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The Ethical Blue Economy Framework (EBEF): Integrating Environmental Ethics, Social Justice and Ethical Governance

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Abstract

Although the discourse on the blue economy promises to reconcile economic growth with the conservation of ocean ecosystems, in practice short-term commercial gains, ecological destruction, displacement, and “bluewashing” are prevalent. This article argues that these failures stem fundamentally from ethical shortcomings rather than technical or managerial issues. A comprehensive literature review and critical conceptual synthesis identify four key problems in current ocean governance: the neglect of environmental ethics in favour of neoliberal growth targets, the inadequate implementation of social equality, the exclusion of the social sciences from technocratic decision-making, and the absence of a holistic ethical model. To address these shortcomings, the Ethical Blue Economy Framework (EBEF) is proposed, synthesising principles from Deep Ecology, the Land Ethic, Social Ecology, and Blue Justice. EBEF comprises three intertwined pillars—Ecological Ethics, Social Justice, and Ethical Governance—built on a social science methodology that emphasises participatory research and the co-production of knowledge. The framework positions ecological integrity as a non-negotiable boundary, social justice as a mandatory condition, and transparent governance as an institutional necessity. Using Türkiye as an illustrative example, the model offers a multi-scale assessment guide for policymakers and stakeholders.

Keywords: Blue economy, Environmental ethics, Social equality, Blue justice, Intergenerational equality

JEL: Q56, D63, Q01

Introduction

Covering more than 70 percent of the Earth's surface, oceans serve as critical life-support systems for food security, global climate regulation, and the livelihoods of billions of coastal communities (Raj, 2023). In this context, the concept of the blue economy has rapidly gained prominence in global policy discourse, offering the promise that economic growth can be harmoniously integrated with the conservation of marine ecosystems. First brought to the international agenda at the 2012 United Nations Conference on Sustainable Development (Rio+20), the blue economy has since attracted unprecedented interest from governments, international organizations, and private-sector actors who view the oceans as a new frontier for economic opportunities (Silver et al., 2015; Voyer et al., 2018).

However, the rapid commercialization of ocean spaces has revealed a deep tension at the heart of the blue economy paradigm: the structural chasm between the proclaimed ideals of sustainability and the unjust and ecologically harmful realities of implementation. A growing body of academic research has documented that blue economy initiatives frequently prioritize short-term economic gains over long-term ecological health (Starlet, 2024), exacerbate social inequalities for marginalized coastal communities (Bennett et al., 2020; Croft et al., 2024), and concentrate wealth in the hands of powerful actors while displacing traditional resource users (Bennett et al., 2020).

This article argues that these failures are not merely technical or governance issues; at their core, they represent ethical failures. The absence of a coherent ethical framework in the blue economy discourse has enabled neoliberal capitalist agendas to overshadow concerns about justice, equity, and ecological responsibility (Croft et al., 2024). As Karaca (2007) emphasized, in the context of broader environmental challenges, environmental problems cannot be reduced to purely technical or economic phenomena; they are fundamentally rooted in the value systems and moral frameworks that determine how societies relate to nature.

The philosophical roots of environmental degradation extend back to the anthropocentric paradigm that has dominated Western thought since the Age of Enlightenment. As Karaca (2007) demonstrates, the Bacon-Descartes-Newton paradigm conceived of nature as an infinite resource at the service of human civilization and formed the ideological basis for the exploitation that accompanied industrialization. Since the Industrial Revolution, a broad scientific consensus has emerged that environmental change is largely attributable to human activities; the depletion of natural capital, the deterioration of air, water, and soil quality, and the destabilization of global climate systems are documented as concrete manifestations of this reality.

Environmental ethics has emerged as a discipline that challenges the anthropocentric worldview at the philosophical level. The fundamental premise of this discipline is that the natural world possesses intrinsic value independent of the instrumental benefits it provides to humans, and that this recognition gives rise to

moral obligations to protect ecological systems (Starlet, 2024; Des Jardins, 2013). This shift from an anthropocentric to an ecocentric worldview is a necessary conceptual prerequisite for the ethical re-foundation of blue economy governance.

In this context, three key traditions of environmental ethics offer direct normative implications for blue-economy governance. First, Deep Ecology, developed by Arne Næss (1973), calls for a radical transformation of consciousness regarding humanity's position vis-à-vis nature, in contrast to the superficial interventions of shallow environmentalism (Devall and Sessions, 2015; Starlet, 2024). The fundamental principle of Deep Ecology—biocentric egalitarianism, which holds that all living beings possess intrinsic value independent of their utility to humans, and that humans are part of, rather than outside, the web of ecological relationships—demonstrates that decisions regarding the exploitation of marine ecosystems cannot be justified on purely economic grounds; such decisions must be assessed in light of the moral obligation to protect the integrity of ocean life for its own sake and for the benefit of future generations.

Second, the Land Ethic, as formulated by Aldo Leopold (1949) in his work *A Sand County Almanac*, extends the moral community beyond humans to encompass the land, waters, plants, and animals. Leopold's general principle that 'anything that serves to preserve the integrity, stability and beauty of the biotic community is right; anything that does not is wrong' provides a strong normative standard that blue economy activities must be assessed not merely based on their economic returns or direct social benefits, but on whether they preserve the integrity and stability of marine ecosystems. This standard directly challenges blue economy discourses that prioritize deep-sea mining and growth in carbon-intensive sectors without sufficient consideration of ecological consequences (Voyer et al., 2018; Wenhai et al., 2019).

