Ocean and Society
2025 • Volume 2 • Article 9167
https://doi.org/10.17645/oas.9167

cogitatio

ARTICLE

Open Access Journal

A Gendered Blue Economy? Critical Perspectives Through Women's Participation in Peru

Sara Doolittle Llanos [1], María Garteizgogeascoa [1], and Isabel E. Gonzales [2]

[1] artec Sustainability Research Center, University of Bremen, Germany
[2] Department of Social Sciences, Pontificia Universidad Católica del Perú, Peru

Correspondence: Sara Doolittle Llanos (doolittl@uni-bremen.de)

Submitted: 9 August 2024 **Accepted:** 21 January 2025 **Published:** 17 February 2025

Issue: This article is part of the issue "Into the (Gendered) Blue: New Perspectives on Gender Equality and Participation in Blue Growth" edited by Kristina Svels (Natural Resources Institute Finland), Milena Schreiber (University of Santiago de Compostela), Kristen Ounanian (Aalborg University), and Magnus Boström (Linnaeus University), fully open access at https://doi.org/10.17645/oas.i401

Abstract

Peru's maritime waters and their natural resources have long been appropriated as part of the country's economic development. While several historical analyses have covered the management and use of marine resources, few have focused on gender relations in these processes. In order to help fill this gap, we use an ethnographic approach, through the qualitative analysis of interviews carried out between 2021 and 2022 with three women involved in Peru's artisanal small-scale fisheries and scallop aquaculture industry. Through their life trajectories, we discuss how these women became key actors within the Peruvian blue economy and the role that concrete and situated gender relations played in that process. We present a critical analysis of women's agency and involvement in the blue economy and how the economic opportunities offered are constrained by gender norms, male dominance, and the precarious nature of (in)formal labor. We suggest a need to shift from a focus on blue growth to a more inclusive concept of blue justice that deals with structural inequalities ingrained in current modes of extractivism and aims to secure fair opportunities for all genders in marine-related activities.

Keywords

aquaculture; blue economy; blue growth; blue justice; gender equity; Peru; small-scale fisheries

1. Introduction

Though there is no consensus on the precise meaning of the terms "blue economy" and "blue growth," both have been used to highlight the need for sustainable development of ocean-based economic activities, such

as aquaculture, fishing, tourism, marine mining, and energy industries (Vierros & De Fontaubert, 2017; Voyer et al., 2018). In light of the vast empirical evidence of the vulnerability of marine resources, some scholars and policy circles question the compatibility of marine economic development and sustainability (Axon & Collier, 2023; Barange et al., 2018; Brent et al., 2020; Das, 2023; Eikeset et al., 2018; Niner et al., 2022). Some authors also note that developing economic activities under the label of blue growth without transforming the uneven distribution of gains and losses can negatively impact already marginalized groups, such as participants in small-scale fisheries (Cohen et al., 2019). In recent literature, some discourses surrounding the blue economy have been cautiously optimistic. Critiques maintain that blue justice is "the recognition, meaningful involvement and fair treatment of all coastal people with respect to how ocean and coastal resources are accessed, used, managed and enjoyed" (Blythe et al., 2023, p. 3), and incorporating analyses of power relations, are more urgent to prioritize in policy and research circles (Bennett et al., 2021; Gustavsson et al., 2021).

Historically, the blue economy was viewed as male-dominated, and women's important roles were overlooked. This notion has been challenged since the 1970s (Knott & Gustavsson, 2022) and contemporary literature describes women's contributions to the blue economy (FAO, 2020a), as well as the challenges of accurately representing those contributions (Kleiber et al., 2015) and of achieving gender equality (Gopal et al., 2020; Soliman, 2022; Williams, 2023). If blue growth initiatives are to foster just economic transitions, they must promote the increased and more equitable participation of women (Bennett et al., 2021; Soliman, 2022; Williams, 2023) and address how power relations manifest in ocean governance (Gustavsson et al., 2021). Within this growing field, we focus on the blue economy of Peru, a country with a remarkable history of marine resource exploitation, and consider women's engagement with the blue economy and how they have exploited the opportunities and confronted the restrictions of such engagement.

Peru's leading position in global seafood markets stems from a deeply rooted history of capital accumulation: the 19th century and early 20th century's "Guano Age" (Cushman, 2005, 2013), the Second World War canning industry (Félix & Porras, 2011), the "fishmeal revolution" that began in the 1960s (Wintersteen, 2021), the developments in scallop aquaculture since the 1980s (Kluger et al., 2019), and the increase in frozen fishery and aquaculture exports since the 1990s (Guevara, 2021). Despite what some call an astonishing "blue revolution" (Bailey, 1985) that has generated more than 200,000 jobs in the fisheries sector (Christensen et al., 2014), many coastal communities continue to live in poverty (Instituto Nacional de Estadística e Informática [INEI], 2020), and small-scale fishers face insecure working conditions. The further sustainable development of fisheries has been promoted as crucial to tackling food insecurity in Peru (FAO, 2016). The growing integration of artisanal fisheries in global markets, combined with other factors (e.g., environmental change affecting species size and distribution), has triggered a critical situation for this sector, which is marked by high rates of informality (e.g., Palacios, 2016), conflicts (e.g., Paredes, 2012), and growing impoverishment (De la Puente et al., 2020). Artisanal fisheries in Peru have become a focus for NGO and state projects (e.g., FAO, 2015, 2016, 2021; Figueroa et al., 2019; Programa de las Naciones Unidas para el Desarrollo [PNUD], 2022; Vaccaro, 2023) aimed at formalization (Pescaformal.pe, n.d.) and sometimes gender equity in the sector, as women are identified as key actors (Figueroa et al., 2019, p. 41) who are increasingly involved in leadership and decision-making (e.g., "Día Internacional de la Mujer," 2024; WWF Peru, 2019). Programs explicitly promoting blue growth in Peru have been limited (McKinley et al., 2019; World Bank, 2021). This analysis focuses on how the opportunities and constraints in Peru's artisanal fisheries and scallop aquaculture have influenced and been influenced by local gendered power relations.

Women have always participated in artisanal fishing activities in Peru (e.g., de Grys, 1988; A. García, 2001; Hammel & Haase, 1962). Their roles are diverse and span the entire fishing process: before fishing (e.g., collecting bait, fixing fishing equipment, and purchasing necessary supplies; Figueroa et al., 2019, pp. 40–41; A. García, 2000, p. 46), during (e.g., collecting and transmitting economic and environmental information; Ocampo-Raeder, 2011), and after fishing (e.g., commercialization, processing; Ayala Galdós, 2000). Despite these contributions, women's labor is still seen as secondary and as support for what men do. Additionally, fishermen rely on the unpaid and unrecognized work of women maintaining households and communities (Delgado-Gustavson, 2011). The transformation of Peru's blue economy—driven by industrialization and the increased access to international markets—created new spaces for women's involvement. In recent decades, the increased export of seafood has expanded the demand for female labor in primary and freezing processing plants. In these plants, women are now the primary workforce and endure exploitative conditions not unlike those reported in studies of the 1970s and 1980s sardine canning industry (Barrig et al., 1985), often facing temporary employment and unjust working environments (Pejerrey Piedra, 2008). Beyond factory work, some women also occupy other roles within the scallop aquaculture value chain, including ownership of aquaculture concession rights, representatives of producers' associations, administrative roles, and, in the case of more highly educated women, advanced technical jobs.

Despite women's long-standing participation in the Peruvian blue economy, their recent demands for recognition, and increased level of organization (L. Mendoza, 2024), institutionalized gender equality remains limited. Although Peru has committed to implementing the FAO's Voluntary Guidelines for Small-Scale Fisheries (FAO, 2020b), which explicitly mentions gender equality, no specific legislation addressing gender in its blue economy has been enacted (Harper et al., 2017). Women's roles in small-scale fisheries in Peru remain poorly documented and in need of research (World Bank, 2021). Data on the numbers of small-scale fishers is limited and outdated (INEI, 2012). Even less is known about the exact number of women engaged either directly or indirectly through fishing, sale, and processing of fishery products, as well as the extent of their participation in decision-making processes (Harper et al., 2017).

This study aims to highlight women's experiences in Peru's coastal blue economy and complement existing theoretical and policy-driven research. In the analysis of our three case studies, we ask the following questions: (a) What processes within Peru's blue economy and its historical development have determined women's roles and contributions? (b) How do women make use of their agency to leverage opportunities within marine and coastal resource exploitation, and how are their experiences shaped or limited by the structural constraints? We ask these questions in the hope of providing a concrete basis for the ongoing attempts to create a situated blue justice that recognizes the specific needs of women within the complex processes of blue resource accumulation.

