



Climate migration in the Dry
Corridor of Central America:

integrating a gender perspective

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CLIMATE MIGRATION IN THE DRY CORRIDOR OF CENTRAL AMERICA INTEGRATING A GENDER PERSPECTIVE

Climate migration in the Dry Corridor of Central America: integrating a gender perspective

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Acronyms

AMDV	Association of Women Defenders of Life
CAC	Central American Council for Agriculture
CCAD	Central American Commission for the Environment and Development
CDH	Human Development Centre
CDM	Women's Rights Centre
CEM-H	Women's Studies Centre
CENTA	National Centre for Agricultural and Forestry Technology
CEPRENAC	Coordination Centre for the Prevention of Natural Disasters in Central America
CIAT	International Center for Tropical Agriculture
UNFCCC	United Nations Framework Convention on Climate Change
COMBRIFOL	Brisas de la Frontera Regional Mixed Cooperative
COMUCAP	Coordinator of Women Farmers of La Paz
CONGCOOP	NGO and Cooperatives Coordinating Organization
CoopeSoliDar RL	Professional Services Cooperative for Social Solidarity
CRRHH	Regional Committee for Water Resources
CADC	Central American Dry Corridor
ENSO	El Niño-Southern Oscillation
ERCC	Regional Climate Change Strategy
FAO	Food and Agriculture Organization of the United Nations
FCAM	Central American Women's Fund
FEM	Foundation Between Women
FEMUPROCAN	Agricultural Federation of Cooperatives of Women Farmers in Nicaragua
IFAD	International Fund for Agricultural Development

FUNDESYRAM	Foundation for Socioeconomic Development and Environmental Restoration
GCRI	Global Climate Risk Index
IICA	Inter-American Institute for Co-operation on Agriculture
IPCC	Intergovernmental Panel on Climate Change
MAREMA	Ministry of the Environment (Nicaragua)
MILPAH	Independent Lenca Indigenous Movement of La Paz-Honduras
MNIGR	National Board for Disaster Risk Management
ODESAR	Organisation for Economic and Social Development for the Urban and Rural Area
IOM	International Organization for Migration
NGO	Non-Governmental Organization
PARCA	Environmental Plan for the Central American Region
UNDP	United Nations Development Programme
PREVDA	Regional Programme for the Reduction of Vulnerability and Environmental Degradation
PRISMA	Salvadoran Research Programme on Development and Environment
SMES	Small and Medium-Sized Enterprises
RDS	Network for Sustainable Development
RECMURIC	Central American Network of Rural, Indigenous and Farming Women
EWS	Early Warning System
SICA	Central American Integration System
UNAG	National Union of Farmers and Stockbreeders
UNEP	United Nations Environment Programme
UNES	Salvadoran Ecological Unit
WEDO	Women's Environment & Development Organization

Introduction

Climate change is a threat which affects the planet's most vulnerable people in multidimensional ways and is manifested unequally depending on the population's natural geographical and social vulnerabilities. It is abundantly clear that climate change has a greater impact on women. Climate change projections also include extremely high numbers of climate change migrants. The Central American region is the most striking example of this phenomenon; this region is severely affected by extreme climate phenomena, and the women among the migrants travelling through the Dry Corridor towards the United States are exposed to violence.

The aim of this study is to understand the relationship between three factors – migration, gender and climate change – in the Central American Dry Corridor because, although there is a vast body of literature that addresses each of these factors individually, there is a significantly smaller number of sources which cover the link between three variables, and studies which analyse the three factors together are virtually non-existent.

It was initially assumed that there was a multi-directional relationship between the deterioration of habitats and livelihoods caused by climate change, the migration phenomenon in the Dry Corridor and gender inequality in that region. The analysis also includes other cross-cutting economic factors, such as energy and extractive mega-projects, and social triggers, such as poverty and violence, which are essential in understanding the migration phenomenon and the patterns of inequality in the region.

This report is divided into four chapters; the first chapter provides the background and context of the Dry Corridor in order to explain why the variables analysed were chosen; the second includes the main testimonies gathered in each of the countries during the fieldwork; the third sets out the main conclusions, and the final chapter includes a series of recommendations for the inclusion of the gender equality perspective in public policies on climate change.

Methodology

The following questions were addressed:

What are the patterns of environmental migration, the causes of which are now likely to worsen as a result of climate change, in the Central American Dry Corridor and the associated gender impacts?

What adaptation and resilience actions have women planned and implemented to deal with climate change?

What factors must be taken into account when formulating public policy at different levels to approach climate change from a gender equality perspective?

The research has been conducted during 2017 and 2018. The qualitative field work included focus groups, interviews and visits to communities, NGOs and government representatives in El Salvador, Guatemala, Honduras and Nicaragua. (see Annex I). A total of 251 people (184 women and 67 men) took part in the focus groups, which were held in the following municipalities (Figure 1):

- the Departments of Usulután and San Miguel in El Salvador
- the Departments of Matagalpa (San Ramón) and Madriz (Somoto) in Nicaragua
- the southern region of Choluteca, the western region of Langué and the north-western region of Marcala, in Honduras
- the communities of Jocotán and Camotán in the Chiquimula department, Guatemala

1.

Background and context

This section summarises the most relevant findings from the review of literature and secondary sources with respect to the context of the Dry Corridor and the interrelationship between climate change, migration and gender, the focus of the research. In addition, the institutional framework in which the three variables studied are integrated at the international, regional and national levels is also analysed.

1.1. THE DRY CORRIDOR, A HIGH CLIMATE RISK AREA

No official geographical demarcation exists for the Central American Dry Corridor, although there is an eco-climatic definition. One of the first attempts to define the area was based on a monthly precipitation analysis, which was used to create a Climate Risk Index map (see Figure 1); the map marks the drought and extreme drought areas (CIAT, World Bank and UNEP, 1999).

In 2012, the FAO marked out the boundaries of the four most affected countries (Guatemala, Honduras, El Salvador and Nicaragua) and defined the Dry Corridor as “a group of ecosystems in the eco-region of dry tropical forests in Central America” (van der Zee Arias, 2012, 2013). Figure 1. Map of the Central American Dry Corridor based on the Climate Risk Index (1999) and the municipalities visited in each country. Source: CIAT, World Bank and UNEP (1999).

The Central American region is classified as highly vulnerable due to its geographical location, atmospheric dynamics, soil type and terrain (IPCC, 2007). The countries in the area rank highest on the GermanWatch Global Climate Risk Index (GCRI). For the period 1997-2016, Honduras was ranked as the country most affected by extreme weather events, while Nicaragua was fourth, Guatemala was eleventh and El Salvador was sixteenth.

According to data from the FAO, 62% of households in the driest areas of the Dry Corridor depend on corn, bean and sorghum production, **80% of households that depend on the production of basic grains live below the poverty line**, and 30% of them live in ex-

treme poverty. Various estimates also show that more than **one and a half million people are moderately or severely food insecure in the region: 25% of households in Guatemala, 36% in Honduras and 13% in El Salvador.**¹

Despite being one of the world’s most vulnerable regions to the consequences of climate change, it is estimated that by 2030 Central America will produce less than 0.5% of the planet’s greenhouse gases (GHG).² On this basis, the resources allocated to the adaptation and mitigation of climate change for the Central American region would be expected to be in line with that reality. However, in practice, this is not the case; according to a recent study³ by the Central American Institute for Fiscal Studies (ICEFI), an InspirAction partner organisation in Guatemala, between 2003 and 2016, Central America only received 211.5 million dollars, that is 0.7% of the funds approved at the global level for adapting to or helping to mitigate climate change.

1 Inter-American Development Bank (IDB), the International Fund for Agricultural Development (IFAD) and the World Food Programme (WFP), with the cooperation of the International Organization for Migration (IOM) and the Organization of American States (OAS). “Food security and emigration: why people flee and the impact on family members left behind in El Salvador, Guatemala and Honduras.”
2 Acosta L, Mora J, Ordaz JL and Ramírez D., *Nicaragua: efectos del cambio climático sobre la agricultura*. CEPAL (2010).
3 Molina Escalante L, Castaneda Ancheta R, *Financiamiento climático y descentralización energética en Centroamérica* (ICEFI, 2017).



Figure 1. Map of the Central American Dry Corridor based on the Climate Risk Index (1999) and the municipalities visited in each country. Source: CIAT, World Bank and UNEP (1999).

The Fifth Assessment Report of the IPCC (2014) assessed the key risks of climate change for Central America. For this region three key risks were identified: (1) water availability in semi-arid and glacier-melt-dependent regions and flooding and landslides in urban and rural areas due to extreme precipitation (2) decreased food production and food quality, and (3) the spread of vector-borne diseases in altitude and latitude (Climate and Development Knowledge Network, 2014). The IPCC also notes that in Central America increases in temperature and drought will decrease agricultural productivity in the short term (by 2030) and affect the food security of vulnerable regions. Subsequent climate models at more precise scales present conclusions in line with those of the IPCC (Imbach et al. 2018).⁴

Calvo-Solano, Quesada & Hidalgo (2017) compiled a list of climate-related impacts and damage in the agricultural sector as an indicator of food security in the region; in 2015, Nicaragua lost 50% of basic grain harvests in the departments of Carazo, Estelí, and Chinandega Boaco; in 2014, El Salvador lost 90% of its bean harvest; in Honduras, 60% of the corn and bean harvests were lost in 2016; and in Guatemala 82,000 tonnes of corn and 118,299 tonnes of beans were lost, representing a financial loss of \$133 million in 2016.

A real reduction has also been observed in sowing intentions in the Dry Corridor, as the farmers are aware of potential adverse conditions that would prevent their crops from succeeding (IICA, 2014). Most studies on the impacts of climate change in the area also mention **environmental degradation caused by the over-exploitation of resources and absence of planning** as factors that worsen the natural resources, health, food production and food security crises (Vargas, 1997).

To summarise, climate change and environmental degradation cause:

- **Increased food insecurity** due to the significant decrease in basic grain yields as a consequence of drought; this leaves a high percentage of the Central American population without access to a basic family food basket, which would enable them to meet their minimum nutrition requirements.
- **Job losses** in the agricultural, livestock, for-

4 Imbach P, Chou SC, Lyra A, Rodrigues D, Rodriguez D, Latinovic D, et al. (2018), *Future climate change scenarios in Central America at high spatial resolution*. PLoS ONE 13(4): e0193570.



estry and fishing sectors (Carazo & Pentzke, 2012).

- **Social conflicts caused by disputes over water sources:** due to the length and extent of drought, the flow of various springs and declines in river levels. This situation causes a lack of water, rationing and loss of pressure in micro-irrigation systems. This issue causes clashes between farmers and/or the community, thereby creating insecurity and presenting signs of an underlying problem with a major social dimension (CEPRENAC, CRRH and CAC, 2002: 39).
- **Deaths and decline in quality of life:** human lives are lost mainly due to flooding in the Caribbean area, as well as accidents involving small vessels that attempt to enter the colder, more distant and deeper waters of the Pacific Ocean because species migrate towards those areas. There has also been an increase in contagious diseases, such as malaria, dengue and cholera in different areas (CEPRENAC, CRRH and CAC, 2002: 40).

1.2. CLIMATE MIGRATION

1.2.1 TERMINOLOGY, LEGAL CONTEXT AND FIGURES

Every second one person leaves their home due to climate change-related causes, according to the 2017 United Nations Frontiers 2017 report, which analyses the environmental issues affecting the planet; one of these issues is migration. The IOM's 2016 Atlas of Environmental Migration states that, in 2015, 19 million people were displaced by climate disasters across the world. This figure does not include displacements caused by drought or slow-onset environmental degradation.

Both the Overseas Development Institute (ODI) and the Internal Displacement Monitoring Centre (IDMC) warn that climate change will increase the figures of displacements associated with disasters.⁵ According to the IDMC, **in 2016, 98% of new displacements associated with disasters were caused by risks related to climate**⁶ or to meteorology, such as storms, floods, forest fires and severe winter weather conditions. It also states that the ten largest displacement events in absolute terms were weather-related. According to this organisation, in 2016 there were 24.2 million new internal displacements associated with disasters, while in 2017 the total was 18.8 million. These figures, which do not include international migration or migration associated with slow-onset disasters (such as rising sea levels), indicate the scale of the phenomenon.

5 Amy Kirbyshire, Emily Wilkinson, Virginie Le Masson and Pandora Batra (January 2017), *Mass displacement and the challenge for urban resilience*. London: Overseas Development Institute (ODI).

6 Alexandra Bilak et al. (May 2017), *Global Report on Internal Displacement*. GRID 2017. Internal Displacement Monitoring Centre (IDMC).

In this research, the term “migration” was chosen, as opposed to “displacement”, to define the variable to be studied, in line with the definition developed by the International Organization for Migration (IOM). In this report, **climate change-induced migration is a sub-category** of the environmental migration category.

This term is used to refer to four patterns: (i) people displaced by climate-related disasters, who have to move temporarily; (ii) people forced to migrate more permanently due to recurrent events; (iii) people forced to migrate due to greater environmental degradation and (iv) people who “choose” to move as an adaptation strategy, in response to environmental pressures and other factors (Wilkinson et. al 2016). Therefore, in this study, the terms **environmental migration and climate migration** will be used but not displacement, as the former is a more inclusive term, which includes **voluntary and forced** population movements, while the latter is limited to only forced population movements (IOM, 2004, p.19).

However, it should be stressed that there is no officially agreed definition or a generic, uniform legal definition of the term “migrant” (UNHCR, 2016). The UNHCR, for example, underlines the importance of using the term “climate-displaced people” to refer to involuntary movements to promote specific legal protection (UNHCR, 2008).

Although the 1951 Convention relating to the Status of Refugees does not allow this status to be granted to people who are displaced for climate or environmental reasons, some progress has been made in attempting to give these people legal protection; for the first time, the New York Declaration for Refugees and Migrants recognised displacement in response to the adverse effects of climate change, natural disasters caused by natural hazards or other environmental factors (paragraph 1); the Global Compact for Safe, Orderly and Regular Migration (2018), non legally binding, recognized climate change as a cause for migration.

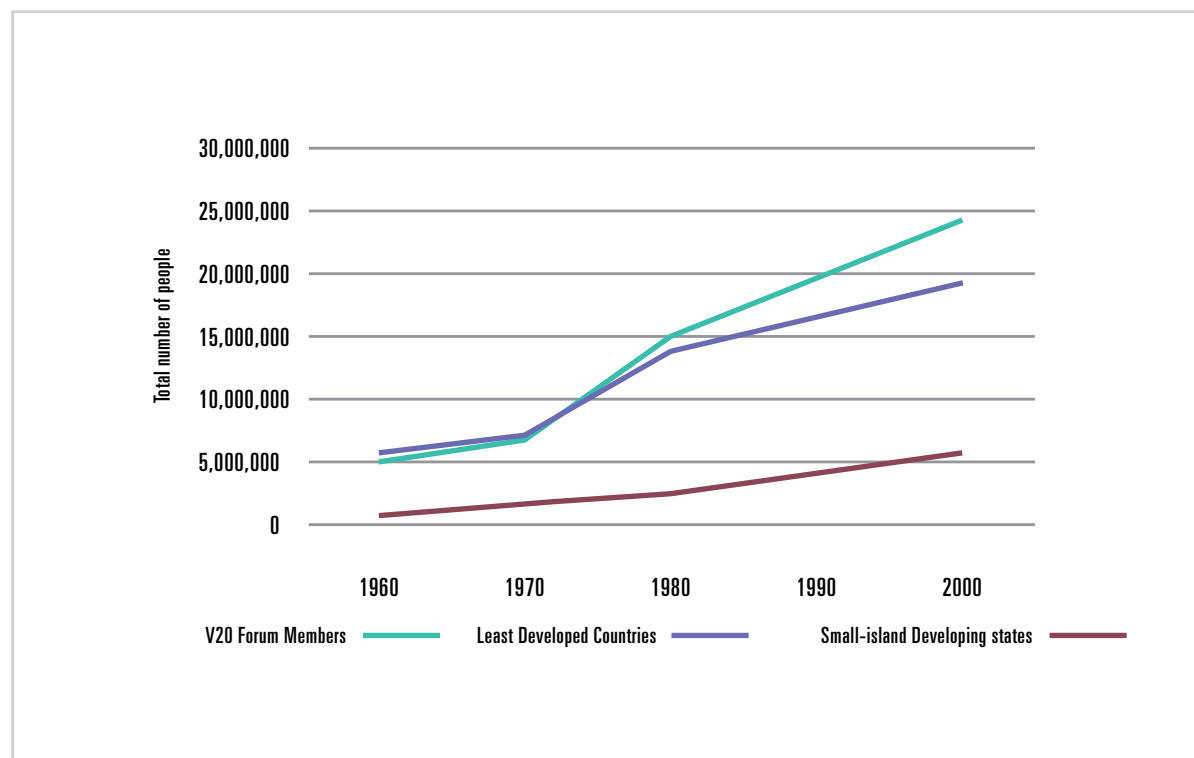


Figure 2. Migrants from 1960 to 2000 in countries vulnerable to climate change. Source: Wilkinson et al. (2016).



