



Full length article

## Centring justice for labour in the new blue economy: Principles for applying emerging evidence and theoretical critiques to policy and practice

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## ABSTRACT

The Blue Economy, according to the World Bank, is the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem", refers to a set of economic activities that sustainably make use of marine ecosystems while protecting nature at the same time. Similar policy trends, such as the Green Economy, have shown that development in the name of sustainability is likely to guarantee socially just development. To avoid the past mistakes, it is necessary to examine the social challenges faced on this new economic frontier. How, then, the existing patterns of unjust social relations are potentially replicated in the new set of blue economic activities, and what can be done to prevent the replication from happening? This paper presents the analysis of the inclusion of social injustice into the BE, the relationship between the *Blue Economy* and social (in)justice with a focus on various forms of unjust labour exploitation that have been identified in the sector. From the literature review, this article concludes by presenting seven key principles that may be used to guide policymakers who are seeking to integrate emerging evidence and theoretical critiques relating to justice and labour into blue economy policy and practice: 1) foregrounding of the human impact of blue economic activity, 2) identifying the replication of the existing patterns of exploitation, 3) programming with and for the vulnerable, 4) centralizing labour education, 5) addressing regulations and legislation relating to labour exploitation, 6) conducting research that beyond the blue economy, 7) underpinning the blue economy strategies with a commitment to multidimensional justice.

### 1. Introduction

The *Blue Economy*, according to the World Bank [82], is the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of the ocean ecosystem"; "the sustainable use and conservation of aquatic resources in both marine and freshwater environments" according to UNECA [88]. Different definitions of the *Blue Economy* may appear upon search for various guidance purposes, however, the definitions all highlight the equal importance of sustainable use of aquatic resources and economic growth. In recent years, discourses around climate change and sustainability have caused a shift in the way marine ecosystems and the resources found within them are valued. The United Nations Convention on the Law of the Sea (UNCLOS) [53] addresses various facets of labour and social justice within the maritime context, though not as its primary focus. Notably, UNCLOS includes provisions that indirectly influence the protection and rights of maritime workers, contributing to broader goals of social justice which include seafarers' rights, safety at sea, flag state

responsibilities, jurisdiction and legal recourse etc. The UN Ocean Decade (2021–2030) [87] integrates principles of labour and social justice within its overarching framework aimed at fostering sustainable development and the equitable utilisation of ocean resources. This decade-long initiative recognises the critical interplay between healthy oceans and the livelihoods of millions of people, particularly those employed in maritime industries and coastal communities. In terms of policy, which is reflected in the emergence of the Blue Economy, has attracted more and more attention in recent years. However, lessons from similar policy trends, notably the Green Economy, suggest that pursuing economic development in the name of sustainability does not necessarily guarantee socially just development. As such, if mistakes of the past are to be avoided, there is a need to examine the problems and challenges relating to justice that may be encountered in emerging blue economies. The question that arises from this is how and why, in the name of 'sustainable development', might policies relating to oceans and coasts exacerbate existing socioeconomic inequalities and infringe upon the rights of marginalised groups. And where are new violations of these

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rights emerging? At the core of this question is how people interact with the economy, which in many cases is through their labour.

Before moving on to the connection between the blue economy and social (in)justice, it is crucial to define the *Blue Economy* first. The *Blue Economy* aims to develop the world into a more sustainable place for human beings, living creatures, and the environment [90]. Compared to the *Green Economy*, the *Blue Economy* focuses more on the attention to the ocean and its habitants, from where, the topics expand to the marine environment and its sustainable development [82]. There are a set of definitions of the Blue Economy, among which, each one is slightly different from the other; in this article, however, the Blue Economy definition that is being applied is from the World Bank – the *Blue Economy* refers to the "sustainable use of ocean resources for economic growth, improved livelihoods, and jobs while preserving the health of ocean ecosystem" (The World Bank, 2017b). Apart from the term "*Blue Economy*", in this paper, the *New Blue Economy* includes 'nature-based' tourism, ocean renewable energy, offshore aquaculture, marine biotechnology, bioprospecting, carbon storage, and payment for ecosystem services (PES), and even, by some definitions, expanding carbon-intensive industries like oil and gas extraction or deep seabed mining [14,63,92], which created a stronger link with the social (in) justice.

This article discusses the relationship between the 'new' blue economy and social (in)justice, bringing together critiques that have been made across multiple disciplines in recent years, with a focus on the various forms of unjust labour exploitation that have been envisaged or, in some cases, identified and documented. The future of blue economy policies, and how successful they will be in achieving their stated aims, remains unclear. What is becoming apparent, however, is that they will only be economically sustainable in the long term if they are also both socially and ecologically sustainable. Policies to date, however, have typically focussed first on the economic and then (sometimes) the ecological importance of marine resources, but they have generally said little about the social role of oceans. As such, this article advocates for positioning justice and labour rights front and centre in blue economy policies and strategies to ensure that the risks and benefits of exploiting marine resources may be distributed in an equitable, just, and sustainable way.

Critiques across various disciplines (most of which have been published in the past five years – 2017–2022) approach justice in the blue economy from different perspectives, but they have begun to converge on a conclusion that may be crucial to the success of ocean governance strategies: *social justice, including regarding labour practices, is a necessary precondition of developing a sustainable blue economy*. This is because the economic and ecological sustainability of efforts to manage oceans and coastal regions depends on ensuring that exploitative labour practices, which are characteristic of the contemporary global economy, are not replicated, but instead are opposed, in new blue economic activities. It is necessary, therefore, to begin addressing labour exploitation and centring justice in the emerging blue economy, blue growth, or blue governance strategies from the outset.

The paper begins by discussing how a shift towards sustainability thinking in development policy has also opened the oceans to new forms of exploitation under the banner of the blue economy. This also requires a discussion of what the 'blue economy' means to different actors and how different definitions can influence which types of economic activities, and therefore which types of labour relations, will be included in blue governance strategies. The similarities and differences between the 'old' and 'new' blue economies are then discussed, including concerning similar research into labour in the green economy. Here, a gap in blue economy research is identified: though it remains important to document and address labour exploitation in the established ocean-based industries (such as industrial fishing and shipbreaking), a more complicated question that remains is how the new blue economy in its many emerging forms might once again reproduce existing forms of unjust labour or create new ones. Though some empirical research on

the social implications of blue economy policies has been conducted, very little directly addresses labour exploitation. That said, critical policy analyses have highlighted how blue economy strategies are already replicating the structural issues found in the world of sustainability more broadly – e.g., power asymmetries, foregrounding economic growth and development, and taking a top-down approach to conservation – that make exploitative labour practices both possible and profitable.