2. Conceptual Framing

Gender relations, understood as situated social and cultural constructs (West & Zimmerman, 1987), seek to assign people to economic, political, and social roles in the public and private spheres. Because these characteristics and roles are organized hierarchically in society, they often form the basis of structural inequalities that intersect with other forms of inequality, such as class, race, and ethnicity (Axelrod et al., 2022; Crenshaw, 2013). Almost every organization, including the organization of work in the fishing sector, contains gender-based inequality regimes (Acker, 2006). These underpin, for example, the systems of skills

valuation, and forms of workload distribution and recognition, creating macro and micro advantages for men over women. In Peru, gender relations are reproduced within patriarchal institutional, political, legal, and economic structures, and local cultural ideals and practices that emphasize men's domination over subordinate women, as well as entanglements within racial and class hierarchies (Van Vleet, 2019). Women and girls are positioned in charge of reproduction, care work, and household resources, although not all communities' experiences align neatly with these ideals. As Van Vleet notes (2019, p. 38), practices of gender are additionally embedded in global developments in media and exchanges in commodities and values. Economic changes are accompanied by sociocultural changes that reshape gender roles and relations, and, in turn, gender interacts locally with international and historical trends, positioning women in specific situations within the blue economy.

We frame our analysis of the blue economy in Peru within academic discussions of blue justice. Following environmental justice scholars, Bennett et al. (2021) understand blue justice as a three-fold (recognitional, procedural, and distributive) critique of the management of marine resources. Considering the many examples of social and environmental injustices in marine spaces (e.g., Ertör, 2023), blue justice highlights the gap between the projected benefits of blue economies and the reality for vulnerable and marginalized people (e.g., Indigenous peoples, women, small-scale fishers, and people living in poverty), as well the resistance of said groups to the injustices they face (Blythe et al., 2023). Findings underline the need to address historical injustices at multiple scales (from local to international) and to redefine researchers' and policymakers' approaches to transformations and development, including challenging questions about the nature of these injustices (Bennett et al., 2021; Yuan et al., 2024), while acknowledging understandings of justice are diverse and ever-changing (Gurney et al., 2021). Specifically, for the case of gender, Gustavsson et al. (2021) point out that institutions tend to reproduce gendered injustices even as they attempt to recognize women, as they avoid engaging with the particular place-based gendered power relations and women's needs are often still unaccounted for. Therefore, research still has to systematically consider and include how women's participation in the blue economy is nuanced, and constrained, by gender norms and power relations (Gustavsson et al., 2021). Inspired by these works, we set off particularly from the recognition aspects of blue justice to discuss some of these local specificities for women in coastal Peru.

3. Methods

We followed an ethnographic approach common in anthropology and political ecology. Each author conducted independent fieldwork from which the three case studies presented in this article arise. The first case study emerged from research with various artisanal fishing organizations to analyze the informal dynamics of the sector; the second one examined the development of the scallop aquaculture industry through a gender-sensitive approach from the 1980s until now; and the third one researched everyday resistance and power dynamics in women's lives in extractive landscapes at the coast. The ethnographic research took place in two coastal provinces known for their significant fishing and aquaculture activity (Section 4.1). The data presented in this article was collected between 2021 and 2022. Interviews were conducted in person or via phone due to Covid-19 restrictions, ensuring participation was voluntary and following standard ethical guidelines. In all case studies, names of people, and in the third case study, additionally names of places and companies, have been substituted by pseudonyms to respect the participants' anonymity. We complemented the interview data with field notes and observations collected

during the fieldwork for each project and analyzed the historical economic and political developments in coastal and marine economies in Peru. We transcribed, coded, and organized the interview data according to occupation, opportunities and challenges present in the interviewee's life, people or institutions that have helped the interviewee, personal qualities that have played a role in the interviewee's trajectory, and further contextual demographic information.

In selecting the case studies, we considered women involved in various ways in the fishing and aquaculture sectors. The cases were selected following a diversity criterion based on factors such as the level of political participation (e.g., participation and membership in grassroots organizations), socio-economic situation (workers, assemblers, etc.), and life stage (age and family responsibilities). We followed an intersectional approach, which recognizes that categories such as age, class, and educational level, among others, intersect with gender, influencing women's experiences and life trajectories (Prins, 2006). This approach was therefore used first to identify case studies within those available in each fieldwork, to ensure that the three women selected reflected diverse experiences shaped by factors relevant to the approach.

We collected information in the form of life histories, which allows us to understand women's agency (i.e., their capacity to make choices) while recognizing the structural limitations that shape their actions (e.g., gendered power relations or economic precarity; Tomassini, 2014, p. 68). Life histories center the voice of the social actors in their interpretation of events that marked their trajectory (Laslett & Thorne, 1997). In doing so, we situate women within their relational environment and social and economic contexts. We recognize the importance of analyzing their interactions with other actors—such as family members, employers, and governmental institutions. These relationships significantly impact women's opportunities and constraints (Atkinson, 1998). By drawing on the concepts of agency and structure, based on Ribot and Peluso (2003) and Crossley's (2022) work, we understand the social structure as a network of interaction of social actors that form political-economic conditions and set the terms (e.g., access to resources). This presents opportunities and constraints and affects processes in differential ways for different actors, determined by the positionality and the power this positionality entails for each actor within a given context (Foucault, 1978).

4. The Peruvian Context and Case Study Sites

The integration of Peru into the world economy has been closely tied to exploiting marine resources, which have contributed significantly to the country's economic growth. The prioritization of marine resource exploitation for export to global markets has often resulted in boom and bust dynamics accompanied by detrimental effects on the environment (e.g., resource exhaustion) and unequal socioeconomic development (e.g., Clarke, 2022). Throughout the 20th century, state action was concentrated on facilitating investments based on the exploitation of resources for large-scale exports. However, the neoliberal extractivist development model also offered many promises for small and medium-scale fishers. Since the 1980s, the Peruvian government sought to support the inclusion of these fisheries while grappling with the persistent informality of the sector (Damonte et al., 2023; Gozzer-Wuest et al., 2022). This informality has significant implications, including challenging working conditions of fishery workers (Lozano et al., 2024), the exponential increase of the fleet (De la Puente et al., 2020), and the lack of compliance with fishing regulations (Palacios, 2016).

The current neo-liberal structure in Peru is also characterized by an unequal division of labor and responsibilities between men and women (Hays-Mitchell, 2002, p. 74) and the assumption that women's work should be readily available, as it is essentialized as a natural feature of womanhood (Moser, 1989, p. 1801). Despite some progress in promoting gender equality, such as closing the gender gap in education or increasing female participation in politics (Trelles, 2020), inequality and oppression persist within the home and in the public sphere. There are high rates of gender violence, teen pregnancies, and wage inequalities, and it is estimated that, on average, women are responsible for 80% of unpaid domestic work, which impacts women's ability to insert themselves into economic activities (W. Mendoza & Subiría, 2013; Miró Quesada & Ñopo, 2022).

The changes experienced in recent decades have impacted the economic and gender dynamics of fishing villages, as is the case of our two study areas: San Andrés and Bahía Encanto.

4.1. San Andrés

Our first two case studies take place in San Andrés (Figure 1), a coastal district located about 250 km south of Lima, where the majority of the population depends on artisanal fishing as the primary subsistence activity. Historically a fishing village, the economic context shifted significantly with the development of two marine resource exploitation activities: anchoveta (*Engraulis ringens*) fishing and scallop (*Argopecten purpuratus*) aquaculture.

Traditionally, regulations in Peru have established artisanal fisheries catches be intended for direct human consumption (i.e., fresh, canned, cured, and frozen products), while industrial catches are allowed to be processed for indirect human consumption (i.e., fishmeal and fish oil). Fishmeal production from artisanal catch, while it does exist, is allowed only as a secondary activity to utilize discards and waste. Artisanal anchoveta fishing gained momentum in San Andrés during the 1990s with catches primarily destined for canned and cured products, supported by international demand from Italy, Spain, and the US. However, from 2015 onwards, declining anchoveta sizes led processing plants for direct human consumption to leave San Andrés in favor of more productive bays. Simultaneously, prices of fishmeal rose, incentivizing clandestine fishmeal production from artisanal fisheries catches. Today, despite the de jure exclusion of artisanal fisheries in anchoveta fishmeal value chains and ongoing regulatory efforts by the state, this fishery continues to be an important source of income in the district.

In the 1980s and 1990s, the scallop industry significantly transformed San Andrés. An extraordinary El Niño event in the early 1980s caused a significant increase in scallop biomass, leading to a surge in scallop harvesting, fueled by rising exports to the US. To counter the decline of wild scallop biomass after the El Niño, actors such as the state, fishers, and capitalists, promoted the transition to aquaculture, facilitated by the intensive use of cheap (female and male) labor. Today, over 11,000 tons of scallops are exported annually (Guevara, 2021, p. 12) with processing plants and aquaculture concessions nationwide. The promotion of the industry was partially done by aligning the discourse with the mainstream narrative that aquaculture is a great opportunity for women and a livelihood opportunity for impoverished communities (N.E, personal communication, May 2022).

