

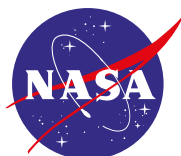


# Women of the Mangroves: Agency, Environmental Stewardship, and Sustaining Life in the Gulf of Guayaquil

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# Abstract

Women crabbers and fishers from the rural and peripheral neighborhoods of the Gulf of Guayaquil work day after day to legitimize an activity that has historically been carried out by men. Their relationship with the mangrove is not new, as the activity is familiar and passed down through generations. They have frequent contact with the mangrove ecosystem from a young age, which lessens somewhat as they grow into adolescents. This lifelong engagement fosters a deep connection to the mangrove, both in terms of living and working within the area. As per both family and societal traditions, it is men who inhabit the mangrove ecosystem for the exploitation, trade, and commodification of the red crab. However, gender systems have caused territorial and family dynamics to change, as this activity is no longer exclusively

male. Women have been compelled to work as crabbers despite facing violence, insecurity, discrimination, and social segregation, as there are no other means of livelihood to support their families. Their relationship with the mangrove is different: for them, the mangrove is a source of life that promotes environmental stewardship and contributes to the building of a strong social and community fabric. This connection allows them to share caretaking responsibilities through governance, labor, and territorial agency.

**Keywords:** Governance, gender systems, agency, mangrove ecosystem.

# Introduction

The country of Ecuador is characterized by the use and exploitation of natural resources. With its primary export-oriented economy, Ecuador dedicates all of its geography to resource exploitation to meet different individual and community needs while simultaneously complying with national and international environmental governance policies. This article aims to illustrate the socioeconomic, governance, and agency conditions from the perspective of gender systems and their relationship with the mangrove ecosystems in peripheral and rural areas of the Gulf of Guayaquil (Isla Trinitaria, Cristo del Consuelo, Batallón del Suburbio, and the communes of Puerto Roma and Puerto Buenavista)<sup>1</sup>. A qualitative methodological approach was used to collect data. This

methodology involved focus groups with local leaders (qualified stakeholders) and semi-structured interviews applying a gender perspective and an intersectional and intercultural approach, along with non-participant observation. Of the participants, 100% self-identified as Afro-Ecuadorian; 59.65% were women (aged 6–69 years) and 40.35% men (aged 8 to 70 years). In terms of livelihood, 40% of women and 100% of men worked in mangrove-related activities. Additionally, the MANGLEE<sup>2</sup>, application was introduced so participants could learn about its use for mapping and monitoring mangroves in Ecuador.

The Gulf of Guayaquil is home to the largest mangrove forests in Ecuador. These resources

- <sup>1</sup> This article is based on information provided during the consultancy "**Gender, Social Inclusion, and Mangroves in the Gulf of Guayaquil,**" conducted between May and July 2023. This consultancy was commissioned by Fundación EcoCiencia as part of SERVIR-Amazônia, an initiative of the Biodiversity International Alliance and the International Center for Tropical Agriculture (CIAT in Spanish), with support from the United States Agency for International Development (USAID), the National Aeronautics and Space Administration (NASA), and the International Center for Research on the El Niño Phenomenon (CIIFEN in Spanish).
- <sup>2</sup> **MANGLEE** is a free educational tool that facilitates the monitoring of mangrove ecosystems in Ecuador. It was developed within the Google Earth Engine (GEE) platform, integrating cloud computing, remote sensing, and machine learning technologies. The tool comprises three modules and a results visualization application, available on GitHub.



allow both men and women who have adapted to various economic and political changes to sustain one of the key pillars of society: the family. The roles of both men and women in the household economy are diverse, with the utilization and management of natural resources being a fundamental practice for sustaining both life and the environment. The primary economic activity in the mangroves is the harvesting of red crab. Gender roles allow for specific activities and actions to be assigned to men and women. However, female and male agency is complementary, reflecting a differentiation rooted in the sexual division of labor, gender stereotypes, and the unpaid domestic work primarily performed by women (mothers, aunts, grandmothers, granddaughters, nieces). This differentiation highlights gender disparities exacerbated by job instability, domestic and social violence, extreme poverty from unmet basic needs (EPUBNs), limited access to education, social discrimination, chronic child malnutrition (CCM), and other intensifying social issues.