Following this, the paper focuses on scholarship relating to blue justice – an approach that examines how coastal communities and small-scale fisheries are influenced by the blue economy and policies - arguing that this approach represents a useful tool for identifying and avoiding the replication of (or at least mitigating against) the issues relating to labour exploitation that are embedded in the global political economy and that has been reflected in both the 'old' blue economy the green economy. Sustainable development, and particularly the goal to "leave no one -behind", which is central to the 2030 Sustainable Development Agenda, requires that the new blue economy be envisaged, planned, and developed with social justice and labour rights at its core. The article concludes by presenting seven key principles that may be used to guide policymakers in the blue economy who are seeking to integrate emerging evidence and theoretical critiques into policy and practice.

The key points to be taken from this article are as follows. Firstly, considerations of the human impact of blue economic activity should be placed at the forefront of blue economy policies and strategies because economic growth at the expense of human well-being is antithetical to long-term ecological sustainability. Secondly, ocean governance strategies must include *context-specific* labour policies that include measures to safeguard vulnerable or marginalised groups (including, but not limited to, women, children, Indigenous Peoples, and migrants) from exploitative labour practices, including modern slavery. Thirdly, for these two recommendations to be effective and meaningful, they must be underpinned by interdisciplinary research into planned, emerging, and established projects that seek to better govern and sustain oceans and coastal regions. This research must also reach beyond measuring the localised, short-term economic and medium-term environmental impacts to assess the extent to which the projects support a just transition to a sustainable global future.

## 2. Methodology

This paper was originally conceived as a review of the literature on modern slavery and forced labour in the blue economy. The intention was to synthesise emerging knowledge regarding the extent of such exploitative labour practices and to identify where commonalities in empirical findings or theoretical critiques have begun to emerge. The primary database used for the search was Google Scholar. This was chosen because Google Scholar has become one of the most extensive and broadest databases of scholarship across a wide range of disciplines (see e.g., Gusenbauer, 2019) and, at this point, is "essentially a superset of WoS [Web of Science] and Scopus, with substantial extra coverage" (Martín-Martín et al., 2019). This also means that the literature search would not be limited by the scope of discipline-focused databases, which would in turn allow for a broad range of theoretical perspectives to be incorporated, including relevant grey literature. However, the initial search using a selection of individual and combined key terms (such as "Blue Economy" + "Modern Slavery", or "Blue Economy" + "Forced Labour") yielded far fewer relevant results than anticipated. Moreover, on reading, it also became clear (in part because of inconsistent definitions of the blue economy) that most of the articles identified in this way focussed primarily on industries that are part of the 'old' blue economy: i.e., industrial fisheries, ship breaking, and extractive industries, all of which have long been associated with forced labour and modern slavery. A small number of articles did address labour exploitation in the new (i.e., 'sustainable') blue economy (which was the intended focus of this research), but they tended to do so within a broader critical framework

of justice. That said, the policies and practices that shape labour relations – an equal, diverse, and fair relation – remained present in some of them as a focal point from which injustices within (and, therefore, the sustainability of) the blue economy was examined.

This article is underpinned by a grounded theoretical methodological approach, guided by the iterative five-stage grounded theory method described by Wolfswinkel et al. (2011). Though often used in qualitative primary research, particularly in anthropology, sociology, and related disciplines, grounded theory is less often used when reviewing the literature. While other approaches, such as systematic reviews and meta-analyses, typically have clear and defined boundaries, a grounded theoretical approach allows the researcher to be led by the data and to shift one's focus in the direction that the literature leads. Thus, the search terms were revised and expanded to move towards what was perceived to be the most innovative work and that which was most relevant to the question of labour exploitation in the new blue economy. This body of work was linked by 'blue justice', an approach that examining the restructuring of rules and authority over the access, use, and management of marine resources and areas of the ocean [12] (new search terms included "Blue Justice" + "Labour Exploitation", for example). In turn, this also drew us towards lessons from more established literature on the 'green economy', 'environmental justice', and 'green grabbing'. This approach, like snowball sampling of research participants when conducting interviews, allowed for a broad set of articles to be identified, reviewed, coded, and narrowed down to those that were most relevant.

The literature review starts with introducing the importance of growing which leads to the exploitation that accompanies the "growing" in the ocean. Then explores the deeper and detailed definition and discussion of the "blue economy" which promotes and supports the idea of sustainability for both marine resources and the people. This opens the topic of the different labour exploitation in the old and new blue economy, and the discussion of blue (in)justice, which leads to the outlook of blue justice for the future.

### 2.1. Opening the oceans to new exploitation

The policies and economic activities outlined in the blue economy, blue growth, and blue governance strategies can potentially act as conduits for development by improving established blue industries, such as fishing or coastal and marine tourism, and developing them in more sustainable ways in conjunction with new and emerging opportunities. This 'new blue economy' (see [31]) can include 'nature-based' tourism, ocean renewable energy, offshore aquaculture, marine biotechnology, bioprospecting, carbon storage and payment for ecosystem services (PES), and even, some definitions, expanding carbon-intensive industries like oil and gas extraction or deep seabed mining [14,63,92]. All of this means that the frontier for the economic development of the oceans is growing, yet – while dominant discourses typically frame the growth of the blue economy as being beneficial for developing nations and coastal communities – rapid and unchecked ocean development also carries risks relating to uneven distribution of potential benefits and harms, including various social justice implications [12,44].

While the global rush to control *land and terrestrial resources* under the auspices of sustainability is relatively well documented and is often referred to as 'green grabbing' (see e.g., [6,38,69,95]), concerning marine and coastal resources, such processes are less well researched. Nonetheless, under the banner of the blue economy, such power grabs are beginning to take shape, enabled through global policy processes that purport to address both the needs of the poor and climate change concerns, but which also seek to protect profit and capital interests [8]. This has been referred to as 'ocean grabbing' (e.g., [12]) or 'blue grabbing' (e.g., [11]). These concerns, along with how such risks might be addressed in policy and practice, underpin much of the research relating to the interconnected concepts of 'environmental justice', 'just transitions', 'just sustainabilities', 'just disruptions', and 'blue justice' [12,28,

35,36,5,46].

