

The Gender-Energy Nexus

Evidence and Gaps in Colombia's Coal Transition



July 2026

Juan Camilo Betancur Jaramillo, Daniela Maestre-Másmela, Elisa Aroncu

Just Energy Transition in Coal Regions



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The gender-energy nexus: Evidence and Gaps in Colombia's Coal Transition

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Editors: Sibel Raquel Ersoy and Maria Cecilia Bonnet (Wuppertal Institute)

Written by: Juan Camilo Betancur Jaramillo, Daniela Maestre-Másmela, Elisa Arond

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Stockholm Environment Institute Headquarters

Virkesvägen 1a, 4tr, 120 30
Stockholm, Sweden

Website: <https://www.sei.org/>
LinkedIn: <https://www.linkedin.com/company/stockholm-environment-institute/>

Stockholm Environment Institute Latin America Center

Calle 71, #11-10, Edificio Corecol, 9no piso, Bogotá, Colombia
Website: <https://www.sei.org/centres/latin-america/>
LinkedIn: <https://www.linkedin.com/company/sei-latinoamerica/>



Executive Summary

Colombia's Cesar department is one of Latin America's most coal-dependent regions, with mining representing up to 43% of departmental income and shaping its social and economic fabric for decades (Arond et al., 2024; Botello et al., 2021; Cardoso, 2015; Holguín, 2020; Maestre-Másmela & Vega-Araújo, 2025; Mohr, 2021; Moor & van de Sandt, 2014; Ulloa, 2016; Vargas Guevara et al., 2022; Vega-Araújo et al., 2023, 2024, 2025). As Colombia navigates an energy transition away from coal, driven by global climate commitments and the sudden closure of major mining operations, the costs of that transition are not being distributed equally (Arond et al., 2024; Corral et al., 2021). This report examines the gender and intersectional dimensions of coal mining and phase-out in Cesar's Corridor for Life, drawing on a literature review, stakeholder mapping, and fourteen interviews with community leaders, NGO members, and government representatives across five municipalities.

The findings reveal that coal mining produces and reinforces deeply entrenched patriarchal structures that shape who works (and in what types of labour), who participates in decision-making, and who bears the costs of transition. Women were confined to informal, precarious, feminised labour surrounding mining, while LGBTIQ+ people were excluded from formal employment through discriminatory hiring, gender policing, and the criminalisation of claiming rights. Armed conflict compounded these exclusions, exposing women and LGBTIQ+ defenders to serious risks for their advocacy.

This report identifies interconnected policy and research priorities for truly just transitions away from coal. Policy priorities include extending focused support to informal and feminised economies, embedding intersectional analysis in mine closure processes and regulation, strengthening protection mechanisms for human rights defenders, and adopting a long-delayed Public Policy for Women. Research priorities include developing frameworks for understanding how energy transitions affect LGBTIQ+ people, operationalising gender and intersectionality beyond binary gender frameworks, and generating longitudinal evidence on post-closure impacts.

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1.0 Introduction

1.1 The context

Coal is the second largest export of Colombia, after oil (Arond et al., 2024). Colombia holds some of the largest coal reserves in Latin America, with large-scale operations concentrated primarily in the Caribbean region, most notably La Guajira and El Cesar departments. The extractivist model has long been central to Colombia's development agenda, with mining revenues contributing significantly to national GDP and regional economies, particularly in peripheral departments with limited alternative economic activity. According to the National Mining Agency of Colombia, 92% of coal production is extracted in open-pit mining areas in Cesar and La Guajira; with more than 58 million tons of coal production in Cesar by 2019 (National Mining Agency, 2022).

However, this has resulted in the growing misalignment between governments' planned fossil fuel production — including coal — and the production levels that would be consistent with limiting global warming to 1.5°C or 2°C, as set in global climate agreements. Existing evidence makes clear that closing this “production gap” requires not only reducing fossil fuel expansion but actively transitioning existing coal-dependent economies and regions toward sustainable alternatives (Stockholm Environment Institute et al., 2025) .

While major coal mining operations continue in the Cesar department, there are initial signs of a transition away from coal. This transition has been complex and requires addressing not only the economic and social impacts of coal mine closures, but also the ongoing and legacy socio-environmental impacts from decades of mining. Colombia yet holds some of the largest coal reserves in Latin America. The government must guarantee effective mine closure regulation, establishing enforceable standards to guarantee socio-environmental safeguards. Mine closure regulation is based on a 2001 mining code, highlighting a persistent gap in Colombian regulation, despite some sector-specific resolutions and decrees that provide a general legal framework for closure (Ospina Betancur & Molina Escobar, 2013). But this legal framework fails to address all the social, economic, environmental and technical challenges of mine closure. The scale of these challenges is quite dramatic at the regional level, as these large multinational operations have provided economic livelihoods to workers and their families in regions where the state has historically been absent, and there is also a legacy of armed conflict and displacement. The transition process should not deepen existing tensions, especially for the people who have historically borne the brunt of socio-environmental impacts linked to large-scale extraction. In this context, some face compounded vulnerabilities as the impact of mining and the transition also bear significant gendered impacts.

Several structural changes are needed for an energy transition to be feasible and just. This means the benefits of transition processes must be distributed equally to all, from a gender lens. This report attempts to address these concerns. First, we will describe the Cesar study area within the research methods and design. Next, we present a literature review focusing on the gender-energy nexus in Cesar. This review includes understandings of gender and intersectionality in coal mining and phase-out research. The results section is structured around our research questions related to gender roles and their interaction with energy transition processes. We mapped the actors involved in just energy transition (JETs) research and action in Cesar to unpack the role of gender in JETs' decision-making. We focused on women and LGBTIQ+ people, as well as the differential impact of coal mining and phase-out.

1.2 Research questions

Our research was structured around the following two questions and their respective sub-questions:

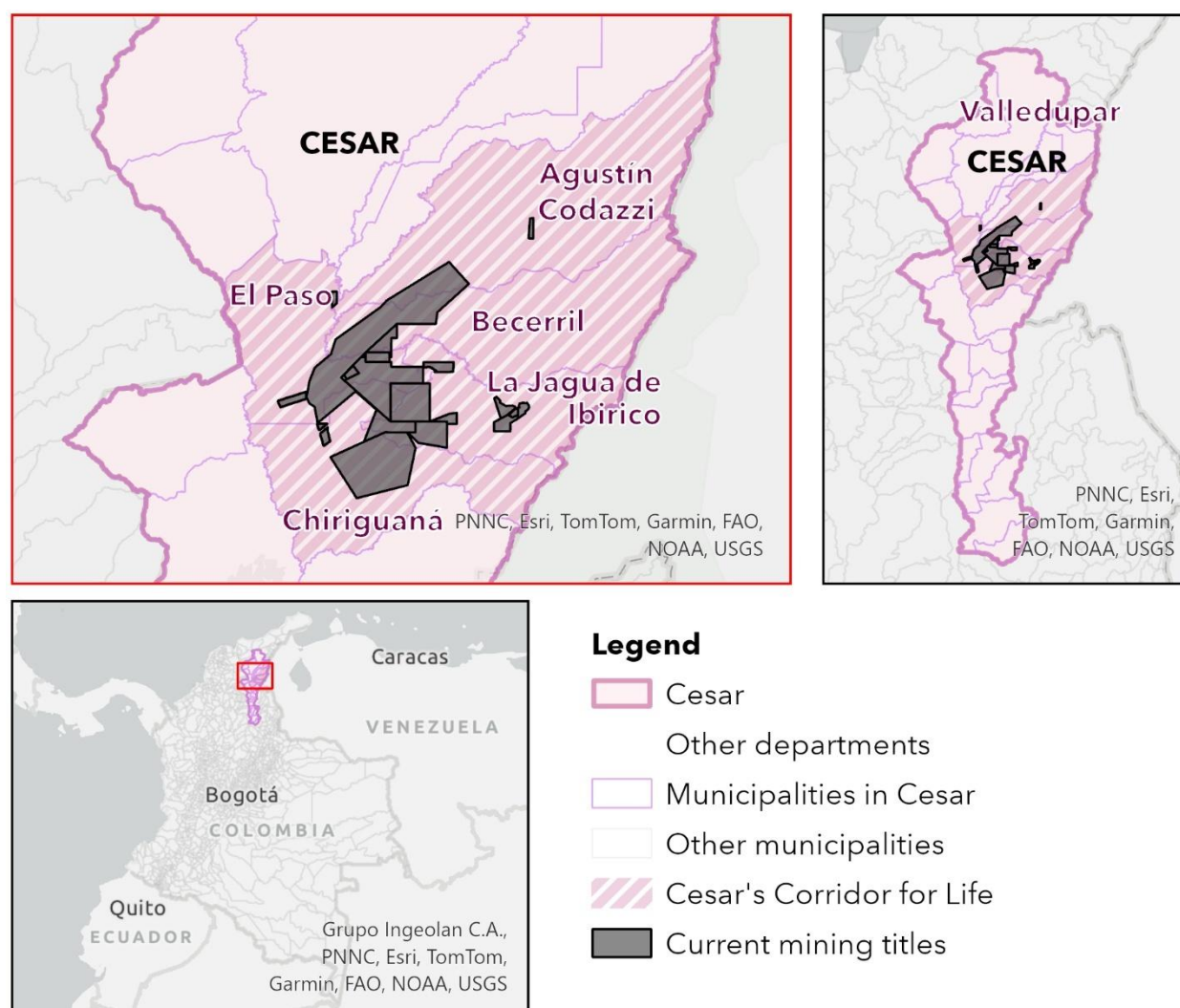
- How do gender roles and norms impact energy transition decision-making?
 - How do cultural norms and gender roles shape women's and men's participation and engagement in coal economies?
 - What is the role of women, men, and marginalized groups in decision-making processes during mine closures and energy transitions?
- How do coal mine closures affect labour and migration patterns?
 - How do these differentially affect women, men, youth, and other marginalized groups, and their livelihood opportunities?
 - What are adaptation measures for these groups?