Third, Murray Bookchin's (2005) theory of Social Ecology adds a critical political dimension to environmental ethics by arguing that ecological degradation is inseparable from social hierarchies and power asymmetries. According to Bookchin, the domination of nature reflects and reinforces the domination of people over one another through capitalism, colonialism, and patriarchy. The systematic marginalization of small-scale fishers, indigenous peoples, women, and coastal communities within blue economy governance (Bennett et al., 2020) is a concrete manifestation of these deep-rooted power asymmetries. Therefore, genuine sustainability in the blue economy necessitates not only ecological conservation but also the transformation of the social and political structures that produce inequality.

Complementing these three traditions, the principle of intergenerational justice, derived from environmental ethics—the idea that present generations have a moral obligation to protect the natural environment for future generations—aligns directly with the Brundtland Commission (1987) (Starlet, 2024; Raj, 2023). In the context of oceans, this principle requires that fishing, mining, energy extraction, and tourism activities must not irreversibly damage marine ecosystems. In particular, in areas where scientific uncertainty is high, such as deep-sea mining and climate-

induced habitat loss, this obligation entails the precautionary principle: the responsibility to prevent harm is paramount, even before such harm is definitively proven (Raffensperger and Tickner, 1999; Starlet, 2024).

Building on this theoretical foundation, this study makes four key contributions. First, it synthesizes environmental ethics theory—including Deep Ecology (Næss), Land Ethic (Leopold), and Social Ecology (Bookchin)—with the governance challenges of the blue economy, with the aim of establishing a coherent ethical foundation. Second, it examines the contradictory discourses and lack of equity within existing blue economy frameworks from a critical perspective. Third, it proposes an Ethical Blue Economy Framework (EBEF) that operationalizes ethical principles across ecological, social, and governance dimensions. Fourth, drawing on the work of Penca et al. (2025), it embeds a social science methodological foundation at the core of the framework to overcome the structural disconnects that cause ethical governance commitments to remain at the rhetorical level rather than being put into practice.

This article addresses a central problem in contemporary blue economy governance: despite its promises of sustainability and equity, blue economy practice frequently results in ecological degradation, social injustice and “bluewashing”. The main research question guiding this study is thus: what kind of ethical architecture is required to align blue economy governance with ecological integrity, social justice and accountable institutions? In response, the article develops the Ethical Blue Economy Framework (EBEF), which integrates environmental ethics, blue justice debates and social science-based governance into a single, operational framework.

The Theoretical Framework of the Blue Economy: Discourse, Equality and Ethical Tensions

The concept of the ‘blue economy’ gained prominence on the global sustainability agenda following the 2012 Rio+20 Conference and was built on the premise that the oceans could be addressed in conjunction with the objectives of economic development, ecosystem conservation, and social welfare. However, the literature demonstrates that, from its inception, this concept has not been a singular, neutral, or consensus-based policy category. Silver et al.’s (2015) analysis in the context of Rio+20 reveals that the blue economy is constructed through divergent discourses by different actors. While these discourses position the oceans as natural capital, an investment arena, and an engine of growth, they also highlight the existential vulnerabilities of small island states, the livelihood importance of small-scale fisheries, and the historical relationships that coastal communities have forged with the sea.

This discursive plurality points not only to conceptual ambiguity but also to a political arena of struggle that shapes the blue economy’s ethical orientation. The concept’s predominant interpretation along the axes of ‘natural capital’ and

‘economic growth’ increases the risk of the commodification of marine ecosystems and the opening of ocean areas as new frontiers for investment. An analysis by Voyer et al. (2018) of international policy documents also confirms this tension: in blue economy documents, discourses on sustainable development, market-based approaches, ocean security, and technology-innovation coexist; however, equality, participation, and distributive justice often remain secondary or vague categories. Consequently, the blue economy is not merely a technical agenda denoting the expansion of economic sectors into marine areas; it is a normative arena for debate concerning which values are to be protected, which actors are to be included in decision-making processes, and how the benefits derived from the oceans are to be shared among them. At this juncture, the issue of ‘bluewashing’ becomes critical to the discussion. Similar to the concept of ‘greenwashing’ in the context of the green economy, bluewashing’ refers to the legitimisation of ecologically or socially problematic activities through the rhetoric of the blue economy (Voyer et al., 2018). When sectors such as offshore oil and gas activities, deep-sea mining, industrial aquaculture, or coastal tourism are positioned under the ‘blue’ label without undergoing adequate ethical and ecological assessment, the concept can become a rhetorical tool not for sustainable transformation, but for accelerated exploitation of the oceans. Fusco et al. (2022) demonstrate how oil and gas actors are reproduced within blue economy agendas as legitimate stakeholders, thereby subordinating climate justice claims to a “business as usual” logic. Similarly, Louey (2022) shows that the language of inclusivity in blue economy policy documents frequently functions rhetorically rather than substantively, since it rarely translates into redistribution of decision-making power. Wenhai et al. (2019) emphasize that, despite the rapid proliferation of international blue economy frameworks, there is no sufficient consensus on what constitutes a sustainable blue economy. This situation highlights a significant gap from the perspective of environmental ethics: sustainability must be assessed not only through indicators of resource efficiency or economic growth but also through criteria of ecological integrity, social justice, and moral responsibility (Karaca, 2007; Starlet, 2024).