Labour exploitation, according to [78], has been a central component of the green-grabbing deals that have sought to profit from the green economy (see also [33]). For this reason, a critical question relating to justice in the blue economy is how efforts to develop and exploit oceans sustainably might avoid also sustaining or exacerbating unjust labour relations that result in exploitative labour practices. Of particular concern are the most extreme forms of labour exploitation, including modern slavery, many instances of which have been identified in existing ocean-based industries. These have garnered attention in the media and academic research, providing an impetus for change in terms of policy development. Most research into labour exploitation and modern slavery, in the blue economy has focussed on fisheries (see e.g., [26]; Haward et al., 2020; [58,72,83,91,96]), while labour conditions in other industries related to the new blue economy remain inadequately researched. This is somewhat unsurprising given the speed at which ocean resource use has changed in recent years, but the lack of data is primarily due to the nature of the blue economy, i.e., that it is transnational in nature, difficult to monitor, and subject to confused and overlapping legislation that is difficult to enforce. Thus, if policymakers are to avoid replicating the mistakes of the 'old' blue economy, it is necessary to explore how exploitative labour practices may be recreated in these emerging sectors.

As with the green economy, there is an inherent contradiction at the heart of the blue economy, which must be overcome if it is to become environmentally sustainable *and* socially just. Regarding the green economy, this problem is summarised by Selwyn as follows: neither pro-market nor radical social democratic variants [of the green economy] consider ending capitalism's competitive, accumulation-driven growth dynamic. And yet it is capitalist economic growth, rooted in the commodification of social life and labour exploitation, that is the root cause of the environmental collapse ([77], p. 805).

### 2.2. What makes the blue economy blue?

A central issue in discussing the blue economy is that the term – as well as associated ideas such as 'blue growth', 'blue government' and, 'blue development' – is not used consistently in policy discourse or academic literature. For example, the blue economy is defined by the World Bank as "comprising the range of economic sectors and related policies that together determine whether the use of oceanic resources is sustainable. Sustainability in this context refers to the use of the resources of our oceans in a way that preserves the health of our oceans for use by future generations" ([82], p. vi, cited in [17]).

As the definition above highlights, the blue economy does not (necessarily) only include the sectors, actors, and policies that are sustainable, but rather comprises those that determine *if* the oceans will be protected. Beyond this narrow definition, as noted by Bohler-Muller et al. [17], policymakers and academic researchers have also begun to consider how this idea can also potentially contribute to cross-cutting issues including poverty alleviation, employment creation, and sustainable development. It is also worth noting that the ideological motivation behind protecting 'our' oceans is to ensure that they will continue to be useful to us at a later date. The vagueness of this definition is important to bear in mind when considering the theoretical contradictions around what constitutes a 'blue economy' and when identifying how labour exploitation might appear within new forms of blue economic activity.

Brears [20] asserts that: in the blue economy, the environmental risks of and ecological degradation from economic activity are mitigated or significantly reduced. Therefore, economic activity balances the ocean ecosystems' long-term capacity to support this activity and remain healthy and resilient ([19], p. 1).

This more optimistic idea – that the economy can make oceans *more* sustainable – is the central logic behind global efforts to develop the new blue economy, but it still leaves open the question of what economic

activity this vision includes or excludes. The result is that many competing interpretations exist. However, like the green economy, the blue economy at least implies that the focus is on environmental sustainability, and this is indeed the definition advocated for by environmental NGOs (see e.g., [98]). As the Centre for the Blue Economy (CBE) has noted, this ambiguity means there are at least three distinct but related understandings of the term in use, which are: [1] the overall contribution of the oceans to economies, [2] the need to address the environmental and ecological sustainability of the oceans, and [3] the ocean economy as a growth opportunity for both developed and developing countries [23].

Thus, on the one hand, 'blue' can simply refer to any economic activities related to marine environments (even those that degrade them) or their potential economic value, while on the other it may refer specifically to economic activities that have positive impacts on oceans and coastal regions and the environment more broadly, or at least do not damage them further. Voyer et al. [92] have also analysed the discourses that have emerged as various actors have co-opted the term, using it in differing and sometimes directly contradictory ways. There is, however, a common thread at the policy level of the blue economy, which reflects a trend towards the commodification and valuation of nature, the designation and delimitation of spatial boundaries, and the securitization of the oceans. Conflict still exists around the legitimacy of individual sectors (specifically carbon-intensive industries) as components of the blue economy. An example of this is South Africa's 'Operation Phakisa', which was hailed as Africa's most advanced 'new' blue economy. The McKinsey-designed project was formally launched in 2014 and its most important financial inputs would come from corporations promoting shipping investments and port infrastructure, offshore oil and gas extraction projects, and seabed mining ([18], p. 341).

Thus, when considering its relationship to labour exploitation, it is necessary to acknowledge that almost any ocean-related economic activity – ecologically, economically, and socially sustainable or otherwise – may be viewed by some (if not all) actors as part of the blue economy. For this reason, researchers have begun to draw a distinction using terms including the 'new' blue economy (see e.g., [31]), the 'emerging' blue economies (see e.g., [22]), and the 'sustainable' blue economy (see e.g., [25]). The definitions and limitations of these still vary to some degree, but they all generally refer to ocean-related economic activity that is linked to, or at least intended to facilitate, the somewhat paradoxical 'sustainable exploitation' of ocean resources (see [3,76]). The economic frontiers of new blue exploitation are ever expanding, but they include ocean renewable energy, offshore aquaculture, marine biotechnology, bioprospecting (see [14]), Marine Protected Areas (MPAs), sustainable subsistence fishing, ecotourism (see [18]), nature-based and community-based tourism, Payment for Ecosystem Services (PES) (see [71,63]), and ocean carbon storage [70]. However, limited empirical research into labour exploitation in these sectors has so far been conducted.

### 2.3. Labour exploitation in the old and new blue economies

Exploitative working conditions in existing industrial sectors of the old blue economy, such as shipbreaking and fisheries, are well documented. Since the early 2000s, civil society organisations have investigated and reported on the environmental and human costs of the dangerous process of dismantling the world's shipping fleet. They have identified major human and labour rights violations and, though these appear to be common, little has yet been done to address the issue (see Choukroune & Nedumpara, 2021). Recently, however, courts have become more willing to enforce international statutes relating to labour rights in the sector. For example, in March 2021, a judgment of the UK Court of Appeal found that a UK shipping company, Maran (UK) Ltd, had "arguably played an active role [in the death of a worker] by sending [a] vessel to Bangladesh, knowingly exposing workers to the significant

dangers". The decision represents a positive development in terms of recognising the issue of precarious and dangerous working conditions in the sector and enforcing labour rights at the international level. This is important because it means companies in the UK could now owe a duty of care to workers in developing nations, even when multiple third parties are involved in the transaction (Holland & Bonner, 2021). It also puts the spotlight on the blue economy as a whole, highlighting issues relating to environmental and health and safety practices and setting a precedent for other cases, which could force shipbreaking and other sectors to improve working conditions (Vidal, 2021).

