatized as submissive, dominated, or weak” (personal interview, Belalcázar August 2016).

In the 1990s we would ask our sisters in the villages if they worked, and they often said that they didn't have an occupation aside from staying at home. Soon, however, from the conversations we had, we realized that women not only worked really hard but were also conscious of it; they just were not used to expressing it in front of their family and male partners.… Possibly, bragging is more of a male characteristic. We are stronger and don’t need that (field interview, Avirama, August 2016).

Nasa Çxhaçxha family council, Belalcázar, Cauca. Photo: Riccardo Vitale, 2016.

Nasa women have managed to achieve high degrees of agency within their constituencies and in the outside world as social leaders, activists, and representatives of political organizations. According to Luz Mary Vanessa Tiquie of Nasa Çxhaçxha, “Women’s resilience is about union and solidarity.… We are generators of ideas and defenders of life” (personal interview, Belalcázar, August 2016).

In a recent article called “The Evangelists of Resilience,” Henry Peralta Buritica points out that resilient development is an individual process as well as a collective one (Peralta Buritica, 2015a). The story of Beatriz Saniceto, another Caucan social leader interviewed for this research, exemplifies how a process of personal emancipation reinforces and is reinforced by collective, communitarian resilience processes. Now a high-profile social leader, Beatriz recalls overcoming a great deal of hardship and living through difficult and formative experiences before deciding or realizing that her destiny was to serve her communities as a defender of human rights, Nasa self-determination, and their territory.

Beatriz is respected in her community as well as being recognized in national and international spheres. She served as treasurer and was then elected *cabildo* (local governor) of Avirama, the *resguardo* where she was born. At present she is completing her mandate as councilwomen in the municipal board of Belalcázar.

In 1996 I was back in Cauca and working with the Caucan Regional Indigenous Council (CRIC) in their women’s program. I traveled from village to village and organized workshops about domestic violence, the family, and the spiritual world of plants. These things are related, and often family problems are tied to imbalances that can be

addressed with plants and the spirits that inhabit them (field interview, Belalcázar, August 2016).

When she was 11 years old, Beatriz escaped from her home, where she was unhappy, to seek adventure in Bogotá. She explains that she did not feel loved by her parents and that she longed to travel and to explore a big city. In Bogotá, she suffered the fate of hundreds of indigenous young women who are tricked into working as servants for little or no pay. For a period of time, she was verbally and physically abused and held against her will until she finally escaped.

I was very young when I became aware that I had strong opinions, that I had forged a strong character and I enjoyed working for the common good.… In 1994, after the eruption, I participated in the creation of Nasa Çxhaçxha. I was treasurer and then served two mandates as elected governor of Avirama. During the Uribe years, I participated in the mobilizations and negotiations of La Maria Piendamó, now I continue working as a member of Nasa Çxhaçxha and councilwoman in Belalcázar (field interview, Belalcázar, August 2016).

Discussing DRR, Beatriz pointed out that *la pervivencia* (resilient living) is engendered within a multiplicity of factors. These range from collective identity and collective work, attachment to the land, education, family relations, and spirituality. The latter notion is important because dismantling and transforming oppressive power structures comes with the recognition that people coexist and are part of a spiritual ecosystem—"from before conception and beyond corporeal death" (field interview, Belalcázar, August 2016). This, according to Beatriz Saniceto, is an individual and political realization that should inform development models that privilege smaller-scale, sustainable options over extractive activities and exploitation of resources (field interview, Belalcázar, August 2016).

The personal stories of women indigenous activists who participate in the organization are a strong reminder that the struggle for gender equality is a necessary condition and an indispensable component of any program seeking true social transformation. Thanks to the commitment and contribution of activists and leaders such as Beatriz Saniceto, Nasa Çxhaçxha is transforming itself, integrating the notion that a gender-focused understanding of equality and economic, social, and cultural rights is the only way forward.