The development of the anchoveta fishery and scallop aquaculture has also significantly introduced job opportunities for women in the community. Most adult men in San Andrés are fishers, while women are employed in processing in local plants and retail and wholesale fish trade, as has been historically observed in southern Peru (Hammel & Haase, 1962). Women also carry out administrative tasks: they keep the accounts of the catches, distribute profits at the dock, and are responsible for household income management. Some are also vessel owners. In recent years, some women have been elected to positions of authority in public institutions (the district mayor's office) and trade unions (fishermen's social organizations). The relatively equal economic and political participation of men and women, compared to other fishing villages, is striking even for fishermen from other localities. However, despite this reported influence of women in San Andrés, patriarchal relations and machismo persist throughout the Pisco province, and experiences of women in rural agrarian areas continue to be marked by violence (Section 6.2).

4.2. Bahía Encanto

The third case study is located in Bahía Encanto, a small coastal community in northern Peru (Figure 1) recognized as a hamlet by its regional government in 2008 after the first families began settling (D. García, 2018). With a population of 307 people according to the 2017 census (City Population, n.d.), it lacks basic essential services such as electricity, running water, a health post, and a secondary school. Most heads of family engage in small-scale fishing. The fact that the small population is comprised of 65.5% men and 34.5% women (City Population, n.d.) reflects the recent history of the settlement: originally an informal fisher wharf, it was temporarily inhabited only by fishermen from the surrounding areas and settlements

Figure 1. Map of Peru and location of study sites.

from the interior, where families rely on agriculture. In the last 30 years, whole families began migrating to the coast and settling there, looking for alternative livelihoods in difficult times, slowly building houses and small businesses that benefit from local tourism in the summer months. Now, families in Bahía Encanto rely heavily on small-scale fisheries, the products of which they land on their beach or in neighboring towns, where they are sold to intermediaries that ship the fish to the interior. Women's roles in the community are mostly as mothers and housewives, although many keep a second informal job with which they complement the family's income. Some send the fish their husbands or family collect to distant family members in the interior, some own small shops or restaurants, do animal farming, and some are informally involved in scallop aquaculture.

Besides these dynamics, Bahía Encanto is located near the activities of large companies, in particular those of the mining company, Salla Tanka, which regularly conducts corporate social responsibility programs and projects together with local enterprises and the local, regional, and national governments, to offer capacity building workshops, donations, health awareness campaigns, etc.

5. Women in the Peruvian Blue Economy

5.1. Sandra: Leadership and Ownership in San Andrés

Sandra, 50, is a vessel owner, mother of three children, and vice-president of an organization of artisanal fishers in San Andrés. She was born in 1973 into a family where all male family members were artisanal fishers. When she finished school, she decided on a career as a healthcare technician. At the same time, she worked as a fish filleter at the San Andrés artisanal landing site to pay for her studies and contribute to the family economy. Her education was interrupted when, at 19, she became pregnant by her partner, a landing site worker. This event led her to reorganize her priorities and focus on her new family's economic consolidation. Working in the fishing sector appeared to be a more economically efficient option than pursuing a career in the health sector and also, a more flexible option to reconcile paid work with family care: working at the landing site would give her immediate money to buy her own place and help support her new family; and, once her son was born, she could take him to the landing site when needed, which would be impossible if she worked in a healthcare facility.

It was during this time that she decided to make her first investment in a boat. It was a difficult decision for the young couple to make, but they had the guidance of her grandfather-in-law, a boat owner. He convinced Sandra that this would be the way to a more relaxed life: a boat would allow her to have a better income and less time and effort to make ends meet. Sandra's determination to take the risk and embark on this journey was fundamental, and after convincing her more risk-averse husband, the vessel was bought.

The couple began to work intensively. From her pregnancy until after giving birth, Sandra migrated temporarily to Pucusana, following the crew for which her husband worked. She dedicated herself to fileting and selling fish, working up to 12 hours daily. Even without the support of her family and community, she was able to quickly integrate into work and complete her long hours thanks to her access to the Wawa Wasi program—a system of community daycare centers, co-managed with the state, created in 1993 and aimed at people living in poverty or extreme poverty (Cueto et al., 2009).

During the 1990s, and especially since 2000, Sandra benefited from the increasing articulation of local artisanal fisheries with international trade circuits. In particular, there was an increase in demand for anchoveta, used in the production of canned and cured fish for export to the European and US markets. During this period, her family's income grew significantly, allowing them to make greater investments in fishing equipment, but also in her family: for Sandra, one of the most important accomplishments of her work has been to provide higher education for her three children.

Over the course of 15 years, Sandra became the owner of five fishing boats of different tonnage. However, this period of boom in anchoveta fishing for human consumption began declining in the mid-2010s. Since then, fish size has decreased, making it unsuitable for the canning process. To not lose their investment during this time, artisanal fishers began to redirect their catch to the illegal production of fishmeal. Since then, Sandra's situation, like that of other anchoveta fishers from San Andrés, has become precarious. On the one hand, the market for illegal fishmeal production allowed her to continue working and earning an income. On the other hand, the selling prices were much lower than those offered by the legal processing plants for direct human consumption. Additionally, Sandra became increasingly vulnerable to sanctions such as fines and seizures and even risked losing her fishing permit, nets, and vessels.

Nonetheless, Sandra managed to become an important economic agent in the region, gaining recognition from her peers and even reaching representation positions. Currently serving as the vice-president of a social organization for artisanal fishermen, she shares her journey of becoming a leader. She started in roles traditionally associated with women, such as being elected as a representative of the parents' association at her children's school. She then transitioned into leadership within the fishing sector, beginning as the treasurer of a fishermen's organization, a common position for women who are included in such associations. These early experiences provided her with a platform to demonstrate her leadership qualities and gain the support of her colleagues for more influential positions. For example, during her time as treasurer, she exposed the mismanagement of the organization's resources by its leaders, establishing herself as an honest, determined, and transparent individual. As a result, she was later chosen by a group of fishermen who had departed from this organization to become their vice-president.

Sandra explains that her leadership is based on her peers' recognition of some number of intrinsic personal qualities, including her initiative, courage, and sense of responsibility and justice. As a vessel owner, she has faced many situations where she has had to defend fishers from unfair treatment by unscrupulous traders, larger-scale fishermen, or abusive authorities. On these occasions, Sandra did not hesitate to stand up for the fishermen, to demand what she believed to be fair, and to mobilize people to achieve their goals, despite the risks and reprisals that might ensue.

She believes that being a woman poses several difficulties but also offers several opportunities to maintain her leadership position. The typical gender division of labor in fishing tends to generate criticism from those who see an incompatibility between representing fishers without being directly involved in the extraction of fish. As a result, Sandra finds it necessary to constantly emphasize her knowledge of navigation, fish species, and the management of fishing operations. But, at the same time, she feels that it is precisely by staying ashore that she can keep track of the unpredictable administrative and/or political processes that her organization is involved in. Sandra also believes that being a woman has given her a set of skills that make her better suited to lead her organization than her male counterparts. According to her, women are more

orderly and rigorous, and these qualities have allowed her to successfully navigate the bureaucratic processes to maintain her association formalized, thus facilitating its dialogue processes with the state. Sandra believes that her gender has given her a different way of managing interests, where dialogue is preferred to confrontation, leading to her being able to build an important network of contacts in the centers of power of public institutions dedicated to the management of fishery resources.

5.2. Eva: A Lifelong Journey in Scallop Processing

Eva, 55, works in artisanal primary processing factories of seafood products in San Andrés and Pisco and is the mother of four children. Born in 1969 in the city of Pisco, she is the third of eleven siblings. Her large family was involved in artisanal fishing and agriculture, as her father was a diver, and they also owned a small farm, where Eva worked as a kid. Like other women, Eva started seafood processing as a child (11 years old) in *peladeros* (informal sites for peeling and processing seafood) during the 1980s scallop boom. *Peladeros* hired many female workers, as they were the available labor force on land. This type of work offered a higher income amidst growing poverty, and a flexible option for women, who could bring their children to help with tasks such as washing the peeled scallops, making the workday more manageable, and reconciling reproductive and productive work.

Eva's family was experiencing economic difficulties due to agricultural droughts, which led her mother to consider new opportunities. Drawn by the employment options created by the scallop boom, she decided to move to San Andrés and Eva followed. The move, however, was difficult as they initially had no place to live. Fortunately, through a personal connection with the mayor, they were granted a lot to build a house. For Eva, the move represented a chance to pursue something she had long been denied: an education. Unlike her brothers, her father had forbidden her from studying, but Eva was determined. Despite his constant threats, she managed to finish secondary school and dreamed of pursuing a career and getting her mother out of violence. This panorama of machismo and gender violence illustrates the rural context of that time and the perceived contrast with gender roles in San Andrés. Indeed, Eva remembers her mother's personality as weak when it came to her relationship with her husband, comparing her to what is expected of women from San Andrés.