In Fiji, as part of International Civil Society Week in December 2017, more than 700 representatives of organisations from 109 countries signed a joint declaration⁷ to call for the **Global Compact for Safe, Orderly and Regular Migrations to grant this protection**. This document also calls for climate change to be included as a driver of internal and international displacement and a commitment to consultation with impacted communities in order to work actively with them and to ensure that they can stay or return to their homes where feasible. When migration is inevitable, the Declaration promotes respect for human rights, including non-refoulement, self-determination, non-discrimination, and the full range of civil, political, economic, social and cultural rights.

Studies on migration flows indicate that they are multicausal, and there has been a tendency to use social or economic factors to explain them (Lacroix, 2011; Orozco & Yansura, 2014). However, over time, environmental changes

⁷ Declaration on Climate Induced Displacement. International Civil Society Week 2017, Fiji 2017.

have become a variable needed to understand migration processes.

The IOM acknowledges that the impact of climate change on migration patterns will depend on the physical conditions and the adaptive capacity of the affected countries and communities. Less developed countries and countries located in particularly vulnerable areas, such as the Small Island Developing States, (see Figure 2), as well as socially and economically marginalised groups within the affected communities - the poor, the elderly, women and children - are the most vulnerable (IOM, 2017).

1.2.2 CLIMATE MIGRATION IN THE DRY CORRIDOR

Various studies (World Food Programme, 2002; Zapata, 2002; Hidalgo and Pérez-Briceño, 2017) have established a clear link between natural disasters and internal and international migration in the Dry Corridor. The Intergovernmental Panel on Climate Change (IPCC) concluded that the variability of and changes in the climate in this region make it highly socially, economically and environmentally vulnerable. In Central

America these factors have created challenges for growth and development (Climate and Development Knowledge Network, 2014).

Carazo et al. (2012), Crush (2013), the Inter-American Development Bank (2013)⁸ and GIZ in Germany (2017)⁹ have partially described the link between climate change and internal, and even international, migration from the Dry Corridor. However, few studies have focused on understanding the roots of this causal link, its scope and impact; nor are there separate statistics on environmental or climate-induced migration, and even fewer on this type of migration with gender- or age-disaggregated data (IOM et al., 2016).

⁸ Vergara, Walter; Rios, Ana R.; Galindo Paliza, Luis Miguel; Gutman, Pablo; Isbell, Paul; Suding, Paul Hugo; Samaniego, Joseluis (2013), *The Climate and Development Challenge for Latin America and the Caribbean: Options for climate-resilient, low-carbon development*. Inter-American Development Bank.

⁹ Federal Ministry for Economic Cooperation and Development. "Environmental Migration in Latin America" Working Group (GIZ) 2017: *Human mobility, natural disasters and climate change in Latin America From understanding to action*.

Although migration has existed in Central America for several decades, environmental changes and natural disasters have a significant impact on population displacement. Guatemala and Honduras are among the countries most affected by natural disasters in the region; like El Salvador, they are chronically food insecure, the main causes of which are climate change, monoculture and lack of access to land, especially for women (IOM et al., 2016). Faced with this reality, migration is becoming a very commonly used emergency strategy.

Movements have been identified from the areas most affected by climate change to less affected areas as people search for employment to generate income and use it to purchase basic grains. For example, movements to rural areas dedicated to permanent and labour-intensive crops, to coffee, sugar, banana and melon producing areas, and to large urban centres. Migration to other countries has also been recorded, especially to the United States and, in some cases, to Mexico. Migration between the Central American countries themselves also occurred, most notably the migration of Nicaraguan farmers to Costa Rica (CEPRENAC, CRRH and CAC, 2002: 40; Sandoval, 2016).



In 2015 and 2016, two droughts struck the region again. In Honduras, 80% of crops were lost in areas where beans are grown, as well as 60% in corn-growing areas. According to FAO estimates, in the Dry Corridor 3.5 million people required humanitarian assistance (the Dry Corridor's total population is 10.5 million).¹⁰

According to the World Humanitarian Summit in 2015, the most frequent emergencies in the region are related to natural events exacerbated by climate change. The impact of these events is worsened by the populations' vulnerability, which is due to their poor response capacity and poverty. During a consultation¹¹ conducted by the IOM and the World Vision organisation in the run-up to this Summit, the populations of Costa Rica, Honduras,

Guatemala, El Salvador and Mexico identified droughts (20%), landslides (16%) and floods (13%) as the main threats.

According to the IOM, the figures on climate migrants in the Dry Corridor are unclear due to the lack of agreement over the way that factors such as poverty, scarcity of natural resources and political conflicts influence the nexus between environmental impacts and migration.

It can be concluded that evidence already exists from the four countries that environmental changes, combined with the lack of an appropriate State response, shape migration patterns. It is a common practice in the region for a number of family members to migrate for work. This type of population movement is not normally regarded as migration but as labour circulation, as the workers do not intend to permanently change their place of residence. However, **due to climate change and natural disasters, it can be stated that this movement displays certain features of migration: a significant number of the people who moved have not considered returning to their place of origin, as they fear that their families will suffer again if they return.**

¹⁰ FAO. *Dry Corridor. Central America: situation report, June 2016.*

¹¹ Report of the Survey under the Consultation with the Affected Communities of Latin America and the Caribbean, *THE VOICE OF THE COMMUNITIES OF LATIN AMERICA AND THE CARIBBEAN, TOWARDS THE WORLD HUMANITARIAN SUMMIT.* February and March 2015. IOM and World Vision.

NICARAGUA: HURRICANES AND DROUGHT CONTRIBUTE TO MIGRATION

Nicaragua is a clear example of the impact that environmental changes have on migration. According to data from the IOM, the number of Nicaraguans registered as living in Costa Rica in 2000 increased from 230,000 to 400,000. This rise is mainly associated with Hurricane Mitch, which occurred in October 1998, and recurrent droughts in the country. These droughts affect small-scale farmers in areas of the Dry Corridor most severely (Vega, 2011).

In Nicaragua, the 2001 assessment conducted by the Ministry of Agriculture and Forestry (MAGFOR) to analyse the effects of the prolonged drought, which was affecting the western and northern areas of the country, referred to losses of 18.3% of the expected corn, bean, rice, sorghum and sesame harvests (MAGFOR, 2001). In that same year, the same communities which were affected by drought also experienced the negative consequences of the drop in international coffee prices, which worsened their poverty and the food crisis. Despite the aid that the governments provided with the cooperation of the international community, migrants flowed from rural area to cities in search of work and food; migration also extended across the borders between some countries, especially between Nicaragua and Costa Rica, as occurred in the Department of Matagalpa in Nicaragua.¹²



EL SALVADOR: FLOODS, LANDSLIDES AND DROUGHT CONTRIBUTE TO MIGRATION

Migration is constantly increasing, linked not only to social factors such as gang violence and extortion but also to the lack of opportunities and factors such as environmental deterioration and natural disasters. Like the rest of the Dry Corridor, El Salvador has been profoundly affected by drought. A study by Inter-American Dialogue (2014) analysed the main causes of migration in this country: 46% identified security as the main cause and placed unemployment second (16%). The mara gangs and insecurity have an effect on internal migration, but in recent years climate impacts have also been added to the causes of migration.

In 2001, drought wiped out agriculture covering a large part of the national territory, followed by a cycle of floods in the farming area of Bajo Lempa and landslides. Economic and food insecurity caused by natural phenomena and the massive destruction of homes, job losses, the abandonment of agriculture and lack of investment in new production infrastructure are direct causes which prompt entire Salvadoran families to migrate.

¹² Vega García, Heidy. *Migración ambiental inducida por variabilidad climática: El caso del Corredor Centroamericano de la Sequía.* 2015.





GUATEMALA: INTENSIFICATION OF HISTORIC MIGRATION

Despite the fact that migration has been a historical and continuous process in Guatemala due to internal armed conflict and the spiral of violence in the seventies and eighties, its patterns have changed to include environmental deterioration. In 2014, over 70% of Guatemala's staple food harvest failed¹³ (UN). This affected more than one million people directly and increased food prices, especially in the Dry Corridor.

The migration of family members (mainly men) in search of temporary employment (sugar cane and coffee picking) is a common and widespread practice in most families, and the income generated enables them to access food and basic goods. A recent Mesoamerican Famine Early Warning System (MFEWS) report stated that these temporary workers are paid an average of 95 quetzales per day, which enables them to feed their family for 5-7 days (Action against Hunger, 2010).



HONDURAS: INTENSIFICATION OF DROUGHT

The lack of access to land and other productive assets, the lack of access to basic services, environmental vulnerability, low agricultural productivity and limited job opportunities outside agriculture are some of the factors which hamper rural development and cause high levels of emigration from the country (Central American network of Rural, Indigenous and Farming Women).

Temporary migration to cut sugar cane and pick coffee, an important process that eases the situation, generates a significant surplus of workers, due to the migration of significant numbers of people from the north-west of Nicaragua, where drought has also affected crops severely. This surplus labour has decreased opportunities and reduced salaries per person (Action Against Hunger, 2010). "People used to migrate because of a lack of opportunities or violence, but in the last five years environmental factors and food security have started to be discussed too. We have observed a lack of public policies that prevent migration" stated Dowal O' Reilly Becerra (project coordinator at the Centre for Research and Promotion of Human Rights [Centro de Investigación y Promoción de Derechos Humanos], CIPRODEH).

¹³ UN Guatemala: Reporte de Situación No. 1 Sequía (2014).

1.3. INTEGRATING A GENDER PERSPECTIVE INTO CLIMATE MIGRATION

For many years, the debate on climate change paid little attention to gender inequalities, which meant that it was addressed as a neutral issue in terms of gender; it required technical solutions and a market-based approach (Rodenberg, 2009), which usually prioritised productive work and made women's tasks invisible.¹⁴

However, given the roles which are assigned to them socially, in recent years further research has been conducted on the different impacts on men and women. Generally, **the gender-specific division of work, the unequal access of men and women to resources and decision-making power make women more vulnerable to climate change and its effects, and their ability to respond is limited** (hbf 2010; Oxfam 2010). It has also been reported that the majority of victims of natural disasters are usually women, due to their limited mobility and their role as care-givers to children, the sick and elderly, which means that women try to protect their family members before themselves (IOM 2008b; Oxfam 2010; IUCN). For example, in the 2004 tsunami in Asia, in some regions of India, women accounted for almost 80% of the victims (IOM 2008b).¹⁵ The UNDP also warned in 2010 **that women are fourteen times more likely than men to die in a natural disaster**.¹⁶

It is clear that women's lives and social roles are profoundly related to changes in the climate and environment. In the agricultural sector, rural women are the main producers of staple foods; this sector is highly vulnerable to natural disasters and climate

change. In Latin America, women lead between 8% and 30% of agricultural undertakings, and the number is rising as a result of the migration of men to cities (Casas, 2017). This reality makes them highly vulnerable to natural disasters and climate change. In 2008, after Cyclone Nargis struck the Ayeyarwady Delta in Myanmar, 87% of single women and 100% of married women lost their main source of income (Blomstrom et al., 2009).

However, care should be taken not to make generalisations regarding the role of women as victims of natural disasters, and there is a great need for disaggregated statistics, which are not always available, in order to draw relevant conclusions. For example, there are specific situations, such as Hurricane Mitch in Nicaragua (1998), during which a higher number of men died (Bradshaw, 2001) than women¹⁷, which shows once again that generalisations cannot be made about the role of women as victims of disasters.

It is not possible to understand climate change and human mobility separately from the cultural, social, political and economic context within which they arise. Natural disasters do not affect everyone equally. Inequalities which exist in our societies and unequal access to resources, opportunities and capacities affect men and women differently. The traditional roles and different responsibilities that are assigned to each gender are also components which reflect the spectrum of climate change and affect the decision to migrate (IOM, 2017).¹⁸

Although there are an increasing number of studies on the different impacts of climate change and natural disasters, as well as new approaches which regard women not only as victims but also as the driving forces behind

¹⁴ Gonda, Noémi. *Género y Adaptación al Cambio Climático. Puesta en común y sistematización de experiencias sobre la integración de la perspectiva de género en la adaptación al cambio climático en el ámbito rural en Nicaragua*. Managua (Nicaragua) 2014

¹⁵ Jungehülsing, Jenny., *Women who go, women who stay: reactions to climate change. A case study on migration and gender in Chiapas*. November 2010.

¹⁶ *Gender and disasters*. Bureau for Crisis Prevention and Recovery. UNDP, 2010.

¹⁷ Sarah Bradshaw and Ángeles Arenas., *Socio-economic impacts of natural disasters: a gender analysis*. (United Nations, May 2004)

¹⁸ Ibid 13

successful adaptation initiatives, there is still **little evidence on climate migration with a gender perspective**. Despite the fact that forced migration caused by disasters continues to increase, there are no systematic data or statistical records on internal and cross-border migration, on which governments could base their policies, and even less disaggregated data available.

Climate migration is often associated with a lack of employment options in agriculture and unpredictable harvesting seasons due to rain and drought, which are directly linked to climate change or worsening environmental conditions. In most cases in which migration is linked to a lack of employment opportunities or the gradual deterioration of livelihoods in the medium and long term, it is men who traditionally migrate, while women stay behind to take care of the home and family. As their husbands are away, they find that they need to take on a more authoritative role with their children (Nawyn, 2010). Dreby (2006) and Kibria (1994) have shown that the other members of the family or society find it difficult to accept these changes in roles, which places an additional burden on women.

Depending on the context, “rural feminisation” (if there is more male migration) can have both positive and negative outcomes in terms of empowerment and gender equality. These outcomes do not only depend on whether more men or women migrate but on the roles and positions that the migrants held in the community and in the family before migrating, as well as the way in which these roles and positions are filled in their absence¹⁹.

Looking beyond climate migration, there are a higher number of publications on the potential impacts of female or male migration, which are relevant in the context of climate; for example, the “feminisation of migration” patterns

¹⁹ IOM *Migration, environment and climate change. Case Studies in South America*. (2017)



are currently increasing due to the economic opportunities for migrant women in the areas of domestic work (Mattingly, 1999), caregiving (George, 2005) and sex work (Lutz, 1997 and Hondagneu-Sotelo, 2011) or also in the case of short-distance migration.

This has also been observed in Central America (FLACSO, 2014). When a family separates, and it is the woman who migrates, the phenomenon of ‘transnational maternity’ (Hondagneu-Sotelo, 2011) or ‘transnational households’ (Orozco, 2007) often occurs, where the woman continues to meet her children’s economic and emotional needs as far as possible, and other women, normally grandmothers, take over the responsibility of caring for children. Some studies have shown that when the father migrates, they generally form new sentimental relationships in the receiving country, send fewer remittances or stop sending them at all; in contrast, migrant mothers under the same circumstances never stop doing so (Foner, 2009).

WOMEN’S UNEQUAL ACCESS TO LAND IN THE CENTRAL AMERICA DRY CORRIDOR

if women farmers had the same access as men to productive resources, there would be between 100 and 150 million fewer hungry people. Furthermore, increasing harvests on farms managed by women would reduce famine by between 12 and 17 percent (fao, 2011).