2.0 Methods

2.1 Study area

This study focuses on Cesar's Corridor for Life. Formerly known as Cesar's Mining Corridor, this region comprises five municipalities in central Cesar, historically dependent on coal mining: Agustín Codazzi, Becerril, Chiriguaná, El Paso, and La Jagua de Ibirico (Figure 1). Within these municipalities, there are 20 current mining titles held by national and international mining companies such as Drummond, Glencore, Coalcorp, Norcarbón, and Goldman Sachs (Colombia's National Mining Agency, n.d.; Quintero, 2011).

Figure 1: Study area.



Cesar has historically been one of the core coal-producing departments in Colombia, and its economy depends on royalties from mining activities. Coal mining has transformed approximately 13,1% of Cesar's Corridor for Life (~74330 Ha), and there are exploration and construction titles in process for 2543 and 213 Ha, respectively (calculated using geospatial layers by Colombia's National Mining Agency, n.d.). Cesar's operating mines have produced between 40 and 50% of Colombian coal exports over the 2023-2024 period (ODT Cesar, 2025). Approximately 30% of public budgets in Cesar in 2019 were supported by mining royalties (Cesore, 2021). Prodeco, a subsidiary of the multinational Glencore, was the second-leading coal company in the department of Cesar, after Drummond, having more than 7,500 direct and indirect jobs (Furnaro & Yanguas Parra, 2022). Coal mining also represents a significant part of the regional economy in Cesar, contributing nearly 43% of the department's GDP (Arond et al., 2024) – and even more significant in the Corridor for Life's municipalities, reaching 79% in Becerril in 2021. Prodeco's sudden suspension of its mining operations in 2020 and subsequent relinquishment of its mining titles thus posed a massive, multifaceted challenge for the department.

. This dependency on coal, and the abrupt economic shock of Prodeco's departure has resulted in both environmental and socio-economic impacts in the region. These include environmental liabilities, air pollution and water contamination, but also impacts on the local economy: mass, sudden unemployment; economic shocks, job losses, informality, conflict, violence, and erosion of the social fabric. Even more, mining areas have been affected by armed conflict in Cesar and the imbrication with paramilitary groups (Corral et al., 2021). In Colombia, an estimated 15% of environmental conflicts are related to coal mining as mining concessions overlap with forest areas (Cardoso, 2015). Cesar's ecosystems and biodiversity are divided into six natural regions, where tropical dry forests have been the most affected by open-pit coal mining, which has also affected regional agriculture (Cardoso, 2015).

2.2 Research design

The research design builds upon previous and ongoing work and engagement from SEI in Cesar and also more broadly in Colombia and beyond, on just energy transitions (JETs) (Arond et al., 2024; Maestre-Másmela & Vega-Araújo, 2025; Vega-Araújo et al., 2023, 2024, 2025) and broader climate research and engagement (Arond & Strambo, 2025; Rebermark et al., 2026). The first step in our research was to map the existing knowledge base on gender and coal phase-out in Cesar and Colombia to identify gaps. This resulted in a literature review on gender and coal mining and phase-out in Cesar and Colombia, developed from a selection of 22 related research documents.

The documents were identified via Google Scholar, using two Boolean queries (English and Spanish) composed of keywords related to gender, intersectionality, and social groups; coal mining, phase-out, and JETs; and impacts of mining (Annex 1). Our inclusion criteria were two

obligatory criteria: 1) the document refers to coal mining or phase-out; 2) the document refers to gender roles or gender equity; and three optional criteria: 3) the document refers to local labour systems in Cesar; 4) the document refers to migration processes in Cesar; and 5) the document refers to participation in Cesar. The selected documents were systematised in a spreadsheet, where we recorded notes for each of the five categories that structured the inclusion criteria.

The Google Scholar search was complemented by a Google Search to collect grey literature, as well as purposive searches and expert recommendations gathered through stakeholder engagement. The grey literature search identified 27 reports. At the same time, we mapped actors engaged with the project's topics in Cesar to identify institutions, universities, international cooperation actors, and NGOs involved. Beyond identifying actors, our purpose was to avoid duplicating efforts and stakeholder fatigue, as well as establish a collaborative network to coordinate work. This was later complemented by an alignment and planning workshop, held in Bogotá, with participation by Bogotá and Cesar-based organizations, in which we mapped current and future endeavours of public institutions, NGOs, universities, and cooperation actors, and identified potential collaboration pathways. The list of organisations that participated in the alignment and planning workshop is available in Annex 2.

The project's fieldwork was developed over three field trips to Cesar between 2025 and 2026. During the visits, we engaged with NGOs such as Programa de Desarrollo y Paz del Cesar (Peace and Development Programme of Cesar, PDP), Tierra Digna, and CREER, participating and collaborating in field work and other research and engagement activities.

We interviewed 14 community leaders and employees of NGOs and government institutions in Agustín Codazzi, Becerril, Chiriguaná, El Paso, and La Jagua de Ibirico, selected by convenience and theoretical sampling. The interviews were coded in NVivo in two stages. First, we implemented an open coding (Creswell, 2007) approach to the interviews, identifying the major categories of information related to gender and coal mining present within the participants' answers. After open coding, we refined the codes and identified connections among them based on code co-occurrence and the researchers' interpretive notes during the analysis. This axial coding strategy (Creswell, 2007) produced two code diagrams that enabled us to interpret the Gender-Energy Nexus in light of our research questions.

Finally, during the project, we engaged in three Global Networking Activities led by the Wuppertal Institute. These exchanges served not only as dissemination spaces but as informal validation exercises, allowing us to contrast our emerging analytical categories with findings from comparable extractive contexts undergoing coal phase-out.

3.0 Results

3.1 Literature review

There is consensus around the idea that, despite the wide recognition that gender analyses need to be integrated into just energy transitions – including coal phase-out – there is limited knowledge production regarding the interactions between gender, gender relations, and coal production, consumption, and phase-out (Bermúdez Rico et al., 2012, 2014; Mohr, 2021; Ulloa, 2016).

Although some studies in the knowledge base we collected describe interactions between gender and coal mining and phase-out, more research is needed to challenge universal gender assumptions with situated and nuanced knowledge regarding gender relations, practices, and social expectations, their effects on decision-making, and how they are affected by mining.

In terms of intersectionality, for the Colombian context, it is critical to understand the interconnections between mining, the Colombian Armed Conflict, the history of ethnic discrimination towards Indigenous and Black communities, rural-urban territorial inequity, and economic policies that incentivise extractivism.

3.1.1 Gender and intersectionality in coal mining and phase-out research

Documents included in the literature review do not provide analytical frameworks to incorporate intersectionality into analyses of the coal mining and phase-out impacts. Often, intersectionality manifests as statements of greater difficulties or different perspectives that arise from women of specific ethnic groups, physical conditions or territorial backgrounds. In this review, we did not find quantitative approaches to intersectionality.

Also, the included documents generally employ a binary approach to gender – that is, understanding gender as a set of relations that shape men's and women's gender roles. This outlines a research gap around other gender identities and the interaction between coal mining and LGBTIQ+ people. Understanding the role that LGBTIQ+ discrimination and resistance play in mining economies and extractivism is key to supporting LGBTIQ+ rights and to fighting all forms of discrimination.