Within fisheries, the global extent of the labour abuses remains largely unknown, and it has not yet received the level of scholarly attention it deserves [45,83]. However, the sector is still by far the most researched and well-documented area of labour in the blue economy. The ILO notes two key characteristics of the fishing industry that make it uniquely vulnerable to such abuses. Firstly, trends of overfishing coupled with a shift toward sourcing a workforce from middle- and low-income countries have meant that more low-cost and migrant workers are now employed by the sector. Because these workers are less able to make demands for better working conditions, this is typically accompanied by a lack of training and poor enforcement of safety and labour standards. Secondly, the fisheries sector has been linked to transnational organized crime, which has exacerbated poor and exploitative working conditions, including facilitating human trafficking and forced labour [52]. According to the Walk Free Foundation, notable examples of modern slavery that have been identified include high-profile investigations into Thai, Indonesian, Chinese, and Cambodian fisheries. This could create the perception that the issue is limited to developing regions and Asia in particular, but there have also been reports of labour abuses aboard vessels from many other nations, including developed countries such as Britain, the United States, and New Zealand ([93]; see also, [67,62,64]). As with shipbreaking, this highlights how the economies of the Global North and unjust labour practices in the Global South are intrinsically linked through the blue economy.

Labour exploitation in other areas of the blue economy is inadequately documented. For example, Jackson et al. [55] note that, even within fisheries research, coastal land-based fish-processing activities and their social-ecological impacts are often overlooked by both marine scientists and antislavery groups. Using remote sensing methods, their research assessed the location and impact of these activities through a case study of Bangladesh's Sundarbans mangrove forests. They identified ten fish-processing camps, some of which were located in regions where human activity was banned, and, crucially, they were able to triangulate their data with previous research on labour exploitation to conclude that there is a "cyclical relationship between modern slavery and environmental degradation, whereby environmental damage is both a driver and result of workers subjected to modern slavery" ([55], p. 429; see also [66]). This type of research is important because it shows that such activities can evade detection, even when legislation against them exists. In other 'traditional' blue sectors, and even more so in the new blue economy, little to no research has been conducted to ascertain who is being exploited, how, where, and by whom.

Chang and Khan's [24] study on MLC-2006 in human rights context has demonstrated the importance of seafarers regarding the contributions to the development of the maritime industry as well as the significance of sufficient social and legal protection for their interests and rights. The study found that among the three parts of the MLC-2006: articles, codes, and guidelines, only the codes and regulations are mandatory, which left non-mandatory articles for member states to choose whether to follow and thus weakened the protections of seafarers' wellbeing and rights. The study highlights the responsibilities of ILO to make the articles mandatory to better protect the seafarers. Another study from Chang and Khan [61] on MLC-2006 that focuses on Pakistan's Maritime labour in the context of blue economy concludes that ratifying the MLC-2006 would offer substantial benefits to



Pakistan's government, shipowners, and seafarers by safeguarding their rights, enhancing operational efficiency, and bolstering the country's maritime reputation. Additionally, the adoption of the MLC-2006 is posited to significantly benefit Pakistan's maritime sector by improving seafarers' rights and working conditions, promoting high training standards, and fostering a transparent and accountable industry. This would attract investment, enhance competitiveness, and encourage youth participation in the profession while ensuring the security of Pakistan-flagged vessels and attracting more international freight to its ports. Boewe's [15] study on work conditions and economic trends in the maritime sector highlights long-term trends in the global labour market for seafarers, including the decline in wages and working conditions driven by the "flags of convenience" system. Additionally, it discusses the efforts of the International Transport Workers' Federation and national trade unions to halt and potentially reverse this "race to the bottom".

Other studies, notably Marschke & Vandergeest's [65] unpacking of the slavery scandals in offshore fisheries and the work of Stringer et al. [80] on forced labour in New Zealand fisheries, have identified exploitative labour practices in so-called 'sustainable' fisheries. Despite this, modern slavery is yet to have appeared on the agenda of some of the fisheries governance institutions and regional fisheries management organizations (RFMOs), meaning awareness has not translated into effective legislation or international enforcement ([29], p. 20). Thus, as Giron-Nava et al. [42] have pointed out, sustainable management of fisheries is a critical step, but it is not enough to ensure the well-being of the world's fishers. For this reason, it is important to scrutinise labour practices within *sustainable* economic activities in the same way as any other enterprise. Strating, Rao and Yea's [79] study on forced labour on fishing vessels focuses on two justice processes in Southeast Asia and the uneven use of Mutual Legal Assistance (MLA) in bringing perpetrators of human trafficking and forced labour at sea to justice to address weaknesses in inter-state cooperation in judicial processes, which reveals a strong normative focus on state sovereignty and economic priorities within Southeast Asian regionalism, which remains a significant obstacle to effectively addressing human rights issues at sea.

As the example of sustainable fisheries suggests, a lack of research or evidence does not mean that labour abuses do not (or will not) occur within emerging sectors of the new blue economy. Part of the reason for this, as Thakholi notes, is that labour in conservation and sustainability has escaped systematic analysis because it has been framed in opposition to, and therefore as 'better' than, more overtly extractive forms of industry. Thakholi uses a case study of ecotourism in South Africa to illustrate how "labour geographies [of conservation] are characterised by the unpaid reproductive work of spouses and in-laws, traumatised rangers, and a racially segregated landscape" ([81], p. 1). Given the centrality of tourism to the economies of many SIDS and coastal developing countries and its prominence in their national blue economy strategies (see e.g., [14,27,32]), it will be crucial for these policies to consider how emerging nature-based tourism and ecotourism projects may replicate existing patterns of labour exploitation.

Though limited empirical research into the prevalence and extent of labour exploitation in the new blue economy has been conducted, in recent years critical scholars have begun to question the labour implications of the ideological assumptions that underpin this vision of ocean development. Bennett et al. [12] summarise how the rapid and unchecked development of the blue economy may also produce new risks for both people and the environment. The article offers a wide range of examples including enclosures of coastal sea areas limiting local and Indigenous fishing rights (thereby increasing dependence on wage labour), men (primarily) becoming more vulnerable to exploitation following migration to work in emerging industries, and women (including those who were already at risk) being further marginalized or left more vulnerable to exploitation through exacerbated gender inequalities (for discussion of how migration affects vulnerability to forced labour see e.g., David et al., 2019). Two key factors in these risks are the

inequitable distribution of benefits and the exclusion of marginalized groups from decision-making and planning, both of which are linked to the foregrounding of the *economy*, and particularly the drive for *growth*, in ocean policy (see e.g., [13,39]). This is illustrated in Bogadóttir's [16] analysis of the negative impact of blue economy development in the Faroe Islands where ecological distribution conflicts have arisen between coastal fishers, landowners, NGOs, local communities, and citizen groups. These conflicts are driven by factors including the expansion of fish farms, the appropriation of land and water resources from local communities by the aquaculture industry, the construction of industrial infrastructure, pollution, displacement of alternative economic practices, and privatization and enclosure of common areas. Moreover, Bogadóttir [16] argues that these blue economic practices in the Faroes threaten marine environments rather than protect them.

