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Demographic Pressure as a Factor in Inter-ethnic Conflicts: Evidence from Colombia¹

Lorenza B. Fontana², Cecilie Dyngeland³ and Kyle G. Dexter⁴

Abstract

This article explores the link between demographic pressure and inter-ethnic conflicts. Relying on a mixed-methods approach applied to the paradigmatic case of the Cauca region of Colombia, we argue that demographic pressure can play an important role in explaining a recent wave of conflicts between indigenous, *mestizo* peasant and Afro-Colombian communities. We find that increasing population density within indigenous territories (*resguardos*) increases the probability of conflict, and that this effect is most acute in *resguardos* with limited agricultural area. We also describe the complexities of claims and strategies linked to these conflicts and the impact on social relationships and livelihoods. We advocate for a more holistic understanding of land struggles, one that moves the discussion beyond territorial recognition for indigenous peoples and engages with the multiple challenges ethnic communities are facing, including demographic pressure, land scarcity, environmental fragility and endemic poverty and marginalization.

Keywords: Land access, indigenous rights, demographic pressure, ethnic conflicts, Colombia

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INTRODUCTION

‘The first problem we have is that we have grown a lot in population, and this is generating a very complicated problem of land tenure (...) because, as we say, “the landless ‘indian’ is condemned to disappear”’ (Interview, Tacueyó, November 2015). This comment made during an interview by the indigenous governor of Tacueyó, a small Nasa community nested in the remote mountains of Western Colombia, is paradigmatic of a broader phenomenon experienced by rural communities across the region, and beyond (Fontana 2023). Across Colombia, demographic pressure in the context of economic and political fragilities has pushed rural communities to look for new strategies of social reproduction such as territorial expansion. As reported in a sentence of the Colombian Constitutional Court, in recent years, there have been ‘more than 800 requests for constitution, cadastral study and extension of indigenous *resguardos* that have not yet been resolved’ (C-371/14, 2015).

While research on territorial rights and their implications for the reshaping of ethnic boundaries and environmental conservation has flourished over the past two decades, population trends in the context of indigenous land claims have remained almost completely unexplored. In this article, we aim to bring demographics into debates on indigenous territorialities, rural politics and ethnic conflict. We focus on demographic pressure and resource scarcity as factors in inter-ethnic conflicts, using the Cauca region of Colombia as a case study. We adopt a mixed-methods approach where we combine qualitative evidence collected during a month-long fieldwork in Colombia, with quantitative analysis based on spatial and census population data and an original conflict dataset compiled using reports of inter-ethnic conflicts. We argue that demographic pressure can indeed play an important role in explaining the rise of conflicts between indigenous peoples and other rural communities.

We find that higher demographic pressure in *resguardos*, measured as increasing population density, is linked to higher probability of conflict. This effect is most evident in *resguardos* with limited agricultural area, which points to the mechanism by which increasing population density

generates conflict. The direction of the effect (increasing population density in *resguardos* increasing the likelihood of conflict) is robust to the inclusion of potentially influential covariates, specifically changes in *non-resguardo* population density, level of education and quality of housing, the latter used as an indicator for level of poverty.

This finding confirms the explanation offered by local leaders about how territorial conflicts have been linked to the need to secure more resources in order to face endogenous demographic pressure. More broadly, they shed light on the relevance of demographic pressure in explaining inter-ethnic land conflicts, while they also speak to broader debates on indigenous territorialities and rural and identity politics.

Our results highlight how land security and territorial recognition is not the ‘end of history’ for indigenous peoples and rural communities more broadly. Territorial rights have indeed been an important victory for indigenous peoples across Latin America and beyond. Yet the fact that international, national and local actors have overwhelmingly canalized efforts towards the constitution of indigenous territories has somehow closed the door on in-depth assessments of what happens after territorial recognition is granted and land secured.

We advocate here for the need to move the discussion beyond territorial recognition, and to look more closely at what happens in the post-recognition phase (Fontana 2023). This, we argue, brings into light other issues that rural communities are facing linked to situations of social marginalization and economic deprivation, but also to the multiple fragilities of the human and geographical landscapes they inhabit, and, ultimately, to the unintended consequences that the crystallization of territorial boundaries is having on inter-ethnic relationships and conflict.

We begin by providing an overview of the relatively scarce literature on inter-ethnic conflicts in Latin America, and we offer an explanation for why demographic factors have remained at the margin of this discussion. Using relevant demographic literature, we make the case for the importance of incorporating ethnic demographics into research on territorial conflicts and inter-ethnic relationships. In the third section, we introduce our case study and offer details on methods, datasets

and statistical analysis. We then present our results by relying on both our qualitative and quantitative evidence. In the conclusions, we reflect on the implications of these results for broader debates on indigenous territorialities and land governance.

RURAL DEMOGRAPHICS AND INTER-ETHNIC CONFLICTS

The ‘territorialization of indigeneity’ (Grydehøj and Ou 2017) has been viewed as the *sine qua non* for indigenous rights ever since the International Labour Organisation (ILO) Convention on the Rights of Indigenous Peoples (169) was ratified in 1989. With the inclusion of the ILO Convention in the majority of national constitutions and the emergence of a very vibrant, vocal, and networked indigenous movement, Latin America has led the way in advancing the agenda for the recognition of indigenous rights and land (Yashar 2005, Van Cott 2007, Engle 2010). The majority of studies conducted on indigenous territorialities in this context have concentrated on the role that safeguarding indigenous land plays in providing disadvantaged ethnic communities with chances for self-determination and the protection of their collective and cultural rights (Reed 2003, Gilbert 2016). Indeed, land recognition has empowered indigenous groups who have historically been marginalised. This has boosted democratisation and enhanced the standard of political communities in nations that have historically suffered from enduring injustice and inequality.

The overwhelming focus on the achievements of Latin American indigenous movements has meant that localized issues and inter-communal tensions around the implementation of indigenous rights are generally overlooked. In recent years, scholars have started to pay closer attention to the rise of new local conflicts in the framework of multicultural reforms. However, analyses have tended to focus on grievances towards the state or private companies rather than between different social sectors (Haslam and Tanimoune 2016, Calderón et al. 2013). In addition, the analysis of the triggers of these conflicts has mainly concentrated on issues around natural resource exploitation (particularly hydrocarbons and minerals) and infrastructure development projects (Merino 2015, Torres Wong 2018). Despite the unprecedented importance placed on environmental rights in the framework of

recent constitutional processes in Latin America (Grugel and Fontana 2019), the number of socio-environmental conflicts has escalated across the region in recent years (Bebbington 2011, Siegel 2016), highlighting the impact of a neo-extractivist economic model (Gudynas 2009) on rural communities and livelihoods.