The reality for women in the Dry Corridor has historically been marked by unequal access to land. It is very important to analyse this link, as most women’s work in rural areas is related to the land, whether it is paid work (agricultural) or a direct means of subsistence for her and her family in the form of unpaid work.

During the various agricultural reform processes which took place in the 1960s in all Central American countries, land was registered in the name of the head of the family (the man). In recent years, attempts have been made to include women through laws that recognised equal rights, but very little land was left to distribute, and the implementation of such laws has not been straightforward under the pressure of market rules. There is still a deep split between formal equality and real equality, and, in practice, rural women have increasingly less access to land, which is of worse quality, and less legal certainty. In addition to legal barriers, there are cultural barriers (for example, in inheritance cases, despite the equal rights granted by law, many widows continue to transfer the land to which they are entitled to their sons, so that they will be responsible for running the family farm).²⁰

Lack of access to land is connected to patriarchal practices, which have historically governed both rural and indigenous communities. According to data collected by the fao, only 23% of women in Nicaragua own their land (2011), 14% in Honduras (2015), 11.5% in El

²⁰ Guereña, Arantxa. “Tierra para nosotras. Propuestas políticas de las mujeres rurales centroamericanas para el acceso a la tierra” produced by the Central American Network of Rural, Indigenous and Farming Women (Red Centroamericana de Mujeres Rurales Indígenas y Campesinas). RECMURIC

Salvador (2007) and 8% in Guatemala (2003). Women access land in marginal and uncertain ways through rents and/or loans from relatives, landlords, friends or neighbours. These forms of access to land generally make women more vulnerable, as they do not have control over the land or over the rules and prices of the rents and/or loans. This makes the processes of production planning and investment difficult and also makes the cost of land more expensive, according to a study conducted in 2008 in Nicaragua by the ngo femuprocan.²¹

Equality between women and men in land ownership continues to be one of the greatest challenges for rural development, as it affects the decisions and climate change adaptation activities that women can undertake. **There is a perception among women who own their own land that this gives them decision-making powers over production and their income.** Gaining access to land also creates independence, which is expressed in the ability to make decisions and undertake activities on their own. In addition, women agree that these elements have a positive influence on their self-esteem and security. However, as noted by the recmuri, it must be acknowledged that land on its own is not enough. Without the necessary productive investment, financial services, technical assistance and market access, land ceases to fulfil its social function and is abandoned or sold.

²¹ Las mujeres rurales y el acceso a la tierra: El caso de las socias de FEMUPROCAN. International Foundation for Global Economic Challenge (Fundacion Internacional para el Desafio Economico Global, fideg). Nicaragua. 2016.

1.4.

AN OVERVIEW OF INTERNATIONAL, REGIONAL AND NATURAL INSTITUTIONS AND POLICIES

This section provides an analysis of the international, regional and national institutional and regulatory frameworks which apply to the three variables of gender, climate change and migration. It was based on previous reviews carried out by civil society organisations, such as the PRISMA organisation in its study on ‘Institutionality and governance in the Central American Dry Corridor’²², the State of the Nation Programme in its “2016 State of the Region”²³ or “De la práctica a las políticas: experiencias latinoamericanas en género, cambio climático y agricultura” (From practice to policies: Latin American experiences in gender, climate change and agriculture”).²⁴

1.4.1 AT THE INTERNATIONAL LEVEL

There are many regulatory and legal frameworks which cover the topics of gender, climate change and migration, although mainly separately. Both gender and migration have their own international policy processes and were both gradually introduced into the United Nations Framework Convention On Climate Change (UNFCCC).

In 2008, climate-induced migration and displacement were mentioned eleven times in

²² Salvadoran Research Program on Development and the Environment. *Institutionality and governance in the Central American Dry Corridor*. 2014.

²³ State of the Nation Programme on Sustainable Human Development (Programa Estado de la Nación en Desarrollo Humano Sostenible, Costa Rica). *Quinto Informe Estado de la Región / PEN CONARE*. - 5th edition. - San José C.R.

²⁴ Witkowski, Kelly; Blanco Lobo, Montserrat. *De la práctica a las políticas: experiencias latinoamericanas en género, cambio climático y agricultura*. European Union. - San José, C.R.: ICA, 2017

UNFCCC documents, but it was the COP16 in 2010 which first recognised climate change-induced mobility in the Cancún Adaptation Framework. At COP18 in 2012, an advisory group was created to address this issue, but little progress has been made since then. The 2016 Paris Agreement, which was adopted at COP21, refers to the vulnerability of migrants in the preamble, and the text on Loss and Damage includes a request to establish a task force under the supervision of the **Warsaw International Mechanism for Loss and Damage, with a mandate to develop recommendations for comprehensive approaches to prevent, minimise and address displacement related to the adverse impacts of climate change**. This working group presented its recommendations at COP24, which was held in 2018 in Katowice (Poland).

The gender issue arose for the first time during the 2001 UNFCCC negotiations, but it was not until 2010 that gender equality was addressed substantially (Blomstrom, E and Burns, B, 2009). By mid-2016, the UNFCCC had 59 gender mandates in a number of decisions and programmes (Gender Climate Tracker, WEDO) and requested countries to include it both at the national level and in financing mechanisms, such as the Green Climate Fund (GCF) or the Global Environment Facility (GEF). The Paris Agreement mentions gender equality and the empowerment of women in the preamble, in Article 7 on adaptation and in Article 11 on capacity-building.

The most significant step was certainly the adoption of the **Gender Action Plan** at COP23 in Bonn (2017) which outlined specific activities and working groups over the following two years focused on **including the gender perspective in the UNFCCC at all levels**, in funds



for climate change mitigation and adaptation, as well as in technology transfer and capacity-building. In November 2019, an initial report will evaluate the progress made in implementing this plan, which also stresses the need to increase the availability of sex- and gender-disaggregated data.

Although both topics also feature in the 2030 Sustainable Development Agenda adopted by the United Nations, migration is not linked to climate change or gender. In SDG 13 on climate change, women are mentioned in goal 13.B as one of the groups to focus on when creating mechanisms for raising capacity for effective planning and management in least developed countries and Small Island Developing States. The 2030 Sustainable Development Agenda refers explicitly to disaster-induced displacement as a factor that could reverse much of the development progress made (paragraph 14).

With regard to migration, **the IOM has been discussing the links between climate change and migration since 1990**; its specific Migration, Environment and Climate Change Division carries out investigations, promotes development and coherence in public policies and institutionally builds public officials’ capacities in these areas. In some research related to climate migration, recommendations that include gender perspective and stress the need for more disaggregated data are already being incorporated.

With respect to the international process on climate change risk management, the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR) refers to climate change-related displacement after disasters and migration, but it does not address the link between migration and climate change in as much detail.²⁵ The SFDRR stresses the importance of the participation of women and calls, inter alia, for transboundary cooperation to be promoted to reduce the risk of displacement (paragraph 28) and encourages the “adoption of policies and programmes addressing disaster-induced human mobility to strengthen the resilience of affected people and that of host communities” (paragraph 30). The UN’s New Urban Agenda addresses the issues of climate change, gender

²⁵ UN *Sendai Framework for Disaster Risk Reduction 2015-2030*. (2015).

and migration separately without making the necessary links.

The Nansen Initiative, launched in 2012 by the Norwegian and Swedish Governments, was endorsed by 109 States from around the world and led to the **adoption of the Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change in 2015** and, in 2016, the launch of the Platform on Disaster Displacement, which works to implement the agenda. Instead of proposing a new binding international convention for cross-border displacement in the context of disasters, the Agenda is based on an approach focused on effective practices that States and (sub)regional organisations can integrate into their own regulatory frameworks. It also stresses that it is important to “collect, consolidate and analyze gender- and age-disaggregated data regarding the overall number of people displaced in disaster contexts, both internally and across international borders, based on clear criteria and effective methods”²⁶ and mentions the **necessary participation of women in all identification and decision-making processes.**

Under the Nansen Initiative a Central America Regional Consultation was held in 2013; it resulted in the creation of a Guide²⁷, which includes the flexible application of existing migration categories, temporary admission and stay when waiting for humanitarian visas to be issued, as well as the temporary suspension of return to countries affected by disasters. In November 2016, the Regional Conference on Migration, which was held in Honduras, provided an opportunity to further develop the measures related to protection and migration described in the Guide (a piece of work which served as a basis for the Costa Rican authorities to ensure a better informed and prepared response to any type of displacement that Hurricane Otto caused in November 2016) and to set future goals at the regional level.²⁸ However, the gen-

²⁶ *Agenda for the Protection of Cross-Border Displaced Persons in the Context of Disasters and Climate Change*. Nansen Initiative (2015)

²⁷ *Regional Conference on Migration (RCM). A guide to effective practices for RCM member countries: Protection for persons moving across borders in the context of disasters*. San José (2016)

²⁸ Walter Käelin and David Cantor. *La Guía de la CRM:*



der perspective is practically absent from this Guide.

Finally, as regards gender, although the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) does not mention migration, it does include a general recommendation (number 26) on the status of migrant women.

1.4.2 AT THE REGIONAL LEVEL

In recent years, a certain amount of effort has been made in the Central American region to incorporate gender considerations into climate change, agriculture and food security policies. The Regional Climate Change Strategy (ERCC), which was adopted in 2010, is a good example of how a gender approach can be integrated into a policy document on climate change (it is

una nueva herramienta de protección para el desplazamiento transfronterizo inducido por desastres en las Américas. (2017)

the interaction between these variables: “Due to its effects on resources, climate change will make social challenges such as poverty reduction and governance more difficult to overcome. These changes may have long-term social, political and security impacts. Uncertainties include the effect that climate change, or environmental degradation, may have on migration at different levels - local, national, regional or international” (Central American Commission for Environment and Development and the Central American Integration System, 2010).

The ERCC does mention “the recognition that the most vulnerable populations in the region include indigenous communities, populations of African descent, rural and urban women, children and the elderly, and families in poverty” (CCAD, 2010). Perhaps more revealingly, this framework policy (ERCC) also recognises the role of women as essential agents of change for the generation of good practices and policies.

1.4.3 AT THE NATIONAL LEVEL

EL SALVADOR

In 2015, El Salvador adopted the National Climate Change Plan and the Ministry of Agriculture (MAG) also established an “Environmental strategy for adaptation to and mitigation of climate change in the farming, forestry, fisheries and aquaculture sector”. However, further progress is required towards legislation which ensures improved mechanisms for adaptation to climate change and a comprehensive risk management strategy, which would help to create the necessary conditions to prevent, adapt to and mitigate climate disasters. At present, reactive approaches based on short-termism and on coping with emergencies are implemented without a preventive approach.

The efforts made by the State to make equality and the elimination of discrimination against women a fundamental requirement in its public policies should be highlighted: **the gender perspective is part of three approaches necessary for well-being outlined in El Salvador’s 2014-2019 Five-Year Development Plan.** The Ministry of Agriculture has a Gender Unit and, in 2009, created the National Board of Rural Women (Mesa Nacional de Mujeres Rurales) with representatives of various national women’s organisations. This initiative successfully

incorporated into its action plan), and it is regarded as a highly useful tool for including gender when planning policies to combat climate change.²⁹

Through the Central American Integration System (SICA), the Council of Ministers was created to implement the Environmental Plan for the Central American Region (PARCA) 2012-2014 and the ERCC. These strategies urge the international community to acknowledge the region’s high vulnerability to climate change, with a view to enabling greater cooperation and financing to reduce its negative impact (State of the Nation Programme, Costa Rica, 2016).

The ERCC, which is a climate change policy framework for the four countries, only mentions the effects of climate change on migration tangentially, which shows the lack of clarity on

²⁹ Gumucio T, Tafur M, Loucel C, Twyman J. 2016. *Inclusión del enfoque de género en políticas de cambio climático: Un análisis de siete países latinoamericanos*. Copenhagen, Denmark: CGIAR Research Program on Climate Change, Agriculture and Food Security (CCAFS)

included rural women in the programmes and in the agricultural and food package delivery register for families affected by the impact of climate change; it is also attempting to increase the number of land ownership deeds granted to women³⁰.

In addition, the Women's City (Ciudad Mujer) programme, which has six offices in the country and is organised by the Secretariat for Social Inclusion, includes activities aimed at economic empowerment and the promotion of women's rights, as well as comprehensive assistance in gender-violence matters or specialised sexual and reproductive health services.

However, the main challenge is achieving an effective link between gender, agriculture and climate change policies.

NICARAGUA

In Nicaragua, the level of economic growth achieved (sustained growth of between four and five percent in recent years), which is above average in Latin America, was made possible, to a large extent, at the expense of the increasing and accelerated deterioration of the country's natural resources. Livestock farming, coffee and sugar growing, and gold mining are dominated by the large industries without real regulations that guarantee environmental protection and the rights of the population.

The country has mortgaged its economic and social "successes" by turning its back on the sustainable development of its natural resources. In the face of the country's environmental crisis, the Ministry of the Environment and Natural Resources, the National Water Authority and the National Forestry Institute have been unable to implement effective public policies in the medium term and have very limited budgets.³¹

Although the Government presented its first public policy instrument directly related to climate change in 2010, the National Strategy for the Environment and Climate Change (ENACC), which has been in force since 2015, hardly any



progress has been made on this matter, and various civil society stakeholders have been calling for a Climate Change Law to strengthen the environmental legal framework in this area. To this end, in February 2018, the Nicaraguan Climate Change Alliance (Alianza Nicaragüense ante el Cambio Climático, ANACC), representing over 50 social organisations, submitted a Draft General Law on Climate Change to the First Secretary and the Environment Committee of the Nicaraguan National Assembly, and they hope that the Government will take it into consideration. Internationally, **Nicaragua initially refused to sign the Paris Agreement because it was not ambitious enough, but in October 2017 it finally decided to accede to it.**

Furthermore, in 2010, it adopted Law 717 Creating the Fund for Land Purchasing with Gender Equality for Rural Women, which was proclaimed as an important change for women in terms of land ownership. However, the budget is too low to implement the Law, and almost no progress has been made towards its implementation, as criticised by the main rural women's organisations in the country.

30 *De la práctica a las políticas: experiencias latinoamericanas en género, cambio climático y agricultura* / Kelly Witkowski and Montserrat Blanco Lobo (eds.); European Union - San José, C.R.: IICA, 2017

31 *Balance de la gestión ambiental en Nicaragua al 2016*. Humboldt centre.

HONDURAS

Honduras is the most vulnerable country to climate change in Central America and has high levels of poverty; 40% of households live in extreme poverty. Although it has a broad policy framework to reduce its vulnerability to climate change (2014 Climate Change Law, the National Climate Change Strategy and the 2018 National Adaptation Plan), in reality the budget allocated to combating its effects is insufficient. In 2017, the total budget for investment in issues related to climate change was equal to 2% of the national budget.³² Furthermore, gender perspectives are not included in its climate policies, although advances have been achieved in incorporating them into policies relating to food security by including gender in their action plans.³³

Honduras has a good number of legal instruments, policies and programmes which acknowledge the need to change unequal gender relations in rural areas and to enhance the role of rural women, such as the Equal Opportunities Law (2000), the Policy for Gender Equality in Honduran Agriculture (1999-2015) or the 2nd Equal Opportunities Plan (2010-2022), but, in practice, there have been no significant changes due to a lack of political will, poor interinstitutional coordination, limited systems for monitoring, evaluation and social auditing, and the meagre budget, in addition to the low participation of rural women in decision-making bodies³⁴.

GUATEMALA

Guatemala has developed various political, legal and strategic instruments concerning climate change, including: a) the Framework Law to Regulate the Reduction of Vulnerability and Obligatory Adaptation to the Effects of Climate Change (Decree 7-2013 of the Congress of the Republic); b) Law to Promote the Establishment, Recovery, Restoration, Management, Production and Protection of Forests in Guatemala, "PROBOSQUE" (Decree 02-2015 of the Congress of the Republic), the goal of which is to recover 1.2 million hectares by 2010; c) the National Climate Change Action

32 *Honduras trabaja contra el cambio climático*. El Heraldo Newspaper, 2017

33 Ibid 29.

34 Ibid 20

Plan, and d) Guatemala's Intended Nationally Determined Contribution.