Eva continued working with her mother to support her and her siblings until she got married at the age of 25 when she stopped working. Her husband at that time did not want her to work and his income was sufficient to maintain the growing family. Some years later, in the early 2000s, her husband suffered a work accident in a fishmeal factory. He fell six meters and entered into a vegetative state that left him with after-effects. Eva quickly reintegrated into the processing labor market as she had to provide for her four children and cover the health care costs for her husband, who was hospitalized with no insurance coverage. She was able to reconcile the return to work at the processing factories as some of her family members could take care of her children while she worked day and night. She feels proud of having been able to provide a better future for them:

> I thought if I had brought them into the world, it was to give them something better, not for them to go through what I went through, so….I don't know, I wanted them to study, to become professionals….But in any case, I feel happy because at least they are good kids, I raised them alone, but there they are. (Eva, phone interview, December 7, 2021)

Throughout the years and thanks to the network built since her first experiences, Eva has been able to find employment in the processing factories of the former owner of the original *peladero* and others. Her career follows the transition from *peladeros* to formal processing plants due to the increasing implementation of sanitary norms, certifications, and the need to adapt to different export opportunities. Eva and her peers learned to process multiple species throughout the years and are seen as skilled workers by their employers. Their work in the processing factories is characterized by a lack of stability. Although factories function almost all year round, workers are kept temporarily, rotating between different processing plants, and in cases like Eva's even in different regions of the country. In August 2007, Pisco suffered the consequences of a big earthquake; nothing was left, and Eva's children were still studying. She was told that there was work in processing scallops in the north of the country, so she temporarily migrated to Sullana in Piura, leaving her children with her brother. She stayed there for two years and visited her family every month. There, she worked Monday through Friday, up to 16 hours a day primarily processing scallops.

When she returned to San Andrés after living in Piura, Eva also worked in bigger factories in the area (i.e., industrial processing plants). Finally, she was formally hired. At the moment of the interview, Eva kept on working, although in a more relaxed manner, as she no longer has children's responsibilities and has a home of her own. However, she cannot stop working. She still provides some financial help to her studying children, and, as she lacks the possibility to join a pension scheme, she must save money with the hopes of retiring one day.

5.3. Dafne: Contributions and Nuances Hidden in Plain Sight

Dafne, in her 30s, occasionally runs a small sandwich cart, sometimes works at sea in scallop aquaculture concessions, is part of a women's fisher's association, and is a mother of two. Dafne's family life is intertwined with small-scale fisheries: her brothers are divers, her mother and sister own small restaurants that sell the local fish specialty Bahía Encanto is known for, and her husband occasionally works as a diver and day laborer for some scallop aquaculture concessions. At the same time, Dafne's mother sends fresh fish and other marine products to the rest of their family in their town of origin, almost 60 km away.

Dafne was not born by the coast. In the early 2000s, she migrated with her family to Bahía Encanto from the interior, where their small farm faced dire times. During her childhood, she was one of the few whose family could afford to send her to secondary school, traveling back and forth to the larger town in the area, Algarrobos. This was costly and time-consuming, but thanks to family connections, Dafne could stay with friends of the family in Algarrobos for weeks at a time until she successfully finished her studies. Dafne points to her education during these years when discussing her family planning: being familiar with contraception and sexual education in general, she was able to plan with her husband for their only child at the time and carefully plan when to have their second, in contrast to other women in Bahía Encanto.

The same family connections that facilitated her secondary studies offered her the opportunity to be one of the few women working as a day laborer in aquaculture concessions in the bay. In the concessions, she carries out several tasks before the scallop seeds are placed on the bottom floor or in the suspended culture systems, such as size classification and cleaning and caring for the equipment. She recalls feeling surprised the job was easy:

> For me, it was something new because I had never done it before. Then I said, "Is this what the men do?" [laughs] Interviewer: What? Why? What do you mean by that? Dafne: [laughs] That it's easy. Interviewer: Ah, you thought what men do was hard?....Dafne: Hm-mh, if I had known it a long time ago, I would have helped my father. (Dafne, interview, August 24, 2022)

Since that first day, she has been irregularly called to work. She enjoys being out at sea with her friends and husband, but she realizes she is being paid less than the job would pay biologists or fisheries engineers. Dafne is also one of the few women in the region who is part of a fisherwoman association. When the locally based mining company Salla Tanka, along with INNOTEC, a state center for fisheries innovation and technological transfer, offered the opportunity, Dafne was included in a small group of women to be formalized in line with the state's fishing formalization objectives for the artisanal fishing sector. The women (only three of whom had any previous fishing experience) were accompanied to Algarrobos to complete the necessary procedures, and in the following year, attended multiple capacity-building workshops regarding sustainable artisanal fishing practices such as fish sizes and seasonal closures. They also engaged in an innovative blue development initiative: fish aquaculture of Chalapo clinid, the local specialty fish.

When the first author interviewed Dafne, the women in the association seemed defeated, as the aquaculture attempt had failed, some speaking of broken nets being the reason fish had escaped and some speaking of theft. The association had hit a roadblock applying for a land concession and wanted Salla Tanka and INNOTEC to support them with land aquaculture or moving away from fisheries altogether to do animal rearing. This was a point of contention because they had been formalized as an artisanal fisher association, and INNOTEC could not support them in endeavors unrelated to fishing. Additionally, interviews with Dafne and other association members revealed difficulties obtaining financial support for setting up a fish processing for their husbands' catch—one of the main hurdles being the lack of fisher licenses—as well as deep challenges in the interpersonal relationships within the association, including discussions of who was "a real fisherwoman," and who was part of the association for opportunistic reasons and not pulling her weight.

6. Discussion

Sandra, Eva, and Dafne's cases offer several starting points for discussing the opportunities and challenges women face in the blue economy in Peru and how these are directly related to local reproductions of gender relations. These women have seen great changes in the local economies throughout their lifetimes. All three have come across opportunities to complement the family income and thus crucially sustain the family's economy in times of crisis (escaping gender violence, coping with health issues, and dealing with economic and environmental distress). In turn, this has led to achievements that the women are proud of, in particular, being able to offer their children an education.

We explore general themes present in women's lives across the Peruvian coast, linking the specific life events to national and local history and contexts. We argue that Sandra, Eva, and Dafne's agency in participating in the blue economy has been constrained by structural issues that frame these opportunities and challenges, such as the gendered division of labor, the burden of care work, (under)valuation of women's work, gender violence and male dominance, and the precarity of the general market and (in)formal economy.

6.1. Gendered Division of Labor and Care Work

Sandra, Eva, and Dafne's abilities to participate in different kinds of work throughout their lives have hinged on the compatibility of the care work of their children or other dependent people with their working hours. Three general tactics become clear: finding income alternatives that allow children in the workspace, leaving the children with a trusted person, or using public services such as the national program Wawa Wasi. In Sandra's case, becoming pregnant at 19 led her to decide on a career in the fisheries sector over her preferred path in healthcare. Dafne has had to compensate for the lack of resources around her by relying on family members and carefully planning her family life so as not to interfere with their financial needs, something uncommon and only possible through her completing her education. Sometimes, family care still conflicts with opportunities for her and her colleagues within the association. When offered the opportunity to join a seafood trap-making workshop in the nearby town, Dafne and the other women from the association voiced concerns about the long schedules and the lack of childcare options. When no solution was presented—INNOTEC representatives stated their role was as a fisheries organization, not a childcare provider—the women quickly signed up for the workshop while planning for their husbands or other family members to attend instead. Eva's first experiences in the *peladeros* were directly related to the activity where children could accompany their mothers. This is no longer possible since the formalization of processing plants and few factories offer childcare.

Fisheries and aquaculture can be hard physical work, regardless of gender. In our case studies, we have seen that without the possibility to offload care work, women's double burden skyrockets (Rivero Reyes, 2002), which takes a toll on workers' bodies. Many women, as in Eva's case, remember their mothers as extremely fatigued, which often triggered their desire to help them. Furthermore, the differences in how these women have been able to cope with challenges in motherhood and work in spite of their desires for their own careers and personal advancement are strongly framed by the kind of work available. Sandra had to abandon the idea of studying in order to sustain her family. However, she successfully became a vessel owner. Similarly, Eva always worked to sustain her family and managed to raise her children even though she could not advance in her career—most probably due to the lack of training opportunities. This places Eva in a different situation of precarity, she still needs to work a hard physical job in which age becomes a critical factor. These case studies highlight the dynamics of households at the coast: Women do engage in work, usually when men embark on economic activities that require them to be absent for extended periods of time, such as fishing, or when economic times are difficult, and men's income cannot sustain the family. Unsurprisingly, the impossibility of lessening the burden of care work strongly limits women's types of participation in economic activities, a phenomenon amply reported in fisheries and other economic activities in Peru (Armbruster et al., 2019; PNUD, 2022; Rivero Reyes, 2002; Tobin & Castellanos, 2021).