Latin American feminisms offer situated alternatives to Western gender frameworks that overlook cultural variation and local epistemologies. Territorial Feminisms and Indigenous Feminisms, for instance, confront coloniality, capitalism, and the hierarchical binaries such as men-women and human-nature (Bermúdez Rico et al., 2012; Ulloa, 2016, 2020; Vargas Guevara et al., 2022). Emerging alongside movements centred on ethnicity, decoloniality, and resistance

to extractivism, these feminisms advance theories and practices that conceive gender, life, and territory as interwoven continuums.

Latin American and other Global South feminisms offer a conceptual framework for understanding the nuances and variations of the effects coal phase-out has on local communities, both at the community and individual levels. Compound discrimination sets different starting points and vulnerabilities for individuals, based on how different aspects tied to social status interact with each other. Breaking hierarchical binaries and understanding people and territories as continuums help comprehend the systemic connections that sustain extractivist logics, as well as how their dismantling could open possibilities for more just, inclusive, and sustainable transitions.

3.1.2 Interactions between gender roles and energy transition processes

How do cultural norms and gender roles shape women's and men's participation and engagement in coal economies?

The literature on the gender-energy nexus in coal mining and phase-out shows that cultural norms and gender roles influence the participation of women and men in coal-based economies. In many territories, extractive industries are embedded in patriarchal and essentialist systems that assign productive, remunerated work to men and reproductive work to women, despite the existence of women workers in the industry.

In multiple contexts, the mining and coal sectors have been constructed and perceived as masculine spaces. Men tend to occupy decision-making and perform in- and out-mine technical work (Bermúdez Rico et al., 2012, 2014; González Colonia, 2017; Lahiri-Dutt, 2022; Mohr, 2021; Pasaribu & Lahiri-Dutt, 2022; Sikweyiya et al., 2022; Ulloa, 2016; Vargas Guevara et al., 2022; Villamizar & Jerez, 2020), while women are often overly represented in informal, “white- and pink-collar positions”, including office and care services. This gendered division of labour limits women's access to better-paid or more secure jobs and reproduces occupational segregation, discouraging women's participation in other types of jobs, such as mechanics (Villamizar & Jerez, 2020). Furthermore, men's dominance in mining is not without cost; those working in mining operations are disproportionately exposed to occupational hazards and job-related illnesses.

Beyond replicating the traditional gender roles, coal economies actively reshape them. Literature has described the intensification of culturally associated gender practices and expectations related to men and women. For instance, some scholars have described the emergence of “hypermasculinities” (Sikweyiya et al., 2022), a deepening of the masculine as provider, gender role; and “petromasculinities” (Daggett, 2018, 2021), a form of masculinity anchored in the value of fossil fuels, the white patriarchal rule, and authoritarian politics.

Similarly, men's roles are shaped by the socio-economic transformations of extractive economies, where traditional masculinities tied to labour in mines or oil fields are disrupted. These disruptions can generate anxieties and reconfigurations of identity, influencing how men position themselves in community decision-making structures (Verweijen et al., 2024).

The case of the Colombian department of Cesar offers a concrete reflection of the transformation of gender roles. Vargas Guevara et al. (2022) have described that before mining, local agrarian systems in Cesar had a less clear gender division of labour. The effect of coal mining in Cesar on masculinities is described as a factor that has increased violence, including femicides and sexual exploitation (Vargas Guevara et al., 2022). On the other hand, for women, gender role reinforcement due to mining and coal has meant an increase in the burden of reproductive work, due to taking care of diseased children or other family members whose health status has been affected by mining (Lahiri-Dutt, 2022; Vargas Guevara et al., 2022).

However, as gender relations are embedded in broader social, political, and cultural contexts, the case of Cesar presents nuances in specifically how these gender relations are transformed and imbricated with power and through what mechanisms. While local economic dynamics and employment in particular play a critical role in gender role transformation, the literature reveals that other dimensions, such as participation, the Colombian Armed Conflict, and migration, are crucial as well. Nonetheless, there is a literature and evidence gap regarding the influence of coal mining and phase-out on LGBTQI+ life experiences and gender roles.

Finally, some authors highlight the interaction of gender with other layers of marginalisation, such as the “double or triple layers of marginalisation” that rural women in Cesar and other coal mining territories experience as victims of armed conflicts (Bermúdez Rico et al., 2012), or the implicit or explicit racism experienced mainly by women (especially Indigenous or Afrodescendent) who express or apply traditional knowledge and practices – e.g., traditional healer women. There is yet a clear gap in evidence on the effects of the intersecting layers of discrimination on men and other genders.

What is the role of women, men, and marginalised groups in decision-making processes during mine closures and energy transitions?

Decision-making during mine closures and energy transitions encompasses formal negotiations with companies and institutions, the design of post-mining futures, and local-level planning of livelihoods and land use. The roles of women, men, and marginalised groups in these processes are deeply intertwined with power and subjectivity. As Verweijen et al. (2024) state, participation is not just about formal inclusion in decision-making forums but is conditioned by the ways extraction reshapes subjectivities, identities, and access to authority.

Women, men, and marginalised communities do not enter these processes as neutral actors; their roles are mediated by histories of exclusion, colonial legacies, and corporate practices that categorise and divide populations (Verweijen et al., 2024). For instance, in regions like La

Guajira, corporations assign identities such as "negatives" or "positives" to communities, influencing who is seen as a legitimate stakeholder in negotiations and who remains peripheral (Jakobsen, 2022, in Verweijen et al., 2024).

Often, communities' rights to previous consultations have been violated by companies and not enforced by government institutions. Even when consultations do occur, companies have tried to co-opt local leaders to neutralise resistance to project development. As Bermúdez Rico et al. (2012) highlight, Indigenous, Afro-Colombian or Black, and campesino women experience disproportionate challenges defending their rights.

In addition to structural exclusion of local, rural, and ethnic communities from political and economic decisions in Colombia, traditional gender roles and gendered division of labour have excluded women from decision-making processes. Social expectations of women undertaking care and domestic work, and the social and economic mechanisms that exclude them from formal jobs, have limited their opportunities to participate in unions and other decision-making or rights defence spaces – these social expectations as caregivers have influenced the decision to invite them or not to formal decision-making spaces (Mohr, 2021).

While men are framed as providers and natural participants in negotiations and decision-making, women are often excluded from decision-making and economic spaces. In some regions, cultural framings portray women as too emotional or inexperienced to participate in political deliberation, especially when they are young (Vargas Guevara et al., 2022). These roles are both shaped by local custom and reinforced by external actors, including mining companies and municipal institutions, which often prioritise negotiations with older men and actively marginalise women and youth (Vargas Guevara et al., 2022).

Moreover, women in Cesar have also been excluded from mining decision-making processes through several mechanisms of violence, dispossession, and disenfranchisement. For instance, the start of mining activities has increased political violence through private security companies and the incidence of guerrilla, military, and paramilitary groups in the surrounding areas, often having severe negative impacts on women and men (Moor & van de Sandt, 2014; Vargas Guevara et al., 2022). Some impacts relate to disarticulating women's activism against mining operations through direct (Bermúdez Rico et al., 2012; Vargas Guevara et al., 2022) or vicarious violence, through threats or actual violence, including murder, of women's husbands, or pressuring them to stop their activism by menacing their sons' or daughters' lives or employment (Bermúdez Rico et al., 2014).

While quotas have been established in companies, unions, and other formal spaces to address women's exclusion from decision-making (Ulloa, 2016), women's participation has been more linked to informal, community leadership, and grassroots activism (Bermúdez Rico et al., 2012, 2014; Mohr, 2021; Ulloa, 2016). In Cesar, women adopt multiple strategies to contest traditional

gender roles and barriers to participation through their daily interactions with degraded landscapes, exposure to environmental harm, and affective labour of sustaining families.

From a feminist geographical perspective, women's embodied experiences in those daily interactions inform their political subjectivities and claims-making (Postar & Behzadi, 2022, in Verweijen et al., 2024), often invisible in formal governance frameworks, but are central to how women assert authority and demand recognition during mine closures and energy transitions using embodied knowledge. Indigenous communities and racialised populations experience compounded forms of exclusion. Their decision-making roles are shaped by historical residues of dispossession and by unfulfilled promises of future development encountered through spaces of agency, performing collective actions that challenge corporate and state narratives, drawing on affective bonds with their territories.

Women, especially working-class, rural, and Indigenous women, have played a transformative role by reinterpreting traditional gender roles – such as those of mothers and caretakers – as sources of political agency. Rather than being confined to the domestic sphere, many women have taken public life through gender and environmental justice movements, framing their activism as an extension of their responsibility to care for children, homes, and future generations (Barry, 2012; Ulloa, 2016; Vargas Guevara et al., 2022).

