Climate-induced migrations in Mesoamerica with a gender perspective

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Abstract

The objective of this article is to analyze climate migration from Mesoamerica, integrating systemic factors of poverty, pandemic, environmental disasters, survival dilemma, insecurity, and violence within a gender perspective. Climate disasters have increased systemic risks and generated cascading processes due to weak governmental policies of prevention, mitigation and adaptation. In addition, U.S. anti-migrant policies, border militarization, and organized crime have increased regional violence, forcing poor people to migrate within caravans. During these journeys, women through their support have achieved greater equity, justice and empowerment in highly adverse conditions. These learnings have generated recognition and more inclusive cultural norms that were demanded even when the migrants were repatriated to their countries, where they have promoted a care economy. They were able to adapt to climate disasters and participate in local politics, where they have promoted sustainable productive practices that have improved the economy and equity in their society. They are overcoming extreme poverty and violent-discriminatory patriarchal patterns by improving their family economy and protecting the community from increasingly more severe climate impacts. *JEL Classification: Z10.*

Keywords: climate-induced migration (CIM), systemic risks with cascading processes, Mesoamerica, militarized borders, care economy.

Migraciones inducidas por el clima en Mesoamérica con perspectiva de género

Resumen

El objetivo es analizar la migración climática desde Mesoamérica, integrando factores sistémicos de pobreza, pandemia, desastres ambientales, dilema de supervivencia, inseguridad y violencia dentro de una perspectiva de género. Desastres climáticos han aumentado los riesgos sistémicos y generado procesos en cascada por insuficientes políticas gubernamentales de prevención, mitigación y adaptación. Adicionalmente, políticas norteamericanas anti-migrantes, una militarización de las fronteras y el crimen organizado han aumentado la violencia regional, forzando a personas pobres a emigrar dentro de caravanas. Durante estos trayectos, las mujeres, por sus apoyos, han alcanzado mayor equidad, justicia y capacitación en condiciones altamente adversas. Estos aprendizajes han generado reconocimiento y normas culturales más incluyentes, que fueron aplicados aun cuando los migrantes fueron repatriados hacia sus países, donde han promovido una economía del cuidado. Esta permitió adaptarse a desastres climáticos y participar en la política local, donde se han promovido prácticas productivas sustentables que han mejorado la economía e igualdad en la sociedad. Están superado pobreza extrema y patrones patriarcales violento-discriminatorios al mejorar la economía familiar y proteger a la comunidad ante impactos climáticos crecientemente más severos. *Clasificación JEL: Z10.*

Palabras clave: migración climáticamente-inducida, riesgos sistémicos con procesos en cascadas, Mesoamérica, fronteras militarizadas, economía del cuidado.

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1. Introduction

This article explores with a gender perspective and a methodology of systemic risk analysis climate-induced migration (CIM) from Central America through Mexico (Mesoamerica)[2] to the United States (US). Militarized borders, transnational organized crime, and more severe and frequent climate disasters have pushed poor rural families and marginal urban sectors into conditions of a survival dilemma (Garay et al. 2019). The objective of this article is to scrutinize CIM from Mesoamerica to the US, integrating complex systemic nexuses with a gender approach. CIM is influenced by factors of poverty, pandemics (CEPAL 2021c), environmental disasters (Abeldaño and González 2018), loss of livelihood, lack of security (Argueta 2017), hunger, and local or transnational violence. A systemic understanding of climate change and public safety impacts explains why disasters have forced individuals, families, and children alone to undertake the dangerous migration route to the US. Pandemic, organized crime, and climate disasters (USAID 2017) have recently forced people to seek alternative livelihoods in other countries, despite the dangers inherent in the migration process. Restrictive U.S. immigration policies and the militarization of the borders in the U.S., Mexico, and Guatemala have increased the difficulties for undocumented migrants (Ortega and Morales 2021). Transnational organized crime has not only increased the cost of the trajectory but kidnappings and murders have resulted in violent deaths along these dangerous routes (CNDH 2018).

Women and girls are highly vulnerable in CIM, where trafficking and sexual violence (UNODC, 2021) have created additional threats. Therefore, CIM affects women and men differently due to their historical triple vulnerability: social, gender, and environmental (Oswald 2014). Women, indigenous, children, the disabled, and the elderly also suffer differently from complex outcomes of climate impacts. Entire villages and families were forced to leave their homes because of extreme climate disasters such as hurricanes, landslides, and droughts, which deprived them of living conditions (Moreno et al. 2020). Additional boundary conditions have increased the risks, where underdevelopment, corruption, extreme poverty, lack of governance, and governmental failures have avoided coping with these interrelated climate-induced challenges (Guerette and Clark 2005). In 2020 more than 20 hurricanes, tropical storms, and floods impacted Mesoamerica, where in November Delta and two weeks later Iota and later Eta collapsed because the weak governmental support and overloaded facilities were unable to receive the refugees. On the Pacific coast, a long-lasting drought has deprived people of their subsistence. Therefore, between October 2020 and September 2021, about 1,734,686 asylum seekers were detained at the US border and expelled to Mexico (Border Patrol 2022), where they are waiting for their asylum acceptance. Most of them were Mesoamerican citizens.

The US Ambassador Ken Salazar argued in October 2021 that "the United States and Mexico are committed to returning these migrants to their countries of origin". Mexico forcibly agreed with its northern neighbor also to limit transit through its country with dissuasive actions by the National Guard and the National Migration Institute (Government of Mexico 2019) at the southern border. In

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[2] Paul Kirchhoff (1943) developed the concept of Mesoamerica, due to similar cultural, socio-economic, and environmental conditions of the north of Central America and the south-east of Mexico.

November 2021, a US judge forced the Biden administration to return to the Trump policy for non-Mexican to wait for their asylum permissions outside of the US, and Mexico was forced to receive the migrants as Third Safe Country. Further, new migrant nationalities (Venezuelans, Cubans, Haitians, Colombians, from the Caribbean islands, Africans, and Asians) tried also to reach the US. After the assassination of the Haitian President Jovenel Moïse, the Mexican Commission for Refugee Aid legalized 15,000 Haitian refugees, who are now working in Mexico, but thousands of new asylum-seekers are entering without documents to Mexico, trying to reach the US (Border Patrol 2022).

This article offers first a methodology where the complexity of a systemic risk understanding is explored. Mesoamerica is a region highly exposed to climate impacts, where COVID-19 had further impoverished the people (CEPAL 2021c). In the American continent, the region has the highest number of catastrophic climate impacts (Miranda 2021; OCHA 2020). The following part reviews conceptually CIM. Disasters have produced a loss of livelihood, shelters, and assets. Further, militarized borders have increased the costs and the threats to migrants. Given these complex interrelations of CIM with the existing socio-economic and political conditions, Central Americans (Henao and García 2019) must cross on their way to the US several borders. During this migration process, they are facing multiple life-threatening conditions by national governments. In addition, gangs, cartels, and transnational organized crime have also extorted CIM, threatening their life, and kidnapping men, women, and children. Girls and women are especially threatened due to human trafficking and sexual abuse (UNODC 2020).

Given these survival dilemmas, many desperate people joined Honduras's emerging caravans (Salazar 2019). This article deepens in a caravan of 4000 people, organized in November 2021, to counter the dangerous trajectory and reduce the cost of undocumented migration. Multiple trapped migrants (Zani 2018; Dowd 2008) joined this caravan because they have lost their livelihood to multiple disasters and were also unable to pay the high costs to traffickers for a still unsafe migration odyssey. This caravan included numerous women, families with small children, unaccompanied children, and the disabled, who were normally highly exposed to migrant authorities and criminal groups.