At COP23 in Bonn (2017), Guatemala presented the **National Climate Change Action Plan (PANCC), a very ambitious project which, inter alia, aims to reduce emission by 11% by 2030.** The PANCC includes the National Council on Climate Change (CNCC) to coordinate matters relating to climate change, a National Climate Change Information System (SNICC), which provides statistical information and reports, as well as the creation of the National Climate Change Fund, which will administer and implement resources to prevent, plan and respond to the impacts of climate change on the country. It is estimated that around 100 million dollars will be needed to implement this plan³⁵ however, the allocated budget in 2017 for protection and care of the environment was 0.13% of GDP³⁶ At COP23, the former Minister for the Environment and Natural resources, Sydney Samuels, made a further call for its status as a particularly vulnerable country to be recognised, in line with the principle of the common responsibilities of developed countries (the main causes of climate change) and demanded finance to make the Green Climate Fund operational. **The principles that govern the PANCC include** comprehensiveness, which also encompasses the need to consider cultural and ethnic relevance, as well as the **gender perspective in the design of any actions**, an approach which is mentioned on various occasions throughout the document.

With regard to incorporating the gender perspective, the 2016 adoption of its first Gender Equality Policy in the area of food security, nutrition and rural development by the Ministry of Agriculture, Livestock and Food (MAGA) is also noteworthy. As for the inclusion of a gender approach in climate change policies³⁷, three policies on climate change, four on food security, one on forest ecosystems and one on risk management refer to a gender perspective; however, it is not clearly integrated in all the other levels of the policies' implementation.

35 Plaza Pública. "Guatemala y su multimillonario plan para reducir la contaminación". November 2017

36 Prensa Libre. "Guatemala invierte poco en proteger el ambiente". January 2017

37 Ibid 29.

2.

Case studies

In this chapter, the main findings from the four case studies will be presented. The results from each country are shown separately, and in the following chapter the results will be analysed in an integrated manner.

Each case study consists of two parts:

1. **Climate migration and gender impacts.**
2. **Adaptation and resilience from a gender perspective.**

EL SALVADOR

“Climate change affects water: we used to find water springs, but it is much more complicated now, as we have to find them deep in the ground or walk very far to find them. It also affects the crops and livestock. There is a food shortage, and we are losing our jobs. We don’t sow or grow anything. Our self-esteem has dropped. We have been changing the sowing seasons, and instead of two harvests, we now only have one...”

(Silvia Azucena García, de Usulután)

Climate change is already a reality in El Salvador. According to data gathered in the National Environment Strategy drafted in 2010 by the Salvadoran Government, in the last six decades the average annual temperature in El Salvador increased by more than 1.3°C and climate scenarios suggest that there will be further increases of between 2°C and 3°C in the next 60 years, depending on global efforts to mitigate global warming. Moreover, the risk of disasters is increasing quickly, as many environmental threats re-emerge more often and are less predictable as a result of climate change; according to the 2017 National Vulnerability and Risk Assessment, which is produced by the Ministry of the Environment and Natural Resources, 88.7% of the territory (where 95.4% of the population is settled) is regarded as a risk area.

Changes in crop productivity resulting from shifts in climate variables also have a significant social impact, which is visible in health: there is an increase in respiratory and diarrhoeal diseases, more severe shortages of foods such as corn, rice and beans,

which are the main source of proteins and calories and provide 50% of the daily caloric intake per capita, especially in rural areas. This situation has the greatest impact on populations in rural areas, the majority of which are engaged in subsistence farming, and, more specifically, women, who represent 51% of the rural population³⁸ and who have low fixed incomes and are not landowners.

The main conclusions drawn from the visits to the departments of Usulután and San Miguel (48 women and 10 men) close to the border between Nicaragua and El Salvador were:

– **Different impacts of climate change:** progress has been made in acknowledging the impacts that climate change has on women (it takes longer to find water, food and care

³⁸ Salvadoran Institute for the Advancement of Women (Instituto Salvadoreño para el Desarrollo de la Mujer, ISDEMU). 2013. *Situación de las mujeres rurales salvadoreñas en el ámbito económico. Sistema Nacional para la Igualdad Sustantiva.*

for the family), but this is not addressed in relation to the topic of migration.

- **Climate migration:** some of the communities establish a link between migration and climate effects, particularly drought, but violence continues to play a more significant role in migration than the climate variable, and there are established patterns of male migration. There are reports of some cases of migration caused by extreme meteorological phenomena exacerbated by climate change.
- **Climate change adaptation:** progress has been made in improving coordination between local Governments, national institutions and civil society to propose measures for climate change adaptation focused on women, such as native seed banks, which are linked to food security. Women are implementing agro-ecological practices to improve their food security, but they need more institutional support and a more cross-cutting approach to the issues of climate change, gender and migration.

2.1.1. Climate migration and gender impacts

“Climate change affects productive activities and the food that goes on the table”

(Iris Griselda Gómez, from San Miguel).

The people interviewed in the departments of Usulután and San Miguel pointed out that in the last five years the rain has arrived earlier than usual, in January, which has had a significant impact on crops and agricultural planning. With regard to fishing, they stressed that fewer fish are caught because the waters have warmed up.

San Miguel is one of the departments in El Salvador with the highest percentage of the female rural population - 53%; in Usulután the percentage of rural women is also high at 52%. Despite their contribution to food production, they are not regarded as farmers but as “housewives”.³⁹ Land ownership plays a significant role: only 15% legally own land suitable for agriculture (DIGESTYC, 2010 cen-

39 UN Women, *Voces desde el terreno: 30 historias de mujeres emprendedoras* (2016)

sus). As they are not owners, they have less power to decide what and how to plant; these factors increase their vulnerability and limit their abilities to become more resilient.⁴⁰

The groups interviewed thought that women were more vulnerable than men to the effects of climate change because they are in charge of health and food security in the communities. Men have more opportunities to choose to work, but this is more difficult for women as they are responsible for household duties and caring for children. Women are aware that the effects of climate change have meant a heavier workload for them because of the lack of rain and water in the wells; they must walk long distances to source water or pay high prices for it.

Almost all of the people interviewed in the communities of Cantón las Cañas, Colonia Nueva Belén and Colonia Prado in San Miguel confirmed that they had a relative or very close friend who had migrated. Although almost 30% of interviewees mentioned the climate variable (crop failure due to environmental factors, including climate change) the rest cited insecurity related to violence and unemployment as the causes. They all referred to long-term migration and the United States as the destination chosen by the vast majority. There are no official statistics, but the communities of San Miguel and Usulután thought that mostly men migrated, and there has been a significant increase in youth migration.

“In Conchagua, it has always been the man who migrates and the woman who stays; families are breaking up. Parents worry, and they want young people to leave because of crime. When a child turns 12 or 14, we have to see how we can send them to another municipality or to another country”

(Santos Ruiz López, Conchagua).

Some areas in San Miguel and Usulután also receive migrants. The migrants are Nicaraguan temporary workers, who migrate to these regions of the Salvadoran Dry Corridor searching for employment opportunities, such as livestock farming, sugar cane cutting and other agricultural jobs. In general, they stay in the country for six months and then return to Nicaragua.

40 Ibid 20.

“During the sugar cane harvest season, the majority of temporary workers who come to El Salvador are Nicaraguan. They also work in livestock farming, generally in rearing and milking activities, in the northern area of La Unión. Dollarisation⁴¹ seems to be an incentive”

(Reina Isabel Romero, from Usulután).

Climate migration

In the communities of **Agua Fría and Alto Nuevo**, men and women migrate, whether due to climate change or the dryness of the soil and lack of conditions conducive to production. Although their inhabitants have been given new land to live off, they cannot support themselves there; for this reason, they sow their crops elsewhere or look for a way to move from one place to another. In these places the land is not fertile and climate change adaptation has been shrouded by poverty.

In some communities, migration is caused by extreme meteorological phenomena exacerbated by climate change. In 2015, at the end of the dry season, there was a **climate event called Mar de Fondo (swell)**, which increased the size of the waves; waves of up to 3 metres high covered around 300 metres of the beach and **destroyed the homes of more than 200 families in 4 communities in the coastal area of the municipality of San Francisco Menéndez** (Department of Ahuachapán). As it is located close to the border with Guatemala, one of the shelters for affected families was set up there. This climate disaster resulted in migration to Guatemala. The Environmental Observatory of the Ministry of the Environment and Natural Resources (MARN) suggests that the increase in faster and higher waves is due to climate change and the El Niño phenomenon, which causes the sea level to rise. Furthermore, the encroaching sea affected the mangrove ecosystem, on which more than 1,700 families depend; the increase in salt water destabilised the biophysical conditions of the mangrove, thereby affecting the reproduction of species such as crabs and shrimps, which are a source of subsistence and income for the families who live nearby.

41 El Salvador is a dollarised country.

2.1.2. Climate change adaptation and resilience from a gender perspective

At government level, the Ministry of Agriculture has introduced policies with priorities for the fight against climate change and food security. The initiatives developed contain inclusive, equality and citizen participation approaches (see 1.4). Work is being carried out involving the exchange of native seeds as a climate change adaptation strategy and a contribution to food security through the National Centre for Agricultural and Forestry Technology (Centro Nacional de Tecnología Agropecuaria y Forestal, CENTA), the first government institution which has a gender policy and a Gender Department. CENTA is attempting to identify seeds which are more resistant to climate change and promote the exchange of seeds. After conducting various investigations, it has given farmers basic grain seeds, such as beans and corn, which adapt to the lack of water and nutrients in the soil. CENTA notes that women have significant knowledge about the land and are more open to being involved in research. In one of its projects, they are collaborating with local Governments in the department of Morazán, which is near San Miguel. The ultimate goal is to create a seed bank for basic grains such as beans and corn, which would help food security and benefit more and more women and men farmers.

“The idea is to use these seeds, which are much more resistant to climate change, and exchange the seeds, so that we all benefit”.

(Ana Xiomara Ruiz, from Usulután)

CENTA has expressed its intention to produce a new report on the situation of women in rural areas in order to have a diagnostic assessment which would help to meet the needs of women as regards climate change and their abilities to tackle its impacts. It has also stressed the need to continue developing methodologies to facilitate the equal participation of men and women in order to achieve food and nutrition security and sovereignty, as well as create spaces for women in which it can promote the development of associative processes⁴²

42 Ibid 20.

Women sweet chilli producers

“Summers are very dry here. We planted vegetables in January and February; the weather was very hot and it didn’t work. Now we have changed the sowing dates, and production has improved. We plant during the second sowing season. We have a drilled well which supplies us with water”

(Milagro del Carmen Moreira, a sweet chilli farmer in the El Brazo canton, department of San Miguel)

This pilot experience with women sweet chilli producers in a mesh house (a structure which is similar to a greenhouse) with the technical support of CENTA and financial support from UN Women through Ciudad Mujer San Miguel, brought about an important change for them; in just two years of entrepreneurship they have achieved economic independence and sales in the municipality of El Tránsito (Usulután) of up to 2,900 dollars, in addition to the knowledge that they have acquired in preparing the soil, planting, etc.

“They trained us to prepare the soil, apply foliar fertilizers and we worked on demonstration plots. Once we had been trained, they gave us support for the mesh house and we sowed 2,000 Nataly sweet chilli plants, which are resistant to high temperatures. We work and we use part of what we earn to live off and we save the rest. Our self-esteem has improved considerably.”

One of the main challenges is making it possible for more women to become involved in projects like this one and share their knowledge with other women, in order to form networks which enable them to build their resilience to climate change and create strategies which help them to stay in their territories.

At the local level, the interviewed Governments noted positive aspects such as the existence of Women’s Departments or the Environment Department, which receive support from CENTA and the Secretariat of the Presidency. However, there are limited relationships between these Departments, and there have been no cross-cutting discussions on climate change, gender and migration.

The local Governments consulted state that they are promoting actions aimed at climate change adaptation and the sustainable development of natural resources. “We are strength-

ening interactions between institutions, with working meetings on specific themes, which can then be transferred to the institutions’ final decisions. This enables a more rapid response to the needs of citizens’ groups, especially consultative women’s groups,” stated a municipal representative. Some effort has been made in exchanging native seeds and protecting springs.

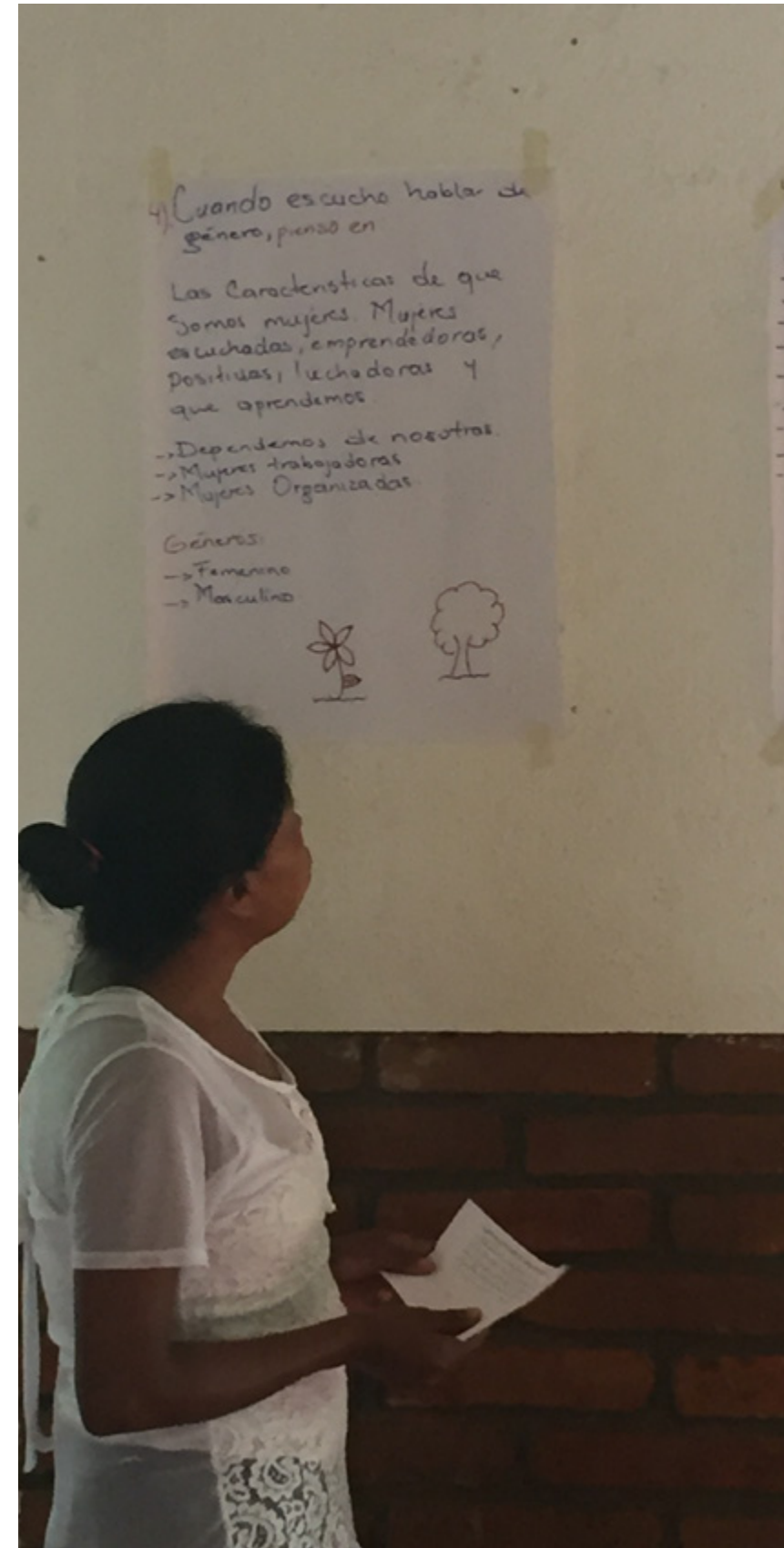
Alliances between institutions and local communities have enabled work to be carried out to improve the socio-environmental surroundings and, by doing so, prevent migration. Women participate actively in some initiatives, although better coordination is required in order to enable more women to become involved in these spaces and put their knowledge to use. As part of its model for the empowerment of women in socio-productive activities, the **initiatives launched by Ciudad Mujer to install water reservoirs** should be highlighted. This technology has been promoted to harvest rain water, and women have been given incentives to install a reservoir on the farms. Women have also been involved in initiatives to protect springs.