RESILIENCE THROUGH AUTONOMY AND SELF-DETERMINATION

United Nations Declaration on the Rights of Indigenous Peoples, Article 3:

Indigenous peoples have the right to self-determination. By virtue of that right they freely determine their political status and freely pursue their economic, social and cultural development (United Nations, 2007).

The Caucan Regional Indigenous Council (CRIC), the oldest and possibly the most politically effective indigenous organization in Colombia, was formed in 1971 in Toribio, Cauca. It was created as a political coalition of indigenous *resguardos* in the spirit of iconic Nasa historical figures such as La Gaitana, Juan Tama, and Quentin Lame, who fought against the Spanish conquistadors for land restitution and land rights.[21] Since the early 1970s the CRIC has led social struggles aimed at consolidating indigenous social, cultural, economic, and political rights, self-determination, and autonomy (CRIC, 2017).

Children participating in social mapping exercises. Photo: Nasa Çxhaçxha.

The CRIC's political aims are summarized in their political platform. The main points include the following:

- Recovery of ancestral lands, territorial defense, and defense of territorial spaces vital for indigenous communities, their identities, and their cultures.
- Strengthening of the *cabildos* (the legal administrative and political representation of indigenous communities within a *resguardo*).
- Generating awareness about constitutional rights and legislation pertaining to indigenous people and making state institutions accountable for their implementation.
- Training indigenous educators and teachers to use pedagogical tools based on autochthonous knowledge, history culture and spirituality.
- Recovering lost lands, defending collective territory, and protecting the environment while promoting community-based, small-scale, economic models that foster a relationship of harmony and equilibrium with Mother Nature.

Nasa Çxhaçxha is one of nine large associations that make up the CRIC. It was created in 1994 through an agreement among 15 *cabildos* representing indigenous communities in Tierradentro in the aftermath of the avalanche that killed more than 1,000 people. Predicting that DRR projects would soon be arriving their way, the *cabildos* wanted to make sure they had the capability to oversee these projects and have a say in their design and implementation. To achieve this, the *cabildos* made use of Decree 1088 of 1993, which gives them the right to establish representative associations aimed at fostering sustainable development and self-determination.

RESILIENCE THROUGH ATTACHMENT TO THE LAND

Sustainable and resilient programming is more likely to succeed when the agenda for territorial defense is clear and established. The struggle for territorial defense is a pillar of indigenous identity in Colombia and beyond. Indigenous people see themselves as the last guardians of a disappearing life system. Defense of the land, conservation of natural resources, and respect for the spirits that inhabit the forests is a multifaceted, ongoing struggle that defines the Nasa as well as other Colombian indigenous people.

I am a Nasa woman, I belong to a resguardo, I defend my territory. Whatever happens, violence and/or avalanches, we are not going anywhere (personal interview with Beatriz Saniceto, Belalcázar, August 2016).

The 1994 avalanche wasn't only a negative occurrence. The volcano woke up in order to shake us up from torpor; it was thanks to this call that we began strengthening our social processes. The conflict, internal displacement, white man's politics, the economy, illegal crops, mining and petrol, mono-crops, poverty, religions, conjures five centuries of history conjuring up to drive us out of the land.… Still, here we are.

We Nasa are historical defenders of our territories.…

Still, we have to stay alert, organize, strengthen our families and our associations, train our future leaders and listen to what the elderly have to say, listen to what the spirits want.…

We need to care for the soil, for seeds, for the water, and for the crops.… The water is most important, without water we cannot be Nasa anymore.…

Resilience is the reason why we are still here.…

Nature gives warnings, like the volcano did. Risk on the other hand is anthropic: pollution, religions, wars, extractive economy, bad planning, land grabbing, those are risks.

People talk about peace and post conflict. We prefer the term "post-accords." What will come remains to be seen.… The real peace is the one we need to make with Mother Nature (personal interview with Huber Castro, Belalcázar, 2016).

According to Nasa life plans, resilient living can happen only when families have a large enough territory to live in and share. To avoid exceeding the carrying capacity of the land, indigenous families need enough territory to be able to grow in size and cultivate subsistence crops and surplus produce for selling and bartering. Access to clean water sources is essential, as is access to hunting grounds and sacred locations to perform rituals and honor spirits and natural entities, such as the volcano Nevado del Huila.