Social Equality, Blue Justice and Governance Gaps

Ethical tensions surrounding the blue economy are not merely discursive; they generate concrete social inequalities within maritime and coastal communities. Bennett et al. (2020) argue that the blue growth agenda has given rise to multidimensional risks, including the marginalization of small-scale fishing communities, displacement from coastal areas, unequal distribution of benefits, appropriation of ocean resources by powerful actors, violations of workers’ rights, exclusion of women and indigenous peoples, erosion of cultural heritage, and shifting the costs of the energy transition onto vulnerable communities. These risks reveal that the social harm potential of the blue economy is neither exceptional nor accidental; rather, it is a consequence of power asymmetries embedded within the existing ocean governance structures.

In this context, the literature on ‘blue justice’ argues that the blue economy must be assessed not only on the basis of ecological sustainability, but also on the principles of distributive, recognition, and participatory justice. While distributive justice focuses on how the benefits and costs derived from ocean resources are shared among social groups, recognitive justice requires that the knowledge systems, rights, and cultural ties of Indigenous peoples, women, small-scale fishers, and coastal communities be made visible. Participatory justice mandates that decision-making processes be shaped not only by states, companies, and technical experts, but also by communities that have direct subsistence, cultural, and ecological relationships with the sea (Bennett et al., 2020; Cisneros-Montemayor et al., 2019; Croft et al., 2024). Recent contributions further show that blue justice is not a single normative standard but is enacted differently across governance regimes, ranging from state-led to market-based and community-based arrangements (Jentoft and Chuenpagdee, 2022). Moreover, blue justice is not only an academic category: Ertör (2023) documents how fisherfolk movements themselves articulate justice claims against ocean grabbing, demonstrating that ethical critique of the blue economy also emerges from below. Empirical evidence on the scale of what is at stake is provided by the Hidden Harvests assessment (FAO, Duke University, and WorldFish, 2023), which shows that small-scale fisheries account for a major share of global catch and employment, yet remain systematically underrepresented in ocean governance.

From this perspective, the fundamental problem in blue economy governance is that, although the principles of equality and justice are often articulated as normative goals, they are not sufficiently operationalised in practice. As Crosman et al. (2022) point out, uncoordinated, unaccountable, and ambiguous governance structures reinforce powerful actors’ control over marine areas and lead to the exclusion of vulnerable communities from decision-making processes. Cisneros-Montemayor et al. (2021) similarly identify the enabling conditions—including secure tenure, inclusive institutions and transparent benefit-sharing—without which equitable and sustainable ocean economies cannot materialise, while Österblom and Wabnitz (2020) frame ocean equity as a precondition rather than a by-product of ocean sustainability. Studies of marine spatial planning reinforce this point by showing how technical planning instruments can quietly encode dominant interests and displace fishers from decision-making arenas (Tafon, 2018; Trouillet, 2019). Consequently, an ethical transformation in the blue economy requires not only strengthening environmental impact assessments but also institutionalizing mechanisms for representation, accountability, rights-based participation, and benefit-sharing.

Turkey’s case illustrates the concrete regional implications of this debate. Bordering three seas, Turkey possesses significant blue economy potential in terms of maritime tourism, fishing, aquaculture, and marine energy. However, the existing literature indicates that this potential has developed alongside industrial pollution,

unsustainable fishing practices, intensive use of coastal areas and inadequate regulatory mechanisms (Suluk, 2022). This situation highlights that the blue economy's claim to sustainability will be undermined if a balance cannot be struck between economic expansion, ecological monitoring, social protection, and ethical governance. Karaca's (2007) emphasis within the context of environmental ethics is therefore significant: the resolution of environmental problems depends not only on technical regulations but also on an ethical transformation from an anthropocentric understanding of exploitation to ecological responsibility and biocentric governance.

This theoretical framework provides the rationale for the Ethical Blue Economy Framework, which will be developed in the subsequent sections of this article. While the blue economy, in its current form, holds significant potential in terms of both ecological sustainability and social justice, without an ethical foundation, it risks reproducing the problems of 'bluewashing', unequal distribution of benefits, and exclusion from governance. Consequently, the blue economy's capacity for transformation can only be realized through a holistic framework that simultaneously addresses the principles of environmental ethics, social equality, and participatory governance.

An Ethical Blue Economy Framework: Scientific Background and Model Development

Conceptual Foundation for Model Development

The discursive tensions and systemic inequalities highlighted in the preceding sections clearly demonstrate the need for an integrated ethical framework capable of addressing these contradictions in both ecological and governance dimensions, going beyond the abstract principles of justice. The scientific and conceptual foundations of this framework are discussed in the following section.

The proposed Ethical Blue Economy Framework (EBEF) was developed in response to three key gaps identified in the existing blue economy literature. First, the blue economy discourse remains conceptually fragmented and normatively ambiguous across different policy agendas, such as sustainability, growth, security, and innovation (Silver et al., 2015; Voyer et al., 2018). Second, blue growth initiatives produce systematic inequalities affecting small-scale fishers, coastal communities, women, and Indigenous peoples (Bennett et al., 2020; Cisneros-Montemayor et al., 2019). Third, existing equity-focused frameworks do not sufficiently center the intrinsic value of non-human species and marine ecosystems, thereby relegating the ecological-ethical dimension to a secondary role (Leopold, 1949; Næss, 1973; Croft et al., 2024).