In addition, women take part in other actions led by municipalities, although the gender perspective is not always present in all of the initiatives. The following initiatives are particularly noteworthy:

- Use of seeds adapted to dry areas and seed exchanges for the future creation of a seed bank;
- Campaigns to prevent post-harvest burning;
- Proper management of solid waste, coordinated by the Municipal Women’s Departments;
- Soil remediation practices (they are promoted as part of the natural fodder), reforestation activities and installation of retaining walls to prevent flooding;
- Strengthening organisation and capacity-building for management, with an emphasis on the empowerment of women,
- Incentives for agro-ecological crop management: reduction in the use of harmful pesticides, eco-community initiatives, support for basic grain crops for food security, especially for farming in the second sowing season (when the rain is more regular), comprehensive capacity-building for women, etc.

“We learned to save water and look after it; and to maintain water wells like pools, which help us with the crops and for use in the home”

(Julia Elizabeth Alvarado, Leader of Usulután)



“There was only a trickle of water in the river. We organised ourselves in the community to start a cleaning process, and we restored the spring. The river was like it was before. Fish and shrimp stocks also recovered”

(Ana Maritza Joya, San Miguel)

The Salvadoran Ecological Unit (Unidad Ecológica Salvadoreña, UNES), an InspirAction partner in El Salvador, is a grassroots civil society organisation, which performs interesting governmental and policy advocacy work on climate issues; together with other organisations it enabled the adoption of the National Climate Change Plan in 2015. Although this plan does not address climate migration, it has managed to incorporate some gender elements, thanks to contributions from various feminist organisations; they are, however, still insufficient.

UNES emphasises the importance of obtaining more climate evidence in order to formulate more specific policies and measures. For example, they are carrying out **monitoring work on wells in order to record information on water reduction**; this work must be conducted in coordination with the relevant national bodies, and work is required, for example, on reforming the Irrigation Law with the Ministry of Agriculture, to prevent further damage to the sugar cane industry. They also work to improve climate information. They have installed **rain gauges in 8 communities, and women are responsible for monitoring** rainfall patterns. In this way, they can take decisions on whether or not to use water and produce risk maps in order to be better prepared.

Other NGOs such as Fundesyram are working on projects targeting vulnerable groups, by promoting sustainable production systems in agriculture, creole or native seeds and projects to increase food security. They have a wealth of technology, which is helping the communities to tackle climate change, especially communities in the Dry Corridor through the promotion of Eco-communities. The aim of the PRISMA Foundation was to encourage dialogue between stakeholders, engaging the local, territorial, national, regional and global levels, to generate public policies.

NICA RAGUA

“Climate change affects us women because we are responsible for buying the products and cultivating the land; because of the effects of climate change, there is now less work, and an economic crisis means that we have to migrate... there is total unemployment.”

(A woman from San Ramón)

Nicaragua's geographical position makes it vulnerable to extreme climate events (storms, hurricanes, floods, drought, etc.) and it is ranked as the fourth most vulnerable country to natural disasters in the GCRI. It emits 0.03% of global emissions and has 0.1% of the world's population. The Nicaraguan Institute of Territorial Studies (Instituto Nicaragüense de Estudios Territoriales, Ineter) stated that the country is losing 337 million dollars each year due to the effects of climate-related events, such as hurricanes, drought and floods.

The driest areas of the Nicaraguan Dry Corridor have been struck by the worse drought in recent years due in part to the strong el Niño phenomenon in 2014. In addition to climate change, which is affecting rainfall patterns and degrading the land, the impacts of worsening drought are significant and include basic grain crop failures (corn and beans), water shortages and an increase in diseases and epidemics in people, animals and plants.

The main conclusions drawn from the field work in Nicaragua were:

- **Impacts of climate change on food security:** the people interviewed in the regions of San Ramón and Somoto clearly associate the impact of climate change with the long and extreme drought experienced in recent years, accompanied by very hot weather and unpredictable rain. Its effects are visible in the decrease in production and crop failure, especially the corn and bean basic grains, which affects its food security and sovereignty. Most interviewees pointed out that other anthropic factors, such as deforestation, mining, the use of agrochemicals or the uncontrolled burning of waste catalyse climate change or exacerbate its impacts. They also mention the impact of mega-projects, which pollute the land and water, as a serious additional problem for communities.
- **Different impacts of climate change:** the majority of people interviewed confirmed that women's workloads increase if there is a shortage of food or water and the increase in diseases related to the temperature rise. This also increases the inequalities which already exist as a consequence of the structural in-

justice suffered by women (patriarchal land access practices, more precarious jobs, excessive workload in the home, etc.).

- **Climate migration:** some cases of climate-change induced forced displacement were identified among the people interviewed or their acquaintances, following landslides caused by localised rain. They also mention cyclical labour migration of men and women inland or to nearby countries (El Salvador, Costa Rica) and even international migration (Spain, United States, etc.), and that the environmental variable is not the only contributing factor. If the women migrates, she runs the risk of suffering labour, sexual and social abuse (in the maquilas, agricultural companies, in their new home, on transport, etc.); if the women stays behind, she must ensure the family's food security with increasingly scarce resources in an environment in which she also experiences gender discrimination.
- **Climate change adaptation:** there are some seed bank or water collection initiatives aimed at involving women in building resilience comprehensively, and not only in the form of voluntary work which increases their workload. A number of NGOs launch initiatives with a gender perspective and work very closely with the concept of new masculinities to change macho culture, which is deeply entrenched in Nicaraguan society.

2.2.1. Climate migration and gender impacts

Both the grassroots women and municipal authorities interviewed referred to the **impact that humans have on the changes in the environment and climate.**

“Consumerism and capitalism also exacerbate climate change: they make things worse, we are losing trees, is it a double blow... What's more, we no longer know which the productive seasons are. This directly affects production, which our livelihood depends on; it affects diversity and all the species that live in that area are disappearing; there used to be a bird that would tell me when it was going to rain and when the production season was, but it's not there anymore.”⁴³

Almost all the people interviewed immediately link the concept of climate change

43 Testimony from the NGO ODESAR.

with the drought in recent years. In Achiote Telpaneca they described how “everything dries up, the trees become dry; we fail because there is no rain, we do not have enough, so the crops fail, the plants do not produce as much (beans do not either) and the animals die; we are in a crisis.”⁴⁴

Women explained that to respond to this situation their children have to go out to find money however they can to send it to their families.

The people interviewed confirmed that **the effects of climate change are more evident for women and deepen the inequalities which already exist as a consequence of the structural injustice suffered by them (lack of access to land, precarious jobs, excessive workload in the home, etc.).**

“There was inequality before, and now with climate change it has doubled or tripled because the water sources are becoming more and more polluted or dry, and that means that women have to walk further to collect those resources. Furthermore, given their role as carers, they have to spend more time caring for people who are ill (flu, Zika, respiratory and skin diseases).”⁴⁵

“We have to resolve this problem among all those involved because we are the ones who suffer the most; we, the women, are responsible for growing the crops, for water supplies, obtaining credit, buying the products, etc.”

(Esperanza López Figueroa, from Los Limones)⁴⁶

In all communities, women agree that they have to walk further to collect the water that they use to prepare food, do the laundry, for children's hygiene, food production, etc. As a result, drought affects women more. “We have to walk further and further to collect the small amount of water that we need for cooking.”⁴⁷

The macho culture also has an influence on women, as they are forced to adapt to this new situation: “it is common all over the region for the mother to be the last to eat; she serves the food and waits to see if the others are still hungry, especially the children; therefore, they end up eating less because of the food shortages.”⁴⁸

44 Achiote Telpaneca Focus Group.

45 FEM, from its diagnostic assessment on water and climate change.

46 Women's focus group in San Ramón.

47 Women's focus group in San Ramón.

48 ODESAR

Patriarchal land access practices

Access to resources is closely linked to patriarchal practices. In terms of access to land, the mayor's office in the municipality of San Ramón acknowledges that only 3% of land is in women's names, and even when they are owners of small plots, **very often the husbands take control of what the women produce, leaving them without economic resources; they then become forced to migrate to other regions to find work as domestic employees.**

In 2005, 19.9% of agricultural landowners registered in Nicaragua were women (FAO). According to statistics for 2011 from the National Institute of Information Development (Instituto Nacional de Información de Desarrollo, INIDE), 23.3% of agricultural producers were women, which does not mean that all of them held land ownership certificates. According to a study by the NGO FEMUPROCAN⁴⁹, the percentages are lower in the departments of Madriz (18.6%) and in Matagalpa (21.7%). It is also interesting to note the difference according to the size of the land owned, as women always have the smallest plots of land: 48.5% are owners of plots of 0.5 blocks or less (around 4.5 metres²) and only 7.6% own plots of 500 blocks or more (from 300 m²).

The topic of access to land is essential because it creates a circle of poverty:

“If we ask for a loan, they don't give one to us because we don't have land to grow crops on.” (Eusebia Martínez, from Los Limones, San Ramón focus group).

The options are limited; although Law 717 exists to help rural women to apply for loans and buy land, it has not been implemented.

“When we don't have land, we don't have anything to answer with, and the banks don't give us a loan – then we have to find ways to support ourselves – we use cardboard, seeds, glass bottles and we make things to sell.”

(Karelia Maritza Blandón, from El Plomo)

49 Ibid 21.



Climate migration

The interviewees described how **natural disasters** (such as landslides after heavy rain) were causing forced migration, although normally to nearby towns: “We are blocked in and there are lots of landslides; we have to rebuild houses but in a new place, so people are leaving temporarily to look for work to obtain resources.”⁵⁰

Although San Ramón mayor’s office acknowledges that the impacts of climate change are apparent, it believes that the feeling of attachment to the land, which comes from the indigenous tradition of the Pachamama, is still stronger than migration. However, according to data provided during interviews conducted by the NGO ODESAR, 10% of people from San Ramón are migrating – at least one person in each family – and it pointed out the need to carry out a study on migration in that town in order to better understand the environmental causes.

In the interview with FCAM, **migration caused by climate change and extreme drought was identified, and it was noted that women migrate to Spain, whereas men migrate cyclically to Costa Rica for the coffee harvest.** This movement is cyclical, as the workers return to their communities at the end of the season. In some testimonies it was mentioned that, due to migration to Costa Rica for the coffee harvest, there was a shortage of workers in Nicaragua and crops were ruined in many places. The reason for this is that in Costa Rica payment is in dollars and is higher than in Nicaragua. Either one person or the whole family may migrate to work during the coffee harvest. Families often take their children out of school so that they can help their parents during the harvest season.

As Somoto is twinned with two towns in the Basque Country, women usually choose this destination in Spain when they decide to migrate and look for employment as domestic workers. Spain is also one of the migration destinations mentioned by women from San Ramón, as well as Panama and Costa Rica. With respect to the cause of migration, the communities talk of economic reasons, which are not easily separated from low agricultural production, the deterioration of the environment and the effects of climate change.

Migration occurs on a large scale in Nicaragua, mainly within the country to cities and coffee growing areas. As for international migration, migrants look for temporary jobs, mainly in the agricultural sector, in neighbouring countries and also go to the United States (although after Trump’s election, it ceased to be a priority destination) and Spain.

“When women migrate, it’s not the men who look after the household but the women’s mothers. This creates a double burden: adult women with their own family and job who also look after their daughter’s children”.

(Fundación entre Mujeres)

Some interviewees stated that migration affects similar percentages of women and men, but disaggregated statistics with which to explore this phenomenon further were not found. Rural women migrate to cities for work as domestic workers or they go to the maquilas. Young and single women migrate, as well as mothers, who sometimes take their children with them, and, if they cannot do so, they leave them with other women in their community, usually grandmothers. With respect to remittances, it was mentioned that, faced with climate uncertainty some young people do not look for work or try to develop new livelihoods. **They prefer to invest their remittances in consumer goods rather than in agricultural production.**

⁵⁰ Women from the Assembly of the Farmers and Ranchers Union (UNAG).

In the communities of San Ramón and Madriz they also mentioned the environmental degradation caused by extractive industry. The invasion of mega-projects creates an additional major problem for communities. The municipality of San Ramón would like to maintain its two large nature reserves, which are affected by water pollution caused by industry, especially coffee harvesting. River pollution is one of the most serious problems, but the Government of San Ramón does not take effective measures to resolve it. Illegal logging in forests, which also exacerbates climate change, is another problem.

2.2.2. Adaptation and resilience from a gender perspective

“Although the problem of climate change affects communities, women, men and young people, there is political will within both the central Government and the municipal Government to promote initiatives which contribute to the sustainable development of the environment through different laws, policies and programmes in San Ramón, in addition to the Municipal Development Strategic Plan (PEDM).”

ODESAR

The Sound of the Bell Foundation (Fundación Sueño de la Campana), ODESAR and UNAG launch initiatives with a gender approach and work very closely with the concept of new masculinities to change macho

culture, which is deeply entrenched in Nicaraguan society.

FEM, in collaboration with FCAM and UNAG, has recently implemented various **seed bank projects with a gender and climate change perspective in the region of Somoto**, and they would like to continue the native seed projects, in which **women have learnt how to improve some types of seeds with new technologies.** They are also working with organic vegetable gardens and agri-food chains (from 2014 to sell coffee at a fair price). The UNAG also works with seed banks and promotes community development with a gender and resilience perspective. For example, in Achiotelpaneca, men and women take part by selecting seeds in a seed bank project to improve production and, by doing so, prevent migration. Women are very involved in this project, but the results of seed banks will not be seen for some time.

The municipality of San Ramón has some resilience programmes aimed at adapting to climate change, but when the projects finish (water conservation, rainwater harvesting, etc.) and the community is responsible for maintaining them, problems of continuity arise. It was not possible to visit all of the projects, but several women-led projects were seen in action in the area: three coffee cooperatives run by women; a lending bank; a group of women who make crafts using recycled paper, and another craft project using fabric at the municipality’s entrepreneurial school.

Seed bank in Naranjo: climate change resilience led by women

The seed bank in Naranjo (Matagalpa) is an example of a community project in collaboration with a local ngo (odesar), which tackles food security, fights to build climate change resilience, supports community development and strengthens women’s leadership. Seed banks help to boost production, storage, and improve and exchange native and domesticated foreign seeds among farming families and their communities.

They have been running for two years with 24 families involved (management board of two men and three women, including the president). The bank loans the seeds which are stored and which adapt the best (native seeds and varieties) at a price of two for one (more attractive price than the market). Women are

responsible for planting the seeds and use a range of strategies to tackle climate change, such as storing all the seeds. They try to use varieties and native seeds; now “we have both types in the native and domesticated seed bank, as well as red beans and white chillies.”

One of the challenges is the water shortage, which is linked to the problem of not owning their own land. There is water or water sources on private land, but the community cannot use them.

HONDURAS

“Heatwaves affect the entire corn planting area. Last year, they affected 60-70% of the yield. Many families migrated between 2015 and 2016 because there was only one successful harvest each year, and if there is no rain you can’t plant more.”

(Alba de Jesús Gonzales,
from Namasigüe, Choluteca).

Despite emitting only 0.05% of global CO2 into the atmosphere, Honduras features at the top of many lists of the most vulnerable countries to climate change, including the GermanWatch Global Climate Risk Index (GCRI). Hurricane Mitch, which struck Honduras in 1998, caused 6,500 deaths and agricultural crop losses of 70%. Between 2014 and April 2016, Honduras suffered one of the longest droughts on record, and the country’s “dry corridor” experienced the worse consequences. The drought that Honduras is experiencing has significantly reduced harvests, causing increased food and nutrition insecurity and poverty, among other effects. As a consequence of crop losses, prices have increased by between 14% and 20%, which is making it more difficult for people to purchase the products in a basic food basket. In response to this situation, families, especially in rural areas, are choosing to reduce the number and quality of meals, thereby increasing malnutrition rates. Paradoxically, in 2017, there was more rain than usual.