These women have strategically used their identities to confront the political and economic dominance of the coal industry. Drawing on socially accepted roles as mothers, wives, and daughters, women position themselves as the main voices in the defence of their territories, reflecting a deeply rooted interest in protecting their communities. Women have built their perspective on alternatives and defending their lives, communities, and territories (Bermúdez Rico et al., 2012). As Ulloa (2020) describes, Latin American feminisms and their relation with other social and political movements – linked, among others, to anti-extractivism, decoloniality, ethnicity, and campesino movements – have consolidated into a fourth wave of feminisms, comprehending autonomous feminisms, community feminisms, territorial feminisms, decolonial feminisms, indigenous feminisms, and quotidian feminisms.

Indigenous women's decision-making roles are informed by a dual reality, particularly among the Wayúu in Cesar: they belong to a matrilineal society where women hold positions of authority, yet they are exposed to social sanctions if they challenge gender expectations (Hylton, 2021, in Karlsson, 2023). Intersectional vulnerabilities further shape their leadership, as they experience compounded discrimination based on both gender and ethnicity, which intensifies their exposure to political, structural, and gender-based violence (Karlsson, 2023). Wayúu women human rights defenders exemplify negotiating cultural expectations while building collective strategies through kinship networks, ethnic solidarity, and gender-based alliances; this has shifted many from a position of feeling powerless to one of asserting that their decisions must be respected (Karlsson, 2023). As Tapias Torrado (2022) explained, the Sutsüin Jieyuu Wayúu (Wayúu Women's Force) mobilisation in Colombia is one example of how indigenous

women have led mobilisations that place their demands at the centre of political action through the “braided action” framework for transforming territorial power into mobilisation, exercising effective leadership, framing struggles in human rights terms, and responding to grave abuses (Tapias Torrado, 2022).

3.1.3 Impact of mine closures on labour and migration patterns

How do these differentially affect women, men, youth and other marginalised groups, and their livelihood opportunities?

Mining and mine closures fundamentally reshape the social fabric of resource-dependent regions by altering both employment structures and mobility patterns. The sudden cessation of mining activities disrupts not only direct jobs but also ancillary services and broader local economies, with ripple effects that extend across gender, age, and ethnic divides (Cock, 2019; The World Bank, 2018). Migrant workers, who often constitute a significant portion of the mining labour force, are especially vulnerable because they typically hold precarious contracts, lack social protection, and face limited reintegration mechanisms once displaced. Further, gendered dynamics of migration associated with the development of mining enclaves are also spatialized in ways that accentuate or deepen “gender roles and economic, social and political inequalities” – where men tend to migrate to sites of production and their families stay in their homes in distant places (Ulloa, 2016, p. 129, translated from Spanish).

At the same time, the care work for mine workers at the sites of production of mines (clothing, feeding, and other services) is often informal labour that is also gendered and precarious (Bermúdez Rico et al., 2012). Case evidence illustrates these dynamics clearly. In Colombia, the 2021 closure of Prodeco's coal mines in La Jagua de Ibirico displaced more than 5,000 workers, many of whom were internal migrants drawn to the region during the boom years. While formal mine employees lost stable jobs, women working in ancillary sectors such as food vending, laundry, and small-scale trade also faced the collapse of their livelihoods. With few mobility options, many households became stranded in a context of economic immobility and deepening precarity (Holguín, 2020; Quiroga Ángel, 2013; Torres, 2024).

South Africa's gold and coal sectors reveal similar patterns but at a larger scale. Mine closures displaced thousands, while the entrenched migrant labour system meant that many foreign and rural-origin workers were excluded from severance benefits, housing support, or retraining, often forcing them into circular or return migration under precarious conditions. Women who had built informal economies around the mines—food vending, domestic services, and sex work—saw demand plummet overnight (Bezuidenhout & Buhlungu, 2011; Cock, 2019).

In Europe, Poland and Asturias (Spain) experienced more structured “just transition” programs, including early retirement schemes, reskilling packages, and social safety nets. Nevertheless, youth outmigration accelerated due to the lack of attractive local alternatives, and reskilling

programs largely targeted male ex-miners while overlooking women in indirect roles. This selective inclusion reinforced gendered disparities, even within ostensibly progressive transition frameworks (NewClimate Institute, 2025; Oei et al., 2020; Velicu & Barca, 2020).

Ghana presents yet another dynamic, where artisanal mining closures—often triggered by global price shocks or regulatory crackdowns—led to massive population shifts. Families dependent on seasonal or small-scale mining were forced to migrate regionally, with women and youth entering precarious informal labour markets. Such patterns intensified cycles of poverty, insecurity, and vulnerability in already fragile communities (Luning & Pijpers, 2017).

Across these cases, closures not only affect employment but also reconfigure migration flows. Some groups experience forced immobility—stranded in towns dominated by a single industry with no viable alternatives—while others are pushed into precarious outward migration. These uneven impacts underline the necessity of understanding mine closures as both labour and mobility crises, with differentiated outcomes for men, women, youth, and marginalised groups.

At the same time, the socio-environmental legacy of mining activities remains an important factor affecting local livelihoods, even after mine closure, and sometimes worsens in the context of mine abandonment or improper closures. Mining activities and titling processes can involve enclosures and exploitation of lands that were previously used by local communities for agricultural or subsistence purposes, also leading to contamination or other impacts on soil and water sources, affecting livelihoods based on these resources (Vargas Guevara et al., 2022).

Even as agricultural jobs or subsistence are negatively affected, job opportunities in the mining or construction sectors are often limited – especially for women, given the types of jobs available are those culturally associated with masculinized attributes such as physical strength (Vargas Guevara et al., 2022). At the same time, those women and men who manage to access a job in the mining sector can contribute to a sense of achievement and economic independence, despite the fact that many women are often carrying a double load with their domestic care duties in addition to the paid labour (Ulloa, 2016). The informal labour opportunities in services for the mining economy – catering, cleaning, etc. are often the more precarious options – with low wages and no job security, yet are more accessible for women (Bermúdez Rico et al., 2012).

3.1.4 Differential Impacts on Vulnerable Groups

Mine closures do not affect populations uniformly. Instead, they reinforce pre-existing structural inequalities while creating new vulnerabilities. Women are disproportionately represented in indirect mining economies, such as food vending, domestic labour, or small-scale commerce. Closures eliminate these income streams, while women's mobility is further constrained by caregiving responsibilities and entrenched gender roles. This creates a “double precarity”: diminished economic independence alongside restricted mobility options (Sovacool et al., 2020; Ulloa, 2020; Velicu & Barca, 2020). Even when women do enter mining or related

sectors, they often encounter unequal conditions, insecure contracts, and limited recognition of reproductive labour (Ulloa, 2016).

Youth face a different challenge. They are more mobile and willing to migrate, yet they frequently lack the skills demanded by other sectors. In the absence of viable alternatives, younger cohorts often outmigrate to urban centres or abroad, leading to a drain of local human capital that undermines community resilience and regeneration (Oei et al., 2020; Watson et al., 2023). This trend also exacerbates generational divides, as older workers may access retirement or compensation schemes, while youth are left with limited prospects.

Migrant workers—whether internal migrants in Colombia or international labourers in South Africa—are typically excluded from severance packages, social protection, or retraining opportunities. Their legal status or informal work arrangements mean they are often invisible in transition planning, leaving them especially exposed to unemployment and displacement risks (Boafo et al., 2024; Cock, 2019).

Indigenous and Afro-descendant communities, particularly evident in Colombia, face layered injustices. Beyond direct job losses, they suffer the erosion of land-based livelihoods due to mining contamination, cultural dislocation, and systematic exclusion from decision-making processes. For these groups, mine closures compound historical patterns of marginalization, intertwining environmental degradation with socio-political exclusion (The World Bank, 2018).

Together, these differentiated impacts demonstrate that mine closures are not only economic disruptions but also social processes that redistribute risk and opportunity in highly uneven ways. The following sections will present how these manifest in Cesar.

3.2 Actor mapping of JET research and action in Cesar

As part of the project's contextualisation, we developed a multi-stakeholder workshop with researchers, practitioners, and policymakers from civil society organisations, public institutions, cooperation organisations, and academia. During the workshop (Figure 2), we prompted the participants to create a network of interactions they have had with other organisations. They classified the interactions as 1) partnership, 2) funding, and 3) tension/conflict. The resulting network of interactions is presented in Figure 3.

Figure 2: Photograph from the alignment workshop.