The direct starting point for EBEF is the Blue Economy Equity Model developed by Croft et al. (2024). This model operationalizes equity in ocean governance through the principles of ensuring justice, preventing harm, respecting rights, and

promoting well-being. The model's theoretical architecture draws on Beauchamp and Childress's (2009) principled bioethical approach, Rawls's (1971) theory of distributive justice, Nussbaum's (1997) capabilities approach, and restorative justice literature. In this respect, the model transforms equality from an abstract norm in blue economy debates into a practical tool that is applicable to governance processes.

However, this study argues that while Croft et al.'s model makes a significant contribution, it is not sufficient on its own for an ethical blue economy. The model focuses predominantly on relations of justice between human communities and addresses environmental ethics issues, such as the integrity of marine ecosystems, the intrinsic value of biotic communities, and intergenerational ecological responsibility, only to a limited extent. Therefore, rather than rejecting the Blue Economy Equity Model, the EBEF repositions it within a broader ethical architecture. Within this framework, the equality approach developed by Croft et al. (2024) constitutes the social justice dimension, whereas Leopold's (1949) Land Ethic, Næss's (1973) Deep Ecology approach, and Bookchin's (2005) Social Ecology theory reinforce the ecological and political-ethical foundations of the framework.

EBEF also draws upon intergenerational justice, the precautionary principle, and strong sustainability approaches found in the sustainability literature. The Brundtland Commission's (1987) definition of sustainable development emphasizes that current economic activities must not limit the ecological opportunities of future generations, while the precautionary principle necessitates the prevention of irreversible damage to marine ecosystems under conditions of scientific uncertainty (Raffensperger and Tickner, 1999). The robust sustainability approach, meanwhile, supports EBEF's understanding of ecological limits by arguing that natural capital cannot be fully substituted by human-made capital (Costanza et al., 2014; Phelan et al., 2020).

The methodological background of the model is based on integrating social sciences into blue economy governance. Penca et al. (2025) argue that addressing the blue economy solely from the perspectives of marine biology, oceanography, and economics is insufficient; they contend that approaches from political economy, anthropology, critical geography, feminist political ecology, and participatory governance must be incorporated into the process. This approach forms a fundamental methodological basis for EBEF in terms of making visible power asymmetries, knowledge hierarchies, and exclusionary decision-making processes within blue economy practices.

Building on this scientific background, the EBEF was developed as a synthesis of three main sources: (i) the literature on environmental ethics, (ii) the literature on blue justice and equality, and (iii) the social science-based literature on participatory governance. Thus, the framework redefines the blue economy not merely as a matter of economic growth or resource efficiency, but as a normative

field in which ecological integrity, social justice, intergenerational responsibility, and the principles of ethical governance must be addressed collectively.

The Architectural Structure of EBEF: Design Principles and Intertwined Pillars

The relationship between EBEF and the Blue Economy Equity Model is one of interdependence rather than competition: the model proposed by Croft et al. (2024) becomes EBEF's social justice pillar; it is constrained by the above-mentioned ecological ethics, enabled by the governance architecture below, and is entirely grounded in social science methodology. This positioning is fully in line with the strategic stance taken by Penca et al. (2025), who advocated a 'critical revision' of the blue economy concept rather than its abandonment.

The framework is built on four design principles. The principle of integration positions the three pillars not in parallel but as intertwined: ecological health determines the outer boundary conditions for all social arrangements, social justice operationalizes human equality within these boundaries, and ethical governance provides the institutional mechanism for both commitments. This structure is consistent with the robust sustainability principle, which posits natural capital as an irreplaceable fundamental precondition (Costanza et al., 2014; Phelan et al., 2020). The principle of applicability transforms abstract ethical principles into concrete governance commitments, such as ecological red lines, intergenerational impact assessments, social impact audits, and binding standards. The principle of pluralism acknowledges that Eurocentric governance frameworks systematically marginalize the knowledge systems of communities most adversely affected by the development of the blue economy (Penca et al., 2025; Silver et al., 2015). The principle of adaptability aims to ensure the framework's applicability at every scale, from community-level ecotourism governance (Phelan et al., 2020) to national blue economy strategies (Suluk, 2022), and international ocean governance negotiations, such as the BBNJ Agreement.

These design principles are embodied in the three interlinked pillars of the EBEF:

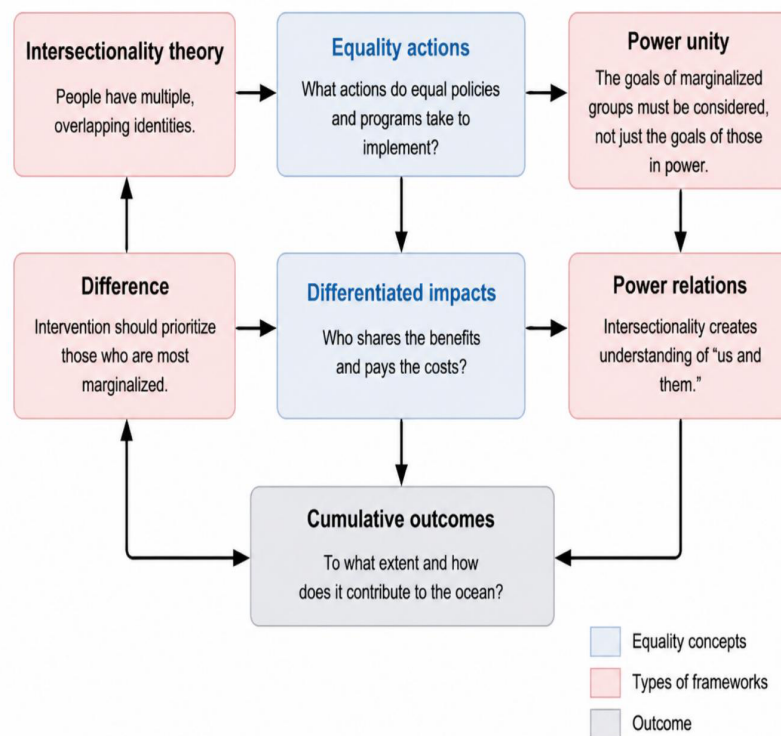
Pillar 1: Ecological Ethics — Outer Boundary. Grounded in Deep Ecology (Næss, 1973), the Land Ethic (Leopold, 1949), and the precautionary principle (Raffensperger and Tickner, 1999), this pillar defines the non-negotiable ecological boundary conditions within which all blue economy activities must operate. Its central claim is that marine ecosystems possess intrinsic value beyond the benefits they provide to humans, and that this intrinsic value gives rise to moral obligations that cannot be overridden by economic or social concerns. By extending the human-centered framework of the Equity Model to the ecological sphere, this pillar emphasizes that ecological harm is not merely an economic externality but also a moral wrong. Its operational commitments include the application of the precautionary principle as the default standard of governance; the identification of ecological red lines that no economic activity may breach; intergenerational impact

assessments modelling the long-term ecological consequences of blue economy activities; and a transition from sectoral management to ecosystem-based management (Brundtland Commission, 1987; Raj, 2023; Phelan et al., 2020; Penca et al., 2025).

Column 2: Social Justice and Equality — Human Necessities Within Ecological Limits. Based on Social Ecology Theory (Bookchin, 1982), the principles of blue justice (Bennett et al., 2020), the Blue Economy Equity Model (Croft et al., 2024), and the social sciences' co-production methodology (Penca et al., 2025), this pillar establishes the ethical imperative that, within the ecological limits defined by Column 1, Pillar operationalizes the ethical imperative that the benefits and burdens of the blue economy must be distributed fairly among communities, social groups, and generations within the ecological limits defined by the Pillar. This pillar does not simply reproduce the Equality Model; it situates it within EBEF's ecological ethical framework, enriching it with Bookchin's structural power analysis and the participatory knowledge co-production methodology developed by Penca et al. (2025). The four principles of the Equality Model — ensuring justice, preventing harm, respecting rights, and supporting development — become the social justice architecture of EBEF and are expanded with three critical refinements: intergenerational equality, ecological harm prevention, and mechanisms for critical discourse to detect 'bluwashing.' Its operational commitments include ensuring the meaningful participation of marginalized groups in all blue economy decision-making processes (Fraser, 1998; Croft et al., 2024), conducting participatory social impact assessments to identify systemic risks, as documented by Bennett et al. (2020), and addressing structural power asymmetries through the recognition of traditional ocean property systems and cultural heritage (Bookchin, 1982; Penca et al., 2025).

In this context, the disaggregated impact framework by Cisneros-Montemayor et al. (2025; see Figure 1) serves as a tool that concretizes the analytical architecture of the social justice pillar of the EBEF. At the heart of the framework, the analysis of differentiated impacts reveals, on the basis of community, identity, and location, who benefits to what extent from blue economy activities and who bears the costs. The principle of intersectionality emphasizes that disadvantage is produced not along a single axis but at the intersection of multiple dimensions such as gender, ethnicity, economic class, and geographical location. The principle of difference aligns with Rawls's difference principle, which requires policy interventions to prioritize the most disadvantaged groups. The dimension of power relations reveals how the legacy of colonialism and existing power asymmetries shape who is heard, whose knowledge is deemed legitimate, and who is included in the distribution of benefits of the research. Finally, equality actions are directly linked to the ethical governance pillar of the EBEF by translating this diagnostic framework into concrete governance interventions.

Figure 1. Disaggregated Impact Analysis Framework in the Blue Economy (Cisneros-Montemayor et al. 2025).



Pillar 3: Ethical Governance: Institutional Architecture. Environmental justice theory, intergenerational equity (Brundtland, 1987; Raj, 2023), the integrative philosophy of sustainability (Costanza et al., 2014), and the science-policy interface strategy (Penca et al., 2025). It addresses the institutional and policy architecture necessary to make the ecological and social justice commitments of the first two pillars functional, implementable, and sustainable across all levels of governance. Without this institutional dimension, ethical principles risk remaining a 'rhetorical aspiration', as Croft et al. (2024, p. 6) warn. Furthermore, without a social science foundation, even well-designed institutional frameworks are vulnerable to co-option by powerful interest groups (Voyer et al., 2018; Silver et al., 2015). Operational commitments include the incorporation of environmental ethics into binding policy frameworks, the development of integrated ethical assessment tools designed within the tradition of 'boundary objects' as outlined by Star and