The main conclusions based on the findings in Honduras are as follows:

- **Impacts of climate change:** it is evident in the regions visited in irregular rain and very long and extreme periods of drought, and it affects food security (loss of basic grains in all regions, in addition to coffee in Langue), the availability of water and health (increase in respiratory and skin diseases).
- **Different impacts of climate change:** water and food resources are increasingly scarce, and women are affected most (more time spent carrying out their duty of collecting water and obtaining food). Women who are not landowners must give 50% of what they produce to their landlord and are producing less and less, which affects their quality of life. In addition to the impacts of climate change, the extractive projects (hydroelectric, mining, monoculture expansion, etc.) oblige women to defend their territories.
- **Climate migration:** the lack of resources makes a large proportion of the population

migrate. Women migrate in equal numbers to men, and they are very often at risk of sexual and labour abuse in the jobs to which they migrate temporarily.

– **Climate change adaptation:** The central Government is not allocating sufficient funds to climate change adaptation initiatives (the gender perspective is not present either) and it delegates the task of project implementation to local Governments. In the Marcala region, the positive impacts of agricultural cooperatives led by women are apparent.

2.3.1 Climate migration and gender impacts

“When we see that we cannot produce any more, and plant pests win, we migrate and, very often, we get it wrong”.

Woman from Marcala.

In the coffee-making region of Marcala, although the soil could still be considered wet, its irrigation level has decreased dramatically for coffee growing, the region’s greatest source of income. The communities of Marcala feel the effects of climate change on their livelihoods: “last year it affected the coffee plantations - not enough beans grew, 15% of the harvest failed; the same thing happened to the basic grains; elote corn was the only maize variety left and the guineo (banana) was frozen (burnt) by the extreme heat, and there were also major losses and they couldn’t be sold.”⁵¹

“Heatwaves affect the entire corn planting area. Last year, they affected 60-70% of the yield. Many families migrated between 2015 and 2016 because there was only one successful harvest each year, and if there is no rain you can’t plant more.”

(Alba de Jesús Gonzales, from Namasigüe, Choluteca).

As they cannot produce food, the farmers must look for other forms of subsistence. According to the Deputy Mayor of Langué: “Climate change affects the farming economy and, therefore, it deteriorates because people who live off daily wages sell their animals, land and furniture to buy things such as beans and food, which they used to be able to produce.”

51 Testimonies from the Choluteca focus group.

In addition to the impacts on food security, the people interviewed in all the communities also found a direct link between climate change, which is reflected in the increase in heatwaves, and the rise in respiratory diseases in the elderly and skin diseases in children. “It is getting hotter and hotter, and it seriously affects the skin of those who have to walk far to go to work or school.” “Climate change reduces production and also causes new diseases.” “Droughts are lasting longer. This year was different (more rain), but the farmers were scared to sow crops because of the droughts between 2012 and 2016.”⁵²

Environmental changes have an impact on the entire family, but the consequences are greater for women. “Women who are not landowners must give 50% of what they produce to their landlord. As they are producing less and less due to drought, this affects their quality of life.” In the Choluteca focus group, the tension created by falling employment and earnings for the family provokes domestic violence against women. With respect to gender, lack of access to land also has an impact, placing Honduran women from the Dry Corridor in an even more vulnerable position.

In Choluteca, where drought is most extreme, the impact is reflected in women’s heavier workload: “we have to carry water from further away because the wells dried up”⁵³, and their food security is even affected.

“There are places in Choluteca where pregnant women eat ripe mangoes with salt and yellow mombin leaves because natural disasters and drought prevent us from planting.”

(Ángela Calix, from Marcovia)

52 Testimonies from the Langué focus group.

53 Women’s focus group in Choluteca.

Climate migration

In the Marcala region, the crops which produced sufficient yields in previous years to sell them and generate extra income are now only enough for survival. For example, in the community of Las Flores, the families produce enough for food, but in order to earn extra money for their other needs, such as health, education and clothes, there is an established temporary work pattern whereby people move temporarily to Comayagua and Olancho between December and March to work on coffee plantations or women work as kitchen assistants⁵⁴. Whole families migrate temporarily, as the children also help to pick coffee. Schools have had to be more flexible in understanding that most students will be absent during the coffee picking season.

People also migrate for the same reasons in Langué, and women are directly affected by the need to move to earn money; in this case, women migrate temporarily, but rather than being away from home for months or years they migrate on a daily or weekly basis to melon plantations. They return home late at night, which erodes ties with family and with their place of origin.

It is clear that the lack of opportunities in their communities obliges women to migrate, albeit temporarily, and to look for work mainly in the maquilas, agriculture or as domestic employees in cities. In several focus groups, people repeatedly said that women who leave to look for jobs were victims of unfair salaries and poor working conditions (excessive hours, threat of dismissal when pregnant, etc.). They also mentioned cases of long-term migration, “when we see that we cannot produce any more, and plant pests win, we migrate and, very often, we get it wrong”⁵⁵.

Climate change also affects the decisions of people who cannot migrate due to a lack of resources, as their livelihoods become more precarious. Similarly, due to increased drought and flooding, families of migrants who receive remittances do not want to use them to cultivate the land; instead, they spend the remittances, as they feel uneasy and hopeless about the unpredictable climatic cycles. This makes it more difficult for families to boost their income and for migrants to save their money when they return home. There is also a lack of a savings culture, which means that remittances are not always invested in productive assets but rather used to purchase unnecessary goods.

54 Marcala focus group.
55 Marcala focus group.

Impacts of mega-projects

Apart from climate change, communities, community leaders and organisations interviewed in Honduras, identified the wave of concessions granted for mega-projects in vulnerable areas with natural resources as a serious problem. During the research, we had access to many testimonies from people complaining about mining projects in the southern region of Choluteca (municipalities of El Triunfo, El Corpus, Urucui and Marcovia); various organisations, including the Association of Women Defenders of Life (amdv), the Human Development Centre (cdh) and the National Board for Disaster Risk Management (mnigr) are opposed to these projects and complain that the employment generated by these projects is minimal and short-lived, while the negative impacts from a socio-environmental perspective are multiple and lasting.

The environmental damage that these projects cause affects women’s abilities to provide food and water for their families and communities. As land and water is lost, the work that women have to do to fulfil their role in the home increases, although it remains invisible and is not valued (for example, making food last longer, finding new water resources, etc.). Faced with this difficult reality, many women have become leaders in defending their communities’ natural resources, but they are victims of harassment, stigmatisation, physical and verbal abuse, and are subjected to threats of sexual violence, criminalisation and murder as they challenge the passive role that they should perform in theory.⁵⁶

The situation in Honduras is linked to serious violations of human rights and, in particular, of the rights of people who defend the land against a Government which continues to promote the expansion of extractive projects (hydroelectric, mining, monoculture expansion, etc.), a model which is destroying the land and also causing climate change.

56 Honduras: the deadliest place to defend the planet. Pg. 29. 2017 Global Witness.

2.3.2 Adaptation and resilience from a gender perspective

It was discovered that the central Government is not allocating sufficient funds to climate change adaptation initiatives and it delegates the task of implementing these projects to local Governments.

Marcala Community: agricultural cooperatives with a gender perspective

COMBRIFOL (Regional Mixed Cooperative "Brisas de la Frontera")

It is a cooperative made up of Lenca small producers with the aim of mitigating the causes of poverty. Three years ago, a Gender Committee was formed because of the need to view women "not as heads of households but as heads of the land." The Committee has a Management Board of four women and is supported by the Marcala Municipal Office for Women and the Prosecutor's Office in gender violence cases. The committee works to provide training to women on preventing violence, sustainable and organic agricultural practices, managing funds and loans, etc.

Since the Committee was formed, the Chair and Treasurer of the Board have identified progress made in increasing productivity, organic production methods and the empowerment of women (as part of mixed-gender training, people are educated on women's rights to make decisions about the land and resources in the home). The Committee has helped to increase the number of women who receive loans to acquire seeds, birds, pigs and plant coffee, which represents a major step forward for their food sovereignty.

As production on the land and food security has increased, families have decided to plant crops in their region and not to migrate. In Marcala, families associated with the cooperative experience a lower rate of migration than the general population. "There is not a lot of migration; regionally, people migrate much more. In the mountainous area, a lot of people migrate to the United States, Spain, Tegucigalpa or San Pedro (Sula). Here, most of the population does not even go to Comayagua to plant coffee", explains the Chair of the Cooperative.

The Committee encourages women to plant native seeds, which is a good method of adapting to climate change as part of the ca-

capacity-building process is being able to choose which seeds are adapting best to the changes in the climate. One of COMBRIFOL's main challenges is helping its members to purchase land. The process of restoring the land using organic fertilisers and native seeds takes time and the benefits are seen in the long term, and members feel that "it is not worth improving the land with organic products if the landowners are not going to let us work the land next year." The advancement of these initiatives is also hindered by the constant struggle against machismo; for example, in the municipalities of Santa Helena and Yarula it has not been possible to carry out the Committee's activities because husbands do not give their wives and daughters permission to attend.

COMUCAP (Coordinator of Women Farmers of La Paz)

It was formed in 1993 as a process of empowering women to stop them from being dependent on their husbands. The project evolved into the creation of a coffee-producing cooperative, under the premise that independence is not possible if women do not have effective control of resources. COMUCAP's activities are guided by the principle of environmental conservation. Each producer who joins signs a letter in which they commit to plant fifty trees each year, and the cooperative helps the women to acquire eco-stoves to reduce logging; both examples are measures to mitigate climate change.

In the words of the President of COMUCAP, the cooperative's production model is aimed at involving all family members in production, so that their ties are strengthened, everyone's work is valued and food and economic security is improved. They are also fighting to eliminate salary inequality (in the La Paz region, women are paid 60 lempiras for a quintal of coffee, while men are paid 100 lempiras). Furthermore, women are empowered in their rights, so that in the event of a separation or abuse they can resort to the law and exercise their rights, thereby ensuring their livelihoods.



In contrast to these two cooperative initiatives led by women, the two experts consulted⁵⁷ from the Women's Rights Centre (CDM) organisation stressed that most adaptation or food security projects in the country do not have a strong gender perspective when it comes to formulating the project phases. Cooperation initiatives tend to be very masculinised and, as women's roles are not understood (timetables, needs, etc.) they ultimately involve extra work for them, which discourages women; for this reason, these projects do not continue once they have been implemented.

For example, when training is scheduled, the fact that women do not only have to find transport but also have to be able to leave their children in the care of someone else, and find time to leave food prepared, etc. is not taken into account. Many projects benefit men in the end as most women are not landowners and are not eligible for many of these benefits. Finally, while they generate benefits, many projects do not have stages for raising awareness among families (especially husbands), and, therefore, there is a risk that they will take the produce from the women because they have cultivated "men's land".

The interviewees also explained that creative ways have to be found to produce crops which are physically close to women's houses so that they have effective control over them and can include tending to the crops in their many duties. Awareness should also be raised among the other family members (mainly husbands) of the value of women's work so that respect for their time and decision-making power increases.

57 - Interview with Pilar Euraque and Hogla Teruel.

GUATEMALA

“I remember 25 years ago the weather was stable. We all knew that on 3rd or 4th May it would rain, and we prepared ourselves. Then came a period of 6 or 7 years with a lot of rain. From 2012 onwards, drought came and we have had permanent drought. We are not well now, we either have too much water or we have drought”

(Juana Ramírez, comunidad de Jocotán)

In Guatemala, in less than a decade, the significant negative effects of several extreme hydrometeorological events have been experienced; for example, Hurricane Mitch in 1998, drought in 2001, and the devastating effects of Tropical Storm Stan in 2005. Extreme events are recurring more often than those reported in the past, despite the fact that Guatemala produces only 0.04% of total greenhouse gases.

Geophysical characteristics are not the only factors that determine the country's risk of suffering the effects of climate change; other social, environmental and economic factors (high rates of poverty with estimated figures of between 59.3% inhabitants living in poverty and extreme poverty according to data from the Guatemalan Government and 70.5% according to the annual reports of the Economic Commission for Latin America and the Caribbean (ECLAC), lack of land-use planning, deforestation, soil loss and degradation, malnutrition and food security, the concentration of inhabitants around cities in high-risk areas, etc.) cause the impacts of extreme events to be even more devastating.

According to data from the World Food Programme (WFP), almost one in two children under the age of five (49.8%) suffers from chronic malnutrition; in the Jocotán department the figure is 67%. 43% of the population is rural, and indigenous women make up over half of this population. Women experience different forms of discrimination which limit the exercise of their rights and freedoms.

In the study conducted in Guatemala the following trends were identified:

- **Impacts of climate change:** Lack of rain has caused farmers to sow only in the second growing season (only one harvest per year), which is seriously compromising their food security, thus worsening their poverty situation.
- **Different impacts:** women are most affected by water shortages.
- **Climate migration:** men commonly migrate in search of employment (temporary jobs during the coffee and sugar cane harvests) and return with resources for the family.
- **Climate change adaptation:** the collection,

protection and exchange of native seeds, which are more resistant to climate change, are good practices together with reforestation and building women's capacities.

2.4.1 Climate migration and gender impacts

In the communities of Jocotán and Camotán mainly corn, beans and coffee are grown (coffee is grown on a smaller scale due to the effects of rust, a fungus which affects coffee leaves). Vegetables are grown, but they are vulnerable to pests and the effects of extreme weather (torrential rain and the subsequent periods of drought). "Maicillo", small corn grown from a native seed, is planted the most. "This type of corn had been lost and was hardly ever planted. But it is recovering now", said one of the women interviewed in Jocotán. Women stated that 2017 was the first year in which they had good rain, which they had not had for fifteen years.

"Sown land uplifts us. There is drought here, and there is either no water or high rainfall. We have been through a period of many years with not a lot of water."

(Juana Ramírez, community of Jocotán)

Families who have small plots of land for subsistence farming do not produce enough to meet their basic needs. According to estimates of representatives of some of the NGOs

Climate migration

Interviewees link migration to the fact that "it is either possible or not possible to harvest". When the land does not produce as much as before, men decided to look for work in nearby companies, for example, sugar companies. Most men move within the communities of the Dry Corridor, and, in some cases, when the coffee harvest takes place these areas receive migrants from Honduras. "Here men are in charge of sowing the crops, and they are also the ones who migrate to go to work and earn money to maintain their family. They go for days or months at a time to earn money."

"The men are only at home when it rains and they can sow the land. If there is no work in the fields, they go to Honduras or farms in Esquipulas (Guatemala) temporarily and then come back. Young sons also move to wherever there is work"

(María Corina Ramírez Hernández, from Matasano-Jocotán)

interviewed, a family of five needs 20 quintales of corn and 5 quintales of beans to make three meals a day, but they only produce around 6 or 7 quintales of corn and barely 30 pounds (0.14 quintales) of beans.

Similarly to the rest of the communities in which interviews were conducted in El Salvador, Honduras and Nicaragua, the lack of rain has caused farmers to sow only in the second growing season (only one harvest per year), which is seriously compromising their food security, thus worsening their poverty situation and giving rise to temporary or, in some cases, permanent migration. Many men secure temporary jobs during the coffee and sugar cane harvests; they earn below the minimum wage and have no employment rights.

The lack of water in homes is another serious problem, which has worsened as a result of climate change and has major consequences for women.

"There is not enough water for everyone; there is inequality in water use. Women and young people can walk for up to 5 hours to bring water back. If there isn't any water we walk for up to 8 hours to find it. We get up at 2 o'clock in the morning. If there isn't any, we have to go and buy it in the village; they sell it for 5 quetzales for a bag of 5 litres or 1 quetzal for a small bag. The children get ill, or sometimes the water from the wells or rivers is very dirty".

(María Corina Ramírez Hernández, from Matasano-Jocotán)

Male migration leaves women in a more vulnerable position, as for periods of three to six months they have fewer resources with which to meet their family's needs. Opportunities for women to organise themselves to find solutions to this shortage are limited because they have to care for children and seek immediate alternatives in order to survive.

The women interviewed also mentioned that men migrate to other countries, mainly the United States, and that the men do not come back or forget about their families. When this happens, women assume the role of head of the family, and they commented on the problems concerning land ownership that they face. Women suffer doubly because they are not landowners and witness the displacements of their partners.