Additional research has examined the effects of redrawing territorial boundaries on nearby communities, explaining conflicts as a function of land formalization (Reyes-García 2016, Fontana 2014b, Rye and Kurniawan 2017). Customary methods of land distribution and boundary determination are rendered obsolete by the land clearance and titling that accompany the establishment of ethnic territorialities, potentially leading to destabilising processes. This also marks the transition from fluid to rigid territorial demarcations, which can in turn trigger new tensions among local communities.

Finally, a growing body of research, often focused on environmental and ecological rather than socio-political questions, have considered the impact of internal migration on land management and forest conservation, with marginal attention to the conflict outcomes of informal land occupation and reterritorialization processes (Coate and Thiel 2010, Mollett 2011, Robles 2016). Most of these studies, however, consider demographic pressure only as exogenous shocks caused by population inflows (Alexiades 2009, Cochrane 2015), while endogenous demographic pressure has received very little consideration even within demographic-focused research.

Overall, these trends represent a move away from historical approaches and an earlier generation of ethnic studies in Latin America. As McSweeney and Arps observe (2005: 3), ‘in contrast to the rich scholarship documenting the traumatic post-contact destruction of indigenous populations in the Latin American tropics, little is known about their contemporary population dynamics’. The reasons behind this change are linked to how indigenous studies as a discipline has evolved over the last few decades, and to the historical processes that informed it. Although ethnic population demographic research was fairly prevalent until the 1980s, new problems about identity, acknowledgment, and cultural survival arose with the emergence of the indigenous movement and

the increased focus on indigenous rights globally (Jackson and Warren 2005). This signalled a rejection of positivist components, including more conventional methods in human geography and anthropology, and a shift towards a post-structuralist epistemological perspective. Demographic inquiry was therefore replaced in mainstream debates by research on participation, representation and positionality. With some exceptions (e.g., Thiede and Gray 2017, McSweeney 2005, McSweeney and Arps 2005), the last three decades have seen relatively few demographic studies of Latin American indigenous and rural people. Notwithstanding the limited research on the topic, some important changes in indigenous demography has been detected, namely a common trajectory of rapid growth (McSweeney and Arps 2005).

Assessing ethnic demographics is a very challenging endeavour, not least for the difficulties of choosing an operational definition of ethnic belonging, as we know from research on the formulation of identity-related questions in national censuses (Perz et al. 2008, Fontana 2014a, Lieberman and Singh 2018). However, the demographic trend reported by demographers is confirmed also by census data. Whether underpinned by high fertility and falling mortality rates or by a renewed sentiment of ethnic belonging, a generalized demographic growth of indigenous populations seems to be an important factor to consider for multiple reasons. As McSweeney and Arps note, this trend gives empirical substance to the ‘return of the Indian’, postulated in the very influential literature on the rise of a transnational indigenous movements since the 1980s (Weare 1996, Albó 1991). More importantly, a more accurate picture of indigenous demographics would be of great value for scholars, policymakers, civil society stakeholders and indigenous peoples themselves in order to better deal with issues such as service provision, socio-economic planning, sustainable environmental management and territorial needs (Kennedy and Perz 2000).

Population increase is a multifaceted phenomenon that involves significant economic aspects and extends beyond simple head counts. As Mitchell notes, ‘population pressure is not an ecological threshold, but an ecological-economic continuum. It refers to the entire relationship between population and resource production, not simply the number of people per hectare’ (1991: 19). As a

complex multi-layered phenomenon, demographic pressure has important implications for local communities. The most obvious is that it can increase the competition over resources, particularly those that are scarce but also strategic for livelihoods. As most indigenous communities are rural, land is often the key resource at stake, for them as well as for their neighbouring non-indigenous population. Research has shown that indigenous population size is the single most important variable that can explain deforestation, depletion of animal populations and extension of cultivated areas (Sirén, 2006, Iwamura et al. 2014). Demographic pressure may also be accelerating the process of integration to the market of indigenous communities (Godoy et al. 2005, Lu 2007), which is reflected in a rapid transition to market-oriented forms of land use (Humphries 1993). This can quickly overturn more sustainable forms of land and forest management observed in indigenous territories (Gray et al 2008, Pichón 1999).

Not only is land the main economic asset for most indigenous peoples, but it also has cultural and religious value and it is often the object of longstanding grievances linked to colonial and post-colonial occupation and displacement. It is therefore not surprising that, in this context, demographic pressure can sharpen issues around social cohesion in different ways. If exogenous demographic growth through migration flows increases social heterogeneity, endogenous population pressure can also contribute to making subtle social differences more relevant and contentious. Indeed, population pressure can change the balance of power between different groups, while at the same time placing greater stress on local social structures and governance. This can in turn affect inter-ethnic relationships and fuel new conflicts, a hypothesis that is at the core of this article.

METHODS

Study Area

The Cauca Department, in south-west Colombia, represents a particularly suitable case to study inter-ethnic land conflicts. It is one of the poorest regions of Colombia⁵ and is also one of the most

⁵ The incidence of poverty in the Cauca is 62%, which is more than double the national average. The household per capita income is 46% of the national average, and 25% of the average in the capital city Bogota (UNDP 2014).

ethnically and culturally diverse.⁶ It hosts the highest percentage of indigenous population in the country, belonging to 8 officially recognized ethnic groups established in 33 of 42 municipalities (CRIC 2020). Most of them⁷ live within the 104 officially constituted *resguardos*. Grounded in the legal framework laid out in the 1991 constitutional reform, these are collective territories under the control of autonomous indigenous governance regimes.