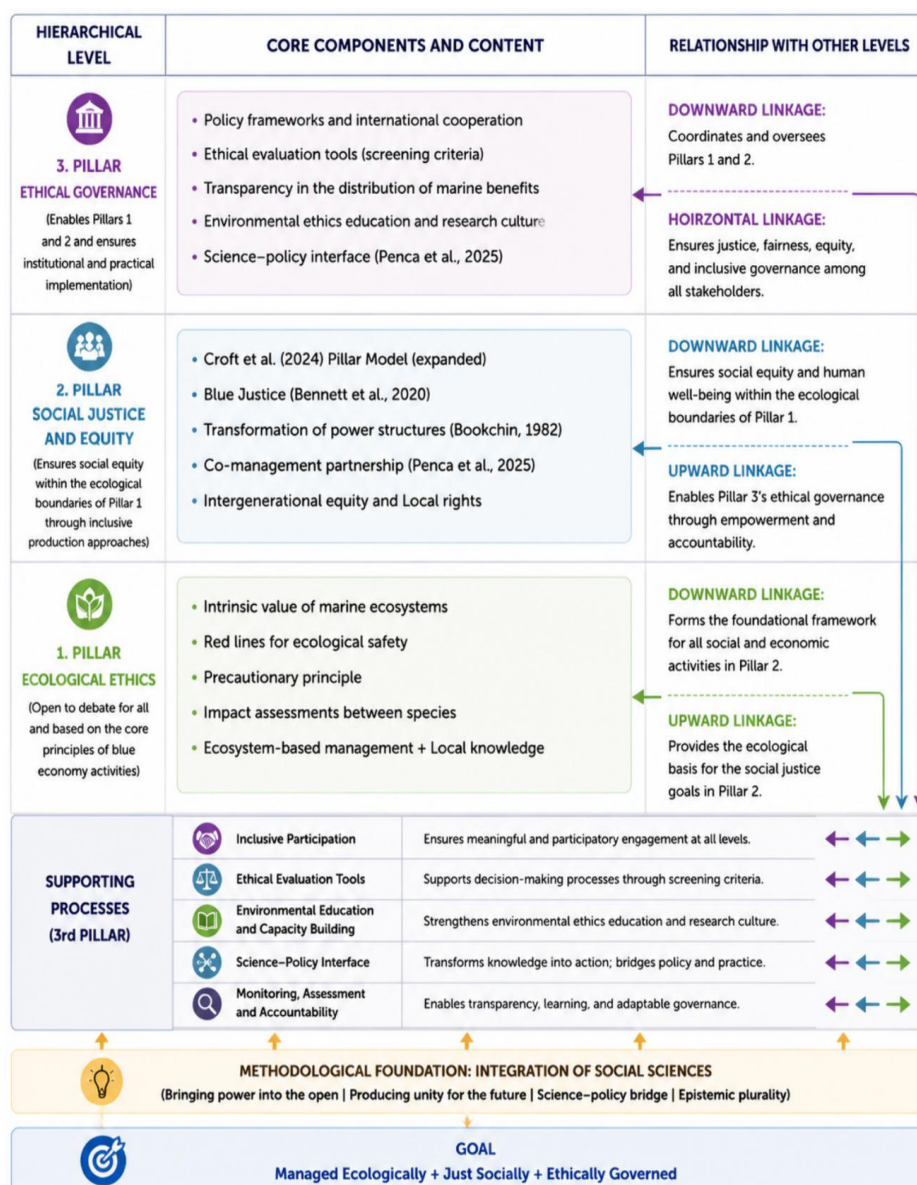
Griesemer (1989), investment in environmental ethics education (Karaca, 2007), the establishment of multi-stakeholder oversight bodies in which marginalized communities are genuinely represented, and active participation in international governance platforms such as the UN Decade of Ocean Science, the High-Level Panel for a Sustainable Ocean Economy, and the International Panel on Ocean Sustainability (IPOS) (Penca et al., 2025).

Positioning of the EBEF: Limitations and Relationship with Existing Frameworks

EBEF does not claim to resolve all tensions within blue economy governance. Consistent with Voyer et al. (2018), we acknowledge that conflicting discourses regarding the meaning and purpose of the blue economy reflect underlying conflicts of interest and ideology. In line with Silver et al. (2015), it acknowledges that powerful actors will continue to instrumentalize the language of sustainability and that the EBEF principles are vulnerable to co-optation without robust implementation mechanisms.

EBEF's claim is more modest but no less significant: the governance of ocean areas requires a coherent ethical architecture that simultaneously honors ecological integrity, social justice, and institutional accountability. No existing framework, including the Blue Economy Equity Framework (Croft et al., 2024), the UNEP Sustainable Blue Economy Transition Framework, or national blue economy strategies (Suluk, 2022) presents this integration in a theoretically grounded, methodologically sound, and practically viable manner. The EBEF aims to fill this gap by building upon existing governance tools while synthesizing them within a broader ethical philosophy that none of them can provide on their own.

In Raj's (2023, p. 461) words, the responsible management of the blue economy is ultimately "a call to action, a plea for responsible stewardship and a vision of a legacy that transcends generations." The EBEF aims to transform this vision from an aspiration into a governance architecture by establishing the ethical and methodological foundations upon which a truly sustainable blue economy can be built.