Family dynamics establish support systems through the transmission of knowledge and skills. Interaction with grandparents strengthens familial and territorial bonds among children and adolescents, based on the preservation of community practices linked to nature

and specifically to mangrove ecosystems. This fosters an understanding, from both intergenerational and intersectional perspectives, of the profound significance of coexisting with otherness, including the non-human world, as explained by anthropologist Viveiros de Castro (2008). Mangrove ecosystems are sites of multiculturalism, where decision-making and power are shaped by collective processes.

These processes are evident in the governance structures and territorial agency within these areas. For women, the mangrove forests initially represented a contested space of power, but they have gradually become a vital means of family and community subsistence. Through ongoing resistance and daily efforts, women have secured opportunities for greater action and participation.



# Gender systems and mangrove ecosystems: a relationship between water, life, and nature

To gain a clearer understanding of the women of the mangroves, it is helpful to provide a brief quantitative analysis of the territory encompassing the mangrove areas. This ecosystem is located in the province of Guayas, in the Santiago de Guayaquil Canton, La Puná Parish. According to the National Institute of Statistics and Censuses<sup>3</sup> (INEC, 2022), the province of Guayas has a population share of 25.9%, with women representing 34.9% of household heads, indicating that caregiving is predominantly a female activity.

The rural parish of Puná, where the mangroves are located, faces severe socioeconomic challenges. Issues such as teenage pregnancy, domestic violence, drug addiction, unemployment, and limited opportunities increase territorial inequalities. Access to basic services is minimal, with only 33% of the population with access to electricity, 67.1% to potable water, 0.8% to sewerage coverage, and 27.2% to waste collection services<sup>4</sup>.

*The mangrove ecosystem in Ecuador is an important component of the National System of Protected Areas (SNAP in Spanish); this organization aims to curb the indiscriminate deforestation of mangroves and provide legal protection while promoting community participation among all stakeholders. This situation determines governance, which, according to Lunay (2005), is the relationship between the interests of those in power and those governed.*

Governance encompasses the set of rules and behaviors related to a specific political action. It is reflected in human agency concerning natural resources and the implementation of best

practices for coexistence. Historically, the mangrove ecosystems of the Gulf of Guayaquil have been threatened by land use changes associated with shrimp farming and the unchecked expansion of the real estate sector, which continues to grow without adequate regulation or planning. Consequently, the loss of mangroves has progressively increased. The next section presents some data points to better understand the current state of the mangrove ecosystem.

<sup>3</sup> All data and population percentages were taken from the 2022 census carried out by the National Institute of Statistics and Censuses of Ecuador (INEC in Spanish).

<sup>4</sup> Living conditions in the rural parish of Puná are increasingly harsh, causing challenges for women crabbers and exposing them and their families to daily violence and inequality. Poor quality of life exacerbates the exploitation of mangrove ecosystem services and leads to greater pollution due to the lack of access to waste collection services.

