

Characterizing environmental migrants in Central America's Northern Triangle regional migration flows.

Susana B. Adamo, Ángel G. Muñoz, Carmen González Romero,

Abstract

Migration patterns in the Northern Triangle (magnitude and composition of the flows, trends over time and space) are strongly associated with economic and conflict factors but the complex web of drivers also include the direct and indirect impacts of climate events (such as heat waves, droughts, hurricanes, flooding). Using data from a special module on environmental migration from the EMIF Sur 2019, this paper explores the characteristics of environmental migrants from Central America's Northern Triangle to Mexico and the United States, and their contribution to shaping the composition of migration flows. The descriptive analysis includes three steps: identifying environmental migrants in the sample, determining their sociodemographic characteristics, and establishing their geographic profile. In order to assess the contribution of environmental migrants to shape the composition of regional flows, the analysis also includes looking for differences and similarities between environmental and other-migrants.

Extended abstract

Introduction

Migration systems connect places (origin, destinations, corridors) through flows and counter-flows of people, goods (e.g. remittances), services, institutions and information (Bakewell et al. 2011). All forms of human mobility change the geography of vulnerability in origin, transit and destination (Adger et al. 2009; Runfola et al. 2016). At the same time, migration is a highly selective process, and this selectivity is reflected in the particular composition of migration flows. As geography, flow composition has the potential of influencing vulnerability.

The migration literature (including literature on environmental migration) has identified several relevant dimensions in the composition of migration flows: age, gender, ethnicity and citizenship, human capital (including skills and labor experience), social capital (migration experience, networks), type of place of residence in the country of origin (for example, rural or urban), type of livelihoods (farm, off-farm, non-farm), among others.

High levels of emigration characterizes the Northern Triangle of Central America --El Salvador, Honduras and Nicaragua (figure 1), and net migration rates were negative in the three countries (-6.3, -0.54 and -0.72 migrants per 1000 people for El Salvador, Guatemala and Honduras, respectively) in the 2015-2020 (Celade 2019). Migration patterns in the Northern Triangle (magnitude and composition of the flows, trends over time and space) are strongly associated with economic and conflict factors but the complex web of drivers also include the direct and indirect impacts of climate events (such as heat waves, droughts, hurricanes, flooding) (Ruiz Meza 2015; Warner et al. 2014; Alpizar et al. 2020; Baez et al. 2017; Dodd et al. 2020). In effect, previous work has shown that both environmental and non-environmental factors influence regional migration trends in Central America, for example by impacting livelihoods and food security particularly in rural areas (Muñoz et al., 2019; Pons 2021).

Figure 1: Central America: the Northern Triangle and the Dry Corridor



Source: www.fao.org/3/a-br092s.pdf

Although climate impacts multiple of the variables that trigger migration in the region, socio-economic factors tend to explain a higher ratio of the total variance in the migration flow (Muñoz et al., 2019). In particular, a multi-model migration ensemble approach --involving coffee, maize and bean prices, coffee yield, infant mortality, recent migration and rainfall amount in Guatemala-- tend to skillfully reproduce the inter-annual variability of the migration outflow from Guatemala to the southern border of the United States (Muñoz et al., in prep). The approach, which can be tailored to other locations, is useful to diagnose past migrations and identify the role of key drivers in different years.

The co-existence of environmental and non-environmental drivers means that migration flows are always mixed, encompassing people moving for many reasons and under various circumstances. To explore the characteristics of environmental migrants in the move in the Northern Triangle of Central America, and how/if they contribute to shaping migration flows, are the objectives of this exploratory paper. Are self-defined environmental migrants different from other migrants?

Data and methods

The data come from the Encuesta Migratoria de la Frontera Sur (Migration Survey of the Southern Border) (<https://www.colef.mx/emif/>), or EMIF Sur, which is a flow flow survey that captures movements or crossings and allows to characterize individual migrants (Najera-Aguirre 2010:56). The survey is designed to target the following flows: (1) migrants crossing the Mexico-Guatemala border in both directions; (2) migrants being returned for Mexico authorities; and (3) migrants being returned by USA authorities. The survey questionnaire includes questions about several dimensions: sociodemographic (the respondent and his/her family), place of residence (Guatemala, Honduras or El Salvador), the crossing and journey through Mexico, labor characteristics of the place of destination, and the migratory experience (Najera Aguirre 2010:64)

The general questionnaire also includes two questions about reasons, motives or causes for leaving the country of origin, and some of the options refer to environmental impacts or hazards. These are the questions asked to all the respondents.