Importantly, Cauca has also been the cradle of the Colombian indigenous movement since the 1970s. The main indigenous organization – the Regional Indigenous Council of the Cauca (Consejo Regional Indígena del Cauca, CRIC) – pursued a political agenda focused on ethnic self-determination and autonomy, in contrast with the mainstream leftist discourse of other social movements, such as peasants and workers (Rappaport 2005), which also have a longstanding presence in the region. Some of the strongest, best organized and vocal peasant movements in the country are based here, including: the Unitary National Federation of Agricultural Trade Unions (Federación Nacional Sindical Unitaria Agropecuaria, FENSUAGRO); the Popular Unity Process of the Colombian Southwest (Proceso de Unidad Popular del Suroccidente Colombiano, PUSOC); and different Associations for the Constitution of Peasant Reserve Areas (Asociaciones Pro-constitución Zona de Reserva Campesina). Afro-Colombian people represents 12% of the departmental population (around 250,000 people), concentrated in the northern areas bordering the Valle del Cauca department. In the 1990s, following the approval of the 1991 Constitution, Afro-Colombian organizations were created in the Cauca, namely the Association of Municipalities of Northern Cauca (Asociación de Municipios del Norte del Cauca, AMUNORCA) and the Association of Community Councils in Northern Cauca (Asociación de Consejos Comunitarios del Norte del Cauca, ACONC).

Indigenous, peasant and Afro-Colombian land is not evenly distributed across the department. As a result of multiple waves of colonization, the fertile central valleys are now mostly inaccessible

⁶ 8 different ethnic groups coexist in the Cauca (yanaconas, ingas, kokonukos, totoroos, paéces or nasa, guambianos, eperara, siapidara) <http://www.sinic.gov.co/SINIC/ColombiaCultural/ColCulturalBusca.aspx?AREID=3&SECID=8&IdDep=19&COLTEM=216>, accessed 13 July 2021), alongside Afro-Colombian population.

⁷ 74% of Cauca indigenous people lives in *resguardos*, according to the 2018 census data (own calculation).

to these populations and in the hands of the agribusiness sector. Indigenous peoples, which were originally settled across the region, were progressively pushed towards the slopes of the Western Cordillera (Eastern Cauca on our map, see Figure 1) (García 2019). From the 1940s, waves of displaced peasants were also relocated to remote regions by the Colombian civil war. Mountain lands have low productivity and are hard to cultivate, which exacerbates a situation of widespread poverty and marginalization of rural communities. According to the CRIC, in 2005 the total amount of land in *resguardos* was 544,901 hectares of which only 191,237 (35%) were productive (CRIC 2007 cited in García 2019). Territorial occupation in this region has also been constrained by the creation of protected areas for conservation and by the presence of guerrilla forces. For both the Revolutionary Armed Forces of Colombia (Fuerzas Armadas Revolucionarias de Colombia, FARC) and the National Liberation Army (Ejército de Liberación Nacional, ELN), the two most important insurgent groups in Colombia, Western Cauca functioned as a corridor for moving troupes and illegal traffic for decades, leading to constant confrontation with the army.

In sum, in the Cauca, a highly diverse population of rural poor inhabits mountainous regions where land scarcity and degradation are real challenges for local livelihoods. Land security and territorial control have therefore been one of the most important claims for indigenous, peasant and Afro-Colombian organizations. Territorial ambitions have gained new visibility over the last two decades, with the multiplication of demands for the constitution of new *resguardos* or the expansion of existing ones. Twenty new *resguardos* were formally established and one was expanded between 2005 and 2012 (with three additional *resguardos* expanded after 2012). Moreover, our fieldwork identified a few cases which are not captured in our dataset, where expansion happened *de facto* through land invasion and displacement of non-indigenous residents. From the 1990s, the Afro-Colombian movement has been trying to secure collective territories through the creation of over 30 Community Councils concentrated in the northern municipalities⁸. Peasant communities have also pursued strategies of territorial consolidation mainly through the demand, or *de facto* constitution, of

⁸ Community Councils are the entities entitled according to the Law 70 of 1993 to collective land deeds.

Peasant Reserve Zones (*Zonas de Reservas Campesinas ZRCs*). Instituted by the Law 160 of 1994, these are areas governed by a mixed system of individual and collective land management under the authority of an elected peasant committee. Their creation was, however, never supported by the central government, which led to the official recognition of very few ZRCs.

There is no doubt that the constitutional and legal reforms ratified in the 1990s opened new opportunities for rural communities to secure their land, particularly through the creation of indigenous *resguardos*. Questions, however, remain on why these reterritorialization processes have been highly contentious in some regions and on the key drivers behind the unprecedented wave of territorial conflicts that swept the Cauca over the past two decades. In particular, the question of whether demographic pressure can exacerbate conflict around new territorial claims has remained completely unexplored.

Qualitative Data

We conducted a month-long fieldwork in Colombia in November 2015, with visits to different locations in the Cauca region. We carried out 22 semi-structured interviews with different stakeholders including indigenous and peasant community leaders and members, local government representatives, and representatives of regional peasant unions and indigenous organizations. Interviews took place in the regional capital Popayan as well as in different locations across two municipalities: Inzá and Toribío (Figure 1). These were identified as regions particularly affected by conflict at the time of fieldwork. Interviews, conducted in Spanish, mainly focused on individual and collective accounts of on-going or recent inter-ethnic conflicts, on their motives and their effects on inter-communal relationships.