Though the examples above do not represent documented instances of labour exploitation or modern slavery as such, exclusion from development and poor environmental health can exacerbate structural social inequalities and increase the risk of people, especially women, falling victim to modern slavery and other forms of exploitative labour (see [21]). The gender dimension of the new blue economy has also been highlighted elsewhere. For example, Bohler-Muller et al. [17] have pointed out that women lag behind men in every sector of the blue economy despite various international efforts to encourage inclusive gender development. In response, they argue that gendered characteristics of the labour market – which result in unfair working practices for women, such as the burden of unpaid care work, working in the informal economy, and discrepancies in income – are also present in the blue economy. They cite Doyle (2017) and Chako (2017) who have argued that major policy interventions are needed to facilitate women's education and access to training, women's rights at work, and women's economic empowerment (WEE), and that these are essential elements of a sustainable blue economy ([17], p. 2).

When considering these critiques, it is important to note that the blue economy agenda is not apolitical, and it has not emerged in a vacuum. Rather, it is shaped by multiple, and often conflicting, interests. As such contextual and historical issues and their continued structural effects need to be recognised, and it is necessary to identify whose voices are represented or excluded in the development of marine regions [22]. In critical political ecology (see e.g., [40]) and related fields, concern around the social contextual issues relating to labour in the green and blue economies have begun to surface. For example, Clark [26] critiques the framing of the new blue economy as a 'revolutionary' and 'transformative' approach to marine and fishery development. Applying the lens of Racial Capitalism, they argue that the expansion of capitalist social relations in key fisheries in the United States corresponded with the re-solidification of white supremacy to (re)produce systemic inequality, negatively affecting Black workers through more labour exploitation, naturalization of existing hierarchy, and the inequitable distribution of socioeconomic harm. Clark's historical analysis draws out three lessons for the blue economy and fisheries scholars and policymakers: (1) be wary of market utopianism, (2) technological innovation is not inherently progressive, and (3) systemic exploitation still matters. Even with these concerns in mind, significant structural obstacles may remain because, according to Banerjee [7], modern slavery and labour exploitation are not only widespread in the global, neoliberal, capitalist system, they are an enabling condition of it.

Cuker and Gibson [31] avoiding labour-related pitfalls in the new blue economy requires that it is intentionally built in inclusive and equitable ways, a key part of which is the education of workers. They agree with Clark [31] that the 'old' blue economy is built on a legacy of labour relationships "shaped by centuries of profit-motivated exploitation of workers and aquatic resources", and that, if replicating this is to be avoided, the workforce must be offered the tools and education to "reject the tradition of exploitation for a new vision of shared ownership that places high value on human diversity and sustainable use of marine resources". This means educating all participants, from labourers to

managers, on the construction of alternative business models and the value of diversity and equity (see also [9,49], for relevant case studies). The need for such action to be taken has emerged from a growing awareness that the rush to develop the blue economy and regulate coastal activity has at times resulted in social injustices and the exclusion of less powerful and unrecognized groups (e.g., small-scale fishers, women, Indigenous peoples, and youth) ([35]; see also, [21]), and that coastal and offshore investment projects and the inequalities embedded in the global capitalist marine economy have resulted in coastal people and communities being subjected to a wide range of injustices, manifested through socio-environmental conflict [36] (see also, [34]).

Part of the difficulty in effectively mitigating the potential risks relating to labour in the new blue economy is that, like the green economy, it seeks to foreground, and therefore reproduce, the power and influence of, major economic players including both state and non-state market actors. According to Kedia & Gautam [60], new blue economic activities ostensibly seek to simultaneously achieve conservation, inclusive development, and the sustainable use of ‘oceans and seas as commons’ through polycentric, multi-level, and multi-actor interventions. However, by examining the issue from the perspective of international political economy they reveal that the initiatives themselves are not yet designed in ways that appreciate the complexity involved in the conceptualisation of ocean-as-commons [60]. Moreover, the most powerful stakeholders remain concentrated in a small number of developed countries, mostly from Europe. As such, the monetary incentives behind sustainable investments (in nature-based tourism and PES mechanisms, for example), which have been promoted as a means for protecting the environment, have been interpreted by critical scholars as forms of accumulation based upon the commodification of nature, ‘presumption’, and institutional power that increasingly treat labour as irrelevant in the production of value. In turn, this (inaccurate) perspective serves to silence workers and render their experiences of exploitation invisible [63]. Nonetheless, some scholars do see such approaches to sustainability as having the potential to combat labour exploitation and modern slavery, provided specific antislavery measures are integrated into programmes [56].

Critical studies highlighted by [12] show how labour exploitation, including modern slavery, is facilitated by jurisdictional complexities and the pursuit of economic efficiency, including high levels of subsidies, economic disparity in labour markets, and the drive to maximize economic returns. They also draw attention to the vulnerability of specific groups (including women and Indigenous Peoples) to unregulated ocean development. At the policy level, fishing subsidies, in particular, have been identified as causing harm by encouraging the over-exploitation of marine resources and by contributing to poor labour conditions on fishing vessels ([4], p. 24). For this reason, ‘harmful’ subsidies have been given a specific target in the United Nations 2030 Agenda for Sustainable Development and, in November 2021, the World Trade Organisation published a draft text of the Agreement on Fisheries Subsidies, which included a statement requiring each party to the agreement to report on labour practices on an annual basis under Article 8 (Notification and Transparency) ([97], p. 6), though this proposal was reportedly rejected by China and Russia [59].