6.2. Machismo, Male Dominance, and Gender Violence: Questions of Personal Freedom, Valuation of Work, and Self-Worth

Opportunities for women at the coast intersect with male dominance, machismo, and gender violence, which are critical issues in both study areas (INEI, 2023; PNUD, 2022; Vaccaro, 2023, p. 43). We highlight three main areas where women have been affected by this: the ability to make choices about one's own life and have personal freedom, the differential valuation of skills among men and women, and issues of gender violence.

Personal freedom, or the lack thereof, has directly impacted women's access to opportunities. Moving away from her home allowed Eva and her mother to escape a controlling and violent father and husband so that Eva could receive an education and a certain degree of economic freedom. This freedom was then curtailed by her husband, and it was only after his accident that Eva regained control of her working hours and finances. Sandras' proactiveness, as shown by her investments and leadership, was facilitated by her husband's support, and while Sandra managed to overcome her husband's skepticism, sometimes machismo at home is more limiting. Dafne discusses having to convince the husbands of her association members to allow the women to attend workshops.

Machismo additionally leads society to overlook and undervalue the skills and knowledge that women contribute to their work and influences how women perceive their abilities and worth. This pattern is evident in Sandra's frequent need to defend her knowledge and legitimacy. The assumption that women, who traditionally stay on land, cannot know about fishing out at sea undermines Sandra's deep understanding of the sector, which she has acquired throughout her whole life growing up in a fishing family. Eva's case further illustrates this issue. In the processing plants, women are traditionally associated with simple manual work with kitchen utensils. Tasks that require more strength-related physical effort, such as lifting and placing the seafood on the work table and pouring ice into the water, are reserved for men. Women's jobs are still physically demanding, and many report physical pain and other health consequences. However, all women's tasks in processing plants fall into a broader category: easy or unskilled. While women themselves may have internalized this perception, employers recognize their skills—especially as processing plants face increasing pressure to secure the number of skilled workers that minimize the amount of wasted product. Managers of processing plants pay close attention during the recruitment process and recruit women who will be highly skilled and, at the same time, knowledgeable of the ever-increasing sanitary requirements placed by the export market. However, the benefits of these skills are not translated into improved working conditions, and this type of work is generally lowly valued by society. Overall, the social rules passed on and reproduced by women can conflict with their own experiences of self-value: one example is Dafne's genuine surprise to learn she was perfectly capable of doing men's work in the scallop concessions, at the same time internalizing the belief that, because she is woman, she is better suited than men for doing specifically more dexterous work.

Regardless of recent advances, women are still embedded in violent households, and violence and assault are an unfortunate reality for many women on the Peruvian coast. While accounts of experiences of gender violence shared by Sandra and Dafne are limited, other women in and around Bahía Encanto describe the violent struggles between women and their husbands to access the money the husbands have when they return from fishing. More than half of Peruvian women are estimated to have suffered physical, sexual, and/or psychological abuse (INEI, 2023), leading in many cases to teen pregnancies (Castañeda Paredes & Santa-Cruz-Espinoza, 2021). These reports of violence are presumed, as in many other places of the world, to be an underestimation of actual numbers (Van Vleet, 2019). Women on the coast are sometimes unfamiliar with what can constitute violence or abuse (e.g., emotional or financial abuse) or with the mechanisms to report and obtain help for gender violence (PNUD, 2022), and prosecution of sexual violence is still difficult because of legal hurdles and stigmatization (Van Vleet, 2019).

Thus, even though the blue economy can open up opportunities for women to engage in different financial activities or political representation, this occurs within the constraints of what is appropriate and

non-transgressive for women to do, while still attending to the gender roles they are socialized in, and still being subject to inequalities that permeate the whole society. Gender roles within fisheries can be port-specific (A. García, 2001), and this was reflected in stories of women in command situations in public and private spaces being more present in San Andrés than in Bahía Encanto. It is worth noting, however, that even in these cases, there are still different demands and values placed on men and women, and even in more urbanized areas where women have relatively more employment options and higher chances of having personal freedom and financial autonomy, opportunities remain precarious (PNUD, 2022).

6.3. Precarious Labor: Attempting to Escape Poverty, at Least for the Moment

The work opportunities discussed in this article are embedded in larger contexts beyond the coast: both Dafne and Eva's families have moved from agricultural sites, as many others, escaping poverty and looking for livelihood options related to fisheries. Migration strategies within small-scale fisheries and aquaculture have been discussed as a strategy to cope with environmental disasters and distress (Kluger et al., 2020).

The cases of Sandra, Eva, and Dafne show a clear tension between the economic opportunities available to them and the precarious economic landscape (i.e., boom-bust dynamics, the temporality of employment, lack of social protection, and informal work). While these work opportunities have provided some improvements in their lives, they remain precarious. Sandra's trajectory illustrates how boom periods of international demand allowed her to invest and position herself in a somewhat privileged situation. However, as the economic panorama changed due to the falling anchoveta sizes, industry relocation, and legal exclusion, Sandra had to make the difficult decision to engage in illegal fishmeal production. Sandra's work is embedded in a volatile economy. Her ability to secure her family life investments remains uncertain. At any moment, she risks losing everything—boats, fishing permits, etc. Eva's case further illustrates how the dynamics of international markets have shaped her work in seafood processing. Over the years, she has adapted to market shifts by learning to process a variety of marine species, from scallops during the 1980s to other seafood products that have gained prominence since. The high demand for products destined for international markets creates economic opportunities but simultaneously exposes workers to the volatility of market trends, as the work is often temporary and comes without basic protections such as pensions, retirement schemes, and health insurance. Dafne's inclusion in a formal fisherwoman association for over a year does little to secure her ability to provide for her family, while she and her peers find informal ways to be inserted as day laborers at scallop aquaculture concessions. Her experience in aquaculture concessions also highlights the temporary and unstable nature of work. She has had chances to work at sea, but these are sporadic, resulting in unpredictable income. This type of employment impedes workers from stabilizing their family economies and improving their working and life conditions in a sustainable, long-term manner.

The experiences of Sandra, Eva, and Dafne show that the line between formal and informal work is not always clear-cut in terms of stability and precarity. Informal work often amplifies instability, but even formal employment in industries influenced by market fluctuations and seasonal demands can leave workers vulnerable. This adds another layer to the discussion of labor precarity in the blue economy. The need for informal jobs in Peru has increased even as economic growth has remained strong (Van Vleet, 2019), and artisanal fisheries, in particular, has been a sector that has been the subject of multiple failed attempts of formalization (Carrere, 2021). Due to the neo-liberalization of the country's economy, social responsibility

tasks have been relegated from governmental institutions to NGOs, leaving marginal populations to rely on financial support that follows global trends of humanitarian organization priorities (Boesten, 2010). Therefore, while specific working opportunities do develop within blue economy activities, women (and men) cannot reliably put down roots and safeguard their livelihoods or families in the face of economic uncertainty: the fragility of the economic system on which these women and their families rely cannot insulate them from possible future crises.

7. Conclusions

To date, the tangible opportunities offered by changing economies, and taken to different degrees by individual women, are constrained by local gender relations and other structural issues and can prevent women from sustainably transforming their standing in society or working towards gender equality and wellbeing.

As exemplified by the third case study, attempts to include women in parts of the blue economy can fail when overlooking the socioeconomic context and structural challenges in which these women are embedded, their needs, and their motivations. Our informants, and many others, have been surrounded by the result of longer processes of resource extraction, global markets intersecting with local ones, and slow shifts in governmental and corporate discourses to increase focus on gender equality in a landscape where much is not yet known about women's roles. Therefore, while we acknowledge the possibilities of marine-related activities to generate both objective improvements in women's lives (being able to educate one's children) and subjective improvements (self-perception of well-being and self-esteem), we argue that challenges women face are so deeply structural that merely rebranding economic endeavors under the banner of the blue economy or blue growth alone will do little to empower and better women's life in Peru.

This article is by no means an exhaustive account of what types of challenges can exist and intertwine for women on the Peruvian coast, much work can still be done to understand women's lived experiences, their needs, and all the ways in which they express agency in different fisheries, ocean-based industries, and other coastal settings. As Williams (2023, p. 26) maintains, the blue economies must be "gender responsive and ultimately gender transformative." This requires complex, deep transformations that will likely generate resistance from those currently involved in decision-making processes. We argue in favor of moving away from using terminology like the blue economy and blue growth in agenda-setting and towards a more explicit understanding of blue justice that directly aims to address not only gendered power imbalances across different scales but also the inherent inequalities that accompany the status quo of marine-related activities under current extractive regimes. We maintain that blue justice for women in Peru cannot occur without taking into account these structural issues of the gendered division of labor, male dominance and gendered violence, and the precarious nature of work at the coast.

Acknowledgments

The authors are thankful to the women who gave their valuable time to share their life experiences with us. We also thank Susan M. Gaines for her help in proofreading the final version of the manuscript, and Michael Flitner and other PhD colleagues for their valuable feedback during the discussions and the writing process, as well as the reviewers who have greatly improved the final manuscript through their thoughtful and considerate comments.