- What was the main reason you left [Guatemala, Honduras, El Salvador] this last time? (one of the options is “natural disasters”)
- Did the following situations cause you to leave [Guatemala, Honduras, El Salvador] the last time: drought or reduced harvest?
- Did the following situations cause you to leave [Guatemala, Honduras, El Salvador] the last time: earthquake, flood, or hurricane damage?

In 2019, the EMIF Sur included a special module on “Environmental migration and violence in the TNCA” (Migración ambiental y violencia en el TNCA), which was applied to migrants from Guatemala, Honduras and El Salvador returned by Mexican authorities, and to migrants returned by the United States authorities that had stayed at least 6 months in that country. The period of reference for the questions were the 12 months previous to last departure from the country of origin. The sample size for the different flows is displayed in table 1.

Table 1: Special Module on Environmental Migration and Violence

Migration flow	Overall sample size	Sample size of the special module
Returned by Mexican authorities to Guatemala	1490	557
Returned by Mexican authorities to Honduras	996	396
Returned by Mexican authorities to El Salvador	1087	599
Returned by USA authorities to Guatemala	1303	622
Returned by USA authorities to Honduras	1110	343
Returned by USA authorities to El Salvador	1169	573
Total	7155	3090

Source: El Colegio de la Frontera Norte, ... Encuesta sobre Migración en la Frontera Sur de México, www.colef.mx/emif

Respondents to the special module were asked:

- During the last 12 months before you left your country, were you or any member of your household harmed by: drought, poor quality or erosion of the land, intense cold or heat, soil contamination or water, conflicts over land or water, diseases such as Zika, cholera or dengue?
- During the last 12 months before you left your country, have you or any member of your household been harmed by: floods, storms or hurricanes, earthquake, landslides, forest fires?
- How did that affect your life? With the following options: lack of communications; lack of water or food; damage to or loss of your home or other property; lack of electricity or other basic services; loss of land to farm or death / loss of animals; loss / disability of a family member or friend; loss or lack of work.
- Did natural disasters or change in the environment motivate you to leave your country?
- In the last 3 months before the start of your trip, did you ever worry or worry that food would run out at home due to lack of money or resources?

Analysis plan

Identifying environmental migrants

The first step is to identify the environmental migrants using the questions in the special module as well as the responses to questions about motives, reasons or causes for leaving their country of origin detailed above. Those that selected environmental factors could be considered as “self-identified environmental migrants”.

Selectivity of migration: sociodemographic characteristics

In a second step, the focus is on the socio-demographic composition of environmental migrants. Migration is highly selective by age and to a lesser degree by gender, and these characteristics have already been highlighted in the literature (see for example Baez et al. (2017a, 2017b) for the migratory response of young adults to heat and drought). Ethnicity is another important characteristic, and the Southern border flows include a large proportion of indigenous migrants (Vegas-Macias 2017). We also include here human and social capital characteristics.

Ruralites or urbanites? Geographic composition

In a third step, we focus on where the environmental migrants are coming from within their country of origin, an information often absent for international flows. In terms of urban/rural origin, the literature indicates that a substantial proportion of migrants from the Northern Triangle countries to Mexico and the United States are from rural areas (ECLAC 2018). Even in El Salvador, 45% of the international migrants were from rural areas in 2009, although 70% of the population resided in urban areas at that time (Baumeister 2020:15). According to these antecedents, we expect to find support for the agricultural pathway (Nawrotzki and Bakhtsiyarava 2017; de Sherbinin 2020) but with differences among the three countries.

In order to assess the contribution of environmental migrants to shape the composition of regional flows, analyses in steps 2 and 3 include looking for differences and similarities between environmental and other-migrants.

Cited References

- Adger, W. N., Eakin, H., & Winkels, A. (2009). Nested and teleconnected vulnerabilities to environmental change. *Frontiers in Ecology and the Environment*, 7(3), 150-157. doi:10.1890/070148
- Alpízar, F., Saborío-Rodríguez, M., Martínez-Rodríguez, M. R., Viguera, B., Vignola, R., Capitán, T., & Harvey, C. A. (2020). Determinants of food insecurity among smallholder farmer households in Central America: recurrent versus extreme weather-driven events. *Regional Environmental Change*, 20(1), 22. doi:10.1007/s10113-020-01592-y
- Baez, J., Caruso, G., Mueller, V., & Niu, C. (2017b). Droughts augment youth migration in Northern Latin America and the Caribbean. *Climatic Change*, 140(3), 423-435. doi:10.1007/s10584-016-1863-2
- Baez, J., Caruso, G., Mueller, V., & Niu, C. Y. (2017a). Heat Exposure and Youth Migration in Central America and the Caribbean. *American Economic Review*, 107(5), 446-450. doi:10.1257/aer.p20171053
- Bakewell, O., De Haas, H., & Kubal, A. (2012). Migration Systems, Pioneer Migrants and the Role of Agency. *Journal of Critical Realism*, 11(4), 413-437. doi:10.1558/jcr.v11i4.413