Since the 1970s the CRIC and the indigenous associations that it represents have been at the front of national and international campaigns to uphold the rights of indigenous communities in Colombia.

Image from Werner Herzog's "Into the Inferno." The documentary explores the relationship between people and volcanoes, early warning systems, and the dialogue between science and spirituality in Vanuatu, Indonesia, Antarctica, and Ethiopia.

RESILIENCE THROUGH EDUCATION AND SPIRITUALITY

United Nations Declaration on the Rights of Indigenous Peoples, Article 12:

Indigenous peoples have the right to manifest, practice, develop and teach their spiritual and religious traditions, customs and ceremonies (United Nations, 2007).

> *As soon as a Nasa is born, the umbilical cord is buried in the kitchen next to the wooden stove.… This means that we are forever attached to our land* (personal interview with Huber Castro, Belalcázar, 2016).

For the Nasa, carrying out their own processes of ethnoeducation within a system where state educational institutions set the rules is a difficult but vital activity. It serves to strengthen local social and cultural identities in a social and political milieu designed to disempower indigenous people (Agamben, 2005; Bhabha, 1994; Appadurai, 1996). This is a crucial element of long-term, evolving social and political resilience processes (*procesos de pervivencia*) that support the autonomy and self-determination of Nasa communities in Tierradentro.

> *Education is a path that begins before we are born and continues after we die. Mother Earth and the spirits guide us in this path.… We build thinking, and we build knowledge.… We learn to defend our territory, and we learn to speak Nasayuwe.… Most of all we learn that our life is a holistic experience and that ancient practices and rituals are essential to perpetuate our communities* (personal interview with L.M. Venegas, El Salado, Belalcázar, 2016).

Deciphering Nasa cosmology is beyond the scope of this study.[22] What is relevant to this discussion is the notion that spirituality plays a central role in the relationship between people, identity, and territory. According to Nasa linguists and elderly *sabedores* (sages), living resiliently entails keeping rituals and spiritual practices alive. Nature is never an enemy but a nurturing mother. Manifestations of natural hazards are nature's warnings. They are messages telling us that the equilibrium has been disrupted and that something must be done.

> *Our rituals are the vehicles through which we live resiliently (and generate pervivencia) in our territory…. When you are born, if the family loves and takes care of you, rituals are performed and plants are mobilized.… These rituals keep us attached to our land.… We are our own enemy. Risks are anthropic; they are manufactured by people.… Nature is not our enemy. We live in it; it protects us and speaks to us* (personal interview with V. Hurtado, Belalcázar, 2016).

Nasa cosmology: performing harmonizing. Photo: PEBI-CRIC (2014b).

A related concept is *putx fxi`zeñxi yuwe,* which is difficult to translate but could be simplified as "coexistence." In Nasa cosmology, coexistence is a supernatural mandate. Permanence through space and time is engendered within a context of coexistence. Life on earth is made up of many correlations that tend toward a dynamic equilibrium, within which spirituality, the environment, and the Nasa family can flourish.

The environment is alive and peopled with entities and spirits. Yu´Ksaw is the spirit of water. Rivers and creeks are the veins of Kiwe Mama (the Earth), the lakes and the lagoons are the home of thunders, and the great lagoon Sa´t Tama is the womb. From this womb come the great guides that give all things an orientation and a flow. Wejxa Ksaw is the spirit of the wind. This is the beginning of life. Its essence walks through space and time; it brings cordiality and the air we breathe. Sek Ksxa`W is father sun, which illuminates existence. A`Te Ksxa`W is the moon, which brings advice. Ā Ksxa`W are the stars that fertilize the lagoons and guide people through the knowledge of our ancestors; they write our human purpose and know the reason why each being exists. And then there is Ipx Ksxaw, Grandpa Fire, the heart and the essence of the beings that inhabit the territory, protector and adviser of those who protect. It symbolizes dialogue, and it must always be kept alive and treated and cared for with harmony**.**

Though complex, indigenous cosmologies are the basis of the relationship between humans and the life system of which we are a part. This is why traditional healers in Colombia and South America urge governments, big business, and development operators to take ancestral spiritual knowledge into account during the design, implementation, and evaluation of any development program affecting indigenous people's lands and environments.