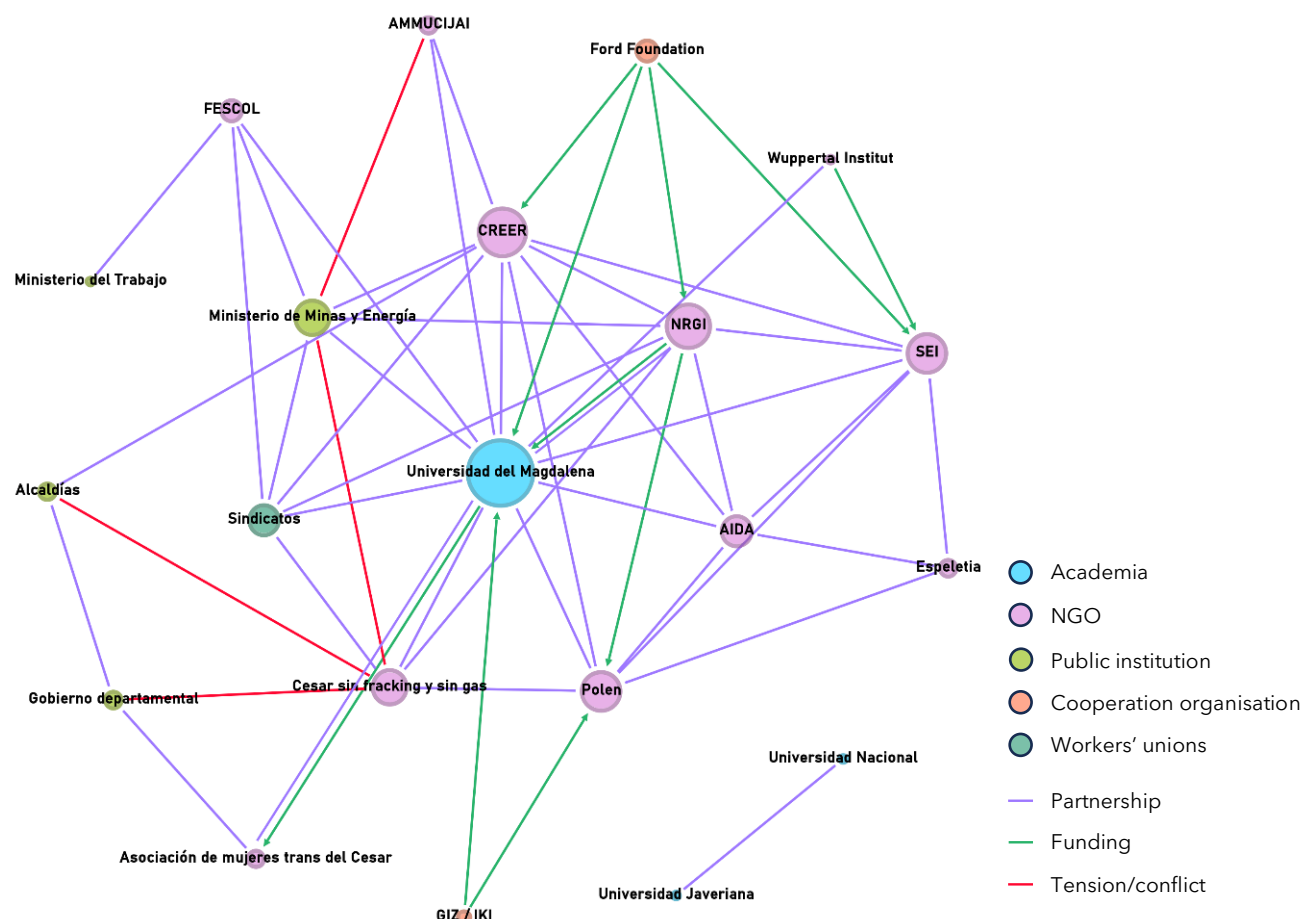
Source: Authors' photo.

The average organisation had approximately five connections with other organisations. Our results show that Universidad del Magdalena, the university of Cesar's neighbouring region, Magdalena, is a central node in the actor network engaged with JETs in Cesar. In practical terms, this means they act as articulators, being connected with all other types of actors (academia, public institutions, cooperation organisations, NGOs, and workers' unions). However, it is important to highlight that the alignment and networking workshop was co-designed with Universidad del Magdalena, and that represents a bias regarding who was invited.

Also, this activity helped us identify a disconnection between two academic actors (universities based in Bogotá, although one of them has a campus in Cesar) and local actors also engaged with JETs, coal mining, and coal phase-out. The Universidad Javeriana and Universidad Nacional are two of the top universities in the country, and their collaboration with local organisations and external actors working in Cesar could strengthen research and policy development with resources and talent, as well as connect these processes with national institutions at the country's capital.

Some NGOs reported tensions with public institutions, such as the Ministry of Mines and Energy, and local and regional governments.

Figure 3: Network of organisations involved in JETs research and practice in Cesar, Colombia



Source: Authors' diagram.

3.3 The role of gender in JET decision-making

3.3.1 Mining and participation of LGBTIQ+ people

The mining activities and phase-out in Cesar's Corridor for Life have historically shown limitations for participation, especially for women and LGBTIQ+ people. When mining first arrived, small-scale coal miners from the area were expropriated from their land and excluded from participating in formal mining due to knowledge and technical barriers (Interview 04, 2025, translated from Spanish). While the mining activities before large-scale mining were based on manual labour and traditional artisanal techniques, large-scale operations introduced heavy machinery and specialised technical knowledge that systematically displaced local miners and reinforced existing barriers to formal employment, particularly for women and LGBTIQ+ people.

Beyond technical barriers, participants reported that women and LGBTIQ+ people have been systematically excluded from formal mining employment since the onset of large-scale operations, as dominant social norms naturalised mining as inherently masculine work (Interview 02, 2025, translated from Spanish). During this period, companies exclusively hired masculine-presenting men, justified by perceptions of mining as physically demanding and environmentally hostile labour — framings that simultaneously constructed femininity and gender non-conformity as incompatible with extractive work.

During the 1990s and early 2000s, companies opened to the inclusion of women in mining (Interview 02, 2025, translated from Spanish). While participation quotas represented a nominal step toward inclusion, women's employment remained largely confined to administrative and feminised roles, leaving the gendered division of labour structurally intact (Interview 02, 2025, translated from Spanish). For LGBTIQ+ people, no equivalent opening occurred. Instead, companies and co-workers alike functioned as active enforcers of heteronormative gender norms, whether through discriminatory hiring practices or workplace bullying targeting those who transgressed them (Interview 02, 2025, translated from Spanish).

So, for a person from the LGBT population to enter [the mining industry], they had to present as a man if they were gay – a faggot¹... at that time, let's talk, let's go back to the terminology they used back then. So, they had to present as a man, and if they continued [behaving in ways that revealed their identity], if they were discovered, they were expelled – that is, fired – because it was not well regarded. Because those people said that they had a policy, and that the policy stated very clearly that it was a man or a woman. There was no third gender (Interview 02, 2025, translated from Spanish).

Beyond exclusion from formal employment, LGBTIQ+ people faced a compounding form of discrimination: when they asserted their civil rights — to recognition, dignity, and protection from harassment — companies and co-workers reframed this as insubordination, using their perceived 'rebellious' or 'revolutionary' character as further justification for dismissal or non-hiring (Interview 02, 2025; Interview 06, 2025). This criminalisation of rights-claiming entrenched their exclusion from an already narrow local economy organised around mining, pushing many toward precarious alternatives, including sex work and feminised service jobs

¹ We translated the original *marica* to “faggot” to preserve its pejorative connotation in context, although the term has since been reclaimed and resignified by queer communities in Colombia.

catering to the mining workforce, such as hairdressing and care work (Interview 02, 2025; Interview 06, 2025).

As national policies became more inclusive to LGBTIQ+ people, discrimination persisted in other ways, manifesting in the disciplining of gender expression and embodiment in the workplace. Queer employees were expected to conform to heteronormative appearance and behaviour: transgender people were required to present in accordance with their gender assigned at birth, while gay and lesbian workers faced pressure to perform heterosexuality in their dress, mannerisms, and social interactions (Interview 02, 2025). Also, the jobs did not match the employee's training. LGBTIQ+ people who had education in mining, such as mining engineers or heavy machinery technicians, were assigned to service, care, or unskilled jobs – for instance, road signalling, waitressing, washing, and cooking (Interview 02, 2025).

If a person was transgender or transvestite, they had to behave like a man, cut their hair – that is, conceal their identity. And if the person was a lesbian, it meant not being masculine; she had to behave very, very feminine, and the job assigned to her was in traffic signalling or miscellaneous services. Despite having a professional title such as mining engineer, heavy machinery technician, or backhoe driver, as soon as they saw you [were queer], they did not look at your job profile but your identity; they told you, “look, you will work in miscellaneous services, as a waitress, as a cook, as a clothes washer...”. (Interview 02, 2025, translated from Spanish).