- Baumeister, Eduardo (2020) *Posibilidades de refugio en el medio rural y Covid-19 en los países de América Central*. Lima, IEP. <https://repositorio.iep.org.pe/handle/IEP/1183>
- CELADE.Population Division of ECLAC (2019) *Latin America. Long term population estimates and projections. 2019 Revision*. <https://www.cepal.org/es/temas/proyecciones-demograficas/estimaciones-proyecciones-excel>
- De Sherbinin, Alex (2020). Climate Impacts as Drivers of Migration. Migration Information Source. October 23. <https://www.migrationpolicy.org/article/climate-impacts-drivers-migration>
- Dodd, W., Gómez Cerna, M., Orellena, P., Humphries, S., Sadoine, M., Zombré, D., . . . Cole, D. (2020). Factors Associated with Seasonal Food Insecurity among Small-Scale Subsistence Farming Households in Rural Honduras. *Int. J. Environ. Res. Public Health*, 17, 706.
- Economic Commission for Latin America and the Caribbean (ECLAC) (2018). *Atlas of migration in Northern Central America* (LC/PUB.2018/23), Santiago de Chile. <https://www.cepal.org/en/publications/44288-atlas-migration-northern-central-america>
- El Colegio de la Frontera Norte, Unidad de Política Migratoria, Registro e Identidad de Personas, Consejo Nacional de Población, Consejo Nacional para Prevenir la Discriminación, Secretaría del Trabajo y Previsión Social, Secretaría de Relaciones Exteriores, Secretaría de Bienestar (BIENESTAR). *Encuesta sobre Migración en la Frontera Sur de México*. www.colef.mx/emif
- Muñoz, Á.G., González Romero, C., Pons, D., Adamo, S., Giraldo-Méndez, D., de Sherbinin, A. *Can We Predict "Climate Migrations"? The 2018 Guatemalan Caravan*. (in prep)
- Muñoz, Á.G., Pons, D., Giraldo-Mendez, D., Adamo, S. B., de Sherbinin, A. M., and Goddard, L. M. (2019) *Can We Predict "Climate Migrations"? The 2018 Guatemalan Case*, AGU Fall Meeting, GC13E-1213, 2019.
- Nájera-Aguirre, J. N. (2010). Conociendo la Encuesta sobre Migración en la Frontera Guatemala-México: alcances y limitaciones. *Papeles de Población*, 16, 49-83. http://www.scielo.org.mx/scielo.php?script=sci_arttext&pid=S1405-74252010000100003
- Nawrotzki, R. J., & Bakhtsiyarava, M. (2017). International Climate Migration: Evidence for the Climate Inhibitor Mechanism and the Agricultural Pathway. *Population, Space and Place*, 23(4), e2033. doi:10.1002/psp.2033
- Pons, Diego (2021) Climate Extremes, Food Insecurity, and Migration in Central America: A Complicated Nexus. Migration Information Source. February 28. <https://www.migrationpolicy.org/article/climate-food-insecurity-migration-central-america-guatemala>
- Ruiz Meza, L. E. (2015). Cambio climático y migraciones laborales en la frontera sur de México. *Revista Luna Azul (On Line)* (35), 301 - 320. <https://revistasojcs.ucaldas.edu.co/index.php/lunazul/article/view/1735>
- Runfola, D. M., Romero-Lankao, P., Jiang, L., Hunter, L. M., Nawrotzki, R., & Sanchez, L. (2016). The Influence of Internal Migration on Exposure to Extreme Weather Events in Mexico. *Society & Natural Resources*, 29(6), 750-754. doi:10.1080/08941920.2015.1076918
- Vega-Macías, D. (2017). Flujos migratorios intrarregionales en Latinoamérica: el caso de los indígenas guatemaltecos en la frontera sur de México. *Revista CIMEXUS*, 12(2), 143-163.
- Warn, E. and S. Adamo. (2014). The impact of climate change: migration and cities in South America. *WMO Bulletin*, 63(2).