The authors confirm their contributions to the article as follows: with study conception and design by Doolittle Llanos, Garteizgogeascoa, and Gonzales; data collection by Doolittle Llanos (Dafne case study), Garteizgogeascoa (Eva case study), and Gonzales (Sandra case study); analysis and interpretation of results by Doolittle Llanos, Garteizgogeascoa, and Gonzales; and draft manuscript preparation by Doolittle Llanos, Garteizgogeascoa, and Gonzales. All authors reviewed the results and approved the final version of the manuscript.

Funding

This manuscript was prepared as part of the bilateral project Social-Ecological Tipping Points of the Northern Humboldt Current Upwelling System, Economic Repercussions and Governance Strategies (Humboldt Tipping, https://humboldt-tipping.org) funded by the German Federal Ministry of Education and Research (BMBF) within the framework EcoBiological Tipping Points (BioTip; https://www.fona.de/en/measures/funding-measures/biotip.php) from March 2019 to March 2023 through the grant number 01LC1823E, and within the framework GlobalTip—Tipping Points, Dynamics and Interactions of Social and Ecological Systems (https://www.fona.de/en/measures/funding-measures/globaltip_en.php) since September 2023 through the grant number 01LC2323B.

Conflict of Interests

The authors declare no conflicts of interests.

Data Availability

The data that supports the findings of this article is available through the authors upon request.

References

Acker, J. (2006). Inequality regimes: Gender, class, and race in organizations. *Gender & Society*, *20*(4), 441–464. https://doi.org/10.1177/0891243206289499

Armbruster, S., Solomon, J., Blare, T., & Donovan, J. (2019). Women's time use and implications for participation in cacao value chains: Evidence from VRAEM, Peru. *Development in Practice*, *29*(7), 827–843. https://doi.org/10.1080/09614524.2019.1604630

Atkinson, R. (1998). *The life story interview*. Sage.

Axelrod, M., Vona, M., Colwell, J. N., Fakoya, K., Salim, S. S., Webster, D. G., & de la Torre-Castro, M. (2022). Understanding gender intersectionality for more robust ocean science. *Earth System Governance*, *13*, Article 100148. https://doi.org/10.1016/j.esg.2022.100148

Axon, S., & Collier, S. (2023). Breaking blue: Establishing comprehensive policy for a just and inclusive transition for the blue economy. *Marine Policy*, *147*, Article 105343. https://doi.org/10.1016/j.marpol.2022.105343

Ayala Galdós, M. E. (2000). *El papel que desempeña la mujer en el sector pesquero peruano*. Red Latinoamericana de las Mujeres del Sector Pesquero. https://www.mujeres.infopesca.org/novedades/nov_2_peru.htm

Bailey, C. (1985). The blue revolution: The impact of technological innovation on Third-World fisheries. *The Rural Sociologist*, *5*, 259–266.

Barange, M., Bahri, T., Beveridge, M. C., Cochrane, K. L., Funge-Smith, S., & Poulain, F. (2018). Impacts of climate change on fisheries and aquaculture. *United Nations' Food and Agriculture Organization*, *12*(4), 628–635.

Barrig, M., Chueca, M., & Yañez, A. M. (1985). *Anzuelo sin carnada: Obreras en la industria de conserva de pescado*. Mosca Azul editors.

Bennett, N. J., Blythe, J., White, C. S., & Campero, C. (2021). Blue growth and blue justice: Ten risks and solutions for the ocean economy. *Marine Policy*, *125*, Article 104387. https://doi.org/10.1016/j.marpol.2020.104387

Blythe, J., Gill, D. A., Claudet, J., Bennett, N. J., Gurney, G. G., Baggio, J. A., Ban, N. C., Bernard, M. L., Brun, V., Darling, E. S., Di Franco, A., Epstein, G., Franks, P., Horan, R., Jupiter, S. D., Lau, J., Lazzari, N., Mahajan, S. L., Mangubhai, S., . . . Zafra-Calvo, N. (2023). Blue justice: A review of emerging scholarship and resistance movements. *Cambridge Prisms: Coastal Futures*, *1*, Article e15. https://doi.org/10.1017/cft.2023.4

Boesten, J. (2010). *Intersecting inequalities: Women and social policy in Peru, 1990–2000*. Penn State Press.

Brent, Z. W., Barbesgaard, M., & Pedersen, C. (2020). The blue fix: What's driving blue growth? *Sustainability Science*, *15*, 31–43. https://doi.org/10.1007/s11625-019-00777-7

Carrere, M. (2021, February 8). Perú: Formalización pesquera está por vencer y miles de pescadores podrían quedar en la ilegalidad. *Mongabay*. https://es.mongabay.com/2021/02/peru-formalizacion-pesquera-esta-por-vencer-y-miles-de-pescadores-podrian-quedar-en-la-ilegalidad

Castañeda Paredes, J., & Santa-Cruz-Espinoza, H. (2021). Factores de riesgo asociados al embarazo en adolescentes. *Enfermería Global*, *20*(2), 109–128. https://doi.org/10.6018/eglobal.438711

Christensen, V., De la Puente, S., Sueiro, J. C., Steenbeek, J., & Majluf, P. (2014). Valuing seafood: The Peruvian fisheries sector. *Marine Policy*, *44*, 302–311. https://doi.org/10.1016/j.marpol.2013.09.022

City Population. (n.d.). *Playa Blanca in Sechura (Piura region)*. https://www.citypopulation.de/en/peru/piura/sechura/2008010036__playa_blanca

Clarke, N. (2022). Chimbote in the blue revolution, 1940–1980. *Historia Ambiental Latinoamericana y Caribeña (HALAC) Revista De La Solcha*, *12*(3), 55–81. https://doi.org/10.32991/2237-2717.2022v12i3.p55-81

Cohen, P. J., Allison, E. H., Andrew, N. L., Cinner, J., Evans, L. S., Fabinyi, M., Garces, L. R., Hall, S. J., Hicks, C. C., Hughes, T. P., Jentoft, S., Mills, D. J., Masu, R., Mbaru, E. K., & Ratner, B. D. (2019). Securing a just space for small-scale fisheries in the blue economy. *Frontiers in Marine Science*, *6*, Article 171. https://doi.org/10.3389/fmars.2019.00171

Crenshaw, K. (2013). Mapping the margins: Intersectionality, identity politics, and violence against women of color. In M. A. Fineman (Ed.), *The public nature of private violence: Women and the discovery of abuse* (pp. 93–118). Routledge.

Crossley, N. (2022). A dependent structure of interdependence: Structure and agency in relational perspective. *Sociology*, *56*(1), 166–182. https://doi.org/10.1177/00380385211020231

Cueto, S., Guerrero, G., Leon, J., Zevallos, A., & Sugimaru, C. (2009). *Promoting early childhood development through a public programme: Wawa Wasi in Peru* (Working Paper No. 51). Young Lives. https://www.ninosdelmilenio.org/wp-content/uploads/2012/10/wp51.pdf

Cushman, G. T. (2005). "The most valuable birds in the world": International conservation science and the revival of Peru's guano industry, 1909–1965. *Environmental History*, *10*(3), 477–509. https://doi.org/10.1093/envhis/10.3.477

Cushman, G. T. (2013). *Guano and the opening of the Pacific world: A global ecological history*. Cambridge University Press.

Damonte, G. H., Kluger, L. C., & Gonzales, I. E. (2023). Intertwined realities—Hybrid institutions in the Peruvian fisheries and aquaculture sectors. *Maritime Studies*, *22*(2), Article 20. https://doi.org/10.1007/s40152-023-00309-1

Das, J. (2023). Blue economy, blue growth, social equity and small-scale fisheries: A global and national level review. *Studies in Social Science Research*, *4*(1), 38–82. https://doi.org/10.22158/sssr.v4n1p38

de Grys, M. S. (1988). Does absence make the heart grow fonder or only the influence stronger? In *Women in a Peruvian fishing village* (pp. 91–105). Institute of Social and Economic Research.

De la Puente, S., López de la Lama, R., Benavente, S., Sueiro, J. C., & Pauly, D. (2020). Growing into poverty: Reconstructing Peruvian small-scale fishing effort between 1950 and 2018. *Frontiers in Marine Science*, *7*, Article 681. https://doi.org/10.3389/fmars.2020.00681

Delgado-Gustavson, V. (2011). *Fishing communities: Gender, economic life, and welfare regimes*. University of Bergen.