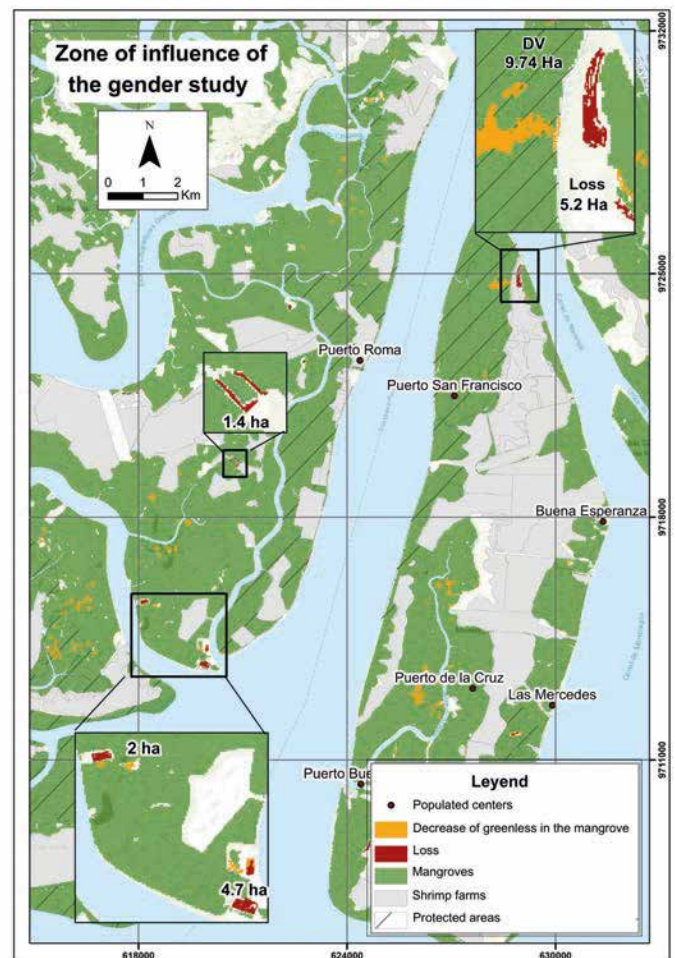




## Mangrove coverage in the study area

The MANGLEE tool estimated a total mangrove area in Guayas of 100,625 hectares in 2018, which had decreased to 98,934 hectares by 2020 and further to 98,208 hectares by 2022. This indicates a loss of mangrove cover of 466.3 hectares between 2018 and 2022, while the recovery in the same period was 432.1 hectares. MANGLEE also identified a total of 868.66 hectares where vegetation density and health were affected, as measured by the normalized difference vegetation index (NDVI). These figures position Guayas as the province with the highest mangrove losses nationwide, reflecting the ongoing impact of human activities, such as aquaculture, on mangrove ecosystems.

*Map 1 illustrates the situation in the study area. In Puerto Roma, no losses were observed thanks to the presence of two socio-mangrove areas: the "21 de Mayo Puerto Roma Crabber and Fisher Association" and the "Mondragón Artisanal Fishing Production Cooperative." However, within a 2-kilometer radius around this area, an estimated 21.74 hectares of mangrove loss was observed, primarily due to the expansion of aquaculture and the maintenance of shrimp ponds. Despite these losses, a recovery of 2.85 hectares was also identified within the same radius.*



**Map 1: Map of study areas.**  
Created by: Ecociencia 2024

<sup>5</sup> The NDVI is a key indicator for assessing vegetation greenness, density, and overall health. A decrease in NDVI suggests that these areas may have experienced a reduction in vegetation cover and could be suffering from illness or stress due to the maintenance or presence of shrimp ponds.

The expansion of shrimp farms causes irreparable damage to the mangrove ecosystem. Research on the collateral effects of shrimp farming on mangroves has shown that shrimp farms contribute to mangrove deforestation and are the primary cause of their loss (Mera Martínez 2019). Additionally, they disrupt the natural life cycle of species. According to Bravo (2010), shrimp farms deplete mangrove forests but are among the most profitable businesses globally. However, they are neither ecologically sustainable nor economically viable in the long term. Acción Ecológica (2020) has reported that Guayas Province contains the largest shrimp farms in the coastal region, with 37% of these large farms occupying 54.4% of the area dedicated to shrimp farming. Further, wherever mangroves are found, there are populations that have historically lived near them and have relied fundamentally on female labor, which has not been properly recognized (Bravo 2010).