The armed conflict in Cesar has further constrained the possibilities for LGBTIQ+ people to organise and claim their rights. Scholars have documented the connections between coal companies and armed actors, both paramilitary groups and guerrillas, including the dispossession of campesino lands that were subsequently incorporated into mining operations (Corral et al., 2021), violence against workers' unions and forced displacement (Quiroga Ángel, 2013), creation of alliances between private security groups, the army, and paramilitary groups for securing mining operations (Moor & van de Sandt, 2014), and intensified, cruel forms of violence towards defenders of women's and LGBTIQ+'s rights (Centro Nacional de Memoria Histórica, 2015; Ruta Pacífica de las Mujeres, 2013; Interview 01, 2025; Interview 02, 2025; Interview 05, 2025).

When we began to engage in advocacy, that is where the real problem started. Why? Because we entered the arena of rights defence and challenged the companies on their gender quotas. And their quotas were always man,

woman, man, woman. So, the mining issue was handled with a great deal of diplomatic distance, with a lot of discretion. Because behind mining there is a mafia, and you had to know who your enemy was, because denouncing [them] could cost you your life (Interview 02, 2025, translated from Spanish).

3.3.2 Mining and women's participation

Our field data support the literature on violence against women defenders of environmental and human rights. One of the participants reported receiving violent threats intended to silence her advocacy for workers' rights following Prodeco's sudden closure in 2021; she was among the community leaders who filed a writ of protection to defend workers' rights in that context.

Beyond direct threats, participants described more structural forms of exclusion from decision-making spaces. Community engagement with mining companies over closure planning and transition processes has been uneven and relied on corporate disposition. One coal company, CNR, was described by one participant as “the worst enemy we have here in the municipality” (Interview 02, 2025, translated from Spanish), with other community members reporting environmental impacts, including noise and water contamination, and criticising the company's practice of sourcing most of the workforce from outside the region.

They came to my house to kill me. I appeared in pamphlets saying they were going to come here, kill my children, that we should leave. The UNP (*Unidad Nacional de Protección* or National Protection Unit) and the institutions abandoned us. I confronted those who said they were their commander. I told them we were not harming anyone, that we were only protecting our territory, and they told me it was not them. (Interview 05, 2025, translated from

Women-led organisations have faced differential barriers. When women organised protests and invited youth to participate, companies vetoed their involvement, labelling participants as “lazy”, “revolutionary”, and “troublemakers” (Interview 02, 2025) – echoing the same criminalisation of rights-claiming documented earlier in relation to LGBTIQ+ people.

Institutional exclusion intensifies these dynamics. Participants reported that their organisations lacked basic operational resources – office space, equipment – and that local government institutions remained inaccessible to organisations outside the dominant political alignment. As she stated, “if we are not politically aligned with them, we are nobody” (Interview 02, 2025).

The exclusion of women from official participation is evident both at the municipal and regional levels. For instance, Cesar has yet to issue a public Policy for Women, a critical step towards protecting women's rights, whose adoption has been delayed for years despite sustained

advocacy by women's organisations (Interview 01, 2025; Interview 02, 2025; Interview 05, 2025). Also, municipal Secretariats for Women have been perceived as inefficient, de-financed mechanisms whose impact is limited (Interview 04, 2025).

Despite these exclusions, women's organisations have created partial spaces for participation. Mining companies have engaged with women of the local working groups on closure planning and legal protection mechanisms, though one interviewee expressed uncertainty about whether this selective inclusion reflected genuine commitment or strategic co-optation (Interview 02, 2025). Meanwhile, organisations such as REDMUPAS — the Women's Network of El Paso municipality — have continued to demand institutional infrastructure to address compounding social crises in mining communities, including substance dependency, sex work, single motherhood, and suicide (Interview 02, 2025).

Two participants described gendered patterns in household financial management, noting that male miners tended to spend rather than save their mining income, leaving families financially exposed when closures occurred (Interview 04, 2025; Interview 08, 2025). In contrast, when women took control of household finances, they redirected income toward productive investment. One participant described how, upon assuming responsibility for household expenses, she channelled mining income into agricultural machinery, diversifying the family's economic base beyond mining (Interview 04, 2025). She noted that her family's relative stability following her husband's dismissal from the mine was a direct result of the working capital they had accumulated under her financial stewardship — capital that continued to sustain them at the time of the interview (Interview 04, 2025).

3.4 Differential impact of coal mining and phase-out

3.4.1 Reinforcement of hegemonic masculinity

Coal mining in Cesar has historically produced and reinforced a particular form of hegemonic masculinity, consolidating hyper-masculine social norms that extended beyond the workplace into community and domestic life. Participants described a mining culture characterised by conspicuous consumption, alcohol use, infidelity, and the public performance of wealth and status. As one social psychologist described, miners would come to drink, party, and fire shots into the air as displays of economic power derived from mining income (Interview 01, 2025). These behaviours transcend mere individual practices, becoming socially enforced norms. Men who resisted them were labelled as "dominated" by their peers, illustrating how hegemonic masculinity operated as a combination of social pressure, peer policing, and individual disposition.

The consequences for women and families were significant. One rural woman described mining life as having brought drinking, infidelity, nightlife, a lack of family responsibility, abuse, and

abandonment, with many women left to raise children alone (Interview 04, 2025). The same participant noted that the burden of sustaining family life fell disproportionately on women, who effectively managed both the domestic and emotional labour of households organised around the miner's schedule and social world. The hyper-masculinisation of mining thus produced a gendered division not only of labour but of social risk, with women absorbing the costs of male miners' conformity to harmful norms.

3.4.2 Violence towards non-normative bodies, identities, and relationships

Exclusion and violence experienced towards LGBTIQ+ people in Cesar's Corridor for Life did not originate with large-scale mining. When large-scale mining began, it became embedded in the pre-existing patriarchal culture and armed conflict. Participants described how, from the 1980s onward, the Cesar region operated under a deeply-rooted patriarchal system, in which being gay or lesbian was socially stigmatised and physically dangerous. Guerrillas and paramilitary organisations actively targeted LGBTIQ+ people, in some cases forcing them to dig their own graves as acts of terror intended to expel them from communities (Interview 02, 2025). In this context, language acted beyond simple enunciation, enacting discrimination structures and power inequities, becoming violence in itself (Butler, 1999); referring to LGBTIQ+ people with terms such as *marica* and *machorra* (a pejorative term for a masculine lesbian) often was an act of marking legitimate targets of violence and constricting bodies into an imagined socio-economic and cultural order organised under patriarchal hierarchies. These kinds of gender policing have been highlighted as part of a process that traps queer people in poverty (Ekane et al., 2023).

Political patronage constituted a further structural barrier. Participants described how dialogue with public institutions was mediated by political connections, *padrinos* (political godfathers), without which entry to stable employment remained effectively impossible regardless of credentials (Interview 06, 2025). For LGBTIQ+ people, who were systematically excluded from the political networks that organised local power, again, due to the stigma of being “revolutionary”, in other words, associated with leftist guerrillas. This gatekeeping mechanism compounded their labour market exclusion in ways that were largely invisible to formal policy frameworks (Interview 02, 2025; Interview 06, 2025).

Many LGBTIQ+ people made clothes or cooked for the miners. Since mine closures, they are conscious that they will have to stop working on feeding, tailoring, clothes washing and ironing, beauty salons – most clients are or were

miners. Mining closures have alerted everybody. (Interview 06, 2025, translated from Spanish).

Mine closure has disproportionately impacted LGBTIQ+ people, whose livelihoods, already precarious and largely excluded from formal employment protections, were severely affected by the sudden disruption in mining economy and miners' out-migration (Interview 06, 2025). The COVID-19 pandemic compounded these effects dramatically: the majority of LGBTIQ+ businesses closed, sex work became more dangerous and less economically viable as miners migrated away, and armed groups resumed targeting transgender women (Interview 02, 2025; Interview 06, 2025). Many LGBTIQ+ people have since been forced to return to rural areas of origin, in a manner the participants described as a form of involuntary displacement (Interview 06, 2025).

Despite these conditions, no comprehensive population diagnosis of LGBTIQ+ communities has ever been conducted in Cesar, leaving their specific needs invisible in official data and, consequently, absent from transition planning frameworks (Interview 02, 2025; Interview 06, 2025).