To summarise, although some scholars have argued in favour of reforming existing global environmental governance strategies, much of the academic literature that focuses on the labour exploitation-sustainability nexus applies Marxist analyses to green and blue economies to illustrate how, through expropriation, exploitation, and class conflict, capitalist owners benefit (or will benefit) from the exploitation and alienation of workers as part of a broader process of primitive accumulation (see e.g., [47,95], p. 12; [10]). In recent years ‘ocean-grabbing’ or ‘blue-grabbing’ has also been critically interrogated, which has included analysing blue economy policy proposals and situating them within broader debates that interrogate the neoliberalisation of nature. For example, Barbesgaard has argued that many such policy proposals fail on their terms and are “a form of ‘antipolitics’ that

precludes more radical visions of addressing environmental and climate change issues” ([8], p. 130). It is from these types of critiques that social and environmental activists, academics, mobilised communities, and some policymakers have begun to reconceptualise the blue economy in terms of justice; a framework that may help emerging and future blue governance policies to avoid replicating the types of exploitative and exclusionary labour practices characteristic of the ‘old’ blue economy.

#### 2.4. Blue justice for labour in a sustainable blue economy

Drawing on the scholarship and activism around environmental justice that has gained momentum in the past twenty years (see e.g., [48, 2,68,73,74,94,85]), research across the social sciences has begun to draw attention to specific issues in the blue economy relating to social justice, including food and nutrition security, impact on livelihoods, localised environmental degradation and inequitable distribution of benefits. However, these critiques have not yet been mainstreamed in policy discourse on ocean governance (see e.g., [30]). As such, critical policy analyses have highlighted the social and environmental implications of blue economy strategies and have questioned the extent to which the paradigm can accommodate meaningful participation and facilitate a just transition to a more equitable and sustainable future. Axon et al. [5], for example, analysed the US ‘Blue New Deal’, which was proposed by Senator Elizabeth Warren in response to limited attention being paid to the blue economy in the ‘Green New Deal’. The article cautions against the risk of power grabs and the threat to food sovereignty, pointing out that the challenges faced by the policy reflect: the “one size fits all” federal approach that has implications for addressing multifaceted obstacles in key sectors of the blue economy, its governance, and tackling interconnected crises that exacerbate socioeconomic inequities and vulnerabilities of marginalised coastal communities ([5], p. 1).

As a potential solution, Axon et al. advocates for a ‘Blue Justice Framework’, as proposed by Ertör [36] (see below), to address the inherent contradictions in the current conception of the blue economy. It is based on the principle that social justice is central to the long-term success of coastal management, resilience, and adaptation policies. Moreover, it is argued that this will help to overcome “business-as-usual exploitative practices” of blue industries, which will, in turn, contribute to empowering the workers and communities at the forefront of coastal-related hazards, while also enhancing marine ecosystems ([5], pp. 6 & 9).

Bennett et al. [12] offered a broader analysis of global blue economy, but reach a similar conclusion, highlighting ten risks and proposing policy solutions to them, which are formulated through a justice lens with three components: recognitional justice, procedural justice, and distributive justice. Many of the risks identified and solutions presented are directly or indirectly related to work and livelihoods, but among the most relevant to the discussion on labour exploitation are those that focus on the economic marginalisation of women, Indigenous Peoples, small-scale fishers, and low-income communities; the policies that are favourable to business but unfavourable to workers (such as problematic subsidies); and the inequitable distribution of blue economy benefits. As a minimum response to these risks, Bennett et al. suggest that, rather than downplaying the uneven distribution of benefits and potential harms, new blue economy strategies must endeavour to: Minimize the [negative] impacts of development on habitats, resources, and ecosystem services [...] Consider and safeguard the access rights and livelihoods of small-scale fishers [...] Maintain and promote access to marine resources needed for food security and well-being [and] Develop policies and mechanisms to foster and ensure the equitable distribution of economic benefits ([12], p. 6).

This framework builds on the earlier work of Bennett et al. [13], which offered five related recommendations for the development of an inclusive blue economy: 1. sustainability and equity must be prioritized, 2. legislation and effective regulatory agencies are necessary

pre-conditions of effective ocean governance, 3. guidelines on the equitable treatment of local populations and sharing of any wealth must be developed, 4. decision-making structures and processes must catalyse participation, and 5. interdisciplinary research will be needed to inform negotiations, policy design, blue-economy initiatives, and the monitoring of social and environmental outcomes.

Morrissey (2021) echoes the assertions of Bennett et al. but does so through a “just disruptions” framework, arguing that rights-based and capabilities-based approaches to justice, including principles of distributive and procedural justice, must be applied to inform adaptive and resilience-focused responses in coastal zones. This framing places practical, real-world, sustainable solutions for coastal communities at the forefront of the blue economy alongside justice, which Morrissey posits are both required if the blue economy is to retain credibility in the current context of climate disruptions, socio-economic challenges, and the degradation of ecosystems. The realities of space, place, and scale and the asymmetries in power relations also need to be acknowledged and more deliberately addressed. Such power asymmetries were illustrated by Ertör [36] through the analysis of 120 aquaculture and fisheries conflicts using data from the Environmental Justice Atlas (EJAtlas). Ertör proposed and applied a Blue Justice Framework as a grounded theoretical approach with three justice dimensions (material and biophysical, spatial, and autonomy and sovereignty) and concluded that the underlying causes of such conflicts are global and structural in nature and emerged from the current capitalist food system and the political neglect and marginalization of coastal communities. Many of the conflicts discussed by Ertör were linked to labour exploitation and working conditions that result from how the “global division of labour associated with marine commodity production creates specific patterns of exploitation, degradation, and unequal exchange” (Clark, Longo, & Auerbach, 2019, cited in [36]).

## 2.5. Envisaging a blue justice future

Blue justice is emerged as “a counternarrative to the promise and commitment to Blue Economy and Blue Growth by shifting imperatives for growth and innovation to the central role played by small-scale fisheries and social justice in sustainable ocean development” [75]. The term was introduced for the first time in the context of small-scale fisheries (SSF) at the Third World Small-Scale Fisheries Congress held in Thailand in 2018, however, it is now being widely implemented by both researchers and social movements engaged in activism and advocacy (2022). Different from the concept of fairness, justice and injustice come with a time dimension that associate with the demands for recognition and correction of the mistakes or harms from the past. If the central, transformative promise of the 2030 Sustainable Development Agenda, which is to “leave no one behind”, is to be achieved, it is important to understand the implications of new blue economic activity for less powerful and unrecognized groups (e.g., small-scale fishers, women, Indigenous Peoples, and youth) who are typically among the most excluded from decision making and most vulnerable to social injustices [35]. Concerning women in particular, Bohler-Muller et al. [17] have pointed out that while gender mainstreaming and gradual recognition of the unpaid work of women at the global level are positive developments, structural, ideological, and social factors that shape and impact gender justice remain, including in new developments such as the blue economy, but major gaps in knowledge regarding how this happens still exist. They highlight four policy priorities relating to gender justice in new blue economy strategies: (i) generating evidence-based knowledge on women in the blue economy, (ii) the need for women to participate in policy-making processes in the blue economy, (iii) creating gender-sensitive institutions and transnational gender networks, (iv) allowing women to be both agents and actors in their development as opposed to passive recipients and beneficiaries of development initiatives. [43] add to this that, because women are often excluded from ‘masculine’ labour categories and instead work in