2.4.2. Climate change adaptation and resilience from a gender perspective

In the interviews, the concept of "defending the body like a territory" was emphasised strongly as part of the indigenous female identity and the demand to make their body a concrete space in order to care for it and "maintain it in a healthy and happy state". For indigenous women, defending the land territory is defending the body territory itself, because they do not regard territory as only a physical space but as a whole, which is also connected to the intangible: **it is the history, memory, culture, roots and spirituality which form each people's world vision.** They attach importance to relationships which do not involve abuse or violence, relationships towards gender equality and decent opportunities for all men and women. Based on this concept, **women refer to the recovery of native seeds as climate change adaptation practices.** In the community of Jocotán a project to ensure that drinking water reaches homes and

prevents women having to carry water is regarded as a priority, as women are the ones who suffer most from the lack and pollution of water. An initiative of this type requires the direct involvement of the public sector, NGOs and the communities. Although some projects have been carried out to build reservoirs to store water, these technologies have not worked as planned, as the materials used have not been able to resist the onslaught of natural phenomena because they are not the most suitable materials. Timely follow-up has also not been arranged, and people have stopped using them.

Environmental adaptation practices included replacing hybrid seeds with native seeds, varieties which are more resistant to climate change. Interactions between different communities in order to exchange native seeds have proved successful. "We have to experiment and see what the land gives us; for this reason, sharing with other farmers is very important and it allows us to be more certain as to what might work. In this way, we learn a lot."

Grain stocks and native seed banks (El Rodeo)

Women mentioned a wide variety of native seeds that are more resistant to climate change, such as black corn, bejuco beans, barco, petaca beans, chajan, etc. and they explained the advantages of using these seeds, namely that their production cycle is short and they are resistant to drought and pests. In 2012, they had the opportunity to learn about successful experiences in Honduras with seed banks, and they thought that it could be a good measure for climate change adaptation in their community.

In El Rodeo, women have a community plot where they sow maize and beans, and also store seeds, and they have another larger facility, which is working very well and is now one of the largest seed reserves in the area. "The idea was to be able to sell seeds cheaper, and we are selling them 10 quetzales cheaper than on the market. Seeds are bought in cash," pointed out one of

the participants. The reserve was established with contributions from the men and women farmers themselves and an initial donation from a cooperation project (275 quintales of maize and 38 quintales of beans) in 2015. They are well organised (treasurer, management) and hold monthly meetings to take the most important decisions.

The aim is to continue strengthening experience, knowledge and capacities in order to do so. In farms, they are trying to diversify with forestry, fruit and vegetable crops. However, one of the main challenges noted is access to land. "It is possible to produce and exchange seeds, but this needs to be connected to the land as a right."

3.

Conclusions

All the communities visited clearly identified climate change as the cause of increased drought, more extreme temperatures, flooding and changes in rain patterns. In several focus groups and interviews, people explained that periods of rain and drought were much more predictable a decade ago than at present, and they linked this irregularity with climate change. There have even been changes in rain patterns in wetter areas, which have had negative consequences for the inhabitants' livelihoods. For example, in the coffee-making region of Marcala (Honduras), the soil could still be considered wet, but its irrigation level has decreased dramatically for coffee growing, which is the region's greatest source of income.

In all the countries it was evident that the irregular rain patterns and drought directly and severely affect the rural economy, as men and women farmers do not know when to sow or harvest. A clear example of this was identified in the first half of 2017 when no crops were planted during the first planting season in any of the areas visited, as they did not think it would rain because it had not rained in the last three years; it did rain, however, and this opportunity was lost.

In response to climate change, the people in the Dry Corridor no longer harvest twice a year; they now only sow in the second growing season (second harvest). The fact that there is only one sowing season per year compromises food security and deepens poverty due to food



shortages. For example, in Honduras, testimonies were given about pregnant women being obliged to eat mangoes and yellow mombin leaves as their main food source as there were no other alternatives. They also clearly linked climate change (testimonies in Honduras and Nicaragua) with more extreme heat and more respiratory diseases among the elderly, skin diseases in children and higher rates of vector-borne diseases (zika, chikungunya and dengue) related to increased numbers of mosquitoes.

With regard to terminology, the communities linked the term migration with cross-border, long-term population movements, while they used the term displacement to refer to movement from the place of origin to other areas of the country (for example, cities with maquilas or coffee-growing regions) where people would go to work for short or long periods of time. For this research, as stated at the beginning, the term "migration" was chosen instead of "displacement" to define the variable studied, in accordance with the IOM definition.

In addition to climate change, anthropic activities, such as deforestation, uncontrolled

GENDER AND CLIMATE CHANGE

All of the interviewees mentioned the importance of equality and that machismo is the main obstacle to its achievement; they also stressed the importance of education in overcoming existing power relations, which favour men.

The interviews revealed evidence of extra responsibilities that women take on as a result of climate variability: they spend more time ensuring the supply of water, providing their families with basic food and caring for sick people of all ages as a result of an increase in illnesses related to the temperature rise (respiratory diseases, skin diseases and diseases such as the zika virus, chikungunya and dengue, caused by higher numbers of mosquitoes).

When food is increasingly scarce, women always eat last and, in terms of production, the main problem continues to be land ownership: most women do not own the land which they cultivate and must give 50% of their harvest to the landowner (testimonies gathered in Honduras). The decline in crop production reduces their income. In addition, tension created in the family, as a result of reduced production and lack of employment and income, provokes domestic violence against women.

The questions posed at the beginning of the research will be answered below. The question on recommendations for public policies to approach climate change from a gender equality perspective will be analysed in Chapter 4.

burning and poor management of solid waste, both by some communities and companies, were identified; these practices are a direct cause of the decline in the quality of life among populations in the Dry Corridor. Furthermore, the communities interviewed in Nicaragua and Honduras also mentioned that **agro-industry, mining and hydroelectric mega-projects**, inter alia, posed an additional threat to their livelihoods. The national Governments support these mega-projects and grant concessions without sufficiently regulating the activities conducted by these companies or consulting the communities in advance.

The projects, which often cause pollution and destroy water sources, only offer temporary jobs while permanently eliminating natural resources. All of these impacts affect life in the communities directly and, due to the close link between the land and water, women have taken a very active role in defending their territories, in regions like Marcala (Honduras), for example. This serious problem may also trigger migration, but this is beyond the scope of this study.

3.1.

ENVIRONMENTAL

MIGRATION PATTERNS

AND DIFFERENT

GENDER IMPACTS

Most of the statistics and earlier studies reviewed on migration in the Central America Dry Corridor identified the “search for opportunities” or “lack of livelihoods or employment” as key factors in explaining migration. They did not explore how climate variables could influence the decline in livelihoods. There was also a lack of data disaggregated by gender, ethnicity and age.

The testimonies gathered in the four countries revealed an increase in migration related to **the lack of employment possibilities in agriculture or uncertainty about rain or drought during harvesting seasons, which were said to be directly linked to climate change** or worsening environmental conditions. Public policies at the national, regional and local levels are not sufficient to curb this phenomenon and disaggregated statistics are required to determine the actual scope of this climate migration.

Through fieldwork, it was possible to establish relationships between climate change and two types of migration, temporary and permanent migration:

A. TEMPORARY MIGRATION

Due to climate uncertainty, which causes irregular rain patterns, among other things, temporary migration during the first sowing season has increased. There used to be two harvests each year, but people now only plant crops in the second sowing season (second harvest) because of climate change. **Communities in the Dry Corridor no longer risk planting crops in the first sowing season and migrate to look for other sources of employment.** In the four countries, people normally migrate to other regions within the same country or to neighbouring countries, most frequently to Costa Rica and

El Salvador. According to the findings from the field work, in Honduras and Nicaragua this phenomenon affects a similar proportion of men and women, although there are specific trends in each country, while in Guatemala and El Salvador migration continues to be a male practice.

NICARAGUA AND HONDURAS

In the areas visited, migration affects both men and women, although the communities had noticed an increase in the number of women deciding to migrate temporarily.

It was clear that **men migrate from Nicaragua to El Salvador, specifically to San Miguel, to find harvest work (sugar cane harvest). One of the reasons for this is that payment in El Salvador is in dollars and is higher than in Nicaragua.** Migration to Costa Rica (another dollarised country) for employment created by the coffee harvests was also mentioned. Families from Marcala (Honduras) explained how the crops which produced sufficient yields in previous years to sell them and generate extra income now only guarantee enough food for survival, and as they need extra income to cover other needs, such as health, education, clothes, etc., they resort to temporary migration.

Both in Nicaragua and in Honduras, more whole families migrate temporarily for the coffee-picking season, and, in particular, women and children migrate because of the high demand for workers to pick this crop. Some schools in places of origin described how they have had to adapt school calendars and make timetables more flexible as children and young people are absent during

the coffee-harvesting season; in the region of Marcala (Honduras), students are absent from school for periods of three to four months, from December/January to March.

In both countries, interviewees also mentioned an increase (with no statistical basis) in the number of women who migrate temporarily to work in agriculture, as domestic employees in cities or in the maquilas; they return home for the second growing season (second sowing and maize or bean harvest, which usually starts in October). Furthermore, FCAM indicated that Spain is the international destination to which women from San Ramón and Somoto migrate for domestic work, and some interviewees also mentioned the United States as a migration destination. In the Honduran municipality of Langua a particular phenomenon occurs among women: although the displacement is not temporary in terms of being away from home for months and/or years, they travel to plantations, particularly melon plantations, on a daily or weekly basis; returning home late at night erodes family ties and represents almost a separation from their places of origin.

GUATEMALA AND EL SALVADOR

In Guatemala, it was discovered that temporary migration for work continues to be an essentially male practice. The impacts of drought worsen poverty and hunger, which causes mainly men to migrate in search of temporary jobs (sugar cane and coffee) to Honduras or Nicaragua. Although in many cases people noted that payments are below the minimum wage and they do not have employment rights, this income helps them to access food and basic goods.

In El Salvador, some of the communities (especially in San Miguel) do establish a link between migration and climate effects, particularly drought, but violence continues to play a more significant role in migration than the climate variable, and there are mainly male migration patterns. They also mentioned long-term migration and stated that the United States was the destination chosen by the vast majority.

B. PERMANENT MIGRATION

Permanent migration related to climate change in the Dry Corridor has not been

studied in depth either, although extreme meteorological phenomena related to climate change, such as hurricanes or landslides, have been partially identified as a cause.

In Nicaragua, some cases of forced migration were identified among the interviewees or their acquaintances, following landslides caused by heavy rain. Testimonies were also collected in El Salvador about extreme meteorological phenomena exacerbated by climate change. In 2015, a climate event called Mar de Fondo (swell) caused waves to reach up to three metres and destroyed more than two hundred families' homes in four communities in the coastal area of the Ahuachapán department, close to the border with Guatemala. This climate disaster caused part of the area's population to migrate, as they had lost their homes in Guatemala.

During the research some testimonies were also gathered in the Salvadoran communities of Agua Fría and Alto Nuevo, where permanent migration is linked to the dryness of the soil and the inability to produce crops, in combination with high rates of poverty.

The increased incidences of drought and flooding is also affecting the use of the remittances which migrants send to their families. As was discovered in Honduras, **there are families who no longer want to use the remittances received to cultivate the land because of the risk of crop failure, and they invest the money in consumer goods.** There is also a lack of a savings culture, as was evident in Nicaragua and Honduras, where remittances are not always invested in productive assets but rather used to purchase unnecessary goods. These combined factors make it more difficult for families to increase their income.

GENDER-DIFFERENTIATED IMPACTS OF MIGRATION

Many of the women interviewed stated that when they migrate they are faced with poor conditions in precarious employment and even abuse from their employees, yet they cannot even demand their rights through fear of reprisals; this is the case of workers in the maquilas or in the agriculture sector, where the bosses are men and there are very strong power relations.

Most people interviewed connected migration to negative effects such as family breakdown, drug addiction, and the tendency for

migrants' children, who usually stay in the care of other women from the family or community, to drop out of school. Ties with family and their place of origin also become eroded when the temporary migration does not involve being away from home for months or years but days or weeks, as was observed in the Honduran municipality of Langué, where women return home late at night.

If the woman migrates, care-related duties are left to other women in the community (grandmothers, sisters, etc.), while men do not become involved in this area. Both in Honduras and Nicaragua the phenomenon of the "feminisation of migration" (see 1.3) emerged; the references in the bibliography described this as the increase in the percentage of women migrants, but it also refers to the fact that this feminisation is part of the global care chain, in which care duties are transferred from one home to another according to power structures (gender, ethnicity, class, migratory status, etc.) and in which women continue to be responsible for reproductive work and domestic well-being (Orozco, A.). This was seen in Nicaragua in particular; when a woman leaves to look for work, her children mainly stay in the care of their grandmother or other women in the family, even if there is a father who should still be responsible for them. Nicaraguan women from San Ramón take the decision to migrate as domestic employees to Panama, Costa Rica or Spain; similarly, as Somoto is twinned with two towns in the Basque Country, women usually choose this destination in Spain when they decide to migrate and look for employment as domestic workers.

When men migrate, women take on more work in addition to the work that they already had. In Guatemala, women state that for periods of between three and six months they have fewer resources with which to meet their family's needs; those who experience permanent migration mentioned how they began to play the role of head of the family as well as problems that they encounter regarding land ownership. Women suffer doubly because they are not landowners and witness the displacements of their partners. In countries like Honduras, women farmers who are not landowners must give 50% of what they produce to their landlord, and they are producing less and less, due to the effects of climate change, which affects their quality of life.



3.2

WOMEN'S CLIMATE CHANGE ADAPTATION AND RESILIENCE ACTIONS

In the four countries visited, people referred to the **elimination of the first harvest of the year as a “forced” adaptation measure due to increased drought**. Women who sowed crops twice a year generally lost the first harvest as a result of drought, which prompted them to take the decision to stop sowing crops in the first season. This adaptation measure means that they must make do with only one annual yield, which reduces their income and also compromises their ability to meet their basic needs and their livelihoods. Many families said that adapting to climate change while living in poverty (negative adaptation) is what obliges them to reduce their consumption of goods, services and other investments in health and education, and women and children suffer the most.

Women are creating and promoting climate change adaptation initiatives, in order to remain in their territories with their families. These **adaptation measures to build resilience in the communities of the Dry Corridor** are mainly focused on: **native seed exchanges and banks; water collection using water reservoirs and through water harvesting and work by organised women, for example, in cooperatives**. The potential to adapt crops municipality by municipality, offering opportunities to diversify specific crops in each of them, is one of the proposals outlined by Bouroncle et al. (2017).⁵⁸

⁵⁸ Bouroncle et al. 2017: *Mapping climate change adaptive capacity and vulnerability of smallholder agricultural livelihoods in Central America: ranking and descriptive approaches to support adaptation strate-*

However, these practices are not always successful. None of the initiatives identified explicitly addresses the three topics of gender, migration and climate change, probably due to a lack of awareness of the interlinkages between these three elements. Interesting national policies to combat climate change with gender equality approaches were identified; for example, El Salvador and Guatemala include references to gender perspective in their National Action Plans against Climate Change, but there is still a long way to go until these policies are fully effective.

Some local Governments are collaborating with NGOs to better understand the different needs of each community, particularly those of women, and this could result in more holistic policies and actions. Some experiences which integrate a gender perspective to a greater or lesser degree can be identified:

- The COMBRIFOL and COMUCAP agricultural cooperatives in Honduras, which are supported by the Marcala municipal office for women
- the seed banks in El Salvador supported by the National Centre for Agricultural and Forestry Technology (CENTA), the first Government institution which has a gender policy and a Gender Department, and the seed bank in Matagalpa, Nicaragua.
- water reservoirs in El Salvador with the support of the Ciudad Mujer programme, which has six offices in the country and is led by the Secretariat for Social Inclusion.