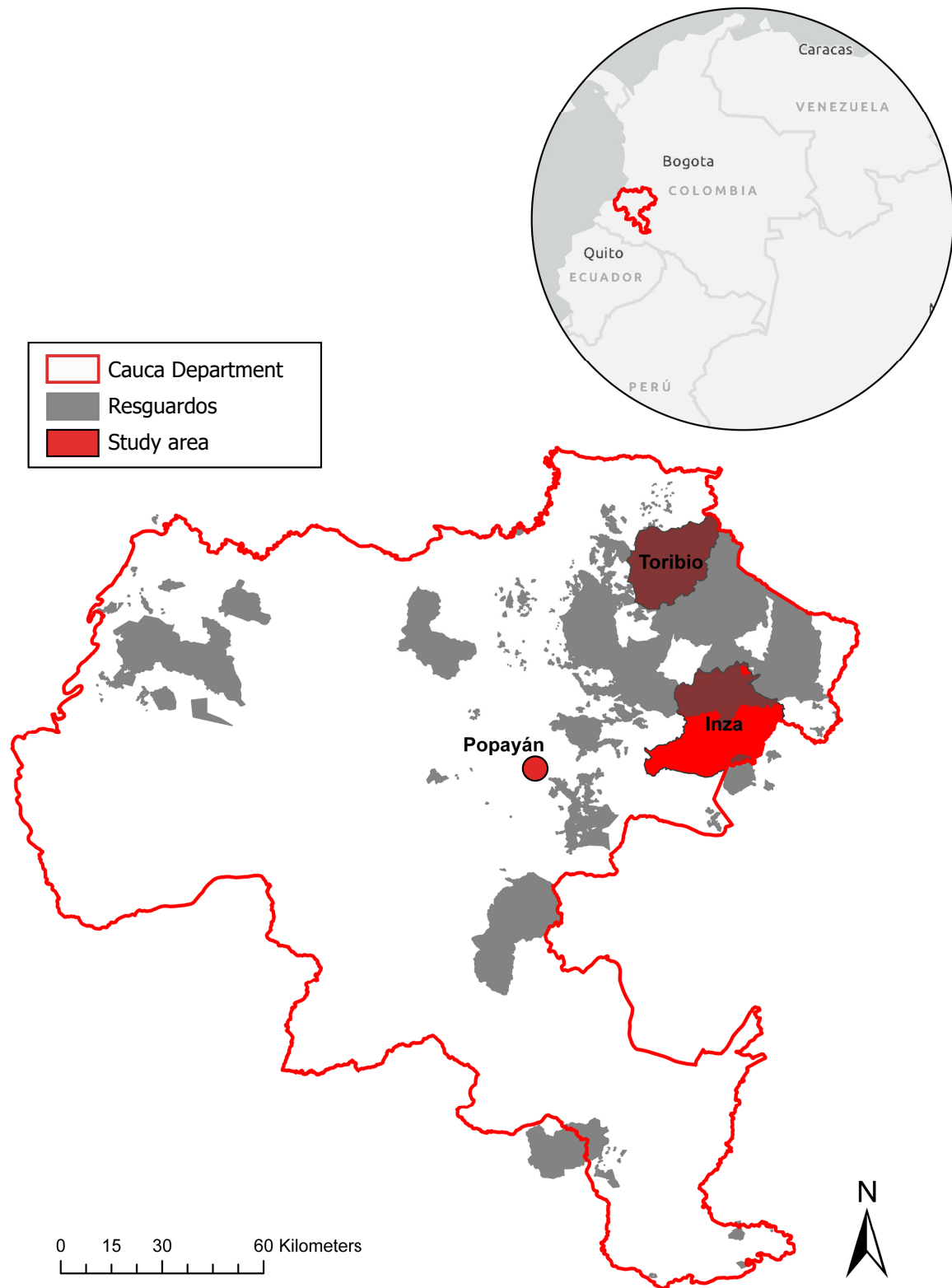


Figure 1: Cauca department highlighting indigenous *resguardo* land and qualitative study areas.

Quantitative Data

For the quantitative analysis we relied on different national datasets to quantify 1) presence or absence of conflict (our dependent variable), 2) demographic pressure (our independent variable), and 3) socio-economic context (covariates). The sample units in our analysis are individual *resguardos*, and we aimed to obtain values from these datasets at the *resguardo* level. Overall, we were able to obtain data from each dataset for 84 *resguardos*. Individual *resguardos* can be restricted to a single municipality or span across multiple municipalities. Where data were acquired at the municipality level (e.g. level of education, housing quality) and a *resguardo* spans multiple municipalities, we averaged values for the pertinent municipalities to derive a single value for each *resguardo*.

1) Data on inter-ethnic conflicts were compiled using the information contained in a report commissioned by the Colombian Institute for Rural Development (INCODER) and produced by the Intercultural Research Centre (CEI) at the Pontificia Universidad Javeriana in Cali (2013). The report is based on a scoping exercise carried out between August 2012 and January 2013 to assess the ‘territorial aspirations’ and conflict situations confronting peasant, indigenous and Afro-Colombian communities. Conflicts were identified through a process of joint evaluation between the CEI-Javeriana team, the INCODER field officers, and ethnic and peasant organizations.

We used the qualitative information in the report to generate an original dataset of inter-ethnic conflicts in the Cauca region and assign conflicts to individual *resguardos*. The percentage of *resguardos* which experienced conflict was similar for the *resguardos* in our sample (31 of 84 with conflict, 36.9%) and for all *reguardos* in the Cauca region (39 of 104 with conflict, 37.5%). Therefore, the subset of *resguardos* that we used in analyses do not seem to be a biased subset with respect to conflict. All conflicts involve at least one indigenous *resguardo* but no *resguardo* is involved in more than one conflict. We therefore use a binary code to define conflict status, i.e. either having experienced conflict (1) or not (0).

2) Population information was gathered from WorldPop (2018)⁹, a 100-meter resolution global gridded dataset with annual population values (TReNDS and SDSN 2020). WorldPop uses gridded population of the world v4 (GPWv4) as their population input, which for Colombia are based on their 2005 population census and population growth rates between 1993 and 2005. In addition, the dataset uses a series of covariates to disaggregate population counts from administrative units into grid cells (e.g. night-time lights, distance to roads, urban and built up settlement areas, and other land cover). It also leaves some residual population in areas not identified as built-up, on the assumption that satellite sensors can overlook some populated areas (TReNDS and SDSN 2020).

We focused on the years 2005 and 2012 as our period of interest. These are the two closest census datapoints to the timeframe for which conflicts were recorded. While gridded population data such as WorldPop have been shown to somewhat underestimate rural populations (TReNDS and SDSN 2020), our decision to use the WorldPop dataset (as opposed to national non-gridded sources which offer projected indigenous population values in inter-census years) is based on the consideration that it incorporates additional information to more accurately quantify populations across space. Also, crucially for this study, it has the advantage of capturing population for 20 *resguardos* which were formally established only after 2005 and thus were not included in the 2005 census. These *resguardos* were operating informally beforehand and could have experienced conflict with neighbouring communities (in fact six of them had), which justifies their inclusion in the analysis.

We overlaid the WorldPop population on *resguardo* and municipality boundaries taken from the National Land Agency (Agencia Nacional de Tierra, ANT, 2018¹⁰), and the Universidad Javeriana

⁹ WorldPop (www.worldpop.org) - School of Geography and Environmental Science, University of Southampton; Department of Geography and Geosciences, University of Louisville; Departement de Geographie, Universite de Namur) and Center for International Earth Science Information Network (CIESIN), Columbia University (2018). Global High Resolution Population Denominators Project - Funded by The Bill and Melinda Gates Foundation (OPP1134076). <https://dx.doi.org/10.5258/SOTON/WP00645>

¹⁰ This data was obtained by submitting a right of petition (*derecho de petición*) to the ANT. The response included a dataset of *resguardos* with dates of constitution, municipality, total area, expansion claim and area of expansion, as well as shapefiles for *resguardo* areas.

de Cali¹¹. We identified 104 *resguardos* within the Cauca¹². These fall across 33 of the department's 42 municipalities.