Discussion

Theoretical Contributions

The Ethical Blue Economy Framework (EBEF) developed in this study contributes to the blue economy literature at three fundamental levels. First, the EBEF challenges the assumption that ecological sustainability, social justice, and institutional accountability can be treated as mutually exclusive policy domains within blue economy governance. Many existing international frameworks position economic growth, environmental protection, and social inclusion as equivalent objectives that often need to be balanced. In contrast, the EBEF defines ecological integrity not as something superimposed on social and economic arrangements but as a prerequisite for their existence. In this respect, the framework is consistent with a strong sustainability approach and imposes an ethical limit on the 'growth-first' logic frequently encountered in blue economy discourse (Costanza et al., 2014; Voyer et al., 2018; Ertör and Hadjimichael, 2020).

Second, EBEF expands the existing literature on blue justice by integrating blue economy equity debates with environmental ethics. Croft et al.'s (2024) Blue Economy Equity Model makes a significant contribution to the operationalization of ocean governance justice. However, this model primarily focuses on equity relations among human communities. On the other hand, EBEF brings Leopold's Land Ethic, Næss's Deep Ecology approach, and Bookchin's Social Ecology theory into blue economy governance, placing ecological integrity, the intrinsic value of non-human species, and structural power relations at the center of the model. This demonstrates that ecological degradation and social inequality are not separate phenomena but are shaped together within the same power and production relations.

Third, EBEF positions social science methodology not as a complementary element of blue economy governance but as a constitutive condition. As Penca et al. (2025) emphasize, addressing the blue economy solely through the perspectives of marine sciences, economics, and technical planning renders power asymmetries, knowledge hierarchies, and exclusionary decision-making processes invisible. Consequently, the EBEF treats participatory research, co-production of knowledge, critical discourse analysis, and epistemic pluralism as fundamental components of ethical governance. This approach shifts the focus of blue economy studies away from the question of 'what should be done?' towards 'by whom, with what values and within what power relations is knowledge produced?'

Implications for Policy and Governance

EBEF provides an integrated normative framework for assessing blue economy policies at the local, national, and international levels. At the international level, the blue economy is still largely monitored through economic indicators such as investment volume, contribution to GDP, export capacity, and job creation. While these indicators are important, they do not, on their own, demonstrate whether activities preserve ecological integrity, whether benefits and costs are distributed fairly, or whether governance processes are accountable. Therefore, the EBEF

proposes three complementary areas of criteria for blue economy assessments: ecological health indicators, social equity indicators, and ethical compliance indicators.

Ecological health indicators should include criteria such as the integrity of marine ecosystems, biodiversity, habitat continuity, water quality, and ecosystem resilience. Social equity indicators should be based on the distribution of benefits and costs, protection of small-scale fishing communities, participation of women and indigenous peoples in decision-making processes, workers' rights, and intergenerational impacts. Ethical compliance indicators should measure the discrepancy between stated sustainability commitments and actual practices, thereby making the risk of 'bluewashing' visible (Silver et al., 2015; Voyer et al., 2018).

At the national level, the EBEF demonstrates that blue economy strategies must be assessed not only in terms of sectoral growth targets but also in conjunction with ecological limits and social justice obligations. As in the case of Turkey, when the economic potential in sectors such as marine tourism, fisheries, aquaculture, and marine energy is accompanied by industrial pollution, unsustainable resource use, and inadequate regulatory frameworks, the blue economy's claim to sustainability is undermined (Suluk, 2022). National strategies must therefore be underpinned by ecological red lines, social impact assessments and participatory governance mechanisms.

At the local level, the Blue Economy Framework for Environmental and Social Benefits (EBEF) reinforces the importance of community-based governance. Coastal communities, small-scale fishers, women, and Indigenous peoples must be recognized not merely as the subject of policy, but as knowledge producers and governance partners. As demonstrated in Phelan et al.'s (2020) study on community-based ecotourism, this approach facilitates more inclusive forms of governance that combine the ecosystem services approach with the principles of social justice and participatory decision-making.

Implications for Business, Civil Society and Communities

The ethical architecture proposed here also has direct implications for ocean finance. Blue bonds, blue carbon markets and "sustainable blue economy" investment principles are rapidly becoming the primary instruments through which capital enters ocean space, yet their allocation criteria remain overwhelmingly financial and rarely incorporate ecological red lines or distributive justice tests (Sumaila et al., 2021). Under the EBEF, financial instruments would themselves be subject to ethical screening: no investment that breaches ecological boundary conditions or excludes affected communities could qualify as "blue", regardless of their formal certification status.

The key implication of EBEF for the business sector is that businesses operating in blue economy sectors must be held to ethical accountability standards that go beyond voluntary corporate social responsibility (CSR) declarations. Actors operating in sectors such as fisheries, aquaculture, marine tourism, offshore energy, maritime transport, and deep-sea mining should not be assessed solely based on economic performance or sectoral efficiency indicators. Ecosystem-based impact assessments, precautionary principles, equitable benefit-sharing, and meaningful participation processes with affected communities must become the minimum ethical obligations for businesses. Existing work on the integration of environmental ethics into corporate sustainability strategies suggests that voluntary declarations rarely alter core business decisions unless supported by binding standards and independent verification (Smith and Taylor, 2018).

In this context, the burden of proof should lie not with communities or ecosystems at risk of harm but with the actors proposing the potentially harmful activity. This approach entails the application of the precautionary principle to blue economy sectors and is of critical importance, particularly in areas where scientific uncertainty is high, such as deep-sea mining, offshore energy infrastructure, and intensive aquaculture (Raffensperger and Tickner, 1999).