During their trajectory, women focused on gender recognition, justice, and equity (Fraser 1998, 2005). Their social behavior and care about everybody allowed them to obtain acknowledgment within the caravan and participation in the decision-making processes. Their collective efforts and care about everybody were also a catalyst against misogynist practices. This greater female participation has reduced the death toll and danger of human trafficking, while the emphasis on empowerment, justice, equity, and recognition was helping to overcome inside the caravan the gender paradox of discrimination and exploitation (Lorber 1994). Recent disasters, an increase in poverty, and militarized borders have changed the composition of migrants generally and CIM particularly.

In the conclusions, the article explored the reach of an economy of care (CEPAL 2021a), which may reduce CIM and limit at-home patriarchal violence. Some repatriated migrants have applied their experience within the caravan, and have transformed inside their communities the dominant misogynic behaviors. At home, women and men together have also promoted preventive disaster policies, adaptation to more dangerous climate events, and rebuilt their destroyed living conditions. All the collective and individual efforts have limited the dangerous path of CIM for marginal families. They have also requested their governments' greater adaptation policies and disaster support.

Locally, they started to fight against internal colonialism (González 2003) and the abuses of the bourgeoisie, who has failed to develop their regions and did not grant dignified living conditions to the most vulnerable, such as poor people, indigenous, women, and young people.

2. Methodology: Systemic Risk Analyses of CIM

A systemic risk methodology analyzes often cascading processes that spread across sectors with nexus relations (Figure 1): COVID-19, disasters, hunger, safe water, poverty, unemployment) and its sub-systems (environment, policy, governance, culture, economics, and gender) affecting the whole CIM system. The neoliberal model of globalization (Mies 1985), the governmental policy of poverty alleviation (Díaz and Viales 2020), the abuse of the local bourgeoisie producing internal colonialism (González 2003), and climate disasters (Bradshaw and Linneker 2009) have destroyed the livelihood of vulnerable people. The spread of these impacts has created existential consequences in the Mesoamerican region (BCIE 2020), where the systemic risks go beyond the possible governance of the Mesoamerican regions (Kuusipalo 2017). Cascading impacts increase the existing difficult living conditions, leading vulnerable families into a survival dilemma (Escudero 2018), where the choice is to stay and eventually die from hunger (FAO 2018) and violence (Argueta 2017) or to migrate in precarious conditions (Fuentes et al. 2022). The systemic interdependence underlies also existing vulnerabilities (Oswald 2014), insufficient policies (Ruiz 2020), and an integrated responses of society (Jelin 2021), where precisely girls and women are at greater risk at home (Castañeda et al. 2020) due to catastrophic climate impacts (BCIE 2020) or exposed to sexual assault and trafficking (UNODC 2021).
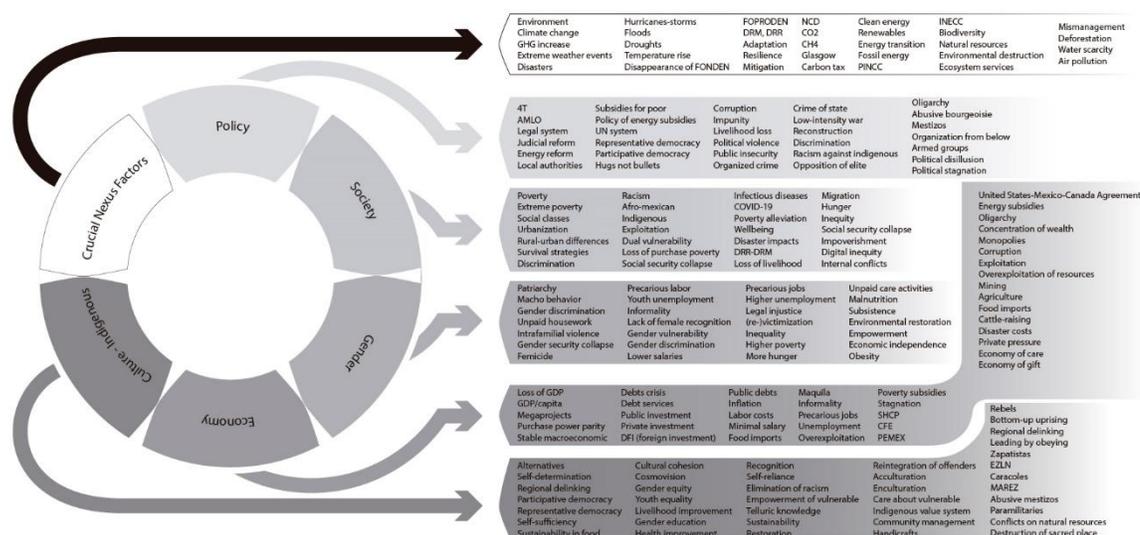

Figure 1. CIM systemic interrelations.
Source: The Author.

Aven and Renn (2020) have developed an integrated risk analysis across multiple scientific disciplines, including biology (Varela et al. 1974), ecology (Holling 2001), psychology (Piaget 1972), and sociology (Luhmann 1995) among multiple other careers, where mathematics has played an increasing role in analyzing big data (Kepner and Hayden 2018). Recently, gender approaches (Imaz et al. 2014) have deepened in the way how the present capitalist system has consolidated its occidental model of appropriation (Moore 2016) based on war, exploitation, discrimination, and violence (Reardon 1996). The system approach includes also the differentiation of scales from local (Fuentes et al. 2022), regional (Mesoamerica; Central America Regional Climate Change Project 2018) to global (Hellema 2019), the relationships between subsystems, where feedbacks, interlinkages, interconnection, and loops (Hochrainer et al 2020) are creating a self-organizing dynamic to maintain the fragile equilibria (Oswald 2020). The system understanding implies unknown and underestimated uncertainties with potential tipping points (Steffen et al. 2018), where the boundary conditions are producing cascading effects such as COVID-19 (CEPAL 2020a) or the migration policy of the US (Ruiz 2020). The catastrophic outcomes may be able to disrupt the existing fragile system and its unstable subsystems (Alden 2010), affecting especially vulnerable women and girls (Carrasco 2013).

A systemic risk analysis interrelates the nexus (Niva 2018) between policy, economy, society, cultural-indigenous factors, and gender with climate disasters and CIM (Srigiri and Dombrowsky 2022). The dynamic interaction among these nexus factors (CEPAL 2019) allows understanding of the root causes of CIM. The boundary conditions imposed by the US legislation on migrants (Guerette and Clarke 2005), the militarized borders (Sassen 2021), and the Mesoamerican policy are producing precarious socioeconomic conditions for the affected families that are aggravated by catastrophic climate impacts (Climate Risk Profile Mexico 2017). It includes the biophysical environment of the region exposed seriously to destroyed ecosystems by cattle raising, commercial agriculture, deforestation, and chaotic urbanization, where water pollution, soil scarcity, and pollution related to corporate mining and commercial agriculture are aggravated by climate disasters (CBD 2009). These extreme events have increased in number and force, due that both oceans are strongly warming up (IPCC 2021). The concentration of this enormous amount of energy in the sea is discharged in the form of dangerous hurricanes (OCHA 2020) or on the Pacific side by a long-lasting drought (Miranda 2021). Socioeconomic conditions were imposed by corporate exploitation, low salaries without social security, internal colonialism by the local elite (González 2003), discrimination of ethnic groups (UNEP 2020), governmental corruption (Transparencia Internacional 2020, 2021), organized crime (De la Rosa 2021), gender violence (Castañeda et al 2020), and unpaid intrafamilial homework for women (GFDRR 2018). All these conditions have generated growing poverty for more than half of the population, where the COVID-19 pandemic has produced cascading impacts that have increased the existing marginality, diseases, and deaths (CEPAL 2021c).