To capture changes in demographic pressure within the study timeframe, we calculated population density within and outside of *resguardos* (i.e. people per km²) for 2005 and 2012. The 'non-*resguardo* areas' were considered as the 27 municipalities that included *resguardos* or portions of *resguardos*, and population density for these areas was calculated excluding the *resguardos* (both the people in them and their geographic area). We calculated the percentage change (positive or negative) in population density from 2005 to 2012 for both *resguardo* and non-*resguardo* areas as a measure of increasing or decreasing demographic pressure.

As the sub-set of conflicts involving Afro-Colombian communities is very small we decided to include this population within the non-*resguardo* population. We focused on *resguardo* and surrounding non-*resguardo* areas as geographical units, as opposed to indigenous and non-indigenous, for two main reasons: first, these are the geographical units that are more relevant in the conflicts we are studying, i.e. conflicts between *resguardos* and neighbouring communities; second, *resguardos* offer a good geographical proxy for where indigenous population is concentrated compared to non-indigenous population. Indeed, the homogeneity of ethnic composition within *resguardos* is high, with 96% of the Cauca *resguardo* population stating to be indigenous (own calculation based on the 2018 census, DANE 2018).

3) Covariate information was gathered from two sources. First, to capture important dimensions of poverty (Alkire & Santos, 2014), we used measures of housing quality and education coverage per municipality. These are both based on the 2005 census and made available spatially by Stanford University's EarthWorks¹³. Housing quality is a score per municipality, which takes into account construction materials, the number of inhabitants, and the amenities available. It gives an

¹¹ A shapefile of *resguardos* from the Instituto de Estudios Interculturales at the Universidad Javeriana de Cali, were used to include spatial information for 31 Cauca *resguardos* missing from the shapefile from ANT.

¹² We excluded one *resguardo* from the sample since only an insignificant part falls within the Cauca.

¹³ <https://earthworks.stanford.edu/catalog/tufts-colombia-housingquality-05> produced by Instituto Geografico "Agustin Codazzi" in 2005. Accessed on 07.03.22.

indication of the general level of living standard in the municipality. Education coverage expresses the percentage gross education coverage per municipality and is the ratio of students per educational level over the population. These measures were only available at the municipal level, but we still consider them valid since they provide indication of the general poverty level in and around *resguardos*.

Second, we calculated the amount of agricultural land within *resguardos* to account for this key resource for indigenous peoples and surrounding neighbouring communities (Ramirez-Villegas et al. 2012). Based on land cover maps for 2000-2002 from the Institute of Hydrology, Meteorology and Environmental Studies in Colombia (IDEAM 2012) we calculated, using ArcGIS Pro, the area within each *resguardo* that is considered agricultural area by combining the categories crop, pasture, and mixed-agricultural areas. We express the variable as total agricultural area in km².

Statistical Analysis

First, we looked at the quantitative data descriptively to assess whether demographic pressure, expressed as *resguardo* and *non-resguardo* population density, is increasing, as reported by indigenous leaders. Then we used generalised linear models (GLMs) with a binomial response to understand drivers of the occurrence of conflict in *resguardos*. All calculations and analyses were conducted using R version 4.1.0 (R, 2018). The GLMs were run using the GLM function in the base ‘Stats’ package.

Based on our fieldwork, we expected that increasing population density would lead to increased conflict, particularly in *resguardos* with limited area for agriculture and subsistence farming. To test this expectation, we built a statistical model with presence or absence of conflict as a binomial response and percent change in population density (from 2005 to 2012) and agricultural area (in km²) as explanatory variables. In order to account for the fact that the effect of changing population density might vary with agricultural area, we allowed these two variables to interact. To test the significant of each of the explanatory variables in the model, we used likelihood ratio tests

that compared the full model with a model which excluded individual explanatory variables. We also assessed whether the sign and magnitude of the estimated coefficients for the explanatory variables changed when the model included potentially important covariates, specifically average house quality, average education level and percent change in population density in municipalities surrounding the given *resguardo*. Prior to model construction, we log-transformed agricultural area in *resguardos* and mean housing quality in order to improve normality and minimise heteroscedasticity of residuals. Validation of fit of models was done by checking model residuals using R's "DHARMA" package (Hartig, 2019).

RESULTS

We now proceed with the presentation of both qualitative and quantitative evidence and with the discussion of our main results. The former focuses on how inter-ethnic conflicts have been perceived and impacted the life of rural communities, on the strategies that communities put in place to respond to demographic challenges and on the multiple dimensions and claims embedded in these conflicts (mainly land, but also education provision and grievances linked to the civil war). Quantitative analysis is then used to assess the prevalence of the problem and the relationship between demographics and conflict at a broader scale.

Land Claims and Inter-Ethnic Conflicts in The Cauca

The governor of Tacueyó received us in the *cabildo*¹⁴ headquarter, on the first floor of a two-story building among a few dozen brick and adobe houses. We were escorted here from the *resguardo* capital of Toribío by the *guardia indígena*, a local unarmed militia that keep guard of the community and try to deter abuses from both the Colombian army and guerrilla groups. The governor spoke about the challenges of living in a frontier land, heavily affected by the armed conflict and by geographical isolation. But the most burning issue, and the first one he mentioned, was the demographic one.

¹⁴ Traditional forms of indigenous governance and administration.

We have a very complicated problem of land ownership because the territory remains the same, but the population has grown a lot. Ten years ago, a head of household gave his children three, four, five hectares of land (...). This year, only meters have been distributed. Some still have their little piece of land, some (...) barely a small lot to build a house, some not even that (interview, cit.).

He went on to explain that different strategies had been attempted such as encouraging people to migrate by purchasing land in other departments (e.g., the remote Southern Putumayo), but as the governor admitted, 'it hasn't been easy because, according to our worldview, "the 'indian' always wants to be where his navel is" (interview, cit.). Expanding towards the Western Cordillera ridge had become an option only recently, with the retreat of the FARC troops following the ceasefire that preceded the 2016 peace agreements. However, the move would jeopardize the conservation of higher elevation ecosystems (*paramos*) in the area, which are protected as natural reserves.