5 CONCLUSIONS

Although DIPECHO-V had an impact, albeit limited in time, in urban Belalcázar, the program failed to properly reach and prepare indigenous communities in rural areas. It also bypassed indigenous political institutions and protocols, generating resistance from some Nasa elected officials and members of the local indigenous organization Nasa Çxhaçxha. DIPECHO-V was not designed, executed, and evaluated with an ethnic framework. The project dealt with ethnicity in a superficial fashion, possibly reflecting the approach usually adopted by state institutions—that is, with little regard for ethnic protocols, national legislation, court judgments, and international laws and covenants on indigenous people.

In contrast, Nasa Çxhaçxha's own DRR programming strengthened and transformed the organization and the communities it represented. Setting an important precedent, Nasa Çxhaçxha approached DRR activities by blending local knowledge and spirituality with technical and scientific knowledge provided by geological institutions and other experts. The program was designed and implemented within Nasa notions of *pervivencia,* understood as the ability of a people to live and survive within a spiritual, ecological, and social system. This approach resulted in innovative programming that set a valuable precedent in DRR/CCA and sustainable development. Because of this approach, the Nasa communities of Belalcázar were chosen in 2015 by the UNISDR as Champions for Disaster Risk Reduction in the Americas (UNISDR, 2015).

DIPECHO-V complemented the work of the decentralized SNPAD committees, as well as the work of local departmental and municipal institutions, in a timely and pertinent way. It empowered the departmental CREPADs, municipal CLOPADs, educational institutions, and local media. Departmental branches of INGEOMINAS, the main Colombian geological monitoring institute, were strengthened thanks to the installation of a complementary seismographer near the volcano. The project also managed to install a VHF radio early warning system connecting rural communities with municipal and departmental capitals. Even though, for reasons already discussed, the indigenous communities decided to dismantle the radio system quite early in the process, the capacities installed during this part of the project may have complemented communities' own DRR and autonomous learning processes.

When asked about whether the capacities installed by DIPECHO-V still existed, most informants answered that although the knowledge remains, the early warning systems are no longer in place owing to the obsolescence of the technical equipment. While the Red Cross implementers of DIPECHO-V collaborated with urban municipal institutions, the project showed minimal complementarity with local indigenous processes. Fieldwork interviews and written documentation showed that DIPECHO-V was not theoretically equipped to address the specific and differential needs of an ethnically diverse population. This is a serious failure in a context where indigenous people are not part of the SNPAD and where judgments, decrees, and orders issued by the Constitutional Court (i.e., Judgment T-025 and Ruling 004) explicitly demand that all public policy in Colombia be designed and applied using a "differential focus" in order to protect and encourage indigenous people's self-determination and cultural diversity.

> Ruling 004 of 2008 states that Colombian indigenous communities are about to be "culturally and physically exterminated" due to strong outside pressures. Indigenous people are losing identity, territory, language, and culture. This writ orders the State to implement policies that strengthen indigenous autonomy, localized development, self-determination, cultural survival, and territorial defense. Similarly Ruling 092 orders the State to take specific actions to protect women victims of the armed conflict (Constitutional Court, Ruling 004 and 092 of 2009, follow up to Judgment T-025 of 2004).

Another serious deficit of the DIPECHO-V project is the fact that it opted not to construct a gender theoretical framework. The theoretical background of the project includes one paragraph about gender and women's access to DRR processes, but the issue is not taken up elsewhere. Regarding gender, disaggregated data, and gender analysis, CRC personnel stated that a number of women were included in the workshops and that their work with students did not

discriminate between sexes. DIPECHO-V acted as a gender-blind project, designing educational programs and contingency plans with no specific target population in mind. Considering the particularity of the context—a rural conflict area—this course of action might have reinforced and perpetuated existing power structures, including those based on patriarchal values and dynamics.