informal and unregulated labour, gendered inequalities in procedural and distributive justice mean that any effort to integrate gender into blue justice must also address the way that power relations are gendered in a particular context, thus extending the policy focus beyond the sea to include issues and concerns that may not be viewed as directly relevant to ocean governance. Gideon’s [41] study on women in sustainable small-scale fisheries identifies different important roles played by women along Kenya coastal line, especially their participation in leadership, decision-making, in fisheries value chain and conservation of fisheries resources, the challenges and opportunities among them. The study identifies the needs for improving women’s right in SSF: the need for more research to be conducted on the role of women in the fisheries sector to help document all women’s activities not just post-harvest processes, and the need for awareness and sensitization on gender mainstreaming in the fisheries sector to help reduce the impacts of culture and traditions that restrict women’s full participation in fisheries.

Strong and just institutions of blue governance, though crucial, are not sufficient conditions for blue justice to be achieved and sustained. [57] have argued that justice for the most marginalized and disadvantaged people, whose rights and access to resources are threatened rather than sustained by the growing blue economy, must also be secured in the daily interactions between less powerful actors – small-scale fishers, for example – and other stakeholders, including governments, which requires an interactive, dialectic learning process. They note that, in practice, interactive governance of this kind would involve those with important things at stake deliberating on what justice should mean in relation to a given project in the setting where it exists and operates: it requires a shift away from top-down programming towards meaningful participation, which in turn means addressing power imbalances. It is important to take social impacts into account in ocean governance reforms, and it is challenging to avoid potential economic wealth-driven social impacts while retaining the SSF benefits to the society [30]. Thus, policymakers need to develop nuanced understandings of justice that reflect people’s experiences and their discourses. This is linked to Morrissey’s (2021) view that avoiding the perpetuation of the ecological and social problems of conventional economic growth requires a more holistic and comprehensive understanding and framing of *what a just and sustainable blue economy is*.

## 2.6. Key principles of justice for labour in the blue economy

In research relating to the blue economy and labour practices, it is becoming increasingly clear that the status quo in the ‘old’ blue economy has so far been characterised by the inequitable distribution of benefits and harm, exploitative and unjust labour practices, and the ongoing marginalisation of groups including women, young people, Indigenous Peoples, and low-income communities. This is because the structural inequalities that are embedded in the contemporary global economy have not been disrupted in the blue economy, but instead have been replicated and have now begun to manifest in new ways. Acknowledging this is a critical step for two reasons. Firstly, it serves as a starting point from which to begin asking *who* is being exploited in the blue economy, *how*, *why*, and by *whom*? And secondly, the long-term ecological sustainability of blue governance strategies depends upon these injustices being addressed.

Though research and policy on labour exploitation in the blue economy have until now largely focussed on conventional sectors – such as shipbreaking, industrial fisheries, and closely related industries – as blue economic activities are expanding into new frontiers, new challenges will also arise. The ILO [51] has identified, for example, that tourism is in the midst of a global boom and the industry is already the highest generator of new employment in developing regions. This is particularly relevant in the context of Africa where, at both regional and national levels, there is a drive to harness the economic potential of the continent’s vast coastlines and resources through tourism. It is expected

that nature-based tourism and ecotourism will only increase in importance, with rapid growth expected to continue over the coming decades, and with this comes the risk of labour being exploited in new ways. In an extensive review of the global context of blue tourism, [84] highlighted how social pressures emerging from growth may have labour-related impacts ranging from increased incidences of labour exploitation, decreased quality of work, minor labour, exploitation of women and immigrant labour, violations of human rights, and worsening of gender and racial inequality.

Based on the literature reviewed in this article, the following seven principles offer ways in which justice and labour rights may be placed at the forefront of new blue strategies during the inception phase or be better integrated into existing strategies while they are being implemented, evaluated, and revised.

### 3. Foregrounding of the human impact of blue economic activity

The human impact of blue economic activity should be placed at the forefront of blue governance policies and strategies because human well-being is a necessary condition of long-term ecological and economic sustainability. Thus, new blue economy strategies must apply rights-based and capabilities-based approaches to safeguard the access rights and livelihoods of local communities and develop policies that ensure the equitable distribution of economic benefits. This means developing practical, real-world solutions to climate risks for the coastal communities whose lives and local environments sustain and are sustained by the blue economy.

### 4. Identifying how and where existing patterns of exploitation may be replicated

It is crucial for those who are developing blue economy strategies to consider how emerging economic activities (such as nature-based tourism and ecotourism or PES projects) may replicate existing patterns of labour exploitation. To understand this, it is necessary to analyse policies, legislation and regulations about contextual and historical issues and their continued structural effects, as well as identifying whose voices are represented or excluded, how and why. This requires a wariness of market-based solutions: the marginalization of coastal communities and the conflicts that have begun to emerge in the new blue economy is linked to global and structural inequalities inherent in the current capitalist system. This includes patterns of labour exploitation, degradation, and unequal exchange, all of which are characteristic of the global division of labour in the 'old' blue economy.

### 5. Identifying and programming with and for vulnerable groups within the local island and coastal communities

Coastal and island communities are not homogenous, and blue economy strategies and activities will more profoundly affect less powerful and unrecognized groups within them (e.g., small-scale fishers, women, Indigenous Peoples, migrants, children and youth). This may represent a risk, but it is also an opportunity to address extant social inequalities, as long as strategies are developed in ways that do not exclude marginalized groups, but instead include *context-specific* labour policies and measures to protect vulnerable groups from exploitative labour practices. In particular, policy interventions are needed to facilitate women's education and access to training (see below), women's rights at work, and women's economic empowerment (WEE) because women not only represent the largest marginalised group in the labour force in many industries but are also typically among the most at risk *within* other disadvantaged populations.