As with many other indigenous territories, the *cabildo* of Toribío, where Tacueyó is located, is trying to secure additional land through a strategy of expansion towards neighbouring non-indigenous communities in the lower valleys (interview with the president of the Nasa Project Association, Toribío, November 2015). The process, however, has sparked confrontation and resistance. In 2007, a violent conflict was triggered by the conclusion of the negotiations between the *resguardo* and the Ministry of Agriculture, where the *cabildo* asked for more land in compensation for a massacre that killed 21 indigenous people in 1991. The state admitted its responsibilities and agreed to buy over 15 million hectares, without consideration that these lands are occupied by Afro-Colombian communities, who hold ancestral claims over them. The relocation of Nasa families to the area led to violent clashes with Afro-Colombians, which resulted in two fatalities and many injured people. This set a precedent for other rural communities, which also started to escalate their land claims with the unauthorized creation of two ZRCs in the neighbouring municipalities of Caloto and Corinto. The ZRCs are perceived by indigenous leaders as threats to the *resguardos* and to their expansionist aspirations (interview with Toribío governor, cit.).

Although Toribío has been one of Colombia's *resguardos* worst affected by the civil war, inter-ethnic tensions are not unique to this area. Across the Cauca communities have been engaging in new strategies to deal with territorial claims and land scarcity. In most cases, they have been taking advantage of a legal framework that, since the 1990s, offers new opportunities to secure collective deeds. They put forward demands to create new *resguardos* or to extend existing ones based on colonial titles and ancestral occupation claims. In some cases, indigenous *cabildos* also resorted to land invasion and other intimidating tactics to break the opposition of other rural communities.

A dramatic example is the case of San Andrés de Pisimbalá in the Inzá municipality, where communities have been living in a situation of endemic violence since 2010. Demographic pressure is one of the main issues at stake: 'Population is growing, but the territory is the same. So we are tight. The *cabildo* is making projects so that the state can extend us' (interview San Andrés governor, San Andrés, November 2015). Another indigenous authority mentioned a study that estimated projections of land needs:

Between 50 and 60 children are born each year. We have more than a thousand children. In about fifteen years we'll be overpopulated. (...) There is a shortage of land. A study was done and we need about 1,800 hectares. (...) At the moment the *resguardo* has 4,330 hectares, of which 45% is suitable for work. The rest are sacred sites, rocks, reserves. So we are going to need more land (interview, San Andrés, November 2015).

Following the rise of divergences around the local school shifting to an indigenous education regime, the local peasant community began to challenge the indigenous authority by refusing to be counted as residents of the *resguardo*. Peasants claim that they hold property titles (*escritura pública*) over land that was granted to them, or to their ancestors, when they moved to the area – mainly as a result of violent displacements in the 1940s and 1950s. Indigenous leaders consider those property titles invalid since they were not signed by indigenous authorities at the time.

In an effort to settle the dispute, the *cabildo* offered to buy out peasant properties. The refusal of some families to sell generated resentment among indigenous residents, who began to occupy peasant estates (*fincas*) and cultivated fields. In certain cases, houses and crops were set on fire. According to a peasant leader, between 2010 and 2015, 27 claims against the *cabildo* were filed for land invasion, personal injury, damage to third party property, threats, kidnapping and murder (interview, San Andrés, November 2015). Peasants consider these actions part of a strategy to intimidate and force them to leave ‘to start recovering [indigenous] territory’ (interview with peasant leader, San Andrés, November 2015). If territorial recovery is understood by indigenous peoples as a legitimate right based on their history and culture, similar feelings and arguments are put forward by peasant dwellers as well.

As those indigenous peoples who have lived on the territory for more than 400 years, we have also lived here for more than 100 years. Our ancestors came here many years ago (...). We also have ancestry; we have roots where we live (interview with peasant leader, San Andrés, November 2015).

Peasants’ attachment to their territory and their reluctance to leave, as well as their need to find some alternative form of governance to the *cabildo*, motivated the declaration of a de facto ZRC around the town of San Andrés. In the peasant union’s view, the creation of a ZRC implies that peasants are also ‘recognized and can continue to live here’ under their own authority (interview with peasant leader, cit.).

Land disputes have become widespread across the Inzá territory, and they have been disrupting what was for decades a relatively peaceful inter-ethnic coexistence, where communities had a rather fluid management of territorial boundaries (Rappaport 2005). Here, five out of six indigenous *resguardos* recently put forward demands for extension, while two more colonial *resguardos* are in the process of clarification. Demographic trends can help explain why so many indigenous communities have jumped at the opportunities offered by the new legal framework to

secure more land. In the next section, we consider whether the cases we just presented are manifestations of a broader phenomenon.

Demographic Pressure as a Factor in Inter-Ethnic Conflict

Growing Demographic Pressure

We began with an assessment of whether population is indeed growing, as reported by indigenous leaders, particularly in *resguardo* areas (Table 1).

Table 1. Average and overall *resguardo* and *non resguardo* population and population densities for the Cauca between 2005 and 2012, and average covariate values.

| Variable name | <i>Resguardo</i> (n = 84) | | | <i>Non-resguardo</i> (n = 27) | | |
|---|---------------------------|-------|--------------------|-------------------------------|--------|--------------------|
| | Mean | SD | Total ^a | Mean | SD | Total ^a |
| <i>Population</i> | | | | | | |
| Population 2005 | 1,473 | 2,158 | 123,735 | 25,332 | 40,330 | 683,973 |
| Population 2012 | 1,811 | 2,781 | 152,103 | 30,067 | 48,732 | 811,802 |
| Population change (people) | 338 | 792 | 28,369 | 4,734 | 8,652 | 127,830 |
| Population change (%) | 21 | 32 | 23 | 17 | 13 | 19 |
| <i>Population density</i> | | | | | | |
| Population density 2005 (people/km ²) | 37 | 34 | 26 | 76 | 93 | 38 |
| Population density 2012 (people/km ²) | 41 | 31 | 32 | 90 | 113 | 45 |
| Population density change (people/km ²) | 4 | 15 | 6 | 14 | 22 | 7 |
| Population density change (%) | 21 | 32 | 23 | 17 | 13 | 19 |
| <i>Covariates</i> | | | | | | |
| Agricultural area 2000-2002 (km ²) | 9 | 14 | 756 | 214 | 195 | 5,770 |
| | | | Mean ^b | SD ^b | | |
| Gross education coverage 2005 (%) | | | 88 | 15 | | |
| Housing quality 2005 (score) | | | 6 | 2 | | |

^aTotal population values are the sum of *resguardo* or *non-resguardo* populations across the Cauca. The total population density values were calculated by summing all *resguardo* or *non-resguardo* populations and area, and then calculating their distinct population density values for the Cauca overall.