We could not gather sufficient data to conclude whether Nasa Çxhaçxha's DRR program applied a specific focus aimed at gender equality. However, our findings showed that within Nasa Çxhaçxha and Nasa political structures, women keep carving out significant spaces and manifesting a level of agency. This occurs, however, within a sociocultural environment that, according to Nasa women activists, remains male-dominated.

These findings suggest that resilient programs can succeed when the social milieu in the target population fulfills certain conditions. Resilient processes in Tierradentro depended on several specific factors:

- The sociocultural environment where the programs took place: ethnic communities were strongly oriented toward self-determination, autonomy, cultural strengthening, and defense of their territory.
- A history of resistance and political struggle in the communities involved.
- The degree of cohesiveness between and within communities.
- The degree of political organizing before implementation of the programs.
- A vision of alternative sustainable development based on food security and respect for the environment and opposed to extractive models.
- Importantly, a spiritual connection with the ecosystems and the entities that populate it: restoration of ancestral knowledge, practices, and rituals and of the role of traditional the *Wälas*, medicine women and men who are the spiritual healers of Nasa communities.

Using social mapping, Nasa Çxhaçxha's Nature and Territory Team developed a methodology that combined Nasa ancestral knowledge and spirituality with scientific knowledge. This work helped strengthen and prepare the Nasa communities for the devastating lahars of 2008.

This experience fits Oxfam's definition of resilience and complements two culturally specific yet universally important notions:

1. Indigenous processes of self-determination, territorial defense, and cultural vindication are significant catalysts of resilient development in Latin America.

2. Incorporating indigenous, ancestral, spiritual knowledge is a necessary precondition of resilient programming and sustainable development. No development model can flourish without the knowledge of people who, in spite of enormous pressures, still retain a delicate yet invaluable connection with the language of nature.

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NOTES

1 The Colombian Red Cross, upon reviewing the draft of this report, makes the point that this was a humanitarian project, with the ultimate goal of “saving lives” (written communication with Colombian Red Cross staff, August 2017).

2 In the view of the Colombian Red Cross, it is not the Red Cross’s duty to guarantee the sustainability of a program that they implement; rather, once they support the development of capacity, it is the local government’s responsibility to sustain that capacity (written communication with Colombian Red Cross staff, August 2017).

3 This contrasts with the Bolivian case study, which showed that families have rebuilt in unsafe areas where the disaster had occurred.

4 This section is adapted from Oxfam International (2016).

5 Belalcázar refers both to the urban center of the eponymous municipality, and to the indigenous *resguardo*.

6 Each of the sources consulted estimates a different velocity. The Colombian newspaper *Semana* (2008) reported that the mudflows descended at 100 kilometers per hour. We opted to use a more conservative figure from a science dissemination website (Astronomoo 2011).

7 The Simbola River is a tributary of the Páez River. The two merge a few kilometers before Belalcázar.

8 The Hyogo Framework for Action 2005–2015: Building the Resilience of Nations and Communities to Disasters set out five priorities for action to reduce disaster losses and achieve disaster resilience (UNISDR, 2005). It was signed by 168 governments and served as a blueprint for DRR and resilience for that decade. It was succeeded by the Sendai Framework for Disaster Risk Reduction 2015–2030, which contains seven targets and four priorities for action.

9 The Nature and Territory Team, created in 2007, has a mandate to understand hazards, expose vulnerabilities, and develop a DRR strategy based on autochthonous knowledge and cultural practices.

10 During field interviews other sources gave different figures. An official from the Secretary of Planning in Belalcázar told me that the size of the 1994 avalanche was 300 million cubic meters and that the 2008 lahar had a mass of 360 million cubic meters. In any case, all informants agreed that the 2008 lahar was a great deal bigger than the 1994 one.