## 6. Labour education as a central component of a sustainable blue economy

If policies are to be inclusive and equitable in practice, the blue economy workforce must have the knowledge and capability to reject exploitation and encourage a move toward social and economic practices that value human rights dignity and freedom alongside the sustainable use of environmental resources. This means educating workers at all levels on alternative business models and the meaning and value of equity and how to apply a rights-based approach. As noted above, women's education, economic empowerment, and inclusion in this process are crucial, and the same is true for young people, migrants, Indigenous Peoples, and other groups that may be marginalized in specific contexts. This is necessary if the rights of marginalized and disadvantaged people – i.e., those whose freedom and access to resources may be threatened by the blue economy – are to be upheld in their daily interactions with other stakeholders, including employers and governments. This includes the development of an inclusive learning process and deliberations on what sustainability and justice should mean. Policymakers will therefore need to develop nuanced understandings of justice that capture the spectrum of people's own experiences, and their understandings of concepts and discourses relating to the blue economy.

## 7. Identifying and addressing regulations and legislation that may facilitate or exacerbate labour exploitation and/or over-exploitation

'Harmful' policies relating to labour, including those that are favourable to business but unfavourable to workers or that result in the inequitable distribution of blue economy benefits must be identified and addressed in blue economy strategies. As noted, a key policy area that needs to be addressed in many contexts is the unhelpful subsidies for industries that are known to have a poor record of labour exploitation (and sustainability), such as offshore fishing. However, as new blue economic activities, such as blue tourism, grow it will be necessary to ensure that legislation and governance strategies create barriers to exploitative labour practices rather than enabling or incentivising them.

## 8. Conducting interdisciplinary research that reaches beyond the narrow confines of the blue economy

Blue economy strategies must be underpinned by interdisciplinary research into planned, emerging, and established programmes and projects. This research must also reach beyond measuring the short-term economic and medium-term environmental impacts to assess the extent to which the projects support a just transition to a sustainable future. The impact on *both* social and ecological sustainability must be prioritized in this research, which should in turn support the development of legislation and the establishment of effective regulatory agencies, which are necessary pre-conditions of sustainable ocean governance. This includes, for example, addressing the ways that power relations are gendered in a given context, which requires extending the policy focus beyond the coast to understand how the broader social context interacts with inequalities in the blue economy. This will contribute to a shift toward holistic, context-specific guidelines on the equitable treatment of local populations and the effective sharing of wealth that is generated through the blue economy. It will also form the foundation of blue economy negotiations, policy design, regional strategies and initiatives, and the monitoring and evaluation of social and environmental outcomes. In some cases, filling knowledge gaps about labour conditions can become the goal itself, but this learning can then be used to shape political possibilities in the new blue economy (see e.g., Havice & Zalik, 2019, p. 7)



## 9. Underpinning blue economy strategies with a commitment to multidimensional justice

To avoid the perpetuation of the ecological and social problems of conventional economic growth, emerging blue economy strategies will require a comprehensive understanding and framing of *what a just sustainable blue economy is*. This means considering the global context, but also the unique realities of space, place, and scale, and the asymmetries in power relations in specific contexts. The above recommendations require that the blue economy is reconceptualised in terms of justice because doing so is central to the long-term success of ocean and coastal management, resilience, and adaptation policies. The multiple dimensions of justice – recognitional, procedural, and distributive justice, material and biophysical, spatial, and autonomy and sovereignty – must be integrated into policies and be applied consistently to inform adaptive and resilience-focused responses that can form the foundation of a just and sustainable blue economy.

## 10. Conclusion

In light of the analysis in this study, it is evident that new blue economy strategies have, in some instances, begun to acknowledge the importance of a holistic approach to sustainability. These strategies incorporate language concerning the human rights of coastal communities and implement measures to ensure equitable and sustainable social, economic, and environmental outcomes while safeguarding investment. Notable examples include the Africa Blue Economy Strategy [1], the Indian Ocean Commission's Regional Action Plan for the Blue Economy [54], and the Bahamas Blue Economy Strategy [50]. For instance, the African Union's strategy highlights the necessity of integrating impoverished and often excluded coastal and lake communities into the blue economy development process, thereby empowering them and enhancing their control over the conditions that determine their well-being.

However, a critical examination reveals that explicit references to blue economy working conditions, incidences of labour exploitation, modern slavery, and proposed protective measures for vulnerable populations are largely absent in these strategies. Other strategies, such as the Seychelles Blue Economy Action Plan [89], aim to build local capacity but only briefly mention broad goals such as 'social equity' and 'social well-being'. Generally, these documents prioritise the "sustainable economic exploitation of aquatic resources and the conservation of ecosystems" over social justice concerns.

This gap between academic research and policy development is particularly pronounced regarding labour issues and the blue economy. The literature reviewed consistently indicates that for blue economy strategies to be successful and sustainable in the long term, they must avoid replicating exploitation patterns that have historically led to environmental degradation and inequitable distribution of harms and benefits. Central to this is the notion of Blue Justice, which demands the meaningful participation of island and coastal communities and ensures the protection of their rights, including fair and just working conditions, free choice of employment, and just and favourable conditions of work (see [37], Art. 31; [86], Art. 23).

Based on the literature reviewed, the following seven principles are proposed to place justice and labour rights at the forefront of new blue economy strategies or to better integrate them into existing strategies during implementation, evaluation, and revision phases: 1) foregrounding the human impact of blue economic activity- recognising and addressing the socio-economic impacts of blue economy activities on local communities; 2) identifying existing patterns of exploitation- understanding how current exploitation patterns might be replicated and taking steps to prevent this; 3) programming for vulnerable groups-ensuring that vulnerable groups within island and coastal communities are specifically considered and supported in blue economy initiatives; 4) labour education- making labour education a central component of

sustainable blue economy development; 5) addressing regulatory gaps-identifying and amending regulations and legislation that may facilitate or exacerbate labour exploitation; 6) Interdisciplinary Research\*\*: Conducting interdisciplinary research that extends beyond the narrow confines of the blue economy to include broader social, economic, and environmental contexts; 7) commitment to multidimensional justice- underpinning blue economy strategies with a firm commitment to multidimensional justice, ensuring fair treatment and equitable benefits for all stakeholders.

Implementing these principles can significantly enhance the alignment of blue economy strategies with the goals of justice and sustainability, ensuring that economic growth does not come at the expense of social equity and environmental health. By prioritising these principles, policymakers can create a more inclusive, fair, and just blue economy that benefits all stakeholders, particularly the most vulnerable populations.

## CRedit authorship contribution statement

**He Yuan:** Writing – review & editing, Writing – original draft, Conceptualization. **Pierre Failler:** Writing – review & editing, Supervision, Conceptualization. **Leila Choukroune:** Writing – review & editing, Supervision, Conceptualization.

## Data availability

No data was used for the research described in the article.

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