^bThese two covariates are only available at municipal level and we report means and standard deviation across municipalities. Raw values were not available to calculate total values for the Cauca overall.

We find that in the Cauca the overall *resguardo* population has increased by ~28,000 between 2005 and 2012, equivalent to a 23% increase. The population outside *resguardo* areas has increased by ~128,000 people, equivalent to 19% overall. These values are much higher than for the Colombian population overall, which had an increase of 8.4% during the same period.¹⁵ Population densities are on average twice as high in *non-resguardo* compared to *resguardo* areas (76 and 90 people per km² in 2005 and 2012 in *non-resguardo* areas compared to 37 and 41 people per km² in 2005 and 2012 in *resguardo* areas). *Resguardos* in the Cauca on average have a very similar population density to Colombia overall (38 people per km² in 2007¹⁶); but this is rather high compared to several other indigenous-inhabited regions (e.g. the Amazon region has 3 people per km², Orinoquia has 3-28 people per km², or the Andes region excluding larger cities and urban areas has 28 people per km², García, 2019). On average, the relative increase in population density is fairly consistent across the Cauca (17% in *non-resguardo* areas compared to 21% in *resguardos*) (Table 1). However, if we only consider those areas that have had an increase in population density (73% of *resguardos* and 93% of *non-resguardo* areas), we find that those *resguardos* have had a much higher relative increase in population density, of 34% in *resguardo* areas, compared to 18% in *non-resguardo* areas.

Table 1 also reveals that *resguardos* have far less agricultural land available compared to *non-resguardo* areas, with 756 km² compared to 5,770 km² respectively. Taken together, these data seem

¹⁵ World Bank Data based on census data 2005 and 2012 <https://data.worldbank.org/indicator/SP.POP.TOTL?end=2012&locations=CO&start=2005>. Accessed on 19.04.2022.

¹⁶ World Bank data based on population in 2007 <https://data.worldbank.org/indicator/EN.POP.DNST?locations=CO> Accessed on 19.04.2022.

to indicate that demographic pressure has been particularly high in *resguardos*, compared to neighbouring areas. A visual presentation of population density in 2005 and conflicts further supports these data (Figure 2). The map shows that the majority of conflicts are found in areas within or adjacent to areas with high population density (within *resguardo*, *non resguardo* or both).

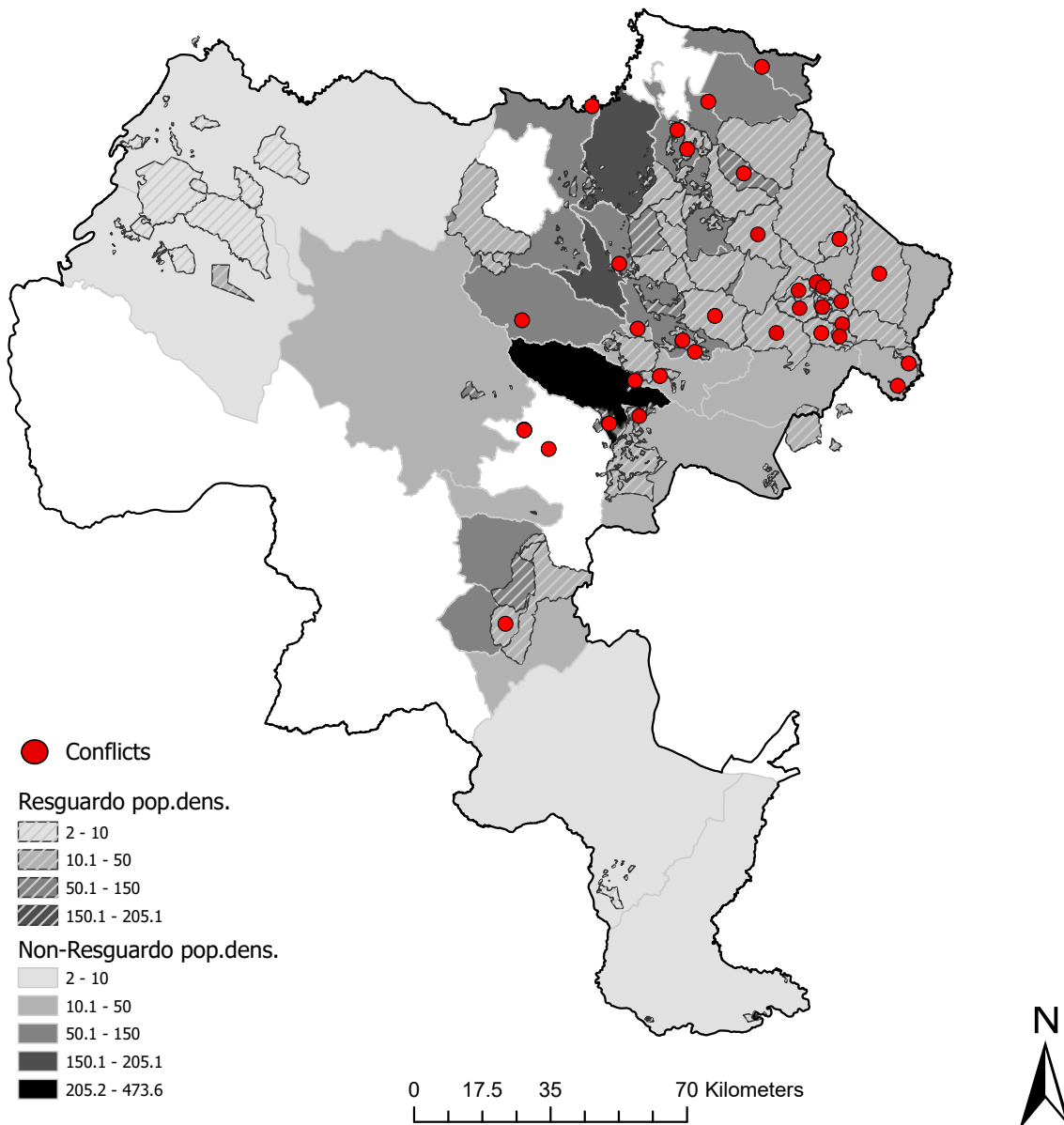


Figure 1 Map of conflict and population density 2005 in *resguardo* and *non resguardo* areas in the Cauca department.