All these interrelated systemic risks have evolved during decades of inefficient and corrupt governments, gender violence (Esquivel 2020), exploitation, discrimination, and unpaid female work inside households. They are further aggravated by climate disasters and COVID-19 outcomes with a lack of an active participation of women in the governance process (CEPAL 2021d). This integrated and interrelated systemic approach may also open opportunities for addressing integrated changes, where precisely the democratic election of President Xiomara Castro in Honduras may promote alternative policies for reducing the CIM and offering dignified livelihood to marginal people in their

home country. This systemic analysis also addresses policies from the bottom-up that may be able to consolidate mitigation and adaptation strategies in a region highly exposed to climate disasters (UNDRR 2019), where women are crucial increasing resilience-building in highly complex conditions (Hochrainer et al. 2020).

3. Mesoamerica is a region with catastrophic climate change impacts

The year 2020 was a very intensive hurricane season from the 1st of June to the 30th of November (Muñoz 2020). Mesoamerica was hit on the Atlantic side by 23 named tropical storms and hurricanes. On September 14, five hurricanes were presented simultaneously at the Atlantic (Paulette, René, Sally, Teddy, and Vicky). Later, two catastrophic hurricanes -Eta (30 of October) and Iota (13 of November)- within a difference of two weeks flooded the whole region and produced multiple landslides (OCHA 2021). The two hurricanes left Honduras with at least 94 dead and the livelihood of almost 4 million people was affected, which could increase the poverty level by 10%, exceeding 70% of the national average. Iota alone caused 26 deaths in Central America and regional governmental dependencies reported in Nicaragua 43,000 damaged houses, where 3.85 million people remained cut off from access to water and food. In Guatemala 1.5 million people were isolated and 32,800 at risk due to the high level of rivers and multiple landslides. Heavy rains and winds in the southern part of Mexico (Tabasco, Chiapas, and Veracruz) have also destroyed 20,000 homes, and the total death toll in Mesoamerican has been estimated over 200 persons (UN Spider 2020). Simultaneously, Mexico and part of Nicaragua on the Pacific side are suffering from a severe drought in 80% of this territory with losses of their basic subsistence food (Gaupp 2020) and an increase in poverty and CIM.

Table 1 compares the crucial economic factors that are obliging people to leave their homes, risking a dangerous trajectory through several countries. When apprehended in the US, they are mostly expelled to the Mexican northern border or repatriated to their home country. In economic terms, whenever Mexico is a bigger country with a greater extension, more people, higher income in GDP, GDP/capita, a more diversified economy, lower inequity (Gini Index), better HDI, and a lower informality, compared with the other three Central American countries. All four countries have high levels of informal labor conditions and during the pandemic, these jobs were almost inexistent, therefore poverty levels have increased in the whole region. Inflation is growing also in the whole region due to the increase in oil and food prices related to the war between Russia and Ukraine. The high poverty index is also the result of the pandemic COVID-19 and the loss of formal and informal jobs.

Within the socioeconomic factors, poverty rate is extremely high in Guatemala and Honduras, including extreme marginality and lack of food for the poorest people. Both countries have also the lowest Human Development Index (HDI, UNDP 2022). Mexico and El Salvador are highly urbanized, while Guatemala and Honduras have still an important rural population working in the fields or as daily laborers. The recent crises and climate disasters have increased the number of female

households in Mesoamerica, related to male migration to cities or to the US, including the intrafamilial violence. The socioeconomic differences also indicate the vulnerability of the four countries to economic shocks, health problems (pandemics), food scarcity, and loss of livelihood and income due to this high informality. Mesoamerica is also the most violent region in the world without a formal war. Poverty, climate disasters, insecurity, lack of human development, and violence are common factors in the region. These interrelated nexuses are forcing people to leave their homes, trying to find better economic and living conditions in the US.

Table 1. Socio-economic and Demographic Indicators

Indicators	Mexico	Guatemala	El Salvador	Honduras
Population million (1)	128.9	17.5812	6.454	9.746
Extension km^2 (1)	1,964,375	108,889	21,041	112,492
PIB, million dollars (2)	1,087,117	77,604.60	24,638.00	23,827.90
PIB/capita dollars (2)	8,431	4,331.70	8,359.00	2,405.70
Annual Growth Rate % (2)	5.8	5.4	10	9
Inflation % (2)	7.28	2.89	3.47	4.5
Poverty Rate % (2)	37.4	50.5	30.7	52.2
Extreme Poverty Rate % (2)	9.2	15.4	8.3	20
Urbanization % (2)	79	51.1	72	57.1
HDI (3)	0.779	0.663	0.673	0.634
GINI Index (3)	45.4	48.3	48.3	48.2
Gender Inequality (3)	0.322	0.479	0.383	0.423
Education Year (2)	10.1	6.1	6.9	6.6
Female Household % (2)	28.7	25.1	15	28.1
Informality % (2)	55.8	79	72.2	81
Life Expectancy, Years (3)	75.1	74.3	73.3	75.3

[1] World Bank Statistics 2021
[2] CEPAL, Statistical Yearbook 2021
[3] UNDP, Human Development Index 2021

These climate disaster impacts have produced in Honduras in February 2021 a massive caravan of more than 8,000 forced migrants, tricked partially by criminals who falsely have offered humanitarian visas in the US. These dishonest promises, together with destroyed livelihoods, violence by organized crime, lack of governmental support, and increased poverty, motivated families with children to leave collectively their country (Isacson 2021). Most of these migrants were violently repatriated by the Guatemalan and Mexican guards back to Honduras or are waiting for a US refugee acceptance on the northern border of Mexico. This type of complex emergency explains the survival dilemma that has affected people confronted by natural disasters and political conflicts and violence. "Complex emergencies combine internal conflict with large-scale displacements of people, mass famine or food shortage, and fragile or failing economic, political, and social institutions. Often, complex emergencies are also exacerbated by natural disasters" (WHO 2002). Burkle (2000) insisted that factors such as high levels of violence, internal colonialism, organized crime, catastrophic public health, food emergencies (FAO 2016), extraction of natural resources in

indigenous regions (CEPAL 2020b), and more frequent and severe climate disasters such as floods (UN-Spider 2020) and droughts have obliged the affected people to find internally and outside the country survival alternatives. During migration processes, women and girls are at greater risk, due to sexual violence and human trafficking (UNODC 2020).