From the perspective of civil society and communities, the EBEF provides a normative language that enables the identification and questioning of governance failures. Concepts such as ecological integrity, procedural equity, substantive equity, intergenerational justice, the rights of nature, and bluewashing allow communities to articulate their demands regarding blue economy projects on a stronger ethical and political footing. Thus, the EBEF can serve as an assessment and challenge framework not only for policymakers but also for civil society organizations, coastal communities, and rights advocates.

Limitations and Future Research

This study is based on a conceptual and theoretical synthesis of the existing literature. Consequently, the most significant limitation of the EBEF is that it is a model that has not yet been empirically tested. The practical utility of the framework should be assessed by applying it in different geographical, institutional, and sectoral contexts. High-income maritime nations, Small Island Developing States, and various maritime basins, such as the Mediterranean, Black Sea, Arctic, Indian Ocean, and Southeast Asia, offer suitable areas for testing the EBEF's contextual adaptability. A growing body of recent empirical work—including social equity indicator applications (Cisneros-Montemayor et al., 2025), governance-regime comparisons of blue justice (Jentoft and Chuenpagdee, 2022), and large-scale assessments of small-scale fisheries (FAO, Duke University, and WorldFish, 2023)—provides both the data infrastructure and the methodological precedents against which the EBEF could be operationalised and validated in future case-based research.

Second, the three pillars of the EBEF must be translated into measurable and monitorable indicators. Quantitative and qualitative indicators must be developed to enable normative principles, such as ecological integrity, social equity, and ethical governance, to be utilized in policy processes. This study outlines the general direction of these indicators; however, the development of detailed measurement sets is left for future research.

Third, the relationship between EBEF and non-Western and Indigenous ethical traditions must be further explored. While the framework advocates epistemic pluralism, a significant portion of its theoretical sources stems from Western-centered environmental ethics and political philosophy literature. Future research should systematically examine how Indigenous ocean ontologies, traditional ecological knowledge, and non-Western approaches to environmental ethics might transform EBEF.

Fourth, the implementation of EBEF poses significant challenges from a political economy perspective. Proposals such as ecological red lines, binding international standards, and structural power transformation may conflict with existing economic interests and established governance arrangements. Therefore, future studies should analyze not only the normative validity of the EBEF but also its feasibility, institutional resistance points, and potential policy coalitions.

Fifth, the financing of a sustainable ocean economy remains a critical but underexplored dimension in relation to EBEF. As Sumaila et al. (2021) demonstrate, the current ocean finance gap is substantial: an estimated USD 8 billion from philanthropy and USD 5 billion from Official Development Assistance were invested in sustainable ocean development over the past decade, yet this level is insufficient to drive the transformative change needed. Furthermore, harmful subsidies—amounting to USD 22 billion annually in global fisheries alone—continue to undermine conservation efforts and perpetuate inequalities (Sumaila et al., 2021). Future research should examine how EBEF's ethical screening criteria could be operationalised within existing blue finance mechanisms, and how harmful subsidies might be redirected towards activities that satisfy the framework's three pillars.

Conclusion

The blue economy has emerged as one of the most powerful yet contradictory concepts in contemporary ocean governance. On the one hand, an optimistic narrative is emerging that ocean-based activities will foster sustainable development, alleviate poverty, and protect marine ecosystems. However, it is evident that, in practice, these promises are often realized at the expense of ecological integrity, social justice, and the rights of coastal communities. The central thesis defended throughout this article is that this contradiction is not merely a technical glitch or a lack of managerial capacity; rather, it is an ethical crisis rooted in the value systems that guide ocean governance.

Building on this understanding, this article presents the Ethical Blue Economy Framework (EBEF), which brings together approaches based on environmental ethics, blue justice, and social science-based governance under a single normative umbrella. The framework is built upon three pillars that are not separate policy domains but are intertwined and organized hierarchically. The ecological ethics pillar emphasizes that marine ecosystems possess intrinsic, rather than merely instrumental, value and that ecological integrity constitutes a non-negotiable boundary condition. The social justice and equality pillar focuses on the equitable distribution of the benefits and costs generated by the blue economy, the effective participation of marginalized communities in decision-making processes, and intergenerational responsibility. The ethical governance pillar highlights the indispensability of accountable, participatory, and binding institutional mechanisms to ensure that these principles do not remain mere rhetorical embellishments.

The main novelty of this paper lies in the development of the Ethical Blue Economy Framework (EBEF), which brings together three domains that are usually treated separately in the literature—environmental ethics, social equity and governance methodology—within a single, integrated and operational architecture. Unlike existing approaches that focus either on ecological sustainability, or on social equity, or on technical governance tools, the EBEF (i) defines ecological integrity as a non-negotiable boundary condition, (ii) embeds a refined blue justice and equity model as the core of social assessment, and (iii) grounds governance design in participatory, social-science-based methods. This combination allows the framework to be applied across different geographical contexts and policy scales, making its contribution relevant for blue economy debates worldwide.

Ultimately, the responsible management of the blue economy is not merely an issue confined to today's development agenda but a matter of stewardship and legacy that transcends generations. The question of what type of ocean we will leave for future generations is, at its core, a moral choice. The EBEF claims to contribute to building this legacy on a foundation that is ecologically sound, socially just, and ethically defensible.

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