The management of mangrove ecosystems as a natural resource for sustaining household economies initially involved men, who were primarily responsible for the harvesting of shellfish and red crab. Governance of these ecosystems has evolved in response to changing social and gender dynamics influenced by various local conditions. While this activity has historically been

male-dominated, it is important to understand that utilizing mangrove resources is far from straightforward, as outlined in the following:

*The harvesting of red crab is traditionally a male-dominated activity requiring substantial physical effort. This includes walking through mud all day with heavy boots, submerging arms up to the elbows, and traveling long distances by boat. Workers are exposed to harsh environmental conditions such as sun, wind, rain, and water, as well significant security risks due to the presence of pirates and organized crime. Moreover, it demands considerable family commitment, as it is a primary source of income. It involves early mornings and exposure to insect and snake bites, which complicate the daily work of those engaged in this activity. (Technical Report 2023).*

The harvesting of red crab strongly influences male behavior. According to Lefebvre (1974), it can represent the normalization and reproduction of a masculinized space, reinforcing the perception that it is unsuitable for women. This view aligns with Pierre Bourdieu's (1998) concept that the sexual division of labor reflects the established social order. Men are associated with the public sphere and market activities, while women are linked to domestic roles, including family care and household responsibilities. Men's



flexibility encompasses not only mobility within the mangrove ecosystem but also access to education and the ability to sustain themselves through labor. In contrast, women's space is more restricted due to their limited access to education. Two socio-mangrove zones have been identified: the "21 de Mayo Puerto Roma Crabber and Fisher Association" and the "Mondragón Artisanal Fishing Production Cooperative."

According to Gayle Rubin (1975), a sex/gender system is a set of arrangements by which a society transforms biological sexuality into a product of human activity, and through which these transformed human needs are satisfied. These activities are complementary as they foster the development of equitable social relationships through the transmission of family and ancestral knowledge, which supports community knowledge.

Gender systems rely on both female and male agency to sustain practices within social structures. In the case of women and their relationship with the mangrove ecosystem, their agency is directly linked to community and family sustenance. According to

Zabala and Castañeda (2014), agency refers to the capacity to act intentionally to achieve goals guided by reason. Female agency, in this context, is associated with the ability to manage and influence community processes, as exemplified in the following account:

*It has been about eight months since my husband passed away. Since he died, I have started working to support myself because I have two sons, but they also have their own families. Therefore, I can't remain idle. It's been tough, but what else is there to do? I sell fruit, watermelon, oranges, eggs, roasted plantain. Yes, it's difficult, I get sick, I get swollen, my arms hurt, but what should I do? My sons can provide me with food, but for anything else I need, I can't ask them because I know they have their own families to support. (focus group, June 6, 2023)*

In this story, the participant's involvement in crab harvesting and fishing began following a change in her family situation due to her husband's death. Her agency is demonstrated by her involvement in these activities to sustain her livelihood. Her sons, who







have their own families, are unable to provide full support. However, the transmission of knowledge helps sustain both family and community processes. Other women, who have been engaged in these activities for several years, assist the participant, thereby highlighting the collective nature of agency and female solidarity.

Agency is also linked to household responsibilities and the care economy. According to Federici (2013), care and domestic activities play a critical role, as women, through their work and love, endeavor to maintain the family unit. This effort entails an additional burden of energy and tasks that are often overlooked when acknowledging that their work at home involves a "sacrifice" to support the "provider/worker" men. Consequently, economic sustainability activities tend to fall on the male figures within the household.