4. Climate-induced migration with gender perspective: some conceptual reflections

The conceptualization of CIM has been contradictory and includes different approaches. It deals with complex and interrelated processes that are involving national, social, climate, cultural, family, and economic factors. "Environmental migrants are persons or groups of persons who, for compelling reasons of sudden or progressive changes in the environment that adversely affect their lives or living conditions, are obliged to leave their habitual homes or choose to do so, either temporarily or permanently, and who move either within their country or abroad" (IOM/MC/INF/288 2007: 2). In climate-affected regions, compelling reasons of sudden (hurricanes, landslides, floods) or long-term and progressive changes in natural conditions (drought, loss of soil fertility, bushfire, intrusion of saltwater) have forced people to leave (OECD 2008; IOM 2009; Isacson 2021). This traditional definition of the International Migration Office does not include gender and cultural aspects. Laczko and Agharzam (2009) insisted that climate disasters produce emergency conditions, and Sánchez et al. (2012) introduced the term climate-forced migration. Llain and Hawkins (2020) argued that climate impacts and water scarcity are often destroying precarious livelihoods, obliging people to leave the rural area or their traditional way of life in cities.

Adverse environmental conditions for subsistence peasants and climate impacts have produced hunger, destroyed land fertility, reduced local employment (Oswald et al. 2014), and increased often violence and conflicts. UNHCR (2021) estimated that in 2020, 82.4 million people globally were forcibly displaced by persecution, conflict, violence, human rights violations (HRW 2020), disasters, or disturbing public order events (Arach 2018). Syria, Venezuela, Afghanistan, South Sudan, and Myanmar amounted to 68% of the refugees. Eighty-six percent of these migrants were hosted in developing countries, mostly neighboring states. These official UN data on refugees do not reflect the full amount of migrants and do not include the internal migration or the CIM in Mesoamerica, the Caribbean, Africa, and some Asian countries.

Hunter and Nawrotzki (2016) systematized the complex interaction of CIM with other drivers, such as a lack of disaster support, poverty, inequality, conflicts about water, land grabbing, insecurity, and organized crime (Homer-Dixon 2019). Guerette and Clark (2005) added weak governance. All these factors undermined well-being and livelihood, exacerbating poverty and gender inequality. They increased the environmental and social vulnerability among poor people (Oswald 2020), and have affected particularly biodiverse indigenous regions in Mesoamerica (CEPAL 2020b). Longer droughts may produce social uprisings and increase conflicts, which are transcending often national borders (Bächler 1999). In addition, Kuusipalo (2017) defined a trapped

population as unable to migrate either internally or externally, due to a lack of financial means, political control, transnational organized crime, and abusive local smugglers.

The complexity of CIM covers also different territorial and political arenas, whenever the vast majority occurs within national borders (Schyler et al. 2016). CIM may be rural-rural when people migrate from disaster-prone regions to other rural areas with better environmental conditions. The most common migration within a country is rural-urban, where people hope to improve their precarious livelihood conditions or public insecurity in marginal suburbs of cities. In international migration people across national borders, mostly without documents, hope for better remuneration in foreign countries (Llain and Hawkins 2020). Additional risk factors in CIM are bad governance (Schweizer and Renn 2019), corruption, coercion by smugglers, human traffickers, and transnational organized crime (Abdelhafit 2019). Women and girls are particularly vulnerable to exploitation, sexual violence, human trafficking, coerced survival sex for shelter, food, protection, or for passing the migration control (Leutert 2018). On the transit, internal colonialism (González 2003) and ethnic discrimination increase discrimination and violence against migrants.

To understand the complexity of CIM, Piguet (2010) used multiple methodological tools. He compared the ecological inference of CIM in different geographical areas. He established sample surveys, time series, multilevel analysis, agent-based modeling, and ethnographic studies. The combination of quantitative and qualitative data allowed him to understand the complex reasons for CIM. The UK Governmental Office of Science (2011) has established another conceptual framework that studied not only the dichotomist approach beyond push and pull factors but searched interactions of personal, social, and regional factors, including environmental, political, socio-economic, and demographic factors. Werz and Conley (2012) distinguished between gradual or sudden appearance and territorial or temporal differences in complex crisis scenarios.

In most of these analyses, cultural and gender factors were missing (Arizpe 2015), due that women with small children are often left behind. They have to care in precarious conditions for their children and elderlies (Oswald et al. 2014), which increases their economic burden, especially when they must also pay the fees to smugglers. Sometimes, their partners die during the migration process and these female heads of household are missing the long-awaited remittances. At the micro-level, therefore complex personal, family, and community decisions influence the migration process.

The diaspora families in arriving countries often play a crucial role during CIM. They pay in the US for the illegal transportation, which improves the security for their relatives during the transit, enabling them to cross the militarized borders in Central America, Mexico, and the US. Once the migrants reached the US, they provide different support to newcomers, such as shelter, social security cards, jobs, and personal support in an unknown country with a foreign language. Private charity may also reduce the vulnerability of migrants, especially those coming from disaster-prone locations with environmental and settlement destructions (USAID 2017). Some counties in the US have also local institutions reinforcing human rights and offering resources that allow a peaceful arrival of newcomers. Finally, in the US there are also official programs for the reunification of families offering humanitarian visas and legal stay for CIM.

Light and Miller (2018) argued that right-wing legislators insisted that undocumented migration has increased violent crime in the US. The authors concluded that the migrants are not responsible for the existing insecurity, but that smugglers, human traffickers, drug dealers, gangs (Mara Salvatrucha), organized crime, and the local police, involved in illegal activities, are

responsible for the upcoming violence. Generally, the migrants are victims of these violent criminal activities. The most frequent places where crimes occur such as human trafficking, kidnapping, extortion, robbery, assault, sexual abuse, assassination, and abandonment are railway tracks, trucks, cars, bus stations, roads, off-road ways, highways, private residences, and vacant lots or fields. The inability of the local and national police to control local criminal organizations, gangs, and transnational organized crime indicates corruption and weak governance in all Mesoamerican countries. Often public functionaries are directly involved in illegal activities or protect criminal gangs. Sometimes, local actors collaborate also with international groups involved in human smuggling, extortion, road control, border crossing, and multiple other illegal local activities related to CIM (Leuter 2018).

In synthesis, most authors of the conceptualization of CIM have focused on push factors (disasters, extreme poverty, insecurity, landlessness, loss of harvest, hunger, and unemployment) or pull factors (better environmental conditions, higher salaries, social security, access to education, and health care in the foreign country). They did not take into account the differences between genders and existing vulnerability. Growing complexity in the analyses (Schyler and Herzer 2016; USAID 2017) has linked CIM also to factors of physical and human security, disasters, historical poverty, violence, gender discrimination, human trafficking, and lack of governance in the Mesoamerican region (Schweizer and Renn 2019). The interactions of all these factors have changed the traditional way of migration, the traveling routes, the border controls, the threats related to violence, and the public and personal insecurity. On behalf of these obstacles, increasingly more people are forced to leave their homes due to climate impacts in Mesoamerica (Díaz and Doering 2021). In the US, migration has become one of the most important political issues in Congress, where a legalization proposal for undocumented and long-term workers was blocked by the Republican party.

Additional pull factors of CIM are the abysmal socio-economic differences in salaries between the US and Mesoamerica. The federally mandated minimum wage in the US has increased in 2021 from $7.25 to $15 per hour. Along the Northern Free Zone border of Mexico, in 2022 the minimum wage raised to 260.34 pesos ($12.70 USD) for 8 hours of work and 172.87 pesos (8.43USD) in the rest of the country. Whenever the purchase power parity in December 2021 in Mexico is 9.5 LCU compared with the international dollar, the increase of the minimal salary in the US has become a powerful pull factor. The remittances in 2021, which have increased in Mexico to 52.743 billion dollars, only behind China and India (Bank of Mexico 2021) are reaching the poorest regions of Mexico, often indigenous mountains. Similar conditions exist in Central America, and remittances have become a decisive factor for undocumented migration, despite the dangers and increasing costs of CIM (Guerette and Clark 2005).