Día Internacional de la Mujer: Jenny Pizarro navega las olas de la igualdad en mar de Ica. (2024, March 7). *Andina*. https://andina.pe/agencia/noticia-dia-internacional-de-mujer-jenny-pizarro-navega-las-olas-de-igualdad-mar-ica-977147.aspx?fbclid=IwY2xjawEYjINleHRuA2FlbQIxMAABHR7mHbpz1i_G4k3Jw-OIxtFS6vRaha_T71gD5Mqf6-MEHn2–fwFddjcMw_aem_ooLqNCi8A81rk9p3MArbtA

Eikeset, A. M., Mazzarella, A. B., Davíðsdóttir, B., Klinger, D. H., Levin, S. A., Rovenskaya, E., & Stenseth, N. C. (2018). What is blue growth? The semantics of "sustainable development" of marine environments. *Marine Policy*, *87*, 177–179. https://doi.org/10.1016/j.marpol.2017.10.019

Ertör, I. (2023). 'We are the oceans, we are the people!': Fisher people's struggles for blue justice. *The Journal of Peasant Studies*, *50*(3), 1157–1186. https://doi.org/10.1080/03066150.2021.1999932

FAO. (2015). *Consultoría sobre el análisis del rol de la mujer en los sectores de la pesca y la acuicultura en el Perú*. https://rnia.produce.gob.pe/wp-content/uploads/2019/09/CONSULTOR%C3%8DA-SOBRE-EL-AN%C3%81LISIS-DEL-ROL-DE-LA-MUJER-EN-LOS-SECTORES-DE-LA-PESCA-Y-LA-ACUICULTURA-EN-EL-PER%C3%9A.pdf

FAO. (2016). *El rol de la mujer en la pesca y la acuicultura en Chile, Colombia, Paraguay y Perú*. http://www.fao.org/3/a-i5774s.pdf

FAO. (2020a). *El estado mundial de la pesca y la acuicultura: La sostenibilidad en acción*. https://openknowledge.fao.org/server/api/core/bitstreams/a4a23148-b335-40ff-b2ca-364a50eb233d/content

FAO. (2020b). *Implementing the SSF guidelines in Latin America and the Caribbean*. https://www.fao.org/voluntary-guidelines-small-scale-fisheries/news/news-detail/Implementing-the-SSF-Guidelines-in-Latin-America-and-the-Caribbean/en

FAO. (2021). *Towards sustainable fishing*. https://www.fao.org/in-action/coastal-fisheries-initiative/news/detail/ru/c/1416309

Félix, H. M., & Porras, M. E. P. (2011). La pesca industrial peruana antes de la anchoveta (1923–1955). *Investigaciones Sociales*, *15*(27), 559–573. https://doi.org/10.15381/is.v15i27.7703

Figueroa, J., González-Watson, S., Mamani, R., Melgar, V., Zevallos, P., Díaz, L., Gonzáles, C., Vásquez, M., Córdova, F., Velasquez, M., Huerta, G., & Arteaga, R. (2019). *Visibilización del rol de la mujer en la pesca artesanal y en la gestión participativa de la Reserva Nacional Sistema de Islas, Islotes y Puntas Guaneras*. Profonanpe; Sernanp; World Bank. https://www.researchgate.net/publication/338332127_Visibilizacion_del_rol_de_la_mujer_en_la_pesca_artesanal_y_en_la_gestion_participativa_de_la_Reserva_Nacional_Sistema_de_Islas_Islotes_y_Puntas_Guaneras

Foucault, M. (1978). *"On governmentality, lecture at the college de France."* In G. Burchell, C. Gordon, & P. Miller (Eds.), *The Foucault effect: Studies in governmentality* (pp. 87–104). Harvester Wheatsheaf.

García, A. (2000). *Pescadores artesanales y medio ambiente en la Reserva Nacional de Paracas Pisco*. Universidad Nacional Mayor de San Marcos.

García, A. (2001). Género en la pesca artesanal en el Perú. *Investigaciones Sociales*, *5*(7), 43–67. https://doi.org/10.15381/is.v5i7.6869

García, D. (2018). Sechura: Conozca Playa Blanca, un atractivo turístico ubicado en pleno desierto. *Noticias Piura 3.0*. https://noticiaspiura30.pe/sechura-conozca-playa-blanca-un-atractivo-turistico-ubicado-en-pleno-desierto

Gopal, N., Hapke, H. M., Kusakabe, K., Rajaratnam, S., & Williams, M. J. (2020). Expanding the horizons for women in fisheries and aquaculture. *Gender, Technology and Development*, *24*(1), 1–9. https://doi.org/10.1080/09718524.2020.1736353

Gozzer-Wuest, R., Alonso-Población, E., Rojas-Perea, S., & Roa-Ureta, R. H. (2022). What is at risk due to informality? Economic reasons to transition to secure tenure and active co-management of the jumbo flying squid artisanal fishery in Peru. *Marine Policy*, *136*, Article 104886. https://doi.org/10.1016/j.marpol.2021.104886

Guevara, J. (2021). *Desenvolvimiento del comercio exterior pesquero y acuícola*. Comisión de Promoción del Perú para la Exportación y el Turismo. https://repositorio.promperu.gob.pe/items/69409643-e9a2-4a27-a412-9e1446096ec5

Gurney, G. G., Mangubhai, S., Fox, M., Kim, M. K., & Agrawal, A. (2021). Equity in environmental governance: Perceived fairness of distributional justice principles in marine co-management. *Environmental Science & Policy*, *124*, 23–32. https://doi.org/10.1016/j.envsci.2021.05.022

Gustavsson, M., Frangoudes, K., Lindström, L., Burgos, M. C. Á., & de la Torre-Castro, M. (2021). Gender and blue justice in small-scale fisheries governance. *Marine Policy*, *133*, Article 104743. https://doi.org/10.1016/j.marpol.2021.104743

Hammel, E. A., & Haase, Y. D. (1962). *A survey of Peruvian fishing communities* (Vol. 21). University of California Press.

Harper, S., Grubb, C., Stiles, M., & Sumaila, U. R. (2017). Contributions by women to fisheries economies: Insights from five maritime countries. *Coastal Management*, *45*(2), 91–106. https://doi.org/10.1080/08920753.2017.1278143

Hays-Mitchell, M. (2002). Resisting austerity: A gendered perspective on neo-liberal restructuring in Peru. *Gender & Development*, *10*(3), 71–81. http://www.jstor.org/stable/4030548

Instituto Nacional de Estadística e Informática. (2012). *I Censo de la pesca artesanal del ámbito marino 2012*. https://www.inei.gob.pe/media/MenuRecursivo/censos/ficha_tecnica_cenpar.pdf

Instituto Nacional de Estadística e Informática. (2020). *Mapa de pobreza monetaria provincial y distrital 2018*. https://www.gob.pe/institucion/inei/informes-publicaciones/3204872-mapa-de-pobreza-provincial-y-distrital-2018

Instituto Nacional de Estadística e Informática. (2023). *Encuesta demográfica y de salud familiar 2023, nacional y departamental*. https://cdn.www.gob.pe/uploads/document/file/6389989/5601739-resumen-peru-encuesta-demografica-y-de-salud-familiar-endes-2023.pdf?v=1716478980

Kleiber, D., Harris, L. M., & Vincent, A. C. J. (2015). Gender and small-scale fisheries: A case for counting women and beyond. *Fish and Fisheries*, *16*(4), 547–562. https://doi.org/10.1111/faf.12075

Kluger, L. C., Alff, H., Alfaro-Córdova, E., & Alfaro-Shigueto, J. (2020). On the move: The role of mobility and migration as a coping strategy for resource users after abrupt environmental disturbance—The empirical example of the Coastal El Niño 2017. *Global Environmental Change*, *63*, Article 102095. https://doi.org/10.1016/j.gloenvcha.2020.102095

Kluger, L. C., Taylor, M. H., Wolff, M., Stotz, W., & Mendo, J. (2019). From an open-access fishery to a regulated aquaculture business: The case of the most important Latin American bay scallop (*Argopecten purpuratus*). *Reviews in Aquaculture*, *11*(1), 187–203. https://doi.org/10.1111/raq.12234

Knott, C., & Gustavsson, M. (2022). Introduction to fishy feminisms: Feminist analysis of fishery places. *Gender, Place & Culture*, *29*(12), 1669–1676. https://doi.org/10.1080/0966369X.2022.2135492

Laslett, B., & Thorne, B. (1997). Life histories of a movement: An Introduction. In B. Laslett & B. Thorne (Eds.), *Feminist sociology: Life histories of a movement* (pp. 1—27). Rutgers University Press.

Lozano, A. G., Shibata, J. P., Jeri, J. C., & Kittinger, J. N. (2024). Elevating labor concerns in small-scale fisheries: Challenges to decent work in Peru's jumbo flying squid fishery. *Maritime Studies*, *23*(2), Article 28. https://doi.org/10.1007/s40152-024-00368-y

McKinley, E., Aller-Rojas, O., Hattam, C., Germond-Duret, C., San Martín, I. V., Hopkins, C. R., Aponte, H., & Potts, T. (2019). Charting the course for a blue economy in Peru: A research agenda. *Environment, Development and Sustainability*, *21*, 2253–2275. https://doi.org/10.1007/s10668-018-0133-z

Mendoza, L. (2024). *Mujeres del mar: Creando olas de cambio*. Naciones Unidas Perú. https://peru.un.org/es/262635-mujeres-del-mar-creando-olas-de-cambio

Mendoza, W., & Subiría, G. (2013). El embarazo adolescente en el Perú: Situación actual e implicancias para las políticas públicas. *Revista Peruana de Medicina Experimental y Salud Pública*, *30*, 471–479.