⁵⁹ *gies*. Climatic Change 141:123-137

GOOD PRACTICES IN ADAPTATION / RESILIENCE TO DEAL WITH THE IMPACTS OF CLIMATE CHANGE AND PREVENT MIGRATION WITH GENDER ELEMENTS

1. NATIVE SEED EXCHANGES AND BANKS

Short description of the project	Country	Project Status (completed, ongoing, planning stage, identified as possible solution but resources are lacking)	Project Goal / Priority (adaptation, mitigation, food security, gender equality, water harvesting, etc.)	Who is participating in the project (NGO, government, community, other)?	Results/Impact/Challenges
Production and dissemination of seeds by CENTA: The National Centre for Agricultural and Forestry Technology shares beans and corn that adapt to the lack of water and nutrients in the soil with farmers from Morazán (near San Miguel). They are provided with the seed if they commit to contribute to the CENTA and create a seed bank and provide other women and men farmers with seeds.	El Salvador	In process	Creation of a seed bank of basic grains, such as beans and corn, which contribute to food security.	Central Government, National Centre for Agricultural and Forestry Technology, local governments in Morazán.	Seed varieties which are more resistant to climate change are being sought, and seed exchanges are being promoted, in order to contribute to food security. CENTA notes that women have significant knowledge about the land and are more open to being involved in research.
Recovery of native seeds in El Rodeo: Women mentioned a wide variety of native seeds that are more resistant to climate change, such as black corn, bejuco beans, barco, petaca beans, chajan, etc. Farms are becoming more diversified with forestry, fruit and vegetable crops.	Guatemala	Identified as a possible solution but resources are lacking.	Not applicable	Not applicable	It is possible to produce and exchange seeds, but this needs to be connected to the land as a right. Women need to have access to land ownership and the resources to develop the land so that these practices are able to develop enough to improve livelihoods.
Seed Bank in Naranjo, Matagalpa: The bank loans the seeds which are stored and which adapt the best (native seeds and varieties) at a price of two for one (more attractive price than at the market). Out of 90 houses in the community, 24 families are involved, and there is a management board made up of three women and two men.	Nicaragua	Ongoing	Tackles food security, fights to build climate change resilience, support community development and strengthen women's leadership.	ODESAR (ONG) with the community	It has helped the community so that it can continue developing agriculture; young people are starting to become involved, but they face two challenges: water scarcity and not owning their own land.
Seed bank and community development, Achote Telpaneca, Madriz: The community grows seeds in plots and selects them to improve and adapt them to the land and climate; women are closely involved in the project.	Nicaragua	Currently being implemented	Tackles food security; prevents migration by improving production; support community development and strengthen women's leadership.	UNAG (ONG) with the community	No results have been achieved yet, but the aim is to create a seed bank that will have a genuine impact.
Seed bank in Somoto: Develop seed banks and continue the native seed projects, as part of which women learn to improve certain seeds using new technologies.	Nicaragua	Planning stage	With a gender and climate change perspective to tackle food security, strengthen women's leadership and promote their rights and gender equality.	FEM, FCAM, UNAG and women's groups	No results yet.

2. WATER COLLECTION USING WATER RESERVOIRS AND THROUGH WATER HARVESTING

Short description of the project	Country	Project Status (completed, ongoing, planning stage, identified as possible solution but resources are lacking)	Project Goal / Priority (adaptation, mitigation, food security, gender equality, water harvesting, etc.)	Who is participating in the project (NGO, government, community, other)?	Results/Impact/Challenges
Ciudad Mujer: Work is carried out to maintain water wells like pools for crop production as part of its model for the empowerment of women in socio-productive activities, the handling and prevention of violence against women and care for women's children.	El Salvador	Ongoing	Provide comprehensive, decentralised services to women with low incomes and living in poverty, to offer them development opportunities.	Local and central Government, as well as strategic partners.	Women satisfied with the comprehensive services that are provided to them. Decentralised institutions have offices to provide assistance for business initiatives and prevent/provide assistance in cases of gender violence.
Monitoring shallow wells: information is recorded on water reduction in wells, in coordination with the relevant bodies. Rain gauges were installed in 8 communities, and women are responsible for monitoring rainfall patterns; in this way, they can take better decisions on whether or not to use water and produce risk maps in order to be better prepared. A reform of the Irrigation Law is being negotiated with the Ministry of Agriculture, to prevent damage to and effects on the sugar cane industry.	El Salvador	Planning stage	Deal effectively with the impacts of climate change and establish measures to tackle drought.	National Government, ONG UNES	No results yet.
Creation of water reservoirs: The community of Jocotán and several more in the Dry Corridor regard a project to ensure that drinking water reaches homes and prevents women having to carry water as a priority; they identified the following main failures of the existing project: use of unsuitable technology and materials and a failure to monitor the project's implementation.	Guatemala	Suspended	Tackle drought with the assistance of technology for water storage.	Several grass-roots NGOs	Results were not as expected.
Water conservation in San Ramon: the municipality worked with 20 people to provide training in water conservation and on a project to build small ponds in the Dry Area (Municipality of San Ramón) for watering crops and the use of animals.	Guatemala	Complete	Prevent the impacts of future droughts; store rainwater, which benefits the community and meets its needs.	Local government of San Ramon	After the start of and during the 2015 drought, they did not have an impact, but in 2016 people that conserved water for March and April were able to make it go further. It is expected that the impacts on women will be measured.

3. WORK BY ORGANISED WOMEN, FOR EXAMPLE, IN COOPERATIVES

Short description of the project	Country	Project Status (completed, ongoing, planning stage, identified as possible solution but resources are lacking)	Project Goal / Priority (adaptation, mitigation, food security, gender equality, water harvesting, etc.)	Who is participating in the project (NGO, government, community, other)?	Results/Impact/Challenges
Women sweet chilli producers in El Brazo (San Miguel): Pilot experience with women sweet chilli producers in a mesh house (a structure which is similar to a greenhouse). They received training on how to prepare the soil, apply foliar fertilizers and set up demonstration plots.	El Salvador	Ongoing	Desarrollo rural de las familias y comunidades desde un enfoque de género	Varias ONG de base, Ciudad Mujer y CENTA	Satisfactorios: en tan solo dos años de emprendimiento han logrado tener independencia económica a través de las ventas de chile en el municipio de El Tránsito (Usulután). El principal reto es la incorporación de más mujeres y beneficiar a más familias.
Agricultural cooperatives with a gender perspective in Marcala.	Honduras	En Desarrollo	Desarrollo rural de las familias y comunidades desde un enfoque de género	ONG de base (COMUCAP y COMBRIFOL)	A través del trabajo de las cooperativas, las asociadas han logrado preservar la seguridad alimentaria propia y de sus familias. Además, tienen cada vez más acceso a créditos, al contar con el respaldo de la cooperativa.
Group of Eco-Craftswomen, "Mujeres del Promo": crafts business using local seeds, established 12 years ago; it has grown in response to the need to migrate and the business now also provides training to women and is an example of respect for nature and ancestral culture: 80% of the seeds (30 different seeds) are local and adolescents are involved in helping the women to gather the seeds.	Nicaragua	Ongoing	Prevents migration; women's economic development; preserves and recognises their indigenous roots, culture and respect for the environment; prevents deforestation;	Grass-roots women with local NGOs	Women have their own salaries and the project helps to raise awareness among the community, especially among young people, about their culture, which is linked to the preservation of natural resources and the health of the environment. The challenges are a lack of resources with which to purchase their own trees and how to tackle climate change.

A best practice with a rights and feminist approach would ensure that women participate fully in decision-making, that projects do not create more work for women (up to a triple day's work) and that traditional stereotypes which take away women's autonomy and disempower them are eliminated. There is still a lack of awareness about how to involve women fully, partly due to the patriarchal understanding of women's work (care, domestic and informal), which is not considered to be "work" and is still invisible. Many institutions continue to formulate changes from a 'women's perspective', without actually considering the changes in gender roles or whether or not the policies promoted reinforce traditional roles instead of encouraging equality.

There are numerous reasons why people migrate in most cases, one of which is climate change; to help counter these factors there is a need for comprehensive policies which pro-

tect communities' livelihoods and empower women, by giving them spaces and resources to implement their own solutions. The NGOs consulted reported that opportunities for women to organise themselves to find solutions are limited because they have to care for children and seek immediate alternatives for survival, such as temporary migration.

One of the most obvious obstacles to women implementing climate change adaptation strategies is the lack of land in their name, which is a widespread problem in the four countries visited (see 4.3). The various political initiatives aimed at promoting change in this area have had mixed results; for example, in El Salvador the number of women involved in land ownership programmes has increased, whereas in Nicaragua, Law 717 Creating the Fund for Land Purchasing with Gender Equality for Rural Women has not been implemented due to lack of funds and political will.

4.

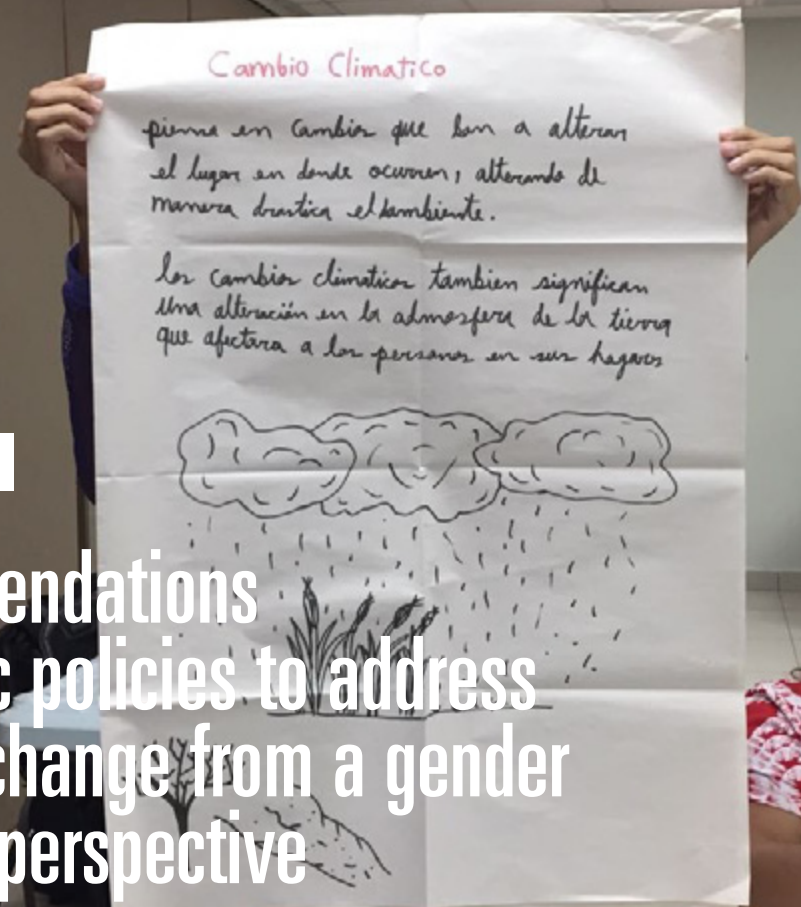
Recommendations for public policies to address climate change from a gender equality perspective

Public policies at international, national and local level must take into account the fact that the effects of climate change accentuate already existing inequalities. However, **it is necessary to stop regarding only women as victims of climate change**, since this could have a profoundly negative impact by deepening the traditional divide between gender roles, which increases inequality.

Women have been continuously implementing strategies to adapt to climate change for decades, but they are also made invisible in their homes and at the community level; giving them greater visibility and supporting these initiatives is an essential part of the fight against climate change.

Climate change adaptation and mitigation strategies cannot be successful if they fail to integrate women's knowledge about their environment and their capacities to respond to the challenges of climate change. It is essential to involve them in the design, monitoring and implementation of public policies on climate change and migration at an international level, and also at a national and local level in the countries of the Central America Dry Corridor.

Some recommendations to improve the integration of a gender perspective in public policies to combat climate change are divided into three areas below.



1

WOMEN'S LEADERSHIP AND EFFECTIVE PARTICIPATION IN INSTITUTIONS AND PROJECTS WITH A GENDER PERSPECTIVE

- **Develop projects within the framework of the Adaptation Fund or the Green Climate Fund (GCF) to capitalise on the GCF gender-equality mandate**, for example, by developing statistics and/or implementing pilot projects on mitigation, resilience and adaptation which prevent displacement and help women to adapt. To this end, governments need more training and support so that they can gain access to finance for these types of projects. Progress is also required towards greater transparency in the operation of all the climate finance mechanisms, which would have an impact on access to funding for civil society and projects led by women.
- **Reform and allocate financial resources to national legislative frameworks governing land ownership in order to close the gender gap in access to land ownership.** If they do not own their land, women continue to be excluded from formal consultation processes to determine their climate change adaptation needs and gain access to agricultural credit. For example, Nicaragua adopted Law 717 Creating the Fund for Land Purchasing with Gender Equality for Rural Women in 2010, but no progress has been made due to an insufficient budget allocation.
- **Increase mandatory training on gender and climate change** for staff involved in decision-making processes relating to national climate change policy and migration policy in El Salvador, Nicaragua, Honduras and Guatemala, and at a regional level, to ensure that a gender focus is included in their action plans. The Regional Climate Change Strategy (ercc) is a good example to follow, but further training is still required in order for it to be implemented properly. In addition, the Global Compact for Safe, Orderly and Regular Migrations endorsed by the United Nations notes the importance of developing migration policies with a gender perspective in order to address women's specific needs and vulnerabilities.
- **Increase institutional and budgetary support provided by local Governments to women's initiatives for climate change adaptation**, especially initiatives related to agroecology, seed banks and access to non-polluting energy sources and technology, without overlooking social policies which would assist women in these processes (support for childcare during periods of temporary migration, improvement in labour rights in temporary jobs, etc.). In the Honduran community of Marcala, the joint work of the Municipal Office for Women and the combrifol agricultural cooperative is an example of good practice.



2 RESEARCH AND DISAGGREGATED STATISTICS



- **Develop databases, historical and specific series which include disaggregated data to determine the actual scale of climate change and related internal, cross-border and international migration.** Obtaining reliable data (supported by expert teams with proper training and adequate budgets) and more studies on the gender perspective in climate migration is essential in order for local and national Governments to be able to formulate adequate response policies, with the support of international institutions.



3 COHERENT POLICIES AND EVALUATION

- **Improve coordination between the various institutions and stakeholders involved in the three topics covered in the study:** promote collaboration between institutions and international processes which address the different factors that trigger migration; for example, collaboration with the Food and Agriculture Organization of the United Nations (FAO) on food security issues, the International Organization for Migration (iom) or the Office of the United Nations High Commissioner for Refugees (UNHCR) to build joint solutions. It would also be beneficial to have spaces for coordination with other institutions, such as the Convention on the Elimination of All Forms of Discrimination against Women (CEDAW) or the United Nations Commission on the Status of Women (CSW), in order to address **cross-cutting approaches.** At a national level, better coordination is required between the different departments responsible for agricultural, forestry and land-use planning issues and the departments which defend the rights of women, in order to implement holistic approaches in the planned actions through, for example, mixed or interdepartmental committees.
- **Evaluate the economic, migration, climate and gender policies which are currently in operation at a national and regional level to:**
 1. Understand their impact on local communities, focusing on human and women's rights;
 2. Ensure that their implementation is not worsening women's living conditions and that they meet the national commitments made under international frameworks (the United Nations Framework Convention On Climate Change, the 2030 Agenda, the Sendai Framework for Disaster Risk Reduction, the New Urban Agenda, etc.);
 3. Identify, share and replicate strategies which achieve national targets, especially relating to climate change and the Sustainable Development Goals (SDG).

5. ANEX I

	Honduras	Guatemala	El Salvador	Nicaragua	
Departments/ regions	Southern region of Choluteca Western region of Langué North-western region of Marcala	Communities of Jocotán and Camotán (Department of Chiquimula)	Departments of Usulután and San Miguel	Departament of Matagalpa (San Ramón) Departament of Madriz (Somoto)	
Support organisations	CDH RDS	Articulación de Mujeres Tejiendo Fuerza para el Buen Vivir (National Network of Women Weaving Strength for Well-Being) Asociación Dispensario Betania (Betania Dispensary Association) Christian Aid RECMURIC	Christian Aid FUNDESYRAM	Fundación del Sueño de la Campana (Sound of the Bell Foundation) ODESAR UNAG	
	21	16	10	20	Total (4 countries)
	46	30	48	60	251

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