Besides the economic benefits, the increase in climate disasters, loss of water and fertile soils, and the lack of governmental disaster management or disaster risk reduction activities in Mesoamerica are additional reasons for leaving highly impacted regions (Toscano 2017). Other motives are the lack of environmental restoration processes, where several smaller climate impacts, stronger hurricanes, and more frequent droughts are pushing people out of their homes. Most of these migration processes became dangerous in Central America and Mexico and transnational

organized crime is increasingly responsible for smuggling people to the US. Migrants are kidnapped, abandoned in dangerous regions, and suffer during the transportation. However, this illegal transportation means one of the most frequent options for crossing the whole Mesoamerican region. Hundreds of people and children are packed in very limited spaces in trailers or containers, where they lack air conditioning, aeration, and sanitary facilities. In 2021, 821 Mesoamerican migrants have died in these illegal facilities (Government of Mexico 2021). Climate conditions are also harsh during the trajectory: in the Southeast of Mexico the weather is hot and wet and along the Northern border it is often cold and windy, but can be also extremely hot. The costs charged by these illegal networks have dramatically increased and amounted in 2022 between 8,000 to 12,000 dollars for each migrant. The Mexican Foreign Minister Ebrard estimated on TV in December 2021 that the illegal transportation of migrants has become a lucrative business of 14 billion dollars per year, primarily managed by transnational organized cartels.

5. An organized caravan walking through Mesoamerica to the US

Given the increasingly more difficult conditions to reach the US and the rising costs for poor people, in November 2021, a caravan with more than 4,000 refugees left Honduras. They increased their number in El Salvador and Guatemala, trying collectively to avoid governmental repression and organized crime (Prieto 2021). This specific caravan included numerous women, children traveling alone, handicapped, and families with small children. The migrants fought first in Guatemala to cross the border, and later they were confronted by the National Guard at the Mexican southern border (WOLA 2021). After several clashes with migration authorities, the members of the caravan decided to walk collectively the remaining 954 km to Mexico City, calling publicly for human rights for asylum-seekers and care about vulnerable CIM. During their walk, most migrants have suffered from the existing extreme weather conditions. Children got sick, men and women were dehydrated, and all had blisters on their feet, thus their advance was slow. Truck drivers were threatened by the National Guards and were unable to give a lift to the migrants in the caravan (Santibañez 2021).

Participants who required medical attention also faced clashes with the Mexican authorities, since they lacked official documents for crossing the country. After a month, especially women with sick family members left the caravan and accepted the legalization offer of the National Migration authorities to stay in Mexico (personal information). The remaining group continued the march and on 12 December 2021, about 400 migrants arrived in Mexico City –one-tenth of the original caravan. After a clash with the local police, they went directly to the sanctuary of the Virgin Guadalupe to thank her for the support obtained from Mexicans during their march. In the pilgrim facilities, they received also shelter, medical treatment, water, and food (Srigiri and Dombrowsky 2022). Most of them continued later their march to the US border. This caravan has received national and international press for their heroic walk despite their difficult migration conditions, the hard climate conditions, and the repression of the migrant authorities.

6. Gender perspective, caravans, and CIM

In this Honduran caravan, women played a crucial role and were powerful agents of change and emotional support for everybody. They have motivated their children and often also their partners to continue the march (personal information). They participated actively in the collective fights against the blockades of the National Guard. In TV and radio, they also indicate how climate impacts have differently affected the assets of women and men. Goh (2021) explained that climate disasters and loss of agricultural subsistence were pushing factors to leave their homes. Women were basically in charge of the basic food production in small orchards or raising domestic animals in the barnyard (IPCC 2019). Extreme weather events, but also frequent small disasters and longer droughts have destroyed systematically their family subsistence (FAO 2018), and hunger with food scarcity has often increased intrafamilial violence (Esquivel 2020), but also damaged the health of family members, especially of small children (Clemens and Cough 2018).

Climate-related disasters and financial and educational gender gaps represent additional burdens for women (Bennet 2006). During extreme events, their lack of training has killed more women and girls than men and boys, both directly during a disaster and indirectly due to a lack of support in post-catastrophe conditions (Neumayer and Plümper 2007). The Red Cross, military, and governmental agencies still manage most climate disasters with technical fixes, lacking knowledge of cultural, social, and economic factors that are increasingly specific vulnerability along gender lines. Often, the allocation of relief support has discriminated against women, especially when they are heads of households (Yonder et al. 2015). Androgenic top-down adaptation, resilience, and mitigation policies have further limited gender mainstreaming, their recognition, and women's empowerment (Alston 2014). There is also a serious lack of research into the many interrelated gender dimensions during climate disasters (MacGregor 2010). The available research on gender-sensitive analyses was carried out generally by female scientists (Neumayer and Plümper 2007), environmentally committed scientists (Imaz et al. 2014), and development researchers working for the UN and non-governmental organizations (GFDRR 2018). An additional factor affecting more women and their livelihood in rural areas is the lack of diversification in subsistence crops (Yu et al. 2012), creating climate-sensitive resource dependency and lack of food (WPF (2020). Trung (2013) explained how the dependency on climate migration and gender impacts due to loss of harvests and food scarcity in Vietnam, has pushed entire villages to leave.

In the Mesoamerican region, additional gender problems exist. It is the most violent region in the world without war. El Salvador is highly insecure with 62 homicides per 100,000 inhabitants (first), followed by Honduras with 42 homicides (fifth), Mexico with 29 homicides (fourteenth), and Guatemala with 26 homicides per 100,000 inhabitants (sixteenth place worldwide; WB 2021). This violence has multiple causes: poverty, intrafamilial conflicts, gender violence, femicide, cultivation of narcotic plants, exploitation of the labor force, and extortion. Trafficking of migrants, drugs, women, girls, human organs, archaeological artifacts, and exotic plants or animals (Yup 2021) are additional threats of insecurity. The national bourgeoisie has further increased this structural and physical violence. These rich people have discriminated against lower classes, reinforcing their cultural contempt against indigenous and poor conational, called by González (2003) internal colonialism.

This bourgeoisie has consolidated its economic status and political power with the exploitation of indigenous people, corruption, money laundering[3], capital flight, and speculation in tax havens (UNODC 2021:1). Their macho behavior also includes the exploitation of women and girls, land grabbing, and corruption often in alliance with national authorities (Transparencia Internacional 2021), maintaining the inequality and exploitation at all levels, but also reinforcing their power position (Prieto 2021). Recognition of exploitation or unpaid labor of women is denied and taken as normal due to their androgenic behavior. Finally, COVID-19 has further enlarged the people at risk (CEPAL 2020a), and during the lockdown femicide and intrafamilial violence have increased four times in the region (INEGI 2021).

In Mesoamerica, a serious problem related to CIM is human trafficking. After economic recession and disasters, victims are targeted locally (UNODC 2020). In Central America, 79% of the detained were girls and women. Children alone account for about one-third of the detected victims of trafficking. Ninety-one percent of these trafficked women were sent to the US, and 81% for sexual exploitation. During the last five years, the share of kidnapped girls has increased by 40% among the detected victims, related to climate disasters, pandemics, and economic recession (CEPAL 2021c). The militarization of the southern border of Mexico with guards coming from different regions has also increased prostitution. Facing the increasing controls of the National Guard at the border, the migratory vortex is changing from the American dream to a safe job in Mexico, especially in the regions, where new megaprojects are requiring labor (Camargo and Prieto 2021). Thus, an increasing number of undocumented migrants are applying for humanitarian visas and working permits in Mexico.