Engaging in crab fishing is an unconventional role for women in contemporary society. Some men perceive these women as a threat or a challenge to their economic activities, as it involves competing for resources necessary to sustain their families. Female

crabbers not only care for their family members, but they also perform domestic work that directly supports the broader community. They symbolically represent an extended family, contributing to education, security, health, and the reinforcement and maintenance of social ties within their neighborhoods and organizations. Their activities are oriented toward actions that promote overall well-being. Federici (2013) argues that domestic work has traditionally been viewed as a natural role for women, leading to its undervaluation by men. This perception persists even when women actively participate in the household economy, reinforcing the notion that caregiving responsibilities inherently belong to women. This minimization of domestic labor leads to the discrimination of women crabbers. In some sectors, women working in the mangrove ecosystem are not well-regarded. This is highlighted in the following:

*We are proud homemakers; as long as we have husbands, they take care of us (laughs), and that is the custom here. We're not going to be slogging through mud doing their hard work. (focus group,*

June 11, 2023).

Being a homemaker dedicated solely to domestic duties aligns with the conservative societal model prevalent in the province of Guayas. However, some women choose to take the risk and work in the mangroves despite societal judgment. These women, who have turned to this activity out of necessity for survival, face violence from the men working in the mangroves. When men encounter these women in the mangroves, they neither assist nor acknowledge them, leaving them to fend for themselves, as it is considered inappropriate for women to engage in this work. Crabbing women face not only social discrimination but other problems, as mentioned in the following:

*It's unsafe because you don't know who you'll run in to. I had to go secretly or alone because my mother wouldn't let me go when I was a child, but I needed the money. Men don't like us working in this activity because of machismo. Both women and men don't respect a crabber/businesswoman. (focus group, June 23, 2023)*

For female crabbers, the economic necessity of working in the mangroves outweighs the risks and challenges they face. These women confront sexism and patriarchal norms, often enduring violence. The lack of access to education exacerbates these challenges, reflecting broader systemic issues in public policy and state support.

Paraphrasing Butler (2002), this neglect signifies that these women do not matter in societies where public investment in improving their quality of life is minimal. For women, the mangrove is a vital resource, and

their approach to extraction activities reflects a distinctive perspective. As recounted by one female crabber, they navigate the exposed roots of the mangrove with care, avoiding the use of machetes, which contrasts with the methods employed by men. This careful approach underscores their commitment to preserving the natural environment and the ecosystem.

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## Conclusions

The lack of state investment and the absence of public policies aimed at improving the quality of life for women whose primary livelihood involves interacting with and utilizing natural resources, such as mangrove ecosystems, have led these women to seek ways to legitimize their work. This work has historically been shaped by traditional practices, gendered agency, and male control. Denying the presence of women crabbers only forces them to conduct it in secret. The clandestine nature of this activity can be understood symbolically. Despite male crabbers' awareness of women's work, violence against them continues to escalate. The lack of support for transportation, spatial segregation, and the devaluation of their work that, within the context

of the social production of mangrove ecosystems, contributes to a strong social fabric, puts the lives and reputations of women at risk. These women, due to social exclusion, have taken the risk of working as crabbers and fishers to sustain their daily lives.

Their presence in the mangrove ecosystem is tied to their familial connections, as this activity is passed down through generations. Though historically marginalized, women's involvement in mangrove-related activities often stems from family ties, such as having a grandfather or father engaged in the same work. This intergenerational connection deepens their commitment to both the work and the mangrove ecosystem, fostering a sense of care and stewardship for a familiar

environment. Women, who typically manage household responsibilities, view their participation in mangrove extraction as crucial for sustaining their families. Without their efforts, men would face significant challenges in dedicating themselves to crabbing. Acknowledging the critical role women play in sustaining their communities, their contributions from an extended family perspective involve a continuous process of development and management.

As community participation mechanisms and social dynamics evolve, it is anticipated that more women will engage in resource extraction within mangrove ecosystems. Additionally, their political and territorial agency will facilitate greater involvement in

community political processes. To support this transition effectively, it is crucial to have backing from organizations that strengthen participation and provide educational opportunities.

The lack of access to technological and informational resources highlights how women carve their path toward agency and autonomy that is tied to the need to create their own relationship to the mangrove ecosystem. This deficiency drives women to challenge established social norms and enhance their capabilities to manage their own family and social care dynamics while maintaining their love of life and nature.



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