Miró Quesada, J., & Ñopo, H. (2022). *Ser mujer en el Perú: Dónde estamos ya dónde vamos*. Planeta.

Moser, C. O. (1989). Gender planning in the third world: Meeting practical and strategic gender needs. *World Development*, *17*(11), 1799–1825. https://doi.org/10.1016/0305-750X(89)90201-5

Niner, H. J., Barut, N. C., Baum, T., Diz, D., del Pozo, D. L., Laing, S., Lancaster, A. M., McQuaid, K. A., Mendo, T., Morgera, E., Maharaj, P. N., Okafor-Yarwood, I., Ortega-Cisneros, K., Warikandwa, T. V., & Rees, S. (2022). Issues of context, capacity and scale: Essential conditions and missing links for a sustainable blue economy. *Environmental Science & Policy*, *130*, 25–35. https://doi.org/10.1016/j.envsci.2022.01.001

Ocampo-Raeder, V. C. (2011). "El mar no termina en la arena": Heterogeneidad, identidad y género en familias de pescadores artesanales de Máncora. *Debate Agrario*, *45*, 71–89.

Palacios, D. (2016). Dinámicas locales de la pesca artesanal informal: Tensiones y disputas por la captura y comercialización de peces juveniles en Paita, Piura. In J. F. Durand, J. Urrutia, & C. Yon (Eds.), *Perú: El problema agrario en debate* (pp. 133–170). SEPIA.

Paredes, C. (2012). *Eficiencia y equidad en la pesca peruana: La reforma y los derechos de pesca*. Investigación Económica y Social.

Pejerrey Piedra, G. (2008). *Hacia el trabajo decente en el Perú: La mujer en la industria pesquera*. Oficina Internacional del Trabajo Ginebra. https://www.ilo.org/sites/default/files/wcmsp5/groups/public/@ed_dialogue/@sector/documents/publication/wcms_160868.pdf

Pescaformal.pe. (n.d.). *Sobre la campaña pescaformal.pe*. https://pescaformal.pe/campana

Prins, B. (2006). Narrative accounts of origins: A blind spot in the intersectional approach? *European Journal of Women's Studies*, *13*(3), 277–290. https://doi.org/10.1177/1350506806065757

Programa de las Naciones Unidas para el Desarrollo. (2022). *Diagnóstico de auto percepción de las mujeres en cadenas productivas de la pesca, maricultura y acuicultura en la Bahía de Sechura*. https://www.undp.org/es/peru/publicaciones/diagnostico-de-auto-percepcion-de-las-mujeres-en-cadenas-productivas-de-la-pesca-maricultura-y-acuicultura-en-la-bahia-de-sechura

Ribot, J. C., & Peluso, N. L. (2003). A theory of access. *Rural Sociology*, *68*(2), 153–181. https://doi.org/10.1111/j.1549-0831.2003.tb00133.x

Rivero Reyes, R. (2002). Gendering responses to El Niño in rural Peru. *Gender and Development*, *10*(2), 60–69. http://www.jstor.org/stable/4030575

Soliman, A. (2022). Understanding gender equality in small-scale fisheries and its role in enhancing blue justice. In S. Jentoft, R. Chuenpagdee, A. Bugeja Said, & M. Isaacs (Eds.), *Blue justice* (Vol. 26, pp 635–653). Springer. https://doi.org/10.1007/978-3-030-89624-9_33

Tobin, D., & Castellanos, P. (2021). Gendered differences in decision-making and participation in value chains: Lessons from the highlands of Peru. *Development in Practice*, *32*(4), 492–502. https://doi.org/10.1080/09614524.2021.1937555

Tomassini, C. (2014). *Ciencia académica y género: Trayectorias académicas de varones y mujeres en dos disciplinas del conocimiento dentro de la Universidad de la República*. CSIC.

Trelles, A. (2020). Las mujeres en contiendas electorales: El caso de las candidatas a regidurías municipales durante las elecciones regionales y municipales 2018, en la provincia de Andahuaylas. In S. V. Winstanley & M. B. Frey (Eds.), *Perú: El problema agrario en debate* (pp. 373–432). SEPIA.

Vaccaro, G. (2023). *Catalizando la implementación de un programa de acción estratégico para la gestión sostenible de los recursos marinos vivos compartidos en el sistema de la corriente de Humboldt*. Proyecto Humboldt II. https://proyectohumboldt2.org/wp-content/uploads/2023/06/PRODUCTO-FINAL-DIAGNOSTICO-DE-GENERO-GVACCARO-2.pdf

Van Vleet, K. E. (2019). *Hierarchies of care: Girls, motherhood, and inequality in Peru* (Vol. 1). University of Illinois Press.

Vierros, M., & De Fontaubert, C. (2017). *The potential of the blue economy: Increasing long-term benefits of the sustainable use of marine resources for small island developing states and coastal least developed countries*. World Bank. https://documents.worldbank.org/en/publication/documents-reports/documentdetail/523151496389684076/the-potential-of-the-blue-economy-increasing-long-term-benefits-of-the-sustainable-use-of-marine-resources-for-small-island-developing-states-and-coastal-least-developed-countries

Voyer, M., Quirk, G., McIlgorm, A., & Azmi, K. (2018). Shades of blue: What do competing interpretations of the blue economy mean for oceans governance? *Journal of Environmental Policy & Planning*, *20*(5), 595–616. https://doi.org/10.1080/1523908X.2018.1473153

West, C., & Zimmerman, D. H. (1987). Doing gender. *Gender and Society*, *1*(2). https://doi.org/10.1177/0891243287001002002

Williams, M. (2023). *Financing the blue economy: Impacts and implications for gender equality and women's empowerment in the global south*. Development Alternatives with Women for a New Sea. https://dawnnet.org/wp-content/uploads/2023/01/20230127-Financing-the-Blue-Economy-Discussion-Paper-48.pdf

Wintersteen, K. A. (2021). *The fishmeal revolution: The industrialization of the Humboldt current ecosystem*. University of California Press.

World Bank. (2021). *Línea de base para la economía azul del Perú*. https://documents1.worldbank.org/curated/en/595871645117266910/pdf/Linea-de-Base-para-la-de-Economia-Azul-del-Per%C3%BA.pdf

WWF Peru. (2019, November 5). *Pesca emprende (Perú CFI-CF): Hacia una pesca sostenible* [video]. YouTube. https://www.youtube.com/watch?v=9QJKZG-_rAc

Yuan, H., Choukroune, L., & Failler, P. (2024). Centering justice for labour in the new blue economy: Principles for applying emerging evidence and theoretical critiques to policy and practice. *Marine Policy*, *168*, Article 106327. https://doi.org/10.1016/j.marpol.2024.106327

About the Authors

Sara Doolittle Llanos is a PhD candidate in political ecology at the University of Bremen, Germany. She studied Biology at the University of A Coruña, Spain, where she also earned a master's degree in education for secondary and vocational training, specializing in science. She went on to earn a master's degree in marine biology from the University of Groningen, the Netherlands, carrying out small research projects in Ecuador that furthered her interest in the social aspect of environmental conflicts. She currently works on the feminist political ecology of fisheries and mariculture in Peru, where she explores socioecological conflicts and everyday resistance in the context of coastal and marine resource governance. She is also a part of the blue justice group within the EnJust network.

María Garteizgogeascoa is a PhD candidate in Social Sciences at the University of Bremen, Germany. She studied biology at the Autonomous University of Madrid, Spain, and later deepened her interest in the social dimensions of global change. She earned a master's degree in interdisciplinary studies in environmental, economy, and social sustainability from the Autonomous University of Barcelona, where she focused her thesis on local indicators of climate change working with local communities in an agrarian setting in Spain. Expanding on this experience, she developed a strong interest in the interactions between local communities and their environments in addressing ecological challenges. Her academic trajectory then took a transatlantic turn, shifting focus to Latin America and marine coastal environments. She currently studies capital-nature relations through the case study of the Peruvian bay scallop, as well as feminist political ecology in fisheries.

Isabel E. Gonzales is a PhD candidate in anthropology at the Pontificia Universidad Católica del Perú (PUCP) and the École des Hautes Études en Sciences Sociales (EHESS, Marseille). She holds a bachelor's degree in anthropology and a master's degree in water resources management. Her research explores the dynamics between state agents and local actors regarding access to artisanal fisheries. She is currently a researcher on the second phase of the Peruvian-German project Humboldt Tipping. Her recent work has been published in journals such as *ICES Journal of Marine Sciences*, *Maritime Studies*, and *Frontiers in Marine Sciences*. Her research interests include political anthropology of the state, fisheries governance, institutional hybridity, and socio-environmental conflicts related to maritime resource management in Peru.