Consequently, the Mesoamerican migrant history reflects complex factors: people are fleeing extreme climate disasters, poverty, land grabbing, lack of governmental support, violence, extortion, threats of death, and forced recruitment of their children by gangs or transnational criminal organizations. Push factors for migration are interconnecting all these adverse factors, where social, economic, family, and cultural aspects interrelate and reinforce negatively the life of women and girls (Isacson 2021; Belot and Ederveen 2012). As the composition of the Honduran caravan indicates, women and children, exposed to extremely adverse conditions in their homeland, were able to support hundreds of kilometers of the walk, for achieving better living conditions and a future for their impoverished and threatened families or children. However, the increasing militarization along both Mexican borders (REDODEM 2020), inhuman policies against migrants, gender discrimination with lack of autonomy (CEPAL 2021b), and political pressure from local citizens, have induced the governments of the US, Mexico, and Guatemala to increase the repression against these migrants (Prieto 2021). On the other side, climate disasters and loss of survival conditions are forcing increasing numbers of refugees to leave, and sometimes they are joining migrant caravans. These CIM hope to find a better life outside their countries. Accompanied by other members of the caravan, women, and girls are less at risk from governmental authorities, the military, criminal organizations, and human traffickers (personal information of female participants in the caravan).

The dominant literature on vulnerability and adaptation does not focus on the complexity of CIM. Kavya et al. (2019) criticized the dominant literature on gender and climate change. Generally,

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3 "The estimated amount of money laundered globally in one year is 2 to 5% of the global GDP, or $800 billion - $2 trillion in current US dollars. Due to the clandestine nature of money-laundering, it is however difficult to estimate the total amount of money that goes through the laundering cycle", https://www.unodc.org/unodc/en/money-laundering/overview.html.

they missed in their public policies of adaptation gender equity, climate justice, and training for women in complex adverse climate conditions. Integrated disaster management with a gender perspective may also enable women and girls to participate in their hometown in multiple activities, such as renewable energy, organic agriculture, and reforestation to increase climate resilience (Ciccotti et al. 2020). Fraser (1998) proposed a second type of social justice, claiming recognition of women, where the assimilation of dominant cultural norms goes beyond the respect for equity. While the inequity and redistribution paradigm may produce conflicts (Fraser 2008) and envy, the recognition addresses the complex relationships between genders, class, status, economy, and culture in the existing diverse social contexts. "When these androcentric norms are institutionalized, women suffer gender-specific status injuries, including sexual assault and domestic violence; objectifying and demeaning stereotypical depictions in the media; harassment and disparagement in everyday life; and exclusion or marginalization in public spheres and deliberative bodies. These harms are injustices of misrecognition" (Fraser 1998: 2), nearly independent of the dominant political economy and the existing development programs.

Therefore, alternative gender recognition requires additional policies for every woman and girl. This postulation does not mean that economic inequity among women is underestimated by Gini Index (WB 2016). Besides a policy for equal salaries and working conditions, recognition implies parity in political and social participation, and empowerment by overcoming the historical dominant devaluation of the feminine culture, enabling simultaneously the economic, social, cultural, and political equity with parity governance (CEPAL 2021d).

7. Changes in migration patterns and militarized borders

For four decades, mostly single men have migrated without documents from Mesoamerica to the US. Since the year 2000, more women are leaving and found jobs in the service sector in North America. Since the terrorist attacks of September 11, 2001, national security policies have justified the enforcement measures against illegal immigrants and the militarization of the Mexican-US border. Alden (2010) claimed that the outcomes of these policy measures have rather undermined US national security than enhanced it. Additional legal changes and the construction of the wall during the Trump Administration have reinforced border controls that were justified as national security issues by the US executive. During the Trump government, the US Border Patrol had also increased deportations, separating even family members, and expelling children alone to the dangerous Mexican side, thousands of kilometers away from the deportation of their parents. The Biden administration tried to revert this inhuman behavior, but in November 2021, a US federal judge requested to return again non-Mexican asylum-seekers to their Southern border, in line with Trumps' policies and Title 42 March 2020 public health order or the Migrant Protection Protocol (MPP). Gramlich (2021) insisted that the number of 'encounters' in July 2021 represents the major wave of migration at the US-Mexico border.
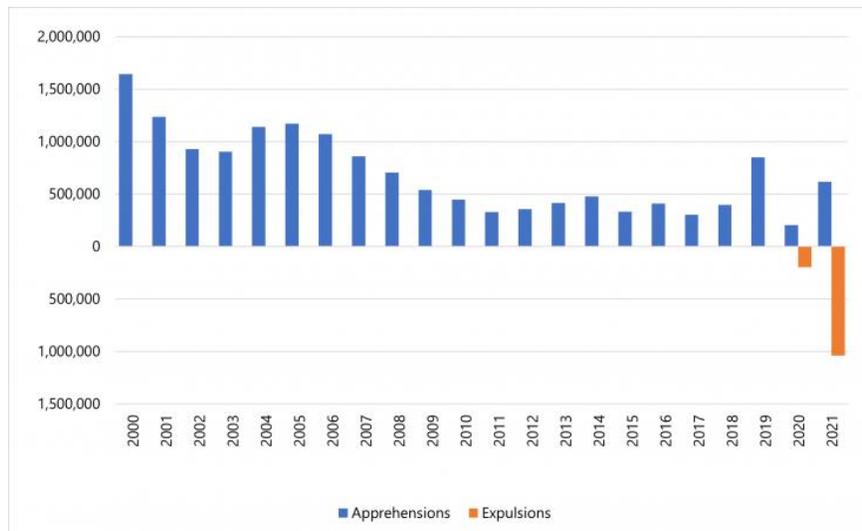
Figure 2. South West Border Apprehensions and Expulsion.
Source: Border Patrol 2022[4]

Most of the undocumented migrants were expelled to Mexico (Figure 2) increasing the insecurity on its northern border. Border Patrol estimated that during 2020, due to the pandemic, poverty, and climate disasters in Mesoamerica, 2.1 million people have tried to reach the US, representing about 42% of the apprehensions. In 2021, 1.66 million tried to cross the border and when including ports, there are 1.73 million people, mostly single male persons, who tried to cross the US border without documents. The increasing level of expulsions in 2022 is affecting seriously Mexico and the support from the US is very limited, thus increasing the existing conflicts and the living costs at the border. Most of these migrants wait for months an acceptance as refugees, but the high number of migrants makes this process very slow.

The United Nations High Commissioner for Refugees (UNHCR) called on Mexico from March 2020 to support children, adolescents, and women crossing alone the country. Mexico has accepted 2020, 41,329 asylum petitions, and in November 2021 additional 108,195 Central Americans applied for this legal status. The World Bank Report (Clement et al. 2021) estimated that in 2050 17 million climate refugees may come only from Latin America searching for better living conditions in the US. As indicated above, the US returned in December 2021 Non-Mexicans over their southern border. The legal obligation to wait for several months for asylum permission in Mexico as a 'third safe country' in highly precarious conditions, together with the violence in the refugee camps along this border region had also changed the composition of the migrants.