11 A peace accord between the government and the FARC guerrillas was signed in November 2016, three months after our fieldwork. However the Colombian countryside, with all its resources, is still highly disputed amongst powerful lobbies and interest groups, both legitimate and illegal.

12 The term *mestizo* refers to people of mixed heritage, generally part Amerindian and part Spanish.

13 In August 2016, the Colombian government and the FARC signed a final peace accord that marked the end of the 52-year-long internal conflict. As a result of the accord, the FARC guerrillas have begun to demobilize and concentrate in pre-established gathering points, where they will gradually disarm and await reintegration into civilian life.

14 Huila is one of the 32 Colombian administrative and political departments. Huila is also the name of an indigenous autonomous, territorial jurisdiction (*resguardo)* adjacent to the Nevado del Huila volcano. Contrary to what the name might suggest, the Huila indigenous *resguardo* is part of the department of Cauca.

15 In this paper, by contrast, we argue that incorporating local ancestral knowledge is a necessary condition for equitable, inclusive, sustainable, and resilient development.

16 As described later in this report, indigenous informants put forward a very different perspective regarding the importance of traditional culture and knowledge for DRR projects and resilient development.

17 For more information on UNITAR’s UNOSAT satellite imaging program, see UNITAR (2017).

18 Note that in 2007 and 2008 this informant was a member of the OSSO Corporation.

19 The extensive and valuable work of the Nature and Territory team has been published in a volume sponsored and edited by the Andean Community, ECHO, and the Andean Community Disaster Prevention Project (PREDECAN, 2009). This publication is a valuable tool that could certainly inform future DRR and development work in the region.

20 Life plans are the product of the collective work of indigenous communities. They function as a type of ethnic or culturally specific development plan. Life plans generally lay out the history of the particular ethnic group, their dreams and expectations regarding the future in their territory, the problems they face, and the foreseeable solutions. Most Colombian ethnic groups have already drafted their life plans.

21 Around 1540, Guaitipan, known as “La Cacica Gaitana," organized a rebellion against conquistadores in an area coinciding with today’s Cauca, Huila, and Tolima. The uprising cost the life of conquistador Pedro de Añasco, who was captured, tortured, and paraded around villages by Gaitana for everyone to see. In the years that followed, with the help of the Paeces (Nasas), Aviramas, and the Guanacos from Tierradentro, Cauca, Cacica Gaitana led fierce battles against the Spaniards. One of these confrontations caused the death of Juan de Ampudia, governor of Popayan (MCN, 2010).

In the first half of the 1600s Juan Tama of the Star, indigenous *cacique* (leader) from Tierradentro, Cauca fought the conquistadores in a series of battles. In 1635 Juan Tama obtained from the Spanish crown the legal recognition of indigenous territories. This historical episode of indigenous resistance in Cauca marked the foundation of five Nasa towns: Jambaló, Vitoncó, San Francisco de Caldono, Quichaya, and Pitayó (CAJAR, 2015).

In the early 1900s the name of Quintín Lame evoked disdain and preoccupation among the landed oligarchy of the areas surrounding Popayán. Lame was an indigenous leader who fought agrarian struggles and campaigned for the restitution of collective *resguardo* lands to indigenous communities. In 1924 after spending four years in prison, he joined the land struggles of the Pijao Indians of Tolima. That same year his book, *Thoughts of the Indio Who Educated Himself in the Jungles of Colombia,* began circulating. Lame died in October 1967 at 87 years old.

In 1974 a group called Indigenous Peasants Quintín Lame was founded. The group’s members received military training from the Marxist-Leninist Colombian Communist Party (PC-ML). The group used military tactics as a form of defense for collective property and to protect the life of indigenous leaders. In 1991 the group demobilized after signing a peace a deal with president Cesar Gaviria. As part of the accords, one exponent of the movement was given a seat in the National Constitutional Assembly. The Colombian constitution of 1991 is considered one of the most progressive on the Latin American continent. It contains fundamental jurisprudence aimed at strengthening processes of indigenous autonomy and self-determination.

22 See, for example, Viveiros de Castro (2004).

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