Population Density and Conflict

We now turn to testing the relationships between changing population density, agricultural area and conflict. A generalised linear model (GLM) that included change in population density in *resguardos*, agricultural area in *reguardos* and their interaction performed significantly better than models that excluded these individual variables. Increasing population density significantly increased the probability of a *resguardo* experiencing conflict (parameter estimate: 0.025 ± 0.014 standard error (SE); $p = 0.047$ from likelihood ratio (LR) test that assessed whether a model without this variable was significantly worse). Increasing agricultural area also increased the probability of a *resguardo* experiencing conflict (parameter estimate: 0.63 ± 0.27 SE; $p = 0.023$ from LR test). The interaction term was significant and negative (parameter estimate: -0.02 ± 0.01 SE; $p = 0.016$ from LR test), indicating that the positive effect of increasing population density declined within increasing agricultural area. In fact, increasing population density was actually related with reduced probabilities of conflict in the largest agricultural areas.

In order to better understand these results, we find it useful to present some simple summary statistics (Table 2). In *resguardos* that have smaller areas for agriculture (the 42 *resguardos* below the median agricultural area of 3.5 km^2), 12 of the 27 *resguardos* with increasing populations densities experienced a conflict (44%), while only 2 of the 15 *resguardos* with flat or decreasing population density experienced a conflict (13%). Thus, in *resguardos* with limited land for agriculture, having an increased population density more than tripled the probability of experiencing a conflict. In the *resguardos* that have larger areas for agriculture (the 42 above the mean agricultural area of 3.5 km^2 , up to 92.4 km^2), 12 of the 34 that have increasing population density experienced a conflict (35%), while 5 of the 8 *resguardos* that have flat or decreasing population density experienced a conflict (63%). The latter result may be due to small sample size and the fact that large *resguardos* seem to attract more conflict in general.

Table 2. Proportion (%) that have experienced conflict depending on size of agricultural area, and change in population density, with parenthesis showing number of *resguardos*, and grey highlights the combinations where the biggest differences are found.

| | Small agricultural area (42) | High agricultural area (42) | Total (84) |
|----------------------------------|---------------------------------|--------------------------------|-------------|
| Flat/decreasing pop.density (23) | 13 % (2) | 63% (5) | 30% (7) |
| Increasing pop.density (61) | 44% (12) | 35% (12) | 39% (24) |
| Total (84) | 33% (14) | 40% (17) | |

The sign and magnitude of the explanatory variables was consistent when covariates were included in the model (0.017 for change in *resguardo* population density, 0.55 for *resguardo* agricultural area, and -0.02 for their interaction), indicating that our results are robust to controlling for average level of poverty in and around *resguardos* and changes in population density in surrounding *non-resguardo* areas. Our assessment of models with the DHARMA R package suite of tools indicated that our models were not overdispersed, had normally and uniformly distributed residuals and did not include outliers.

DISCUSSION AND CONCLUSIONS

Our findings highlight the understudied link between demographic pressure and inter-ethnic conflicts. Reports from local leaders emphasize the urgency to secure additional land, particularly agricultural land, in the face of rapid population growth. Quantitative data offer evidence supporting people's perception that the population is rapidly growing, particularly within *resguardo* areas. In *resguardos* with limited land for agriculture, the probability of experiencing conflict is more than three times as high in *resguardos* that have increasing population density as compared to *resguardos* with flat or

decreasing population density. Qualitative evidence presented provides additional insights on the social dynamics behind inter-ethnic disputes and the complexity linked to their intertwined dimensions, which are relevant elements to further understand the nature and phenomenology of these conflicts. Most of these conflicts revolves around land claims, and particularly the efforts of rural communities to secure land access or expand territorial control via *resguardo* constitution or expansion and recognition of ZRCs and Afro-Colombian Community Councils. These claims are often linked, as changes in one party's territorial ambitions often trigger a reaction from neighbouring communities in an attempt to push back or consolidate their own territorial boundaries. However, other claims and issues interfere in these disputes, adding to the complexity of inter-ethnic land conflicts. Our cases illustrate, for example, how education provision can seed new tensions when they become tied to ethnic politics; or how past grievances linked to the civil war can trigger inter-communal tensions if due diligence is not applied to the compensation process.

Our data on demographic changes among indigenous population in the Cauca region mirror broader trends among indigenous peoples across Latin America, which points to the fact that communities might be experiencing similar issues with demographic pressure, resource scarcity and rise of inter-ethnic tensions elsewhere in the region. The Michoacán state in Mexico is just one example of a scenario very similar to the one of Cauca, where, in an effort to resolve hundreds of land disputes following the implementation of a policy for the individualisation of peasant and communal land (*ejido*), the government gave priority to communities self-identifying as native people (*pueblos originarios*) (Vásquez León 2016). Similar inter-ethnic conflicts over land have been described also in Bolivia and Peru (Fontana 2014a and 2019).

The relevance of our findings goes beyond the specific case of Cauca. It points to the fact that more attention should be placed on understanding what lies behind ethnic territorial claims. Demographic changes, for instance, have not been high on the radar of researchers and governmental agencies, which have tended to interpret those claims as an expression of cultural and collective rights. Although the strong ties of indigenous, black and peasant communities with their territories is

undoubtable and is certainly a motivation beyond their claims, problems faced by rural communities require a more holistic approach, both in their conceptualization as well as in the strategies to address them. We showed here that demographic factors can play an important role in motivating territorial claims which might in turn fuel new inter-ethnic tensions. This speaks to the need to move beyond a conceptualization of territorial consolidation as ‘the end of history’ for indigenous communities. The recognition of the importance of land control has represented an important victory for the Latin American and global indigenous movements. However, indigenous peoples as well as other communities of rural poor are confronted with multiple challenges linked to their conditions of marginalization and poverty. State and international responses should therefore consider a wide range of interventions designed around dialogue and collaboration with local communities, including, for example, economic initiatives to improve land productivity or other sustainable enterprises, which would in turn contribute to reducing social and economic anxiety and containing social tensions.

Finally, we want to acknowledge that we have now moved only initial steps towards the understanding of inter-ethnic conflicts and their link with demographic factors. Both more complex statistical models as well as additional field research and data gathering are needed in order to better understand the multi-layered nature of these conflicts. We would see a value in expanding the scope of the analysis to more areas and countries, increasing the sample size and improving the generalisability of results, as well as to more closely focus on the impact of population dynamics particularly outside resguardo areas through both qualitative and quantitative inquiries.

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