This border region has the highest crime rate and violence due to the presence of transnational organized crime. The highest rate of femicide is in Ciudad Juarez, where 132 women were assassinated in 2021 (data from Red Mesa de Mujeres, a local NGO). Therefore, living alone on the northern border of Mexico is especially threatening for women and girls, while the Mexican government is unable to grant security and decent living conditions to all these migrants. In the context of greater control of organized crime, massacres of migrants have occurred in several other states of Mexico. On April 6, 2011, 193 people were found in clandestine graves in the municipality

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[4] https://www.cbp.gov/newsroom/stats/southwest-land-border-encounters

of San Fernando, in the state of Tamaulipas (Hernández 2021). Not all is insecurity on this northern border. The region also offers opportunities for jobs in the assembly industry. Expelled migrants can cross several times to the US at the risk of being immediately returned to Mexico.

At the US border, in numeric terms 45% of the detained migrants in 2021 came from El Salvador, Honduras, and Guatemala; 29% from Mexico, and 26% from other countries (Gramlich 2021). These changes within two years of the demographic composition of undocumented migrants are the result of new complexities in the migration process, where the increase in poverty due to COVID-19 and climate disasters have economically destroyed multiple livelihoods in Mesoamerica. CEPAL (2022) estimated that two decades of development were lost during 2020-2022 in this region of Mesoamerica because of climate impacts and pandemics.

Looking at recent data in 2021-2022, the US Border Patrol reported nearly 200,000 deported undocumented migrants along the US-Mexico border only in July 2021, the highest monthly total in more than two decades (Bolter 2021). Title 42 of US migrant law allows the judges to immediately expel 43% of these migrants to Mexico. During the final months of the Trump administration, about 80% of these asylum-seekers were returned as non-Mexicans across the border (Gramlich 2021). The detained migrants in the US were confined in inhuman metal cages on the US border without access to vaccines, producing a high death toll. Only during the Biden administration, these migrants were vaccinated, protecting also the officials of the Border Patrol from a potential infection. "While from May 2019 to July 2021 families traveling together were reduced from 64% to 38%, single minor children continue to represent 9% of the migrants" (US Customs and Border Protection, July 2021, cited by Gramlich 2021: 4). This statistically relevant reduction of family migrants can be partially explained by the awareness of the dangers of illegal crossing, pandemics, and criminal cartels.

In the case of poor CIM without relatives in the US and lack of money, the cartels oblige them to work for them (drug trafficking, prostitution, etc.) or to give a kidney instead of the payment. Without any doubt, CIM got converted into highly dangerous because of migrant authorities, transnational organized crime, inhuman conditions in illegal trailers, and a lack of approval of the proposed migration law in the US, which could resolve the lack of labor force in that country and organize a legal migration process form Mesoamerica.

8. Conclusion of CIM with gender equity and economy of care

Analyzing systemic risks in CIM with an interdisciplinary nexus approach and the integration of climate, economic, social, cultural, gender, environmental, and political factors at the local, regional, national, and international levels, migration is a highly complex phenomenon. The opportunity of leaving connects at the international level with diaspora, legal framework, and the pressure on transit countries to the US. It involves a regional policy of the National Guard and the Institute of Migration in Mexico, and at the local level socio-economic, gender violence, family or community decisions, where destroyed livelihood by extreme climate events, and insecurity in Mesoamerica push people to leave. Organized transnational crimes got involved migrant trafficking, extortion, and kidnapping. Caravans, the diaspora, the economic possibility of a migrant family, internet connections for safer migration tools, and migrant policies in Mesoamerica and the US have changed

the traditional way toward the 'American Dream', where the organized transnational crime is creating an additional threat.

Whenever these interrelated factors may pressure for CIM, these complexities are also producing systemic risks. Confronted with extreme economic crisis situations and often a survival dilemma due to the destruction of climate impacts, individuals, families, and children alone have pushed people to undertake the dangerous migration path to the US, crossing several militarized borders. The rising costs for illegal transportation through controlled borders have promoted caravans, where also the most vulnerable -women, girls, small children, elderly, and handicapped- found a way to pass through Central America and Mexico. Extreme poverty and lack of job opportunities are additional push factors for leaving. Confronted with losses of houses, assets, wellbeing, money, and overpopulated or inexistent official refugee camps in Mesoamerica, for multiple families in dramatic economic conditions, CIM represents the sole survival alternative, especially when criminal gangs are threatening their life or want forcibly to recruit their children. As indicated in the article, CIM has different impacts on women and men, where especially girls are higher exposed to trafficking and sexual violence (UNODC, 2021). Collective walks have also revealed the women's ability to withstand adverse weather conditions and confrontations with the military at the borders. They were able to integrate the members of the caravan and reduce the rejection from the local Mexican population.

The recent catastrophic climate and economic disasters in Mesoamerica have affected more seriously vulnerable people who were unemployed or informally working. With the loss of jobs and income during the COVID-19 confinement and later several severe climate impacts, their capacity of survival was destroyed. In these systemic adverse environmental, social, and economic conditions emerged questions about how to reduce migration from Mesoamerica, increase the safety at home for everybody and avoid the dangers of a CIM? The first alternative proposed is to review and reframe complex, interrelated and unpredictable risks. As top-down policies have failed in Mesoamerica, there exists the possibility of bottom-up approach. Resilience-building with a gender perspective and reinforcement of climate mitigation at home is the best alternative policy to reduce the existing dual vulnerability (Oswald 2014). Different recognition of women in disaster organizations and governments includes also greater female participation, training in preventive actions, resilience-building during an extreme event, governmental financial support during the crisis, an economy of care (CEPAL 2022) in refugee camps, and in marginal living conditions. Economic support alone is unable to overcome the precarious financial conditions and only an active involvement during the reconstruction process of all social and ethnic groups may overcome the critical conditions. An integrated approach to prevention, disaster and reconstruction management may reduce corruption and the higher death tolls of women and girls during a disaster (Ariyabandu and Fonseka 2009). Recognition of women empowers them to become constructive and creative participants in preventive disaster risk management. Integrating men and women, youth, and old people may also reduce internal colonialism (González 2003), economic precarity, and gender-based violence.

CEPAL (2021a) proposed an economy of care able to reduce the adverse interrelations of lack of income, poverty, CIM, and gender violence. A key element is autonomy and equity of women, which are reinforcing the physical, economic, and political participation of women and girls, thus increasing the output of the local economy. Cultural patterns of patriarchal, violent, and discriminative behaviors have not only covert the environmental destruction of corporate enterprises (mining) and