3.4.3 Care services economy around mining workers

The gendered division of labour in Cesar's coal economy extended beyond the formal mining sector. While men occupied formal mining employment, the economic survival of women and LGBTIQ+ people in mining municipalities was largely organised around providing care, housing, and domestic services to mining workers (Interview 01, 2025; Interview 05, 2025; Interview 06, 2025; Interview 07, 2025). This informal economy encompassed washing miners' clothes, cooking, bedroom rentals, food and water vending, tailoring, and beauty services; feminised labour that was precarious and dependent on the presence of a male mining workforce (Interview 01, 2025; Interview 05, 2025; Interview 06, 2025; Interview 07, 2025).

This dependency made women and LGBTIQ+ people critically vulnerable to the economic consequences of mine closure. When mining operations ceased, the customers that sustained these informal economies disappeared alongside formal mining employment. Unlike formal miners, women and LGBTIQ+ workers in the care services economy had no access to severance packages, retraining programmes, or institutional support mechanisms, exposing a critical gap in just transition frameworks that centre the formal male worker as the primary subject of transition policy.

3.4.4 Intersectional impacts

I cannot claim to be fighting for young people's rights while excluding a sexually diverse young person from the community. I cannot claim to support women while minimizing the experiences and trajectories that young people bring. It feels like there is a lack of coherence between what people say and what they actually do (Interview 03, 2025).

Intersectionality: gender, rurality, and socioeconomic status

Rural women face compounded and co-produced barriers for participation in coal decision-making. These barriers are related to the distances they often have to travel to attend consultations, workshops, and institutional events; the gendered division of labour that overburdens them with unpaid care work, in addition to the productive work they carry out; and taking care of farms, subsistence crops, and animals.

Women often face greater difficulties participating due to their workload and household responsibilities. Caring for children, managing daily farm operations, processing milk, and feeding animals require constant attention. Because many households raise animals, these tasks cannot be postponed, increasing women's time burden. (Interview 04, 2025).

Intersectionality: gender, ethnicity, age, and socioeconomic status

Gender, ethnicity, age, and socioeconomic status intersect to create structures that exploit women, both cisgender and transgender, in coal mining contexts. Gender-based violence such as sexual abuse, human trafficking, and gender-based violence are produced and sustained by structural inequities, discrimination, and unequal power relations that disproportionately target women experiencing multiple forms of marginalization.

3.4.5 Other differential impacts

Coal mining and phase-out have produced a range of additional differential impacts across gender and social groups. Children of miners have been reported as disproportionately affected by depression, substance abuse, and other mental health challenges following mine closure, reflecting the wide social disruption caused by the sudden closure of a pillar for local economies (Interview 01, 2025; Interview 04, 2025).

Participants also identified the stigma surrounding infidelity as a significant social harm affecting both miner men and the women partners of miners – a legacy of the hyper-masculine mining culture described above that persists into the post-closure period (Interview 01, 2025; Interview 04, 2025). According to participants, wives of miners carried the stigma of infidelities with other partners while miners were working on the mines (long shifts, lasting more than a week) (Interview 01, 2025; Interview 04, 2025), while miners often visited other partners while off their shifts (Interview 04, 2025).

3.5 Adaptation strategies of the affected groups

3.5.1 Migration

Coal mining and phase-out in Cesar has driven significant migration flows among sex workers. When mining operations began or grew, there was immigration of people attracted by sex work from non-mining municipalities and from Venezuela (Interview 02, 2026). However, after the closure of Prodeco, and during the COVID-19 pandemic, there was out-migration due to a reduced demand of sexual services (Interview 02, 2026).

People have not adapted; they have even migrated out of the country. [...] Here [El Paso], we have two multinationals and one Colombian company; yet employment is scarce and we suffer poverty (Interview 05, 2025).

For many formal mining workers, predominantly young men, job loss has prompted migration toward other extractive regions or urban centres in search of equivalent employment (Interview 05, 2025). Notably, one participant points out that the pandemic reversed some of these urban trajectories, forcing many LGBTIQ+ people back to rural areas of origin (Interview 02, 2025).

3.5.2 Leadership in household finances

Gendered patterns in household financial management have shaped differential economic outcomes following closures. In households where women assumed control of finances and redirected mining income toward productive investment, families demonstrated greater economic resilience after closure. One participant described how her family's relative stability following her husband's dismissal from the mine resulted in accumulated working capital under her stewardship – capital that continued to sustain them at the time of the interview (Interview 04, 2025). In contrast, households in which miners prioritised consumption over savings faced economic vulnerability after closure (Interview 08, 2025). These findings suggest that women's financial agency, when it was exercised, functioned as an adaptation strategy in the absence of adequate institutional transition support.

3.5.3 Strengthening rural economies

Participants pointed toward strengthening rural economies as key to a post-mining future. Factors such as taking advantage of ex-miners' knowledge on using heavy machinery for agriculture (Interview 03, 2025), current and past agriculture in the territory (Interview 03, 2025; Interview 06, 2025), and education and training offered by the National Service for Learning (Interview 04, 2025) can position agriculture more prominently within local economic systems.

Also, participants highlighted the importance of local gastronomy and agricultural produce, such as *guaymaro*, *uva de lata*, and *vino de palma*, in shifting towards an agricultural-based economy. Those products, according to participants, can be the basis for innovation arising from local products, knowledge, and talent (Interview 02, 2025).

4.0 Policy pathways for addressing gendered and intersectional impacts

The findings presented in this report point toward a set of interconnected policy pathways that, taken together, could begin to address the gendered and intersectional dimensions of coal phase-out in Cesar. These pathways are not exhaustive but reflect the most pressing gaps identified through fieldwork, literature review, and stakeholder engagement.

Closing the gender data gap

No comprehensive population diagnosis of women and LGBTIQ+ people has been conducted in Cesar, or its municipalities, rendering their specific vulnerabilities invisible in official data and, in the case of LGBTIQ+ people, absent from transition planning frameworks. A critical policy step is the commissioning of a disaggregated, participatory population diagnosis that assesses the socioeconomic conditions, livelihoods, and transition needs of men, women, and LGBTIQ+ people in historically coal-centred municipalities. Without this baseline, effective targeted interventions remain blocked, and the structural exclusions documented in this report will persist into the post-mining economy.

Extending just transition frameworks beyond the formal male worker

Current transition frameworks, including retraining programmes, severance mechanisms, and productive diversification initiatives, are designed around the formal male miner as the primary subject of transition policy. This report demonstrates that women and LGBTIQ+ people, overwhelmingly concentrated in the informal care and services economy surrounding mining, are disproportionately affected by mine closure yet systematically excluded from institutional support. Just transition policy in Cesar must formally recognise and address informal and feminised labour as part of the coal economy, extending eligibility for retraining, livelihood support, and social protection to those whose livelihoods depended on mining without being formally employed by mining companies.

Including men in gender-responsive just energy transition frameworks

In Colombia, traditional gender approaches to policymaking have focused on women, particularly from a vulnerability and work inclusion perspective (Betancur Jaramillo, 2021). Besides this being problematic due to unintended negative consequences on women due to overwork such as adding more labor through work inclusion on top of carrying the burden of domestic responsibilities, it ignores the elephant in the room: patriarchy concerns everybody in

society, not just women. To effectively dismantle patriarchy and gender-based violence, men must be incorporated into gender education, trainings, and strategies. Education strategies must address how men are also victims of patriarchal systems, gender-based violence at work, and consolidating new masculinities groups inside and outside the workplaces.

Gender-responsive and intersectional mine closure regulation

Colombia's current regulations around mine closure and socio-environmental standards are limited and inadequate. Developing such regulations is an opportunity to embed gender and intersectional analysis from the outset. Mine environmental impact assessments and closure plans should be required to include gender-disaggregated and intersectional analysis, participatory consultations with gender experts, women's organisations, and LGBTIQ+ groups, and specific provisions for the informal economies that will be disrupted by closure. Regulatory frameworks should also address the long-term socio-environmental liabilities that disproportionately burden rural women and subsistence communities after mining ceases.

Effective participation of marginalised groups in transition decision-making

As the results illustrate, participation in transition planning has been selective and contingent on corporate or institutional disposition rather than guaranteed as a right. Meaningful participation requires structural conditions such as logistical support to overcome the mobility and time burdens that constrain rural women's participation and institutional accountability mechanisms that prevent tokenistic inclusion. The alignment and planning workshop conducted as part of this project offers one model for multi-stakeholder coordination, but its reach and representativeness would need to be substantially deepened to include more community-level organisations, particularly those representing LGBTIQ+ people, Indigenous and Afro-Colombian communities, and informal workers.