the local bourgeoisie (cattle raising), but have also limited legal changes in civil and political participation, social and economic rights for minorities with a life free of violence. This integrated approach includes sexual and reproductive rights for all gender groups and environmental preventive protection for the affected regions. All these changes are proposed by the Platform of Action of Beijing, the Agenda 2030 of the Sustainable Development Goals, and the Convention of *Belém do Pará*, fighting all forms of discrimination against women, men, and indigenous people. Only an integrated approach, taking into account the systemic nexus among sectors and levels of actions may reinforce the economic empowerment of vulnerable people, and contains patriarchal cultural discrimination and physical violence. When in the most remote region, the whole society is committed and promotes a culture and economy of care with peace, the ingrained discrimination, low payment of salaries and discrimination is changing for an alternative development for everybody (Collin 2021). The challenges of poverty and CIM are complex and often contradictory. CEPAL (2021d: 2) insisted that simultaneously governments and society must dismantle the concentration of power, governmental corruption, insecurity, organized crime, socioeconomic inequality, exploitation of vulnerable, favoritism of local bourgeoisie, and rigid sexual division of work, where unpaid care activities are basically performed by women.
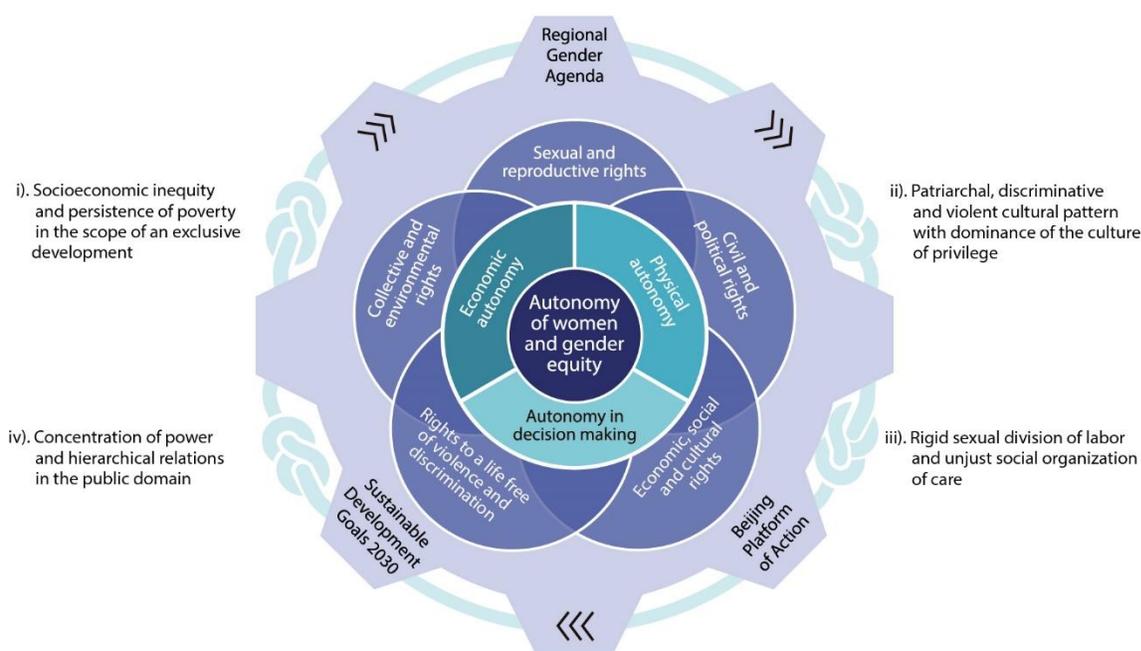
Graph 1. Care Economy.
Source: CEPAL 2021a:

A care economy is an alternative approach to the traditional male Build trust through coherent decision-making and reliable information, economic analysis, focusing on gender empowerment. equity, and self-reliant subsistence agriculture. Since three years ago, CEPAL (2021a) has insisted that GDP could rise 6.93% in 2030 with a full involvement and equity of women in labor

and social protection. With an annual increase of 1% in female labor and salaries, the increase in GDP in 2030 could increase by 2.14%. Nevertheless, multiple economic approaches do not take into account this crucial understanding of autonomy and gender equity, where physical, decision making, and economic autonomy could increase the rights for collective, environmental, civil, political, sexual, reproductive, and a life without violence and discrimination. Without any doubt, the outcome of gender empowerment during the marches in caravans has indicated that once women are repatriated to their home countries, they start to undertake economic activities to overcome poverty, discrimination, and violence, improving the economic wellbeing of their families with microbusiness and subsistence crops.

To mitigate CIM, economic marginality, and climate disasters, an integrated framework in Mesoamerica implies legal, political, cultural, and economic transformations. This integrated economic management offers CIM and vulnerable people new possibilities to explore coherent programmatic agenda without leaving nobody behind (UNEP-ODS 2015). This approach integrates gender recognition and socioeconomic equity both through processes of empowerment from the bottom-up and a top-down policy of equity in salaries and working conditions. This policy would also reinforce the cultural recognition of the female part in women and men (Reardon and Snauwaert 2015; Reardon and Jenkins 2007) within a multicultural approach (Arizpe 2015), and a sustainable care of ecosystems (IPBES 2018). In synthesis, economic improvement and climate adaptation with gender empowerment may gradually consolidate a culture and economy of recognition with an economy of care for everybody (CEPAL 2021a). It includes also mitigation activities to limit climate change impacts as an additional adaptation strategy (IPCC 2021). The recovery of damaged ecosystems is part of the mitigation (Lovelock 2003) in a region highly exposed to extreme weather events (Moreno et al. 2020) and an economy rooted in collective wellbeing may reduce the risks of CIM.

The second reflection is related to the conditions of violence during the migration process, the control of the transnational organized crime, and the threats of militarized borders. America has lost during the COVID-19 pandemic hundreds of thousands of workers, before general vaccinations were available. Further, the investment in infrastructure from the Biden administration requires additional labor force, so a transparent system of temporal visas could order the undocumented migratory flow. On the Mesoamerican side, there are plenty of trained and untrained workers and climate disaster migrants without survival conditions at home could find a new livelihood in the US. The increase of the minimum salaries offers an additional input to save money and send remittances to the needed and affected families in Mesoamerica. However, the present blockage in the US Congress by the Republican representatives to vote for a regulated migration process is affecting the economy in both regions. Lack of labor force in the US and missing job opportunities in Mesoamerica, stronger climate impacts, destruction of the local environment (landslides, sea-level rise), and migrants who have lost all their assets during disasters could prevent conflicts and create opportunities for both regions. Limiting the humiliation and dangers of CIM, promoting regional development in Mesoamerica, and training everybody in disaster risk management and care economy with gender recognition could reinforce both mitigation and adaptation to climate change.

IPCC (2021) indicates that in the future, even more, serious disasters will challenge Mesoamerican people and the migrant policy in the US. Precisely North America is the country that has the highest economic losses from disaster (SwissRe 2021). Reducing the existing dangers in the

CIM process may also limit potential upraises and regional conflicts, where land reforms and different economic management may challenge the dominant bourgeoisie and economic policy. The political change in Honduras with a female president and their concerns of the structural problems in her country may open the way for an economy of care. It may facilitate an integrated development process in a region extremely exposed to climate change impacts (IPCC 2022).

Non-action will increase the systemic risks of overcoming economic misery, preventive anticipatory disaster management, local and national conflict governance, livelihood for vulnerable people, and the related complex and unpredictable outcomes of climate change (Simpson et al. 2021). The International Risk Governance Center (IRGC) explored a co-development of management (Trump et al. 2018). The IRGC proposed seven integrated steps to reinforce systemic economic and governance processes by defining boundaries and scenarios of potential transitions, the determination of tolerable risks, and the involvement of all stakeholders in proposing co-development strategies, where critical shifts in the complex interaction should promote a participative way of sustainable economic improvement and adaption strategies that enable everybody to deal with complex risks management and maintain the threats at an acceptable level of livelihood for all involved people (Sillman et al. 2022). Climate change impacts with CIM in Mesoamerica and the US policy of migration are complex and its negative impacts are growing. Nevertheless, they are affecting above all the most vulnerable people, including migrant women and girls. Only a collaborative systemic approach including all nexus relations within a risk analysis and trust-building at the local level may limit CIM and maintain the often precarious livelihood of poor people, where gender and cultural recognition complements the systemic approach of risk governance.

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