Public Policy for Women and institutional strengthening

Cesar has yet to adopt a Public Policy for Women despite sustained advocacy from women's organisations over many years. Its adoption is a foundational institutional step that should be accompanied by adequate resourcing of municipal Secretariats for Women and other institutions such as Women's and LGBTIQ+ Advisory Councils, which participants described as chronically underfunded and ineffective. A well-funded public policy framework that considers intersectionality is a potential institutional basis for addressing gender-based violence, supporting economic autonomy, and ensuring women's and LGBTIQ+ inclusion in post-mining economies.

Addressing the intersection of armed conflict, political patronage, and transition

Coal transitions in Cesar cannot be addressed in isolation from the armed conflict and the political patronage systems that have historically structured access to employment, resources, and institutional spaces. Just transition policies must create and engage with existing protection mechanisms for women and LGBTIQ+ human rights defenders, who face risks and threats for exercising and claiming their rights. This includes strengthening the UNP (*Unidad Nacional de Protección* or National Protection Unit) in the region and establishing mechanisms to protect their lives beyond using public force and militarised approaches to security.

Strengthening rural and agricultural economies with a gender lens

Participants consistently identified the strengthening of rural and agricultural economies as a desirable foundation for a post-mining future. This includes leveraging ex-miners' technical knowledge for agricultural mechanisation, investing in local agri-food value chains based on regional products, and expanding access to the National Service for Learning (SENA). Also, participants highlighted the importance of establishing a new local campus of the Popular University of Cesar. However, for these pathways to be genuinely inclusive, they must be accompanied by specific measures addressing women's and LGBTIQ+ people's access to land, credit, training, and markets. Rural women's disproportionate unpaid care burden must also be addressed through care infrastructure investment if they are to benefit meaningfully from economic diversification.

5.0 Conclusions

5.1 Gendered roles and coal mining and phase-out

- Coal economies are embedded in gendered systems assigning men to productive, better-paid technical and decision-making roles, and women to lower-paid, informal, “white/pink-collar” or care work, reinforcing occupational segregation and limiting women’s mobility.
- Mining spaces reinforce traditional gender roles, cultivating hypermasculinities and petromasculinities, linking male identity to fossil fuel labour, authority, and provision; disruptions to these roles (e.g., mine closures) can trigger identity anxieties and shifts in community positioning. In the case of women, gender roles linked to reproductive and domestic work can be deepened as labour in mines and proximity to them increases illnesses in children and family members. Sudden mine closures have also meant that ex-miners outcompete women in non-mining positions, leading to limited paid job opportunities for women.
- Decision-making is shaped by histories of exclusion, corporate categorisation of communities, and gendered norms that frame men as legitimate negotiators and women as caregivers, limiting women’s formal inclusion in unions, negotiations, and political forums.
- Women’s participation is curtailed by political violence, dispossession, and targeted intimidation; yet women engage through informal leadership, environmental justice activism, and embodied knowledge rooted in daily interactions with degraded environments.
- Women, including indigenous leaders like the Wayúu, strategically leverage maternal and caretaker identities to claim political authority, link anti-extractivist struggles to broader feminist and decolonial movements, and build alliances that contest corporate/state power despite compounded ethnic-gender vulnerabilities.

5.2 Impact of coal mine closures on labour and migration patterns

- Women and LGBTIQ+ people concentrated in the informal care and services economy surrounding mining have been disproportionately affected by closure, losing livelihoods with no access to the severance packages, retraining programmes, or institutional support mechanisms available to formal miners.

- Mine closure has triggered differentiated migration flows: formal male workers have migrated toward other extractive regions or urban centres in search of equivalent employment, while LGBTIQ+ people, particularly transgender women, have experienced displacement toward larger cities or across national borders, or return to rural areas of origin.
- Women's financial agency has been an adaptation strategy in the absence of adequate institutional support. Households where women directed mining income toward productive investment had better economic resilience after mining closures.
- Sex work, a survival strategy shaped by structural exclusion, has become more precarious following mine closure, as the customer base, mostly miners, migrated away and armed groups resumed targeting transgender women more aggressively.

5.3 Key knowledge gaps to address in JETs with an intersectional gender lens

This report offers one of the first empirical accounts of how LGBTIQ+ people have experienced coal mining and phase-out in a Global South context. Future research should seek to understand how LGBTIQ+ people engage with transition processes across different settings, how their livelihoods are disrupted by mine closures, and what forms of institutional inclusion or exclusion condition their access to support. Moreover, it is important to centre ethics into research, and to implement participatory and community-based methodologies that mitigate the risks LGBTIQ+ people face in disclosing their experiences, especially in contexts of armed conflict and social conservatism.

- The literature reviewed for this report predominantly employs binary gender frameworks. More research that strongly operationalises intersectionality methodologically and breaks with binaries is needed. For instance, it is crucial to develop approaches capable of comprehending the co-production and intensification of different forms of inequity based on gender, ethnicity, age, territorial location, and socioeconomic status.
- This report documents the dependency of women's and LGBTIQ+ livelihoods on the care and services economy surrounding mining. Research mapping their composition, their links to formal mining employment, and the mechanisms through which mine closure disrupts them is necessary for designing just energy transitions beyond the formal male miner.
- Most existing evidence on gendered impacts of coal mining and phase-out is cross-sectional. Understanding how gender relations, household and local economies, mental

health, land tenure, and migration patterns evolve following closure is essential for evaluating the effectiveness of transition interventions and mitigating possible negative side effects. Also, these understandings need to be nuanced by gender, ethnicity, age, and territoriality.

- More research is needed regarding how coal mining and phase-out transform gender roles, domestic violence, mental health, community cohesion, and men's positioning in post-mining economies. Understanding these dynamics is central to a feminist and queer research agenda, and to effectively dismantling patriarchal systems.

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Annex 1

Google Scholar Boolean Query – English version:

("gender role*" OR "gender norm*" OR "sex role*" OR "gender relation*" OR masculinit* OR femininit* OR women* OR men* OR "women* participation" OR "men* participation" OR "LGBTIQ*" OR "LGBT*" OR queer OR transgender OR transsexual OR "non-binary" OR "gender divers*" OR "sexual minorit*" OR "gender minorit*" OR indigenous OR afro OR native OR "ethnic population")
AND ((coal AND "mine closure") OR "coal mining" OR "coal phase-out" OR "coal closure*" OR "mine closure*" OR ("energy transition*" OR "just transition*") NOT ("renewable energy" OR "wind power" OR "solar energy")) OR "fossil fuel phase-out")
AND (impact* OR effect* OR consequence* OR "decision-making" OR "power dynamic*" OR "labour market*" OR "labor market*" OR migra* OR displace* OR adapt* OR strateg* OR polic* OR inequalit* OR discriminat* OR exclusion)

Google Scholar Boolean Query – Spanish version:

("roles de género" OR "normas de género" OR "relaciones de género" OR masculinidad* OR feminidad* OR mujer* OR hombre* OR LGBT* OR queer OR transgénero OR transexual OR "no binario" OR "diversidad de género" OR "minoría sexual*" OR "minoría de género" OR indígena* OR afro OR "población étnica" OR "poblaciones étnicas" OR "grupo étnico" OR "grupos étnicos")
AND (("carbón" AND "minería") OR "minería de carbón" OR "abandono del carbón" OR "cierre de minas" OR ("transición energética" OR "transición justa") NOT ("energía renovable" OR "energía eólica" OR "energía solar")) OR "abandono de combustibles fósiles")
AND (impacto* OR efecto* OR consecueneci* OR "toma de decisiones" OR "dinámicas de poder" OR "mercado laboral" OR migra* OR desplazamiento* OR adaptación* OR estrategia* OR política* OR desigualdad* OR discriminación OR exclusión)

Annex 2

Participant No.	Organisation	Location
1	Universidad del Magdalena	Santa Marta
2	Universidad del Magdalena	Santa Marta
3	Universidad del Magdalena	Santa Marta
4	Universidad del Magdalena	Santa Marta
5	Universidad del Magdalena	Santa Marta
6	CREER	Bogotá
7	Polen Transiciones Justas	Bogotá
8	AIDA	Bogotá
9	Movimiento Cesar sin Fracking y sin Gas (Departamental) y Comité de Género	Valledupar
10	Independent researcher specialized in work with labour unions	Bogotá
11	Asociación de Mujeres Trans del Cesar	Valledupar
12	NRGI	Bogotá
13	Ministry of Mines and Energy - Gender team	Bogotá
14	AMMUCIJAI	La Jagua de Ibirico
15	AIDA	Bogotá
16	Universidad Javeriana	Bogotá

Participant No.	Organisation	Location
17	Ministry of Labour	Bogotá
18	SEI	Bogotá
19	SEI	Bogotá
20	SEI	Bogotá
21	Polen Transiciones Justas	Bogotá
22	UNAL	Bogotá
23	NRGI	Bogotá

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